



City of New York

OFFICE OF THE COMPTROLLER

Scott M. Stringer
COMPTROLLER



FINANCIAL AUDIT

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Deputy Comptroller for Audit

Audit Report on the New York City
Housing Authority's Maintenance and
Repair Practices

FK14-102A

July 13, 2015

<http://comptroller.nyc.gov>



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OFFICE OF THE COMPTROLLER
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NEW YORK, NY 10007

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July 13, 2015

To the Residents of the City of New York:

My office has audited the New York City Housing Authority's (NYCHA) maintenance and repair practices to determine whether NYCHA completes Work Orders satisfactorily and in a timely manner, and accurately reports Work Order statistics. We audit entities such as NYCHA to ensure that they properly care for and maintain assets entrusted to them and provide residents safe and decent housing, and do so in accordance with applicable rules and regulations.

This audit found that NYCHA did not meet its goals of eliminating its entire Work Order backlog and permanently reducing repair wait times. In particular, NYCHA did not meet its stated goals for the average time for completion of its largest category of Work Orders, Corrective Maintenance Work Orders, within prescribed time frames. Additionally, NYCHA did not ensure that Violation Work Orders were performed in a timely manner and did not establish time frames for or adequately track the completion of Inspection and Preventive Maintenance Work Orders. Further, in its performance reports to the public, NYCHA significantly understated Work Order statistics, including the total number of open Work Orders, the average amount of time it takes NYCHA to complete Work Orders, and its backlog of open Work Orders. To the extent that NYCHA reported dramatic reductions in the number of open Work Orders and the time it took to complete repairs, we found, at least in part, that reductions resulted from NYCHA making administrative changes in the way it categorized and closed Work Orders rather than from actually performing repairs more quickly.

NYCHA also did not effectively track whether residents were satisfied with work in accordance with its own procedures. Further, with regard to mold, mildew, and/or excessive moisture conditions, NYCHA did not train all staff and assign qualified staff to assess conditions and design and perform remediation work. Finally, based on resident satisfaction survey responses we received and our review, we cannot be assured that NYCHA completes work orders in a satisfactory manner because of these issues.

This audit made a total of 27 recommendations, including that NYCHA should implement operational changes to improve its ability to timely address Work Orders; include all Work Orders, regardless of location and category, in the total number of open Work Orders reported on its website; and report the actual number of Work Orders open beyond prescribed time frames on its website. The report also recommends that NYCHA should immediately reinstate the GM Directive-3760 requirement to document Resident Satisfaction Survey results in Maximo and ensure that mold, mildew, and/or excessive moisture inspection and remediation Work Orders are assigned to appropriately trained staff.

The results of the audit have been discussed with NYCHA officials, and their comments have been considered in preparing this report. Their complete written response is attached to this report. If you have any questions concerning this report, please e-mail my Audit Bureau at audit@comptroller.nyc.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Scott M. Stringer".

Scott M. Stringer

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
Audit Findings and Conclusions	2
Audit Recommendations	2
Agency Response.....	3
AUDIT REPORT	4
Background	4
Objectives.....	6
Scope and Methodology Statement.....	6
Discussion of Audit Results	7
FINDINGS AND RECOMMENDATIONS.....	9
NYCHA Did Not Achieve Its Goals of Eliminating the Entire Work Order Backlog and Reducing Average Repair Wait Times.....	10
Recommendations	14
NYCHA Did Not Complete Violation Work Orders in a Timely Manner.....	15
Recommendations	17
NYCHA Did Not Set Time Frames for and Track the Completion of Inspection and Preventive Maintenance Work Orders	17
Recommendation	17
NYCHA Did Not Ensure that Maximo Data was Reliable.....	18
Recommendations	20
NYCHA Did Not Accurately or Properly Report to the Public Key Work Order Statistics	20
Total Number of Open Work Orders	21
Recommendation	21
Average Time to Complete Work Orders	21
Recommendations	22
Backlog of Open Work Orders	24
Recommendation	24
NYCHA Did Not Utilize All Available Tools to Ensure that Work Was Properly Performed.....	25
Recommendations	29

NYCHA Did Not Fully Comply with Its Mold, Mildew, and Excessive Moisture Policies and Procedures	30
NYCHA Did Not Ensure that Relevant Staff Were Properly Trained.....	31
Recommendation	32
NYCHA Did Not Ensure that Work Plans Were Properly Documented in Maximo.	33
Recommendations	33
NYCHA Procedures May Have Led to the Underassessment of Mold and Mildew Severity Levels.....	34
Recommendations	34
NYCHA Did Not Properly Staff Assessment and Remediation Work Orders	35
Recommendation	36
NYCHA Did Not Ensure that Proper Remediation Techniques Were Used Where Sheetrock Was Affected by Mold, Mildew and Moisture	36
Recommendation	37

DETAILED SCOPE AND METHODOLOGY.....38

APPENDIX I

APPENDIX II

ADDENDUM

THE CITY OF NEW YORK OFFICE OF THE COMPTROLLER FINANCIAL AUDIT

Audit Report on the New York City Housing Authority's Maintenance and Repair Practices

FK14-102A

EXECUTIVE SUMMARY

The New York City Housing Authority (NYCHA) has provided housing for low and moderate income New York City residents since it was chartered in 1934. Currently, there are approximately 400,000 residents in 328 developments in all five boroughs. NYCHA uses the Maximo software system to create, assign, and track Work Orders to perform maintenance and repair work that is requested by residents or initiated by NYCHA and private management companies overseen by NYCHA. There are four categories of Work Orders:

- Corrective Maintenance Work Orders – all resident Service Requests result in Corrective Maintenance Work Orders and they can also be created by NYCHA staff and private contractors who manage some NYCHA developments. They constitute the vast majority of NYCHA Work Orders.
- Inspection Work Orders – created to prompt inspections of various types including apartments, boilers, elevators, fire extinguishers, and window guards.
- Preventive Maintenance Work Orders – created for routine maintenance issues such as elevators, West Nile Virus treatment, and heating equipment.
- Violation Work Orders – created in connection with summonses and violation notices issued by various government entities such as the Fire Department (FDNY), the Department of Buildings (DOB), and the Department of Health and Mental Hygiene (DOHMH).

In January 2013, NYCHA reported that it had a backlog of more than 420,000 Work Orders. To address the backlog and improve residents' quality of life, NYCHA announced that it was implementing new operational efficiencies and process changes to achieve its goals of eliminating the entire backlog by the end of 2013, and permanently reducing the average wait time for repair work to one week for simple repairs and two weeks for repairs needing skilled tradesmen and responding to all emergency repair requests within 24 hours. Further, NYCHA committed to providing reports on the status of the backlog reduction. Thereafter, NYCHA began reporting monthly statistics on its website including the number of open Work Orders, the average amount of time it takes NYCHA to complete Work Orders, and its backlog of open Work Orders.

Additionally, in April 2014, NYCHA entered into a Stipulation and Order of Settlement (the Settlement) with residents who alleged they suffered from asthma and alleged that NYCHA failed to make reasonable accommodations and modifications in its policies, practices, and procedures to effectively abate mold, mildew, and/or excessive moisture conditions. The Settlement provided that NYCHA would modify its policies and procedures, train staff on them, and “maintain an average service level of no more than seven (7) days for completion of mold and excessive moisture-related work orders that require simple repairs that can be done by a maintenance worker in a single visit to the apartment and an average service level of no more than fifteen (15) days for completion of more complex repairs.”

As of April 2015, NYCHA reported that it had 120,730 open Work Orders and advised that NYCHA’s manageable workload is about 90,000 Work Orders. For that same time, NYCHA reported that, on average, it took NYCHA 35 days to complete repairs.

Audit Findings and Conclusions

NYCHA did not meet its goals of eliminating the entire Work Order backlog and permanently reducing repair wait times. In particular, NYCHA did not meet its stated goals for the average time for completion of its largest category of Work Orders, Corrective Maintenance Work Orders, within prescribed time frames. Additionally, NYCHA did not ensure that Violation Work Orders were performed in a timely manner and did not establish time frames for or adequately track the completion of Inspection and Preventive Maintenance Work Orders. Further, in its performance reports to the public, NYCHA significantly understated Work Order statistics, including the total number of open Work Orders, the average amount of time it takes NYCHA to complete Work Orders, and its backlog of open Work Orders. To the extent that NYCHA reported dramatic reductions in the number of open Work Orders and the time it took to complete repairs, we found, at least in part, that reduction resulted from NYCHA making administrative changes in the way it categorized and closed Work Orders rather than from actually performing repairs more quickly.

NYCHA also did not effectively track whether residents were satisfied with work in accordance with its own procedures. Further, with regard to mold, mildew, and/or excessive moisture conditions, NYCHA did not train staff, appropriately identify the nature and severity of conditions, and assign qualified staff to assess conditions and design and perform remediation work.

Based on survey responses we received, and our review, we cannot be assured that NYCHA completes Work Orders in a satisfactory manner because of these issues.

Audit Recommendations

This report makes a total of 27 recommendations to NYCHA, including:

- NYCHA should implement operational changes to improve its ability to timely address Work Orders and in particular identify and implement detailed steps necessary and time frames to implement the materials acquisition, planning, scheduling, and staffing required to meet NYCHA’s goals for addressing resident-requested and staff-initiated repairs.
- NYCHA should ensure that data is recorded so that management can readily identify and review Violation Work Orders approaching and past due dates.
- NYCHA should record and track actual or targeted completion dates for Inspection and Preventive Maintenance Work Orders in Maximo.

- NYCHA should include all Work Orders, regardless of location and category, in the total number of open Work Orders reported on its website.
- NYCHA should establish and report on its website Service Level Agreement days (i.e., the average number of days to complete a repair for a month) based on the amount of time it takes to fully complete repairs.
- NYCHA should discretely report Service Level Agreement days for emergency, simple, and more complex repairs on its website.
- NYCHA should report the actual number of Work Orders open beyond prescribed time frames on its website.
- NYCHA should immediately reinstate the GM Directive-3760 requirement to document Resident Satisfaction Survey results in Maximo.
- NYCHA should ensure that Executive management—including but not limited to the Chair, General Manager, the Operations Executive Vice President, Operations Vice Presidents, and Operations Directors—reviews Resident Satisfaction Survey data monthly and take appropriate follow-up and corrective action to ensure that work is performed and that residents are satisfied with the quality of work.
- NYCHA should ensure that mold, mildew, and/or excessive moisture inspection and remediation Work Orders are assigned to appropriately trained staff.

Agency Response

In its response, NYCHA stated that it shared many of the concerns raised in the report and that it was “committed to changing the way we do business.” NYCHA attributed its maintenance and repair deficiencies to “[b]illions in underfunding by all levels of government, outdated and inefficient management models, and rapidly deteriorating buildings. . . . As funding has decreased, capital repairs and rehabilitations have been deferred resulting in the dramatic increase in the needs and costs for maintenance and repairs.”

Nevertheless, NYCHA stated that it “has made meaningful progress in improving our maintenance and repair practices and outcomes over the past 18 months. As a step in the right direction, NYCHA has reduced the number of open work orders and the average repair wait time by more than 50 percent since 2013.” However, NYCHA acknowledged that it “must fundamentally change how we do business, which is why NYCHA recently released NextGeneration NYCHA—a 10-year strategic plan to change the way NYCHA is funded, operates and engages residents. . . . Through immediate measures and long-term strategies in NextGeneration NYCHA, we plan to address many of the issues you raised.”

We are pleased that NYCHA recognizes its failure to adequately address the repair and maintenance needs of its residents and that it has expressed a commitment to addressing its problems. However, NYCHA’s response and the NextGeneration NYCHA plan do not directly address many of the report’s findings and recommendations. Moreover, since this is the fourth plan issued by NYCHA in ten years to address maintenance and repair and other related operational and fiscal issues, we are concerned whether the strategies described in this plan will be fully implemented and tracked and whether the intended benefits will ultimately be realized.

The full text of NYCHA’s response is included as an addendum to this report.

AUDIT REPORT

Background

NYCHA has provided housing for low and moderate income New York City residents since it was chartered in 1934 under the New York State Public Housing Law as a public benefit corporation, three years before the enactment of a national federal housing program. Pursuant to its charter and its status as a federal Public Housing Authority, NYCHA develops, constructs, and manages affordable housing. Currently, there are approximately 400,000 residents in 328 developments in all five boroughs.¹

Multiple operations departments at NYCHA (collectively referred to as Operations) as well as its Energy Department are responsible for the proper care and maintenance of NYCHA-owned properties. Operations includes five separate Property Management Departments, organized largely by geographic location.² In addition, Operations includes units with specialized functions such as Maintenance Repair & Skilled Trades, Technical Services, Elevators, and Emergency Services. NYCHA's developments are managed on a day-to-day basis primarily by NYCHA staff, including a Housing Manager, a Superintendent, and an Assistant Superintendent. In addition, NYCHA contracts out the management of 26 developments to two private management companies, Building Management Associates (BMA) and Kraus Management. BMA is responsible for managing 8 developments composed of 850 units, and Kraus Management is responsible for managing 18 developments composed of 1,703 units. NYCHA's Mixed Finance Property Management Department is generally responsible for overseeing BMA's and Kraus Management's performance.

NYCHA uses two different software systems, Siebel and Maximo, to plan, schedule, assign, and track repair and maintenance work at the developments. Siebel is used to create maintenance and repair Service Requests based on resident complaints. Residents can make these complaints by calling the Customer Contact Center (CCC) and CCC call takers process Service Requests in Siebel. Siebel is then used to schedule appointments with residents for work to be performed.

Maximo is used to create, assign, and track Work Orders to perform maintenance and repair work requested by residents or initiated by NYCHA staff and its private management companies. NYCHA's Operations, Energy Department, and private management companies can initiate maintenance and repair work by their creating Work Orders directly in Maximo. Service Requests based on resident complaints are routed by Siebel to Maximo and Work Orders are automatically created.

There are four categories of Work Orders:

- Corrective Maintenance Work Orders - created for emergency and non-emergency maintenance and repairs.

¹ During the audit period, NYCHA was responsible for the proper care and maintenance of 336 residential properties composed of 179,270 residential units.

² The five Property Management Departments are the Manhattan Property Management Department, Bronx Property Management Department, Brooklyn Property Management Department, Queens/Staten Island Property Management Department, and Mixed Finance Asset Management Department.

- Inspection Work Orders - created for the numerous types of inspections performed by NYCHA, including those of apartments, boilers, elevators, fire extinguishers, and window guards.
- Preventive Maintenance Work Orders - created for routine maintenance related to elevators, West Nile Virus treatment, and heating equipment and are scheduled based on established time frames or meter-based prompts.
- Violation Work Orders - created in connection with summonses and violation notices issued by the FDNY, DOB, DOHMH, Housing Preservation and Development (HPD), Department of Environmental Protection (DEP), Department of Sanitation (DSNY), Department of Labor (DOL), or other government entities.

Corrective Maintenance Work Orders may be initiated by residents through Siebel Service Requests or by NYCHA staff and its private management companies. Inspection, Preventive Maintenance, and Violation Work Orders are initiated only by NYCHA staff and its private management companies.

At the outset, NYCHA creates what it calls a “Parent Work Order” for the initial task or primary work to be performed. Subsequently, “Child Work Orders” are created whenever there is additional work needed as a result of repairs or inspection from the initial Parent Work Order. Maximo assigns Parent and Child Work Orders unique, sequential numerical identifiers and allows for the tracking of related Parent and Child Work Orders.

All Work Orders, of whatever type, are electronically routed to appropriate Operations supervisors who in turn assign Work Orders to staff responsible for performing the work. Upon completing Work Orders, staff return the hard-copy Work Orders to clerical staff. In turn, clerical staff record Work Order data, such as the dates and times that Work Orders were started and completed in Maximo. When processing Service Requests and completing and dispositioning Work Orders, CCC, Operations, Energy, and clerical staff must comply with NYCHA’s Standard Procedures, General Manager Directives, and Deputy and Assistant Deputy General Manager Memoranda, which are posted on NYCHA’s intranet.

In January 2013, NYCHA stated that

[s]ustained underfunding by the Federal government has forced NYCHA to cut maintenance and repair staff, while at the same time, NYCHA properties that were constructed decades ago have suffered, as federal capital improvement and repair funding has also declined. As a result of Federal disinvestment, the wait time for some non-emergency repair requests made today can be as long as two years.

Further, NYCHA reported that it had a backlog of more than 420,000 open Work Orders.

To address the backlog and improve residents’ quality of life, NYCHA announced that it was implementing new operational efficiencies and process changes to achieve its goals of eliminating the entire backlog of outstanding repair requests by the end of 2013, and permanently reducing the average wait time for repair work to:

- One week for simple repairs;
- Two weeks for repairs needing skilled tradesmen; and

- 24 hours for responding to all emergency repair requests.

Further, NYCHA committed to providing reports on the status of the backlog reduction. Thereafter, NYCHA began reporting on its website monthly statistics including the number of open Work Orders, the average amount of time it takes NYCHA to complete Work Orders as compared to targeted times, and its backlog of open Work Orders.

In April 2014, NYCHA entered into the Settlement with residents who alleged they suffered from asthma and alleged that NYCHA failed to make reasonable accommodations and modifications in its policies, practices, and procedures to effectively abate mold, mildew, and excessive moisture conditions. The Settlement provided that NYCHA would modify its policies and procedures, train staff on them, and “maintain an average service level of no more than seven (7) days for completion of mold and excessive moisture-related work orders that require simple repairs that can be done by a maintenance worker in a single visit to the apartment and an average service level of no more than fifteen (15) days for completion of more complex repairs.” To monitor NYCHA’s compliance with completing repairs within specified time frames, the Settlement required NYCHA to provide plaintiffs’ counsel with quarterly reports detailing “the number and percentage of work orders that were completed within the agreed upon service levels” and “the number and percentage of work orders that were not completed within the agreed upon service levels.”

As of April 2015, NYCHA reported that it had 120,730 open Work Orders and advised that NYCHA’s manageable workload is about 90,000 Work Orders. For this same period, NYCHA reported that, on average, it took NYCHA 35 days to complete repairs.

Objectives

The objectives of this audit were to determine whether:

- NYCHA completed Work Orders satisfactorily and in a timely manner; and
- NYCHA accurately reported Work Order statistics.

Scope and Methodology Statement

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. This audit was conducted in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, §93, of the New York City Charter.

Many of our reported findings are based on data obtained from Maximo, even though we identified issues about the reliability of Maximo data. Despite audit concerns regarding Maximo data reliability, we used this information because it was the best available and because it was relied upon by NYCHA. These issues are fully discussed in the Findings and Recommendations section of this report.

The scope of this audit covers January 1, 2013 to July 31, 2014. Please refer to the Detailed Scope and Methodology at the end of this report for the specific procedures and tests that were conducted.

Discussion of Audit Results

The matters covered in this report were discussed with NYCHA officials during and at the conclusion of this audit. A preliminary draft report was sent to NYCHA officials and discussed at an exit conference held on June 3, 2015. On June 17, 2015, we submitted a draft report to NYCHA with a request for comments. We received a written response from NYCHA on July 1, 2015.

In the written response, NYCHA stated that it shared many of the concerns raised in the report and that it was “committed to changing the way we do business.” NYCHA attributed its maintenance and repair deficiencies to “[b]illions in underfunding by all levels of government, outdated and inefficient management models, and rapidly deteriorating buildings. . . . As funding has decreased, capital repairs and rehabilitations have been deferred resulting in the dramatic increase in the needs and costs for maintenance and repairs.” Nevertheless, NYCHA stated that it “has made meaningful progress in improving our maintenance and repair practices and outcomes over the past 18 months. As a step in the right direction, NYCHA has reduced the number of open work orders and the average repair wait time by more than 50 percent since 2013.”

However, NYCHA acknowledged that it “must fundamentally change how we do business, which is why NYCHA recently released NextGeneration NYCHA—a 10-year strategic plan to change the way NYCHA is funded, operates and engages residents. . . . Through immediate measures and long-term strategies in NextGeneration NYCHA, we plan to address many of the issues you raised.” In particular, NYCHA stated that its NextGeneration NYCHA plan includes: several pilot programs aimed at addressing repairs in a more timely manner; plans to improve transparency by measuring performance based on the total time to complete an entire repair; plans to implement a mobile app that will allow residents to request, schedule, and provide feedback on maintenance and repair service requests; and targeted roof replacements at buildings that have high numbers of maintenance repair requests such as leak repairs, painting, and mold.

While NYCHA’s response reflects a commitment to improving its processes for delivering repair and maintenance services to its residents, its formal response to the audit and its NextGeneration NYCHA plan do not directly respond to or offer near-term, enterprise-wide, detailed steps to address many of the report’s findings and recommendations. Most notably, NYCHA in its formal audit response did not address the report’s findings and recommendations related to Violation Work Orders, Resident Satisfaction Surveys, and mold, mildew, and/or excess moisture policies and procedures.

In addition, we note that this is the fourth plan issued by NYCHA in ten years to address maintenance and repair and other operational and fiscal issues. NYCHA issued “The Plan to Preserve Public Housing” in April 2006, “PlanNYCHA A RoadMap for Preservation” in December 2011, “The Boston Consulting Group (BCG) Reshaping NYCHA Central Support Functions” in August 2012,³ and “NextGeneration NYCHA” in May 2015. Each of these plans set forth goals and strategies aimed at ensuring NYCHA’s stability through cost savings and revenue initiatives

³ In August 2012, working closely with NYCHA, BCG issued a report detailing more than 100 recommendations which, if implemented, BCG estimated would result in annual cost savings of \$71 million and annual efficiencies and revenue enhancements of \$56 million by 2016.

and using additional resources to improve services and residents' quality of life. However, the implementation of NYCHA's prior plans' goals and strategies were often not tracked to ensure that benefits were realized, in whole or in part. Further, NYCHA has repeated a number of the initiatives from plan to plan, which indicates that they have never been implemented or that they have previously only been partially implemented. This raises questions about the merits of these previously proposed plans and about NYCHA's ability to implement them now. For example, in each of its four plans, NYCHA set forth goals and strategies to achieve cost savings by cutting administrative staff and to increase parking and commercial leasing revenues. In its current NextGeneration NYCHA plan, NYCHA estimates that these goals and strategies will result in cost savings of \$90 million per year and operating revenues of \$6 million per year. We question whether the goals and strategies in NYCHA's current plan will be properly implemented and tracked and whether the intended benefits will ultimately be realized.

The full text of NYCHA's response is included as an addendum to this report.

FINDINGS AND RECOMMENDATIONS

NYCHA did not meet its goals of eliminating the entire Work Order backlog and permanently reducing repair wait times. NYCHA did not complete its Corrective Maintenance Work Orders, which constitute the overwhelming majority of Work Orders, within their prescribed time frames. As of July 31, 2014, based on data obtained from Maximo, NYCHA had nearly 55,000 Corrective Maintenance Work Orders that exceeded the time frames set by NYCHA for their completion. Additionally, NYCHA did not, on average, address emergencies and complete more complex repairs within its targeted time frames of one and fifteen days, respectively. NYCHA also did not complete Violation Work Orders within prescribed time frames and did not establish time frames for or adequately track the completion of Inspection and Preventive Maintenance Work Orders. Based on our review of Maximo data for Violation Work Orders completed in July 2014, we found that NYCHA took, on average, 370 days to complete Violation Work Orders. We also found that NYCHA did not accurately report its performance to the public in that it significantly understated Work Order statistics including the total number of open Work Orders, the average amount of time it takes NYCHA to complete Work Orders, and its backlog of open Work Orders. To the extent that NYCHA reported dramatic reductions in the number of open Work Orders and the time it took to complete repairs, we found, at least in part, that reductions resulted from NYCHA making administrative changes in the way it categorized and closed Work Orders rather than from actually performing repairs more quickly.

In addition, NYCHA did not ensure that residents were satisfied with work. We noted that NYCHA did not ensure that its Operations staff and contractors had residents complete satisfaction surveys after Corrective Maintenance Work Orders were completed, and that clerical staff documented survey results in Maximo. In the absence of this information, NYCHA supervisory personnel were hindered in their ability to identify and investigate negative responses, schedule appropriate follow-up work, hold Operations staff and contractors accountable for not performing or poorly performing work, initiate appropriate corrective action, and ultimately, improve customer satisfaction.

In response to 3,166 surveys that we sent regarding Corrective Maintenance Work Orders, we received 708 resident responses, a 22.4 percent response rate.⁴ Of these we found:

- 41.9 percent (277 of 661) of responses indicated that a repair issue was not completely resolved;
- 59.4 percent (380 of 640) of responses indicated that a repair issue was not addressed timely;
- 20.6 percent (131 of 635) of responses indicated that NYCHA staff did not show up for scheduled appointments; and
- 45.1 percent (291 of 646) of responses indicated that residents were not satisfied with the service provided by NYCHA staff.

Additionally, 138 of the 708 responses indicated that requested maintenance and repair work was not completed on the dates reported in Maximo. For 44 of these 138 responses, NYCHA reported

⁴ Our surveys used the same language used by NYCHA in its CCC Quality Assurance Survey about customer satisfaction following the completion of a repair. In total, we received 708 responses from residents who requested maintenance and repair work. However, residents did not always answer each of the Resident Satisfaction Survey questions. Therefore, the number of responses for each Resident Satisfaction Survey question varies.

in Maximo that someone from the NYCHA staff or private management companies verified the conditions reported by the resident that were the subject of the Parent Work Order after the complaint had been made. Based on our review of Maximo apartment Work Order histories and Work Orders related to these 44 verified conditions, we found that:

- In 26 instances, residents made multiple repair requests; however, NYCHA has yet to perform requested work.
- In 14 instances, residents had to make multiple repair requests before NYCHA ultimately completed the requested repair.
- In 4 instances, residents made a single repair request that resulted in NYCHA completing the requested repair.

Finally, NYCHA did not comply with certain policies and procedures designed to address mold, mildew, and/or excessive moisture conditions in that it did not train staff, appropriately identify the nature and severity of conditions, and assign qualified staff to assess conditions and design and perform remediation work.

Based on survey responses and our review, we cannot be assured that NYCHA completes Work Orders in a satisfactory manner because of these issues.

These matters are discussed in detail in the following sections of this report.

NYCHA Did Not Achieve Its Goals of Eliminating the Entire Work Order Backlog and Reducing Average Repair Wait Times

NYCHA did not meet its goals of eliminating the entire Work Order backlog and permanently reducing repair wait times. NYCHA did not complete its Corrective Maintenance Work Orders, which constitute the overwhelming majority of Work Orders within their prescribed time frames. As of July 31, 2014, NYCHA had nearly 55,000 non-current Corrective Maintenance Work Orders based on data obtained from Maximo and it did not address emergencies and complete more complex repairs within targeted time frames.⁵ As noted above, Corrective Maintenance Work Orders are created for emergency and non-emergency maintenance and repair requests made by residents.⁶

In January 2013, NYCHA announced its goals of eliminating the entire backlog of outstanding repair requests by the end of 2013 and permanently reducing the average wait time for repair work to one week for simple repairs and two weeks for repairs requiring skilled tradesmen and 24 hours for responding to all emergency repair requests. NYCHA stated that it intended to achieve these goals by instituting new operational efficiencies and making process changes.

In its Backlog Plan, dated October 2012, and its subsequent Strategy to Reduce the Backlog, dated December 2012, NYCHA outlined 26 “productivity improvement drivers” across six categories that it contended were essential to increasing productivity and eliminating the backlog.

⁵ Many of our reported findings are based on data obtained from Maximo, even though we identified reliability concerns with Maximo data. We used this information because it was the best available and it was relied upon by NYCHA. These issues are fully disclosed in the Findings and Recommendations section of this report.

⁶ NYCHA staff and its private management companies can also create Corrective Maintenance Work Orders directly in Maximo.

In December 2012, NYCHA assessed the impact of the six categories of productivity improvement drivers on eliminating the backlog to be:

- Materials (30 percent);
- Planning and scheduling (30 percent);
- Staffing (20 percent);
- Process improvements (10 percent);
- Communication (no impact individually but required to achieve other results); and
- Performance management⁷ (no impact individually but required to achieve other results).

It specifically identified the biggest contributing factors to reducing the backlog as “making sure enough quantity and quality of material and equipment are available to do the repairs; coordinating the scheduling for work of various skilled trades, such as carpenters, electricians, plasterers and plumbers; and hiring additional labor to perform the work.” NYCHA first indicated that it would implement productivity improvement drivers between October 2012 and February 2013, and then revised its time frame to between December 2012 and April 2013.

However, NYCHA does not appear to have implemented its plan as designed. We asked multiple NYCHA officials with responsibilities related to maintenance and repairs to explain and document how the productivity improvement drivers that NYCHA identified as having a significant impact (e.g., materials, planning and scheduling, and staffing) were implemented and were repeatedly told that they had no knowledge of the productivity drivers or documentation related to NYCHA’s efforts to address them.

Instead, NYCHA officials maintained that NYCHA primarily reduced the backlog of open Corrective Maintenance Work Orders by generating and distributing daily General Manager Reports and discussing them at conference calls with the General Manager and Executive and Operations managers. These reports included the total number of open Corrective Maintenance Work Orders, major incidents and service outages, aging schedules, and the average time to complete Work Orders. Summary statistics, including the average time to complete Work Orders, were reported by borough, craft, and Work Order failure type such as carbon monoxide detector, mildew, and bedbugs. Additionally, NYCHA reported on a monthly basis on its website its efforts and progress in reducing the backlog. We note, however, that these activities constituted only what NYCHA had identified as “performance management productivity improvement drivers” which NYCHA had identified as having no impact individually on the backlog.

In August 2013, NYCHA publicly restated its goal from eliminating the entire backlog:

[a]t the conclusion of this initiative, the Authority anticipates that the number of work orders that will be open at any given time will be approximately 90,000. This represents the number of work orders NYCHA would have if workers were handling maintenance requests in an average of 7 days, and more complex requests in an average of 15-days.

Based on its analysis, NYCHA concluded that so long as it had fewer than 90,000 Work Orders open at any one time, it did not have a backlog. NYCHA did not consider the length of time between a repair request and a Work Order being completed when determining and reporting on its backlog of open Work Orders.

⁷ In its Strategy to Reduce the Backlog dated December 19, 2012, NYCHA identified three performance management drivers: establish performance expectations; measure staff performance to ensure productivity gains; and report at multiple levels.

However, as is discussed separately in more detail below, NYCHA's methodology of determining the existence and extent of backlogged repair requests does not accurately report how many repair requests have been open for longer than the one, seven, or fifteen average day goals set by NYCHA for addressing emergencies, and completing simple and more complex repairs. Thus, on July 31, 2014, NYCHA reported that it had 84,520 open Work Orders and so, according to its analysis, there was no backlog because this number was less than 90,000. By contrast, when the time frames in which Work Orders have been open are measured, based on our review of Maximo data as of July 31, 2014, NYCHA had a backlog of 54,847 open Corrective Maintenance Work Orders that have not been completed within the time frames set by NYCHA.

These findings are detailed in Table I below and in Appendix I.

Table I

Backlog of Open Corrective
Maintenance Work Orders
As of July 31, 2014

Work Order Category	Prescribed Time Frames to Address or Complete	Current Work Orders Open Within Set Time Frames	Number of Work Orders Open Beyond Prescribed Time Frames								Total Work Orders
			1 – 30 Days	31 – 60 Days	61 – 90 Days	91-120 Days	121-180 Days	181-365 Days	> 365 Days	Number of Non-Current Work Orders	
Emergency	1 Day	957	3,502	331	19	4	5	3	5	3,869	4,826
Minor Corrective	Average of 7 days	10,928	7,887	1,601	581	242	94	23	29	10,457	21,385
Skilled Trades Required	Average of 15 days	12,038	13,194	7,992	6,560	4,118	3,703	2,397	2,557	40,521	52,559
Total		23,923	24,583	9,924	7,160	4,364	3,802	2,423	2,591	54,847	78,770
% of All Work Orders		30.4%	31.2%	12.6%	9.1%	5.5%	4.8%	3.1%	3.3%	69.6%	100.0%

In addition, based on our review of Maximo data for Work Orders that were closed in July 2014, NYCHA did not achieve its goal of permanently reducing the average wait time for more complex repairs to two weeks and responding to emergencies within 24 hours as detailed in Table II below.

Table II
Average Time to Complete
Corrective Maintenance Work
Orders - July 2014

Work Order Category		Number of Work Orders Completed	NYCHA Prescribed Time Frames to Address or Complete Work Orders	Percentage of Work Orders Closed within NYCHA Prescribed Time Frames	Auditor Calculated Average Actual Time to Address or Complete ⁸ Work Orders
Emergency		49,227	1 Day	75.8%	1.5 Days
Non-Emergency	Simple	91,989	Average of 7 Days	81.7%	4.8 Days
	More Complex	42,298	Average of 15 Days	52.6%	71.9 Days

After presenting our findings to NYCHA in April 2015, NYCHA stated that it did implement planning and scheduling productivity drivers and provided us with documentation to support its contention. This documentation primarily consisted of emails, write-ups, and a document entitled “WO Reduction Changes in Processes & WOs.” Since we had not been provided with these documents during the course of the audit, we were not able to confirm that these planning and scheduling productivity drivers were in fact implemented and evaluate their efficacy.

We note that many of the productivity drivers that NYCHA claimed to have implemented were administrative policy changes and not operational efficiencies or process changes, which were the areas that NYCHA originally noted would most affect its ability to reduce the backlog and promptly address Work Orders. For example, in February 2013, NYCHA administratively changed its policy and began to close Corrective Maintenance Work Orders if residents were not home when NYCHA staff, private management companies, or contractors came and attempted to perform work. NYCHA allowed non-emergency Corrective Maintenance Work Orders, with some exceptions,⁹ to be closed after one visit and emergency Corrective Maintenance Work Orders¹⁰ to be closed if the resident was not home on two different days. Therefore, these

⁸ We calculated the length of time that it takes to complete each Corrective Maintenance Work Order as the difference between the Maximo Work Order “reported date” and “actual finish date” i.e., the date that the Work Order was completed. We excluded from our calculation those Work Orders that were administratively closed in Maximo but for which no work was performed. This included duplicate Work Orders and Work Orders closed because residents were not home for, canceled, or rescheduled appointments. We then calculated the average amount of time to complete Work Orders as follows:

$$\text{Average Time to Complete a Work Order} = \frac{\text{Sum of the Time to Complete all Work Orders Closed within the Month}}{\text{Total Number of Work Orders Closed within the Month}}$$

⁹ NYCHA did not allow for Work Orders related to health and safety issues, mold, or leaks from above to be closed simply because a resident was not home two or more times when workers arrived to perform work.

¹⁰ NYCHA considered emergency Work Orders to be priority 7, 8, and 9 Work Orders which were required to be addressed within 24 hours.

Corrective Maintenance Work Orders were not closed because the conditions complained of were repaired, but rather because no one was home when repair staff came to perform the repair. Accordingly, NYCHA's administrative change had the effect of reducing the number of days that NYCHA reported Corrective Maintenance Work Orders remained open, but it did not reduce the amount of time it took NYCHA to make the repairs reflected in the Corrective Maintenance Work Orders.

Similarly, NYCHA changed its policy concerning when Parent Work Orders should be "administratively" closed in Maximo. Formerly, Parent Work Orders were not closed until all related Child Work Orders were completed. However, effective March 2013, NYCHA started to close Parent Work Orders when related Child Work Orders were created. This had the effect of making it appear that Parent Work Orders were being completed more quickly, when in fact, they were simply being administratively closed more quickly.

Finally, in November 2013, NYCHA administratively changed its policies and allowed certain NYCHA staff to lower Child Corrective Maintenance Work Order priorities. This meant that the prescribed time frames in which Operations staff or contractors were required to complete work were increased and thereby, NYCHA allowed itself more time to complete these Corrective Maintenance Work Orders. Consequently, decreases in NYCHA's backlog and the average time to complete Corrective Maintenance Work Orders from the time NYCHA initiated its Work Order reduction initiative in January 2013 until the present were attributable, in some degree, to administrative policy changes and not to improved performance resulting from the implementation of new operational efficiencies or process changes.

Additionally, after presenting our findings to NYCHA in June 2015, NYCHA disputed our calculations of the backlog and average time to complete Corrective Maintenance Work Orders and provided us with its own calculations of average times to complete emergency, simple, and more complex repairs. However, our review of NYCHA's data found that its calculations are incorrect because it improperly classified emergency and more complex repair Work Orders. For example, NYCHA included Work Orders assigned to Caretakers as more complex repair Work Orders. However, Caretakers are generally laborers and not skilled tradesmen (e.g., electricians and plumbers) who are generally required to address the more complex repair Work Orders.

Recommendations

NYCHA should:

1. Implement operational changes to improve its ability to timely address Work Orders and in particular identify and implement detailed steps necessary and time frames to implement the materials acquisition, planning, scheduling, and staffing required to meet NYCHA's goals for addressing resident-requested and staff-initiated repairs.

NYCHA Response: "We agree operational changes are needed to improve timeliness of maintenance and repairs. Through NextGen initiatives, such as OPMOM, we are testing a new decentralized property management structure that introduces greater accountability, which is intended to also improve customer service. Other NextGen strategies, such as the rollout of the MyNYCHA app, are intended to provide an enhanced customer experience with easier and more accessible scheduling of inspections and repairs.

In addition to NextGen, efforts such as Real-Time Dispatching, One-Call and Inventory Accountability are all aimed at streamlining and improving turnaround times and looking at maintenance work through a holistic approach.”

2. Institute regular independent, oversight of Operations’ progress in undertaking these steps and meeting NYCHA’s repair goals.

NYCHA Response: “[W]e agree oversight of our repair goals is directly linked to accountability. As we work to implement OPMOM under NextGen, we are developing quality assurance measures for work to be assessed independent from Operations.”

Auditor Comment: NYCHA’s oversight should not be limited to its Optimal Property Management Operating Model (OPMOM) program, which is a pilot program limited to 18 developments. Rather, NYCHA should institute regular independent oversight of Operations’ progress as it undertakes each of the detailed steps necessary to implement the materials acquisition, planning, scheduling, and staffing required to meet NYCHA’s goals for addressing resident-requested and staff-initiated repairs.

3. Publicly report the actual time it takes to address emergency repairs and complete routine and complex repairs.

NYCHA Response: “Accountability and transparency are at the center of NYCHA’s NextGen goals and strategies. With accountability and transparency at the forefront, we intend to move performance measures away from individual work order counts and refocus on timeframes to complete repairs.

As we learn lessons through the OPMOM pilot and make adjustments, we anticipate reducing service times for basic maintenance to seven days at those sites. As stated above, the balanced scorecard will track metrics and performance at a property in key areas of operations, including maintenance and emergency work order Service Level Agreements among other areas.

We recognize reorienting around Key Performance Indicators (KPIs) means an entire shift how NYCHA does business, but we are committed to public accountability and learning and improving from our numbers and metrics.”

Auditor Comment: NYCHA’s OPMOM balanced scorecard does not provide for an immediate and enterprise-wide response to this recommendation. As noted above, NYCHA currently is piloting OPMOM at only 18 developments and does not anticipate that it will assemble best practices and begin rolling them out to all developments until the end of 2016. Therefore, NYCHA should immediately start publicly reporting—on its NYCHA metrics website—the actual time it takes to address emergency repairs and complete routine and complex repairs.

NYCHA Did Not Complete Violation Work Orders in a Timely Manner

NYCHA did not complete Violation Work Orders within prescribed time frames. As previously noted, Violation Work Orders are created in connection with summonses and violation notices issued by government entities such as the FDNY, DOB, and DOHMH. NYCHA’s Violation and

Summonses Standard Procedure (SP 158:03:01) states that it “is NYCHA’s policy to comply or abate any summonses or violation notices issued to NYCHA by a governmental agency in a timely, safe, and secure manner.”

NYCHA’s SP 158:03:01 details issuing agency and NYCHA-required time frames for completion of Violation Work Orders by agency and violation type. For violations that cannot be immediately corrected, NYCHA’s SP 158:03:01 requires that

separate child corrective maintenance Work Orders are created by the Violations Unit indicating the abatement and compliance times required to resolve each corrective maintenance Work Order. . . . The Property Manager or Property Maintenance Supervisor must check daily for any open corrective maintenance Work Orders related to violations. . . . [T]he Development Property Manager or Property Maintenance Supervisor ensures that development staff completes all required corrective work within the time specified in the Violations Work Order.

However, NYCHA generally did not record abatement and compliance times on Violation Work Orders as required and therefore, was unable to track and ensure that Violation Work Orders were closed within prescribed time frames as detailed in Table III below.

Table III

Aging of Open Violation Work
Orders as of July 31, 2014

Agency Name	NYCHA Compliance Time Frame Range ¹¹	0-30 Days	31-60 Days	61-90 Days	> 90 Days	Total
FDNY	At the discretion of the FDNY Inspector or 35 Days	99	70	49	1,420	1,639
DOB	1 – 450 Days	22	15	7	1,367	1,411
DEP	5 – 60 Days	0	1	5	196	202
DOH	1 - 30 Days	21	8	4	19	52
DOL	1 – 90 Days	0	0	0	20	20
HPD	1 – 90 Days	0	0	0	2	2
Miscellaneous	As recommended or 1 Day	2	1	0	45	48
Total		144	95	65	3,069	3,374

Additionally, based on our review of Maximo data for Violation Work Orders completed in July 2014, we found that NYCHA took, on average, 370 days to complete Violation Work Orders.

¹¹ NYCHA’s SP 158:03:01 Appendix B details issuing agency and NYCHA-required time frames for completion of Violation Work Orders by agency and violation type. For example, HPD issues three types of violations each of which has a different NYCHA-mandated time frame for completion. Class A – nonhazardous, Class B – hazardous, and Class C – immediately hazardous violations must be completed in 90, 30, and 1 days, respectively. NYCHA’s SP 158:03:01 Appendix B is included in this report as Appendix II.

Recommendations

NYCHA should:

4. Ensure that the Violations Unit records the issuing agency and/or NYCHA-required compliance time frames on Violation Work Orders.

NYCHA Response: NYCHA did not address this recommendation.

5. Ensure that data is recorded so that management can readily identify and review Violation Work Orders approaching and past due dates.

NYCHA Response: NYCHA did not address this recommendation.

NYCHA Did Not Set Time Frames for and Track the Completion of Inspection and Preventive Maintenance Work Orders

Although NYCHA established time frames for and tracked the completion of Corrective Maintenance Work Orders in Maximo, NYCHA did not adequately track Inspection Work Orders created for the various types of inspections performed by NYCHA, such as its inspections of boilers, elevators, and window guards. Neither did it track performance times for Preventive Maintenance Work Orders created for routine maintenance related to elevators, West Nile Virus treatment, and heating equipment.

NYCHA automatically creates Work Orders in advance at set intervals (e.g., monthly, quarterly, or semi-annually) for Inspection and Preventive Maintenance Work Orders, but it does not schedule the actual dates and times that they are to be performed or consistently record target start and finish dates in Maximo. Consequently, NYCHA could not track whether Inspection and Preventive Maintenance Work Orders are performed in a timely manner. As noted, Inspection and Preventive Maintenance Work Orders included inspections that are critical to ensuring reliable elevator, heat, and hot water service and public safety. Thus, NYCHA's failure to track the timeliness of their completion increases the chances of health and safety problems for residents and hinders NYCHA's ability to adequately maintain vital services.

After presenting our findings to NYCHA in June 2015, NYCHA maintained that it did track Inspection and Preventive Maintenance Work Orders and subsequently, provided us current Maximo tracking reports related to elevator inspections and a current Excel spreadsheet used to track summer heating overhaul preventive maintenance work. However, NYCHA should establish time frames for the completion of these Work Orders. Further, it should track all Inspection and Preventive Maintenance Work Orders in Maximo.

Recommendation

6. NYCHA should record and track actual or targeted completion dates for Inspection and Preventive Maintenance Work Orders in Maximo.

NYCHA Response: NYCHA did not address this recommendation.

NYCHA Did Not Ensure that Maximo Data was Reliable

NYCHA did not ensure that Maximo data was reliable. As noted, repair and maintenance work is initiated by the Operations and Energy Departments by their creating Work Orders directly in Maximo. In addition, residents may call the Customer Contact Center (CCC) to make maintenance and repair Service Requests. CCC call takers process Service Requests in Siebel. In turn, Siebel Service Requests are routed to Maximo and Work Orders are automatically created. Maximo assigns Work Orders unique, sequential numerical identifiers. This control measure allows NYCHA to ensure that all Work Orders are accounted for in Maximo.

However, based on our review of Work Order numbers for Work Orders created from January 1, 2013, through June 30, 2014, we found that Maximo data was not complete. Preliminarily, NYCHA could not account for 5,785,557 of 9,635,917 Work Order numbers, or 60 percent. It was during this period that NYCHA engaged in a publicized effort to eliminate its backlog of open Work Orders and reduce the average wait time for repair work. As previously detailed, in January 2013, NYCHA announced its goal of eliminating the entire backlog of outstanding repair requests by the end of 2013 and permanently reducing wait times for repairs and response times for emergencies. In January 2014, NYCHA announced that it had succeeded in reducing its backlog by 95 percent, from 333,000 to 16,000.¹² We asked NYCHA to confirm in writing that it had provided us with all created Work Orders. NYCHA did not at that time provide us with the written confirmation we requested. However, after presenting our findings to NYCHA in June 2015, NYCHA did state in writing that it “provided all of the Work Orders (WO) created between January 1, 2013 and June 30, 2014.”

After presenting our findings to NYCHA in January 2015, NYCHA maintained that 4,647,421 Work Order numbers could not be accounted for because of a “skip-sequencing” issue that was corrected as a result of unrelated Maximo system changes in March 2014. We were informed that, prior to the March 2014 system correction, Maximo occasionally failed to issue sequential Work Order numbers as it was supposed to and instead skipped forward over large ranges of Work Order numbers and then reverted back to sequential numbering. Since the skip-sequencing issue stopped occurring in March 2014, NYCHA reasoned that an unrelated system fix made in the same time frame must have also corrected the skip-sequencing issue. However, we cannot be reasonably assured that this does in fact account for any of the 4,647,421 missing Work Order numbers in question since NYCHA did not provide us with direct evidence to support its assertion.

In addition, NYCHA maintained that unaccounted for Work Order numbers resulted from 690,201 duplicate and unsaved Work Orders, and 447,935 Inspection Work Order component tasks. In February 2015, NYCHA demonstrated to us that if more than one Work Order is created for the same complaint (i.e., where two Work Orders are created for the same failure code, at the same location, and are assigned to the same craft) the second Work Order will be created with a new and different number. However, Maximo will display an error message detailing the existing Work Order number and noting that a Work Order was “already created with similar information.” NYCHA maintained that Maximo will not allow the duplicate Work Order to be saved and submitted and will instead automatically purge it from the system. NYCHA similarly demonstrated that Work Orders that are created but not saved in Maximo are also automatically purged. However, our review of Work Orders failed to support NYCHA’s explanation. We found instances where duplicate Work Orders were in fact created and retained in the system with different Work

¹² On its website, NYCHA reported that “as of January 1, 2014, it has successfully reduced its backlog of open maintenance and repair requests to approximately 16,000 open work orders, down from 333,000 at the beginning of 2013. With 90,000 open work orders representing normal work in process, this reduction brings the total number of open work orders at NYCHA down from 423,000 to 106,000.”

Order numbers. Additionally, we reviewed closed Work Orders for July 2014 and found that NYCHA manually closed 1,103 Work Orders noting that they were duplicates, which is inconsistent with NYCHA's assertion that duplicates are automatically purged from the system entirely. We also note that during this period, NYCHA had the capability of manually purging Work Orders.

With regard to Inspection Work Order component tasks, NYCHA maintained that each individual Inspection Work Order would account for numerous Work Order numbers because one number is created for the Inspection Work Order and additional numbers are created for each component task associated with the Inspection Work Order. After presenting our findings to NYCHA, NYCHA stated that in response to our July 2014 request for all created Work Orders, it provided us only Corrective Maintenance, Inspection, Preventive Maintenance, and Violation Work Orders, but did not provide us with any Inspection Work Order component tasks that were assigned separate Work Order numbers. Subsequently, in January 2015, NYCHA provided us a list of 447,935 Inspection Work Order component tasks. However, we can place only limited reliance on this list because it was provided to us six months after our initial request.

After presenting our findings to NYCHA in June 2015, NYCHA maintained that its duplicate Work Order rules were more complex than originally explained to us and stated that it "did not initially include Task Work Orders because tasks are nothing more than the steps performed during an inspection and have no meaning in the counts of WOs. However, all tasks for the requested time period were subsequently provided."

Since NYCHA did not establish accountability for and ensure the accuracy and completeness of Maximo data, NYCHA lacks an effective management oversight tool and may not reliably report to the public key productivity measures including the total number and backlog of open Work Orders and the average time to complete Work Orders.

NYCHA Response: "We thoroughly investigated the issues the Comptroller has raised on our work order database system, Maximo and after thorough examination there were no work orders lost or deleted from the asset management system. We have worked extensively with the vendor and the appropriate tech support to understand and troubleshoot the jumped work order number sequencing. The break in sequencing was found to be an anomaly, and as an isolated issue, has not reoccurred." [Emphasis original.]

Auditor Comment: As previously detailed, we could not be reasonably assured that NYCHA accounted for 5,785,557 of 9,635,917 Work Order numbers for the following reasons:

- First, NYCHA did not provide us with direct evidence to support its assertion that an unrelated system fix corrected its skip-sequencing issue.
- Second, NYCHA's explanation that duplicate Work Order numbers are automatically purged from the system was demonstrated through testing by the auditors to be incorrect.
- Third, NYCHA did not provide all Work Orders to the audit staff in a timely manner and so we could only place limited reliance on them.

Additionally, we note that NYCHA did not initially confirm in writing that it had provided us with all of the Work Orders created during the period we requested. Moreover, as noted, during the 18-month period from January 1, 2013, through

June 30, 2014, NYCHA had the capability to manually purge Work Orders and was engaged in a publicized effort to eliminate its backlog of open Work Orders and reduce the average wait time for repair work.

Recommendations

NYCHA should:

7. Ensure the integrity of Maximo data by accounting for all created Work Orders including but not limited to duplicate and unsaved Work Orders.

NYCHA Response: NYCHA did not address this recommendation.

8. Periodically review Maximo data to determine whether all Work Order numbers are properly accounted for in Maximo.

NYCHA Response: “We are regularly reviewing our systems to ensure the integrity of the data for accurate management of our work orders.”

NYCHA Did Not Accurately or Properly Report to the Public Key Work Order Statistics

NYCHA significantly understated or did not properly report to the public key Work Orders statistics. As noted, in January 2013 NYCHA announced that it was implementing new operational efficiencies and process changes aimed at eliminating the entire backlog of outstanding repair requests by the end of 2013, and “permanently reducing the average wait time for repair work to one week for minor corrective repairs and two weeks for repairs needing skilled tradesmen; and responding to all emergency repair requests within 24 hours.” Thereafter, NYCHA began reporting on its performance monthly on its website.

NYCHA’s goals related to the amount of time it takes to address emergency repairs, and complete simple and more complex repairs, which would include all work necessary to fully complete repairs. For example, if a resident reported a water leak, NYCHA’s stated goal should include the amount of time it takes to inspect and verify the reported leak, fix the leak, and make related cosmetic repairs such as plastering and painting. By contrast, NYCHA measures and reports its performance in meeting targeted repair time frames based on the amount of time it takes to complete individual Parent and Child Work Orders. Thus, in the case of the water leak complaint referred to above, NYCHA reported separately on the time it took to close out separate Parent and Child Work Orders for inspecting and verifying the leak, opening the wall and fixing the leak, repairing the wall opening, and painting over the repair.

However, NYCHA’s manner of reporting does not appear to be consistent with its goals of addressing emergencies within one day and to completely make simple and more complex repairs within an average of seven and fifteen days, depending on their severity and complexity. Moreover, it obscures the actual amount of time it takes NYCHA to fully complete repairs since, rather than reporting on the repair time from the time the complaint is received to the time it is completely resolved, each component part of a repair is measured separately. Further, NYCHA only reports on the time it takes to resolve Corrective Maintenance Work Orders, but not on its Preventive Maintenance, Inspection, and Violation Work Orders or on all Work Orders created by from private vendors who manage NYCHA developments.

Based on our review of NYCHA’s reporting on its website for the month ending July 31, 2014, NYCHA significantly understated the number of open Work Orders, the average amount of time it takes NYCHA to complete Work Orders, and its backlog of open Work Orders.

Total Number of Open Work Orders

NYCHA understated the total number of open Work Orders primarily because it reported only on the number of open Corrective Maintenance Work Orders and did not report the number of open Inspection, Preventive Maintenance, and Violation Work Orders. Additionally, NYCHA did not report Work Orders created outside Maximo by one of its private management companies responsible for managing 18 developments composed of 1,703 units.

When we presented our findings to NYCHA in April 2015, NYCHA maintained that it reported only Corrective Maintenance Work Orders because these were the only Work Orders in which residents were interested. However, this ignores the fact that Violation Work Orders reflect health and safety issues which are of great importance to residents. Similarly, Inspection and Preventive Maintenance Work Orders affect critical health and safety issues and help to ensure the proper maintenance of critical systems relied on by the residents, such as elevators and boilers. In addition, the amount of time it takes NYCHA to complete Work Orders is contingent upon its entire workload. Therefore, it is important for NYCHA to consider and report information about all categories of Work Orders.

For July 31, 2014, NYCHA reported that it had 84,520 open Work Orders. However, NYCHA excluded at least 50,999 open Work Orders—30,719 Inspection Work Orders, 16,906 Preventive Maintenance Work Orders, 3,374 Violation Work Orders, and some Work Orders related to 18 developments privately-managed by Kraus Management. NYCHA did not provide us with the number of open Work Orders reported by Kraus Management as of July 31, 2014. This represents an understatement of at least 37.6 percent.

Recommendation

9. NYCHA should include all Work Orders, regardless of location and category, in the total number of open Work Orders reported on its website.

NYCHA Response: “For far too long, the total number of open work orders has been the sole measure of NYCHA’s performance. Open work orders as a measurement often masks the amount of time it takes to actually complete repairs.

Through NextGen, NYCHA intends to refocus performance measures on the completion time for a total repair instead of individual work orders.”

Auditor Comment: Whether NYCHA measures and publicly reports on its performance based on Work Orders, repairs, or some other performance metric, NYCHA should include performance metrics for all locations and all categories of maintenance and repair work.

Average Time to Complete Work Orders

NYCHA’s public reports of the time it has taken to complete Work Orders significantly obscures its failures to meet its own goals. Preliminarily, we note that NYCHA reported only the average

time it took to complete Corrective Maintenance Work Orders. As previously discussed above, NYCHA did not track and document whether its Inspection, Preventive Maintenance, and Violation Work Orders were performed in a timely manner. Further, NYCHA did not transparently present its average time to complete Corrective Maintenance Work Orders because it did not report average times for each of its three Work Order priority levels which each have different performance goals—one day for emergency repairs, seven days for simple repairs, and fifteen days for more complex repairs. Instead, NYCHA presented only its average time to complete *all* repairs as compared to a single target time of 15 days, which obscures its actual performance.

Furthermore, NYCHA also did not accurately report the average time to complete Work Orders because it included in its calculation open Work Orders which completely distorts its numbers, which are supposed to be of the average time it takes to close a Work Order. Thus, a Work Order that is open for a day and not yet addressed will be included in NYCHA's calculations.

NYCHA stated that it included open Work Orders because it considered the average number of days to *complete* a repair for a month (which it referred to as Service Level Agreement "SLA" days) to be "a function of both the number of open work orders as of the end of that month and how long they have been open as well as the number of closed work orders in that month and how long they took to complete (from the Report Date to the Actual Finish)."

$$SLA = \frac{\text{Number of Days to Close} + \text{Number of Days Open}}{\text{Number of Work Orders Closed} + \text{Number of Work Orders Open}}$$

In addition, NYCHA also included in its calculation Work Orders which were administratively closed in Maximo but for which no work was performed, which also distorted its numbers. For example, NYCHA included Work Orders which were closed because residents canceled or rescheduled appointments, or were not home at the time of scheduled appointments.

In an additional policy change that distorted NYCHA's reported average times to complete repairs, effective June 2014, NYCHA no longer allowed mold and/or mildew Work Orders to be created for a resident's entire apartment. Accordingly, NYCHA stopped creating a single Parent Work Order directing a mold inspection of an entire apartment. Rather, CCC call takers created separate Work Orders to inspect each room in the apartment—potentially up to 10 rooms. Upon verification of a reported mold and/or mildew condition, Operations staff created separate Child Work Orders to perform remediation work and related cosmetic repairs in each room, e.g., separate Work Orders to clean mold and/or mildew in each room, separate Work Orders to plaster walls in each room, and separate Work Orders to paint walls in each room. By splitting the Work Orders related to mold and mildew remediation, NYCHA may have understated the amount of time to complete individual tasks (e.g., cleaning mold and/or mildew, plastering, and painting) and inflated the total number of Work Orders—both of which may serve to understate the average time to complete Work Orders.

Recommendations

NYCHA should:

10. Establish and report on its website SLA days based on the amount of time it takes to fully complete repairs.

NYCHA Response: "Through NextGen, NYCHA intends to refocus performance measures on the completion time for a total repair instead of

individual work orders. We are working to identify appropriate Key Performance Indicators (KPIs) to measure success.”

11. Stop including open Work Orders and administratively closed Work Orders in its calculation of average SLA days reported on its website.

NYCHA Response: NYCHA did not address this recommendation.

12. Discretely report SLA days for emergency, simple, and more complex repairs on its website.

NYCHA Response: “As a new model under NextGen, OPMOM is striving to increase accountability and transparency. NYCHA will communicate performance results by posting the OPMOM balanced scorecard publicly. The balanced scorecard will track metrics and performance at a property in key areas of operations, including maintenance and emergency work order Service Level Agreements, among other areas. With a localized property management model and use of the balanced scorecard, NYCHA will be better equipped to isolate each development’s metrics.”

Auditor Comment: As previously noted, NYCHA’s OPMOM balanced scorecard does not provide for an immediate and enterprise-wide response to this recommendation. Currently, NYCHA is piloting OPMOM at only 18 developments and does not anticipate that it will assemble best practices and begin rolling them out to all developments until the end of 2016. Therefore, NYCHA should immediately start discretely and publicly reporting—on its NYCHA metrics website—SLA days for emergency, simple, and more complex repairs.

13. Create a single Parent Work Order for requested repairs that relate to a same condition within an apartment.

NYCHA Response: “We also agree work orders for multiple repairs associated with one project should be streamlined. We are in the planning phases of One-Call, which will enable operations to plan complex repairs with residents in ‘one call.’ At the time of the call, multiple work orders can be opened for the maintenance project instead of opening a skilled trade work order after a work order associated with a part of the repair is closed. This initiative intends to improve response times and customer satisfaction with a holistic approach to a repair project management.”

Auditor Comment: NYCHA’s response does not directly address the recommendation that a single Parent Work Order be created for all the work required to address a condition in a single apartment. The report recommended that NYCHA not split Work Orders to create separate Work Orders for each room in an apartment in connection with a single condition. Thus, for example, where mold is reported throughout an apartment, we recommend that NYCHA create a single Work Order to address the problem rather than create separate Work Orders for the inspection of each room of the apartment, to clean mold and/or mildew from each room, to plaster walls in each room, and to paint walls in each room.

Backlog of Open Work Orders

Finally, as discussed above, NYCHA did not accurately represent to the public what portion of its open Work Orders represented a backlog. As noted, in January 2013, NYCHA announced its goals of eliminating the entire backlog of outstanding repair requests by the end of 2013 and permanently reducing the average wait time for repair work to one week for simple repairs and two weeks for repairs requiring skilled tradesmen and responding to all emergency repair requests within one day. Accordingly, an accurate report of NYCHA's backlog would include a report of all open Work Orders that were not completed within those time frames.

However, rather than report its actual backlog, NYCHA initially reported the total number of open Corrective Maintenance Work Orders and then in August 2013 began reporting the backlog as the total number of open Corrective Maintenance Work Orders it has regardless of their age, less 90,000 which NYCHA advised represented its "normal work in process" or "manageable workload." NYCHA stated that

[t]he baseline of 90,000 reflects the average number of WOs created each week in each craft and assumes 7 days of WOs for those with 7-day SLAs and 15 days for those with 15-day SLAs. These numbers were approximations but would represent our approximate expectations for open WOs at any given time if we were within our SLAs.

Based on our analysis of Work Orders open as of July 31, 2014, NYCHA's "baseline" figure is not realistic. Consequently, NYCHA significantly understated the severity of its backlog as detailed in the Table IV below.

Table IV

Comparison of the Backlog
As of July 31, 2014

Reported by NYCHA		Calculated by Auditors	
Number of Open Work Orders Reported by NYCHA on Its Website as of July 31, 2014	84,520	Number of Open Work Orders in Maximo as of July 31, 2014	78,770
Estimated Number of Work Orders Open for ≤ 7 or 15 days	90,000	Actual Number of Work Orders Open for ≤ 1, 7, or 15 days	23,923
Backlog	-5,480	Backlog	54,847

Recommendation

14. NYCHA should report the actual number of Work Orders open beyond prescribed time frames on its website.

NYCHA Response: “Accountability and transparency are at the center of NYCHA's NextGen goals and strategies. With accountability and transparency at the forefront, we intend to move performance measures away from individual work order counts and refocus on timeframes to complete repairs.

As we learn lessons through the OPMOM pilot and make adjustments, we anticipate reducing service times for basic maintenance to seven days at those sites. As stated above, the balanced scorecard will track metrics and performance at a property in key areas of operations, including maintenance and emergency work order Service Level Agreements among other areas.

We recognize reorienting around Key Performance Indicators (KPIs) means an entire shift how NYCHA does business, but we are committed to public accountability and learning and improving from our numbers and metrics.”

Auditor Comment: As previously noted, NYCHA's OPMOM balanced scorecard does not provide for an immediate and enterprise-wide response to this recommendation. Currently, NYCHA is piloting OPMOM at only 18 developments and does not anticipate that it will assemble best practices and begin rolling them out to all developments until the end of 2016. Therefore, NYCHA should immediately start publicly reporting—on its NYCHA metrics website—the actual number of Work Orders open beyond prescribed time frames on its website. Further, when NYCHA refocuses on time frames to complete repairs, NYCHA should publicly report the actual number of repairs open beyond prescribed time frames on its website.

NYCHA Did Not Utilize All Available Tools to Ensure that Work Was Properly Performed

NYCHA did not ensure that maintenance and repair work was properly performed because it failed to consider responses to Resident Satisfaction Surveys that were supposed to be completed prior to Work Orders being closed out. Further, NYCHA did not ensure that Resident Satisfaction Survey responses were obtained after Work Orders have been closed. The completion of a Resident Satisfaction Survey is a NYCHA procedure expressly designed as a management control over work quality. Survey responses are supposed to not only let NYCHA know the resident's view of the work done, but are also supposed to trigger an inspection when a resident is dissatisfied.

In December 2009, at the direction of the NYCHA Chair, NYCHA implemented General Manager (GM) Directive-3760 in an effort to improve customer service. This Directive required Operations staff and contractors, upon completing work, to ask residents to indicate whether work was satisfactorily performed by checking a “yes” or “no” box and writing comments. If residents refused to complete the Resident Satisfaction Survey, Operations staff and contractors were required to indicate this on the Work Order prior to the Work Order being closed out. Additionally, residents should be asked to sign Work Orders to confirm that work was performed.

Each day, clerical staff were required to document Resident Satisfaction Survey responses and comments in Maximo. In turn, Housing Managers were required to review responses, contact residents who indicated that they were not satisfied, and schedule appointments for the Housing Manager, Superintendent, or Assistant Superintendent to inspect the work performed. Additionally, Housing Managers were required to identify Operations staff and contractors who had an excessive number of refusals and contact residents to determine whether they were

afforded an opportunity to complete Resident Satisfaction Surveys. However, NYCHA did not enforce this key control intended to obtain resident feedback on the service that was provided aimed at providing assurance that work was done and accountability for the quality of work, and improving customer service.

A NYCHA Internal Audit Department report issued in March 2012 found that Operations staff and contractors did not ensure that residents signed Work Orders and completed Resident Satisfaction Surveys, and clerical staff did not document results in Maximo. The Internal Audit Department believed that these deficiencies were NYCHA-wide and recommended that “[e]very effort should be made to ensure that all residents complete the resident satisfaction survey” and “employees who disposition work order in Maximo should be instructed to include all pertinent information from the work orders into Maximo.” In response, Operations agreed to “remind staff of present procedures.”

Subsequently, rather than fully enforce its GM Directive, NYCHA rescinded the requirement to document Resident Satisfaction Survey results in Maximo in September 2013, although the rest of the GM Directive was left intact. In support of the withdrawal of the requirement to document resident satisfaction responses in Maximo, NYCHA stated that

this was explicitly set up at the request of the Chairman, however Research does not use this data and we have not identified anyone who does. When Research has (not often) looked at customer satisfaction they have used the survey done by CCC.

The survey in CCC NYCHA was referring to is its CCC Quality Assurance Survey, which was designed, in part, to evaluate the services provided by Operations staff and contractors. However, a NYCHA Internal Audit Department report issued in May 2013 similarly found that NYCHA did not look at resident satisfaction survey results. Moreover, the report noted Quality Assurance Survey responses could not be tied back to an individual Work Order and stated, “there is no information provided that can alert management of employees who are performing poorly based on feedback received from the residents.”

Further, a follow-up audit conducted by NYCHA Internal Audit issued in June 2014 found that NYCHA Operations staff and contractors were still not ensuring that Resident Satisfaction Surveys were completed. Consequently, NYCHA could not identify and investigate negative responses, schedule appropriate follow-up work, hold Operations staff and contractors accountable for not performing or poorly performing work, initiate appropriate corrective action, and ultimately, improve customer satisfaction.

In connection with this audit, we sent 3,166 surveys to residents to determine whether Operations staff and contractors performed work in June 2014 and whether residents were satisfied with that work. The questions and responses in our satisfaction portion of the survey (see Table V) were identical to those used by NYCHA in its CCC Quality Assurance Survey. We received 708 responses to this survey from residents, a 22.4 percent response rate. Of the 708 responses, 138 indicated that requested maintenance and repair work was not completed on the dates reported in Maximo. For 44 of these 138 responses, NYCHA reported in Maximo that it verified the conditions reported by the resident that were the subject of the Parent Work Order. Based on our review of Maximo apartment Work Order histories and Work Orders related to these 44 verified conditions, we found that:

- In 26 instances, residents made multiple repair requests, however, NYCHA has yet to perform requested work. For example, a resident reported 6 times that her bathtub/shower

enamel surface was damaged and rusted and requested that it be repaired. The resident made an initial request on September 18, 2012 and five additional requests between March 25, 2013 and October 9, 2014. Each time NYCHA verified that the repair was needed, but did not subsequently ensure that needed repairs were made.

- In 14 instances, residents had to make multiple repair requests before NYCHA ultimately completed the requested repair. For example, a resident initially reported that there was constant leaking from above in his bathroom and requested that it be repaired on June 2, 2014. NYCHA verified that this repair was needed 8 times and erroneously reported that necessary repairs were made 4 times before NYCHA ultimately repaired it on October 20, 2014, approximately 4 months later.
- In 4 instances, residents made a single repair request that resulted in NYCHA completing the requested repair. However, 3 out of the 4 requests were not made in a timely manner. For example, on June 12, 2014, a resident reported that her closet door was off the hinges and requested that it be repaired. NYCHA verified that it needed to be repaired and created a Child Work Order on June 16, 2014. However, NYCHA did not complete the requested repair until January 29, 2015, approximately 7.5 months later.

Additionally, residents indicated that they were not satisfied with work that was performed. In response to 3,166 surveys that we sent:

- 41.9 percent (277 of 661) of responses indicated that residents' issues were not completely resolved;
- 59.4 percent (380 of 640) of responses indicated that residents' issues were not addressed timely;¹³
- 20.6 percent (131 of 635) of responses indicated that NYCHA staff did not show up for scheduled appointments; and
- 45.1 percent (291 of 646) of responses indicated that residents were not satisfied with the service provided by NYCHA staff.¹⁴

The complete results of our survey are detailed in Table V below.

¹³ For the 640 responses received, 380 responses indicated that their issue was not addressed in a timely manner as follows: 127 responses indicated that their issue was addressed "somewhat" timely; 90 responses indicated that their issue was addressed "not very" timely; and 163 responses indicated that their issue was "not resolved."

¹⁴ For the 646 responses received, 291 responses indicated that they were not satisfied with the service provided by NYCHA staff as follows: 124 responses indicated that their level of satisfaction was "fair" and 167 responses indicated that their level of satisfaction was "poor."

Table V**Results of Resident Satisfaction
Survey**

Was your issue completely resolved?		Yes	No	Total	
▪ Percentage		58.1%	41.9%	100%	
▪ Number		384	277	661	
Was your issue addressed in a timely manner?	Timely	Somewhat	Not Very	Not Resolved	Total
▪ Percentage	40.6%	19.8%	14.1%	25.5%	100%
▪ Number	260	127	90	163	640
Did NYCHA staff keep their scheduled appointment?		Yes	No	Unsure	Total
▪ Percentage		71.0%	20.6%	8.4%	100%
▪ Number		451	131	53	635
How would you rate your level of satisfaction with the service provided by the NYCHA employee that responded to your service request?	Excellent	Good	Fair	Poor	Total
▪ Percentage	21.0%	33.9%	19.2%	25.9%	100%
▪ Number	136	219	124	167	646

Based on survey responses and our review of Maximo apartment Work Order histories and Work Orders, we cannot be assured that NYCHA completes Work Orders in a satisfactory manner because of these issues.

Numerous residents also took the opportunity of responding to the auditors' survey to inform us of other long-standing unresolved maintenance and repair issues within their apartments and building common areas and to request our help. Some of these issues constituted potentially unsafe conditions which we reported to NYCHA including: unsecure building entrance and apartment doors; homeless people sleeping in building stairwells; gas smells; an improperly functioning stove that twice caught on fire; and mold and mildew conditions.

After presenting our findings to NYCHA in April 2015, NYCHA maintained that it rescinded its requirement to document Resident Satisfaction Survey responses in Maximo to reduce the amount of time it takes clerical staff to disposition Work Orders. Additionally, NYCHA recalled that prior to rescinding the requirement, it had reviewed results and found them to be largely positive. Finally, NYCHA maintained it uses CCC Quality Assurance Survey to assess resident satisfaction and noted that residents may contact NYCHA via its CCC or by email through its website.

However, NYCHA staff are still required to seek to have residents complete the Resident Satisfaction Survey. It is the only means that NYCHA has of assessing satisfaction enterprise-wide and providing some independent accountability at the Work Order level. Furthermore, the time required to check two boxes to indicate whether residents signed Work Orders and whether residents were satisfied is nominal. Therefore, NYCHA should record and review this information to improve resident satisfaction as originally intended.

Recommendations

NYCHA should:

15. Immediately reinstate the GM Directive-3760 requirement to document Resident Satisfaction Survey results in Maximo.

NYCHA Response: “We agree resident feedback is an important part of guiding NYCHA’s core work as efficient and effective landlords.

Low response rates on resident surveys made them an ineffective tool in gauging honest feedback for repairs. We shifted to automated customer satisfaction calls as a more independent and effective way to collect valid resident feedback.

For too long, NYCHA has used outdated operating procedures and forms of resident engagement that netted low response rates and incomplete performance data. NYCHA is transforming to become a more modern, effective landlord by leveraging technology. As part of NextGen, NYCHA is currently testing beta versions of MyNYCHA, our first mobile app that will allow residents to create, view, schedule, and reschedule requests for maintenance service. . . . As we upgrade and improve the capabilities of this technology, additional features such as resident satisfaction survey components could offer streamlined, real-time insight into customer satisfaction at higher response rates than previous surveys.

In addition to app capabilities, NYCHA is meeting our customers where they are: social media. We support NYCHA residents across multiple channels, such as Facebook and Twitter, where we are seeing higher levels of engagement and an emerging forum to field work order inquiries and resident satisfaction feedback.

We acknowledge technology is only one piece in improving the flow of communications with residents. The OPMOM strategy under NextGen is intended to create a new model that increases staff control and accountability and improves customer service and resident engagement. Property managers are revisiting their work methods and creating more frequent meetings with resident leaders.”

Auditor Comment: As previously noted, the Resident Satisfaction Survey is *currently* the only means that NYCHA has of assessing satisfaction for each and every Work Order and providing independent accountability at the Work Order level. NYCHA’s automated calls are made on a sample basis and the response rate is low. From January 2013 through June 2014, NYCHA made 518,152 automated calls and had an average response rate of only 7.8 percent.

Additionally, while NYCHA's maintenance and repair mobile app sounds promising, we were informed that it is far from operational and the resident satisfaction component is not included in the initial rollout. Rather, it is conceived as a possible upgrade to an app that does not yet exist.

Lastly, while social media and OPMOM Property Managers may play a supplemental role in resident engagement and feedback, they are not an independent, systematic, enterprise-wide means of assessing of resident satisfaction.

16. Conduct outreach efforts to educate and inform residents of the opportunity to and importance of signing Work Orders and completing Resident Satisfaction Surveys. Outreach efforts should include but not be limited to: distributing flyers and/o sending direct mailings; automated calls to residents; and working with Resident Associations; the Citywide Council of Presidents; and the Resident Advisory Board.

NYCHA Response: NYCHA did not address this recommendation.

17. Return to appropriate Operations staff and contractors Work Orders that lack a resident signature and Resident Satisfaction Survey results or documented resident refusals to sign.

NYCHA Response: NYCHA did not address this recommendation.

18. Withhold payments from contractors for Work Orders that lack a resident signature and Resident Satisfaction Survey results or documented resident refusals to sign.

NYCHA Response: NYCHA did not address this recommendation.

19. Terminate contractors that repeatedly fail to have residents sign Work Orders and complete Resident Satisfaction Surveys.

NYCHA Response: NYCHA did not address this recommendation.

20. Ensure that Executive Management—including but not limited to the Chair, General Manager, the Operations Executive Vice President, Operations Vice Presidents, and Operations Directors—reviews Resident Satisfaction Survey data monthly and take appropriate follow-up and corrective action to ensure that work is performed and that residents are satisfied with the quality of work.

NYCHA Response: NYCHA did not address this recommendation.

NYCHA Did Not Fully Comply with Its Mold, Mildew, and Excessive Moisture Policies and Procedures

Effective April 2014, NYCHA entered into a Settlement with residents who claimed that they suffered from asthma and that NYCHA failed to make reasonable accommodations and modifications in its policies, practices, and procedures to effectively abate mold, mildew, and excessive moisture conditions. The Settlement provided that NYCHA would modify its “written policies, standard operating procedures, forms, and information materials for residents and staff” to effect NYCHA's Operations & Maintenance Policy for Mold & Moisture Control in Residential Buildings. Accordingly, NYCHA was required to draft revised policies and procedures, submit

them to plaintiffs' counsel for comments, and after receipt and review of plaintiffs' comments, finalize revised policies and procedures.

NYCHA finalized its policies and procedures on June 3, 2015. During the course of the audit, NYCHA provided us its draft Mold/Mildew and Moisture Control in NYCHA Buildings Standard Procedure (SP 040:14:1) dated May 21, 2014, which it said was in effect. NYCHA's draft SP 040:14:1 largely directed the work in accordance with two factors: 1) the size and proximity of affected areas; and 2) whether development walls and/or ceilings were made from sheetrock.

Notwithstanding its completion of these procedures, as is described below, NYCHA did not appropriately train staff, take key factors into consideration when assessing and addressing mold, mildew, and excessive moisture conditions, and failed to properly document Work Plans in Maximo. These failures hindered the ability of Operations to effectively abate mold, mildew, and/or excessive moisture conditions and/or employ appropriate resident and employee protection, remediation, containment, cleanup, and contaminated materials disposal techniques.

NYCHA Response: "Stabilizing NYCHA's finances is critical to addressing the major quality of life issues impacting our residents, including mold, vermin, unreliable building systems, and delays for basic repairs. NextGen offers many long-term solutions, but in the near-term the City is investing \$300 million in capital support over the next 3 years for NYCHA to replace roofs on buildings with the highest amount of leaks, mold, and painting requests. By completing repairs to the worst roofs in the portfolio, NYCHA can address one of the primary causes of mold. In developments where roofs have been replaced, work tickets normally associated with mold abatement work have substantially decreased. In addition to major capital repairs, NYCHA has systematically changed how we handle mold cases. We've placed greater emphasis on determining the root cause which leads to mold, instead of superficial repairs that don't address the underlying problem. . . .

In response to our mold procedures, the mold recurrence rate, even as self-reported by residents was down to 27 percent in the first quarter of this year. While we've made progress, NYCHA is always looking to further improve our training, processes and procedures in many of the recommendations you provided."

Auditor Comment: While we are pleased that NYCHA will be replacing roofs and agree that this is critical to addressing chronic mold conditions, it is nonetheless important that NYCHA implement each of the below recommendations related to mold, mildew, and/or excessive moisture conditions in order to improve its compliance with NYCHA's Operations & Maintenance Policy for Mold & Moisture Control in Residential Buildings and SP 040:14:1.

NYCHA Did Not Ensure that Relevant Staff Were Properly Trained

NYCHA did not ensure that Operations staff who inspect and remediate mold, mildew, and/or excessive moisture were properly trained. NYCHA's Operations & Maintenance Policy for Mold & Moisture Control in Residential Buildings and draft SP 040:14:1 both require that staff receive necessary training to carry out their responsibilities. Draft SP 040:14:1 states that:

All applicable NYCHA staff will receive the necessary training to successfully perform their responsibilities in this Standard Procedure. The training will include the following areas . . . [c]onducting a full investigation of all resident service requests of mold/mildew and/or moisture problems including best practices in the visual inspection of an apartment . . . [c]leaning, removing, and restoring damaged surfaces.

This training requirement incorporated similar requirements agreed to by NYCHA in the Settlement and effective as of April 2014. NYCHA contracted with a vendor to develop and provide required training and offered training classes from 2013 to 2015. However, NYCHA did not ensure that all applicable Operations staff attended. Based on our review of mold, mildew, and/or excessive moisture inspection and remediation Work Orders for 60 sampled locations that were completed between May 6, 2014 and July 31, 2014, we found that 86¹⁵ of 118¹⁶ Work Orders (72.9 percent) were performed by staff who did not receive appropriate training.

After presenting our findings to NYCHA in June 2015, NYCHA maintained that while it required all staff who perform remediation work to attend training classes, it did not require all staff who perform inspection work to attend training classes. Instead, NYCHA maintained that it required a core group of staff who perform inspection work to attend training classes and in turn, this core group trained their peers.

NYCHA did not provide a basis for its decision not to require inspection staff to attend formal trainings as is required of remediation staff. By contrast, the New York City Department of Health and Mental Hygiene Guidelines on Assessment and Remediation of Fungi in Indoor Environments states:

A visual inspection *is the most important initial step* in identifying a possible mold problem and in determining remedial strategies Proper training of workers is critical in successfully and safely remediating mold growth. [Emphasis added.]

Accordingly, NYCHA should ensure that its staff obtain appropriate training in inspections.

Recommendation

21. NYCHA should ensure that mold, mildew, and/or excessive moisture inspection and remediation Work Orders are assigned to appropriately trained staff.

NYCHA Response: “In collaboration with by the New York City Department of Mental Health & Hygiene, we engaged environmental scientists from Rutgers University and Hunter College to help design new training programs.

NYCHA has trained 350 supervisors in mold remediation. Supervisors have trained staff in the field to improve staff competency on how to address the root cause (leaking roof/pipes, moisture build up in the bathroom, exc.) NYCHA created a new mold protocol that ensure supervisors inspect apartments to

¹⁵ The 86 cited Work Orders were performed by 64 different workers.

¹⁶ The 118 Work Orders were performed by 87 different workers.

identify the root cause, so we can continuously work to address resident concerns as they are raised.”

NYCHA Did Not Ensure that Work Plans Were Properly Documented in Maximo

NYCHA did not ensure that the staff at individual developments and Maintenance, Repair & Skilled Trades staff accurately recorded mold and/or mildew severity data and required follow-up actions in Maximo. NYCHA’s draft SP 040:14:1 requires that:

On the date scheduled a supervisor from the development, or if the Work Order is in a sheetrock location a supervisor from Maintenance, Repair & Skilled Trades (MR&ST), should visit the apartment or other location of the reported water leak, mold/mildew, or moisture-related problem. The supervisor will conduct an assessment and create a plan to address the mold/mildew and correct any underlying moisture conditions. . . . Staff should also summarize the assessment and Work Order Action Plan on the back of the Work Order. Development/MR&ST staff should enter the data on the back of the Work Order into Maximo.

The Work Order Action Plan should include the exact square footage of mold/mildew affected areas and required actions to clean mold and/or mildew and address underlying causes.

However, based on our review of Maximo data for 60 sampled locations, NYCHA did not ensure that Operations staff accurately entered Work Order Action Plan data in Maximo. For 50 of 60 sampled locations, we could not determine whether Maximo data was accurate because NYCHA did not maintain and provide us with original Work Order Action Plans or fully completed original Work Order Action Plans. Furthermore, for 8 of the remaining 10 locations, Operations staff did not record accurately or at all the square footage of affected areas, required actions to clean mold, and required actions to address underlying conditions based on a comparison made of source documents and data in Maximo.

Recommendations

NYCHA should:

22. Employ system edits to prevent Work Orders with missing data, including but not limited to Work Order Action Plan data and Resident Satisfaction Survey responses, from being closed in Maximo.

NYCHA Response: NYCHA did not address this recommendation.

23. Periodically conduct quality assurance reviews for a sample of closed Work Orders to ensure that data is accurately and completely entered in Maximo, and take appropriate follow-up and corrective action.

NYCHA Response: NYCHA did not address this recommendation.

NYCHA Procedures May Have Led to the Underassessment of Mold and Mildew Severity Levels

NYCHA split Work Orders and created separate Parent and Child Work Orders for each room within a single apartment. Consequently, NYCHA did not determine the aggregate square footage of affected areas throughout an apartment and may not have accurately assessed severity levels and follow appropriate policies and procedures. As a result of its practice of splitting Work Orders by rooms, in one out of eight mold locations with split Work Orders we reviewed, the severity level of the problem in the apartment was assessed lower based on the measurements in the individual rooms than it would have been had the severity level been based on the square footage of the affected areas on the apartment as a whole.

NYCHA's draft SP 040:14:1 stated "[t]he size of the area impacted by mold/mildew contamination determines the type or 'level' of remediation" and designated severity levels as detailed in Table VI below.

Table VI

Mold and Mildew Severity Levels

Severity Level	Square Footage of Affected Area
Level I	Less than 10 square feet
Level II	10 to 100 square feet
Level III	Greater than 100 contiguous square feet

For each of these severity levels, NYCHA's draft SP 040:14:1 details staffing and supervision requirements as well as resident and employee protection, remediation, containment, cleanup, and contaminated materials disposal techniques to be employed.

In addition to potentially understating the severity of a mold condition as a result of splitting Work Orders, NYCHA may also have understated the square footage of affected areas recorded on Work Order Action Plans. Although not required, in 20 instances, NYCHA staff noted the square footage of affected or treated areas in the Work Order notes field. Of these 20 instances, there were 10 instances in which there were discrepancies between the square footage recorded on Work Order Action Plans and Work Order notes fields. Further, five of these ten discrepancies would have resulted in improper designations of mold severity. NYCHA's draft policies and procedures state that "[w]henever possible, photograph(s) should be taken of the conditions found and attached to the Work Order in Maximo." However, NYCHA generally did not do so. Therefore, we could not definitively determine whether the square footage recorded on Work Order Action Plans was understated.

Recommendations

NYCHA should:

24. Whenever possible, take photographs to document reported mold, mildew, and/or excessive moisture conditions found and attach them to the Work Order in Maximo.

NYCHA Response: NYCHA did not address this recommendation.

25. Periodically run reports to assess how often Operations supervisors and staff take photographs to document reported mold, mildew, and/or excessive moisture conditions found and attach them to the Work Order in Maximo and take appropriate follow-up and corrective action to ensure this practice is followed going forward.

NYCHA Response: NYCHA did not address this recommendation.

NYCHA Did Not Properly Staff Assessment and Remediation Work Orders

NYCHA did not ensure that appropriately qualified Operations staff performed mold, mildew, and/or excessive moisture inspections and remediation work. Since sheetrock is porous and therefore, more difficult to remediate, where sheetrock is located, NYCHA’s draft SP 040:14:1 requires MR&ST supervisors and staff to: 1) conduct assessments (to be conducted only by supervisors); 2) create Work Order Action Plans to address mold and mildew conditions and correct underlying moisture conditions (to be conducted only by supervisors); and 3) perform remediation work at designated sheetrock locations. Accordingly, NYCHA Standard Procedure 040:14:1 Appendix D detailed a list of 104 developments with sheetrock materials. NYCHA maintained that it employed system edits to ensure that only appropriate staff were assigned to perform inspections and remediation work at sheetrock locations.

However, based on our review of all mold, mildew, and excessive moisture Parent Work Orders created and closed from May to July 2014 for sheetrock locations, NYCHA did not assign MR&ST supervisors to conduct assessments and create Work Order Action Plans as detailed in Table VII below.

Table VII

Analysis of Assessment Staffing for
Work Orders at Sheetrock
Developments
May 2014 to July 2014

Month	Total Number of Assessment Work Orders	Number of Assessment Work Orders that Were Improperly Assigned	Percentage of Assessment Work Orders that Were Improperly Assigned
May 2014	279	33	11.83%
June 2014	217	45	20.74%
July 2014	241	45	18.67%
Total	737	123	16.69%

Further, based on our review of 50 sampled remediation Work Orders, NYCHA did not assign MR&ST staff to perform remediation work on 21 occasions.

After presenting our findings to NYCHA in June 2015, NYCHA maintained that the list of 104 sheetrock locations detailed in both NYCHA’s draft SP 040:14:1 dated May 21, 2014 and NYCHA’s final SP 040:14:1 dated June 3, 2015, was incorrect and that we should instead rely on a list of sheetrock locations maintained in a Maximo data table. Specifically, NYCHA officials stated that

[w]hen we changed the process for mold, we attempted to identify sheetrock locations using general information. We initially sent out the list on Nov. 15, 2013 By May 21, 2014, when the SP was issued . . . a number of the locations had been corrected. The process we were using to capture the corrections did not include updates to the procedure.

However, given our reliability concerns with Maximo data, we cannot be reasonably assured that the data contained in Maximo is more reliable than the data in both NYCHA's draft SP 040:14:1 dated May 21, 2014, and NYCHA's final SP 040:14:1 dated June 3, 2015.

Recommendation

26. NYCHA should reconcile and ensure the accuracy of sheetrock locations contained in Maximo and its final SP 040:14:1 dated June 3, 2015.

NYCHA Response: NYCHA did not address this recommendation.

NYCHA Did Not Ensure that Proper Remediation Techniques Were Used Where Sheetrock Was Affected by Mold, Mildew and Moisture

NYCHA did not ensure that Operations staff employed appropriate mold and/or mildew remediation techniques. Since sheetrock is porous and therefore, more difficult to remediate, NYCHA's draft SP 040:14:1 required that contaminated sheetrock be removed and discarded to "prevent human exposure and avoid further damage to building and construction materials, and furnishings." Further, NYCHA's Operations & Maintenance Policy for Mold & Moisture Control in Residential Buildings provides that:

The key to controlling mold growth is to remove the moisture, the nutrients, and the source of the spores. Generally this is accomplished by cleaning with a detergent solution and/or physical removal of drywall, ceiling tiles, cellulose insulation, etc., as well as repairing the source of the uncontrolled moisture. . . . **Porous** materials such as ceiling tiles and insulation, and sheetrock with more than a small area of contamination should be removed and discarded. [Emphasis original.]

This policy defined Level I Work Orders to cover small areas. Accordingly, NYCHA should have removed and discarded sheetrock for all Level II and Level III Work Orders. However, based on our review of 30 Level II Work Orders at sheetrock locations, NYCHA did not remove and discard sheetrock on any occasion.¹⁷

After presenting our findings to NYCHA in April 2015 and June 2015, NYCHA officials maintained that once sheetrock is painted, the outer surface is not porous. Therefore, they stated that staff was not required to remove and discard the sheetrock, except in those instances where water or mold had penetrated it from behind the wall or if the sheetrock was degraded. However, NYCHA's policies and procedures do not make such a distinction. Moreover, even if this is in fact the

¹⁷ For the 50 sampled remediation Work Orders created and closed in July 2014 for sheetrock locations, there were 20 Level I Work Orders and 30 Level II Work Orders.

applicable procedure, in 6 of the 30 Level II Work Orders at sheetrock locations we identified, NYCHA should have removed and discarded sheetrock because the mold was caused by water penetration was from behind the wall.

Recommendation

27. NYCHA should remove and discard porous materials, including but not limited to sheetrock, ceiling tiles, and insulation, for Level II and Level III Work Orders.

NYCHA Response: NYCHA did not address this recommendation.

We noted a number of repeated reoccurrence of mold, mildew, and excessive moisture conditions that have been reported. The Settlement requires that

[w]ithin no more than 60 days after the completion of a Level II or Level III Work Order, NYCHA shall make a good-faith attempt to contact the resident to determine if all of the work identified in the Work Order was completed, and the mold and excessive moisture problems and their underlying causes have been effectively addressed.

Based on NYCHA's court-mandated reporting for Level II and Level III Work Orders completed from May to October 2014, residents were contacted and questioned after work was done. Mold and/or mildew recurred as detailed in the Table VIII below.

Table VIII

NYCHA's Court-Mandated Reporting
of Mold Recurrence for Level II and
Level III Work Orders for the Period
May 2014 to October 2014

	A	B	C	D	E
Month	Total Number of Completed Mold Work Orders	Number of Successful Resident Contacts	Percentage of Successful Resident Contacts (B ÷ A)	Number of Work Orders for Which Residents Reported that Mold Recurred	Percentage of Work Orders for Which Mold Recurred (D ÷ B)
May 2014	271	162	59.8 %	70	43.2 %
Jun 2014	318	128	40.3 %	42	32.8 %
Jul 2014	615	142	23.1 %	35	24.6 %
Aug 2014	1,300	764	58.8 %	338	44.2 %
Sep 2014	993	479	48.2 %	187	39.0 %
Oct 2014	1,073	274	25.5 %	101	36.9 %
Total	4,570	1,949	42.6 %	773	39.7 %

The reoccurrences of mold conditions reported raise the possibility that the work performed was inadequate, at least in part, because of NYCHA's failure to comply with various aspects of its draft policies and procedures as detailed above.

DETAILED SCOPE AND METHODOLOGY

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. This audit was conducted in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, §93, of the New York City Charter.

Many of our reported findings are based on data obtained from Maximo, even though we identified issues about the reliability of Maximo data. Despite audit concerns regarding Maximo data reliability, we used this information because it was the best available and because it was relied upon by NYCHA. These issues are fully disclosed in the Findings and Recommendations section of this report. The scope of this audit covers January 1, 2013, to July 31, 2014.

To gain an understanding of NYCHA's maintenance and repair practices, we interviewed CCC, Manhattan Borough Development Office, Skilled Trades, Technical Services, Emergency Services, Research Management Analysis, and Quality Assurance staff as well as a Senior Vice President for Operations and the Director of Strategic Priorities. We also reviewed NYCHA's Standard Procedures, General Manager Directives, and Deputy and Assistant Deputy General Manager Memorandum, and relevant prior Comptroller's Office IT Audits and NYCHA Internal Audit Department reports.

We requested the NYCHA extract from Maximo and provide to us all Work Orders that were created from January 1, 2013, to July 31, 2014, all Work Orders that were closed from January 1, 2013, to July 31, 2014, and a list of open Work Orders. NYCHA provided us a list open Work Orders as of August 1, 2014. Further, we asked NYCHA to confirm in writing that it provided us all relevant Work Orders.

Completed Corrective Maintenance Work Orders in a Timely Manner

To determine whether Work Orders were completed in a timely manner, we identified all Corrective Maintenance Work Orders reported in Maximo as open on July 31, 2014. We then separated these Work Orders into three priority levels—emergency, simple, and more complex—and identified Work Orders open beyond their respective prescribed time frames (i.e., 1, 7, and 15 days, respectively). For all Corrective Maintenance Work Orders open beyond prescribed time frames, we performed an aging and identified the date of the oldest outstanding request.

Further, for each category of Corrective Maintenance Work Orders reported in Maximo as closed in July 2014, we determined, on average, how long it took NYCHA to complete 183,514 Work Orders during the month and compared NYCHA's average times to its prescribed time frames of 1, 7, and 15 days. We calculated the length of time that it takes to complete each Work Order as the difference between the Maximo Work Order reported date and actual finish date. We then calculated the average amount of time to complete Work Orders as follows:

$$\text{Average Time} = \frac{\text{Sum of the Time to Complete all Work Orders Closed within the Month}}{\text{Total Number of Work Orders Closed within the Month}}$$

Violation Work Orders

To determine whether NYCHA completed its Violation Work Orders in a timely manner, we performed an aging of 3,374 Violation Work Orders open in Maximo as of July 31, 2014. Further, we determined the total number of open Violation Work Orders for each issuing agency. To determine how long it took NYCHA to complete Violation Work Orders, we judgmentally selected all 108 Violation Work Orders closed in July 2014, to calculate the average time to complete. We calculated the length of time that it took to complete each Work Order as the difference between the Maximo Work Order violation date and actual status date. We then compared these figures to the issuing agency and NYCHA-required time frames for completion as detailed in NYCHA's SP 158:03:01. In addition, to determine whether NYCHA correctly recorded abatement and compliance times, we randomly sampled 50 Work Orders of 68 closed Violation Work Orders.

Inspection and Preventive Maintenance Work Orders

To determine whether NYCHA set time frames for and could track Inspection and Preventive Maintenance Work Orders, we randomly sampled 50 Work Orders each for the 8,083 Inspection and 3,769 Preventive Maintenance Work Orders that were closed in the month of July 2014 to identify whether NYCHA consistently recorded target start and finish dates in Maximo.

Maximo Data Reliability

To gain an understanding of NYCHA's Siebel and Maximo computer systems to plan, schedule, assign, and track work, we reviewed Maximo and Siebel system manuals, interface technical specifications, conducted numerous walk-throughs with NYCHA Information Technology (IT) staff, and reviewed relevant prior Comptroller's Office and NYCHA Internal Audit Department reports. To assess the reliability of Maximo data, we requested all Work Orders that were created and/or closed from January 1, 2013, to July 31, 2014, searched for missing and duplicate Work Order numbers, and discussed discrepancies with NYCHA IT staff.

According to NYCHA, Maximo business rules do not allow duplicate Work Orders to be saved. NYCHA considers Work Orders to be duplicative if they are for the same failure code, at the same location, and assigned to the same craft. To determine whether Maximo duplicate business rules were implemented as reported, we randomly sampled 50 Work Orders of 1,103 duplicate Work Orders that were closed in the month of July 2014 from NYCHA's Maximo data. The duplicate Work Orders were identified by their resolution code and/or description fields in Maximo data. The documentation of the 50 sampled Work Orders was reviewed, and we attempted to identify whether duplicate Work Orders were referenced and assess whether NYCHA properly purged the sampled Work Orders based on the criteria of same location, problem, and craft.

Accurately and Properly Report to the Public Key Work Order Statistics

Total Number of Open Work Orders

To determine whether NYCHA accurately and completely reported its open Work Orders, we judgmentally selected the total open Work Orders posted on NYCHA's website for July 2014 and compared them with the total open Work Orders that we compiled from NYCHA's Maximo data as of July 31, 2014, to identify any discrepancies. In addition, we verified whether those Work Orders created outside Maximo by its private management companies were properly included.

Average Time to Complete Work Orders

To determine whether NYCHA properly calculated the average time to complete Work Orders, we judgmentally selected to recalculate the average time to complete Corrective Maintenance Work Orders that were completed in July 2014. For our recalculation, we categorized the Corrective Maintenance Work Orders into Emergency and Non-Emergency and simple and more complex based on Craft designation. We also excluded the Work Orders that had duplicate, cancelled, rescheduled, tenant not home (TNH), or no contact noted in their resolution code or description fields.

Backlog of Open Work Orders

To determine whether NYCHA accurately reported the backlog of open Work Orders, we judgmentally selected to recalculate the backlog as of July 31, 2014. Specifically, we analyzed the 78,770 open Work Orders that we compiled from NYCHA's Maximo data as of July 31, 2014, and determined the number of Work Orders that were open within their time frame, i.e., 1, 7, or 15 days, based on the priorities assigned to each Work Order and categorized the Corrective Maintenance Work Orders into Emergency and Non-Emergency and simple and more complex based on Craft designation. Then we determined the backlog of the open Work Orders by ascertaining the difference between the total 78,770 Work Orders and the number of Work Orders open within their time frame.

Ensure Work Was Properly Performed

To determine whether Corrective Maintenance repairs were properly performed, we randomly sampled 3,166 of 177,920 Work Orders from 322 developments that were closed in June 2014. Specifically, we randomly selected 10 closed apartment-related Work Orders per development or all of the Work Orders closed during the month for developments that had less than 10 closed Work Orders. For the 3,166 sampled Work Orders, we sent confirmation letters and surveys to residents in December 2014 and asked them to confirm whether repairs were completed as reported in Maximo (i.e., to confirm the type of repair and the date the repair was completed) and whether they were satisfied with work that was performed. For the resident satisfaction survey, we used NYCHA's CCC Quality Assurance Survey questions and response options. We received 708 valid resident responses for which we quantified and summarized results.

For 138 of the 708 responses, residents indicated that requested maintenance and repair work was not completed on the dates reported in Maximo. For 44 of these 138 responses for which NYCHA reported in Maximo that it verified reported conditions, we reviewed Maximo apartment Work Order histories and relevant Work Orders to determine whether NYCHA completed requested repairs and whether they did so on dates reported in Maximo.

Compliance with Mold, Mildew, and/or Excessive Moisture Policies and Procedures

Based on a total population of 10,520 Work Orders representing 280 NYCHA developments that NYCHA reported to plaintiffs' counsel for May to July 2014, we randomly selected 60 Work Orders from NYCHA's quarterly report from May to July 2014 (the most currently available report within our audit scope period), submitted to the plaintiffs' counsel as required by the Settlement. Specifically, we sampled 50 of 10,327 Work Orders requiring action within 7 days, and we sampled 10 of 193 Work Orders requiring action within 15 days and conducted the following testing:

Training

To determine whether NYCHA staffed mold, mildew, and excessive moisture assessment and remediation Work Orders with staff who had received appropriate training as required by NYCHA's draft SP 040:14:1, we traced all of the staff assigned for assessment and remediation Work Orders for the 60 sampled locations to NYCHA's attendance sheets for training classes held between March 12, 2013, and June 6, 2014.

Documenting Work Plans

To determine whether NYCHA properly documented the Work Plans as required by NYCHA's draft SP 040:14:1, we requested scanned copies of original hardcopy assessment Work Orders related to the 60 sampled locations for our review. We compared information of square footage of the affected area, action to clean, and action to address the root cause entered into Maximo with the original Work Plans to determine whether the data in Maximo were well supported and documented.

Assessing Severity Levels

To determine whether the severity levels for the 60 sampled locations were properly assessed and documented, we compared Work Plans to the affected square footage noted in the remediation Work Orders. In addition, we determined whether photos were taken in support of all sampled assessments.

Sheetrock Location Testing Sample Selection

We randomly selected 50 Work Orders for sheetrock locations from Maximo created and closed Work Orders for July 2014. Specifically, we selected 25 Work Orders where assessment was performed by Owner Group TSDEFO and 25 that were not.

Assessment and Remediation Staffing

To determine whether NYCHA properly staffed assessment and remediation Work Orders, we reviewed Maximo Work Orders and assessed where the work was performed by MR&ST supervisors and staff as required by SP 040:14:1.

Remediation Work

For the 50 sampled Work Orders at sheetrock locations, we identified 30 Level II Work Orders. For these 30 Level II Work Orders, we reviewed Maximo Work Orders to determine whether NYCHA removed and discarded sheetrock in accordance with SP 040:14:1 and NYCHA's Operations & Maintenance Policy for Mold & Moisture Control in Residential Buildings.

Location Name	Development Completion Date	Age of Development in Years, as of 04/30/15	Total # of Units	Number of Non-Current Work Orders	Number of Outstanding DOB Violations	Number of Outstanding Environmental Control Board Violations	Property Management Department	Managed by
Developments								
1010 EAST 178TH STREET	03/31/71	44.1	220	20	5	6	MIXED FINANCE	MURPHY CONS. (BRONX)
104-14 TAPSCOTT STREET	10/31/72	42.5	30	18	0	0	BROOKLYN	REID CONS.
1162-1176 WASHINGTON AVENUE	12/31/75	39.4	66	14	5	15	BRONX	CLAREMONT CONSOLIDATED
131 SAINT NICHOLAS AVENUE	03/31/65	50.1	100	39	3	0	MANHATTAN	TAFT CONS.
1471 WATSON AVENUE	12/31/70	44.4	96	63	7	0	BRONX	SOTOMAYOR HOUSES CONS.
154 WEST 84TH STREET	03/31/96	19.1	35	0	0	0	MIXED FINANCE	KRAUS MGT. CONS. (MANHATTAN)
303 VERNON AVENUE	05/31/67	47.9	234	53	6	0	BROOKLYN	SUMNER CONS.
335 EAST 111TH STREET	06/30/69	45.9	66	24	1	1	MANHATTAN	JEFFERSON CONS.
344 EAST 28TH STREET	03/31/71	44.1	225	56	4	6	MIXED FINANCE	STRAUS CONS. (MANHATTAN)
45 ALLEN STREET	07/31/74	40.8	107	42	3	0	MANHATTAN	GOMPERS CONS.
572 WARREN STREET	08/31/72	42.7	200	86	3	0	BROOKLYN	WYCKOFF GARDENS CONS.
830 AMSTERDAM AVENUE	08/31/65	49.7	159	97	5	0	MANHATTAN	DOUGLASS
ADAMS	08/31/64	50.7	925	18	16	0	BRONX	ADAMS
ALBANY	10/14/50	64.6	829	404	25	0	BROOKLYN	ALBANY
ALBANY II	02/07/57	58.3	400	194	12	0	BROOKLYN	ALBANY CONS.
AMSTERDAM	12/17/48	66.4	1,084	202	47	2	MIXED FINANCE	AMSTERDAM
AMSTERDAM ADDITION	01/31/74	41.3	175	59	0	0	MIXED FINANCE	AMSTERDAM CONS. (MANHATTAN)
ARMSTRONG I	05/31/73	41.9	371	131	11	5	BROOKLYN	ARMSTRONG CONS.
ARMSTRONG II	10/31/74	40.5	248	98	7	0	BROOKLYN	ARMSTRONG I CONS. (BROOKLYN)
ASTORIA	11/09/51	63.5	1,104	543	54	4	QUEENS/STATEN ISLAND	ASTORIA
ATLANTIC TERMINAL SITE 4B	04/30/76	39.0	300	111	1	0	BROOKLYN	WYCKOFF GARDENS CONS.
AUDUBON	04/30/62	53.0	168	56	4	0	MANHATTAN	HARLEM RIVER CONS.
BAILEY AVENUE-WEST 193RD STREET	05/31/73	41.9	233	43	0	0	BRONX	FORT INDEPENDENCE CONS.
BAISLEY PARK	04/30/61	54.0	386	155	19	0	QUEENS/STATEN ISLAND	BAISLEY PARK CONS.
BARUCH	08/06/59	55.8	2,194	886	49	3	MANHATTAN	BARUCH
BARUCH HOUSES ADDITION	04/30/77	38.0	197	18	3	0	MANHATTAN	BARUCH CONS.
BAY VIEW	06/07/56	58.9	1,610	283	72	0	MIXED FINANCE	BAY VIEW
BAYCHESTER	10/31/63	51.5	441	68	19	1	MIXED FINANCE	BOSTON SECOR CONS.
BEACH 41ST STREET-BEACH CHANNEL DRIVE	11/30/73	41.4	712	466	7	4	QUEENS/STATEN ISLAND	BEACH 41ST STREET-BEACH CHANNEL DRIVE
BEDFORD-STUYVESANT REHAB	05/31/83	31.9	85	59	0	0	BROOKLYN	SUMNER CONS.
BELMONT-SUTTER AREA	02/28/86	29.2	72	29	0	0	MIXED FINANCE	BOULEVARD (BROOKLYN)
BERRY	10/27/50	64.6	506	127	7	2	QUEENS/STATEN ISLAND	BERRY CONS.
BERRY STREET-SOUTH 9TH STREET	09/30/95	19.6	150	103	19	0	BROOKLYN	TOMPKINS CONS.
BETANCES I	05/31/73	41.9	309	25	10	0	BRONX	BETANCES CONS.
BETANCES II (132)	07/31/73	41.8	51	11	0	0	BRONX	SPLIT MANAGED BY BETANCES, MILL BROOK, AND MITCHEL
BETANCES II (182)	07/31/73	41.8	78	52	5	2	BRONX	
BETANCES II	07/31/73	41.8	46	1	0	0	BRONX	
BETANCES III (132)	07/31/73	41.8	22	5	0	0	BRONX	SPLIT MANAGED BY BETANCES, MILL BROOK, AND MITCHEL
BETANCES III (182)	07/31/73	41.8	19	8	0	0	BRONX	
BETANCES III (9A2)	07/31/73	41.8	26	1	12	0	BRONX	
BETANCES IV	12/31/73	41.4	282	18	0	4	BRONX	BETANCES CONS.
BETANCES V	02/28/74	41.2	100	19	13	10	BRONX	BETANCES CONS.
BETANCES VI	10/31/82	32.5	155	12	0	1	BRONX	BETANCES CONS.
BETHUNE GARDENS	03/31/67	48.1	210	89	8	0	MANHATTAN	HARLEM RIVER CONS.
BLAND	05/08/52	63.0	400	47	22	0	QUEENS/STATEN ISLAND	LATIMER GARDENS
BORINQUEN PLAZA I	02/28/75	40.2	509	87	27	10	BROOKLYN	BORINQUEN PLAZA I CONS.
BORINQUEN PLAZA II	12/31/75	39.4	425	104	32	6	BROOKLYN	BORINQUEN PLAZA I CONS.
BOSTON ROAD PLAZA	08/31/72	42.7	235	12	3	4	BRONX	PELHAM PARKWAY CONS.
BOSTON SECOR	04/30/69	46.0	538	113	1	3	MIXED FINANCE	BOSTON SECOR CONS.

Location Name	Development Completion Date	Age of Development in Years, as of 04/30/15	Total # of Units	Number of Non-Current Work Orders	Number of Outstanding DOB Violations	Number of Outstanding Environmental Control Board Violations	Property Management Department	Managed by
BOULEVARD	03/22/51	64.2	1,441	371	73	30	MIXED FINANCE	BOULEVARD (BROOKLYN)
BOYNTON AVENUE REHAB	08/22/85	29.7	82	7	14	3	BRONX	BRONX RIVER CONSOLIDATED
BRACETTI PLAZA	05/31/74	40.9	108	20	2	0	MANHATTAN	LES CONS.
BREUKELEN	11/06/52	62.5	1,595	897	44	6	BROOKLYN	BREUKELEN
BREVOORT	08/10/55	59.8	896	262	15	3	BROOKLYN	BREVOORT
BRONX RIVER	02/28/51	64.2	1,246	96	9	1	BRONX	BRONX RIVER CONS.
BRONX RIVER ADDITION	02/28/66	49.2	226	19	5	0	BRONX	BRONX RIVER CONS.
BRONXCHESTER	06/30/78	36.9	208	33	4	3	MIXED FINANCE	ST. MARY'S PARK CONS. (BRONX)
BROWN	07/23/85	29.8	200	71	12	1	BROOKLYN	GARVEY CONS.
BROWNSVILLE	04/16/48	67.1	1,338	410	83	7	BROOKLYN	BROWNSVILLE
BRYANT AVENUE-EAST 174TH STREET	08/31/72	42.7	72	6	2	8	MIXED FINANCE	BUILDING MANAGEMENT ASSOCIATES (BRONX)
BUSHWICK	04/01/60	55.1	1,220	375	32	1	MIXED FINANCE	BUSHWICK CONSOLIDATED
BUSHWICK II (GROUPS A & C)	07/19/84	30.8	300	142	24	1	BROOKLYN	HOPE GARDENS CONS.
BUSHWICK II (GROUPS B & D)	07/05/84	30.8	300	158	12	2	BROOKLYN	HOPE GARDENS CONS.
BUSHWICK II CDA (GROUP E)	12/10/86	28.4	276	94	2	0	BROOKLYN	HOPE GARDENS CONS.
BUTLER	12/31/64	50.4	1,492	156	13	3	BRONX	BUTLER
CAMPOS PLAZA	09/30/79	35.6	269	56	5	0	MANHATTAN/MIXED FINANCE (OVERSIGHT)	CAMPOS PLAZA CONS.
CAMPOS PLAZA II	04/30/83	32.0	224	31	0	0	MANHATTAN/MIXED FINANCE (OVERSIGHT)	CAMPOS PLAZA I CONS.
CAREY GARDENS	11/30/70	44.4	683	294	32	4	BROOKLYN	CAREY GARDENS CONS.
CARLETON MANOR	03/31/67	48.1	174	41	3	0	QUEENS/STATEN ISLAND	HAMMEL CONS.
CARVER	02/14/58	57.2	1,246	305	29	4	MANHATTAN	CARVER
CASSIDY-LAFAYETTE	09/30/71	43.6	380	59	12	27	QUEENS/STATEN ISLAND	RICHMOND TER. CONS.
CASTLE HILL	12/15/60	54.4	2,025	226	35	3	MIXED FINANCE	CASTLE HILL
CHELSEA	05/31/64	50.9	425	70	9	0	MIXED FINANCE ASSET MANAGEMENT DEPARTMENT	CHELSEA (MANHATTAN)
CHELSEA ADDITION	04/30/68	47.0	96	8	0	2	MIXED FINANCE	CHELSEA (MANHATTAN)
CLAREMONT PARKWAY-FRANKLIN AVENUE	12/16/86	28.4	188	15	9	0	BRONX	UNION AVE. CONS.
CLAREMONT REHAB (GROUP 2)	12/31/87	27.3	107	32	0	2	BRONX	CLAREMONT CONS.
CLAREMONT REHAB (GROUP 3)	02/28/85	30.2	115	31	3	1	BRONX	CLAREMONT CONS.
CLAREMONT REHAB (GROUP 4)	10/23/86	28.5	150	32	2	2	BRONX	CLAREMONT CONS.
CLAREMONT REHAB (GROUP 5)	11/30/85	29.4	135	33	0	1	BRONX	CLAREMONT CONS.
CLASON POINT	12/20/41	73.4	401	141	28	0	BRONX	SACK WERN CONS.
CLINTON	10/31/65	49.5	749	447	17	4	MANHATTAN	CLINTON
COLLEGE AVENUE-EAST 165TH STREET	07/31/72	42.8	95	9	3	0	BRONX	CLAREMONT CONSOLIDATED
CONEY ISLAND	02/25/57	58.2	534	217	22	0	BROOKLYN	SURFSIDE GARDENS CONS.
CONEY ISLAND I (SITE 1B)	05/31/73	41.9	193	78	7	0	BROOKLYN	CAREY GARDENS CONS.
CONEY ISLAND I (SITE 8)	12/31/73	41.4	125	64	9	12	BROOKLYN	O'DWYER GARDENS CONS.
CONEY ISLAND I (SITES 4 & 5)	07/31/74	40.8	376	175	19	3	BROOKLYN	SURFSIDE GARDENS CONS.
CONLON LIFE TOWERS	03/31/73	42.1	216	43	1	0	QUEENS/STATEN ISLAND	BAISLEY PARK
COOPER PARK	06/25/53	61.9	700	189	41	2	BROOKLYN	COOPER PARK
CORSI HOUSES	11/30/73	41.4	171	23	4	1	MANHATTAN	JEFFERSON CONS.
CROWN HEIGHTS	09/04/86	28.7	121	51	1	9	BROOKLYN	PARK ROCK CONS.
CYPRESS HILLS	05/25/55	60.0	1,444	369	90	15	BROOKLYN	CYPRESS HILLS CONS.
DAVIDSON	08/31/73	41.7	175	19	3	1	BRONX	UNION AVE. CONS.
DE HOSTOS APARTMENTS	03/28/69	46.1	223	100	0	3	MIXED FINANCE	WISE TOWERS CONS. (MANHATTAN)
DOUGLASS ADDITION	06/30/65	49.9	135	62	3	0	MANHATTAN	DOUGLASS CONS.

Location Name	Development Completion Date	Age of Development in Years, as of 04/30/15	Total # of Units	Number of Non-Current Work Orders	Number of Outstanding DOB Violations	Number of Outstanding Environmental Control Board Violations	Property Management Department	Managed by
DOUGLASS I	09/25/58	56.6	1,305	538	19	2	MANHATTAN	DOUGLASS CONS.
DOUGLASS II	09/25/58	56.6	753	312	5	0	MANHATTAN	DOUGLASS CONS.
DREW-HAMILTON	09/30/65	49.6	1,217	406	7	1	MIXED FINANCE	DREW- HAMILTON CONS.
DYCKMAN	04/25/51	64.1	1,167	327	1	0	MANHATTAN	DYCKMAN
EAGLE AVENUE-EAST 163RD STREET	05/31/71	43.9	66	12	0	1	BRONX	FOREST CONS.
EAST 120TH STREET REHAB	11/01/85	29.5	42	37	2	0	MANHATTAN/MIXED FINANCE (OVERSIGHT)	WAGNER CONS.
EAST 152ND STREET-COURTLANDT AVENUE	08/31/73	41.7	221	57	5	0	BRONX	MELROSE CONS.
EAST 165TH STREET-BRYANT AVENUE	10/31/87	27.5	111	0	17	0	MIXED FINANCE	BUILDING MANAGEMENT ASSOCIATES (BRONX)
EAST 173RD STREET-VYSE AVENUE	10/31/87	27.5	168	6	4	0	MIXED FINANCE	BUILDING MANAGEMENT ASSOCIATES (BRONX)
EAST 180TH STREET-MONTEREY AVENUE	09/30/73	41.6	239	61	1	2	BRONX	TWIN PARKS CONS.
EAST 4TH STREET REHAB	08/01/88	26.8	25	19	6	0	MANHATTAN/MIXED FINANCE (OVERSIGHT)	PROJECT BASED SECTION 8. LES CONS.
EAST NEW YORK CITY LINE	03/31/76	39.1	66	50	3	0	BROOKLYN	CYPRESS HILL CONSOLIDATED
EAST RIVER	05/20/41	74.0	1,170	660	13	5	MANHATTAN	EAST RIVER CONS.
EASTCHESTER GARDENS	06/01/50	65.0	877	171	23	0	BRONX	EASTCHESTER GARDENS CONS.
EDENWALD	10/30/53	61.5	2,039	298	33	14	BRONX	EDENWALD
ELLIOT	07/15/47	67.8	608	124	16	3	MIXED FINANCE	CHELSEA (MANHATTAN)
FARRAGUT	05/07/52	63.0	1,390	418	24	0	BROOKLYN	FARRAGUT
FENIMORE-LEFFERTS	09/30/69	45.6	36	34	2	0	BROOKLYN	REID CONS.
FHA REPOSSESSED HOUSES (GROUP I)	10/31/69	45.5	40	11	6	4	QUEENS/STATEN ISLAND	BAISLEY PARK
FHA REPOSSESSED HOUSES (GROUP II)	09/30/70	44.6	27	13	4	1	QUEENS/STATEN ISLAND	BAISLEY PARK
FHA REPOSSESSED HOUSES (GROUP III)	04/30/71	44.0	19	9	2	2	QUEENS/STATEN ISLAND	BAISLEY PARK
FHA REPOSSESSED HOUSES (GROUP IV)	06/30/71	43.9	21	5	2	1	QUEENS/STATEN ISLAND	BAISLEY PARK
FHA REPOSSESSED HOUSES (GROUP IX)	09/30/72	42.6	53	19	1	9	QUEENS/STATEN ISLAND	BAISLEY PARK
FHA REPOSSESSED HOUSES (GROUP V)	07/31/76	38.8	16	23	2	0	QUEENS/STATEN ISLAND	BAISLEY PARK
FHA REPOSSESSED HOUSES (GROUP VI)	07/13/76	38.8	15	10	3	0	QUEENS/STATEN ISLAND	BAISLEY PARK
FHA REPOSSESSED HOUSES (GROUP VII)	07/31/76	38.8	13	8	5	0	QUEENS/STATEN ISLAND	BAISLEY PARK
FHA REPOSSESSED HOUSES (GROUP VIII)	06/30/82	32.9	45	11	4	17	QUEENS/STATEN ISLAND	BAISLEY PARK
FHA REPOSSESSED HOUSES (GROUP X)	06/30/82	32.9	38	20	6	4	QUEENS/STATEN ISLAND	BAISLEY PARK
FIORENTINO PLAZA	10/31/71	43.5	160	90	0	0	BROOKLYN	UNITY PLAZA CONS.
FIRST HOUSES	05/31/36	79.0	126	19	1	6	MANHATTAN	LES CONS.
FOREST	11/12/56	58.5	1,350	458	32	4	BRONX	FOREST CONS.
FOREST HILLS COOP (108TH STREET-62ND DRIVE)	11/30/75	39.4	430	3	13	5	QUEENS/STATEN ISLAND	KRAUS MANAGEMENT
FORT INDEPENDENCE STREET-HEATH AVENUE	11/30/74	40.4	344	60	5	1	BRONX	FORT INDEPENDENCE CONS.
FORT WASHINGTON AVENUE REHAB	10/01/85	29.6	226	67	1	0	MANHATTAN	FORT WASHINGTON CONS.
FRANKLIN AVENUE I CONVENTIONAL	08/31/94	20.7	61	0	0	0	MIXED FINANCE	KRAUS MGT. (BRONX)
FRANKLIN AVENUE II CONVENTIONAL	08/31/94	20.7	45	0	0	0	MIXED FINANCE	KRAUS MGT. (BRONX)
FRANKLIN AVENUE III CONVENTIONAL	08/31/94	20.7	15	0	0	0	MIXED FINANCE	KRAUS MGT. (BRONX)
FULTON	03/31/65	50.1	944	216	14	3	MIXED FINANCE	FULTON

APPENDIX I
Page 4 of 8

Location Name	Development Completion Date	Age of Development in Years, as of 04/30/15	Total # of Units	Number of Non-Current Work Orders	Number of Outstanding DOB Violations	Number of Outstanding Environmental Control Board Violations	Property Management Department	Managed by
GARVEY (GROUP A)	02/28/75	40.2	321	189	5	5	BROOKLYN	GARVEY GROUP CONS.
GLEBE AVENUE-WESTCHESTER AVENUE	12/31/71	43.4	132	14	16	0	BRONX	SOTOMAYOR HOUSES CONS.
GLENMORE PLAZA	04/30/68	47.0	440	136	38	17	BROOKLYN	LOW HOUSES CONS.
GLENWOOD	07/14/50	64.8	1,188	380	92	1	BROOKLYN	GLENWOOD
GOMPERS	04/30/64	51.0	474	147	8	0	MANHATTAN	GOMPERS CONS.
GOWANUS	06/24/49	65.9	1,139	389	26	29	BROOKLYN	GOWANUS
GRAMPION	05/17/77	38.0	35	14	1	3	MIXED FINANCE	KING TOWERS CONS. (MANHATTAN)
GRANT	10/31/57	57.5	1,940	1266	28	4	MANHATTAN	GRANT
GRAVESEND	06/28/54	60.9	634	137	11	31	BROOKLYN	O'DWYER GARDENS CONS.
GUN HILL	11/30/50	64.5	733	86	13	2	BRONX	PARKSIDE CONS.
HABER	06/30/65	49.9	380	77	12	5	BROOKLYN	CAREY GARDENS CONS.
HAMMEL	04/20/55	60.1	712	418	46	5	QUEENS/STATEN ISLAND	HAMMEL CONS.
HARBORVIEW TERRACE	06/30/77	37.9	377	63	6	4	MIXED FINANCE	AMSTERDAM CONS.
HARLEM RIVER	10/01/37	77.6	577	224	0	0	MANHATTAN	HARLEM RIVER CONS.
HARLEM RIVER II	10/31/65	49.5	116	63	0	0	MANHATTAN	HARLEM RIVER
HARRISON AVENUE REHAB (GROUP A)	09/01/86	28.7	34	0	0	0	MIXED FINANCE	KRAUS MGT. (BRONX)
HARRISON AVENUE REHAB (GROUP B)	12/01/86	28.4	150	0	0	1	MIXED FINANCE	KRAUS MGT. (BRONX)
HERRANDEZ	08/31/71	43.7	149	35	2	0	MANHATTAN	GOMPERS CONS.
HIGHBRIDGE GARDENS	06/18/54	60.9	700	37	25	3	BRONX	HIGHBRIDGE GARDENS
HIGHBRIDGE REHABS (ANDERSON AVENUE)	04/30/97	18.0	135	1	6	10	MIXED FINANCE	KRAUS MGT. (BRONX)
HIGHBRIDGE REHABS (NELSON AVENUE)	10/31/96	18.5	80	0	1	0	MIXED FINANCE	KRAUS MGT. (BRONX)
HOE AVENUE-EAST 173RD STREET	12/31/70	44.4	65	1	5	0	MIXED FINANCE	BUILDING MANAGEMENT ASSOCIATES
HOLMES TOWERS	04/30/69	46.0	537	220	10	0	MANHATTAN	ISAACS CONS.
HOPE GARDENS	08/31/81	33.7	324	119	18	4	BROOKLYN	HOPE GARDENS CONS.
HOWARD	12/30/55	59.4	815	343	35	49	BROOKLYN	HOWARD
HOWARD AVENUE	08/01/88	26.8	150	57	28	1	BROOKLYN	PARK ROCK CONS.
HOWARD AVENUE-PARK PLACE	08/31/94	20.7	156	81	18	2	BROOKLYN	PARK ROCK CONS.
HUGHES APARTMENTS	06/30/68	46.9	513	188	17	5	BROOKLYN	HUGHES APARTMENTS CONS.
HUNTS POINT AVENUE REHAB	11/30/91	23.4	131	12	3	3	MIXED FINANCE	BUILDING MANAGEMENT ASSOCIATES (BRONX)
HYLAN	06/30/60	54.9	209	42	3	0	MIXED FINANCE	BUSHWICK CONSOLIDATED
INDEPENDENCE	10/31/65	49.5	744	330	23	0	MIXED FINANCE	TAYLOR STREET - WYTHE AVE. CONS. (BROOKLYN)
INGERSOLL	02/24/44	71.2	1,840	569	51	31	BROOKLYN	INGERSOLL
INTERNATIONAL TOWER	05/31/83	31.9	159	18	2	0	QUEENS/STATEN ISLAND	BAISLEY PARK CONS.
ISAACS	07/31/65	49.8	636	276	12	3	MANHATTAN	ISAACS CONS.
JACKSON	07/31/63	51.8	868	241	21	12	BRONX	MORRISIANA AIR RIGHTS CONS.
JEFFERSON	08/28/59	55.7	1,493	250	47	10	MANHATTAN	JEFFERSON CONS.
JOHNSON	12/27/48	66.4	1,310	172	31	3	MANHATTAN	JOHNSON
JUSTICE SONIA SOTOMAYOR HOUSES	02/28/55	60.2	1,497	399	74	5	BRONX	SONIA SOTOMAYOR CONS.
KING TOWERS	11/01/54	60.5	1,379	482	15	6	MIXED FINANCE	KING TOWERS CONS.
KINGSBOROUGH	10/31/41	73.5	1,165	379	71	47	BROOKLYN	KINGSBOROUGH CONS.
KINGSBOROUGH EXTENSION	05/31/66	48.9	184	26	5	6	BROOKLYN	KINGSBOROUGH CONS.
LA GUARDIA	08/08/57	57.8	1,094	214	15	7	MANHATTAN	LA GUARDIA CONS.
LA GUARDIA ADDITION	08/31/65	49.7	150	11	2	1	MANHATTAN	LA GUARDIA CONS.
LAFAYETTE	07/31/62	52.8	882	189	27	7	BROOKLYN	LAFAYETTE CONS.
LATIMER GARDENS	09/30/70	44.6	423	100	7	0	QUEENS/STATEN ISLAND	LATIMER GARDENS CONS.

Location Name	Development Completion Date	Age of Development in Years, as of 04/30/15	Total # of Units	Number of Non-Current Work Orders	Number of Outstanding DOB Violations	Number of Outstanding Environmental Control Board Violations	Property Management Department	Managed by
LAVANBURG HOMES	10/31/84	30.5	104	0	3	0		PER DATA BOOK OPERATED BY HENRY STREET SETTLEMENT. HOWEVER, PER LICENSE AGREEMENT BETWEEN NYCHA AND HENRY STREET SETTLEMENT (HSS), HSS PROVIDES ONLY CLIENT SERVICES AND IS NOT RESPONSIBLE FOR BUILDING MANAGEMENT.
LEAVITT STREET-34TH AVENUE	10/31/74	40.5	83	10	5	3	QUEENS/STATEN ISLAND	LATIMER GARDENS CONS.
LEHMAN	11/30/63	51.4	622	216	12	17	MANHATTAN	LEHMAN VILLAGE
LENOX ROAD-ROCKAWAY PARKWAY	09/01/85	29.7	74	55	1	1	BROOKLYN	REID CONS.
LEXINGTON	03/16/51	64.2	448	189	7	0	MIXED FINANCE	WASHINGTON (MANHATTAN)
LINCOLN	12/29/48	66.4	1,286	530	25	23	MANHATTAN	LINCOLN
LINDEN	07/17/58	56.8	1,586	332	94	0	MIXED FINANCE	LINDEN
LONG ISLAND BAPTIST HOUSES	06/30/81	33.9	232	109	7	2	BROOKLYN	UNITY PLAZA CONS.
LONGFELLOW AVENUE REHAB	10/31/90	24.5	75	0	0	0	MIXED FINANCE	BUILDING MANAGEMENT ASSOCIATES (BRONX)
LOW HOUSES	12/31/67	47.4	536	167	16	3	BROOKLYN	LOW HOUSES CONS.
LOWER EAST SIDE I INFILL	06/01/88	26.9	189	67	6	4	MANHATTAN	GOMPERS CONS.
LOWER EAST SIDE II	11/01/88	26.5	188	67	6	0	MANHATTAN	LES CONS.
LOWER EAST SIDE III	04/30/97	18.0	56	1	18	0	MIXED FINANCE	KRAUS MGT. (MANHATTAN)
LOWER EAST SIDE REHAB (GROUP 5)	12/01/86	28.4	55	27	8	0	MANHATTAN	LES CONS.
MANHATTANVILLE	06/30/61	53.9	1,272	437	4	14	MIXED FINANCE	MANHATTANVILLE CONS. (MANHATTAN)
MANHATTANVILLE REHAB (GROUP 2)	11/01/88	26.5	46	20	5	0	MIXED FINANCE	MANHATTANVILLE CONS. (MANHATTAN)
MANHATTANVILLE REHAB (GROUP 3)	09/30/83	31.6	51	24	5	4	MIXED FINANCE	MANHATTANVILLE CONS. (MANHATTAN)
MARBLE HILL	03/06/52	40.5	1,682	401	24	1	MIXED FINANCE	MARBLE HILL
MARCY	01/19/49	66.3	1,717	408	96	2	BROOKLYN	MARCY
MARCY AVENUE-GREENE AVENUE SITE A	06/30/97	17.8	48	0	7	0	MIXED FINANCE	KRAUS MGT. (BROOKLYN)
MARCY AVENUE-GREENE AVENUE SITE B	06/30/97	17.8	30	0	12	0	MIXED FINANCE	KRAUS MGT. (BROOKLYN)
MARINER'S HARBOR	09/03/54	60.7	607	519	43	1	QUEENS/STATEN ISLAND	MARINER'S HARBOR
MARLBORO	02/27/58	57.2	1,765	309	33	0	MIXED FINANCE	MARLBORO
MARSHALL PLAZA	06/30/86	28.9	180	72	1	3	MANHATTAN	HARLEM RIVER CONS.
MCKINLEY	07/31/62	52.8	619	65	5	0	BRONX	FOREST CONS.
MELROSE	06/20/52	62.9	1,023	219	18	3	BRONX	MELROSE CONS.
MELTZER TOWER	08/31/71	43.7	231	60	1	0	MANHATTAN	GOMPERS CONS.
METRO NORTH PLAZA	08/31/71	43.7	275	168	41	10	MANHATTAN	EAST RIVER CONS.
MIDDLETOWN PLAZA	08/31/73	41.7	179	21	6	14	BRONX	EASTCHESTER GARDENS CONS.
MILBANK-FRAWLEY	10/01/88	26.6	80	68	3	14	MANHATTAN/MIXED FINANCE (OVERSIGHT)	TAFT CONS.
MILL BROOK	05/26/59	56.0	1,255	405	12	1	BRONX	MILL BROOK CONS.
MILL BROOK EXTENSION	01/31/62	53.3	125	45	1	0	BRONX	MILL BROOK CONS.
MITCHEL	02/28/66	49.2	1,732	384	11	0	BRONX	MITCHEL
MONROE	11/02/61	53.5	1,102	142	22	2	BRONX	MONROE
MOORE	03/31/64	51.1	463	80	7	2	MIXED FINANCE	ST. MARY'S PARK CONS. (BRONX)
MORRIS	08/31/65	49.7	1,085	228	8	0	BRONX	MORRIS
MORRIS II	08/31/65	49.7	802	153	6	1	BRONX	MORRIS CONS.
MORRIS PARK SENIOR CITIZENS HOME	04/30/77	38.0	97	22	1	3	MANHATTAN	ROBINSON CONS.
MORRISANIA	05/31/63	52.0	206	11	8	1	BRONX	WEBSTER CONS.
MORRISANIA AIR RIGHTS	01/01/81	34.3	843	141	16	6	BRONX	MORRISANIA AIR RIGHTS
MOTT HAVEN	03/31/65	50.1	993	137	6	20	BRONX	MOTT HAVEN
MURPHY	03/31/64	51.1	281	32	6	0	MIXED FINANCE	MURPHY CONS. (BRONX)
NEW LANE AREA	07/12/84	30.8	277	18	3	0	QUEENS/STATEN ISLAND	SOUTH BEACH CONS.
NOSTRAND	12/14/50	64.4	1,148	427	32	7	BROOKLYN	SHEEPSHEAD BAY CONS.

Location Name	Development Completion Date	Age of Development in Years, as of 04/30/15	Total # of Units	Number of Non-Current Work Orders	Number of Outstanding DOB Violations	Number of Outstanding Environmental Control Board Violations	Property Management Department	Managed by
OCEAN BAY APARTMENTS (BAYSIDE)	09/25/61	53.6	1,395	457	48	23	QUEENS/STATEN ISLAND	OCEAN BAY APTS. CONS.
OCEAN BAY APARTMENTS (OCEANSIDE)	02/28/51	64.2	418	156	28	9	QUEENS/STATEN ISLAND	OCEAN BAY APTS. CONS.
OCEAN HILL APARTMENTS	03/31/68	47.1	238	81	7	4	BROOKLYN	OCEAN HILL CONS.
OCEAN HILL-BROWNSVILLE	11/10/86	28.5	125	80	1	1	BROOKLYN	PARK ROCK CONS.
O'DWYER GARDENS	12/31/69	45.4	573	69	12	4	BROOKLYN	O'DWYER GARDENS CONS.
PALMETTO GARDENS	03/31/77	38.1	115	42	5	0	BROOKLYN	HOPE GARDENS CONS.
PARK AVENUE-EAST 122ND (123RD STREET)	03/31/70	45.1	90	35	8	4	MANHATTAN	ROBINSON CONS.
PARK ROCK REHAB	09/01/86	28.7	134	78	14	3	BROOKLYN	PARK ROCK CONS.
PARKSIDE	06/12/51	63.9	879	143	45	8	BRONX	PARKSIDE CONS.
PATTERSON	12/31/50	64.4	1,791	349	20	3	BRONX	PATTERSON
PELHAM PARKWAY	06/30/50	64.9	1,266	120	23	1	BRONX	PELHAM PARKWAY CONS.
PENNSYLVANIA AVENUE-WORTMAN AVENUE	09/30/72	42.6	336	76	2	6	BROOKLYN	PENN-WORTMAN CONS. CONS.
PINK	09/30/59	55.6	1,500	582	92	1	BROOKLYN	PINK
POLO GROUNDS TOWERS	06/30/68	46.9	1,614	578	2	28	MANHATTAN	POLO GROUNDS TOWERS
POMONOK	06/30/52	62.9	2,071	504	66	27	QUEENS/STATEN ISLAND	POMONOK
PUBLIC SCHOOL 139 (CONVERSION)	10/08/86	28.6	125	33	0	0	MIXED FINANCE	DREW-HAMILTON CONS. (MANHATTAN)
QUEENSBRIDGE NORTH	03/15/40	75.2	1,543	641	40	8	QUEENS/STATEN ISLAND	QUEENSBRIDGE NORTH
QUEENSBRIDGE SOUTH	03/15/40	75.2	1,604	539	55	6	QUEENS/STATEN ISLAND	QUEENSBRIDGE SOUTH
RALPH AVENUE REHAB	12/23/86	28.4	118	120	0	0	BROOKLYN	REID CONS.
RANDALL AVENUE-BALCOM AVENUE	10/31/78	36.5	252	45	0	0	BRONX	THROGGS NECK CONS.
RANDOLPH	04/30/77	38.0	151	47	1	2	MIXED FINANCE	KING TOWERS (MANHATTAN)
RANGEL	10/08/51	63.6	984	193	10	4	MANHATTAN	RANGEL
RAVENSWOOD	07/19/51	63.8	2,166	679	140	11	QUEENS/STATEN ISLAND	RAVENSWOOD
RED HOOK EAST	Unavailable		1,411	439	62	49	BROOKLYN	RED HOOK EAST
RED HOOK WEST	Unavailable		1,480	432	27	25	BROOKLYN	RED HOOK WEST
REDFERN	08/28/59	55.7	604	457	45	2	QUEENS/STATEN ISLAND	REDFERN
REHAB PROGRAM (COLLEGE POINT)	01/31/64	51.3	13	1	0	0	QUEENS/STATEN ISLAND	LATIMER GARDENS. FOUR DEVELOPMENTS IN REHAB PROGRAM ARE COUNTED AS ONE DEVELOPMENT.
REHAB PROGRAM (DOUGLASS REHABS)	01/31/64	51.3	112	3	24	2	MIXED FINANCE	KRAUS MGT. (MANHATTAN).FOUR DEVELOPMENTS IN REHAB PROGRAM ARE COUNTED AS ONE DEVELOPMENT.
REHAB PROGRAM (TAFT REHABS)	01/31/64	51.3	156	0	16	2	MIXED FINANCE	KRAUS MGT. MANHATTAN. FOUR DEVELOPMENTS IN REHAB PROGRAM ARE COUNTED AS ONE DEVELOPMENT.
REHAB PROGRAM (WISE REHAB)	01/31/64	51.3	40	16	0	0	MIXED FINANCE	WISE TOWERS CONS. FOUR DEVELOPMENTS IN REHAB PROGRAM ARE COUNTED AS ONE DEVELOPMENT.
REID APARTMENTS	11/30/69	45.4	230	71	10	1	BROOKLYN	REID APARTMENTS CONS.
RICHMOND TERRACE	04/30/64	51.0	489	143	16	0	QUEENS/STATEN ISLAND	RICHMOND TERRACE CONS.
RIIS	01/17/49	66.3	1,191	487	23	8	MANHATTAN	RIIS
RIIS II	01/31/49	66.3	578	231	11	1	MANHATTAN	RIIS
ROBBINS PLAZA	02/28/75	40.2	150	78	3	0	MANHATTAN	ISAACS CONS.
ROBINSON	05/31/73	41.9	189	77	54	7	MANHATTAN	ROBINSON CONS.
ROOSEVELT I	09/30/64	50.6	763	329	46	46	BROOKLYN	ROOSEVELT CONS.
ROOSEVELT II	12/31/66	48.4	342	100	12	0	BROOKLYN	ROOSEVELT CONS.

APPENDIX I
Page 7 of 8

Location Name	Development Completion Date	Age of Development in Years, as of 04/30/15	Total # of Units	Number of Non-Current Work Orders	Number of Outstanding DOB Violations	Number of Outstanding Environmental Control Board Violations	Property Management Department	Managed by
RUTGERS	03/31/65	50.1	721	91	6	1	MIXED FINANCE	RUTGERS (MANHATTAN)
RUTLAND TOWERS	05/17/77	38.0	61	48	5	3	BROOKLYN	REID CONS.
SACKWERN	05/12/77	38.0	413	126	28	10	BRONX	SACK WERN CONS.
SAINT NICHOLAS	09/30/54	60.6	1,526	537	42	25	MIXED FINANCE	TAFT CONS.
SAMUEL (CITY)	08/31/94	20.7	664	237	149	15	MIXED FINANCE	SAMUEL (MANHATTAN)
SAMUEL (MHOP) I	01/31/94	21.3	53	0	4	0	MIXED FINANCE	KRAUS MANAGEMENT (MANHATTAN)
SAMUEL (MHOP) II	07/31/93	21.8	10	0	0	0	MIXED FINANCE	KRAUS MANAGEMENT
SAMUEL (MHOP) III	06/30/95	19.8	10	0	3	0	MIXED FINANCE	KRAUS MANAGEMENT
SARATOGA SQUARE	11/30/80	34.4	251	61	6	5	BROOKLYN	OCEAN HILL APTS. CONS.
SARATOGA VILLAGE	12/31/66	48.4	125	58	0	0	BROOKLYN	OCEAN HILL APTS. CONS.
SEDGWICK	03/23/51	64.1	786	116	14	0	BRONX	SEDGWICK CONS.
SEWARD PARK EXTENSION	10/31/73	41.5	360	121	10	6	MANHATTAN	GOMPERS CONS.
SHEEPSHEAD BAY	08/08/50	64.8	1,056	414	84	12	BROOKLYN	SHEEPSHEAD BAY CONS.
SHELTON HOUSE	10/31/78	36.5	155	33	2	6	QUEENS/STATEN ISLAND	BAISLEY PARK CONS.
SMITH	04/27/53	62.0	1,935	468	26	7	MANHATTAN	SMITH
SOUNDVIEW	10/29/54	60.5	1,259	106	27	4	BRONX	SOUNDVIEW
SOUTH BEACH	03/20/50	65.2	422	82	22	3	QUEENS/STATEN ISLAND	SOUTH BEACH CONS.
SOUTH BRONX AREA (SITE 402)	05/01/88	27.0	114	31	1	0	BRONX	UNION AVE. CONS.
SOUTH JAMAICA I	08/01/40	74.8	448	451	0	0	QUEENS/STATEN ISLAND	SOUTH JAMAICA I CONS.
SOUTH JAMAICA II	10/25/54	60.6	600	604	37	9	QUEENS/STATEN ISLAND	SOUTH JAMAICA I CONS.
ST. MARY'S PARK	04/30/59	56.0	1,007	111	9	0	MIXED FINANCE	ST. MARY'S PARK CONS.
STANTON STREET	12/01/03	11.4	13	0	0	1	MIXED FINANCE	KRAUS MANAGEMENT (MANHATTAN)
STAPLETON	05/31/62	53.0	693	102	7	2	MIXED FINANCE	STAPLETON (SI)
STEBBINS AVENUE-HEWITT PLACE	04/17/87	28.1	120	16	21	0	BRONX	UNION AVE. CONS.
STERLING PLACE REHABS (SAINT JOHNS-STERLING)	05/11/91	24.0	83	56	0	0	BROOKLYN	PARK ROCK CONS.
STERLING PLACE REHABS (STERLING-BUFFALO)	05/11/91	24.0	125	105	0	3	BROOKLYN	PARK ROCK CONS.
STRAUS	01/31/65	50.3	267	48	6	1	MIXED FINANCE	STRAUS CONS. (MANHATTAN)
STUYVESANT GARDENS I	08/31/72	42.7	331	161	6	1	BROOKLYN	STUYVESANT GARDENS CONS.
STUYVESANT GARDENS II	02/28/86	29.2	150	38	6	0	BROOKLYN	STUYVESANT GARDENS CONS.
SUMNER	05/14/58	57.0	1,099	287	54	15	BROOKLYN	SUMNER CONS.
SURFSIDE GARDENS	06/30/69	45.9	600	247	22	9	BROOKLYN	SURFSIDE GARDENS CONS.
SUTTER AVENUE-UNION STREET	08/31/95	19.7	100	35	6	3	BROOKLYN	REID CONS.
TAFT	12/31/62	52.4	1,470	626	40	5	MANHATTAN	TAFT CONS.
TAPSCOTT STREET REHAB	01/24/86	29.3	155	145	0	2	BROOKLYN	REID CONS.
TAYLOR STREET-WYTHE AVENUE	06/30/74	40.9	525	116	25	14	MIXED FINANCE	TAYLOR STREET - WYTHE AVE. CONS.
TELLER AVENUE-EAST 166TH STREET	09/30/71	43.6	90	12	2	3	BRONX	CLAREMONT CONSOLIDATED
THOMAS APARTMENTS	08/31/94	20.7	87	9	0	0	MIXED FINANCE	WISE TOWERS CONS. (MANHATTAN)
THROGGS NECK	11/27/53	61.5	1,185	310	21	1	BRONX	THROGGS NECK CONS.
THROGGS NECK ADDITION	09/30/71	43.6	287	46	9	0	BRONX	THROGGS NECK CONS.
TILDEN	06/30/61	53.9	998	487	21	0	BROOKLYN	HOWARD
TODT HILL	06/01/50	65.0	502	123	14	0	QUEENS/STATEN ISLAND	BERRY CONS.
TOMPKINS	07/31/64	50.8	1,046	565	46	13	BROOKLYN	TOMPKINS CONS.
TWIN PARKS EAST (SITE 9)	04/30/82	33.0	219	49	0	1	BRONX	TWIN PARKS CONS.
TWIN PARKS WEST (SITES 1 & 2)	09/30/74	40.6	312	127	0	0	BRONX	TWIN PARKS CONS.
TWO BRIDGES URA (SITE 7)	04/30/75	40.0	250	50	0	1	MANHATTAN	LA GUARDIA CONS.
UNION AVENUE-EAST 163RD STREET	03/11/85	30.2	200	17	0	0	BRONX	UNITY AVENUE CONS.
UNION AVENUE-EAST 166TH STREET	09/01/88	26.7	120	27	2	0	BRONX	UNION AVE. CONS.
UNITY PLAZA (SITES 17,24,25A)2	11/30/73	41.4	167	67	4	4	BROOKLYN	UNITY PLAZA CONS.
UNITY PLAZA (SITES 4-27)	09/30/73	41.6	462	282	2	1	BROOKLYN	UNITY PLAZA CONS.

Location Name	Development Completion Date	Age of Development in Years, as of 04/30/15	Total # of Units	Number of Non-Current Work Orders	Number of Outstanding DOB Violations	Number of Outstanding Environmental Control Board Violations	Property Management Department	Managed by
UNIVERSITY AVENUE REHAB	01/31/85	30.3	230	0	4	3	MIXED FINANCE	KRAUS MGT. (BRONX)
UPACA (SITE 5)	07/03/86	28.8	200	52	0	2	MANHATTAN	ROBINSON CONS.
UPACA (SITE 6)	01/30/87	28.3	150	36	5	0	MANHATTAN	ROBINSON CONS.
VAN DYKE I	05/27/55	60.0	1,603	533	37	22	BROOKLYN	VAN DYKE I
VAN DYKE II	04/30/64	51.0	112	30	1	2	BROOKLYN	HUGHES APARTMENTS CONS. (BROOKLYN)
VANDALIA AVENUE	05/31/83	31.9	293	31	7	4	BROOKLYN	PENN-WORTMAN CONS.
VLADECK	11/25/40	74.5	1,531	294	32	2	MANHATTAN	VLADECK CONS.
VLADECK II	10/25/40	74.6	240	41	9	0	MANHATTAN	VLADECK CONS.
WAGNER	06/12/58	56.9	2,162	2306	29	10	MANHATTAN	WAGNER
WALD	10/14/49	65.6	1,861	330	8	0	MANHATTAN	WALD
WASHINGTON	09/20/57	57.6	1,515	510	43	6	MIXED FINANCE	WASHINGTON (MANHATTAN)
WASHINGTON HEIGHTS REHAB (GROUPS 1&2)	05/01/88	27.0	216	176	6	16	MANHATTAN	FORT WASHINGTON CONS.
WASHINGTON HEIGHTS REHAB PHASE III	11/30/87	27.4	102	100	5	3	MANHATTAN	MANAGED BY FORT WASHINGTON AND HARLEM RIVER
WASHINGTON HEIGHTS REHAB PHASE IV (C)	10/01/90	24.6	32	34	0	0	MANHATTAN	FORT WASHINGTON CONS.
WASHINGTON HEIGHTS REHAB PHASE IV (D)	07/01/90	24.8	32	50	1	0	MANHATTAN	FORT WASHINGTON CONS.
WEBSTER	09/30/65	49.6	606	55	9	4	BRONX	WEBSTER CONS.
WEEKSVILLE GARDENS	04/30/74	41.0	257	155	27	0	BROOKLYN	ALBANY CONSOLIDATION
WEST BRIGHTON I	12/31/62	52.4	490	285	25	0	QUEENS/STATEN ISLAND	WEST BRIGHTON CONS.
WEST BRIGHTON II	12/31/65	49.4	144	23	0	0	QUEENS/STATEN ISLAND	WEST BRIGHTON CONS.
WEST FARMS ROAD REHAB	08/13/86	28.7	208	18	4	0	MIXED FINANCE	BUILDING MANAGEMENT ASSOCIATES
WEST FARMS SQUARE CONVENTIONAL	06/30/94	20.8	20	0	0	0	MIXED FINANCE	BUILDING MANAGEMENT ASSOCIATES (BRONX)
WEST TREMONT AVENUE-SEDGWICK AVENUE AREA	07/31/73	41.8	148	28	7	4	BRONX	SEDGWICK CONS.
WHITE	09/30/64	50.6	248	82	2	0	MANHATTAN	EAST RIVER CONS.
WHITMAN	02/24/44	71.2	1,659	386	51	41	BROOKLYN	WHITMAN
WILLIAMS PLAZA	04/30/64	51.0	577	88	17	0	MIXED FINANCE	WILLIAMS PLAZA (BROOKLYN)
WILLIAMSBURG	04/10/38	77.1	1,630	251	44	0	BROOKLYN	WILLIAMSBURG
WILSON	06/30/61	53.9	398	314	5	6	MANHATTAN	EAST RIVER CONS.
WISE TOWERS	01/31/65	50.3	399	176	4	0	MIXED FINANCE	WISE TOWERS CONS.
WOODSIDE	12/30/49	65.4	1,357	213	55	17	QUEENS/STATEN ISLAND	WOODSIDE
WOODSON	08/31/70	44.7	407	92	9	0	BROOKLYN	HUGHES APTS.
WSUR (BROWNSTONES)	06/30/68	46.9	236	169	0	1	MIXED FINANCE	WISE TOWERS CONS.
WSUR (SITE A) 120 WEST 94TH STREET	09/30/65	49.6	70	26	0	0	MIXED FINANCE	WISE TOWERS CONS. (MANHATTAN)
WSUR (SITE B) 74 WEST 92ND STREET	09/30/65	49.6	168	76	1	1	MIXED FINANCE	WISE TOWERS CONS.
WSUR (SITE C) 589 AMSTERDAM AVENUE	09/30/65	49.6	158	57	1	0	MIXED FINANCE	WISE TOWERS CONS. (MANHATTAN)
WYCKOFF GARDENS	12/31/66	48.4	529	206	13	8	BROOKLYN	WYCKOFF GARDENS CONS.
Other Locations								
LONG ISLAND CITY WAREHOUSE				0	7	2		
POLICE SERVICE AREAS				6	32	13		
TOTAL			179,270	54,847	5,346	1,472		

Note: Environmental Control Board is an administrative tribunal court that is not part of the state court system, but hears cases on potential violations of the laws that protect the City's quality of life.

APPENDIX B

Time Frames for Completion of Violations					
Department	Failure Classes	Violation Type	Issuing Agency Compliance Time	NYCHA Compliance Time	NYCHA Abatement Time
DOH	DOH	WINDOWGUARDINTERVIEW (Window Guard/Interview)	5 Days	1 Day	N/A
		COMMISORDERABATELEAD (Commissioners Order to Abate Lead)	5 Days	5 Days	N/A
		COMMISORDERREMEDIATELEAD (Commissioners Order to Remediate Lead)	21 Days	21 Days	N/A
		MOLD (Mold)	Compliance time not indicated	3 Days	N/A
		HYGENE (Hygiene)	Compliance time not indicated	30 Days	N/A
		VERMINWEEDRODENT (Vermin & Weed Control & Rodent)	5-10 Days	10 Days	N/A
		HEALTHSAVETYREPAIRS (Health & Safety Repairs (includes DOH/ACS/DFTA Inspections))	1-30 Days	30 Days	N/A
DOL	DOL	WILLFUL (Willful)	Immediate	1 Day	N/A
		SERIOUS (Serious)	30-60 Days	60 Days	N/A
		NONSERIOUS (Non Serious)	90 Days	90 Days	N/A

APPENDIX B

Time Frames for Completion of Violations					
Department	Failure Classes	Violation Type	Issuing Agency Compliance Time	NYCHA Compliance Time	NYCHA Abatement Time
FDNY	FDNY VO (Violation Order)	FIREMANSERVICE (Fireman Service)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		FIREALARM (Fire Alarm)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		FIRESUPPRESSION (Fire Suppression)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		STANDIPESPRINKLER (Standpipe/Sprinkler)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		CERTIFICATEOFFITNESS (Certificate of Fitness)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		DIAGRAMSSIGNS (Diagrams/Signs)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		SELF CLOSING DOOR (Self Closing Door)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		STAIRWAYREPAIR (Stairway Repair)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		EGRESS (Egress)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		VISIONPANEL (Vision Panel)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		SEALOILTANK (Seal Oil Tank)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		PUBLICASSEMBLY (Public Assembly)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
		(APPROVEDFIRESAFETYPLAN(Approved Fire Safety Plan)	At the discretion of the Inspector	At the discretion of the Inspector	N/A
ROOFTANK (Roof Tank)	At the discretion of the Inspector	At the discretion of the Inspector	N/A		

Appendix B
Page 2
Index No. 158:03:1
Revised 5/28/12

APPENDIX B

Time Frames for Completion of Violations					
Department	Failure Classes	Violation Type	Issuing Agency Compliance Time	NYCHA Compliance Time	NYCHA Abatement Time
FDNY	FDNY NOV (Notice of Violation)	FIREMANSERVICE (Fireman Service)	35 Days	35 Days	N/A
		FIREALARM (Fire Alarm)	35 Days	35 Days	N/A
		FIRESUPPRESSION (Fire Suppression)	35 Days	35 Days	N/A
		STANDIPESPRINKLER (Standpipe/Sprinkler)	35 Days	35 Days	N/A
		CERTIFICATEOFFITNESS (Certificate of Fitness)	35 Days	35 Days	N/A
		DIAGRAMSSIGNS (Diagrams/Signs)	35 Days	35 Days	N/A
		SELF CLOSING DOOR (Self Closing Door)	35 Days	35 Days	N/A
		STAIRWAYREPAIR (Stairway Repair)	35 Days	35 Days	N/A
		EGRESS (Egress)	35 Days	35 Days	N/A
		VISIONPANEL (Vision Panel)	35 Days	35 Days	N/A
		SEALOILTANK (Seal Oil Tank)	35 Days	35 Days	N/A
		PUBLICASSEMBLY (Public Assembly)	35 Days	35 Days	N/A
		(APPROVEDFIRESAFETYPLAN(Approved Fire Safety Plan)	35 Days	35 Days	N/A
ROOFTANK (Roof Tank)	35 Days	35 Days	N/A		
HPD	HPD	CLSSANONHAZARD (Class A - Non Hazardous)	90 Days	90 Days	N/A
		CLASSBHAZARD (Class B - Hazardous)	30 Days	30 Days	N/A
		CLASSCHAZARD (Class C - Hazardous)	Immediate	1 Day	N/A

APPENDIX B

Time Frames for Completion of Violations					
Department	Failure Classes	Violation Type	Issuing Agency Compliance Time	NYCHA Compliance Time	NYCHA Abatement Time
DEC	DEC	STATEDECVI (All violations received from state DEC)	2 Weeks after receiving the violation to appear in front of the board and state your case. After you appear in front of the board you will have 30 days to pay the fine associated with the violation.	DEC recommendation or Law Department recommendation	N/A
DEP	DEP	CERTOPBTU (Certificate of Operation (>2.8MMBTU))	60 Days	60 Days	N/A
		CERTREGBTU (Certificate of Registration (350MBTU-2.8MMBTU))	60 Days	60 Days	N/A
		ECB (ECB)	5 Days before court date	5 Days	N/A
DSNY	DSNY	RUBBISH (Rubbish)	Not Indicated	1 Day	N/A
NYCHA - CPD	NYCHACPD	AC (Air Conditioners)	N/A	1 Day	N/A
DOB	DOBECBCLASS1	BOILER	Immediate	1 Day	N/A
		CONSTRUCTION	Immediate	90 Days	1d
		CRANESANDDERRICKS	Immediate	90 Days	1d
		ELEVATOR	Immediate	1 Day	N/A
		LOCALLAW	Immediate	450 Days	1d
		QUALITYOFLIFE	Immediate	1 Day	N/A
		SITESAFETY	Immediate	90 Days	1d
		SIDEWALKSHED	Immediate	90Days	1d

APPENDIX B

Time Frames for Completion of Violations					
Department	Failure Classes	Violation Type	Issuing Agency Compliance Time	NYCHA Compliance Time	NYCHA Abatement Time
DOB	DOBECBCLASS2	BOILER	40 Days	40 Days	N/A
		CONSTRUCTION	40 Days	40 Days	N/A
		CRANESANDDERRICKS	40 Days	40 Days	N/A
		ELEVATOR	40 Days	40 Days	N/A
		LOCALLAW	40 Days	40 Days	N/A
		QUALITYOFLIFE	40 Days	40 Days	N/A
		SITESAFETY	40 Days	40 Days	N/A
		SIDEWALKSHED	40 Days	40 Days	N/A
DOB	DOBECBCLASS3	BOILER	40 Days	40 Days	N/A
		CONSTRUCTION	40 Days	40 Days	N/A
		CRANESANDDERRICKS	40 Days	40 Days	N/A
		ELEVATOR	40 Days	40 Days	N/A
		LOCALLAW	40 Days	40 Days	N/A
		QUALITYOFLIFE	40 Days	40 Days	N/A
		SITESAFETY	40 Days	40 Days	N/A
		SIDEWALKSHED	40 Days	40 Days	N/A
DOB	DOBECBNONPOPCLASS1	BOILER	Immediate	1 Day	N/A
		CONSTRUCTION	Immediate	1 Day	N/A
		CRANESANDDERRICKS	Immediate	1 Day	N/A
		ELEVATOR	Immediate	1 Day	N/A
		LOCALLAW	Immediate	1 Day	N/A
		PLUMBING	Immediate	1 Day	N/A
		PUBLICASSEMBLY	Immediate	1 Day	N/A
		QUALITYOFLIFE	Immediate	1 Day	N/A
		SIGNS	Immediate	1 Day	N/A
		SITESAFETY	Immediate	1 Day	N/A
SIDEWALKSHED	Immediate	1 Day	N/A		

APPENDIX B

Time Frames for Completion of Violations					
Department	Failure Classes	Violation Type	Issuing Agency Compliance Time	NYCHA Compliance Time	NYCHA Abatement Time
DOB	DOBECBNONPOPCLASS2	BOILER	40 Days	40 Days	N/A
		CONSTRUCTION	40 Days	40 Days	N/A
		CRANESANDDERRICKS	40 Days	40 Days	N/A
		ELEVATOR	40 Days	40 Days	N/A
		LOCALLAW	40 Days	40 Days	N/A
		PLUMBING	40 Days	40 Days	N/A
		PUBLICASSEMBLY	40 Days	40 Days	N/A
		QUALITYOFLIFE	40 Days	40 Days	N/A
		SIGNS	40 Days	40 Days	N/A
		SITESAFETY	40 Days	40 Days	N/A
		SIDEWALKSHED	40 Days	40 Days	N/A
DOB	DOBECBNONPOPCLASS3	BOILER	40 Days	40 Days	N/A
		CONSTRUCTION	40 Days	40 Days	N/A
		CRANESANDDERRICKS	40 Days	40 Days	N/A
		ELEVATOR	40 Days	40 Days	N/A
		LOCALLAW	40 Days	40 Days	N/A
		PLUMBING	40 Days	40 Days	N/A
		PUBLICASSEMBLY	40 Days	40 Days	N/A
		QUALITYOFLIFE	40 Days	40 Days	N/A
		SIGNS	40 Days	40 Days	N/A
		SITESAFETY	40 Days	40 Days	N/A
		SIDEWALKSHED	40 Days	40 Days	N/A

Appendix B
Page 6
Index No. 158:03:1
Revised 5/28/12

APPENDIX B

Time Frames for Completion of Violations					
Department	Failure Classes	Violation Type	Issuing Agency Compliance Time	NYCHA Compliance Time	NYCHA Abatement Time
DOB	DOB	BOILER	No compliance	1 year from issue	N/A
		CONSTRUCTION	No compliance	1 year from issue	N/A
		LL11	No compliance	1 year from issue	N/A
		ELEVATOR	No compliance	1 year from issue	N/A
		FIRESAFETY	No compliance	1 year from issue	N/A
		LANDMARK	No compliance	1 year from issue	N/A
		MISCELLANEOUS	No compliance	1 year from issue	N/A
		PLUMBING	No compliance	1 year from issue	N/A
		PUBLICASSEMBLY	No compliance	1 year from issue	N/A
		SIGNS	No compliance	1 year from issue	N/A
		UNSAFE BUILDING	No compliance	1 year from issue	N/A
		SIDEWALKSHED	No compliance	1 year from issue	N/A



NEW YORK CITY HOUSING AUTHORITY

250 BROADWAY • NEW YORK, NY 10007

TEL: (212) 306-3000 • <http://nyc.gov/nycha>

SHOLA OLATOYE
CHAIR & CHIEF EXECUTIVE OFFICER

July 1, 2015

Marjorie Landa
Deputy Comptroller for Audit
The City of New York
Office of the Comptroller
1 Centre Street
New York, NY 10007-2341

Re: Audit Report on the New York City Housing Authority's Maintenance and Repair Practices FK14-102A

Dear Ms. Landa:

We are writing in response to your audit report on New York City Housing Authority's (NYCHA) maintenance and repair practices. We, too, share many of the concerns you have raised and are committed to changing the way we do business to better fulfill our promise to provide safe and decent housing to the 400,000 New Yorkers that are NYCHA residents.

Billions in underfunding by all levels of government, outdated and inefficient management models, and rapidly deteriorating buildings have resulted in diminished quality of life for our residents. As funding has decreased, capital repairs and rehabilitations have been deferred resulting in the dramatic increase in the needs and costs for maintenance and repairs.

The status quo is not sustainable for NYCHA, our residents, or preserving the future of public housing in New York City. We must fundamentally change how we do business, which is why NYCHA recently released NextGeneration NYCHA—a 10-year strategic plan to change the way NYCHA is funded, operates and engages residents.

While it is clear that we can and must do better for our residents, NYCHA has made meaningful progress in improving our maintenance and repair practices and outcomes over the past 18 months. As a step in the right direction, NYCHA has reduced the number of open work orders and the average repair wait time by more than 50 percent since 2013. We know there is more work to be done.

Through immediate measures and long-term strategies in NextGeneration NYCHA, we plan to address many of the issues you raised with four principal goals:

1. Achieve short-term financial stability and diversify funding for the long term
2. **Operate as an efficient and effective landlord**
3. (Re)build, expand and preserve public and affordable housing stock
4. Engage residents and connect them to best-in-class social services

Improving maintenance and repairs is at the core of operating as an efficient and effective landlord. The NextGen plan includes key components to improve maintenance and repairs and customer service levels:

- **Performance Measures:** NYCHA plans to improve transparency around performance and metrics. The Authority has for too long focused on the number of work orders outstanding as the sole measure of its performance. NYCHA will reorient to measure its performance based on the total time to complete an entire repair. We are working to identify appropriate Key Performance Indicators (KPIs) to measure success. (*NextGeneration NYCHA*, page 10)
- **OPMOM:** NYCHA is piloting an Optimal Property Management Operating Model (OPMOM) to empower local property managers at several test developments to build their own budgets and determine staffing needs. NYCHA will ultimately assemble best practices from OPMOM and will begin to deliver them across the portfolio. We project a reduction in repair time for basic maintenance to a maximum of seven days at OPMOM developments. (*NextGeneration NYCHA*, page 9)
- **Enhancing Customer Service with Digital Applications:** NYCHA is launching an app, *MyNYCHA*, for residents to create, submit, view, schedule and update inspections and maintenance service requests 24 hours a day-7 days a week. (*NextGeneration NYCHA*, page 9)
- **Capital Repairs:** With a City investment of \$300M over the next three years in a roof replacement program, NYCHA will complete repairs at the worst roofs in the portfolio, addressing one of the primary causes of mold. NYCHA is targeting roof replacements at 66 buildings housing nearly 13,000 residents that have high numbers of maintenance repair requests such as leak repairs, painting and mold. (*NextGeneration NYCHA*, page 11)

Additional steps NYCHA is taking to improve repairs and accountability in alignment with NextGen:

- **Real-Time Dispatching:** In the past month, NYCHA Operations launched a pilot at one of our developments to test the tracking and reporting of repairs and work order performance completion in real-time. Improved work order data will lead to increased efficiency, more timely work order sequencing, decreased wait times and enhanced customer service.
- **One Call:** We are in the planning phases of implementing an initiative to schedule all necessary components of a repair project with one call. This pilot program, which will be tested at 5 developments, will allow operations to plan complex repairs with residents with “one call.” Currently, only one skilled trade work order may be opened at a time for a repair project.
- **Real-Time Repairs:** We are piloting a procedure, in which minor repairs can be performed during the course of an apartment inspection. Simple repairs, such as smoke detectors, window guards, and minor plumbing repairs can be addressed in real-time as apartments are inspected.
- **Inventory Accountability:** In partnership with the Comptroller’s office, we are working to overhaul our current inventory systems to better manage, distribute, and track the materials and supplies necessary to perform more timely repairs.
- **Training and Mentoring:** We are currently reviewing the training of our frontline Operations staff and identifying areas we can incorporate “hands on” training components to improve staff

competency. We are developing specialized training programs in areas of skilled trades where there are labor shortages, such as plastering and heating trades.

We have reviewed the 27 recommendations included in the audit, grouped them according to topic area and provided NYCHA's feedback and action plans. Please find our responses below:

Comptroller's Operations & Goal Recommendations

1. Implement operational changes to improve its ability to timely address Work Orders and in particular identify and implement detailed steps necessary and timeframes to implement the materials acquisition, planning, scheduling, and staffing required to meet NYCHA's goals for addressing resident requested and staff-initiated repairs.
2. Institute regular independent, oversight of Operations' progress in undertaking these steps and meeting NYCHA's repair goals.
13. Create a single Parent Work Order for requested repairs that relate to a same condition within an apartment.

NYCHA'S RESPONSE

We agree operational changes are needed to improve timeliness of maintenance and repairs. Through NextGen initiatives, such as OPMOM, we are testing a new decentralized property management structure that introduces greater accountability, which is intended to also improve customer service. Other NextGen strategies, such as the rollout of the MyNYCHA app, are intended to provide an enhanced customer experience with easier and more accessible scheduling of inspections and repairs.

In addition to NextGen, efforts such as Real-Time Dispatching, One-Call and Inventory Accountability are all aimed at streamlining and improving turnaround times and looking at maintenance work through a holistic approach.

Additionally, we agree oversight of our repair goals is directly linked to accountability. As we work to implement OPMOM under NextGen, we are developing quality assurance measures for work to be assessed independent from Operations.

We also agree work orders for multiple repairs associated with one project should be streamlined. We are in the planning phases of One-Call, which will enable operations to plan complex repairs with residents in "one call." At the time of the call, multiple work orders can be opened for the maintenance project instead of opening a skilled trade work order after a work order associated with a part of the repair is closed. This initiative intends to improve response times and customer satisfaction with a holistic approach to a repair project management.

Comptroller's Performance Recommendations

9. NYCHA should include all Work Orders, regardless of location and category, in the total number of open Work Orders reported on its website.
10. Establish and report on its website SLA days based on the amount of time it takes to fully complete repairs.
11. Stop including open Work Orders and administratively closed Work Orders in its calculation of average SLA days reported on its website.
12. Discretely report SLA days for emergency, simple, and more complex repairs on its website.

NYCHA’S RESPONSE

For far too long, the total number of open work orders has been the sole measure of NYCHA’s performance. Open work orders as a measurement often masks the amount of time it takes to actually complete repairs.

Through NextGen, NYCHA intends to refocus performance measures on the completion time for a total repair instead of individual work orders. We are working to identify appropriate Key Performance Indicators (KPIs) to measure success.

As a new model under NextGen, OPMOM is striving to increase accountability and transparency. NYCHA will communicate performance results by posting the OPMOM balanced scorecard publicly. The balanced scorecard will track metrics and performance at a property in key areas of operations, including maintenance and emergency work order Service Level Agreements, among other areas. With a localized property management model and use of the balanced scorecard, NYCHA will be better equipped to isolate each development’s metrics.

The image to the right is a sample OPMOM balanced scorecard included in the NextGen plan:

**OPMOM Metrics
Quarter One,
2015 Sample**

Pilot developments have progressed in the first three months

Rent Collection Rate (%) Metric Target: 95		
Jan	Feb	Mar
65.6	68.3	78.0

Apartment Turnaround (Days) Metric Target: 40		
Jan	Feb	Mar
89.8	66.9	59.8

Emergency Service Level (Hours) Metric Target: 24		
Jan	Feb	Mar
21.5	20.1	19.0

Comptroller Work Order Timeframe Recommendations

- Publicly report the actual time it takes to address emergency repairs and complete routine and complex repairs.
- NYCHA should ensure that the Violations Unit records the issuing agency and/or NYCHA-required compliance timeframes on Violation Work Orders.
- NYCHA should report the actual number of Work Orders open beyond prescribed timeframes on its website.

NYCHA’S RESPONSE

Accountability and transparency are at the center of NYCHA’s NextGen goals and strategies. With accountability and transparency at the forefront, we intend to move performance measures away from individual work order counts and refocus on timeframes to complete repairs.

As we learn lessons through the OPMOM pilot and make adjustments, we anticipate reducing service times for basic maintenance to seven days at those sites. As stated above, the balanced scorecard will track metrics and performance at a property in key areas of operations, including maintenance and emergency work order Service Level Agreements among other areas.

We recognize reorienting around Key Performance Indicators (KPIs) means an entire shift how NYCHA does business, but we are committed to public accountability and learning and improving from our numbers and metrics.

Comptroller’s Database Systems Recommendations

- NYCHA should ensure that data is recorded so that management can readily identify and review Violation Work Orders approaching and past due dates.
- NYCHA should record and track actual or targeted completion dates for Inspection and Preventive Maintenance Work Orders in Maximo.
- Ensure the integrity of Maximo data by accounting for all created Work Orders including but not limited to duplicate and unsaved Work Orders.
- Periodically review Maximo data to determine whether all Work Order numbers are properly accounted for in Maximo.

NYCHA'S RESPONSE

We thoroughly investigated the issues the Comptroller has raised on our work order database system, Maximo and after thorough examination there were no work orders lost or deleted from the asset management system. We have worked extensively with the vendor and the appropriate tech support to understand and troubleshoot the jumped work order number sequencing. The break in sequencing was found to be an anomaly, and as an isolated issue, has not reoccurred. We are regularly reviewing our systems to ensure the integrity of the data for accurate management of our work orders.

In addition to data integrity, NYCHA's operations team is reviewing priorities and coding to better manage work orders entered into the system as it relates to repair management. In the past few months, Operations and IT staff have reviewed thousands classifications of categories, failures and problem codes used in Maximo. We are currently working to develop a new list of codes to better manage and prioritize work orders entered into the system.

Comptroller's Resident Satisfaction Recommendations:

15. Immediately reinstate the GM Directive-3760 requirement to document Resident Satisfaction Survey results in Maximo.
16. Conduct outreach efforts to educate and inform residents of the opportunity to and importance of signing Work Orders and completing Resident Satisfaction Surveys. Outreach efforts should include but not be limited to: distributing flyers and/or sending direct mailings, automated calls to residents, and working with Resident Associations, the Citywide Council of Presidents, and the Resident Advisory Board.
17. Return to appropriate Operations staff and contractors Work Orders that lack a resident signature and Resident Satisfaction Survey results or documented resident refusals to sign.
18. Withhold payments from contractors for Work Orders that lack a resident signature and Resident Satisfaction Survey results or documented resident refusals to sign.
19. Terminate contractors that repeatedly fail to have residents sign Work Orders and complete Resident Satisfaction Surveys.
20. Ensure that Executive Management-including but not limited to the Chair, General Manager, the Operations Executive Vice President, Operations Vice Presidents, and Operations Directors-reviews Resident Satisfaction Survey data monthly and take appropriate follow-up and corrective action to ensure that work is performed and that residents are satisfied with the quality of work.

NYCHA'S RESPONSE

We must fundamentally change NYCHA's business model because ongoing operating shortfalls, unmet capital needs, years of disinvestment and resident dissatisfaction require meaningful change. Many NextGen strategies are geared towards enhancing the flow of communication to and from NYCHA and residents. We agree resident feedback is an important part of guiding NYCHA's core work as efficient and effective landlords.

Low response rates on resident surveys made them an ineffective tool in gauging honest feedback for repairs. We shifted to automated customer satisfaction calls as a more independent and effective way to collect valid resident feedback.

For too long, NYCHA has used outdated operating procedures and forms of resident engagement that netted low response rates and incomplete performance data. NYCHA is transforming to become a more modern, effective landlord by leveraging technology. As part of NextGen, NYCHA is currently testing beta versions of MyNYCHA, our first mobile app that will allow residents to create, view, schedule, and reschedule requests for maintenance service. Maintenance repairs submitted through the app are immediate catalogued to create work orders. To minimize missed appointments, the app

has a calendar feature to schedule repairs at the resident's convenience. As we upgrade and improve the capabilities of this technology, additional features such as resident satisfaction survey components could offer streamlined, real-time insight into customer satisfaction at higher response rates than previous surveys.

In addition to app capabilities, NYCHA is meeting our customers where they are: social media. We support NYCHA residents across multiple channels, such as Facebook and Twitter, where we are seeing higher levels of engagement and an emerging forum to field work order inquiries and resident satisfaction feedback.

We acknowledge technology is only one piece in improving the flow of communications with residents. The OPMOM strategy under NextGen is intended to create a new model that increases staff control and accountability and improves customer service and resident engagement. Property managers are revisiting their work methods and creating more frequent meetings with resident leaders.

Comptroller's Mold Recommendations

21. NYCHA should ensure that mold, mildew, and/or excessive moisture inspection and remediation Work Orders are assigned to appropriately trained staff.
22. Employ system edits to prevent Work Orders with missing data, including but not limited to Work Order Action Plan data and Resident Satisfaction Survey responses, from being closed in Maximo.
23. Periodically conduct quality assurance reviews for a sample of closed Work Orders to ensure that data is accurately and completely entered in Maximo, and take appropriate follow-up and corrective action.
24. Whenever possible, take photographs to document reported mold, mildew, and/or excessive moisture conditions found and attach them to the Work Order in Maximo.
25. Periodically run reports to assess how often Operations supervisors and staff take photographs to document reported mold, mildew, and/or excessive moisture conditions found and attach them to the Work Order in Maximo and take appropriate follow up and corrective action to ensure this practice is followed going forward.
26. NYCHA should reconcile and ensure the accuracy of sheetrock locations contained in Maximo and its final SP 040:14:1 dated June 3, 2015.
27. NYCHA should remove and discard porous materials, including but not limited to sheetrock, ceiling tiles, and insulation, for Level 11 and Level III Work Orders.

NYCHA'S RESPONSE

Stabilizing NYCHA's finances is critical to addressing the major quality of life issues impacting our residents, including mold, vermin, unreliable building systems, and delays for basic repairs. NextGen offers many long-term solutions, but in the near-term the City is investing \$300 million in capital support over the next 3 years for NYCHA to replace roofs on buildings with the highest amount of leaks, mold, and painting requests. By completing repairs to the worst roofs in the portfolio, NYCHA can address one of the primary causes of mold. In developments where roofs have been replaced, work tickets normally associated with mold abatement work have substantially decreased.

In addition to major capital repairs, NYCHA has systematically changed how we handle mold cases. We've placed greater emphasis on determining the root cause which leads to mold, instead of superficial repairs that don't address the underlying problem. In collaboration with by the New York City Department of Mental Health & Hygiene, we engaged environmental scientists from Rutgers University and Hunter College to help design new training programs.

NYCHA has trained 350 supervisors in mold remediation. Supervisors have trained staff in the field to improve staff competency on how to address the root cause (leaking roof/pipes, moisture build up in the bathroom, exc.) NYCHA created a new mold protocol that ensure supervisors inspect apartments to identify the root cause, so we can continuously work to address resident concerns as they are raised.

In response to our mold procedures, the mold recurrence rate, even as self-reported by residents was down to 27 percent in the first quarter of this year. While we've made progress, NYCHA is always looking to further improve our training, processes and procedures in many of the recommendations you provided.

Many of the issues raised in the audit are or will be addressed through the implementation of NextGeneration NYCHA. Urgent challenges persist, and NYCHA remains committed to addressing critical areas of focus, including inventory and supply chain management, work order and service time improvements, capital repairs and mold, and other everyday challenges.

We believe strategies outlined and aligned with NextGen will not simply fix what is broken, but will proactively improve and enhance the experience of living in the City's public housing. We share your resolve in changing how NYCHA does business and becoming the landlord our residents have long-deserved.

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael Kelly', with a long, sweeping tail extending to the right.

Michael Kelly
General Manager