

**Office of the
NYCHA FEDERAL MONITOR
Bart M. Schwartz
Pursuant to Agreement dated January 31, 2019
260 Madison Avenue, Third Floor
New York, New York 10016
347.809.5555
www.nychamonitor.com**

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Dear New Yorkers:



*Bart M. Schwartz, Federal
Monitor*

This Monitor Report focuses on two critical service areas within NYCHA with significant performance obligations under the HUD Agreement (Agreement) – the heating services and capital projects departments. While each department has different responsibilities, they are intricately related to each other. The heating department (Heating Management Services Department or HMSD) is responsible for the proper delivery of heating and hot water to residents. Its work takes place largely in building boiler and tank rooms, as well as in resident units when addressing heating deficiencies (a responsibility shared with development maintenance workers). HMSD’s primary function entails maintenance and repair of heating equipment, including the distribution systems within buildings that deliver the heat and hot water to each unit. To function effectively, HMSD staff must have the proper training and experience to keep the heating and related equipment operational. The proper management of its large staff of line workers (Heating Plant Technicians or HPTs) necessitates proper management by HMSD supervisors to ensure that the line workers follow HMSD standard procedures in their maintenance and repair work, and that they enter proper information regarding site conditions and work performed into Maximo, NYCHA’s work order data base.

NYCHA’s Capital Division (the Asset & Capital Management Division or A&CM, formerly known as the Capital Projects Division), is mainly responsible for providing NYCHA with the new equipment needed to deliver core services to residents (e.g., boilers, elevators, trash compactors), as well as maintaining and repairing development building infrastructure (e.g., roofs, exterior walls and foundations) and interior building systems such as water and waste lines within apartment walls. Some of these capital projects are managed by A&CM and others by private projects management companies hired by NYCHA. A&CM also regularly teams with private capital project consultants for

much of its work, especially the more complicated projects such as the Comprehensive Modernization program discussed in this report.

As with every part of NYCHA, HMSD and A&CM face challenges in properly delivering their services and in complying with certain of their Agreement obligations. In addition to outlining their latest performance metrics, this report describes some of the main constraints each department faces. The heating section of the report assesses HMSD's performance over the last year, which includes last summer's preventive maintenance program to prepare equipment for the coming heating season, and HMSD's performance during the heating season that concluded this past May. The capital projects section reports mainly on A&CM's progress in delivering its critical projects, particularly boiler and elevator replacements, and projects related to waste management. We also report on important developments in both departments over the past few months as each has been engaged in a comprehensive restructuring program, including updating their standard operating procedures and processes that, when fully implemented, should significantly improve their performance.

Heat Report

[Executive Summary](#)

During the past heating season (October 1, 2021 through May 31, 2022), the Monitor heat team evaluated HMSD's overall heating services performance and compliance with the heating obligations in the HUD Agreement. We analyzed heat-related data in NYCHA's work order data base Maximo, inspected numerous NYCHA boiler rooms and other heating assets, and conversed with NYCHA staff. This report highlights HMSD's heat performance metrics, provides our analysis of the main root causes for heating outages and other problems that occurred in providing heat to residents, and reports on what NYCHA, the Monitor team and HUD are doing to improve heating services.

NYCHA's sharp increase in heating outages this past heating season can be linked in part to its failure to properly execute and complete last year's summer preventive maintenance (PM) program. As we conducted our inspections, the Monitor provided NYCHA with reports of our findings throughout last summer. We also provided NYCHA with a comprehensive report of our review and analysis which detailed our concerns regarding the PM program earlier this year.

Over the last few months, HMSD - working with the Monitor team and HUD - implemented important measures to improve its PM performance this summer. We are

already seeing signs of better performance. Additionally, NYCHA has been working on a plan to comprehensively restructure its heating department that should provide it with extensive additional resources and better integration of its operations with those of property management staff at the developments which should improve overall heating service delivery.

Introduction

The two key performance indicators in the HUD Agreement for heating services are 1) the number and 2) duration of outages¹. As we reported in the Tenth Monitor Quarterly Report (February 2022), NYCHA experienced a substantial increase in heating outages this past season, particularly during the period from the last week in December 2021 through January 2022, when temperatures were generally the lowest of the winter. The season's average duration times for outages also increased from the prior heating season but remained below the 12-hour average outage duration time mandated under the HUD Agreement. After the January spike, both the number and duration of outages declined to levels closer to those experienced in the two prior heating seasons. These and other performance metrics are discussed in greater detail below.

NYCHA's ability to improve to a level where it is properly providing heating services to its residents largely depends on 1) how effectively it can timely replace its worst-performing boilers and other related heating equipment (capital projects), and 2) how well HMSD can perform both its comprehensive equipment routine maintenance during the heating season and its annual PM program over the summer, and make necessary equipment repairs, to keep its equipment operating and properly producing and providing heat throughout its buildings. Regarding this second part, NYCHA's success during the heating season is largely determined by how well HMSD performs its summer PM program (before the heating season starts).

As detailed below, NYCHA did not complete its summer maintenance and equipment inspections work last year, and thus was not adequately prepared for the start of the heating season. This both increased the likelihood of equipment failure under the demands of the heating season and lessened the equipment's ability to effectively produce heat. Also, not all necessary equipment repairs were identified because HMSD staff did not consistently follow the department's procedures for entering maintenance and equipment inspection information into the Maximo data base. In short, NYCHA was

¹ **Outages** happen when multiple apartment units experience temperatures below legal requirements caused by a breakdown in heating services that effect at least an entire building stairhall, sometimes a whole building, and even an entire development. The root cause generally stems from a single source – often a malfunctioning boiler or major blockage in the building's steam heat system – that cuts off sufficient heat to those units.

not fully ready for the start of this past heating season, and the subsequent performance metrics bore that out.

In January 2022 we issued a comprehensive report of our assessment of HMSD's PM performance last summer.² The report included contributions from NYCHA's Environmental Health & Safety Heat Oversight Team (EHS) and HUD, which worked with the Monitor to review the PM program. The report also made several recommendations, including 1) adding staff to HMSD, 2) improving staff training at every level of HMSD, 3) updating its standard heating operating procedures, 4) ensuring that staff are properly capturing key data in Maximo, and 5) improving management and supervision of HMSD line staff to ensure they are following procedures and properly executing the summer PM plan.

Since the January report was issued, NYCHA has been taking steps to rectify the problems with their PM performance and improve HMSD generally. These planned improvements include 1) better oversight and support of HMSD with both a new Chief Operating Officer and Senior Vice President who have already made important strides to improve HMSD's performance culture, 2) increased use of vendors to perform crucial aspects of the summer maintenance work to ensure completion, 3) better coordination and collaboration between HMSD, EHS, HUD and the Monitor Heat Team SMEs to oversee and assess both vendors and HMSD staff as they perform PM and repairs over the summer, 4) initiating the process to establish comprehensive staff trainings with both in-class and field components (including the set up of a new NYCHA heating lab), 5) establishing a working group to update its heating standard operating procedures, 6) significantly increasing HMSD staffing levels for more front-line and management personnel, and 7) initiation of a plan to restructure HMSD in coordination with NYCHA's overall roll out of the Authority-wide new organizational plan known as the Neighborhood Model.

These planned improvements represent a substantial commitment by NYCHA to improve its heating services. NYCHA has quickly begun work on many of these initiatives, including obtaining funding for much of the proposed staffing increases and revamping its entire heat staff training process. The challenge now is to push ahead and complete all these measures. Improved collaboration between HMSD and NYCHA Property Management will be necessary, as well as NYCHA personnel working together with the Monitor team, HUD and EHS.

² This is a link to the Monitor Heat PM Report: **Heat (Final) PM Report_02.02.pdf** at https://filecloud.guidedpostsolutions.com/url/Heat_PMReport_0202

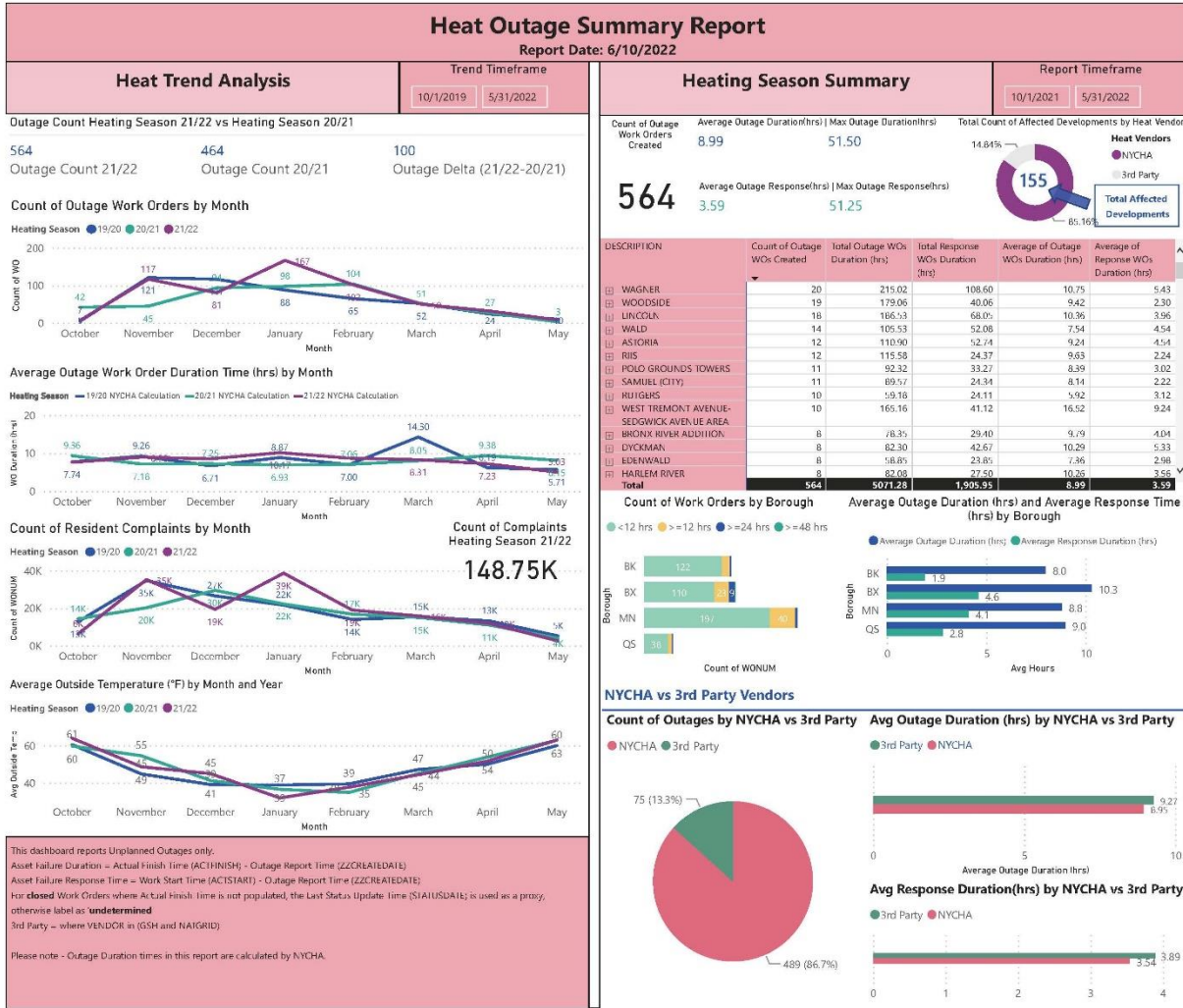
I. OVERVIEW OF PERFORMANCE METRICS AND OTHER NYCHA HEATING SEASON HIGHLIGHTS

The main performance requirement deficiency was the high number of unplanned heating outages this past season, which was a significant increase from the two prior heating seasons. There was also a substantial increase from the past two seasons in outages lasting over 12 hours, an important requirement of the HUD Agreement. Additionally, outages took place in a greater number of developments, meaning that a greater number of residents were affected than in the past two seasons.

The graphic below from the Monitor's heat data team provides a broad overview of NYCHA's unplanned heat outage performance, including:

- 1) Performance comparisons over the last three heating seasons, for the period from October 1st through May 31st;
- 2) Identification of the worst performing developments; and
- 3) A detailed breakdown of the performance of the current heating season.

These statistics are based on NYCHA data from Maximo. In addition to the increase in unplanned outages, we note that NYCHA had approximately 200 *planned* outages during the season. HMSD usually schedules planned outages to complete necessary heat equipment repairs during the heating season that require boilers and/or other heating equipment be turned off to perform the work. The consequences for residents are the same as for unplanned outages – no heat and/or hot water – but these outages are set up so that residents are notified at least 48 hours before they take effect. Additionally, HMSD will only schedule them when outdoor temperatures are at least 40 degrees.



Key Findings:

1. There were 564 unplanned heat outages this past heating season. This is an increase of 100 outages, or 22% greater than last season's count of 464 unplanned outages.
2. The average outage duration for this season was approximately 9 hours. This is an increase of almost 1.5 hours as compared to the prior season's average outage duration time, which was approximately 7.5 hours.
3. The count of unplanned outages with durations greater than 12 hours doubled this last heating season – with 97 this season and 47 for the prior. Fifteen of the outages lasted between 24 and 48 hours, with one outage lasting more than 48 hours. In the month of January 2022 alone, there were 47 outages greater than 12 hours in duration.

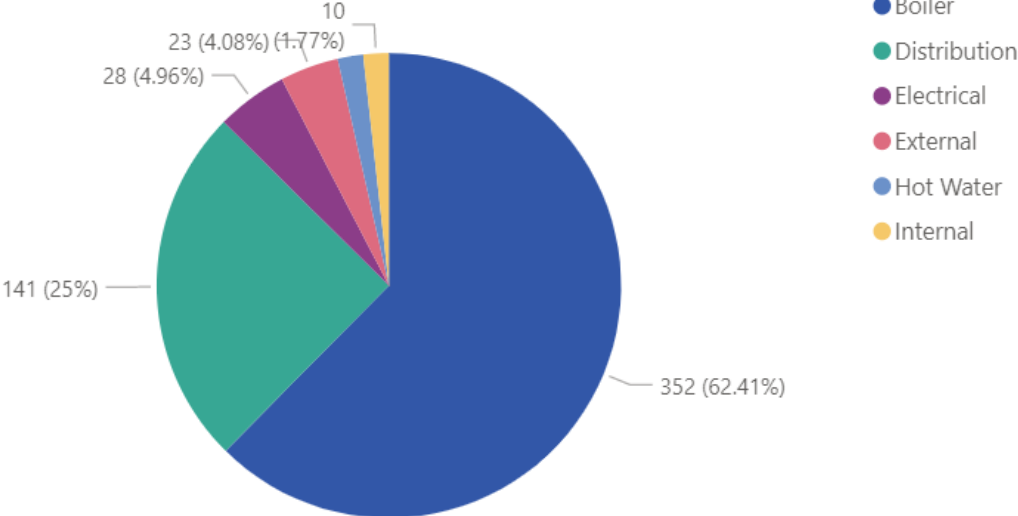
4. Unplanned outages this season affected 155 developments, with the most outages at Wagner (20), Woodside (19), Lincoln (18), Wald (14) and Astoria (12).
5. Boiler unplanned outages (as opposed to breakdowns in other heating equipment or heating distribution systems) accounted for 62.4% of all unplanned outages (352 boiler outages) in the 2021/22 heating season compared with 44% during 20/21 season (204 boiler outages) and 31.7% during 2019/20 season (153 boiler outages).

II. ROOT CAUSE ANALYSIS OF HEAT OUTAGES AND DURATIONS

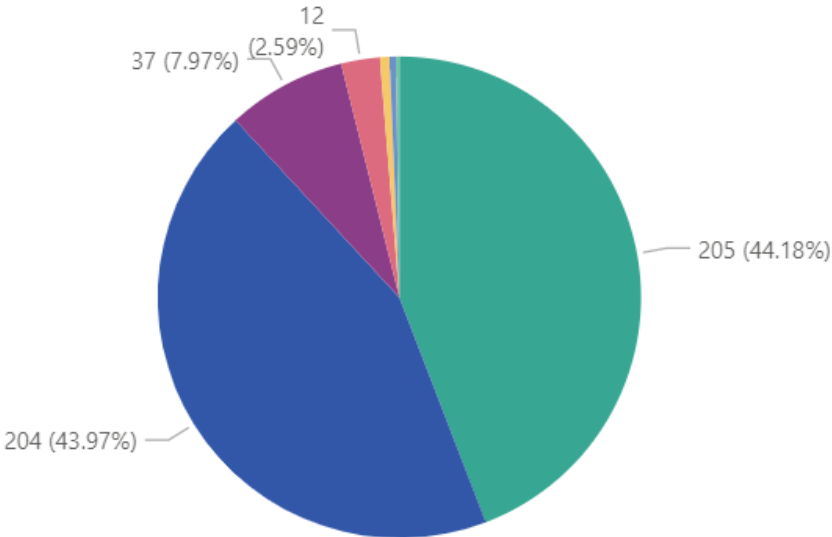
It is essential for NYCHA to understand the root causes for outages. This will enable NYCHA to reduce such occurrences and the associated impacts on residents. As noted, the EHS unit was required by and established pursuant to the HUD Agreement to address this concern. For the last three heating seasons EHS has conducted comprehensive root cause investigations for outages greater than 12 hours and provided HMSD with important recommendations to help address the underlying problems and operational deficiencies. The Monitor heat team coordinates with EHS to better understand outage causes and identify the necessary corrective actions.

The principal finding relating to outages this past heating season was an increase in breakdowns in boiler mechanical operations - with an increase of 73% over the 2020/21 heating season and 130% over the 2019/20 heating season. There were 352 boiler failures this past season, 204 for the 2020/21 season and 153 for the 2019/20 season. As shown on the chart below, outages caused by boiler mechanical failures accounted for 62.4% of NYCHA's heat outages this past season. It should be noted that if a development is converted to private management through RAD/PACT during a heating season, the pre-RAD portion of outages associated with that development is or will be included in the outage counts for all heating seasons.

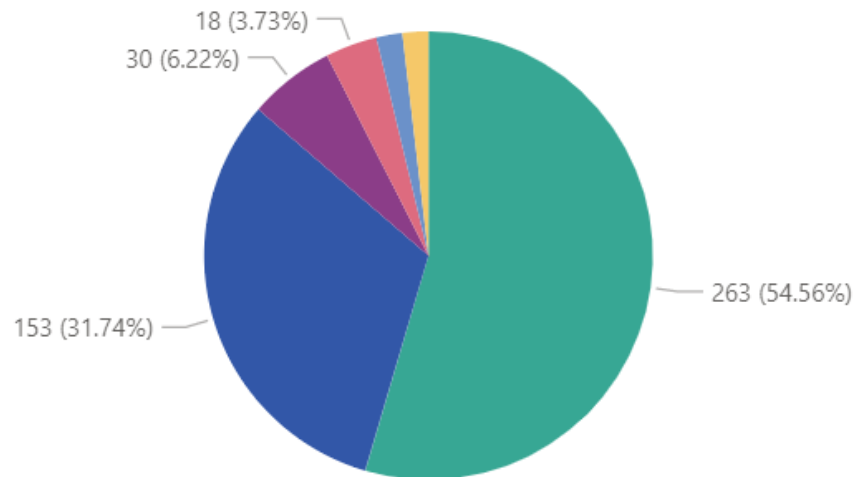
Heating Season 21/22 - Count of Workorders by Cause



Heating Season 20/21 - Count of Workorders by Cause

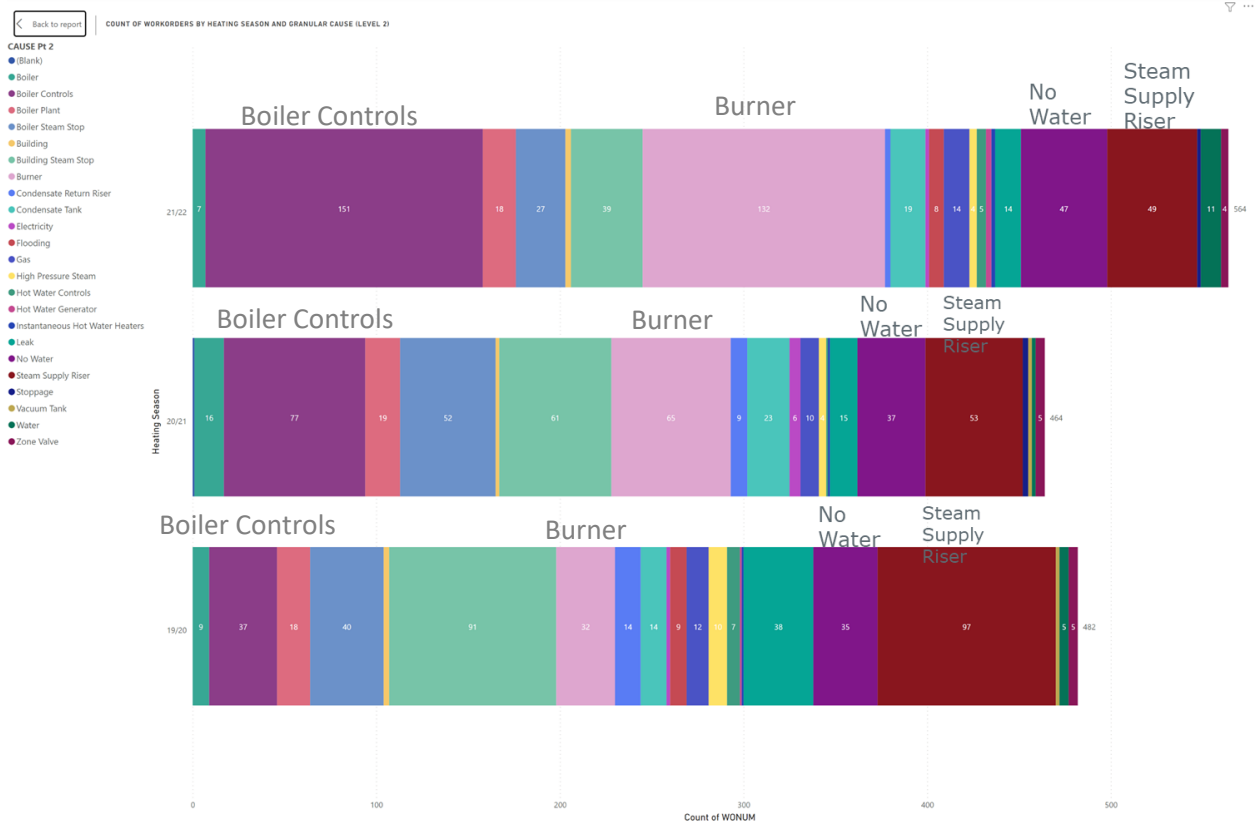


Heating Season 19/20 - Count of Workorders by Cause



Issues relating to boiler controls and burners were the leading cause of boiler related outages this season.³ Boiler control outages have gone up by 300% since the 2019/20 heating season while Burner outages have gone up by 312% since the 2019/20. The increase of such outages is likely caused by lack of effective PMs combined with degrading assets.

³ Boiler control breakdowns generally involve problems with low water cutoff valves, feed water regulators and/or firematic devices.



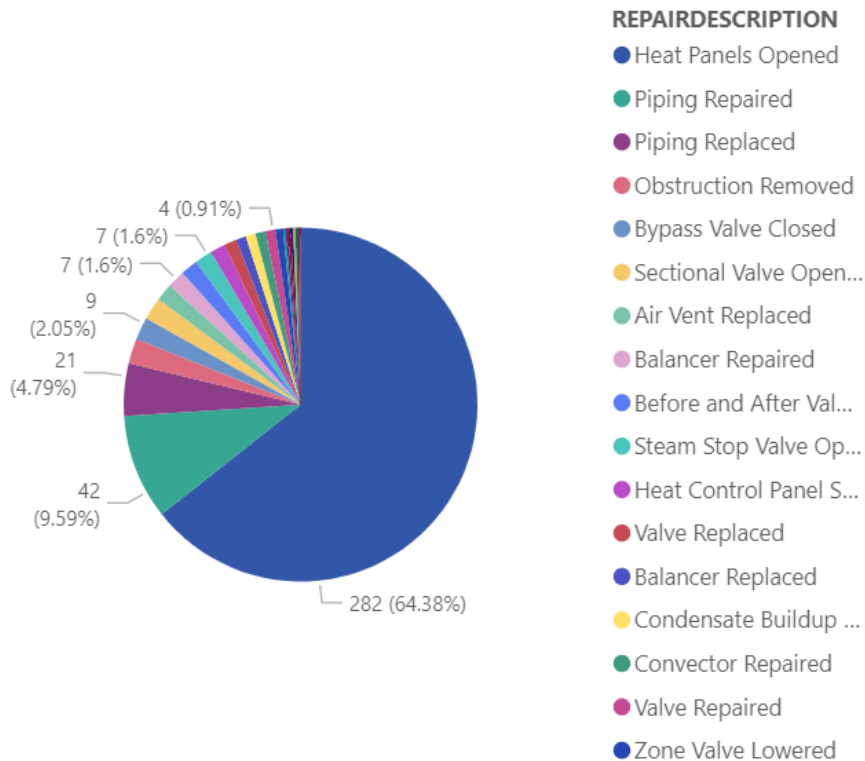
Regular review of work order data in Maximo, particularly the maintenance, repair and breakdown histories of the relevant equipment, is critical to determining and understanding the root cause(s) of heat outages stemming from equipment failures. One of the key recommendations of the EHS and the Monitor team is that HMSD should improve its training and management of its staff so that work orders for maintenance, repairs and responses to outages provide accurate descriptions and details of the condition of the equipment in their care, their assessments of why the equipment failed, and all corrective actions they took. Regarding routine maintenance work, our reviews of Maximo data show that this information is not being consistently captured in work orders, and when it is included, often contains few details regarding the condition of the equipment or the maintenance work performed. The result is that HMSD managers have insufficient information to know whether proper maintenance schedules are being followed by staff or whether proper maintenance protocols are being followed when work is done. Accordingly, there is no comprehensive understanding of the general conditions of heating assets for repair and replacement purposes.

We have seen similar issues regarding work order submissions when HMSD staff respond to outages. For example, we performed a review of repair codes most frequently used for outage work orders. A large majority of repair codes (64.38%) indicate “heat panels opened” as the repair description. This is not a useful description as it does not

help to identify which specific asset(s) was responsible for the root cause of the outage. Further, this repair code indicates a temporary fix was implemented which did not address the underlying root cause of the outage.

The lack of quality data in Maximo is a significant obstacle to assessing the effectiveness of annual overhauls, identifying root causes of outages and problem assets, and inhibits the development of mitigation strategies.

Count of Workorder by Repair Description



Further analysis of outage data also demonstrates the need to include more detailed information in Maximo. For example, only 10 of the nearly 293,000 heating outage-related repair records created since January 1, 2019, show an asset ID for the specific equipment that broke down causing the outage. While it may not be possible to identify asset IDs for all outages, this practice should be the standard, particularly for boiler outages. Without identifying asset IDs for outage records, it is challenging to determine which of the multiple boilers at a development was involved in the outage. This is essential information for both maintenance and capital equipment replacement decisions.

ZZWOREPAIRSDONEID	REPAIRCODE	WONUM	ORGID	SITEID	REPAIRDDESCRIPTION	WORKTYPE	ASSETNUM	LOCATION
9276500	HEATCNTRLPNLSTNGLOWERED	66292037	NYCHA	MN	Heat Control Panel Setting Lowered	CM	443909	060.14.027.F01
12680084	CONDENSATEBUILDUPDRAINED	72222418	NYCHA	MN	Condensate Buildup Drained	CM	443660	060.08.015.F01
15089632	AIRVENTREPLACED	69708516	NYCHA	BK	Air Vent Replaced	CM	197009	095.08.801
15089636	AIRVENTREPLACED	71389228	NYCHA	BK	Air Vent Replaced	CM	197012	095.12.801
16297323	HEATPANELSOPENED	78487075	NYCHA	BX	Heat Panels Opened	CM	547065	334.03.033
18042970	RADIATORREPAIRED	76938316	NYCHA	BK	Radiator Repaired	CM	197009	095.08.801
20225782	RADIATORREPAIRED	89946181	NYCHA	BK	Radiator Repaired	CM	206933	205.03.801
18042929	ELEMENTBODYREPLACED	76938316	NYCHA	BK	Element Body Replaced	CM	197009	095.08.801
13481130	HEATPANELSOPENED	73381907	NYCHA	QS	Heat Panels Opened	CM	50823	53.27

III. IMPROVING HMSD's PREVENTITIVE MAINTENANCE PROGRAMS

Until NYCHA's aging and poorly performing boilers and other heating equipment can be replaced by NYCHA's Capital Division, HMSD must do all it can to keep existing equipment properly maintained and repaired. The annual summer PM process is designed to preserve and restore equipment operability by cleaning, lubricating, adjusting, repairing and replacing worn components to help ensure equipment and mechanical areas are in satisfactory operating condition. Conducting comprehensive inspections of all heating equipment in every boiler and tank room is a critical part of the HMSD summer PM program and will greatly assist in achieving the imperatives that PM work is being properly performed, and all needed repairs are captured in work orders so they can be identified, scheduled and tracked for completion prior to the start of the season. This is particularly true for any repairs that 1) will require boilers to be off-line to complete and 2) if not timely done, may cause an outage during the season. As discussed in detail below, the Monitor's January PM Report identified several areas where HMSD fell short in properly executing its PM plan last summer. NYCHA has since initiated some important measures that if effectively implemented should greatly improve HMSD's operations. We are seeing major improvements in HMSD's execution of their summer PM already this year.

Monitor assessment of heat PM in 2021

As the January PM Report detailed, HMSD did not complete last summer's PM program. This assessment is based on extensive field inspections the Monitor team conducted of over 95% of NYCHA boiler and tank rooms last year and our analysis of Maximo data. EHS also conducted numerous inspections and we regularly met with their

team, HUD with HMSD throughout the summer to share information and findings to assess HMSD's progress and discuss ideas to get summer PM properly completed.⁴

Our reviews of Maximo data also indicated that inspection work orders had not been completed for some boilers and other key equipment. This left HMSD without a complete record of the repairs that needed to be address before the start of the heating season. In part, this was due to staff not consistently following their standard procedures for conducting their PM program. We also saw that staff were not always properly using their recently created PM work order system (PM and IN work orders) to properly record their work, making it difficult to determine for some equipment what PM had been completed and what remained⁵.

We determined that there were several reasons for HMSD's incomplete execution of its summer PM plan in 2021, which include:

- a) HMSD being under-staffed. This includes both their line workers (HPTs) and supervisors (heating superintendents, administrators and deputy directors). There are simply not enough workers and managers to properly maintain and repair their equipment or provide needed supervision and staff support. HMSD also does not have sufficient support staff, such as data analysts, skilled trades persons and staff trainers.
- b) NYCHA has not yet replaced enough of NYCHA's worst performing heat equipment (especially boilers) to alleviate the substantial burden on HMSD staff to keep this equipment operational. We are seeing that capital boiler replacement projects are currently on average 9 to 10 months behind schedule. However, we can report that NYCHA is close to completing an extensive revision of its main

⁴ As the report describes, during our boiler room inspections done just prior to the start of the heating season, we observed that there were still many boilers that had not been overhauled (the annual process of shutting down and thoroughly cleaning components of soot, ash and other debris that lessens boiler efficiency). In October and November 2021, we also saw that there was equipment still clearly in need of repairs, including condensate tanks, hot water and vacuum tanks, and various pumps – many with signs of severe leaks and corrosion. Our subsequent Maximo reviews for much of this equipment indicated that no work orders had been opened for their repairs. Additionally, our field inspections revealed that some completed PM work orders for specific boilers incorrectly stated that the overhaul work had been completed. We prepared field reports for every inspection we performed (with numerous photographs) and all the analytics we conducted, and immediately provided them to HMSD, EHS and HUD.

⁵ Two years ago, HMSD worked with NYCHA's Performance Tracking & Management Department to create specific work orders to support HMSD managers in conducting their annual summer inspections (the *PM work order* to track annual PM work performance and the *IN work order* to identify and generate work orders for needed repairs).

capital projects procedures. When implemented, this should improve its ability to properly deliver its projects.

c) HMSD often does not effectively use the staff it does have. For example:

- i) Staff were often not complying with HMSD's established standard procedures for scheduling and completing daily, weekly, monthly and annual maintenance work required for equipment. Managers are also not performing regular, comprehensive inspections to assess whether this work is being done properly and needed repairs were identified. For those repairs that are scheduled (i.e., work orders are opened), HMSD had not organized a reliable way to track their progress towards completion. For example, we saw work orders for the repair of some poorly operating condensate tanks that had remained open for multiple years without action being taken. In the fall of 2021, we and EHS identified many of these work orders (for boiler rooms in the Bronx and Manhattan) and provided detailed reports to HMSD for those that needed immediate repairs.
- ii) Staff were not properly recording their maintenance, repair and inspection activities, and are not recording findings and other relevant information in work orders. For example, regarding any NYCHA boiler room it is often impossible to tell what regular maintenance work has been performed by analyzing the pertinent work order data. It should also be noted that staff are also not properly completing boiler room logbooks that should also be used to record these activities.
- iii) Training within HMSD should be completely revamped. As we have reported, most HPTs start with HMSD with little or no formal training or experience in heating services. While the classroom training course at NYCHA's Learning & Development center is adequate as an initial training step, HPTs must currently wait over a year on average before there is space and training staff for them to take the class. There was also no effective structure to provide thorough in-field training by more experienced staff and managers to new HPTs. Until recently, HMSD also did not ensure that new HPTs were being consistently paired with more experienced staff in their field assignments. Among other problems, these circumstances explain why heat operating procedures are not being consistently followed, and it is likely that a significant portion of HMSD staff do not fully know the procedures.

- iv) We also observed insufficient management and supervision of HPTs and lower-level managers. This is essential not only to ensure that maintenance and repair work is being done properly and on schedule, but also to make sure that line staff have the resources they need to get their work done. Having too few supervisors greatly limits their ability to regularly visit and assess boiler room conditions and to directly interact with staff in the field. These things are essential for proper management and to ensure effective staff performance.

- v) HMSD was not properly managing parts and equipment storerooms. This is necessary to effectively respond to outages and to make needed repairs during the heating season. This includes keeping a list of where all its storerooms are located, ensuring that the sites are secure, and maintaining current inventories of all materials in each storeroom so HMSD knows what equipment it has and where it is located. Starting in 2021, HMSD initiated regular meetings with NYCHA's Procurement Unit to begin the process of overhauling its storerooms and putting proper controls in place. Improving the storeroom procedures, and HMSD's ability to efficiently purchase needed parts and replacement equipment is an extensive process that will take time to complete.

IV. NYCHA Initiatives to Improve HMSD PM and Overall Performance

With the arrival of a new Chief Operating Officer, and Senior Vice President to oversee HMSD (and certain other NYCHA pillar areas), NYCHA's Operations Division and HMSD have recently started to more comprehensively address many of the issues that have constrained HMSD's effectiveness.⁶ Many of these improvement initiatives are also the result of NYCHA's Authority-wide reorganization under the "Neighborhood Model", which establishes a more decentralized operating structure with an objective of more closely placing authority and accountability within NYCHA's 30 neighborhoods and developments to replace the current more centralized system.

Restructuring HMSD

NYCHA has been diligently working the last few months on its plan to restructure HMSD. The details provided to date indicate that when completed, the plan will be

⁶ We note that when NYCHA named the new COO in January, it was understood that he would likely be in that position for only six months. In late July, NYCHA not only named a new COO, but also created a new deputy COO position. It is anticipated that this team along with their Chief of Staff will continue to improve NYCHA's operations, particularly as NYCHA restructures itself under the Neighborhood Model.

ambitious and comprehensive and should go a long way to closing many of the gaps we have seen with HMSD's ability to provide heating services. The main aspects include (i) substantially increased staffing resources, (ii) more strategic placement of staff in the field consistent with NYCHA's Neighborhood Model, and (iii) greater data, technical and analytical support to improve strategic planning for repairs and responding to emergency heating breakdowns. While it will take some months to recruit and on-board the new staff and work out the details of how to better integrate HMSD's operations with those of Property Management and the Neighborhood Model, the new budget to provide much of the funding for this plan has recently been approved by NYCHA's CEO and HMSD has started the hiring process.

The proposed increases in HMSD resources will include additional managerial and front-line staffing. HMSD will be adding more deputy directors, heat neighborhood administrators and heating superintendents to its existing managerial staffing. Having substantially more heating superintendents is especially important given their critical role as HMSD's main managers in the field. Their roles in oversight and management of the HPTs daily work and performing inspections to assess and ensure that all PM work is properly completed and that all needed equipment repairs are identified and tracked for completion is essential to HMSD's success. Equally important is that NYCHA is in the process of adding substantially more HPTs to HMSD's ranks will enable more maintenance and repair work to be completed.

Other additional staff, including skilled trades, maintenance workers, data analysts, planners, and administrative support staff will also be on-boarded. The new staffing will provide HMSD with needed administrative, analytical, and strategic planning/emergency response support for its line staff and supervisors. This will include timekeepers and clerical staff, and more technical staff including OBS (oiler/boiler specialist), Maintenance Workers and oilers to help HMSD address the more complex maintenance and repair issues, unit systemic diagnosis of heating problems and on-site training for new HPT staff. HMSD also plans to enhance its weekend and overnight roving teams to enable more effective responses to outages and other heating breakdowns during these low staffing periods.

The structure and other details provided to date of various aspects of the new HMSD restructuring plan are promising and if effectively implemented, should materially improve NYCHA's overall heating service delivery. This includes being able to perform all necessary equipment maintenance work and properly responding and completing necessary repairs.

Revised training plan for HMSD

Lead by the new NYCHA Senior Vice President, HSMD, and NYCHA's Learning & Development unit, with participation from the Monitor team, NYCHA is revising its classroom heat training program and additionally developing a formal in-field training component. The long-term objective is to create a state-of-the-art heating training center (or "lab") at NYCHA's Long Island City facility. The lab will contain pieces of the heating equipment that exist across NYCHA so that trainees will learn on the same types of equipment they will ultimately be expected to maintain and repair in the field. In many ways HMSD's training program will be modeled after the existing and successful training program that NYCHA's elevator department has been using for the last several years to train their staff. Part of HMSD's objective is that it 'owns' its training (rather than sending staff to outside instructors) so that it will comport with the experience of performing heating service work at developments, as well as allow HMSD to use a robust written performance review process that, among other things, will enable HMSD instructors to better assess a trainee's fitness for the work of an HPT. NYCHA estimates that it will take at least 12 to 18 months to set up the heat lab.

Additionally, NYCHA is immediately establishing what it calls a "Bridge Program" to close the gap between current staff needs and when the new heating lab is completed and ready to start formal trainings. The plan is to take the HPT classroom training curriculum currently conducted at the NYCHA Learning & Development facility in Brooklyn and condense it into an intensive six-week course, running six days per week. This heating crash course will be offered for HPTs (including the approximately 50 HPTs that were part of the pandemic cohort) as well as for the new HPPT title (Heating Pressure Plant Technicians) and is scheduled to start in mid-September of this year. The Monitor team will continue to work with HMSD as it rolls out the bridge training program and offer expertise to ensure the program meets the needs of the new HPTs.

These training plans appear to be comprehensive, well devised, and certainly necessary given the current gaps in training for existing staff (especially HPTs) and the expectation of on-boarding many new heating staff over the next few months who will also need immediate training before they are ready for the field. Additionally, as the Neighborhood Model continues to be rolled out, NYCHA should create appropriate training courses for HMSD supervisors as well.

Revising NYCHA's heating standard procedures

Ensuring that staff understand and comply with NYCHA's standard procedures is a central part of the training curriculums for property management at developments and every service pillar area, including HMSD training programs. The breadth and complexity

of standard procedures necessary to properly execute NYCHA's heating services is substantial. Just the number of procedures necessary to properly maintain and repair all the various types and ages of NYCHA heating equipment alone is daunting. NYCHA formed an internal working group some months ago and recently completed a draft revised heating standard procedure for HUD and the Monitor to review. These procedures were last revised almost three years ago and while fairly comprehensive, updates are needed, including with regard to PM and more clearly defining the roles and responsibilities of and between HMSD and property management staff regarding heating service delivery at developments. The challenge is not only to make sure the procedures are complete and provide sufficient guidance for all relevant topics for heating services, but additionally that they are presented using appropriate language and other descriptive aids (charts, graphs, photographs, diagrams, etc.) so that staff can understand and use them in the field. To this end, the working group has started to create various quick reference guides and other ways that key portions of the standard procedures can be lifted out and put in more user-friendly formats for staff in the field. This includes creating QR codes that will be placed in strategic locations in boiler and tank rooms to provide easy reference for staff performing field work.

HUD and the Monitor team have reviewed and made comments on the draft procedures and provided them to the NYCHA working group. We will also review and comment on the quick reference guides and QR code drafts HMSD is proposing to use in boiler rooms to better support HPTs and other line staff in understanding the most essential portions of the procedures that they will need to follow for proper maintenance and repair work. The NYCHA working group has done a very thorough job in its work to revise the standard procedures and create additional aids to assist staff in better using them.

[HMSD's PM Strategy Plan Including Vendor Support to Perform Boiler Overhaul](#)

As detailed above, HMSD was unable to complete the overhaul for all its boilers last summer. NYCHA strategically decided well before this past heating season was over that it would use a vendor to supplement HMSD staff in performing boiler overhaul work to ensure its overall completion this summer. With the assistance of the Monitor and EHS, HMSD has been closely overseeing the vendor's work this summer to make sure it is being done properly and that they are staying on schedule to complete their portion of boilers by early September. While some adjustments had to be made to the vendor's overhaul process since they began their work in late March, the vendor's work has generally been acceptable. It has recently become clear that the vendor will not be able to timely complete the overhaul for all the boilers it was initially assigned to under the contract. HMSD has been 'taking back' some of these boilers and will be conducting the overhaul to ensure all this work is done before the heating season starts on October 1st.

Bringing on the vendor to support completing boiler overhaul work was part of HMSD's larger written PM strategy plan for this summer's PM work. HMSD used Maximo data to identify the development boiler/tank rooms with the worst performing heating equipment for each NYCHA neighborhood. HMSD has also relocated HPT staff for a better mix of work experience levels in the field so that newer staff can learn from more seasoned HPTs. Each neighborhood has had an assigned team of HPTs that began the summer PM process by focusing on the developments with the worst performing equipment that is most in need of PM. PM and IN work orders are also being tracked to see if they are being properly used and completed to enable better data collection.

As stated, the Monitor heat team has been working with EHS and HUD this summer to inspect boiler rooms to assess the vendor's overhaul work. We are also monitoring HMSD staff to ensure they are following their standard PM procedures and otherwise sticking to their PM strategy plan to get all the work completed before the start of the heat season. We continue to draft detailed field reports with photographs and immediately provide them to HMSD for any needed corrections. We also highlight examples of where work is being properly completed. While HMSD has created a dashboard to track all the boiler overhaul work this summer, we also suggest that NYCHA create a corresponding comprehensive tracking system (it could be in dashboard format) to ensure that all these repairs identified in the IN (inspection) work orders are captured, prioritized, and completed before the heating season starts. We also want to make sure that HMSD follow their standard procedure that a boiler readiness report be prepared just prior to the start of the heating season on October 1st. This process involves NYCHA's licensed boiler mechanics starting up every boiler and tuning them in preparation for the winter. Lastly, once the heating season starts, we strongly suggest that HMSD include in their outage work orders the individual asset numbers (contained in Maximo) for every major piece of heating equipment that contributed to the root cause of that outage.

Now less than a month out from the start of the heating season on October 1st, we can report that NYCHA has greatly improved its summer PM performance from last year. HMSD is closely monitoring the progress of the boiler overhaul work performed by their staff, the overhaul vendor and the vendors who manage the third-party heating sites. It appears that despite the inability of the vendor to timely finish all its assigned overhaul work this summer, the work they did complete greatly assisted HMSD staff so that most of the overall summer PM work will get done. The biggest challenges now will be completing needed capital repairs for such things as steam leaks and correcting some other building infrastructure problems that impact boiler rooms, before the winter. NYCHA has been identifying all these needed repairs and conducting regular meetings with the Capital Division and other units within NYCHA to address them.

In addition to being more strategic and improving their PM work this summer, NYCHA's Operations Division and HMSD upper management have also been working with HMSD staff to create a more pervasive culture and mindset of being more accountable in their work to properly maintain equipment and overall conditions in their boiler rooms. This sort of change comes gradually, but we are starting to see quantifiable improvements in the field and often a more responsible attitude by staff we encounter regarding their work. For the Monitor team's part, we will continue to inspect and report on what we see in the field and will otherwise continue to work and support NYCHA and HMSD to improve their overall heating services and especially ensure NYCHA is fully ready for the upcoming winter.

Capital Report

[Executive Summary](#)

Under the HUD Agreement ("Agreement"), the Monitor is tasked with overseeing NYCHA's Capital Division with regard to (i) its delivery of specific capital projects required under the Agreement (mainly heating system and elevator replacements), (ii) its delivery of specific projects outlined in the City Capital Action Plan ("CCAP"), (iii) other capital projects directly related to the pillar service areas under Exhibits A and B of the Agreement, and (iv) assessing the capital planning and management improvements that A&CM plans to implement as part of the organization plan changes in the Agreement and NYCHA's Transformation Plan. To do this, the Monitor formed a capital projects team comprised of capital project and program managers with experience in the public and private sectors.

While A&CM has been making significant progress in restructuring and improving its capital projects procedures, the Monitor team remains concerned about A&CM's ability to timely deliver these capital projects. They include replacement of 297 building heating systems (mainly boilers) and 275 elevators. Further, the \$2.2 billion CCAP requires NYCHA to make significant investments in waste management projects to meet its Agreement obligations to properly collect and remove trash from developments, abate lead and complete the comprehensive modernization of two developments to address mold, leaks and failing building systems and components.

The capital projects for heating, elevators and waste management are behind schedule on average between 9 and 12 months, and these delays are increasing. Initially, they were not being properly disclosed, as NYCHA reported that its projects were generally on time. The Monitor team showed that this was inaccurate and encouraged

NYCHA to set more realistic project schedules and timely report needed adjustments when identified. While NYCHA has met its obligation in the Agreement to replace a set number of heating systems by the end of 2022, it is far behind and will not meet its Agreement obligation to replace a set number of elevators by the end of this year. The reasons for these delays are discussed below.

Since 2019, the Monitor team has been identifying problems with the quality and consistency of NYCHA's capital processes and procedures, some of which do not reflect industry best practices. As a result, the project scoping process has been compromised, as have the management of project schedules, risks and contract documents. The procurement process, including attainment of required approvals from the City's Office of Management and Budget (OMB) and the City Comptroller, is a significant challenge that NYCHA has not yet successfully navigated, and which greatly affects project schedules. As further described below, there are projects across the capital program that are still delayed and have project risks with no clear resolution, poorly defined schedules, and inconsistent project tracking and reporting.

In recent months NYCHA has begun to take comprehensive steps to strengthen A&CM and implement better project management practices. These measures comport with industry best practices. We will continue to report on NYCHA's progress in advancing these projects and whether they improve project management and delivery.

Our main areas of concern are NYCHA's maintenance of project schedules, the procurement process, securing critical materials, and resident relocation. We recommend that NYCHA consider bundling more heat and elevator projects to reduce the overall impact as NYCHA navigates the various approval processes. This also may prompt more interest from vendors, as it could eliminate the need for multiple proposals. To address market challenges, NYCHA should expand the approach used on Sandy recovery projects, that is, securing critical equipment directly from suppliers prior to awarding a contract to a general contractor. This approach will work for elevators and for traditional Design-Bid-Build (DBB) projects.⁷ NYCHA should take advantage of the significant purchasing power it has due to the size of its capital program. NYCHA also needs an alternative way to partner with OMB and the City Comptroller to expedite project approvals. Finally, we recommend that NYCHA utilize the Monitor's expertise in large capital programs and projects, project controls and risk evaluation. (For whatever reason, NYCHA has often been reluctant to work with the Monitor's experts.) It is vital for NYCHA

⁷ Design-Bid-Build (DBB) is a project delivery method in which the project is designed and built under separate contracts. The project is designed first either by the in-house design department or a design consultant. Then, after design completion, the project is bid out to contractors to perform the construction work.

to involve the Monitor in the review of both RFPs and the vendor proposals. The Monitor has subject matter experts (“SMEs”) in both DBB and Design-Build delivery who were involved in the procurement phase of NYCHA’s first Design Build projects.⁸

Replacing Aging Equipment

Under the Agreement, NYCHA is obligated to meet specific performance metrics for its heat and elevator services (primarily related to limitations on both the number and duration of service outages) and must also complete capital projects requiring the full replacement of a number of building heating systems and elevators within specified times. NYCHA is severely challenged in this regard, however, because much of the equipment needed to provide critical services to NYCHA residents is well beyond its intended lifespan (e.g., NYCHA reports that 58% of the elevators have exceeded their lifespans). Much of this equipment is in poor working condition and experiences frequent breakdowns and outages, and NYCHA’s Operations Division struggles to keep the worst of this equipment running. Parts necessary for repairs and replacements are sometimes unavailable because they are no longer being manufactured.

Since execution of the Agreement in January 2019, NYCHA’s capital projects continue to experience significant schedule delays and other challenges in completing them. As indicated above, project schedules for new heating system and elevator replacements are respectively approximately 10 and 9 months behind schedule, and A&CM forecasts further delays. Elevator conditions are particularly dire, with replacement of only two of NYCHA’s 3000-plus elevators by NYCHA since well before execution of the Agreement, and NYCHA forecasting only 12 more elevator replacement completions by the end of 2022.⁹ The Agreement calls for NYCHA to replace 108 elevators, under its A&CM division, by the end of 2022. NYCHA has already met its Agreement obligation number for 70 heating system replacements by the end of 2022 and may actually complete just over 90.

NYCHA must effectively use available capital funding to timely deliver these critical projects. For example, NYCHA has had \$450 million in state funding available since the end of 2019 for new boilers and elevators. Halfway through 2022, it had only started physical construction at 5 of the 25 developments scheduled to receive new boiler systems (3 out of the 5 are just in early mobilization stages.) This slow pace can be attributed to NYCHA’s poor performance during the project planning and procurement

⁸ Design-Build (DB) is another type of project delivery method where the project is bid/contracted out to a single firm that is responsible for the full design and construction of the project.

⁹ This does not include elevators addressed by NYCHA’s transfer of developments through the PACT program.

phases. While A&CM has substantially increased its efforts in the last few months to overhaul its procedures, it is still not adequately organizing and recording project documentation. Based on what we have seen, A&CM is often not properly managing its projects, documenting its activities, reporting consistently and properly, or identifying risks. NYCHA has recently received additional funding from New York State for a new set of elevator projects. Without improvements to procedures and processes, these projects will also experience similar delays.

Program Performance

The Monitor's capital team has been analyzing NYCHA's progress towards delivering new heating systems and elevators and assessing the likelihood that NYCHA will meet the requirements of the Agreement. We are also tracking the progress of NYCHA's waste management, lead abatement and the Comprehensive Modernization programs. The team is focused on NYCHA's performance in three core areas: organizational improvements, program and project planning and management, and project delivery.

To date, A&CM has been slow to collaborate with the Monitor's capital team SMEs who have been available to work with A&CM to improve its operations. Our ability to assess and report important details of some capital projects relevant to the Agreement has been hindered by A&CM's inconsistent program and project management documentation and unwillingness by A&CM leadership to conduct regular project meetings with its project consultants and contractors.¹⁰

In 2019, NYCHA obtained approval to use Design-Build contracting. This is a new methodology for NYCHA, A&CM, NYCHA's legal and procurement staff - as well as OMB and Comptroller's office. New procedures had to be developed. Accordingly, in 2020 NYCHA incurred significant delays in heating projects. Several projects had to be repackaged, rescope, and rebid.¹¹

Project Controls Assessment for Heat and Elevator Projects

We have also been assessing the quality of NYCHA's project controls. Project controls and related applications are a core tool that the project manager uses to make

¹⁰ For example, the team was advised that all information required to assess the status of projects is available in NYCHA's project management system, e-Builder. The Monitor team spent many hours in e-Builder looking for the required information. Though not consistently filed, we found most project information was available for those projects with approved funding. However, the team has been unable to find information on projects in the planning or scoping phases.

¹¹ See heating projects for example.

informed, timely decisions that help reduce delays and mitigate cost increases. Key areas within a project controls system include cost management (maintaining financial control of a project), schedule management (developing, maintaining, managing, and controlling the schedules for time and resources for the completion of the project), risk management (determining the risks present in a project and evaluating the procedures to minimize their impact) and project reporting (providing key information to project stakeholders on the risks and issues in and progress of a project).

The Monitor has been assessing NYCHA’s performance in these areas using a Red/Amber/Green scoring system. Red means that it is “not acceptable, significant improvement required”, Amber means “acceptable, but improvement required” and Green means “acceptable as is”. The table below shows the Monitor’s current assessment. We discuss our assessments with NYCHA on an ongoing basis. NYCHA has been improving and is committed to continuing to do so.

Control Assessment Category	Risk Score
Cost management	Amber
Schedule Management	Red
Risk Management	Red
Document Management	Amber
Project Reporting	Amber

Scheduling Issues

The Monitor team has consistently found problems with NYCHA’s management and maintenance of its project schedules. Sometimes NYCHA’s baseline schedule has not included sufficient time to navigate through the procurement and approval processes, causing project delays before the start of construction. For example, the heat, elevator and waste management projects were delayed in getting approvals from OMB. Supply chain delays exacerbate NYCHA’s challenges. The delay in availability of materials, including critical elevator system components, and limited manufacturer capacity for materials such as waste compactors, will further delay project schedules and completions.

The elevator project schedules have improved significantly during the past several months, but the same has not been consistently seen in the heat projects. NYCHA has now committed to improving the heat project schedules and has indicated it plans to deploy the same schedule structures used for the elevator projects.

NYCHA is working with OMB to establish more reliable timeframes and processes to obtain necessary approvals. This will provide more accuracy in schedules. There have also been reporting discrepancies between NYCHA's capital projects tracking software and various NYCHA reports. While some of these discrepancies have been resolved, others remain.

Heat Projects

New York City has allocated approximately \$238 million towards the heat upgrade program, seeking alternative design solutions offering more operational and energy efficient systems for the provision of heat and hot water. As a result, NYCHA may not need to replace each existing boiler with a new boiler. The Monitor will track the number of assets removed from the list for replacement to measure NYCHA's performance.

While NYCHA has met the Agreement heating system replacement obligations for 2022 (70 boiler replacements), the concern is that many projects have incurred significant delays such that NYCHA may struggle to meet the much greater obligation of 297 replacements by the end of 2026. The average project delay is currently 10 months and forecasted completion dates have increased for a substantial number of replacements. A&CM continues to advise that once contracts are executed, it expects that each project schedule will improve. The Monitor team is concerned, however, that the number of new heat assets installed by NYCHA within the Agreement's mandated time frame will decrease. The procurement process has taken longer than originally assumed in the schedule. The municipal approval processes including internal activities within NYCHA and at OMB continue to take longer on average than assumed in project schedules. Additionally, contractor proposals have come in over budget, requiring NYCHA to re-scope the project to enable it to progress. For example, NYCHA had bundled together three heating projects in one proposal package (Brownsville Houses, Saratoga Village, and Ocean Hill) which did not receive many bids. The bids that were received were over budget or non-responsive. Vendors responded that the project scope could not be performed within the given NYCHA budget. NYCHA had to re-scope, repackage, and rebid these projects, delaying the schedule considerably.

Elevator Projects

The CCAP allocates approximately \$92 million towards the NYCHA elevator replacement program (which will require at least \$255 million, the balance of which is funded by New York State).

While NYCHA is forecasting that it will exceed the Agreement elevator replacement obligations for 2024 (275 replacements), it has already fallen well short of meeting the 2022 Agreement replacement requirement of 108 new elevators. The reasons for the delay are similar to those affecting the heat projects. Low bidder participation and initial proposals that were over budget caused NYCHA to extend bid durations and re-bid projects. In addition, delays arising from submitting packages for and securing OMB approvals and vendor name checks (VNC) (a required vendor background examination process) added to the delays. Elevator projects are also being impacted by supply chain delays for manufacturing and delivery of key elevator components. The average delay for elevator projects is currently 9 months. At the start of this year, NYCHA forecasted that approximately 25 elevators would be completed by the end of 2022. In June that number decreased first to 18 elevators and then again to the current forecast of 12 to 14. This number may fluctuate as a function of further supply chain delays when elevator projects are in the construction phase.

Waste Management Projects

Approximately \$630 million in funding has been allocated for waste management projects. NYCHA has 9 projects that utilize the Design-Build procurement strategy. The remainder of the waste yard redesign portfolio will be delivered through a DBB procurement strategy. Currently, the portfolio is divided into 9 groups or bundles. By leveraging increased funds and expanding procurements, NYCHA plans to accelerate the projects to complete the program by the second quarter of 2027, three years earlier than the original CCAP schedule.

The initial group of waste yard projects is 12 months behind the initial schedule. Delays in preparing approval packages and securing approvals from OMB, relative to timelines assumed in initial schedules, were a material factor. Lessons were learned regarding the OMB approval processes, and adjustments were made quickly. They will be applied in the next round of procurement. NYCHA will need to ensure that submission packages are complete and error-free for these steps to move swiftly in the next quarter. Any further delays will affect the notice to proceed (NTP) date, construction schedule, and costs for contractors across all 12 active projects.

The first project, a pneumatic system project, will start at the Polo Grounds Houses this summer and several internal compactor replacement projects will commence later this year. The initial work will include environmental testing.

Waste management projects have been slowed by inflation of commodities prices due to supply chain disruptions caused by COVID-19, a shortage of manufacturing and

qualified installer capacity, and delays in environmental testing due to competing demands across NYCHA. The Monitor has recommended that A&CM and NYCHA's Procurement Unit work together to develop solutions.

Comprehensive Modernization Program

The CCAP allocates \$501 million for comprehensive lead and mold abatement, which NYCHA is implementing through its Comprehensive Modernization program in two developments. These projects entail major renovations and reconstruction of building infrastructure and apartments. The developments - Todt Hill in Staten Island, with approximately 500 units, and Saint Nicholas in Manhattan, with approximately 1500 units – were selected after NYCHA performed a suitability analysis that considered various criteria including building conditions, history of capital repairs, degree of lead content, and volume of mold and leak work orders.

Units will be abated of asbestos and lead paint, piping in chase walls (including cold and hot water supply, return risers and branching, sanitary waste risers and branching, and sanitary vent risers and branching) will be removed and replaced and, where required, ventilation will be upgraded. Bathrooms and kitchens will be renovated. When possible, residential units will be further upgraded in line with resident priorities and to comply with the New York City Building Code were required.

The Comprehensive Modernization program will require careful planning, strong organizational support and integration, and management with appropriate technical capacity. It will significantly affect residents and involves many risks that need to be carefully managed. NYCHA has assembled a project management team consisting of NYCHA staff experienced in implementing the Sandy recovery projects and consultants who have managed large Design-Build projects. NYCHA did a significant amount of outreach to the contracting community to understand the risks and challenges associated with this type of project. NYCHA is completing a full risk assessment of the project, which entails identification and consideration of the risks associated with the projects to be followed by development of risk mitigation plans. A final risk management plan will be produced by the fall. The Monitor team is looking for a similar approach to be adopted on all major programs as part of the A&CM improvement project discussed below.

NYCHA contemplates selective relocation of residents in temporary housing located on site or within the neighborhood. Personal property may be stored in storage facilities or in apartments. Residential line unit vacancies will allow for quicker, more efficient renovations. It is understood that resident relocation, roughly estimated at \$15,000 per unit, is not capital-eligible, and will require NYCHA to allocate funds separate from the Agreement capital funds to cover the costs. In that regard, alternative sources

of funds have been identified. NYCHA has been meeting with residents at these developments to establish reliable communication, engage them in the planning process and discuss and mitigate the impact to residents.

NYCHA may proceed with the Comprehensive Modernization projects using the Design-Build method. According to the “Request for Qualifications” document issued by NYCHA to the construction industry on June 30, 2022, in addition to comprehensive construction services, a Design-Builder may be responsible for i) coordinating and matching moves to temporary units, including tracking all units pursuant to HUD Guidelines; ii) preparing tenant rights and relocations packets; iii) distributing tenant notices; iv) obtaining moving services and scheduling and coordinating the physical moves (to and from) of tenants and their belongings; v) providing social services and other resources, as appropriate, to assist tenants with collateral issues that may arise during relocations; vi) conducting initial screening and assessment of all apartments to identify resources needed in advance of the moves; and vii) establishing a relocation office at each property.

In addition to NYCHA and its project manager addressing schedule and cost risks, we cannot overstate the importance of the resident engagement and relocation components to the critical paths of the two projects. For schedules to be met and costs contained, the Design-Build teams must be deeply engaged with each household and prepared to address every contingency swiftly and efficiently.

Since the Comprehensive Modernization projects will be undertaken as Design-Build, a new delivery method for NYCHA, NYCHA must be diligent in establishing the program and the RFP documents. Preparation of a good RFP is necessary for the success of any capital project, especially for Design-Build, as it lays out the contractual obligations between NYCHA and the contracted firm and apportions the risks between the owner and design builder. With the Design-Build method, once a contract is awarded, NYCHA will have limited input in the design and final scope of the project. Thus, the RFP will be pivotal. NYCHA must also utilize Design-Build industry best practices to draft key documents and incorporate any lessons learned from any previous Design-Build procurements. It is vital that NYCHA involve the Monitor in the review of the RFP and the vendor proposals. The Monitor has SMEs in Design-Build delivery who were involved in the procurement phase of NYCHA’s first Design-Build projects. In the first Design-Build projects for heating, NYCHA also involved an SME from the DBIA (Design-Build Institute of America) to review the RFP and form of contract. We recommend that NYCHA engage similar expertise for this procurement.

NYCHA's current timetable for the Comprehensive Modernization contracting process (which is subject to modification) is as follows: receiving questions regarding the request for qualifications by July 8, 2022; receiving statements of qualifications by July 20, 2022; making a "shortlist" announcement in early September 2022; issuing the RFPs to the construction entities in October 2022; and issuing the contract notices to proceed in the first quarter 2024.

Lead Abatement Program

Approximately \$862 million in funding has been allocated towards the lead abatement program. This three-phase program, still in the preliminary phase, requires careful planning. In March 2022, the administration of the program was transferred from A&CM to the NYCHA Healthy Homes Department ("Healthy Homes") based on Healthy Homes' experience and expertise with XRF testing and lead abatement. The Federal Monitor supports this decision.

With the reduction of the New York City lead testing standard from 1.0 mg/cm² to 0.5 mg/cm² in December 2021, NYCHA had to retest units across the portfolio. NYCHA's TEMPO program, which is focused on XRF testing, repairs and lead abatement in units with children under 6 years old, has accordingly revised its plans and target schedules. Phase I of the lead abatement program will focus on units with children under 6. NYCHA is also abating lead to the .5 standard in apartments as part of the turnover process. NYCHA and the Monitor have developed and will continue to refine a formal reporting structure for this work.

NYCHA's Restructuring of A&CM

With the infusion of the \$2.2 billion in City capital funding resulting from the Agreement, as well as additional funding being made available by New York State, NYCHA is undertaking a capital program significantly larger and more complex than in recent years. For NYCHA to deliver these capital projects on schedule and within budget, it needs a robust capital projects organization that uses best industry practices for construction planning and management. This need was recognized by the consultant who conducted an organizational assessment of NYCHA in 2019, and is also noted in NYCHA's Transformation Plan.

NYCHA has recently made progress towards strengthening its capital program organization and the procedures and management tools it employs to plan, track, and deliver capital projects. Among other improvements, NYCHA has revised its capital project procedures manual, created new scheduling and safety and inspection teams, and implemented new management systems and standardized key metrics.

Additionally, in January 2022, NYCHA hired a new Chief Asset and Capital Management Officer (CACMO) who oversees A&CM and NYCHA's Real Estate Department. The CACMO has undertaken a complete assessment of A&CM and has established an A&CM Division Change Program to identify and implement improvements in ten key areas. This will improve portfolio planning, project management, interagency coordination, and project delivery. The A&CM goals are to:

- 1) Integrate and align the Authority's existing capital investment plans and development, modernization, and asset management focused teams, to create a single pipeline for projects;
- 2) Bring comprehensive repairs to NYCHA apartments through strong partnership with residents and other stakeholders, use strategic, data-driven portfolio planning, and achieve effective project delivery; and
- 3) Embrace innovation in building materials, construction methods, and technology to enhance residents' living experience and improve building performance and management.

A&CM's engagement with NYCHA's central operations teams and developments will be one of the critical components toward successful implementation of the Neighborhood Model. Planning and management of the capital program - which include i) incorporating operations staff, resident engagement, and data review of the performance of equipment in the planning process, and ii) consistent compliance with procedures to track and manage projects and the accuracy of reporting - will improve the timeliness and quality of projects. NYCHA should promptly commence and expedite this organizational improvement plan.

Conclusion

We have seen important recent improvements in management and controls of the capital program. Further improvement is essential. We also have seen NYCHA's elevator and heat project schedule documentation become more detailed, which will improve project management. NYCHA's preparation of monthly progress reports and quarterly updates is also helping to ensure that NYCHA undertakes a careful internal review before details are presented to the Monitor. This in turn will support NYCHA in managing its capital projects.

We remain concerned with NYCHA's approach to maintaining project schedules, the procurement process, securing critical materials, and resident relocation. The Monitor's continued oversight of the CCAP should ensure that NYCHA is implementing planned improvements, addressing risks and advancing projects. The Monitor will continue to assess NYCHA's progress with a focus on NYCHA's ability to:

- Organize portfolio and capital projects planning around a transparent prioritization model and stakeholder priorities
- Strengthen stakeholder engagement approach through property liaison function and improved engagement practices
- Adopt industry best practices project controls methods such as risk and stakeholder management

As stated, we recommend that NYCHA consider bundling more heat and elevator projects to reduce the impact arising on multiple individual projects going through the approval processes. The benefits of bundling can be seen in the waste management program.

We also recommend that A&CM work with the City and NYCHA's Procurement Unit to complete VNC checks on bidders at the outset of bidding, rather than at the award phase. By accelerating the VNC process, NYCHA could secure critical materials during the final contract execution stages. Further, with continuing global supply chain issues, NYCHA needs to find alternative methods to secure the critical materials it needs. NYCHA should take advantage of the significant purchasing power it has due to the size of its capital program. NYCHA has advised that for the Sandy recovery projects it secures critical equipment immediately prior to awarding a contract with a general contractor. This approach will also work for elevators and for traditional DBB heat projects. Accordingly, the final design solution remains to be seen.

Further, we recommend that NYCHA hold more pre-market awareness days with manufacturers, contractors, and vendors to alert them to anticipated projects, potentially stimulating greater vendor interest and enlarging that market.

In addition to our ongoing oversight and assessment of A&CM's progress in improving its capital projects practices and procedures and completion of its projects, we will keep urging NYCHA to use the Monitor capital team's expertise in addressing the challenges NYCHA faces in completing these essential projects. As detailed above, NYCHA's decision to use a Comprehensive Modernization strategy to rehabilitate its building stock is ambitious and has many risks. Our capital team stands ready to assist

with our extensive background and experience (especially with the Design-Build process) as A&CM moves forward in planning, managing, and completing these projects.

Respectfully Submitted,

Bart M. Schwartz