



Capital Plan

Calendar Years 2020-2024

December 18, 2019

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Overview

NYCHA’s 2020 – 2024 Capital Plan provides approximately \$7.114 billion in planned commitments for infrastructure improvements, major modernization, other systemic upgrades and repair, resiliency, and fortification of developments damaged or impacted by Superstorm Sandy. The Plan is based on the current federal capital funding outlook, funding from local elected officials and the City of New York, as well as expected disaster recovery in the wake of Superstorm Sandy.

The Plan includes \$6.1 billion in City and Federal funds to address deteriorated heating, elevators, facades and roofs. The City funding includes \$1.2 billion to address lead, mold, heating, elevators and pests). The Federal funding includes \$791 million to address building exteriors, including brick and roof projects and another \$114 million to address elevator replacements. The State funding includes \$350 million for boilers and \$100 million for elevator replacements. Overall, of the \$7.114 billion dollars included in this Plan, 47.0% is from Annual Federal Capital Grants, 38% is from the City of New York, 7 % comes from the State of New York, and 8% comes from other sources (Community Development Block Grant, Disaster Recovery, and Other).

All Funds (In Thousands)

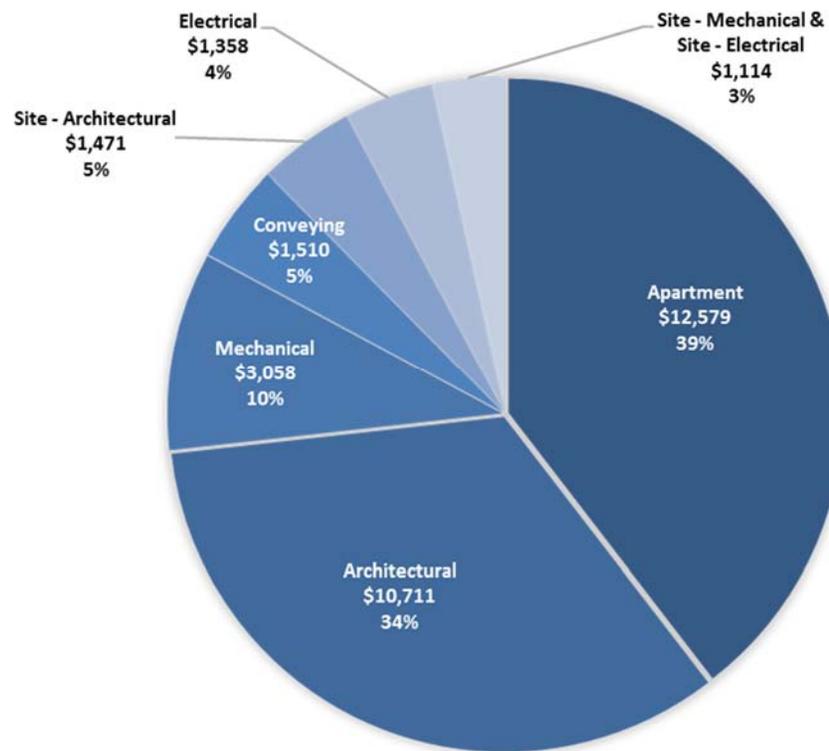
	2019 Carry Forward Balance	2020 New Funds Available	Total Available for 2020	2021	2021	2021	2021	2020 - 2024 Plan Totals
Federal	583,060	551,749	1,134,809	551,749	551,749	551,749	551,749	3,341,804
City	902,659	470,238	1,372,897	336,000	386,000	336,000	336,000	2,766,897
State	16,235	450,000	466,235	-	-	-	-	466,235
Community Development Block Grant (CDBG)	137,513	-	137,513	-	-	-	-	137,513
Disaster Recovery	-	59,016	59,016	244,699	26,285	2,768	-	332,767
Other	68,554	250	68,804	-	-	-	-	68,804
Grand Total	1,708,021	1,531,252	3,239,274	1,132,448	964,034	890,516	887,749	7,114,021

NYCHA’s Chronic Funding Gap

NYCHA’s aging housing stock requires far more capital investment than has been available from Federal, State, and City grants. The 2017 Physical Needs Assessment (PNA) estimates over \$31.8 billion dollars in capital needs in the first five years. The capital needs are projected to grow anywhere from \$42.7 billion to \$68.6 billion over the next ten years depending on the estimated rate of deterioration. Of NYCHA’s 2,351 residential buildings, 77% are more than 40 years old.

Five Year PNA – NYCHA’s Capital Needs

(In Million)



\$31.8 Billion

Funding available to NYCHA for capital improvements has failed to keep pace with growing needs but has historically declined. From 2001 to 2017, annual federal capital grants have declined \$74 million, or 18%, from \$420 million to \$346 million. Beginning in 2018 and continuing through 2020, Federal capital funding has increased substantially. NYCHA was awarded \$528 million in 2018 and \$552 million in 2019. Despite the increase in appropriations to the Capital Fund program over the years, rising costs continues to result in very real cuts to the program. This chronic funding gap has severely constrained NYCHA’s ability to make necessary repairs and upgrades to brickwork, roofs, elevators, building systems (such as heating and plumbing systems), and apartment interiors.

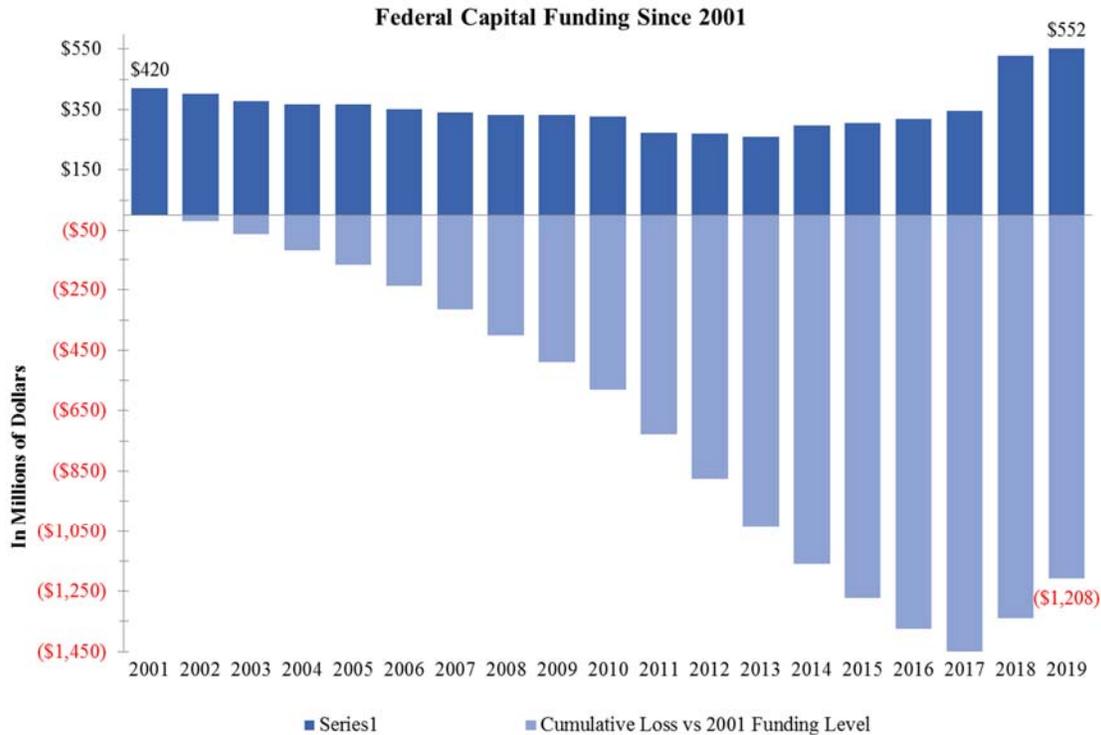
Federal Capital Funding Since 2001

NYCHA has experienced a cumulative federal capital grant funding loss of \$1.208 billion since 2001. Funding shortfalls have meant that only \$2.050 billion has been invested in capital improvements during the last five years (2015-2019). Over the last four years, there has been an

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increase to federal capital fund allocation. Continuous funding at the 2019 level of \$552 million would reduce the overall funding shortfall.

(In Millions)



NYCHA’s Capital Funding Sources

Federal Funding:

NYCHA is using an optimistic approach in allocating the Federal Capital Funds by using the 2019 capital fund grant amount of \$552 million. Despite this assumption, the funding allocation for 2020 remains unclear. Below is a chart summarizing funding allocation by administering areas/departments

All Funds (In Thousands)

Administrating Areas	2019 Carry Forward Balance	2020 New Funds Available	Total Available for 2020	2021	2022	2023	2024	2020-2024 Plan Totals
Administration	1,724	-	1,724	-	-	-	-	1,724
Healthy Homes	-	16,600	16,600	16,700	16,700	-	-	50,000
IT	25,301	7,492	32,793	5,716	5,716	5,698	4,404	54,327
Operations	15,282	67,965	83,247	67,865	67,865	84,565	84,565	388,108
Safety & Security	-	-	-	-	-	-	-	-
Capital Projects	465,612	233,667	699,279	235,443	235,443	235,443	235,443	1,641,051
Finance	75,141	226,025	301,166	226,025	226,025	226,043	227,336	1,206,595
Grand Total	583,060	551,749	1,134,809	551,749	551,749	551,749	551,749	3,341,804

Federal Deadlines

Federal capital grant awards require NYCHA to meet deadlines for establishing contracts to perform work (obligation deadline) and completing work (expenditure deadline). Accordingly, NYCHA prioritizes its capital projects to meet and exceed the federal obligation and expenditure deadlines. The U.S. Department of Housing and Urban Development (HUD) requires housing

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authorities to obligate 90% of capital grant in 24 months and to expend 100% of capital grant in 48 months. If these deadlines are not met, housing authorities may incur penalties, such as the forfeiture of funds. In 2019, NYCHA met HUD mandated deadlines ahead of schedule.

(In Thousands)

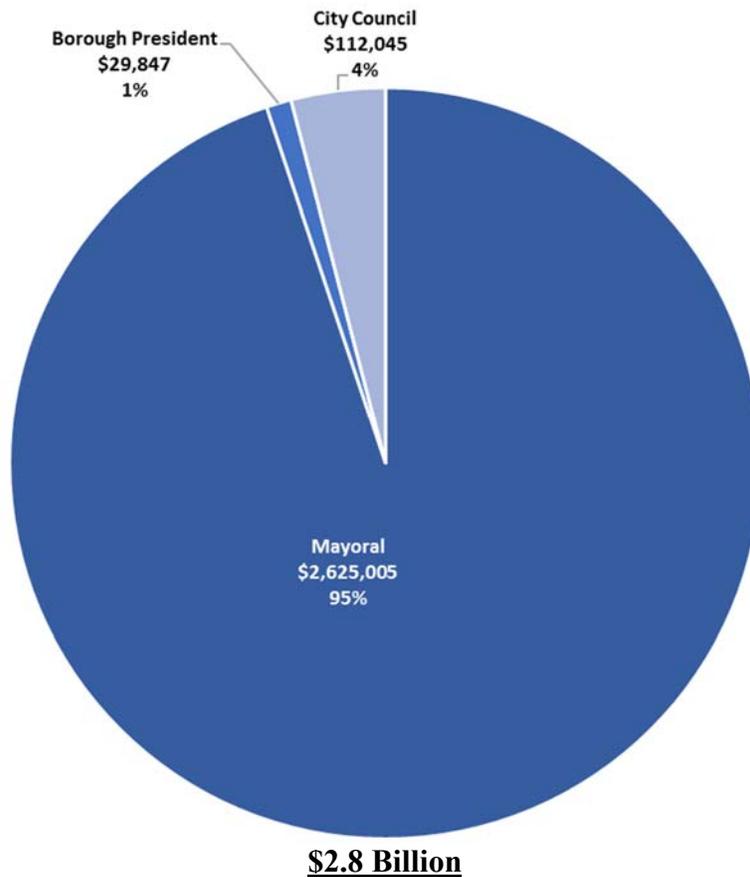
Awards	Obligations Deadline	Expenditures Deadline	Current Modified Budget	Obligation	Expenditures	Funds Available	Obligation %	Expenditure %
CF2015	4/12/2017	4/12/2019	306,356	306,356	306,356	-	100%	100%
CF2016	4/12/2018	4/12/2020	318,733	318,733	318,733	-	100%	100%
CF2017	8/16/2019	8/16/2021	346,326	338,184	267,523	8,142	98%	77%
CF2018	7/3/2020	7/3/2022	528,246	465,572	123,821	62,674	88%	23%
CF2019	4/15/2021	4/15/2023	551,749	179,790	70,300	371,959	33%	13%
Grand Total			2,051,410	1,608,635	1,086,733	442,775	78%	53%

City Capital Funding:

Mayor Bill de Blasio has provided funding to NYCHA to address the needs of the aging public housing infrastructure. The funding in this Plan is based on the City’s FY 2020 September Capital Plan and includes Mayoral initiatives as well as funding allocated by elected officials (i.e., Council Members and Borough Presidents).

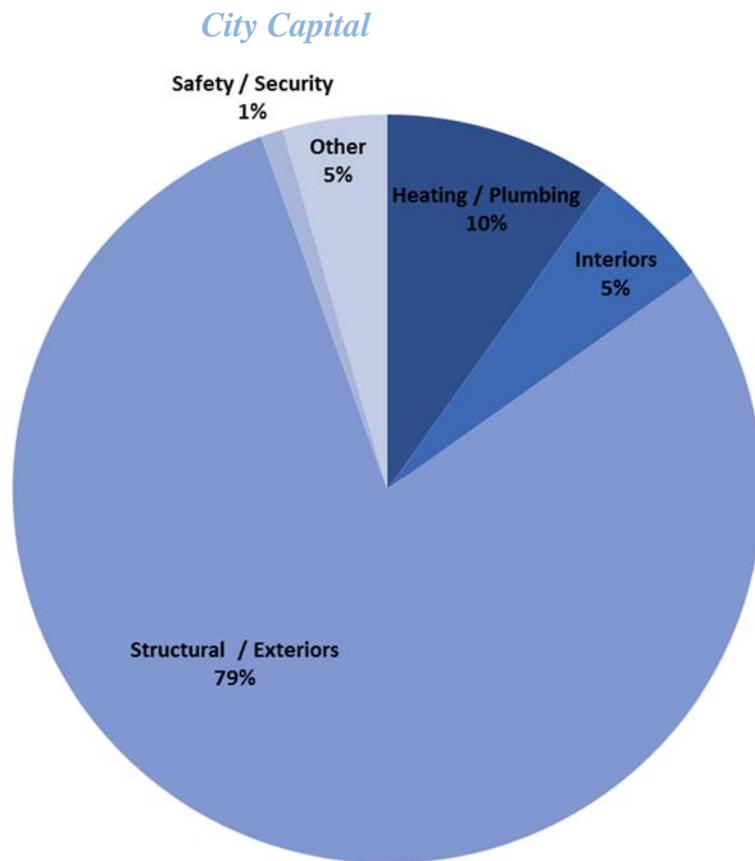
FY 2020-2024 City Capital by Funding

(In Thousands)



Projects include:

- **Roofs:** Investment of \$1.3 billion to replace over 950 deteriorating roofs on NYCHA buildings over the next 10 years. In 2020, the allocation is for \$319 million (23% of the 2020 budget). This commitment will not only fund the replacement of roofs and parapets (the protective wall along roofs), but it will also help to substantially reduce mold which can be detrimental to residents' health. Leaky roofs are one of the key sources of the water and excessive moisture that can cause mold in apartments as well as physical damage to the building's structure. This Five-Year Plan includes over \$692 million in funding.
- **HUD/Southern District of NY Agreement:** Investment of \$1.2 billion to address Mold, Lead, Heating, Elevators and Pests.
- **Waste & Pest Management Initiative:** NYCHA received over \$30 million in funds to replace or install exterior and interior compactors, excavate and clean basement crawl spaces and purchase bulk crushers.
- **Heating:** Investment of \$399 million to complete boiler work, installation of hot water heaters and installation of new gas rises in NYCHA developments.



Total: \$2.8 Billion

2019 Accomplishments

Capital Projects Division

Completed Projects:

In 2019, Capital Projects Division (CPD) succeeded in completing capital work at 132 developments in 2019, valued at \$248.8 million, impacting more than 90,000 families. There is ongoing construction at 183 developments, totaling \$1.45 billion, impacting over 130,000 families. The projects in the CPD portfolio include jobs funded primarily by Federal, State, and City partners. There is also Energy Performance Contract (EPC) funding of approximately \$122.8 million primarily for boiler replacements, heating controls, and lighting efficiency. The projects completed in 2019 and ongoing work include improvements to playgrounds, security enhancements, remediation of crawl spaces, apartment renovations, boiler replacements, and fortifying NYCHA's building envelopes. Below are NYCHA's selected capital projects highlights and accomplishments for 2019.

City Capital

Mayoral Roofing Initiative:

The Mayoral Roofing Initiative, originally consisting of thirteen phases, was consolidated by the Office of Management and Budget to be completed in 8 tranches due to the successes of the program. It provides a total of \$1.4 billion to replace aging roofs and to improve the lives of approximately 175,000 NYCHA residents in 949 buildings. Replacing the roofs will make buildings cooler and consume less energy as well as protect from water leakage to apartments. Upon completion, NYCHA will be out of deferred maintenance and into life-cycle costs on roofing.

Status:

Tranche I:

- Completed in 2018 roof installations at 65 buildings at six developments.

Tranche II:

- Construction has been completed at 52 buildings at 7 developments. Legal issues Breukelen have delayed the completion of 26 roofs.

Tranche III:

- Construction has been completed at all 7 buildings at Borinquen Plaza II
- Construction has started at 9 developments. Forty-six (46) buildings have been completed. The remainder of 48 buildings will be completed by the end of 2020.

Tranche IV:

- This Tranche comprises 134 roof replacements at 12 developments. The projected start dates for these projects range from February 2020 to June 2020.

Tranche V:

- There are 8 developments with a total of 111 roofs to be replaced. These projects are in varying stages of Design.

Security Enhancements:

- Completion of 1 MAP CCTV site and 2 MAP LAC sites in 2019
- Completion of 10 Non-MAP CCTV projects and 3 LAC projects 2019 with predominantly City funding of approximately \$5 million

Quality of Life:

- Completed 4 grounds and landscaping projects.
- Completed structural upgrade to 5 senior\daycare centers

Energy & Sustainability:

Energy:

- Continued construction for four active energy performance contracts totaling \$271.8 million. Scope of work includes Whitman and Patterson boiler replacements, new BMS and heating controls including apartment temperature sensors at 58 developments; LED lighting upgrades (apartment & public space) at 70 developments; and Soundview domestic hot water (DHW) decoupling from central boiler plants.
- AC Pilot: Began installation of smart AC at Meltzer Tower in August. To date, 180 air conditioners have been installed.
- Entered into \$3.7 million in Weatherization Assistance Program Agreements at 9 developments
- In collaboration with NYSERDA finalized request for proposals to select a design team for retrofitting one building to achieve near net-zero energy performance.
- Procured four Energy Service Companies (ESCO) to implement future energy performance contracts.

Sustainability:

- On December 23, 2019, NYCHA signed the first solar lease with Bright Power, Inc. and Sol Purpose to develop approximately 2 MW of community-shared solar on 27 rooftops in Queensbridge North and South. This project, a part of NYCHA's ACCESSolar program, projects to hire 12 temporary full-time residents for installation and subscriber outreach.
- Sustainability installed food waste disposals to reduce organic waste from household waste streams, eliminate food sources for pests and divert organic materials from landfills in 676 units at 3 developments.
- Enlarged ground-floor trash chute doors were installed at 12 developments, bringing the NYCHA total to 40 completed developments. These enlarged doors will make it more convenient to dispose of larger trash bags for compaction in existing interior compactors rather than dumping trash bags outside.
- Through a contract with DSNY, GrowNYC is implementing a program to address recycling, waste management and related operational issues at 12 NYCHA developments in the NRR zones. The goal is to address all facets of waste management – from generation of trash and recycling to sorting, hauling, storage, disposal and pick up at selected developments through education and additional resources.

- In partnership with NYCHA Ideas42 conducted an applied research project to understand and address quality of life issues including improper disposal of household trash and pet waste at 27 developments. The study demonstrated that improved access to trash disposal infrastructure, supplemented by behaviorally informed communications, significantly reduced the amount of trash, litter, and dog waste on the grounds of NYCHA developments.
- NYCHA installed cardboard balers at nine developments to prepare cardboard for recycling by DSNY and remove it from bulk waste streams sent to landfills.
- Sustainability kicked off the development of a Climate Adaptation Plan, focused on developing strategies physical enhancements (e.g. flood barriers, backup generators, cooling systems, etc.) to its portfolio that will help protect residents against future climate risks.
- NYCHA received a grant for \$198,719.25 from FEMA to develop a shovel-ready project proposal for a water square at the Clinton Houses in East Harlem. The project, which is part of a larger East Harlem resiliency plan, serves as a place making tool for the larger community while reducing the effects of flooding along the 106th street corridor. The project is being developed in collaboration with DEP, who is providing a \$66,240 local match.

Federal Capital

In compliance with HUD’s mandated deadlines, NYCHA places priority on achieving its Capital Plan obligation and expenditure targets ahead of schedule. NYCHA’s goal is to obligate 90% of its capital funds within 16 – 18 months, ahead of HUD’s 24-month obligation deadline.

To date, the grants under the Capital Funds Program have been obligated and expended as follows:

HUD Obligations

- 2016 Capital Fund Grant - CPD obligated the entire \$218 million fund. 90% of the funds were obligated in February 2018, 3 months ahead of the deadline
- 2017 Capital Fund Grant - to date, CPD has obligated \$215 million, or 96%. 90% of the funds were obligated within 15 months of receipt of funds, 9 months ahead of deadline.
- 2018 Capital Fund Grant – to date, CPD obligated \$333 million, or 88% of the 378 million budget.
- 2019 Capital Fund Grant – to date, CPD obligated \$93 million, or 23% of the \$401 million budget.

HUD Expenditures

- 2016 Capital Fund Grant – CPD fully expended \$218 million by February 2019, 14 months ahead of the deadline.
- 2017 Capital Fund Grant – CPD expended \$143 million, or 64% of the grant. The deadline to expend the funds is August 16, 2021; the projection is to expend the funds by June 2020, 13 months ahead the deadline.
- 2018 Capital Fund Grant – CPD has a budget of \$401 million, to be expended by April 2023

Local Law 11:

Pursuant to the NYC Department of Buildings regulations, NYCHA proposes to repair the unsafe buildings and comply with NYC Local Law 11 requirements to repair all unsafe conditions found at the exterior walls of all NYCHA owned buildings city wide. All buildings higher than six (6) stories are required to be inspected once every five years. Upon filing an UNSAFE report, the owner, or person in charge, shall immediately commence such repairs or reinforcements as required to secure the safety of the public and make the facades conform to the provisions of the administrative code (RCNY §103-04). All unsafe conditions shall be corrected within thirty (30) days from the submission of the report (RCNY §103-04). Property owners must repair dangerous conditions within 90 days of filing a technical report (NYC DOB FISP).

A total of 105 buildings were completed at a cost of \$49.4 million by the end of 2019.

- Completed inspection at 1,511 buildings (100%) of Cycle 8 of LL11 buildings.
- Increased the number of safe buildings in Cycle 8 from 184 to 607.
- Received authorization for approximately \$70 million.
- Expended approximately \$49 million for repair work and approximately \$12 million on sidewalk sheds. In 2019, 62,280 linear feet of sheds were installed
- Removed approximately 47,452 linear feet of sidewalk sheds in 2019.

Information Technology

NYCHA's Information Technology (IT) Department continues to make significant service improvements for both our internal and external customers through the implementation of advanced technologies including mobile and self-service technologies. NYCHA continues to be recognized as a technology leader. In 2019, NYCHA was awarded two Regional Awards of Merit from the National Association of Housing and Redevelopment Officials (NAHRO) at their Summer Conference held in Boston, Massachusetts on July 11, 2019.

- Shanna Castillo of the Office of Resident Economic Empowerment and Sustainability and Venkata Chitrapu, of the IT Department, received the award for Resident Economic Empowerment and Sustainability in the category of Resident and Client Services.
- Venkata Chitrapu, of the IT Department, received the award for NYCHA's IVR and KIOSK Self Service System in the category of Administrative Innovations.

Below are some of the highlights and status of key technology initiatives.

Maximo and Handhelds

In 2019, NYCHA entered in an agreement with HUD and the Southern District of NY to engage in a series of reforms and milestones aimed at improving health, safety, and quality of living throughout NYCHA properties. In support of this agreement, NYCHA has implemented the following improvements to Maximo:

Robocalls. Supporting the new Planned Outages policy of scheduling robocalls 60 hours prior to a scheduled outage; not allowing residents to cancel work orders related to lead, mold, leak or flooding. In addition, the system will prevent work orders from being closed for "tenant not home" when certain failure code and problem code conditions are met for apartment locations.

Lead-based paint issues were also at the forefront. To support NYCHA's new lead-related initiatives Maximo now tracks visual assessment certifications using a daily feed from Human

Resources and Data Warehouse. In 2019, NYCHA deployed the new Lead Universal Dashboard. Users can view the latest progress on lead-based paint visual assessments by category, including 2018 visual, 2018 child under 6, CCOP category 1, newly created inspections for HUD, etc. Users can drill down to see data for each property management; users can further drill down to see open remediations or inspections work orders. In addition, enhancements were made to support XRF-related work orders:

- XRF QA Monitor and Re inspection work orders are now generated and configured for NYCHA handheld devices.
- Tenant notices and robo-calls providing notice ahead of scheduled work.
- 2019 Annual Visual Assessments - Capture of the visual assessment details on the NYCHA handheld device.
- Auto-generation of follow-up inspection work orders and abatement/remediation/dust wipe work orders based.
- XRF Positive Result Process; Pre-renovation Acknowledgment Form; and functionality to capture the EPA Pre Acknowledgement and EPA Post checklist on handheld.
- Identifying in EBLL work orders when a child under 6 lives in or frequents the apartment.
- Maximo now tracks visual assessment certifications using a daily feed.
- Bare Soil remediations on NYCHA playgrounds that could pose a potential lead hazard.

Elevators. Deployed improvements to the management and reporting of elevator issues, including:

- Streamlining the process of closing elevator parent work orders where there are no other child work orders open.
- Allowing users to create children WOs on life-threatening ELEVOOO work orders.

Mold: Continued to support the Authority-wide Mold 2.0 rollout.

- Implemented additional enhancements for Mold process, including requiring and allowing for photos and improved reporting. Child work orders prevented from being created once a mold inspection generates a QA work order, and improved scheduling of superintendent 4 hours in advance, replacing the 7-day restriction.
- Enhancements related to Mold include automated escalation emails when mold work orders related to Local Law 55 Violations are open more than 21 days and added a requirement for users to answer ventilation questions upon arrival at an apartment for a Mold Inspection work order.
- Create a new owner group “OMAR” for mold work orders; added a flag for Capital Work on work orders that have repeat repairs in an apartment.

Heating:

- New report in Maximo that displays all boiler and tank room assets for all locations.
- Updates to Heating Outage reporting logic to more accurately track heating outage durations.

Pests/Exterminators:

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- Enhance to the Pesticide Usage screen to allow users to select the room and specific place of application for each pesticide used. This is a compliance requirement for all exterminator CM work orders on the Handheld.
- Targeted Relief: Introduced Targeted Relief inspections and new functionality to be applied for all units that have more than one pest infestation complaint verified by NYCHA staff within twelve months.
- Implemented interim solution and new dashboard to support “Blitz” initiative, to track and complete extermination inspections on both Maximo and handhelds.
- Daily Buildings and Grounds Inspections - Building Supervisors must complete inspection checklists for Buildings, Grounds, and Playgrounds tasks every 24 hours (HUD requirement). Work Orders remain open for 1 month before auto-closing.

Human Resources: Overtime Approval released to production. This enhancement automates approvals for unplanned overtime with a multi-level approval process available for both desktop and handhelds. It also streamlines the process by providing reporting capabilities to track requests and match approvals to time sheet submissions.

Additional dashboards created for Daily Building, Grounds, Playgrounds Inspections, Door Sweeps, Mold. New reports for PAIS (Pests) and Heating.

EPA - RRP Record Retention – Enhancements include:

- Users cannot close CM work orders unless they attach the EPA pre-renovation and EPA post-renovation forms.
- Users to enter the estimated date and time they will complete the work.
- Users are required to enter results of a dust wipe and indicate Pass or Fail.

Maximo Inventory: Working with NYCHA’s Materials Management and Operations Departments, IT successfully completed development of storeroom inventory redesign, supporting the deployment of a new inventory process and improved underlying technology.

Other:

- Live with integration between Maximo and Jurisdiction Online.
 - NYCHA receives heating asset deficiencies identified by C.N.A. insurance via Jurisdiction Online (JOL) to identify, track and resolve deficiencies before they become violations.
 - Corresponding inspection WOs are automatically created to track deficiencies with info identified by C.N.A.
 - If needed, manually created child Corrective Maintenance WOs track resolution of deficiencies.
 - Improved tracking and handling of boiler asset deficiencies reported by C.N.A in Maximo.
 - NYCHA receives heating asset deficiencies identified by C.N.A. insurance via Jurisdiction Online (JOL) to identify, track and resolve deficiencies before they become violations.
 - Corresponding inspection WOs are automatically created to track deficiencies with info identified by C.N.A.

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- If needed, manually created child Corrective Maintenance WOs track resolution of deficiencies.
 - Improved tracking and handling of boiler asset deficiencies reported by C.N.A in Maximo.
 - Part of heating-related compliance initiatives, as requested by City Council, Mayor's Office and other agencies.
 - Live with third-party vendor National Grid using Maximo. National Grid users can use Maximo desktop to access and close National Grid owner group work orders.
 - Warranty data migrated from APEX into Maximo, so that all work orders created for assets/ locations under warranty will be flagged. The "Warranties Exist" field shall be checked and banner/ message will be displayed on affected Work Orders in Maximo.
- Live with third-party vendor National Grid using Maximo. National Grid users can use Maximo desktop to access and close National Grid owner group work orders.

Siebel

Also, in support of HUD guidance and milestones, Siebel has been upgraded with improved features:

- Complaint Management for Compliance Department: Went live with this project to maintain a forum for employee, contractor, and resident complaints (including anonymous complaints) regarding compliance issues and action taken on such complaints as appropriate.
- Compliance Web Project: Developed and deployed new Siebel-Webform for Compliance, EH&S, and Quality Assurance Depts to capture complaints about poor quality/incomplete repair and issue reoccurred after repair.
- Lead Disclosure: Implemented the logic to generate the Lead - Notice of Hazard Reduction letter from Siebel. Deployed changes to support Lead Disclosure requirements by displaying the sample Lead disclosure forms in the Self-Service Portal.
- Mold: Developed and deployed the CCC triage questions for Mold. Deployed changes to not allow any child tickets of Mold to be cancelled/closed from Siebel.
- Chair's Office Correspondence / Monitor Queries – Legacy correspondence system retired, and functionality integrated into Siebel.
- Continued to enhance the Self-Service Portal with the following changes,
 - Deployed the Quality of Life functionality on Siebel Public Service and Self-service application. The residents can now report non-violent, unlawful behaviors that affect the sense of well-being and public safety.
 - Ingersoll Section 8 Application: Deployed the changes in production for accepting the Ingersoll Section 8 application via Self-Service portal.
 - Tenant Complaints: Deployed the process to capture complaints by residents against NYCHA staff members.

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- CUNY Scholarship: Deployed a Siebel self-service application to provide the ability for Public Housing residents and Section 8 LLC residents to apply for CUNY Scholarships.
- PH Annual Notices: Created new screen in Siebel to save load the Annual Survey questions/answers in Siebel for the year 2019. Siebel worked on creation of the maintenance work orders for the installation/repair of the window guards.
- Heat and Hot Water: Project gave tenants the ability to let NYCHA know if heating outage restorations worked and if not, so that NYCHA could take immediate-action to fix the issue by creating required tickets.
- NYCHA IT continued to support the Leased Housing Program with the following initiatives:
 - Deployed functionality for Leased Housing voucher holders and staff to submit changes for Head of Household, Family Composition, and other profile details.
 - Deployed enhancements to implement the Permission Category for Leased Housing Department's policy on occupancy and succession and the associated HAP (Housing Assistance Payments) calculations.
 - Fast Act Implementation Plan: Deployed logic support the HUD Streamlined Certification of Fixed Income policy to the Leased Housing Department Annual Recertification process.
 - Deployed new and enhanced Reasonable Accommodation (RA) functions for residents and applicants. Final versions of the RAD conversion letters for Brooklyn Bundle were sent out to tenants through back file conversion process. A total of 1,256 letters were sent.
 - RAD Portal: Deployed Self-Service portal functionality to allow Public Housing/Active/Prelim waitlist applicants to apply for Section 8 RAD developments.
 - Ingersoll Application: Deployed portal to accept applications for Ingersoll Senior development.
 - Change of Head of Household/Profile change for Section 8: Deployed the Siebel Self-Service portal changes to allow tenant request the changes to the Head of the household and/or profile updates. Also, implemented the process on the Employee portal for the NYCHA staff to review and approve request.

Self-Service Kiosks

New kiosks have been added to NYCHA's walk-in centers, allowing for shorter waits and improved access to accounts and services.

Digital Van

In 2019, NYCHA expanded its fleet with a fourth Digital Van. These mobile connectivity stations allow residents to access wireless broadband internet, allowing them better access to NYCHA services as well as other important resources, like research, job hunting, and education.



Third Digital Van at the LaGuardia Houses on the Lower East Side.

Owner Extranet

During 2019, NYCHA also upgraded the Owner Extranet, the online portal for NYCHA Section 8 Owners. Deployed following New functionality:

- Allow owners to view upcoming inspections, tenant recertification dates, problems with repair certifications, and to resubmit rejected certifications of repairs.
- Allow Owners to view inspection related photos

In addition, NYCHA deployed changes to block submissions of certifications of repairs for 24-hour violations in public spaces.

Customer Contact Center Interactive Voice Response (IVR)

Deployed the Outbound-Callback (Virtual Hold) feature to NYCHA's Customer Contact Center (CCC) Production environment, which offers NYCHA customers a convenient option to have a NYCHA Representative call them back at a more appropriate time. This Callback feature improves the efficiency of NYCHA's CCC staff, by reducing their queue and Average Speed to Answer (ASA), and provide better customer experience for callers into NYCHA's Customer Contact Center.

Support for Infrastructure at Development Management Offices

VoIP Phone Deployment to NYCHA Property Management Offices: Deployed Voice over IP (VoIP) phones to 145 sites, with more than 3,200 VoIP Phones installed, and approximately 1,700 users trained.

E-LAN: Converted networks to high-speed dedicated E-LAN services, for improved internet access, at close to 130 management offices and other Property Management sites.

IT Service Management (ServiceNow®)

Deployed a new NYCHA IT Service Desk, powered by ServiceNow®, featuring a new Service Portal and Knowledge Base, with Incident Management and Problem Management functionality. The platform is available inside and outside the NYCHA network.

NYCHA Outages Web Page

- Deployed publishing of upcoming planned outages.
- Integrated functionality required by the New York State Vital Services legislation to include additional information related to the current status of open Heat, Hot Water, Water, Elevator and Electric outages.

Heating Action Plans on NYCHA Website

- Published development heat actions plans on the Developments portal and Transparency page

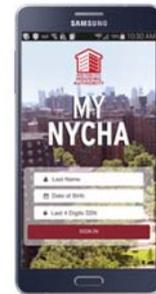
XRF Testing Initiative on NYCHA Website

- Launched public facing web page to show XRF Lead-Based Paint Test results.

MyNYCHA Mobile App

Deployed the following additional functionality:

- View tickets grouped by job
- View current Rent Bill
- Report Windows Issues in Heat/Hot Water Work Tickets
- View Lead Visual Assessments under inspections



Workforce Management for Customer Contact Center

Deployed the Workforce Management (WFM) application to NYCHA’s Customer Contact Center (CCC) Production environment, which allows for more efficient management of NYCHA CCC staff, along with enhanced performance metrics tracking and reporting. The WFM application enables streamline scheduling and administration of staffing resources, including management of CCC work shifts, CCC staff performance and feedback, providing customizable metrics reporting and analysis, such as calls handled, average handling time, staffing demand forecasting and planning.

IT Security

This year, NYCHA’s IT Department completed 8 major initiatives aimed at strengthening cybersecurity and awareness throughout the organization.

- Encrypted Data to protect sensitive Personally Identifiable Information (PII)
- Implemented a 24/7 Managed Security Service (MSS) to monitor NYCHA’s IT
- Implemented an Artificial Intelligence (AI) capability
- Implemented Symantec Altiris, allowing for automated Inventory/Security and OS patching

New York City Housing Authority

- Implemented a Cloud Access Security Broker (CASB) solution for cloud IT Security monitoring, to protect data and security for Office 365 and Symantec.
- Implemented the Tripwire application to Automate IT change management
- Implemented AppGuard, an additional end-point protection to prevent virus / ransomware attacks on all NYCHA field endpoints and Windows 7 Machines.
- Established a shared Cyber-Awareness Training Program to train employees on best practices to safeguard against potential security threats.

eBuilder

This year, NYCHA completed work on migrating functionality for the Primavera project management software used by the Capital Projects Department over to a cloud-based solution powered by eBuilder. This follows with a broad strategy for NYCHA to migrate services to cloud-based solutions wherever feasible.

Compliance Management

The rollout of new cloud-based software for Site Compliance was completed in 2019. The new system, SiteCompli, improves the efficiency of managing regulatory compliance violations issued by NYC and New York State agencies. The use of Open Data public portals aims to identify and manage these violations in a timely and cost-effective manner.

Two-Way Radio Handsets

NYCHA has upgraded its two-way radios, deploying over 3,500 new handsets for our Executive, ESD and NYCHA OEM vehicle fleet.

Floor Switches

Aging network switches were replaced and upgraded across the 90 Church St, Long Island City, and Borough Management offices.

2020 Capital Plan Highlights

Capital Projects Division

Federal Plan

The Capital Projects Division will receive \$1.175 billion in new Federal Funding over the period from 2020 to 2024 for investment in NYCHA's building portfolio. The projections over the upcoming years are summarized below.

Brick and Roof Projects

For the FY 2020-2024 Capital Plan, \$321 million, or approximately 27% of the allocation of the Federal Plan, is targeted at building exteriors, including brick and roof projects. This work will ensure that building exteriors are watertight by replacing aging, deficient roofs and repairing brick façades. A significant portion of this funding will be allocated for Local Law 11 brickwork replacement projects at 60 developments. The remaining portion of this funding will support major exterior roof work at Sotomayor, Patterson, and Dyckman developments. These sites have been prioritized based upon the Physical Needs Assessment (PNA) level of deficiencies and roof ratings, as well as an analysis of the volume of work order tickets.

Heating & Plumbing

Over \$309 million, or about 26% of the Federal Plan will be allocated to heating and plumbing projects.

Heating plant replacements are planned for 15 developments including: Bronx River, Butler, Dyckman and Saint Nicholas. These projects will fully replace heating plants and all ancillary equipment to optimize the total lifecycle investment, and to reduce fuel consumption. Underground steam distribution replacements are planned for 5 developments to ensure reliable and efficient heat delivery. The prioritization of these selected sites is based upon the assessment of conditions with regards to boiler equipment and underground piping age, volume of work tickets and availability of replacement parts. In addition, this allocation will be used for gas risers, roof tanks and underground fire/water lines at 23 developments.

Elevators

The funding for the elevator portfolio is \$81 million which is 7% of the Federal Plan. This allocation will be used to replace 126 elevators at 8 developments, including Queensbridge South, McKinley and Lafayette. Sites are prioritized based on conditions assessments.

One of the largest projects in the elevator portfolio is a comprehensive replacement of the 49 cars at Queensbridge South development. The architectural and engineering aspects are being funded federally and the physical work by New York State allocation.

Safety and Security

\$69 million or about 6% of the Federal Plan will be allocated for fire alarm and security systems. Of this amount, \$63 million is slated for inclusive security upgrade to install new main entrances, intercom and CCTV at 11 sites, including Woodson, Hernandez and Low Houses.

Waste Management

Over \$165 million, or about 14% of the Federal Plan will be allocated toward waste management projects.

This work is essential to the health, safety and welfare of residents and staff. Of this amount, \$28 million is planned for interior compactor replacement projects at 40 developments, including Wilson, Haber and Rangel. An additional \$137 million is planned for new waste yard and exterior compactor replacements at 86 sites, including La Guardia, 303 Vernon Avenue and Webster.

Apartment Bathrooms

The Federal Plan allocates approximately 13% of funding, \$157 million, for the renovation of bathrooms at Jefferson, Highbridge, Mitchel, and Pink developments. Each of these developments has a high number of work order tickets. Having completed building envelope work at these sites, allows NYCHA to invest wisely in the interior of the buildings.

City Plan

The City's capital projects portfolio being managed by CPD through 2024 is approximately \$2.7 billion. The funding is allocated for roof replacement, façade repairs, boiler replacement and related repairs, security enhancements, grounds improvement, and energy conservation measures.

In 2018, a commitment was made to NYCHA to provide \$200 million under the Mayoral Heating Initiative program for the installation of boilers, domestic hot water systems, and temperature controls. In that same year, NYCHA allocated \$156 million of the funds for boiler replacement for eleven developments. Design for those developments were completed in 2018 were awarded in 2019. Additionally, \$43.1 million, available in FY 2020, is being allocated to support heating plant upgrades at additional developments. These upgrades will include separation of domestic hot water from the heating system and installation of heat monitoring systems

As part of the Mayor's Waste & Pest Management Initiative NYCHA received over \$30 million in funds to replace or install exterior and interior compactors, excavate and clean basement crawl spaces and purchase bulk crushers. These measures will assist in reducing resident exposure to rodents, which studies have shown can trigger asthma attacks and spread communicable diseases.

Brick & Roof

The brick and roofing program are funded under the Mayor's \$1.3 billion roofing initiative. In 2020, the allocation is for \$319 million (23% of the 2020 budget). CPD has expedited the roofing replacement initiative through a more aggressive schedule from thirteen tranches down to eight. The objective is to shorten the delivery time for these replacements. Over the next 4 years, there will be an allocation of approximately \$182 million for each of the years to replace the roofs at the designated developments.

The schedule for 2020 is to continue to complete the remaining roofs in Tranche 3, with an expected completion date of December 2019 for six developments, with the remaining one development projected to be completed by October 2020. Tranche 3 is in progress: construction has started at seven of nine developments. The two remaining developments from Tranche 3 will begin construction by June 2019; and at least one will be completed by December 2019.

Security Enhancement

The City Plan has allocated approximately \$55 million (4%) of the 2020 funding to security enhancements, which include installation of CCTV/LAC and lighting across the City. Of these

funds, over \$7 million funded by the Borough Presidents and City Council Members are planned for lighting. The current MAP CCTV/LAC projects at five developments are expected to be completed by December 2019. MAP CCTV and lighting work on Red Hook East and Red Hook West is expected to begin in the first quarter of 2021, after the completion of major work currently being done under the Recovery and Resilience program.

Quality of Life

In 2020, approximately \$128 million (9%) is being allocated to enhance the quality of life for NYCHA residents by improving the community facilities, and recreational centers and repair or replacement of playgrounds.

At Patterson, \$1 million in City funding has been allocated for two new bathrooms and a commercial kitchen renovation at the community center. The project is currently in the design stage.

Ongoing senior center projects include Vladeck and the Hudson Guild for a combined allocation of \$4.2 million projected to be completed by March 2020.

Approximately \$30 million has been allocated in 2020 for elevator repair and replacement.

As mentioned previously, the Mayor's Waste & Pest Management has an impact on the quality of life of the residents since it will provide additional funding for garbage disposal systems that will reduce the exposure to the infestation of rodents.

Major Renovation

\$10 million of Mayoral funding will be contributed towards the ongoing repairs to apartments at 8 developments putting them back on the rent roll so that more apartments are available for residents. Repairs in Whitman are expected to begin in 2019.

Heating & Plumbing

Approximately \$200 million is being provided through the Mayor's Heating initiative to address heating issues at 20 developments, impacting approximately 45,000 residents. This initiative includes boiler replacement, domestic hot water system, and heating controls. It is expected that this system of repairs as well as new system replacement will result in approximately \$5 million in energy savings.

Under this Plan, 39 boilers will be installed at 10 developments to alleviate the chronic outages previously experienced by residents. Heat and hot water systems will be modernized at twelve developments (ten developments receiving both boilers and domestic hot water (DHW) decoupling and two developments getting only DHW decoupling) where the hot water system will be separated from the boiler system. In addition, there are 7 developments that will be receiving only the heating controls component. The separation of DHW from the heating systems will permit the heating system to be turned off in summer months, enabling better preventive maintenance of the boilers as well as reducing wear on the boilers, thereby extending their useful life.

Gas riser replacements and underground fire and water line projects in excess of \$67 million are at various stages of the construction cycle. Developments impacted include Patterson, Castle Hill, Grant, Washington, Mitchel, and Van Dyke.

Ventilation Modernization

In 2017, the City committed \$20 million to modernize ventilation systems in 19 developments located in East Harlem as part of the East Harlem Rezoning portfolio. Proposals are expected by early March 2019. An engineering firm is being engaged for the design and preparation of construction documents, following which NYCHA will issue a Request for Proposals for the actual work. It is anticipated that the work will commence in the first quarter of 2020. These allocated funds will be spent between 2019 and 2021.

Energy Programs

Energy Performance Contracts (EPC):

- NYCHA set a goal of securing \$300 million in energy performance contracts funding by 2025. NYCHA is on track to exceed this goal by 2021. As of January 2020, NYCHA has received HUD approval of \$271.8 million for four energy performance contracts serving 70 developments. NYCHA expects to complete construction in 2020 for the four energy performance contracts.
- Will submit to HUD Ameresco A \$ 20 million revision for additional heating controls for Ameresco A energy performance contract.
- Will issue task orders to four IDIQ Energy Service Companies to begin energy audits for future energy performance contracts.

In 2016 NYCHA set a goal of securing \$30 million in Weatherization Assistance Program (WAP) by 2025. To date, NYCHA WAP contracts total \$13.9 million. WAP is a program of the US Department of Energy, administered by NYS Homes and Community Renewal. WAP provides grants of up to 80% of the cost of repairs and capital improvements that improve the energy efficiency of housing serving low-income residents. NYCHA plans to enter into \$3 million Weatherization Assistance Program Agreements for the April 2020 – March 2021 program year.

80x50 and Pilot Programs:

NYCHA is engaged in testing new technology to inform future capital investments toward meeting the City's goal of reducing Greenhouse Gases by 80% by 2050. In 2018, NYCHA prepared its participation in RetrofitNY, a deep-energy retrofit competition of the New York State Energy Research and Development Authority (NYSERDA). A NYCHA RetrofitNY RFP was issued in 2019. NYCHA also developed a pilot program to provide energy-efficient, smart AC units. In August 2019, 180 air conditioners were installed at Meltzer Tower. Through a partnership with the Mayor's Office of Sustainability and with funding from NYSERDA, NYCHA is designing a test installation of air-source heat pumps to provide both heating and cooling in another. NYCHA in collaboration with NYSERDA finalized request for proposals to select a design team for retrofitting one building to achieve near net-zero energy performance

In 2020, NYCHA in collaboration with NYSERDA Release RetrofitNY request for proposals for design team and begin passive house design at a NYCHA building.

Pilot installation of air-source heat pump for 7 top-floor apartments. Energy Department has engaged a mechanical vendor, AWL Industries, to do the installation work.

Sustainability

- **Waste Yard Redesigns and Recycling infrastructure:** CPD redesigned exterior waste yards to eliminate in-kind replacements and incorporate facilities to store multiple waste streams, including recycling in an improved aesthetic design. In 2020 Sustainability will kick off design for the first six locations.
- **Develop Green Infrastructure Stewardship Program:** NYCHA is developing a volunteer Green Infrastructure (GI) training and education program that promotes stewardship of vegetative GI through clean up as well as planting days and programing at Edenwald, Seth Low and Bronx River Houses.
- **Kick off GI projects to mitigate Combined Sewer Overflow:** Designs for the 15 phase II green infrastructure sites have been completed and filed with DOB. Construction kick off is scheduled for Cypress Hills and Pink Houses in early March 2020 with all other sites slated to begin shortly thereafter.
- **Release Climate Adaptation Vulnerability Assessment:** This report describes NYCHA’s vulnerabilities to climate change-induced hazards and how vulnerability varies across NYCHA’s portfolio of properties. A vulnerability assessment provides the basis for prioritizing risks and developing a climate adaptation plan. It catalogues the major climate hazards projected for New York City, along with the physical, social, and procedural characteristics that make NYCHA vulnerable to climate hazards in the coming decades.
- **Install Waste Management infrastructure:** Sustainability awarded a task order to install interior compactors at 23 developments and enlarged hopper doors at an additional 23 developments, plus in-sink food waste disposers at one development.
- **Kick off mattress recycling program:** Sustainability will release a Mattress Recycling RFP to procure mattress recycling services for up to 100 developments as funding allows. The first batch of sites will be selected for 2020 implementation after the contract is awarded.
- **Complete first solar PV installations:** NYCHA is aiming to complete the first installations of rooftop solar PV arrays as part of NYCHA’s Commercial Solar program.

Recovery & Resilience

In December 2015, NYCHA gained access to \$3 billion, the largest grant in Federal Emergency Management Agency (FEMA) history. Since then, NYCHA has been moving full steam ahead to get shovels in the ground on all critical Recovery and Resilience projects. To date, 3 developments have had major Sandy Recovery Projects substantially completed covering 27 residential buildings. As of the end of December 2019 NYCHA has awarded over \$2.98 billion in contracts related to Sandy Recovery and spent over \$1.7 billion. Every day, NYCHA is making tremendous strides to ensure its developments are protected in the face of climate change and that projects are progressing as quickly as possible. As of the end of 2019, NYCHA had active construction benefitting 234 buildings.

- **Status of Construction**
 - 3 developments complete.
 - 30 major projects in progress (218 buildings benefiting).

- In 2020, NYCHA anticipates completing construction on 14 major resiliency contracts and starting up 5 new boiler plants.
- All construction anticipated to be complete in 2022.
- **Construction Milestones**
 - 139 roofs completed
 - 1,148 exterior lights installed
 - 931 CCTV cameras installed
 - 33 layered access control (LAC) systems at doors installed
 - 50 new annexes in progress
 - 26 new annexes completed
 - 142 hot water heaters installed
 - 54 boilers in place
 - 99 generators installed
 - 26 generators turned over and operational
- **Status of Funds**
 - \$3.26 billion total funding from HUD and FEMA
 - \$317 million CDBG-DR Award
 - \$251 million spent, \$66 million remaining to be spent
 - 90% of CDBG-DR Award expected to be spent by July 2020 (\$285 million)
 - Final 10% of CDBG-DR Award expected to be spent by April 2022 (\$32 million)
 - \$2.98 billion in contracts awarded
 - \$1.74 billion in work completed
 - Immediate Storm Response
 - Preliminary Construction
 - Design
 - Construction Management
 - Major Construction
 - Program Management
- **Status of Jobs**
 - Over 860 new section three positions created
 - 177 pre-apprenticeship training graduates (100% CDBG-DR funded)

In 2020, NYCHA will complete 14 additional Sandy Recovery contracts and will start up and commission 5 additional boiler plants. Every month additional investments are bringing benefits to the lives of NYCHA residents throughout the Sandy Recovery Program.

Information Technology

In 2020-2024, the Authority will continue to leverage its investments in advanced technologies in support of the NYCHA's business vision and regulatory and compliance obligations. The following are the major initiatives that the Authority will undertake in 2020-2024 in information technology that improves service to our customers and stakeholders, and supports NYCHA's mission of providing safe, clean, and affordable housing and facilitating access to social and community services.

Federal Plan

Self-Service

NYCHA will continue to maintain and support the Self-Service Kiosks which were deployed to NYCHA development management offices and Walk-In offices, and in 2024 complete a state-of-good-repair refresh of the devices.

Customer Relationship Management (CRM)

Starting in late 2020, NYCHA will begin to deploy modernized Tenant Data and Rent Collection Systems to replace the legacy TDS, RCS, and TSAP systems with Siebel CRM and Oracle eBusiness Suite. The deployment will be paced over, with several developments being moved to production each month, over a six-to-nine-month period.

In addition, in 2020, the Siebel system will be upgraded to Innovation Pack 18, which includes a more modern platform known as "Open UI." The Open UI framework will support an improved user experience for NYCHA users.

Also, in 2020, NYCHA will analyze and determine a roadmap for digitizing records related to Tenant Management, Law Matters, and Employees. The benefits of electronic folders include minimizing the time spent on finding and retrieving files, reducing the number of lost files and information, simplifying the sharing of files across departments, and improving privacy and recovery.

Maintenance Operations

From 2020-2024, NYCHA IT will continue to support the Agreement entered by NYCHA, HUD, and the Southern District of NY, by building functionality to support Maintenance Operations and Asset Management.

In addition, in 2020-2021, NYCHA will build on its successful Inventory Re-Design Project by implementing functionality to support Serialized Assets (refrigerators and stoves).

Transparency, Reporting, and Compliance

As a government entity, NYCHA is subject to various applicable laws governing the "Accessibility" of its technology communications and services to internal and external customers. In 2020, NYCHA IT will implement a Digital Accessibility compliance program to help assess IT assets and applications to ensure compliance with applicable Digital Accessibility laws.

Finance and Procurement

In 2021, NYCHA is scheduled for a State-of-Good-Repair upgrade to its financial system, Oracle eBusiness Suite, and archive its database files.

Infrastructure and Information Security

In 2019, NYCHA deployed 142 55-inch Smart Screens across its developments and offices. In 2020-2024, NYCHA will support and maintain the devices, and purchase new devices as needed for the business units. Also, in 2021, NYCHA will replace its Multi-functional Device printers (MFDs) with upgraded devices in all Central and field offices.

In 2020-2021, NYCHA continues the initiative to migrate critical business applications to the Cloud, including Oracle eBusiness, Siebel CRM, and Maximo Asset Management. In 2021, NYCHA IT will purchase additional Exadata Database Machine resources, with five years' support, to support the cloud migration. In addition, NYCHA will provide Linux Unix Application & Web Tier Virtualization & Cloud Training to upskill staff on managing Linux and Unix in the cloud. NYCHA IT will also provide staff with Cloud Based Testing & Training Services to ensure staff is prepared to support the new Cloud Infrastructure.

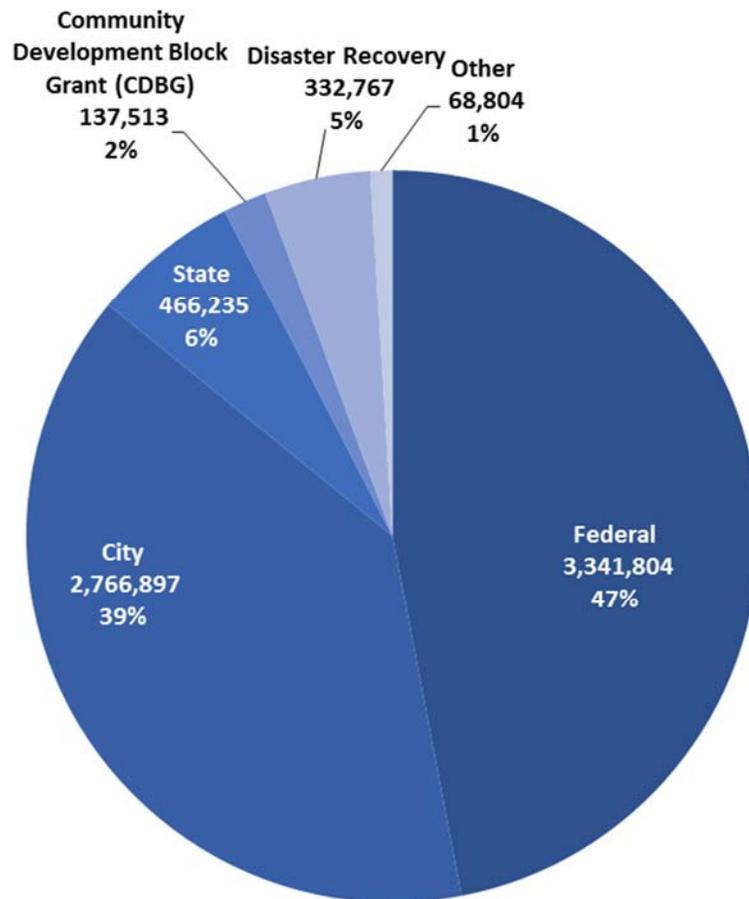
In 2022, NYCHA will initiate a State-of-Good-Repair desktop refresh, replacing over 6,000 desktop computers with Virtual Desktops. NYCHA IT will also replace end-of-life switches with current models.

Over the next five years, NYCHA IT will continue to support and maintain the VoIP phones that were deployed to the Borough Management and Development offices and deploy minor upgrades as needed. All VoIP phones at Central, Borough, and Development offices are scheduled for State-of-Good-Repair upgrades from 2021-2024.

Also, over the next five years, NYCHA IT Security Assessment and will implement new tools for as threats are understood.

Capital Funding Summary

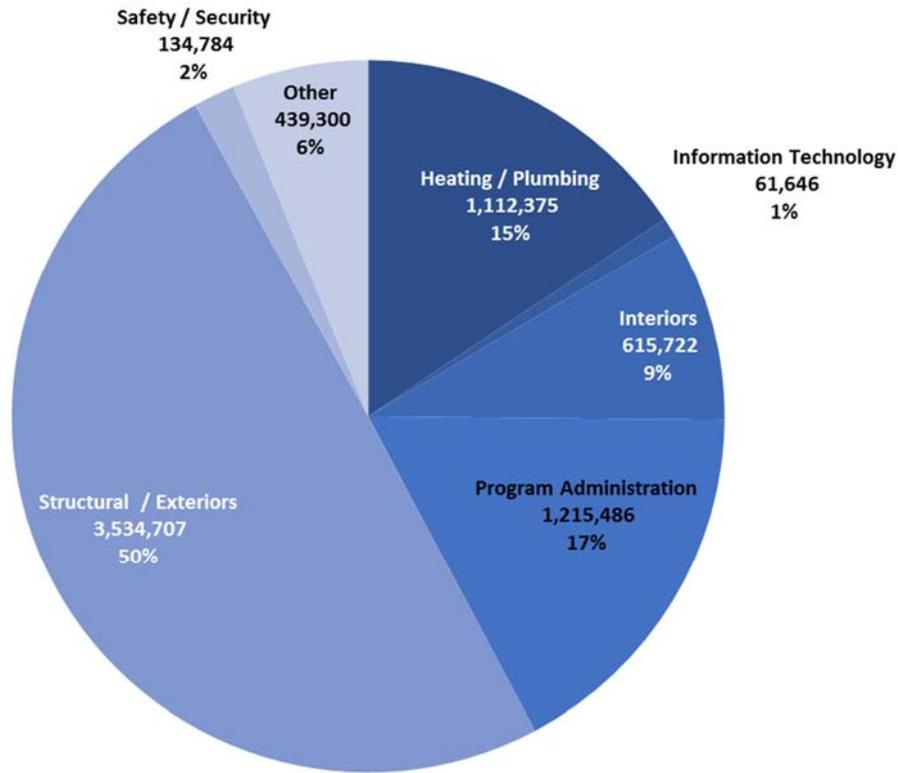
FY 2020 – 2024 Capital Funding by Funding Source
(In Thousands)



Total: \$7.1 Billion

- Other includes DANY, Public Housing Development Grant and State.

FY 2020 – 2024 Capital Plan by Work Type
(In Thousands)



Total: \$7.1 Billion

- Other includes Fire Safety, Garbage Disposal, Energy projects and A & E/CM Fees.