



Capital Plan

Calendar Years 2018-2022

December 20, 2017

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Table of Contents

Overview 4

 Capital Planning Process - Capital Project Ranking ("CPR") 4

 NYCHA’s Chronic Funding Gap 5

 Federal Capital Funding Since 2001 6

 NYCHA’s Capital Funding Sources 7

 Federal Funds: 7

 Alternative Funding: 7

 City Capital Funding: 9

2017 Accomplishments 11

 Capital Projects Division 11

 Information Technology 14

2018 Capital Plan Highlights 18

 Capital Projects Division 18

 Information Technology 22

Capital Funding Summary 27

Overview

NYCHA’s 2018 – 2022 Capital Plan provides approximately \$5.315 billion in planned commitments for infrastructure improvements, major modernization, other systemic upgrades, 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 \$2.154 billion in expected one-time disaster recovery funds to address the impacts of Superstorm Sandy. Overall, of the \$5.315 billion dollars included in this Plan, 36.6% is from Annual Federal Capital Grants, 40.5% is from funds related to disaster recovery, 20.9% comes from the City of New York, and 2.0% comes from other sources.

All Funds (In Thousands)

Funding Source	Carry Forward Balance as of							2018- 2022 Plan Totals
	Oct. 2017	2018	Total for 2018	2019	2020	2021	2022	
Federal	410,957	306,356	717,313	306,356	306,356	306,356	306,356	1,942,738
City	285,695	333,384	619,079	136,000	136,000	86,000	136,000	1,113,079
State	3,634	-	3,634	-	-	-	-	3,634
Disaster Recovery ¹	-	760,325	760,325	791,771	500,122	101,898	-	2,154,117
Insurance Proceeds	86,000	-	86,000	-	-	-	-	86,000
Public Housing Development Grant	420	-	420	-	-	-	-	420
District Attorney Funds	14,745	-	14,745	-	-	-	-	14,745
Plan Total By Funding Source	801,452	1,400,065	2,201,517	1,234,127	942,479	494,254	442,356	5,314,733

¹ Breakdown of Disaster Recovery	Carry Forward Balance as of							2018- 2022 Plan Totals
	Oct. 2017	2018	Total for 2018	2019	2020	2021	2022	
FEMA	-	573,005	573,005	756,833	496,352	100,400	-	1,926,590
CDBG	-	176,594	176,594	24,213	3,771	1,498	-	206,075
HMGP	-	10,726	10,726	10,726	-	-	-	21,452
Total for Disaster Recovery	-	760,325	760,325	791,771	500,122	101,898	-	2,154,117

Capital Planning Process - Capital Project Ranking ("CPR")

The Capital Project Ranking ("CPR") system is the process NYCHA uses for evaluating, planning and scheduling capital projects. While each capital project meets a specific need, all capital plans must compete with other projects for scarce resources, receive funding in accordance with a priority rating system and be formally adopted as an integral part of the annual capital budget.

The purpose of the CPR system is to establish priorities for the 5-year capital plan, which outlines the projected capital project needs. This CPR includes a summary of the projects’ estimated costs, schedule and recommended source of funding for each project where appropriate. The CPR prioritizes the ranked projects in each year of the Capital Plan. However, because NYCHA’s goals and resources are constantly changing, the CPR is designed to be re-assessed in full annually.

Capital projects were evaluated according to the following CPR criteria:

- **Quality of Life (10%)** – is a characteristic that impacts the general well-being of our residents. For example, playgrounds, basketball courts, community centers enhance the quality of life for residents.
- **Infrastructure (20%)** – this element relates to needs such as roofs, boilers, elevators, Technology needs such as system upgrades, handheld devices, and new software would also be included in this element.
- **Economic Development (10%)** – considerations relate to projects that foster the development, re-development, or expansion of a diversified resident base that will empower residents and/or generate a positive financial contribution to NYCHA. Providing the infrastructure updates to NYCHA property to encourage quality store rentals would score high in this category. A new boiler project would likely score low in the economic development category.
- **Health/Public Safety (15%)** – includes lighting, layered Access. New layered Access would directly impact the health and safety of residents, scoring high in this category.
- **Impact on Operational Budget (20%)** – Some projects may affect the operating budget for the next few years or for the life of the improvement. Will it reduce headcount or other operational costs?
- **Regulatory Compliance (10%)** – this criterion includes regulatory mandates such as HUD mandates, City or State mandates, or Court-ordered mandates.
- **Timing and Location (15%)** – are important aspects of a project. If the project is not needed for several years, it would score low in this category. If the project is for a development that has not any capital work done recently it would score high in this category.

A project's overall score is determined by calculating its score against each criterion. The scores of all projects are then compared to provide recommendations to the Capital Steering Committee. The components of the criteria and scoring scale are included with the recommendation. The Capital Steering Committee used this rating system to determine what projects make up NYCHA's 2018 – 2022 Capital Plan.

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. Of NYCHA's 2,462 residential buildings 75% are more than 40 years old and have over \$16.5 billion dollars in unfunded capital needs.

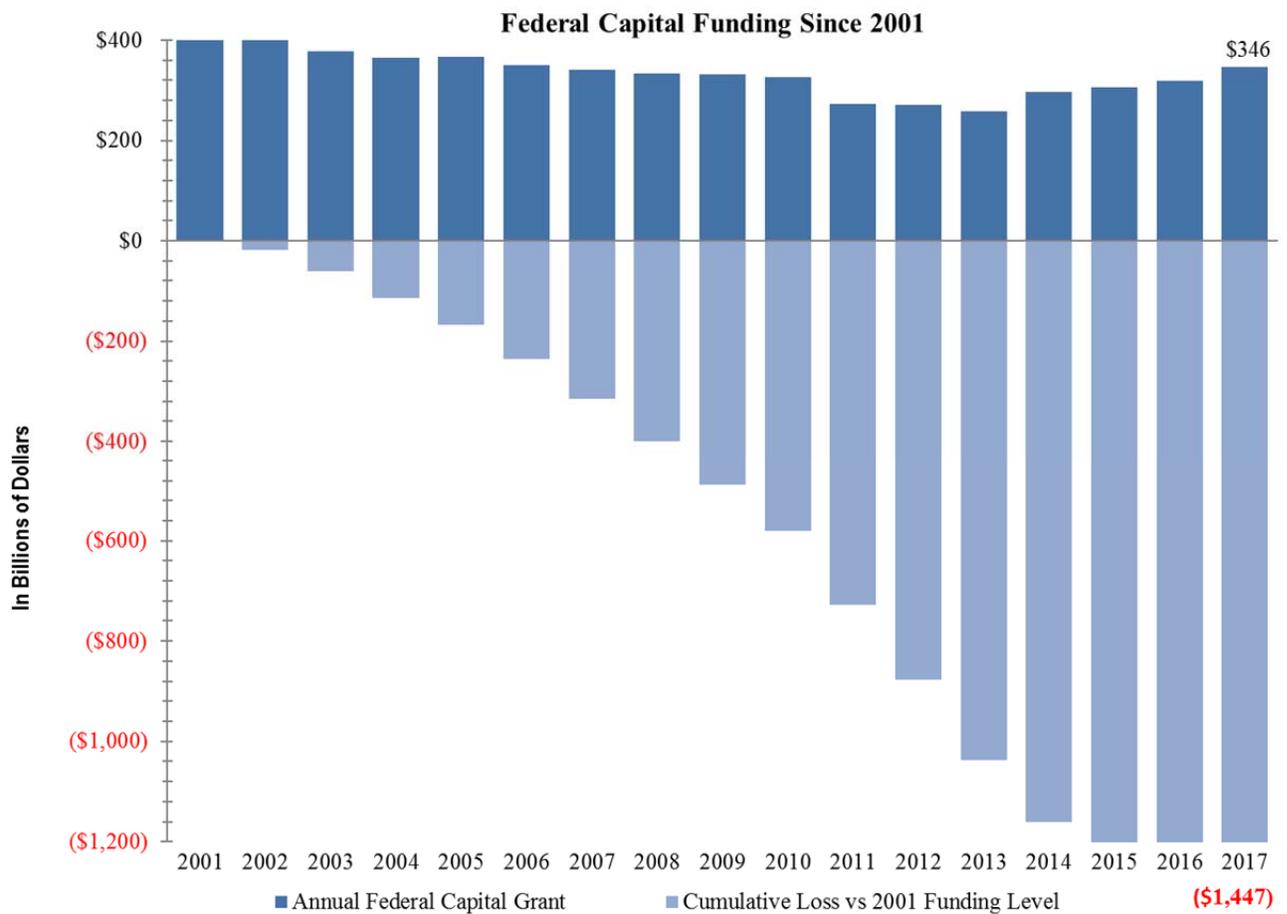
Funding available to NYCHA for capital improvements has not only failed to keep pace with needs, but has dramatically declined. From 2001 to 2016, annual federal capital grants have declined \$102 million, or 24 %, from \$420 million to \$318 million. As a result, NYCHA has experienced a cumulative federal capital grant funding loss of \$1.375 billion since 2001. Even in the years of steady appropriations to the Capital Fund, rising costs have resulted in very real cuts to the program.

This chronic funding gap severely constrains 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 \$1.447 billion since 2001. Funding shortfalls have meant that only \$1.7 billion has been invested in capital improvements during the last five years. Over the last three years, there has been an increase to federal capital fund allocation. However, this incremental change has not had a significant impact on the overall funding shortfall.

(In Millions)



NYCHA's Capital Funding Sources

Federal Funds:

NYCHA is using a conservative approach in allocating the Federal Capital Funds by using the 2015 capital fund grant amount of \$306 million. Although this strategy was used, it is unclear of the amount of funding that will be allocated for 2018. The current administration is proposing drastic reductions to the capital fund grant program for 2018 and the elimination of the capital fund grant program for 2019. NYCHA prioritized projects and deferred administrative and management fees that were charged to the capital grant in previous years; these fees will be paid out of non-capital funding sources. Below is a chart summarizing funding allocation by administering areas/departments:

All Funds (In Thousands)

EVP/SVP/VP	Carry Forward Balance as of							2018- 2022 Plan Totals
	Oct. 2017	2018	Total for 2018	2019	2020	2021	2022	
Administration	2,153	-	2,153	-	-	-	-	2,153
Capital Projects	282,476	223,788	506,264	228,283	228,667	230,443	230,443	1,424,099
IT	41,078	12,371	53,449	7,876	7,492	5,716	5,716	80,249
Finance ¹	69,722	65,197	134,919	65,197	65,197	65,197	65,197	395,708
Operations	15,417	5,000	20,417	5,000	5,000	5,000	5,000	40,417
Supply Management	111	-	111	-	-	-	-	111
Plan Total By EVP/SVP/VP	410,957	306,356	717,313	306,356	306,356	306,356	306,356	1,942,738

¹ Breakdown of Finance	Carry Forward Balance as of							2018- 2022 Plan Totals
	2018	Total for 2018	2019	2020	2021	2022		
Contingency	4,767	5,492	732	726	727	728	8,407	
Debt Service	59,772	119,547	59,768	59,774	59,773	59,772	358,632	
LLC 1 Replacement Reserve	4,697	9,394	4,697	4,697	4,697	4,697	28,183	
Electronic Invoicing	485	485	-	-	-	-	485	
Total for Finance	69,722	134,919	65,197	65,197	65,197	65,197	395,708	

Alternative Funding:

NYCHA identified alternative funding to supplement the anticipated shortfall in federal funding under this current government administration. The current administration is proposing drastic reductions to the capital fund grant program for 2018 and the elimination of the capital fund grant program for 2019. Funding of \$86 million from Insurance Proceeds were made available to be allocated to projects that were considered priority.

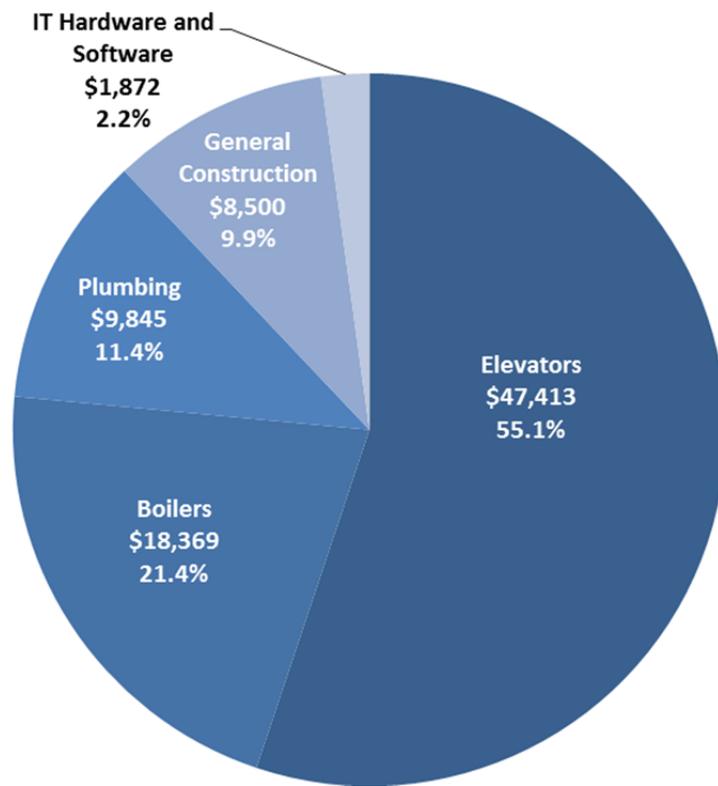
Projects include:

- Elevator Communication Devices – system to enable residents and staff to contact authorized personnel in case of emergency or elevator malfunction

- Tank Decommissioning – ceasing use by emptying oil and cleaning in preparation for converting to gas operation
- Gas Risers – Replacement of gas risers at three developments (Douglas I, Throggs Neck and Washington)
- Stairways – reconstruction of stairways in buildings at Red Hook Houses

Insurance Proceeds for Capital

(In Thousands)



Total: \$86 Million

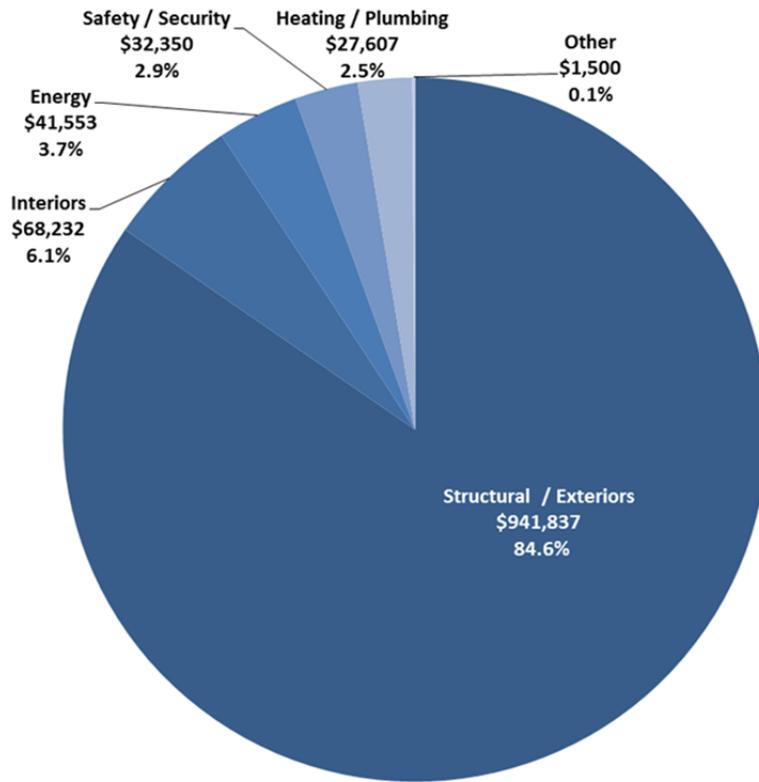
City Capital Funding:

Mayor De Blasio has provided funding to NYCHA to address the needs of the aging infrastructure. The funding in this plan is based on the City's FY 2018 September Capital Plan and includes Mayoral initiatives as well as funding allocated by elected officials (Council Members and Borough Presidents).

Projects include:

- **Roofs** - Investment of \$1.3 billion to replace over 950 deteriorating roofs on NYCHA buildings over the next 10 years. 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 people's health. Leaky roofs are one of the key sources of the water and excessive moisture that causes mold in apartments as well as physical damage to the building's structure. This five-year plan includes over \$500 million in funding.
- **Facades** - Investment of \$355 million in City funds to replace 150 aging building facades on NYCHA buildings, which is critical to maintaining NYCHA's buildings and improving residents' quality of life. This five-year plan includes over \$100 million in funding.
- **Rat Mitigation** – Investment of \$16.3 million to reduce the city's rat population. The City will allocate \$16.3 million in capital spending to replace dirt basement floors with concrete "rat pads" in prioritized NYCHA buildings within the Mitigation Zones. The cementing of basements, complemented by extermination and cleanouts, has been evidenced to reduce resident-generated work orders related to rats at NYCHA facilities by 40%. This five-year plan includes over \$12 million in funding.

City Capital
(In Thousands)



Total: \$1,113 Million

2017 Accomplishments

Federal Plan

Federal capital grant awards require NYCHA to meet deadlines for establishing contracts to perform work (obligation deadline) and completing work (expenditure deadline). If these deadlines aren't met NYCHA may incur penalties, such as the forfeiture of funds. Accordingly, NYCHA places priority on achieving its capital plan obligation and expenditure targets. HUD requires housing authorities to obligate 90% of funds in 24 months and to expend 100% of funds in 48 months. In 2017, NYCHA completed every one of its HUD mandated deadlines ahead of schedule.

Capital Projects Division

Completed Projects:

NYCHA's Capital Projects Division (CPD) succeeded in completing capital projects at 97 developments valued at \$489.4 million in 2017, impacting more than 87,000 families. There is ongoing construction at 148 developments totaling \$562.2 million, impacting over 100,000 families. The projects in the CPD portfolio include jobs funded primarily by Federal, State, and City stakeholders. The projects completed in 2017 and ongoing work includes improvements to playgrounds, security enhancements, and fortifying NYCHA's building envelopes. Below are NYCHA's selected capital project highlights and accomplishments for 2017.

Mayoral Roofing Initiative:

The Mayoral Roofing Initiative consists of thirteen phases for a total of \$1.3 billion to replace aging roofs and to improve the lives of approximately 175,000 NYCHA residents in 952 buildings. Replacing the roofs will make buildings cooler and consume less energy as well as protect from water leakage to apartments.

Phase I:

- Completed installation at 63 buildings
- Work progressing at 2 buildings and expected to be complete by March 2018

Phase II:

- Completed design and bid contracts for the projects in this phase
- Received Comptroller approval for \$106 million
- Completed mini solicitations and registration for CM and AE services
- Completed training with quality assurance and roofing manufacturers for new liquid applied roofing system

Phase III:

- Surveyed all developments to address scope of work and quantities
- Bid two contracts for approximately \$44 million
- Completed mini solicitations and registration for CM and AE services

Local Law 11:

Pursuant to the Department of Buildings regulations, NYCHA will comply with NYC Local Law 11 requirements to replace all unsafe conditions found at the exterior walls of all NYCHA owned buildings city wide. NYCHA buildings are required to be inspected every five years, once unsafe conditions are found they are required to be replaced with safe conditions within the next five years from the date of inspection.

- CPD closed out all Cycle 6 task orders and 75% of Cycle 7 task orders
- Completed inspection at 72% of Cycle 8 LL11 buildings
- Increased the number of safe buildings in Cycle 8 from 184 to 429
- Received approval of \$84 million from Comptroller
- Expended approximately \$35 million of City funding on repair work and \$12 million on emergency sheds
- Removed approximately 80,000 linear feet of sidewalk sheds

Security Enhancements:

- Completion of 4 Mayor's Action Plan (MAP) lighting projects
- Completion of 2 MAP Closed Circuit Television / Layered Access Control (CCTV/LAC) projects and 15 non-MAP CCTV projects
- Assignment of preconstruction task orders for the CFY2018 security portfolio
- Won American Council of Engineering Companies (ACEC) Platinum award for Lighting designs
- Won CMAA National Award for CCTV installations

Heating:

- Restored gas service at 1,129 apartments in 8 buildings in the Bronx in an emergency
- Awarded two underground steam distribution replacement contracts valued at \$18.5 million.

Energy & Sustainability:

Energy:

- Completed City capital-funded heating control system upgrades at Arthur H. Murphy and Stebbins Avenue-Hewett Place, bringing the total number of developments with indoor temperature controls to 10. The upgrades enable NYCHA to provide heat according to the indoor temperature, and thereby help to eliminate discomforts associated with overheating.
- Completed a \$17 million LED upgrade of apartment and common-area lighting in Brooklyn in May 2017, funded by a loan from the New York State Green Bank and a grant from Con Edison.

- Began construction on \$56 million Ameresco-A Energy Performance Contract (EPC), serving 19,954 apartments in 16 developments. Ameresco-A includes a City Capital contribution of \$3.9 million.
- Completed construction on NYCHA's first State Weatherization Assistance Program (WAP) project and began construction on four new projects totaling \$2.6 million. Six WAP agencies conducted energy audits of 18 developments comprising 2,238 apartments.
- HUD approved the \$68 million BQDM(define) EPC on July 12th and a \$43 million Sandy-A EPC on August 22.

Sustainability:

- NYCHA released an Request for Proposal (RFP) in October of 2017 to invite solar developers to propose photovoltaic installations on NYCHA property in exchange for lease payments. This RFP will be the first of an anticipated series to meet the Renew300 commitment of 25 MW(define) over 10 years.
- Department of Environmental Protection (DEP) is more than halfway through the installation of 540 meters at 500 NYCHA buildings. All NYCHA buildings will have meters in place by 2019.
- Replaced outdated fixtures and updated purchasing standards: NYCHA has now updated its purchasing standards to match the NYC affordable housing standard for toilets (1.28 gallons per flush), showerheads (1.5 gallons per minute), and bathroom faucets (1 gallon per minute). In addition, NYCHA partnered with DEP's Toilet Replacement Program and are on path to complete replacements of 1,500 fixtures by the end of 2018.
- Leading up to the release of NextGeneration NYCHA Waste Management Plan, NYCHA completed a waste characterization study of recycling and bulk waste.
- DEP completed the \$8 million Green Infrastructure (GI) installation at Edenwald Houses, the largest GI installation in the city. The installation is one of 4 completed, and over 60 planned storm water management projects.
- In partnership with the Fund for Public Housing, NYCHA launched Ideas Marketplace, a crowdfunding platform for resident and community led sustainability initiatives. The platform attracted three projects and raised over \$30,000 in 2017.

Recovery and Resilience:

By the end of 2017, the design on nearly all major recovery and resilience projects were completed. Most of the portfolio was in procurement and construction phases.

Project status shown below:

Major Sandy Recovery Projects Substantially Completed (1)

- Lower East Side Rehab V

Major Sandy Recovery Projects Started (26)

- Oceanside
- Coney Island Sites 4 & 5
- Carleton Manor
- Campos Plaza II
- Carey Gardens
- Lavanburg
- Coney Island Site 8 (Coney Island Sites)
- Rangel
- Coney Island
- Gowanus
- Redfern
- Red Hook East
- Haber
- Bayside
- Astoria
- Coney Island Site 1B
- Gravesend
- O’Dwyer (Coney Island Sites)
- Surfside (Coney Island Sites)
- Baruch
- Smith
- Two Bridges
- East River
- Wald
- Red Hook West
- La Guardia

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 2017, NYCHA was selected as the winner of the Citizen’s Budget Commission’s 2017 Prize for Public Service Innovation. The prize was awarded for NYCHA’s Digital Initiatives, including the MyNYCHA App, Handhelds Mobile Work Order Application, Online Recertification and the Digital Vans. NYCHA also received an award for Demonstrated Excellence in Project Management for its Online Public Housing Annual Re-certifications program at the 2017 Best of New York City Awards presented by Government Technology and the City of New York.

NextGen Office, an umbrella program under which NYCHA is upgrading, replacing and enhancing its technology infrastructure, was kicked off in 2017. Initiatives completed are:

- The replacement of over 4,500 of 5,500 desktop computers with new Windows 10 computers at the management and borough offices. Users also received a license for Office 365, Microsoft’s new cloud-based productivity suite.

- Installation of 215 VoIP telephones at six Pilot developments and the Borough Management Offices.
- Improved internet and cloud access for development sites via router and switch hardware upgrade. Cloud based filtering enables the management offices to access the Internet and cloud-based services from their own broadband circuit, which would reduce dependencies of 90 Church and LIC services during catastrophic conditions.
- Piloted Smart Screens technology at two developments. Smart Screens are a 55-inch interactive touch screen monitors to support meetings, presentations, video conferencing, training webinars, local real-time updates on development's work orders and potential weather emergencies. Smart Screens will help improve communications, operations and customer service.

Completed deployment of Online Annual Re-certifications for Public Housing including:

- Released functionality to NYCHA's public housing residents across all NYCHA's ~320 developments.
- Trained over 1,000 staff members in Siebel Basic/Siebel eService and How to Process an Annual Review in Siebel.
- Conducted close to 70 Learning Labs (directed training and support) For Housing Assistants and Assistant Manager/Property Manager.

NYCHA's Self-Service Portal continued its growth, with new online services added to provide our applicants, residents, and Section 8 voucher holders with better access to services and information.

The following online functions were added:

- Completing interim Section 8 Re-certifications.
- Support for Violence Against Women Act (VAWA).
- Requesting emergency and non-emergency transfers, for Section 8 and for NYCHA Public Housing residents (VAWA compliant)
- Making portability requests.
- New languages available through Google Translate.

NYCHA built on its Interactive Voice Response (IVR) platform to release additional functionality for residents who wish to call in service requests. The new functions included Spanish language, additional work order types, such as, painting/plastering requests, stoppages, pest control, leaks, and repairs for doors, windows, and refrigerators.

These IVR self-service enhancements will increase efficiency by reducing call volume to the CCC call agents, and improve customer experience. NYCHA's Self-Service Portal also provides access to Opportunity NYCHA, where residents and other stakeholders can access information on training, financial services, job and business opportunities. This year, the following functions were added to the platform:

- Capturing customer intake information, and program eligibility determination.

- Making online referrals and self-referrals.
- Managing events and RSVPs.
- Managing the NYCHA Resident Training Academy: Tests, pre-screening, information sessions and interview sessions. Offerings: These are the programs offered by REES Partners (Provider or Employers) which help residents get job opportunities. Outcome of the participation in the program is tracked in the system.
- Managing contracts created between Employer and REES.
- Maintaining Provider and Employer profiles.
- Managing NYCHA's Section 3 program.

MyNYCHA, which was first deployed in 2015, saw the following new enhancements:

- Implemented functionality to allow public space ticket creation for extermination and lighting
- Enhanced email notification functionality for ticket creation, scheduling and appointment reminders

NYCHA's Owner Extranet is the online platform for Section 8 Owners to transact with NYCHA, and to some extent, with residents. On the site, over 35,000 NYCHA owners can submit lease renewals and repair certifications, apply for direct deposit, access tax documents and other functions. Newly added items include:

- Lead Based Paint Certifications (059.740). Integrated functionality to allow Leased Housing Owners to submit Lead Based Paint certifications online. This feature works to enforce NYCHA's compliance with Lead Based Paint inspections regulations. Further, processing Lead Based Paint certifications online translates into time and money savings both for the Leased Housing Owners and the Housing Authority.
- 24 Hour Violations. Integrated functionality to allow Leased Housing Owners to be notified of 24 Hour Violations both via e-mail and via Owner Extranet allowing owners to respond to these time sensitive matters as soon as possible to avoid losing subsidies.

NYCHA continued to enhance and broaden the functionality of its maintenance and asset management system (Maximo). In addition to various system enhancements and upgrades, the following support was added:

- System enhancements to support improved management and reporting of work orders related to critical tasks, including, mold/mildew, lead, CCTV, heat and hot water, exterminator, violations and court-ordered repairs.
- New inspection functionality for Fuel Oil Management.
- Implemented Second Pass Scheduling for apartment inspections, which allows scheduling for apartments that were not inspected for various reasons at first pass.

Through the end of 2017, NYCHA trained approximately 3,750 NYCHA staff in using Maximo handhelds. This includes staff assigned to specific Developments, such as Maintenance Workers,

Superintendents, Assistant Superintendents, Housing Managers, Supervisor of Caretakers, and Supervisor of Groundskeepers. It also includes various borough-based skilled trades staff such as: Bricklayers, Carpenters, Electricians, Elevator Mechanics, Exterminators, Heating-Plant-Technicians, Lead Abatement Workers, Painters, Plasterers, Plumbers, Roofers, and Welders.

In addition, during the year, NYCHA also added mobile functionality for inspections, as follows:

- Exterminators
- Apartment and Move-out
- Mold/Mildew
- Lead
- Common Spaces

NYCHA completed the digitizing of HR employee paper folders and files and deployed a system to continue storing all future HR employee files electronically, thus reducing manual labor associated with hardcopy files.

NYCHA expanded its Siebel footprint to include Correspondence functions in support of:

- Replace manual correspondence process with an automated, electronic process that ties into NYCHA's customer relationship management system.
- After getting a complaint via paper or email or phone, Correspondence (ATAD) will create a Service request, which will be assigned to staff.

Since 2014, NYCHA has espoused a "cloud-first" strategy that has resulted in several key components of its IT infrastructure moving to cloud-based providers, most notably:

- NYCHA's email exchange server and productivity suite was upgraded to Microsoft Office 365, providing all NYCHA users with cloud-based access to their email and applications.
- AirWatch mobile device management was implemented to manage NYCHA phones and tablets.
- NYCHA should continue to examine the viability and financial benefits of migrating NYCHA infrastructure and application components to cloud providers on a case-by-case basis.

In addition, NYCHA conducted a study to assess the feasibility of moving its data center to a cloud facility. The results of the study supported NYCHA's hybrid approach of combining cloud and on-premises infrastructure, as a full cloud solution would be cost-prohibitive for NYCHA.

Accomplishments under NYCHA's Information Security Program include:

IT Security Governance

- Developed new Incident Response procedure
- Published monthly general awareness articles in employee publications
- Kicked off deployment of Altiris Application, which facilitates delivery of SW patches, upgrades, and fixes to NYCHA desktops and servers.
- Completed Data Loss Prevention Agent

- Security End-Point Protection (SEP) agent upgrades
- Upgraded Security Endpoint Protection (SEP) Program

IT Security Engineering

- Upgraded and enhanced Data Loss Prevention (DLP) Application
- Enhanced Security Information & Event Management (SIEM) System
- External Web Application Security eService – Proof of Concept (POC) completed – Enhanced Tenant Access Management

IT Security Controls Assessment Program

- Completed Penetration Testing of internal and external sites.

2018 Capital Plan Highlights

Capital Projects Division

Federal Plan

The Capital Projects Division will receive \$1.14 billion in new Federal Funding over the period from 2018 to 2022 for investment in NYCHA’s building portfolio.

Brick and Roof Projects

Approximately 21%, of the FY18-22 Capital Federal Plan, \$241 million, is targeted to 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 Federal Plan funding will support major exterior envelop work at Breukelen, Ingersoll, Justice Sotomayor, Patterson, Throggs Neck, and Whitman developments. These sites have been prioritized based upon the Physical Needs Assessment (PNA) level of deficiencies and roof ratings, as well as volume of work order tickets.

Heating & Plumbing

The Federal Plan will fund over \$275 million, 24% of the total Federal Plan, in heating and plumbing projects. Boiler plant replacements are planned for 13 developments including Astoria, Baruch, Pomonok, Rutland Towers and Soundview. These projects will fully replace heating plants and all ancillary equipment to optimize the total life cycle investment, as well as reduce fuel consumption. The prioritization of these selected sites is based upon the assessment of conditions with regards to boiler equipment age, volume of work tickets and availability of replacement parts. The investment of \$275 million will also include underground piping replacement projects at Harlem River to replace condensate lines, at Baruch there will be replacement of gas risers, and at Whitman & Van Dyke, underground fire & water lines will be replaced.

Elevators

The Federal Plan allocates 10% of funding, \$117 million, for elevator replacements at 13 sites including Atlantic Terminal, Boston Road, Coney Island 1B, Fort Independence, McKinley, Mitchel, Morrisania Air Rights, Queensbridge North and South, Sumner, Unity Plaza, West Brighton, and WSUR developments. Sites are prioritized based on conditions assessments. This work is essential to the health, safety and welfare of residents and staff. One of the largest projects is a comprehensive replacement of the 98 cars at Queensbridge North and South developments. The investment of \$117 million also includes over \$30M for elevator communication devices to be installed at over 69 sites across NYCHA. These devices which are required for elevator code compliance, will allow communication to a central command center for emergencies and outages.

Multi-Trade Projects

The landmarked Harlem River development is nearing completion of the first phase of a major renovation project for exterior brick and roof work, along with the renovation of 42 top floor apartments. The Federal Plan will fund a second phase to rehabilitate the remaining top floor apartments and kitchens, all apartment bathrooms, stair hall lighting and stair halls, underground steam piping, site improvements, as well as entrance doors, layered access control and CCTV. The Dyckman development is also to have a significant investment of funds to cover building envelop and major interior components. The multi-trade strategy will bring these development buildings to a state of good repair.

Apartment Bathrooms

The Federal Plan allocates 34% of funding, \$383 million, to the renovation of bathrooms at Breukelen, Jefferson, Mitchel, Patterson, Pomonok, Albany, West Brighton, Astoria, St. Nicholas and Wagner developments. Each of these developments has a high number of work order tickets. Having completed building envelope work at these sites, we can invest wisely in the interior of the buildings.

NYCHA has launched their own Sandy Pre-Apprenticeship Program to train NYCHA residents in the construction field with direct entry into NYC construction unions. The Recovery and Resilience Department has a goal of training 100 NYCHA residents through this initiative in 2018. This program is funded with \$1.4 million in CDBG-DR funds.

City Plan

The City's capital projects portfolio being managed by CPD through to 2021 is approximately \$1.2 billion. The funding is allocated for roof replacement, façade repairs, boiler replacement and related repairs, security enhancements, grounds improvement, and energy conservation measures.

Brick & Roof

The brick and roofing program is funded under the Mayor's roofing initiative. In 2018, the allocation is for \$251 million (41% of the 2018 budget). For the plan years 2019 – 2021, there will be an allocation of approximately \$100 million for each of the years to replace the roofs at designated developments.

The schedule for 2018 is to complete the remaining roofs in Tranche 1 by March 2018; start construction at seven developments (Tranche 2) by May 2018; and complete four of those projects by December 2018. CPD has already surveyed all developments in Tranche 3 to address the scope of work and quantities. Contract documents will be bid by April for work to commence by July 2018.

Security Enhancement

The City Plan has allocated approximately \$40 million (7%) of the 2018 funding to security enhancements to install CCTV/LAC and lighting across the City. The current MAP CCTV/LAC projects at 10 developments are expected to be completed by July 2018. The remaining 5 developments will be completed by 2020. For these projects, CPD anticipates that the documentation will be submitted to OMB for approval by June 2018 to start construction by November 2018. The plan is to initiate procurement of the Architectural and Engineering, and the Construction Management consulting services for the CFY 2019 projects by October 2018.

Quality of Life

In 2018, approximately \$124 million (20%) is being allocated to enhance the quality of life of NYCHA residents by improving the community facilities and recreational centers and repair or replacement of playgrounds. As mentioned previously, the Rat Mitigation initiative 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

There is \$17 million of Mayoral funding which will contribute towards the ongoing repairs to apartments at approximately 40 developments to put them back on the rent roll so that more apartments are available for residents. Regarding the bathroom renovations previously discussed, at Breukelen, Mayoral funding of \$19 million is contributing to the kitchens and bathrooms renovations in all 31 buildings. Work is projected to begin in September 2018 and be completed by March 2021.

Heating

Approximately \$200 million is being provided through the Mayor's 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 and 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 12 developments (10 developments receiving both boilers and Domestic Hot Water (DHW) and 2 other developments only DHW) where the hot water system will be separated from the boiler system. In addition, there are 8 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.

Ventilation Modernization

In 2017, the City committed \$20 million to modernize ventilation systems in 19 developments located in East Harlem. These funds are expected in 2018, and will be spent between 2018-2021.

Energy Programs

Energy Performance Contracts (EPC):

NYCHA set a goal of securing \$300 million in EPC funding by 2025. As of February 2018, NYCHA has received HUD approval of \$168 million for four EPCs and has submitted for approval an additional EPC of \$103 million. In total, NYCHA expects to have four EPCs in construction in 2018 and one EPC is in the 5th year of its 13-year compliance period. Ameresco-A EPC will complete lighting and water efficiency work in all 16 developments in 2018. The heating system upgrades at Whitman Houses will continue until 2019. Ameresco-A includes a City Capital contribution of \$3.9 million. BQDM EPC and Sandy-A EPC will begin construction in March 2018, with expected completion in late 2019. BQDM includes a City Capital contribution of \$3.1 million and a Con Edison grant of \$8.3 million. Ameresco-B EPC, pending HUD approval as of February 2018, will be in construction 2018-2021. Ameresco-B includes a City Capital contribution of \$25 million. NYCHA plans to issue Requests for Proposals for at least one additional EPC in 2018, which will leverage the Mayor's \$200 million investment in NYCHA heating systems.

Weatherization Assistance Program (WAP):

NYCHA set a goal of securing \$30 million in WAP grants by 2025. The WAP program year begins in April and ends the following March. In the 2017-2018 program year, there are 990 apartments in 12 NYCHA developments in construction for a total value of \$4.0 million. All 2017-2018 program year construction will be complete by April 2018. Assessments are underway for 4 developments for the 2018-2019 program year.

80x50 and Pilot Programs:

NYCHA is testing new technology toward meeting the City's goal of reducing Greenhouse Gases 80% by 2050. In 2018, NYCHA will be issuing a Request for Proposals in conjunction with RetrofitNY, a deep-energy retrofit competition of the New York State Energy Research and Development Authority (NYSERDA). NYCHA is also working with the New York Power Authority (NYPA) to use its on-bill financing facility to provide energy-efficient, smart AC units at one development in 2018. 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. Finally, five building technology firms selected through a NYCHA/MOTI Call for Innovations and a Fund for Public Housing Tech Pilot competition are pursuing pilot installations of smart building technology in 2018 in various NYCHA buildings.

Information Technology

Strategic Solutions

In 2018-2022, the Authority will continue to leverage its investments in advanced technologies in support of the NextGeneration NYCHA business vision, and to assist in reducing central office costs. The following are the major initiatives that the Authority will undertake in 2018 and 2019 in information technology that improve service to our customers and stakeholders.

NextGen Office – Providing Development Staff with Better Technology Tools

New Computers

By February 2018, IT will complete the installation of new computers with Windows 10 and Microsoft Office 365 for all Development and Central Office desktop users. Additional Office 365 applications – Skype for Business and OneDrive – will also be deployed in 2018. These updated tools will better equip our “frontline” staff to serve their customers.

Smart Screens

Between March and May 2018, IT will install 55-inch interactive Smart Screens at each of the Authority’s developments. The devices are designed to support training, communication and collaboration for staff at the developments, thereby enabling them to have the skills and knowledge to better serve their customers.

Self Service Initiatives

MyNYCHA App

The MyNYCHA app, which was first deployed in 2015, saw new enhancements in 2017 to support public space requests and email notifications. Planned 2018 – 19 enhancements include:

- Login credentials same as NYCHA Self Service Portal
- View latest Rent Bill
- Report an issue with a recently closed ticket
- Create tickets for complaints
- Push notifications

Public Housing Annual Reviews

This ongoing project will complete the migration of the Annual Review process to Siebel by implementing the rent calculation and interim re-certification processes in Siebel.

Self Service Portal: Opportunity Connect (Resident Economic Empowerment & Sustainability)

NYCHA’s Self-Service Portal provides access to Opportunity NYCHA, where residents and other stakeholders can access information on training, financial services, job and business opportunities. In

2018, the following functions will be added to the platform: management of Section 3 Contracts compliance and the Family Self Sufficiency program.

Section 8 Owner App and Web Enhancements

NYCHA's Owner Extranet is the online platform for over 35,000 NYCHA Section 8 Owners, who utilize it to submit lease renewals and repair certifications, apply for direct deposit, access tax documents and other functions. In 2018, a re-branded NYCHA Owner Extranet will be deployed with the following new functions:

- Online contract rent change
- Apartment Transfers
- Online vacant apartments reporting
- Lead-based paint certification documents
- Inspection failure photos
- Apartment repair certifications
- Post-voucher change notices
- Alerts for upcoming inspections
- Voucher payment suspensions and a suspension view tab

In addition, NYCHA will leverage its successful MyNYCHA app platform to deploy Apple and Android apps for Leased Housing Owners to manage inspections.

Tenant Management and Rent Collection System

Development for the replacement of NYCHA's legacy tenant management and rent collection systems will begin in April 2018. This program will replace antiquated NYCHA Project Information Management Systems (PIMS) with new technology that will enable online self-service as well as improved reporting.

Electronic Resident Files

Digitize existing resident paper folders and files; establish a system to continue storing all future resident files electronically and reduce manual labor associated with hardcopy files.

Maximo Mobile (Hand Helds)

As of December 2017, NYCHA completed the rollout of hand held devices to approximately 3,750 NYCHA staff, who were trained in using the devices. Included in the training were Maintenance and Skilled Trade Workers, Superintendents, Assistant Superintendents, Housing Managers, and other supervisors. 2018 Goals for Maximo Mobile include adding new or enhancing existing hand-held inspections related to critical NYCHA processes, such as lead, asbestos, CCTV, window guard and others.

Maximo System Enhancements

2018 Goals for Core Maximo include enhancements for managing work orders related to lead, mold/mildew, heating, emergency, violations and other NYCHA tasks. Additional functionality is also planned for Physical Needs Assessment, asset management and improved inventory management. Improve heating fuel management system and retire the legacy Emergency Fuel System (EFS). Automate Local Law (Lead) and Vinyl Asbestos Tile (VAT) work order. Deploy enhanced functionality for tracking work related to violations. New functions around inventory management are also planned for 2018.

Siebel System Enhancements (Correspondence)

NYCHA expanded its Siebel footprint to better integrate NYCHA’s correspondence functions with its customer relationship management system. In 2018, NYCHA will sunset its legacy MailLog system and broaden the use of Siebel Correspondence to include all NYCHA external communications.

Support for Rental Assistance Demonstration Program (RAD) Initiatives

NYCHA will continue to leverage HUD’s Rental Assistance Demonstration program (RAD), to convert approximately 1700 units to the Section 8 platform.

Human Resources (HR) Digital Files

NYCHA will integrate departments’ local copies of employees’ HR folders, which are known as “location folders,” with the central office folders to create one comprehensive digital HR file.

Legal Case Management System

This project will implement a cloud-based legal case management to replace two systems that do not meet the needs of the Law Department and are no longer supported by their vendors.

Centralized Violation Management System

Kickoff implementation of a compliance monitoring and data reporting solution to support management of compliance issues.

New Forms Management System

This project will replace NYCHA’s no-longer supported forms submission software (Movaris) with Adobe Experience Manager (AEM).

Procurement Enhancements

In 2018-2019, NYCHA will continue to streamline processes, increase transparency and improve services around its internal procurement for materials and services. Future goals for the Procurement initiatives include:

- HD Supply Integration
- Deploy Vendor Evaluation system
- Expand Receipts Dashboard to Support Services and other Central Offices areas
- Decentralize release adjustment process to the field and improve efficiency
- Implement forecasting for Support Services

Resident Broadband Initiatives

In 2018-2019, NYCHA will collaborate with City Hall and a DoITT mayoral initiative to bridge the digital divide and provide broadband access to NYCHA residents.

- Replace offline databases used to track procurements and compliance

Primavera Replacement

This project, ongoing in 2018, replaces the project management software used by Capital Projects Department and migrating functionality to eBuilder, cloud-based solution.

Virtual Hold and Workforce Management

NYCHA's Customer Contact Center (CCC) is the main point of contact for NYCHA residents, Section 8 (Leased Housing) voucher holders, and the public. NYCHA's CCC handles approximately 12,000 calls per day with some peak days averaging at 18,000 calls. This 2018 initiative seeks to optimize CCC processes, enhancing the current Calabrio system with Virtual Hold and Workforce Management functions. The objective is to protect NYCHA's information technology investment by maintaining and supporting its technology infrastructure. The key objectives FY2018-FY2021 technology strategy is to ensure business continuity through a robust and resilient infrastructure program. The projects below are examples of enabling information technology activities that the Authority will deploy in the coming two years in support of this objective:

Expand Bandwidth and Improve Circuits at Management Offices

Several NYCHA field sites still use DSL or T1 and perform poorly when interacting with NYCHA systems like Microsoft Exchange and Maximo. This project will track action plans to ameliorate performance at those locations by implementing Verizon Ethernet Service (E-LAN) – for improved communications links and faster performance. The increased bandwidth will support video conferencing and online learning. Rollout begins in 2018. Additionally, NYCHA will seek to install improved network circuits at all NYCHA developments.

VoIP Phones for Borough Management and Field Offices.

In 2017, the update of Borough Management telephones to VoIP was completed. The next phase of this initiative, beginning in 2018, is to upgrade the development offices to VoIP. Field office users will have direct lines for desk phones, voicemail routed to their Outlook inbox, and call forwarding, among other features.

NYCHA's Information Security

In 2018, NYCHA will continue implementing its Information Security program with the following new initiatives:

- Begin NYCHA-wide IT Security Training program
- Complete table-top exercises for Incident Response
- Cloud Access Security Broker (CASB) – Proof of Concept to comply with HUD collaborative tools usage regulations scheduled for 1st Qtr. 2018

- Continue to implement External Behavior Based monitoring tools to prevent unauthorized foreign manipulation of NYCHA web sites

Refresh of Floor Switches

Technology refresh of aging network switches on all floors at 90 church, 250 Broadway, LIC and Borough Management Offices

Improve Connectivity for NYCHA's Mechanical Systems

Approximately 60% of NYCHA's buildings have an active fiber network connecting them to their respective management offices. This initiative involves migrating all elevator, energy and CCTV mechanical systems to the existing active fiber to improve connectivity by replacing aging wireless bridges that are prone to malfunction.

NYCHA's Cloud-First Strategy

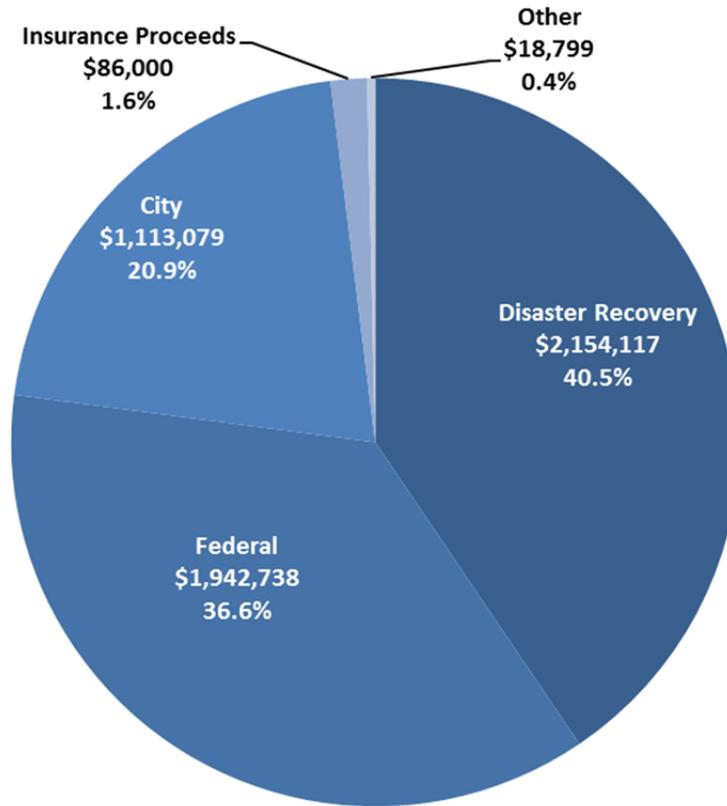
Since 2014, NYCHA has espoused a "cloud-first" strategy, migrating services and infrastructure to the cloud whenever feasible, based on financial, technical, security, and business criteria. In 2018-2019, NYCHA plans to migrate the following services to cloud-based platforms:

- Kronos Time and Attendance
- eBuilder Construction Management Software
- Q-matic Queue Management System

NYCHA will also continue to examine the viability and benefits of migrating other NYCHA infrastructure and application components to cloud providers on a case-by-case basis.

Capital Funding Summary

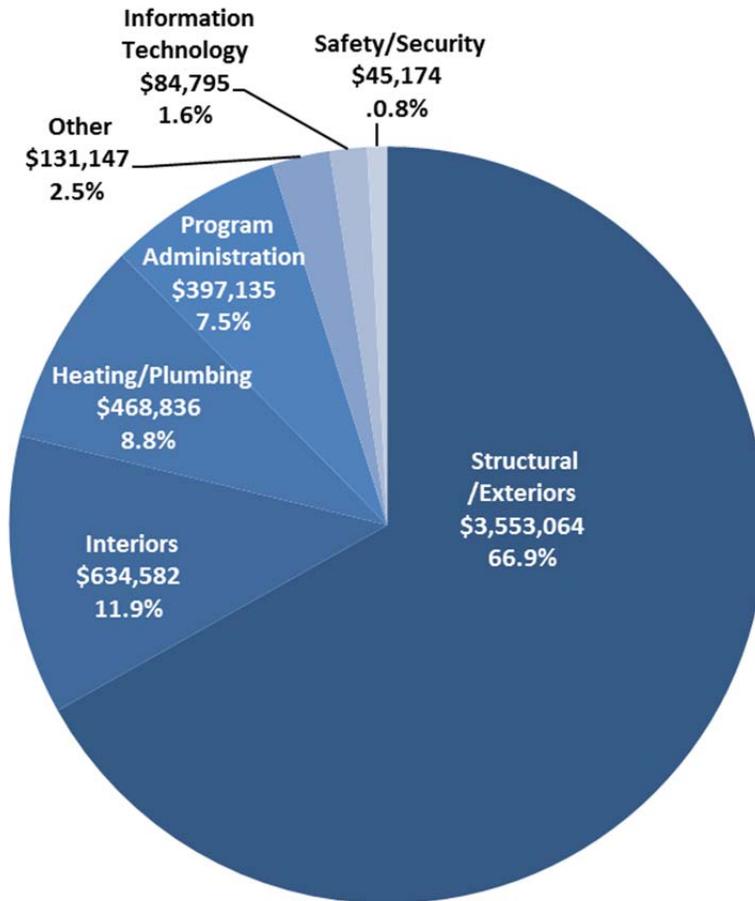
**FY 2018 – 2022 Capital Funding by Funding Source
(In Thousands)**



Total: \$5.315 Billion

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

**FY 2018 – 2022 Capital Plan by Work Type
(In Thousands)**



Total: \$5.315 Billion

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