The New York City Housing Authority (NYCHA or the Authority) will soon release its estimate of the capital investment needed to bring its housing stock into a state of good repair, its Physical Needs Assessment (PNA), as required at least once every five years by the U.S. Department of Housing and Urban Development (HUD). NYCHA’s previous PNA, conducted in 2011 and released in 2012, identified $16.5 billion in needed capital improvements between 2012 and 2016. This was a 140 percent increase over the $6.9 billion identified in the 2006 PNA. It is likely that NYCHA’s forthcoming PNA will include capital needs exceeding $25 billion, dwarfing the resources available in its most recent capital plan.

This report—part one of two on NYCHA’s capital budget—will provide background on the Authority’s capital assets, the 2011 PNA, the 2012-2016 Capital Plan, and spending over that period. Part two will analyze the 2017 PNA after its release and offer recommendations on how NYCHA can help address the gap between its resources and its growing capital needs.
BACKGROUND

System Size, Age, and Condition

With more than 176,000 apartments under management, NYCHA is both the nation’s largest public housing authority and New York City’s largest landlord. In an era of rising rents and record-high rent burdens, NYCHA has become an increasingly important resource for low-income New Yorkers. The average monthly rent for NYCHA’s public housing units is $509, and the average tenant family earns $24,336 annually, or about 30 percent of the city’s area median income for a family of three. Unlike privately-owned affordable housing, the affordability requirements for public housing do not expire, eliminating the risk of displacement for NYCHA residents.

The age and scale of the NYCHA system makes it increasingly difficult and expensive to maintain. For most of its existence, NYCHA has been among the nation’s highest performing public housing authorities. Until recently, the financial and political pressures that led other cities to reduce their public housing stock did not exist in New York. While the nation’s public housing stock shrank by 400,000 units since the mid-1990s, New York City retained nearly all of its public housing. As a result NYCHA’s average unit is now 58 years old, and 84 percent of its housing was built before 1970. Almost all of its buildings have exceeded their useful lives.

Accordingly, researchers have found that conditions in NYCHA developments have worsened in recent years. An analysis of Housing and Vacancy Survey data by the Community Service Society found that reports of cracked walls, severe plaster issues, and water leaks have risen 50 percent over the past decade. HUD’s public housing assessment system ranked NYCHA among the lowest scoring large public housing authorities for physical conditions. Neither is a perfect measure of the state of NYCHA’s housing stock, but both suggest the system is in need of substantial investment.

Capital Planning Process

The PNA is the first step in the Authority’s capital planning process. HUD requires public housing authorities to assess the capital needs of their portfolios every five years by estimating the remaining useful lives of their capital assets at each development and determining when they will need to replace those assets and at what cost. NYCHA hires private engineering firms to conduct its PNAs.
The assessment divides the Authority's capital needs into five broad categories, which HUD refers to as disciplines:

- **Apartment:** Interiors, including bathrooms, kitchens, closets, and doors;
- **Architectural:** Building exteriors and common areas, including roofs, parapets, brickwork, windows, and entrances/exits;
- **Mechanical:** Building systems, including boilers, elevators, water tanks, gas lines, trash compactors, and piping;
- **Site:** Playgrounds, fixed equipment, landscaping, parking lots, and sidewalks; and
- **Electrical:** Fire alarms, security cameras, interior/exterior lighting, and other electrical upgrades.

HUD also requires housing authorities to conduct a supplementary green building and sustainability needs assessment.

The PNA, by category and by development, drives the Authority’s strategy for allocating its limited financial resources. For example, the Authority may choose to target specific high-need developments for comprehensive renovations, or it may choose to focus on specific categories like building exteriors, which, if allowed to deteriorate, will increase other needs in the future.

NYCHA then uses this needs assessment and capital strategy to develop a five-year capital plan in which the Authority allocates resources according to its physical needs and strategic goals. The PNA helps support the Authority's requests for resources, since HUD requires that all federally-funded capital investment relate back to the previous physical needs assessment.

### 2011 CAPITAL NEEDS

NYCHA's 2011 PNA found the total cost of bringing the system to a state of good repair would be $16.5 billion over five years, with an additional $13 billion in needs beyond five years. The vast majority of the $16.5 billion five-year need was for Apartments (46 percent, or $7.6 billion) and Architectural work (40 percent, or $6.7 billion). Mechanical was the third largest need (7 percent, or $1.2 billion). (See Figure 1.) The PNA also identified $6.4 billion in additional Mechanical needs beyond five years, indicating that most systems did not require replacement in the near term. Site and Electrical needs represented smaller shares of the total.

These needs were spread throughout the system and across all types of developments. The $16.5 billion represented an average of approximately $93,000 per unit, and more than 80 percent of developments had an average need per unit that exceeded $70,000.7 (See Figure 2.) These per-unit needs were less than the system's replacement cost but high enough to justify significant renovation projects.
Figure 1: Five-Year Capital Needs in the 2011 Physical Needs Assessment by Category

- Electrical: $0.2B (1%)
- Site: $0.9B (5%)
- Mechanical: $1.2B (7%)
- Architectural: $6.7B (40%)
- Apartment: $7.6B (46%)


Figure 2: Average Per Unit Need by Decile

1st: $43,747
2nd: $65,724
3rd: $75,639
4th: $85,806
5th: $92,247
6th: $98,314
7th: $102,811
8th: $110,017
9th: $118,430
10th: $142,839

The substantial five-year assessment reflected the accumulated cost of years of deferred maintenance and underinvestment. By 2011 the condition of NYCHA's already aging housing stock had been made worse by years of inadequate federal subsidies, its continued failure to adopt modern property management practices, and additional burdens placed on the system by City and State officials.

NYCHA’s federal capital subsidies totaled $1.6 billion from 2006-2010, only 23 percent of the $6.9 billion identified in the 2006 PNA. Furthermore, despite NYCHA’s increasing needs, federal support had decreased by 18 percent since 2002, from $401 million to $327 million in 2010.

Meanwhile, NYCHA’s failure to maintain its units at a high standard contributed to worsening conditions, which in turn increased its capital needs. A 2012 Boston Consulting Group report found that NYCHA’s property management model was woefully inefficient and that its underfunded capital plan had increased the system’s physical needs.

Finally, New York City and New York State made a series of policy choices that increased NYCHA’s fiscal stress, including withdrawing funding for non-federalized public housing developments, requiring the Authority to operate noncore activities like community and senior centers, and requiring it to pay the City for supplemental public services. These factors led NYCHA to use capital funds to support its operating budget. Recently, however, the City has taken actions that have stabilized NYCHA’s operating budget. (See Citizens Budget Commission’s (CBC) report Room to Breathe for more background on NYCHA’s operations.)

The PNA preceded Superstorm Sandy, which hit in 2012. NYCHA calculated that Sandy caused $3 billion in damage to the system. While some of this damage was new, Sandy also damaged or destroyed many apartments, exteriors, and mechanical systems already flagged for replacement in the 2011 needs assessment.

### 2012-2016 CAPITAL PLAN

**Size and Allocation**

NYCHA’s pre-Sandy 2012-2016 five-year capital plan totaled $2.4 billion, or 15 percent of its $16.5 billion need. The significant gap between NYCHA’s capital funding and the PNA required the Authority to prioritize the use of its limited resources. In recent years NYCHA has chosen to invest in securing and sealing exteriors before investing in building systems or interiors.

Of the $2.4 billion, NYCHA planned to commit $1.5 billion for capital projects. Approximately half, $763 million, was for Architectural work, primarily roofs and brickwork projects needed to stabilize buildings and prevent additional damage from water infiltration. Another $421 million was for upgrading mechanical systems, while only $22 million was for improvements to interiors. An additional $300 million was for construction management fees, staffing costs, contingency reserves, and miscellaneous expenses.
Nearly $300 million of the plan was for debt service on new bonds backed by a portion of NYCHA’s federal capital subsidy. The remaining $552 million, or 23 percent of the whole plan, was for non-capital items including information technology, routine maintenance, and addressing more than 300,000 work orders that had accumulated over the previous decade. In the last two years NYCHA has relied less on capital fund transfers to balance its operating budget as its financial outlook has improved.

### Funding Sources

Unlike private housing developers who can use tax credits to fund capital projects or operating surpluses to back loans, NYCHA has a limited ability to independently fund capital investment. Federally imposed rent caps and inadequate operating subsidies prevent NYCHA from generating an operating surplus that could be used to back bonds or build capital reserves. Federal law also prohibits housing authorities from taking advantage of Low-Income Housing Tax Credits (LIHTC) and restricts their ability to use capital subsidies and other assets to back tax-exempt bonds. Thus NYCHA relies primarily on federal subsidies and State and City grants to fund its capital plan. To access the funding sources available to private developers, housing authorities must convert units from the public housing model to other subsidy programs.
Federal Capital Subsidies

The 2012-2016 Capital Plan anticipated $1.6 billion in federal grants; NYCHA ultimately received just $1.45 billion over that period. While federal capital subsidies are intended to cover the cost of maintaining the country’s public housing system in a state of good repair, in practice they fall well short of what is needed.\(^{14}\)

Capital Fund Financing Program

HUD’s Capital Fund Financing Program (CFFP) allows housing authorities to issue bonds backed by federal capital subsidies so long as no more than a third of the annual subsidy goes toward debt service. In the 2012 Capital Plan NYCHA anticipated issuing $500 million in new debt to support its plan. NYCHA sold new CFFP bonds in 2013 when it refunded $186 million in existing debt and raised $470 million in new funds. It is important to note the CFFP bond program does not increase the amount of funds in total. Rather, it allows NYCHA to borrow against future federal funds and repay them with interest, effectively allowing for an accelerated pace of capital investment.

City and State Grants

New York City and New York State are the next largest sources of capital funding. NYCHA’s 2012 Capital Plan anticipated $164 million in City funding; the City actually contributed $377 million in capital grants over the plan period.\(^{15}\) The majority of the additional grants were City capital contributions for roof and building facade repair work. This level of City funding also represents a significant increase in resources from the previous decade when the City committed an average of $20 million per year to NYCHA.\(^{16}\) The Manhattan District Attorney also contributed $101 million in asset forfeiture funds for security improvements in NYCHA developments.
The 2012 Capital Plan anticipated New York State would provide $17 million during the plan period. Historically the State provided $60 million annually for State-built and financed developments, which were ineligible for federal subsidies. New York State stopped providing an annual operating subsidy to NYCHA in 1998, and NYCHA did not receive subsidies for those properties until they were federalized in 2010 as part of the post-recession economic stimulus package.\textsuperscript{17} However the Fiscal Year 2016 Adopted Budget appropriated $100 million for capital projects at NYCHA, which the State allocated to a variety of small projects, including lighting upgrades, playground equipment, and appliances.\textsuperscript{18}

\section*{2012-2016 CAPITAL SPENDING}

NYCHA spent approximately $1.7 billion on capital improvements between 2012 and 2016. This amount was 30 percent greater than planned level of capital commitments, an increase partly due to City, State and Sandy funds not budgeted in the 2012 Capital Plan. The spending, however, met just 10 percent of NYCHA's $16.5 billion need.

This spending, like the plan, reflected the strategic prioritization of architectural needs over other work categories. (See Figure 4.) Between 2012 and 2016 NYCHA spent $1.1 billion, or 68 percent of the total, on roofs and brickwork. While this is 50 percent greater than what was allocated in the 2012 Capital Plan, it represented only 17 percent of the PNA-identified Architectural work.

\begin{figure}[h]
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\includegraphics[width=\textwidth]{figure4.png}
\caption{Capital Needs, Planned Commitments, and Expenditures by Category, 2012-2016 (dollars in millions)}
\end{figure}

\textbf{Note:} The planned commitments and actual expenditures do not include Sandy recovery work or the $18 million in mechanical work funded through NYCHA's new energy performance contracts. Both planned commitments and actual expenditures exclude construction management fees and capital-eligible staffing costs.

\textbf{Sources:} New York City Housing Authority, 2011 Physical Needs Assessment (PNA) Summary, and Five Year Capital Plan Calendar Years 2012-2016.
The Authority invested $259 million in building systems, or 62 percent of the original 2012 plan and 22 percent of the need. Another $169 million, roughly three times the plan, went for lighting, cameras, and other security measures as part of the Mayor’s Action Plan for Neighborhood Safety program. Much of this work was funded by allocations from the New York City Council and the Manhattan District Attorney’s asset forfeiture funds. NYCHA spent just $78 million on Apartments, or 1 percent of the total need.

Alternative Strategies

NYCHA’s 2015 strategic plan, NextGenerationNYCHA, identified alternative strategies including private-public partnerships to address its capital shortfall. These programs build on NYCHA’s previous efforts to convert unsubsidized developments to a contract-based rental voucher model, included in the 2012 Capital Plan. These financing arrangements bring additional resources to fund capital improvements and reduce NYCHA’s long-term capital needs.

Public-Private Partnerships

HUD has created programs that enable public housing authorities to raise private funds for renovating or rebuilding public housing developments. Each requires housing authorities to convert developments from the conventional public housing subsidy programs to project-based rental vouchers. NYCHA used these programs to fund improvements at seven developments and to raise additional revenue for the Authority.

In 2014 the Authority transferred six developments with 874 units to a partnership between NYCHA and two private developers. The partnership issued tax-exempt bonds and raised LIHTC equity to fund the acquisition and a comprehensive rehabilitation of the six developments. As part of the transaction, the units, which were unsubsidized, would receive funding through project-based Section 8 vouchers. The partnership ultimately invested about $89,000 per unit to rehab the developments. NYCHA also received $159 million in cash as part of the transaction.

In 2016 NYCHA completed its first transaction through HUD’s Rental Assistance Demonstration (RAD) program to rehabilitate the Sandy-damaged 1,395-unit Ocean Bay – Bayside development in Far Rockaway, Queens. RAD allows housing authorities to swap federal public housing subsidies for new rental assistance vouchers that provide an equivalent level of funding. For the Ocean Bay conversion, NYCHA transferred ownership of the development to a newly created public-private partnership, which then used the voucher funding stream to raise additional private funding. NYCHA used RAD to raise $253 million in tax-exempt bonds and LIHTC equity, which it combined with $105 million in FEMA disaster relief funding to rehabilitate the property.

In both projects NYCHA retained ownership of the land underneath each development, assumed a 50 percent partnership in the new entities, and secured rights to reacquire the properties at the end of the 15-year LIHTC compliance period. NYCHA plans to continue to use these programs
in the future, though its ability to do so is constrained by the limited availability of project-based Section 8 vouchers and the cap on RAD conversions.

Energy Performance Contracts and Sustainability Programs

HUD also encourages public housing authorities to invest in sustainability projects by allowing them to enter into energy performance contracts (EPCs). EPCs use the planned savings generated from lower utility bills to fund upfront investments. HUD allows housing authorities to use a portion of their annual operating subsidy to fund these projects. This restriction limits the financing to small projects, but NYCHA has managed to use it creatively to fund sustainability work throughout its portfolio. In 2012 NYCHA funded $18 million to upgrade lighting and heating controls through an EPC. In 2016 it received HUD approval for two EPCs potentially worth a combined $300 million to upgrade lighting fixtures, ventilation systems, and a heating plant.

The New York State Energy Research and Development Authority also has allowed NYCHA to participate in the New York State Weatherization Assistance Program. The arrangement will bring up to $40 million in subsidies for energy efficiency upgrades to many of the small buildings in NYCHA's portfolio.21

WHAT TO LOOK FOR IN THE 2017 PNA

The forthcoming PNA will show that NYCHA’s five-year capital needs have grown substantially from the 2011 PNA. NYCHA's buildings are six years older, its capital plan funded just 10 percent of the needs identified in 2011, construction costs have grown faster than the rate of inflation, and Superstorm Sandy caused $3 billion in damage. While we do not know what the ultimate cost will be, it is clear that the Authority's capital needs are growing at an unsustainable rate. At the current pace it is reasonable to be concerned that NYCHA's needs could soon jeopardize its ability to preserve New York City's public housing stock in the future.

CBC will address at least five critical issues in part two of our analysis of NYCHA's new PNA:

- **The growth in the physical needs assessment by amount and by category.** This will be affected by the level of investment (or underinvestment) over the previous five years and will likely reflect outstanding needs such as building systems identified for replacement beyond 2016 that are now due to be replaced.

- **The impact of the investments of the previous five years on needs and building conditions.** NYCHA has focused its limited capital spending on upgrading roofs and building exteriors. This work should help prevent leaks and mold conditions and allow NYCHA to invest more in interior renovation work and mechanical systems. If the investment was substantial enough and effective, the next PNA should reflect improved building conditions at the developments that
received large investments, and the capital plan should show additional resources going toward interior work.

- **The causes of growth.** The PNA should indicate the causes of the growth, including new needs, growth in the cost of previous needs not addressed, increased construction costs, and the impact of Superstorm Sandy, among other factors.

- **Alignment between the new capital plan and the PNA.** NYCHA will also release a new five-year capital plan in conjunction with the new PNA. The capital plan allocation should reflect investments made over the past five years and the updated needs shown in the PNA. The plan will also reflect NYCHA’s strategy—whether it plans to focus resources on high-needs developments or spread funding more evenly across the system.

- **How NYCHA plans to use alternative strategies to address needs.** NextGenNYCHA calls for the continued use of Section 8 Conversions, RAD, and land sales to supplement the limited federal capital subsidies. The new needs assessment should clarify which developments are most suitable to convert to voucher programs or could benefit from property dispositions to raise funding for capital investment.
ENDNOTES


3  Beginning the 1990s the federal government has encouraged local housing authorities to replace their most severely distressed housing developments with a mix of new public housing, other subsidized affordable units, market-rate units, and rental assistance vouchers. Congress created the HOPE VI program in 1992 to forestall the loss of affordable units and correct the mistakes that led to the ongoing deterioration of public housing during the 1970s and 1980s. The program, however, resulted in a net loss of public housing. More than 157,000 units were demolished through the HOPE VI program in the 1990s and 2000s, many of which either were not rebuilt or were replaced with rental vouchers. A federal task force on severely distressed public housing, whose findings spurred the creation of HOPE VI, exempted NYCHA from its analysis on the grounds that NYCHA was an outlier among the nation’s housing authorities; it had higher occupancy rates, longer waiting lists, better financial performance than almost any large housing authority; its residents were more likely to work, its buildings were better maintained, and its large apartment buildings were more contextual with their surroundings. In 1996 Congress created a viability test for large public housing developments: properties with more than 300 units with vacancy rates of at least 10 percent where the cost of rehabilitation work exceeded the cost of demolition and providing tenants with rental vouchers. With several small exceptions, NYCHA’s properties did not meet the criteria required to receive HOPE VI funding. See: Nicholas Dagen Bloom, “Learning From New York: America’s Alternative High-Rise Public Housing Model,” Journal of the American Planning Association, vol. 78, no. 4 (Autumn 2012), www.tandfonline.com/doi/abs/10.1080/01944363.2012.737981. Lawrence J. Vale and Yonah Freemark, “From Public Housing to Public-Private Housing,” Journal of the American Planning Association, vol. 78, no. 4 (Autumn 2012), www.tandfonline.com/doi/abs/10.1080/01944363.2012.737985?journalCode=rjpa20.


Sean Campion, Room to Breathe: Federal and City Actions Help NYCHA Close Operating Gaps, but More Progress Needed on Implementing NextGenNYCHA (Citizens Budget Commission, July 2017), cbcny.org/research/room-breathe.

The original 2012 capital plan did not include work funded by not-yet recognized City and State grants or federal Disaster Recovery funding that NYCHA would receive in response to Superstorm Sandy. See: New York City Housing Authority, Five Year Capital Plan Calendar Years 2012-2016 (May 9, 2012), http://www1.nyc.gov/assets/nycha/downloads/pdf/Five_Year_Capital_Plan_2012-2016.pdf.

The 2012 Capital Plan also included $8.8 million for lead inspections and testing in the non-capital section of the plan. Actual spending data for expense items funded through the Capital Plan is not available. The Authority now funds lead testing and abatement through its operating budget.

NYCHA has the flexibility to use capital funds for non-capital purposes since most of its funds are not borrowed. HUD allows housing authorities to use up to 20 percent of their federal capital subsidies for operating costs. Between 2003 and 2012, NYCHA used $338 million in capital subsidies to fund operations. See: Rachel Bardin and Maria Doulis, Cleaning House: How to Close the New York City Housing Authority’s Operating Gaps (Citizens Budget Commission, April 2015), cbcny.org/research/cleaning-house; and Sean Campion, Room to Breathe: Federal and City Actions Help NYCHA Close Operating Gaps, but More Progress Needed on Implementing NextGenNYCHA (Citizens Budget Commission, July 2017), cbcny.org/research/room-breathe.

HUD’s Capital Fund Guidebook attributes the problem to inadequate Congressional appropriations for public housing. HUD acknowledges the public housing operating and capital subsidies “remain inadequate to meet current needs,” which has led to “a substantial backlog of unmet modernization or replacement needs.” See: U.S. Department of Housing and Urban Development, Office of Public and Indian Housing, Capital Fund Guidebook (April 1, 2016), https://www.hud.gov/sites/documents/CapitalFundGuidebookFinal.pdf.
NYCHA operates on a calendar year budget, while the City's fiscal year begins on July 1. Data on the City's capital commitments to NYCHA reflect the City's fiscal year rather than NYCHA's.


NextGenerationNYCHA calls for leveraging existing HUD programs to preserve the Authority’s highest need units, including conventional public housing units with extremely high capital needs and the remaining properties not eligible for federal subsidies. The plan anticipated NYCHA could preserve 50,000 units through Section 8 conversions and the Rental Assistance Demonstration Program. See: New York City Housing Authority, NextGenerationNYCHA (May 2015), www1.nyc.gov/assets/nycha/downloads/pdf/nextgen-nycha-web.pdf.

The total acquisition cost for the project was $300 million. At closing NYCHA received $159 million in cash and $141 million in a long-term purchase money mortgage. The note accrues interest at a 6 percent annual rate and is payable from surplus cash flow pursuant to the transaction's operating agreement. See: Triborough Preservation LLC, Financial Statements (With Supplementary Information) and Independent Auditor's Report (December 31, 2016), emma.msrb.org/ER1068665-ER837157-ER1238046.pdf.
