



THE MISSION OF THE URBAN LAND INSTITUTE

Shape the future of the built environment for transformative impact in communities worldwide

ULI, the Urban Land Institute, is a 501(c) (3) nonprofit research and education organization supported by its members. Founded in 1936, we now have more than 45,000 members worldwide, representing the entire spectrum of land use and real estate development disciplines working in private enterprise and public service.

- ULI at the local level: sharing best practices and fostering professional development
 - Local district councils carry out, at the local level, the mission of ULI.
 - With over 2,500 members – including real estate developers, investors, property owners, brokers, architects, planners, public officials, engineers, and students – ULI New York holds the prominent spot as one of ULI’s largest District Councils.
- The members of this panel have been selected from the ULI network for their expertise relevant to the problems and opportunities presented by this Technical Assistance Panel’s scope. All panel members donate their time, effort, and expertise on the Technical Assistance Panel program as a personal contribution to further ULI’s work and objectives.



New York Urban Resilience at ULI

- The Urban Resilience program brings ULI's expertise in land use, real estate, and climate resilience to communities nationwide.
- Resilience panels:
 - Provide land use and development strategies for vulnerable sites
 - Assess policy opportunities to enhance community resilience
 - Craft strategies for implementation and funding of resilience projects and programs



New York Resilient Land Use Cohort

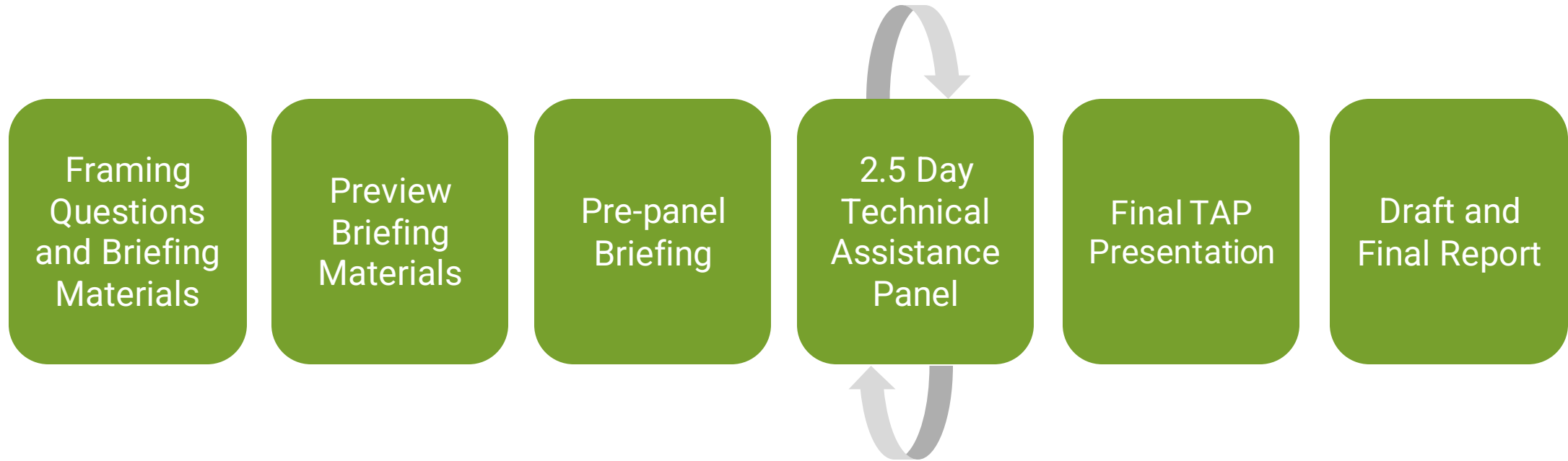
Program Overview

- RLUC is building a platform for **advisory services, technical assistance** and **knowledge sharing** between 8 cities and their ULI District Councils.
- The project is **generously supported by JPMorgan Chase** through a grant to the ULI Foundation.
- The cohort will support cities to **take action toward climate adaptation and resilience** through technical assistance from the ULI membership and peer-to-peer exchange.





New York TAP Process





New York

Thank you to the Technical Assistance Panel Sponsor





The Panel

Janice Barnes (TAP Chair)

Managing Partner

Climate Adaptation Partners

Janice is the founding partner of Climate Adaptation Partners, a NYC-based woman-owned business focused on planning, advocacy and partnership-building for climate adaptation.

Ryan Cassidy

Director of Sustainability & Construction

RiseBoro Community Partnership

Ryan Cassidy is the Director of Sustainability & Construction for RiseBoro Community Partnership, where he manages the design and construction of a robust affordable housing pipeline.

Satpal Kaur

Designer

Designer and Building Systems thought leader with over a decade of experience implementing cutting edge technologies while designing buildings. Branded as a High-Performance Building Activist because of her passion for data and building science approach in architecture.

Cecilia Kushner

Executive Vice President, Planning Division

NYC Economic Development Corporation

Cecilia Kushner is the Executive Vice President for the Planning Division at NYCEDC where she leads large multidisciplinary teams to deliver on some of the most ambitious and complex urban planning and development projects in New York City.

Matthew Kwatinetz

Director of the NYU Urban Lab and Managing Director, QBL Partners

New York University

Matthew Kwatinetz is a professor of Real Estate Economics and Director of the NYU Urban Lab, and the Managing Partner of QBL Partners, a double bottom line public/private advisory firm.

Amy Macdonald

Principal & Resilience Practice Leader

Thornton Tomasetti

Amy Macdonald, who oversees Thornton Tomasetti's Resilience practice, has a broad background in geotechnical engineering, hazard mitigation, disaster response and recovery work.

Pete Munoz

Senior Engineer and Practice Lead

Biohabitats

Based out of the Cascadia Bioregion office in Portland, Oregon, Pete, a practice lead at Biohabitats, works around the globe helping to connect communities with appropriate inspirational living water infrastructure.

1. What **landscape features** might most effectively be modified to provide increased resilience to coastal flooding (**and other climate challenges**) at Marlboro Houses?
2. What **modifications to buildings** should be incorporated into future capital work at Marlboro Houses to increase climate resilience?
3. What **operational changes** might be necessary to support increased climate resilience at Marlboro Houses?
4. What **funding strategies** should NYCHA consider in order to implement needed resiliency work at Marlboro Houses?



Landscape Team:
Amy Macdonald
Pete Munoz



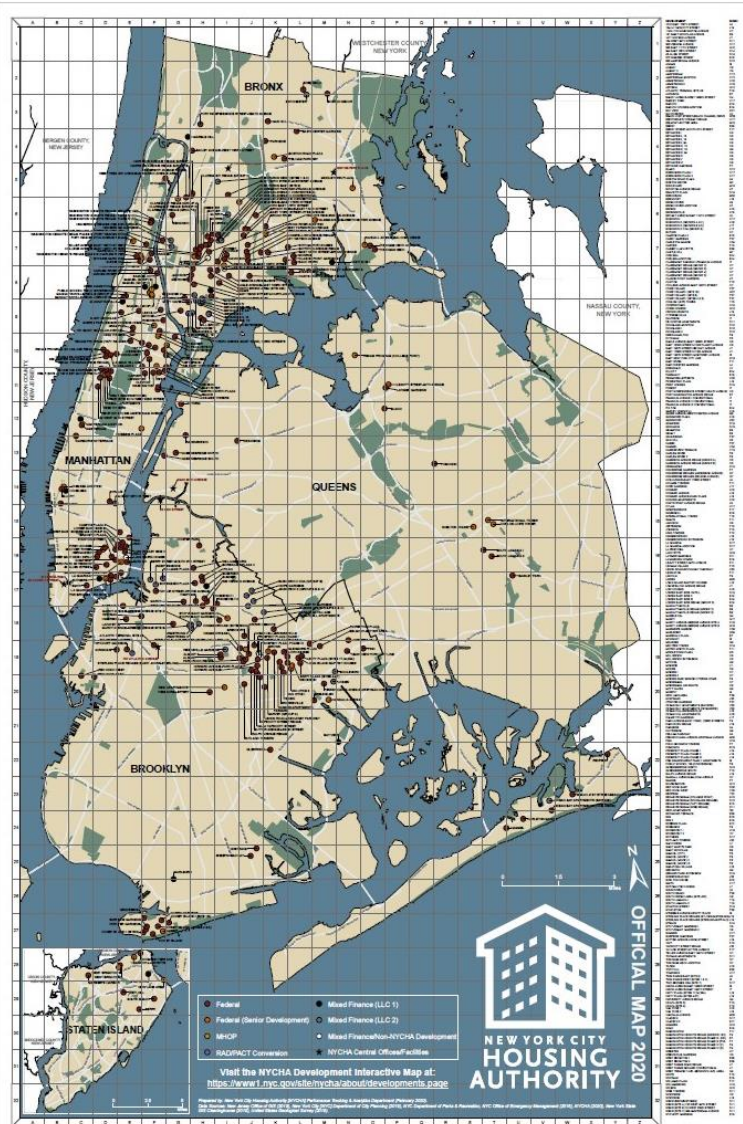
Buildings Team:
Ryan Cassidy
Satpal Kaur



Operations and Funding Team:
Cecilia Kushner
Matt Kwatinetz



NYCHA Portfolio and Marlboro Pilot Potential



This Portfolio

- 5 Boroughs
- 302 Developments
- 2,252 Buildings
- 169,820 Units
- 555,498 Residents
- 11,569 Employees

Source:
https://www1.nyc.gov/assets/nycha/downloads/pdf/NYCHA-Fact-Sheet_2020_Final.pdf

This Leverage

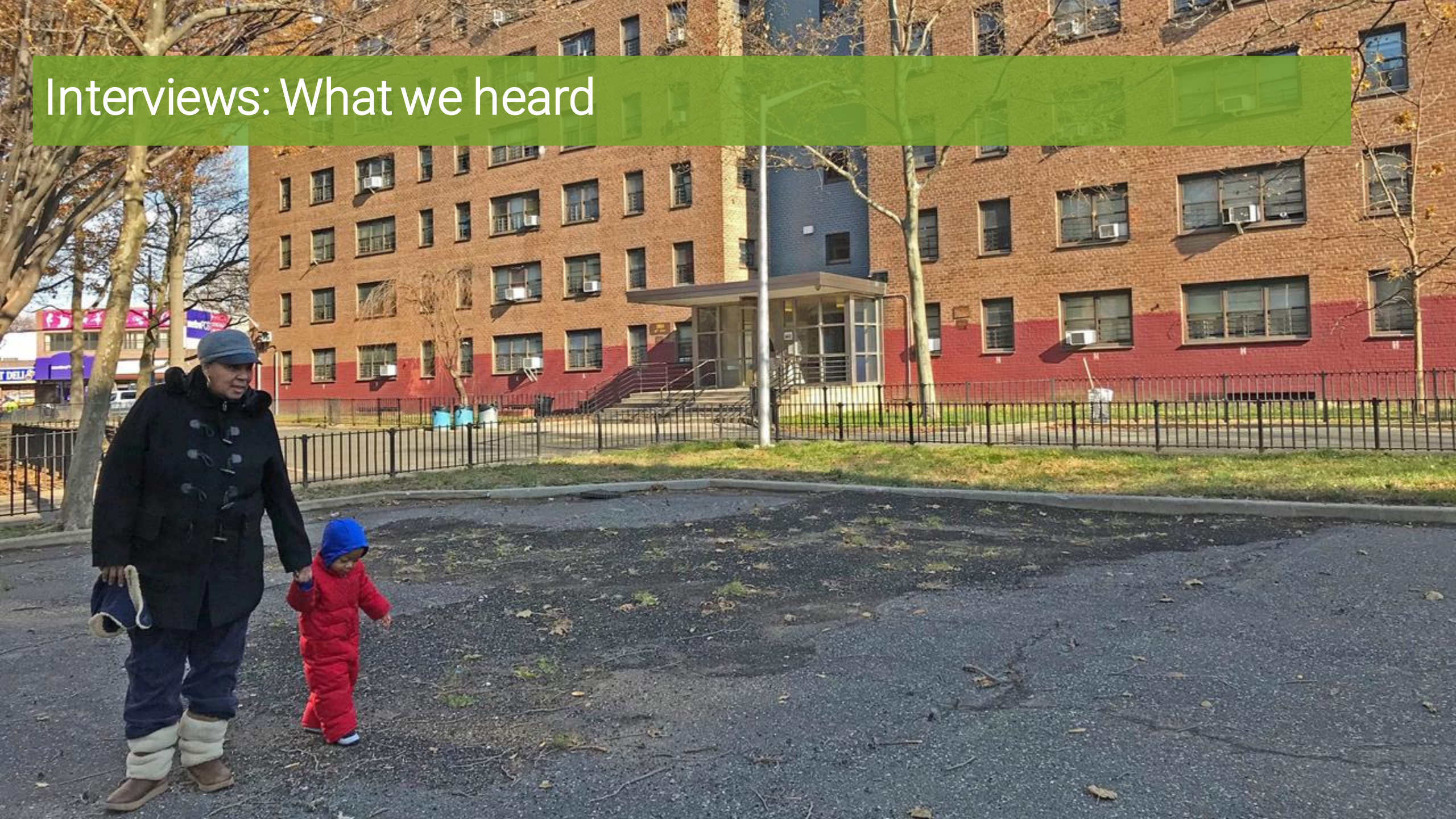
- System-Level Impacts on resilience, energy and water demands
- Workforce Development to build generational change and improve family incomes
- Industry Transformation with long-term implementation of solar, HVAC and prefabrication needed for portfolio
- Health Equity measures with other investments
- Waste Diversion with portfolio-scale rehabilitation

Presentation Roadmap

Interviews
Opportunities
Recommendations
Correlated Actions



Interviews: What we heard





What We Heard – Landscape

Stakeholder Commentary

Long term resilience: operations and maintenance

- The site is located on an old swamp which had a stream running through it. Frequent ponding is an ongoing issue.
- Consider life cycle deployment & operational costs when selecting resilience measures.
- Pay local community to deploy and maintain measures as opposed to 3rd party contractors. This will increase stakeholders buy in.
- Need guidance and training for green infrastructure maintenance.
- Nature-based solutions can attract trash - need solution to address.

Solution multipliers

- Develop a system of practices and incorporate redundancy. Preference for passive and fail-safe measures.
- Encourage activation of space and engaging inhabitants.
- Consider multi-hazard risks when considering resilience measures (e.g., snowplow damaging permeable pavement).
- Educate community – training and signs explaining function of nature-based solutions to avoid bioswales being mowed over.

Panelist Commentary

- Successful interventions will need stakeholder engagement (both tenant and staff)
- Planning and design efforts will require a holistic approach.
- All investments need to result in multiple benefits (no single service infrastructure).
- Sustained education and training is critical to success.
- Integration of education is a great tool to keep stakeholders informed and engaged.
- Solutions need to consider remnants of historic landforms/waterways, along with current tenant demographics and needs.



What We Heard – Buildings

Stakeholder Commentary

NYCHA current building program

- The current Electrification RFP is designed with heat and hot water solutions in mind. It is open ended as to solutions but must meet LL97 2024 requirements
- NYCHA's Climate Adaptation is an effort that identifies that different sites will have different measures. A draft of the procurement to be public to have transparency and feedback.
- The Greenhouse RFQ is not part of the NYCHA portfolio. The Campaign Against Hunger sees it as a way of empowering community and reducing economic stress and providing education.
- NYCHA is restructuring management to a geographic model with more direct management of property managers

Current challenges

- A need for a policy for NYCHA that hold GC accountable to hire local trained staff for construction and community engagement.
- NYCHA capital programs are fractured between energy, resilience, roof, environmental (asbestos/lead/etc) etc.
- Needs to improve core competency on maintenance and management-critical issues

Future opportunities

- Solar PV payout is limited by low utility rates/regulatory hurdles/ net metering constraints
- HUD waiver needed to retain utility savings

Panelist Commentary

- Long term planning for policies being introduced that get the Stakeholder/tenant buy to be part of the design and process.
- RFPs should target longer range solutions- out to 2050
- Capital Improvements tend to follow programs or emergency and not planned replacements
- Buildings should be wired for solar PV but wait until full value is realized
- HUD waiver in Q2 2021 to retain utility savings
- New Workforce opportunities to add or preserve union jobs in HVAC maintenance, solar installations, and construction



What We Heard – Operations, Funding/Financing

Stakeholder Commentary

Operational delivery and transparency = trust

- Sentiment that campus is not proactively managed by NYCHA and that there is no clear accountability
- Operational issues are understood as a lack of care for NYCHA residents
- Blueprint provides a reinvention of operational capacity closer to the assets and will force accountability
- Chronic issues of flooding and lack of functioning AC make resilience a today problem

Barriers to effective resilience transformation

- The life cycle cost of investments is not considered, leading to overly complex resiliency measures with no clear operational protocols
- Capital investments are defined to match specific funding priorities vs. Priorities of specific buildings: PNA defined without assessment of needs
- Resilience investments are essentially a post-Sandy pipeline focused on flooding
- NYCHA does not recoup savings on energy efficiency

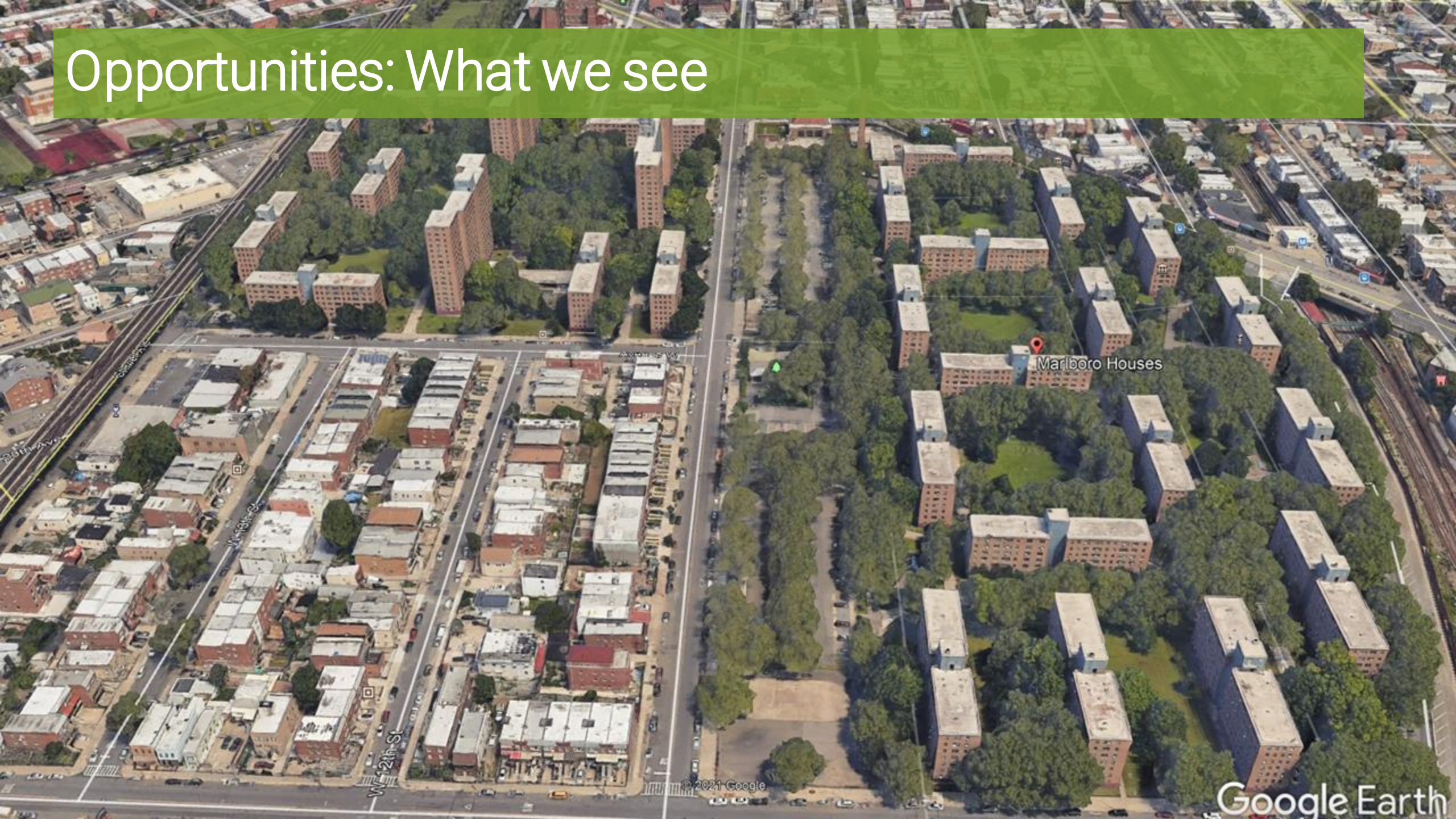
Marlboro Houses has many assets to build upon

- Marlboro Houses has sufficient funding to upgrade the building
- Marlboro Houses presents a real opportunity to think in terms of "complete communities" with operations and invite the community in, given how much ground floor space
- MH presents opportunity for new builds

Panelist Commentary

- Clear lines of accountability, protocols and management process standardization must be the foundation to rebuild trust
- Capital pipeline must strategically focus on chronic issues with health implications (heat; regular flooding/mold)
- Operation managers must take a system view to buildings and campus to define long-range solutions and clear phased implementation
- Resilience must be fully defined (storm surge; chronic precipitation flooding; heat) and a campus-specific plan developed
- All capital investments must integrate resiliency and energy efficiency in their scopes and define goals for the life span of the investment
- The potential need to repurpose the ground floors must be integrated in the leasing/vacancy plan so it can happen over time
- The scale of capital investments should all for robust competition between contractors, high MWBE goals, and some workforce development components

Opportunities: What we see





Opportunities - Landscape

Unique opportunity with the amount of open space / natural area available.

Lots of potential for private / public partnership (partnerships with NYC Parks, etc.).

Nature based solutions offer a lot of potential for solution multipliers.

There are a lot of potential to enhance the value of current assets.

Unique opportunity to create more indoor/outdoor spaces (with relocation of residents to higher elevations).

Strategic choices of landscape resilience measures and nature-based solutions can provide enhancement of ecosystem services, including:

- Improve and regulate air quality,
- Enhance water retention and reduce runoff,
- Increase water infiltration,
- Improve recreational space for tenant demographic,
- Support mental health and wellbeing,
- Increase biodiversity,
- Reduce heat island effect, and
- Moderate extreme events.



New York

Landscape: Context / Importance

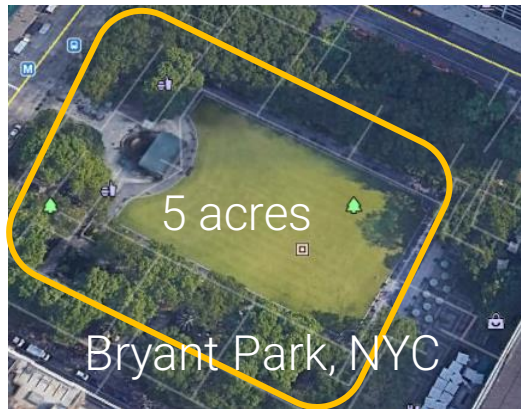


 **New York**
Landscape: Context / Importance





New York Landscape: Rethinking Value





New York

Landscape: Nature-Based Solution Opportunities

The image displays an aerial site plan for the NYCHA Marlboro Houses, illustrating various nature-based solution opportunities. The plan is overlaid with several icons: a bird icon, a leaf icon, a hand holding a plant icon, a sun and clouds icon, and a hand holding a plant icon. A circular diagram titled "ECOSYSTEM SERVICES" is positioned at the bottom left of the plan, detailing various services such as Carbon Sequestration, Air Quality, Water Quality, and Biodiversity. The plan also features a dashed white boundary and a dashed black boundary. The text "NYCHA Nancy Owens Studio Landscape Architecture + Urban Design PLLC" is visible at the bottom of the plan.





Opportunities - Buildings

Re-defining Marlboro Houses as buildings that are Net Zero & Passive House by combining electrification, apartment and façade renovations

Phase I Demonstration- Building 19- Community Center cooling, façade and apartment renovation resilience/landscaping integration

Solar PV (rooftops/battery storage/ parking lots & Electric Vehicle charging)

Innovation of panelized façade systems

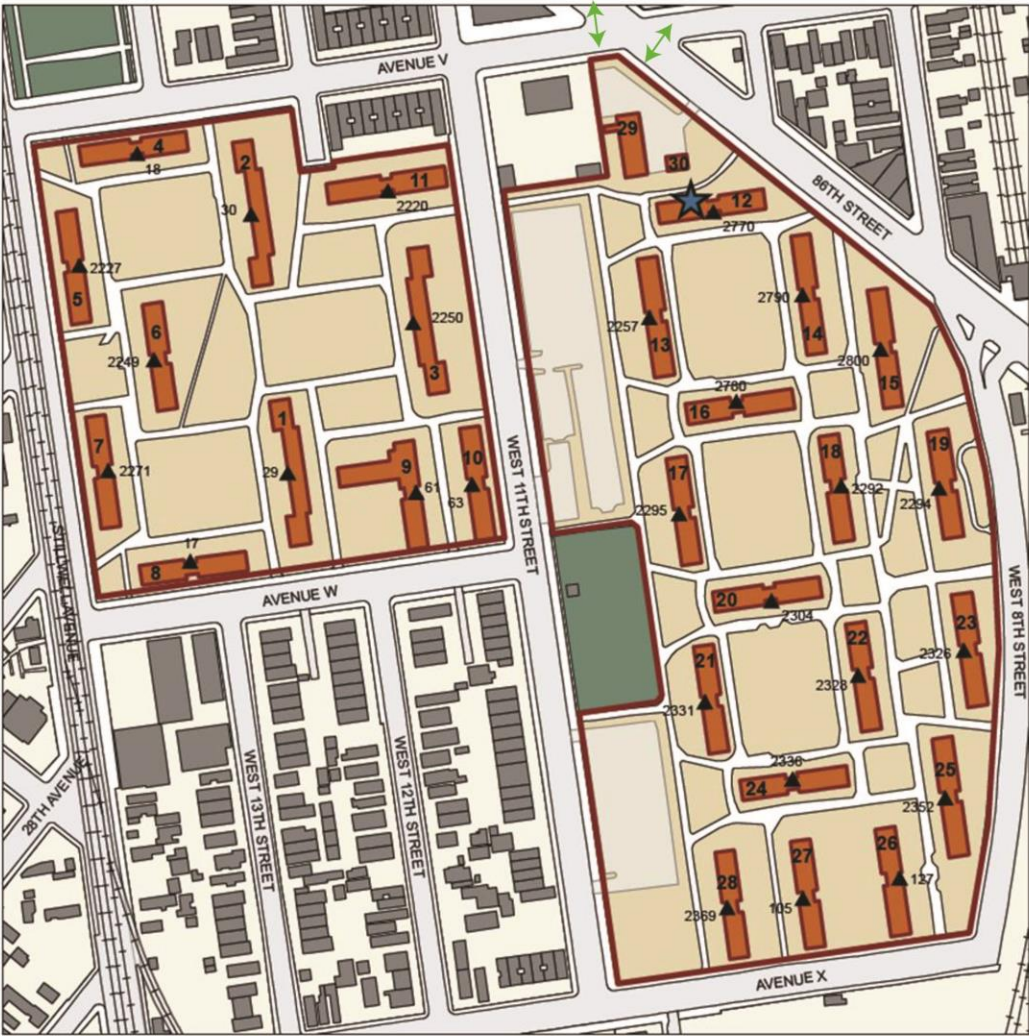
New Construction/ Development opportunities and integration of resilience strategies

Retail and commercial space opportunities

Local hiring/ MWBE/ workforce training as part of larger scale redevelopment to preserve and expand existing union workforce.



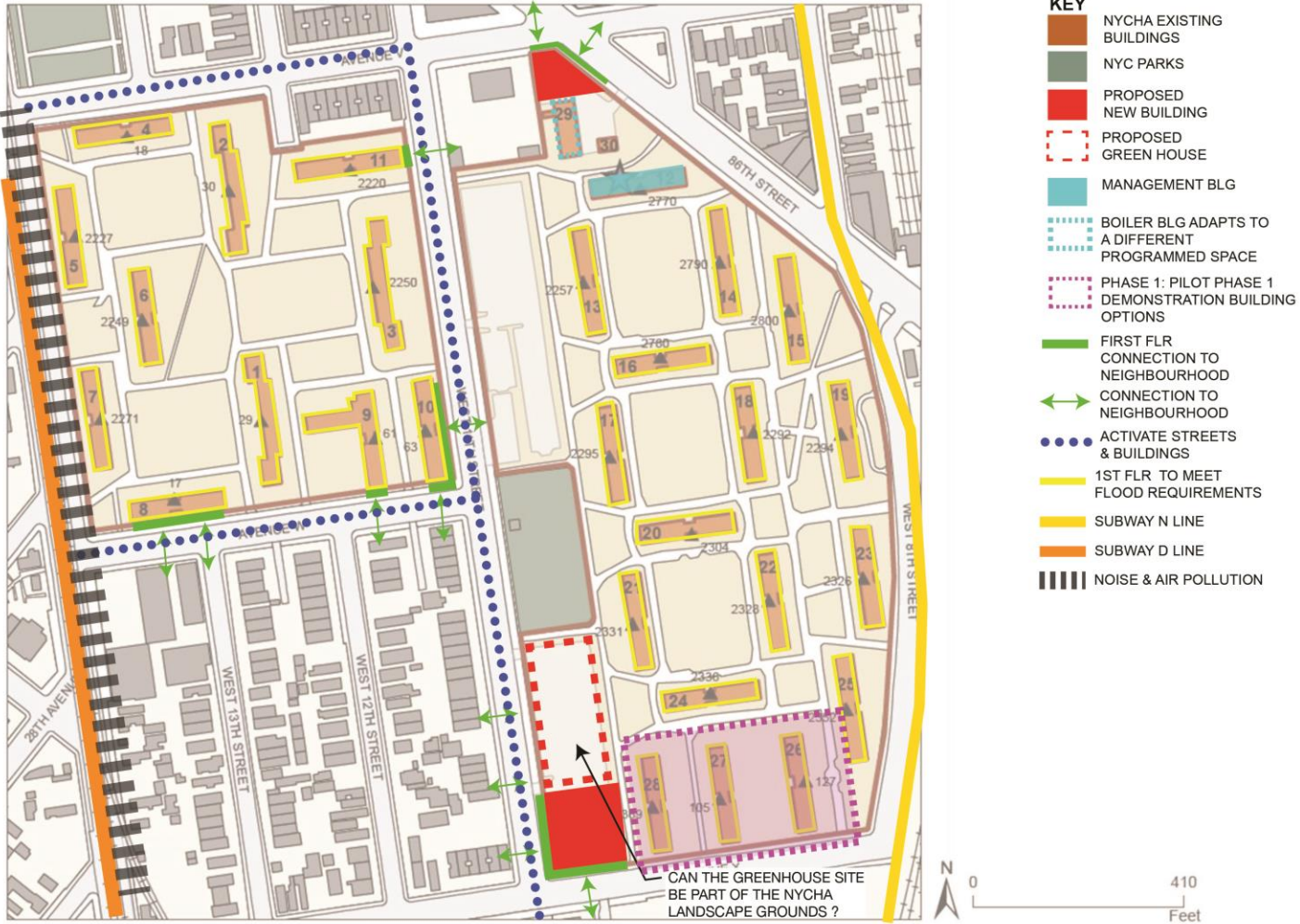
Buildings: Existing Marlboro Site Plan



- KEY**
- NYCHA EXISTING BUILDINGS
 - NYC PARKS

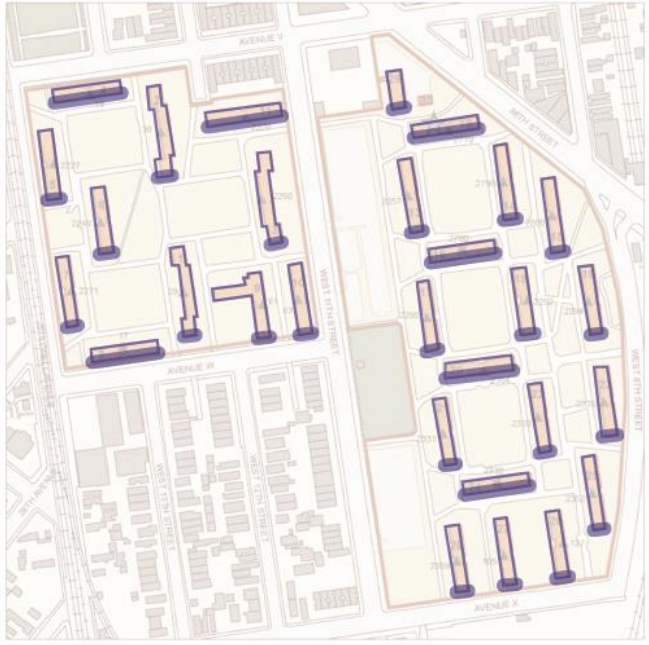


Buildings: Marlboro Resilience Site Plan





Buildings: Marlboro NYCHA Housing Electrification options



SOLAR PHOTOVOLTAIC (PV) INCORPORATED INTO FACADE.






SOLAR PHOTOVOLTAIC (PV) TRELLIS ON EXISTING ROOFS.



SOLAR PHOTOVOLTAIC (PV) TRELLIS INCORPORATED INTO LANDSCAPE & PARKING.



- KEY**
-  SOLAR PHOTOVOLTAIC (PV)
 -  BUILDING OUTLINE
 -  SOLAR PHOTOVOLTAIC (PV) INCORPORATED INTO FACADE

Buildings: Marlboro NYCHA Design Approach

Case Study

803 Knickerbocker Ave, NY

The design approach led to an inventive approach of carving the EIFS insulation into varying wedge shapes to create a sculptural façade to shade the building and heat the building with a unique heating system that is typically used for an entire brownstone. A Conscious approach to microclimate shading and cooling during the peak summer times is illustrated in the façade with air conditioner units acting as awnings.



803 Knickerbocker Avenue: Mixed-use house built to the ultra-efficient German Passive Haus standards. The building will feature a senior facility on its ground floor and 31 apartment units as well as a residents' community room and roof garden.

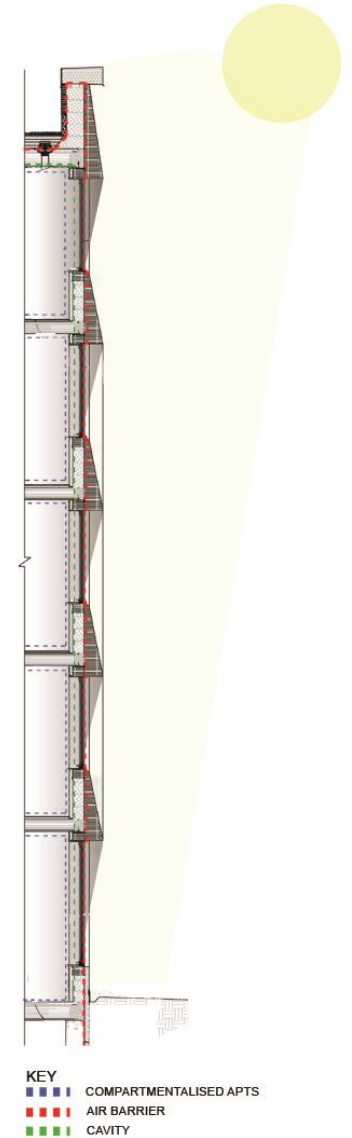


EIFs Insulation wedges with Eco mesh AC units



EIFs Insulation wedges with ERV ducts

* The R-value is continuous and refers to the thermal performance of the entire assembled wall -- including windows. In comparison, a standard steel stud brick veneer assembly with R-12 fiberglass batt cavity insulation with double glazed insulated windows yields an overall effective R-value of about 3 to 4.



Buildings: Marlboro NYCHA Retrofit Concepts

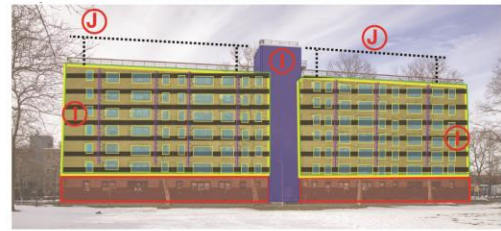
TYPE 1 NYCHA EXISTING PLAN

- Compact building: ratio of enclosure area to floor area is simple to help peak loads.
- Smaller surface area & volume
- Easier to economically insulate

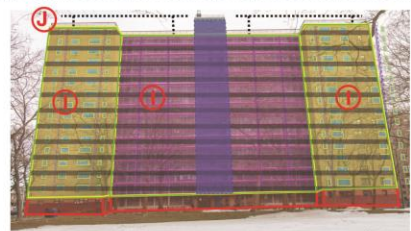
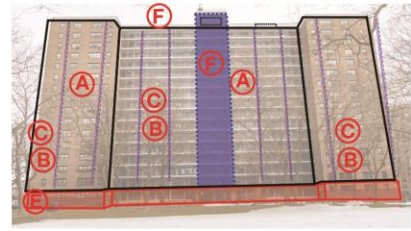
NYCHA EXISTING TYPE 1 ELEV.

- Smaller surface perimeter
- Plan work at Basement level for new sewer system coordinated with landscaping.
- Early Resilient design & construction planning: HVAC, Prefab Enclosure & Building Energy analysis.

TYPE 1 NYCHA EXISTING BLG



TYPE 2 NYCHA EXISTING BLG



TYPE 2 NYCHA EXISTING PLAN

- Irregular building Shape: Ratio of enclosure area to floor area is not simple therefore will have different energy loads.

NYCHA EXISTING TYPE 2 ELEV.

- Larger surface area & volume
- Plan work at Basement level for new sewer system coordinated with landscaping.
- Different insulation techniques to be applied to reduce Thermal Bridging.
- Early Resilient design & construction planning: HVAC, Prefab Enclosure & Building Energy analysis.

HVAC ON EXTERIOR FACADE & BASE FLOOD ELEVATION

- (A) Airtightness: Air Barrier applied on exterior facade
- (B) Heating & cooling lines on exterior facade
- (C) Coordinate ERV for units
- (D) Mech systems to be unitized.
- (E) First floor elevated to above Base Flood elevation.
- (F) HVAC pods horizontally on roof or vertically off facade.

THERMAL ENCLOSURE APPLIED

- (G) Continuous Insulation -> Facade & roof.
- (G.1) Continuous Insulation may vary due to Thermal Bridging at balcony extending out.-> Facade & roof.
- (H) Thermally broken window

CLADDING & FUTURE ELECTRIFICATION

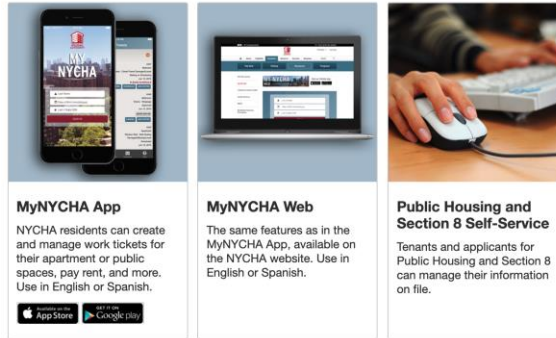
- (I) Cladding: Site applied or Pre-Fab
- (J) Future Photovoltaic panels panels

NOTE:
Window frame thickness needs to be taken into account for light & air.
1st floor may not be a conditioned

NOTE: ALL IMAGES ARE FOR DIAGRAM PURPOSES

ULI New York Opportunities - Operations

Existing tools, such as MyNYCHA, are an excellent base for improving operations



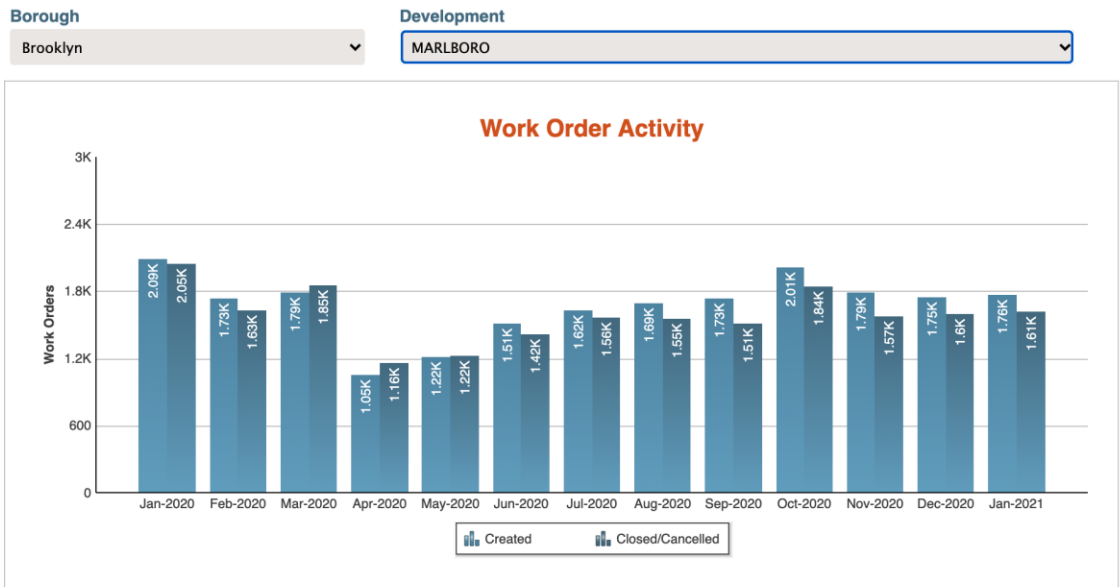
Creating accountability by bringing PM and NA onsite monthly with residents

- Building credibility by clarifying accountability chain, make it personable and immediately addressing chronic "low hanging fruit"
- On-site staff easily creating stream of data for improvements

Immense operations possibilities of open space, ground floor and new construction

Involve residents in new roles alongside existing workforce

- Significant opportunities for data-driven management using resident input
- Training opportunities for residents and workers
- Following the model of resilience ambassadors to engage youth in getting data on resilience vulnerabilities of residents and educate on climate risks



This chart shows how many new repair requests (work orders) were placed every month for the past year, and how many requests were closed or cancelled.



To what extent do these actions improve residents' resilience?

Best Practice: *Green Samurai Strategies* build on already existing actions



MyNYCHA

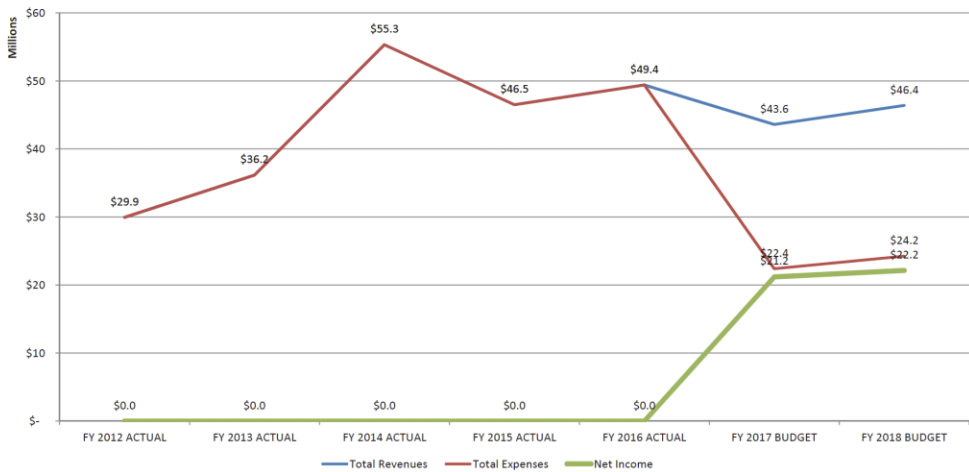
MyNYCHA provides a documented trail of the request for repairs, including a record of what is actually entered by the resident, providing accountability and consistency throughout the process.

Each year, NYCHA's maintenance workers, skilled trades workers and supervisors close approximately two million work orders



What We See as Opportunities – Funding/Financing

	FY 2012 ACTUAL	FY 2013 ACTUAL	FY 2014 ACTUAL	FY 2015 ACTUAL	FY 2016 ACTUAL	FY 2017 BUDGET	FY 2018 BUDGET
42DP							
Total Revenues	\$ 29,943,008	\$ 36,162,562	\$ 55,333,974	\$ 46,505,908	\$ 49,416,300	\$ 43,598,254	\$ 46,392,683
Total Expenses	\$ 29,943,008	\$ 36,162,562	\$ 55,333,974	\$ 46,505,908	\$ 49,416,300	\$ 22,393,288	\$ 24,239,395
Net Income	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,204,966	\$ 22,153,288



Source: Example from NYCEDC Budget Book

Public Preservation Trust to access new capital

- Opportunity for expedited procurement options
- Trust allows for public/public partners (not privatization) that make more connections to local community

Creating property level financials will lead to funding and financing options

- Expand upon existing use of energy performance contracts to unlock capital
- Operating and capital
- Cost/Benefit analysis leading to new persuasive capital conversations



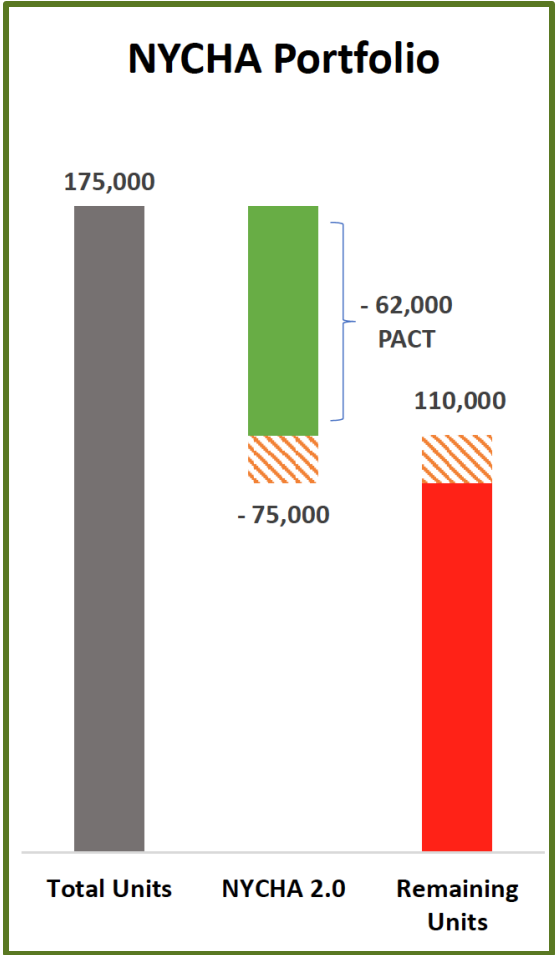
\$14.7B Funding Needed for Portfolio-Wide Stabilization

Urgent needs for NYCHA's 175,000 apartments

- 62,000 on the way to repair through NYCHA 2.0
- 110,000 need capital investment

Funding needed: \$18B to stabilize

- \$3.3B secured
- \$14.7B funding gap

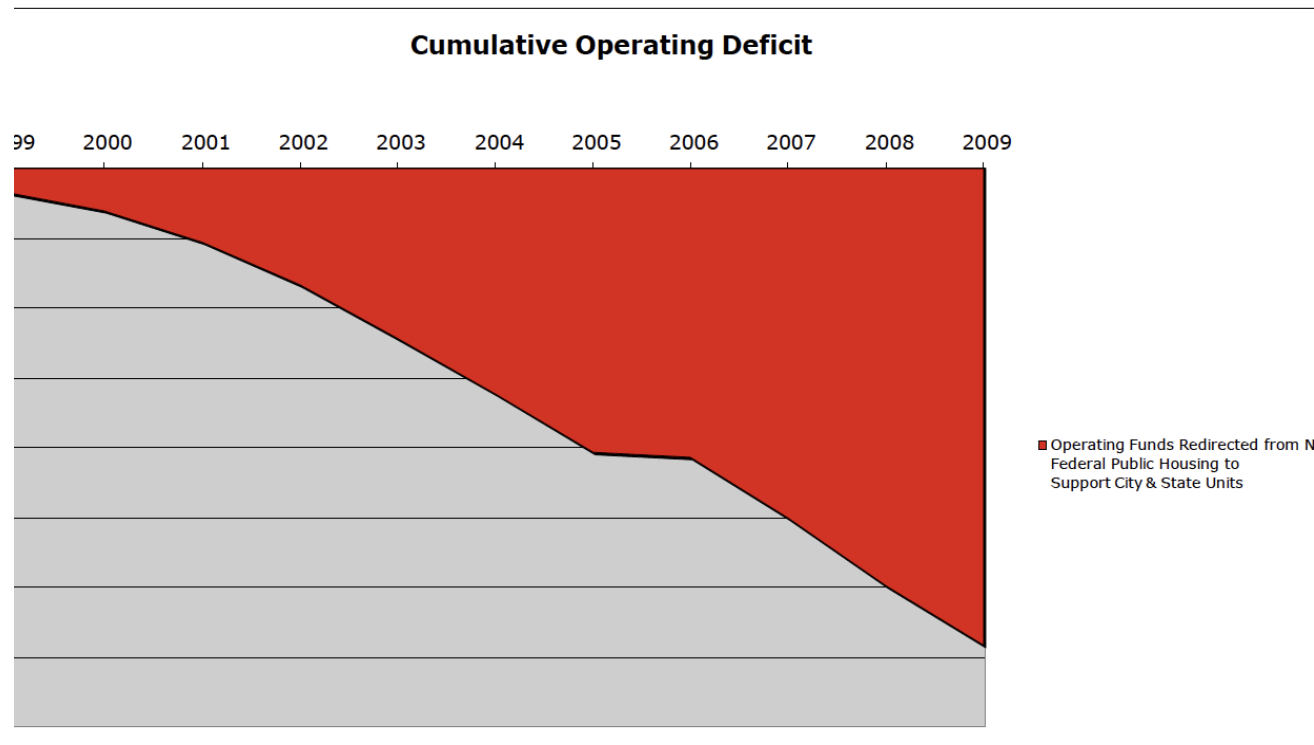


Source: NYCHA Briefing Book



New York

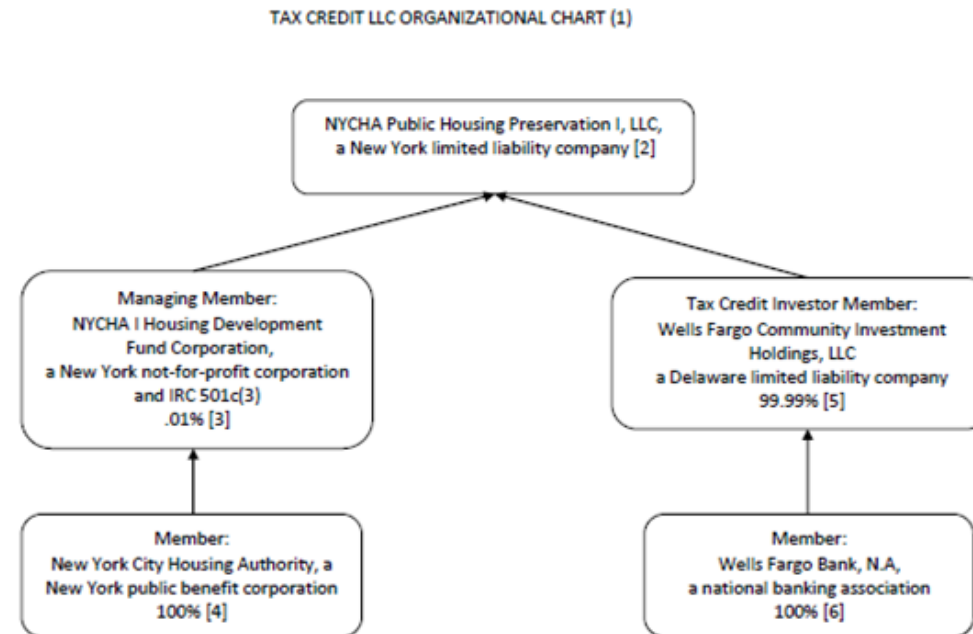
Marlboro Houses is part of a portfolio of "State/City Properties" that were created a cumulative operating deficit of \$700M from 1999-2009



- 21 NYCHA Developments built with state and city funds, not federal.
- Annually supported by State and City operating (not federal)
- State ended in 1998, City in 2003
- 1995 HUD amendment allowed sharing of subsidy from other properties with no new allocation, but still have to comply with Federal requirements
- Caused ballooning of annual deficit to support these properties, by 2009, there was almost \$700M transferred from other properties to support these state/city properties.
- **Estimated \$50M annual operating deficit for City/State Properties prior to mixed-finance transaction**

Mixed Finance Transaction for the State/City Properties Provides New Funding (2010)

- Provided HUD operating subsidy
- Provided some capital upgrades (façade, windows)
- HUD subsidy provided for 13 (including MH)
- LHTC structure ("LLC 1")
- Expires in 2025
- **Not FEMA eligible post-Sandy due to ownership**



33.79
202,426
15,183,887
13.33%
120
\$22,429,000
\$2,783
\$538
STILLWELL AVE AVENUE V 86TH ST AVENUE X

	<u>Per Unit</u>	<u>MH Total</u>	<u>Notes</u>
Income			
Rental Income	538	949,570	From NYCHA data book
HUD Subsidy	?	?	Unknown at this time, expires 2025
Expense	(2,783)	(4,911,995)	From NYCHA data book
Operating Profit / (Loss)	(2,245)	(3,962,425)	

Operating Budget: Marlboro Houses

<u>Back of envelope checks</u>	
Per Unit Operating Subsidy	(2,245)
Number of mixed finance units	22,272
Estimated annual deficit	(50,000,000)
# State/City developments	21
Average #units per dev implied	1,061
Marlboro House number of units	1,765



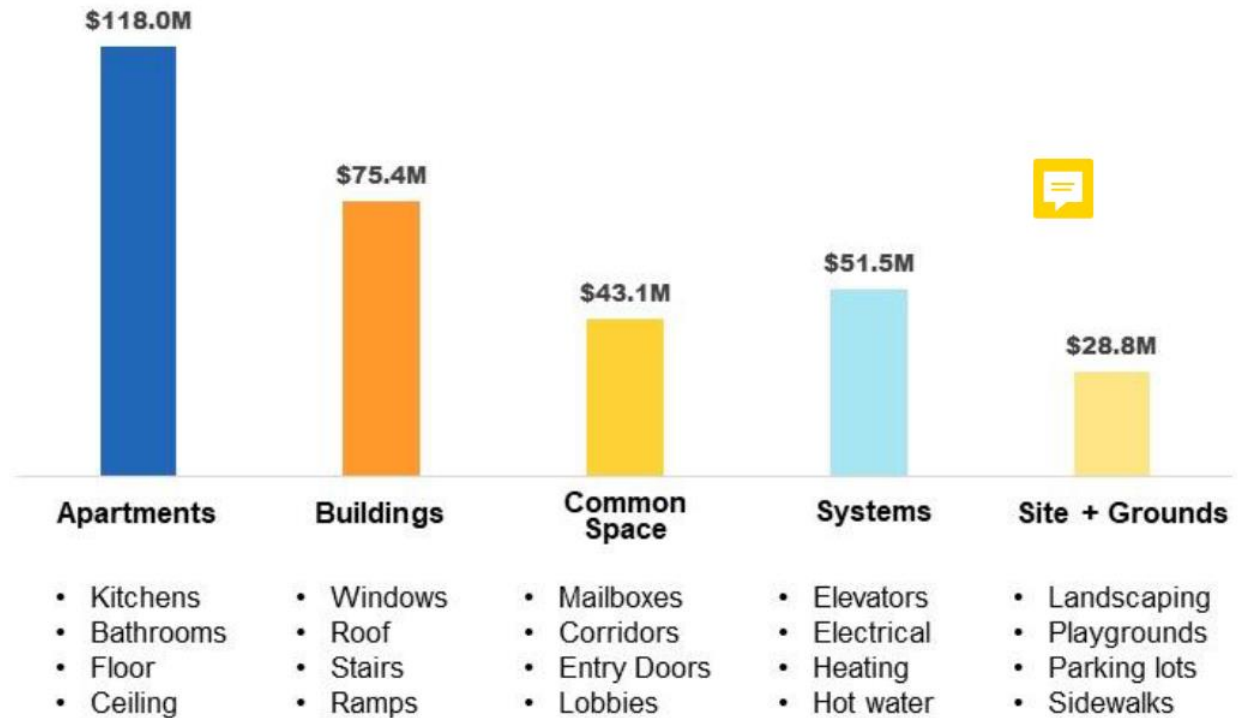
New York

Capital Needs:

NYCHA Projects \$317M in Capital Needed to Stabilize Marlboro Houses

- Not eligible for federal dollars due to LLC 1 structure
- LLC 1 Structure provides \$400/unit/year
- Not FEMA eligible post-Sandy due to ownership structure

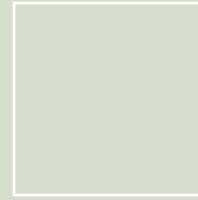
Total Repair Cost = \$316.9M



Data reflects five-year physical needs assessment (2017)
*PACT converted projects excluded



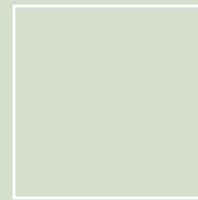
Creation of
NYC Public
Preservation
Housing
Trust Could
Be a Solution
for Capital



110,00 apartments meet
obsolescence criteria



TPVs are worth
650/unit/month and can
be bonded to fund
repairs in the short term



Trust structure allows
for ongoing federal
subsidy to close
operating **deficit**



Public Trust Financing Seems to Provide Adequate Capital

Interest rate and issuance costs both need validation: sinking fund, DSCR requirements

	Non-PACT Portfolio	Marlboro Houses	Assumptions
#Units	110,000	1765	Briefing Book
TPV	650	650	Briefing Book
Months	12	12	
Interest Rate	1.80%	1.80%	Plug from NYCHA documents
Term	30	30	
Bond Proceeds	\$ 19,755,278,104	\$ 316,900,000	Goal Seek on interest rate
Per Unit	\$ 179,593	\$ 179,547	



Financing Needs More Data On Specific Properties

Different states of non-PACT will determine if there is surplus for Marlboro Houses (and other State/City Developments)

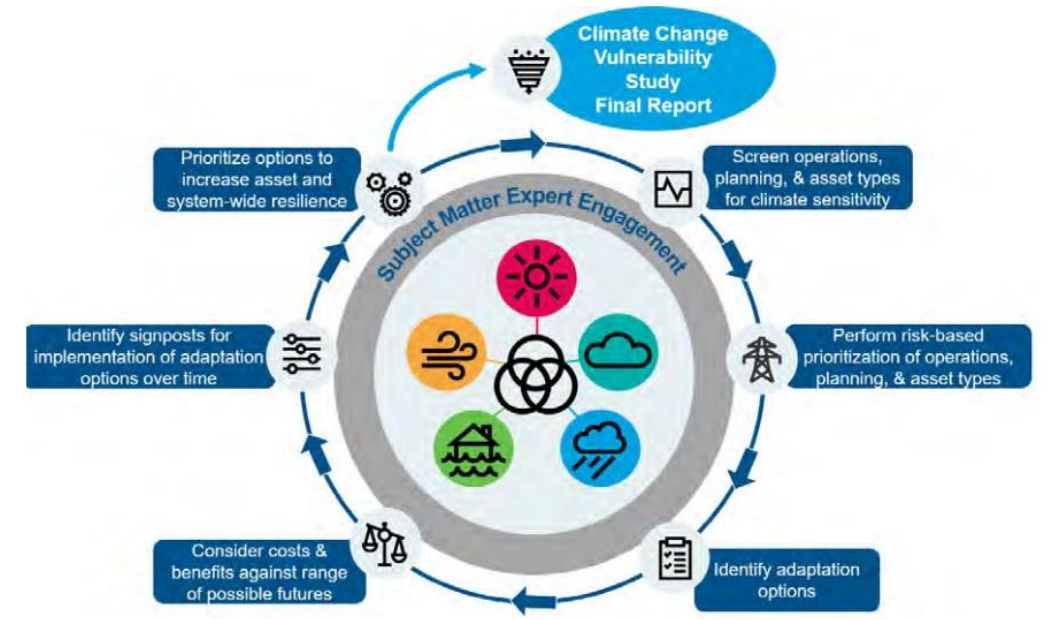
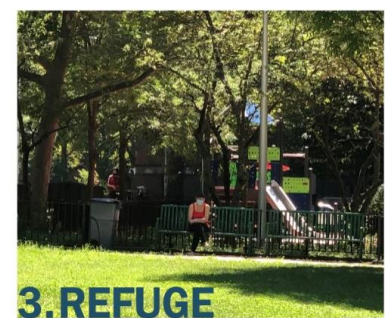
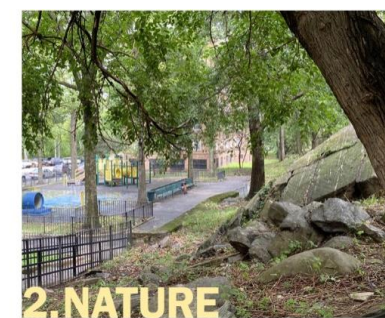
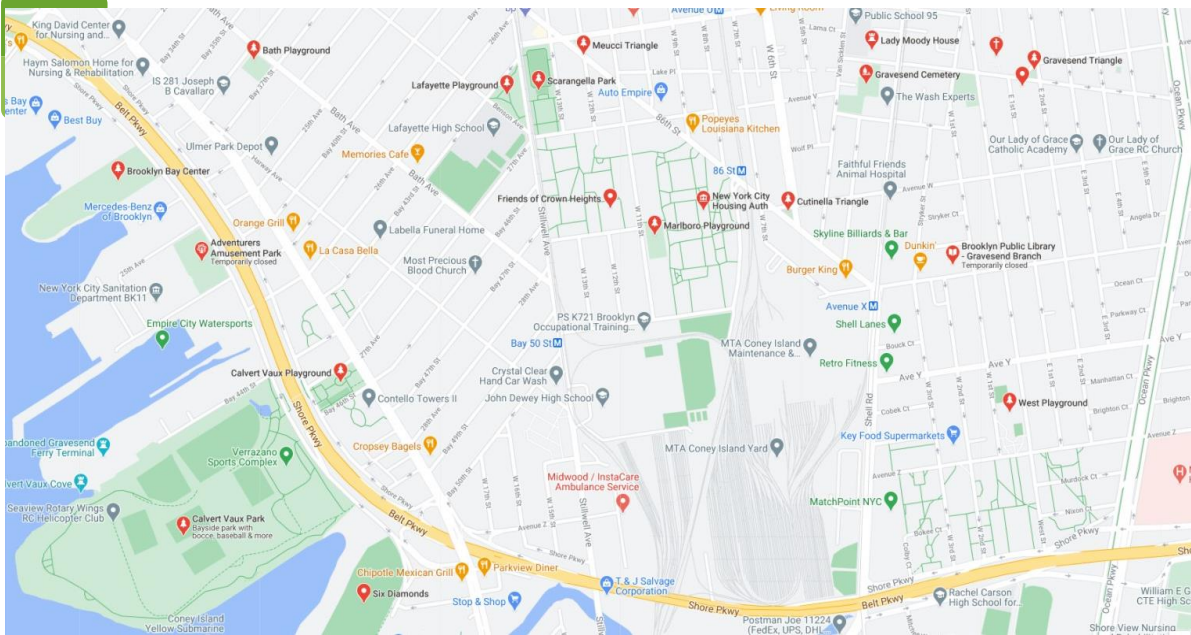
	Favorable	Expected	Unfavorable
Bond Proceeds	\$19,755,278,104	\$19,755,278,104	\$19,755,278,104
Total Non-PACT Units	110,000	110,000	110,000
City/State Unit %	20%	20%	20%
Average Per Unit Need (non City/State)	50%	100%	150%
Average Per Unit Need (non City/State)	\$89,797	\$179,593	\$269,390
Available Per Unit for Marlboro House	\$269,343	\$179,547	\$89,750

Note: Marlboro Houses is estimated by NYCHA as requiring \$180k/unit to address deferred capital maintenance. This is due to its status in the State/City properties which have not qualified for the same level of federal capital support as the rest of the properties.

However, the remainder of the non-PACT portfolio should need something less than the State/City portfolio, since there has been ongoing capital support. This chart shows a favorable, expected and unfavorable expectation of the amount that could be available per unit to the State/City Portfolio – including Marlboro.

Recommendations: What we suggest





Evaluate Marlboro Houses
resilience strategy within its
larger community context

Include an all-hazards
approach in all
investments, including day
to day activities

Leverage ALL community
assets to draw down risks
and improve quality of life

Build an integrated and
iterative budgeting, operating
and reevaluation cycle tied to
resilience



Coping – ASAP
Near Term – Next 1-2 Years
Mid Term – Next 3-5 Years
Long Term – Beyond 5 Years



Our Recommendations - Coping

Setting Baselines

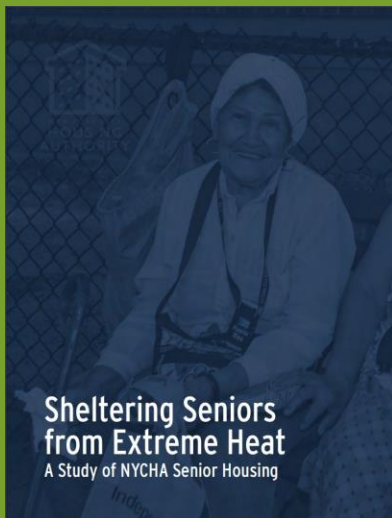
1. Evaluate existing programs for resident preparedness for extreme events. See <https://www1.nyc.gov/assets/nycha/downloads/pdf/n20-sheltering-seniors-from-extreme-heat.pdf>
2. Assess/sample actual resident coping strategies and access to resources given specifics of Marlboro House campus vulnerabilities.

Providing Backstops

1. Prepare basic communications to improve readiness for climate-related events such as storms and heat waves. Reference NYCEM resources.
2. Invest in on-site improvement for temporary respite areas (indoors and outdoors) given projected heat season.

Growing Capacities

1. Develop habituated programs in concert with other community activities to deepen awareness and capacity through social ties and other resource access.



Vulnerable New Yorkers: Cool and Safe At Home

Every year, hot summers cause dehydration, heat exhaustion, and heat-stroke – all outcomes that disproportionately impact older adults and vulnerable populations. The City is creating a \$55 million program to provide over 74,000 air conditioners to New Yorkers who are 60 years old and older and have income below 60 percent of the state median income, and do not have air conditioning at home.

Eligible New Yorkers will be identified by NYCHA, DFTA, HRA and HPD, and city case managers will reach out directly to income-eligible seniors. Approximately 22,000 of these air conditioners will go to NYCHA residents, and installations for these air conditioners will begin next week. The City is providing \$35 million in funding, including \$10 million from NYCHA, and the City thanks NYSERDA for committing another \$20 million.

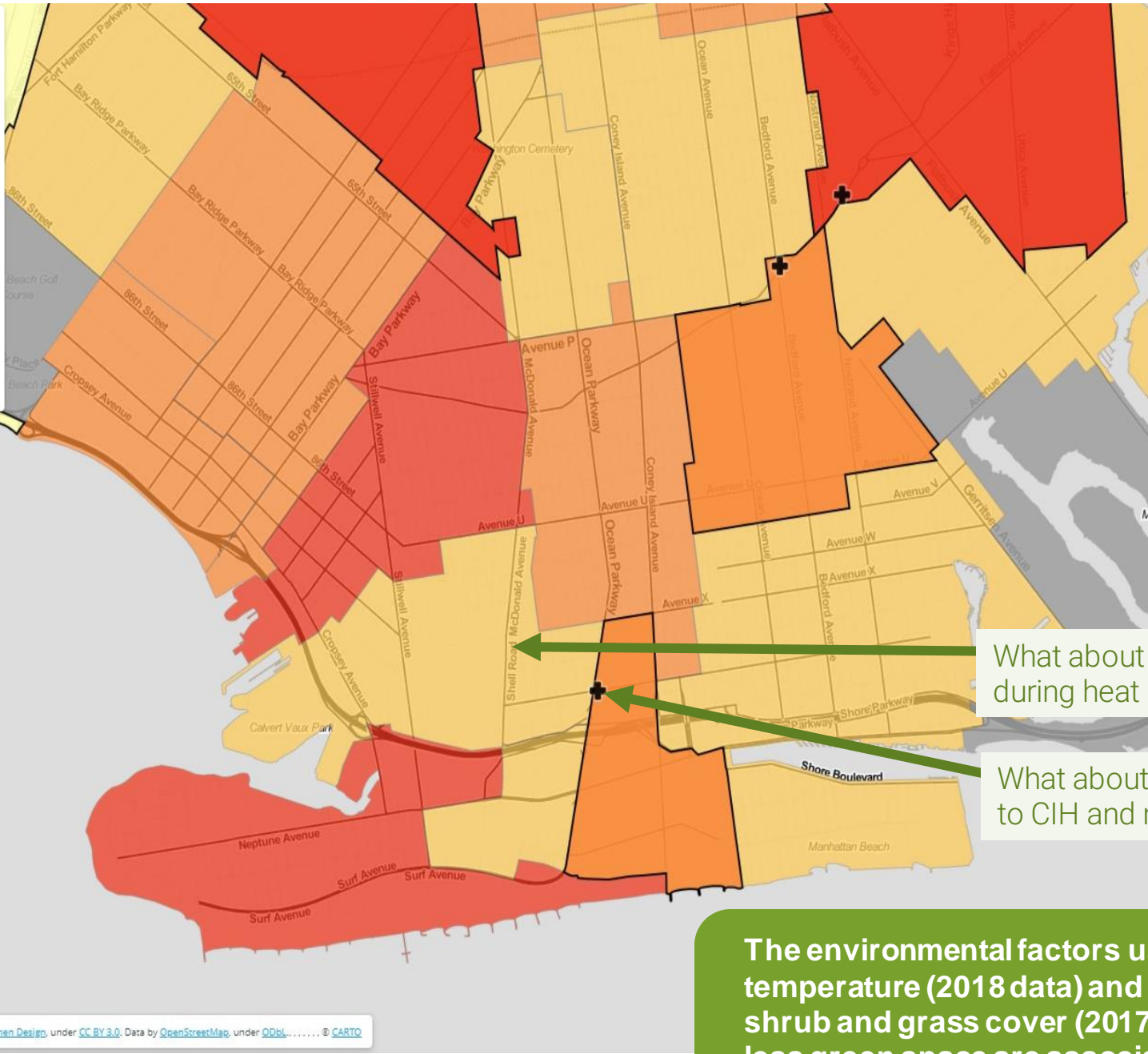
The City is also petitioning the Public Service Commission (PSC) for \$72 million to help pay the utility bills for 450,000 vulnerable New Yorkers so they can afford to run their ACs and keep cool. The program would ensure that vulnerable New Yorkers can afford to use their air conditioners and protect families from preventable heat-related illness and death, including relief for COVID-19-discharged patients at greatest risk and NYCHA residents paying their own energy bills. As more families experience economic insecurity due to COVID-19, they may not be able to prioritize an air conditioner purchase or the corresponding utility bills, thereby increasing the risk of heat illness and death and compounding inequitable impacts of COVID-19.

What are the resources and how are they used?

What could help to backstop the exposure?

How might capacity improve?

- Learn more!
- [Click here to learn how the HVI was calculated.](#)
- [Click here to learn how to beat the heat!](#)
- NYC Hospitals
- HOSPITALS
- Neighborhoods with a Hospital
- Neighborhood Heat Vulnerability
- Parks and Cemeteries



Hospitals Selected
4

- Choose your hospital(s)
- ALL SELECTED
 - VA NY HARBOR HEALTHCARE SYSTEM - BROOK... 1
 - NEW YORK COMMUNITY HOSPITAL OF BROOK... 1
 - MOUNT SINAI BROOKLYN 1
 - CONEY ISLAND HOSPITAL 1

SEARCH IN 77 CATEGORIES

What about power outages and rolling brownouts during heat season?

What about co-morbidities, hospitalizations, ER visits to CIH and neighborhood clinics?

The environmental factors used are daytime summer surface temperature (2018 data) and percent of green space, such as tree, shrub and grass cover (2017 data). Higher surface temperature and less green space are associated with increased risk of death during heat waves.



New York

Our Recommendations - Coping

Meaningful and Sustained Engagement, not just communications

From... did you know?

1. Climate changes expected are/aren't...or Resilience is/isn't...
2. Blueprint for Change or NYCHA 2.0 is/isn't...
3. NYC Climate Resilience Guidelines are/aren't...
4. Flood and heat risks and resources...

from useful to used

To... could we collaborate?

1. Ground-truth Data
2. Resilience Ambassador
3. Community Science
4. Buddy Program
5. Workforce Growth

Branded Program with clear identity

Multicultural, multigenerational Involvement

Analog and Digital platforms and activities





Our Recommendations - Landscape

Near-Term

Performance Criteria and Measurement

- Identify metrics
- Assess existing natural resource and open space assets
- Map problem areas, current/future hazards and proposed capital improvements
- Create planning design criteria
- Develop best practice maintenance guidance for green infrastructure and training of grounds keepers

Early Wins

- Identify and complete low hanging fruit green infrastructure upgrades
- Explore / expand greenhouse opportunities

Funding and Financing

- Explore DEP (and other?) funding incentives
- Complete rough ROI for green infrastructure and water capture / re-use infrastructure

Midterm

- Integrate assets / planning efforts / desired goals
- Complete integrated green infrastructure phase I efforts
- Transition obsolete assets?
- Plan for SLR adaptation

Long-Term

- Optimize performance and function with nature-based solutions and green infrastructure
- Consider regional interventions
- SLR adaptation Interventions

Resilience Solutions

- Bioswales
- Rain gardens
- Enhanced tree canopy
- Increased landscape diversity
- Regeneration of natural waterways and sinks
- Raised pathways
- Increased connectivity to neighborhood
- Biophilic design connections with indoor space
- Targeted lighting plan to improve safety and reduce impact on wildlife

Near-Term

Consulting/Studies

- Pursue IPNA- use Flextech grants (confirm obsolescence)
- Study Indoor Air Quality
- Study Campus-wide solar, including façade shading, storage, and black-start capabilities
- Study waste stream impacts or potential savings
- Source Pre-Development capital

Coping/ First Tasks

- Address Environmental issues (mold, asbestos, lead remediation)
- Repair Elevators
- Clean Sewer lines
- Provide Community Center Cooling strategy (weave into NYCHA electrification)

Pre-development

- Develop overall project sources/uses

Midterm

- Investigate new building locations at Ave X and 11th corner and near current boiler plant location
- Integrate façade panels with deployment of electrification work
- Include ventilation upgrades to façade heating/hot water work
- Refinancing of LIHTC at YR15
- Deliver a completed Phase I to motivate and inspire tenants and stakeholders

Long-Term

- Consider new Construction opportunities (swing capacity or new development)
- Complete additional renovations and modify based on Phase I learning
- Meet workforce, MWBE, local hiring and innovation goals
- Develop financial links between Housing, Healthcare, and Insurance
- Consider ground floor repurposing

Our Recommendations – Operations & Finance

Near-Term

Use analytics to determine priorities, create processes for transparency and accountability

- Upgrade work order system to generate detailed reporting
- Property Manager "Top 10" list monthly reporting to community
- Neighborhood Administrator monthly issues tracking with MH residents
- Implement Asset Management Calendar, inspections, variance reporting and SOGR

Create Long-Term Resilience Plan

- Shelter in Place Plan
- Climate & Physical Site assessment
- Integrated PNA
- Identify new funding opportunities with Biden-Harris administration for innovative resilient landscape and building solutions

Midterm

Develop a foundation for operational consistency and excellence.

- Establish 3+5 Property level financials for operating and capital
- Create Asset Plans
- Create Property Atlas in digital form
- Annual system review: Maintain, retrofit or replace sustainably

Deliver the Public Trust Transaction

- Finance capital repair at MH
- Public Trust structuring: insure accountability, discipline and SOGR
- Public Trust allows for ongoing operating subsidy
- Trust explores operating and funding partnerships with public and non-profits.

Long-Term

Long-term adaptation

- Consider ground floor repurposing
- Consider publicly owned new developments to make up for lost units on ground floor
- Implement best practice adaptation plans with each development

Long-term financial stability

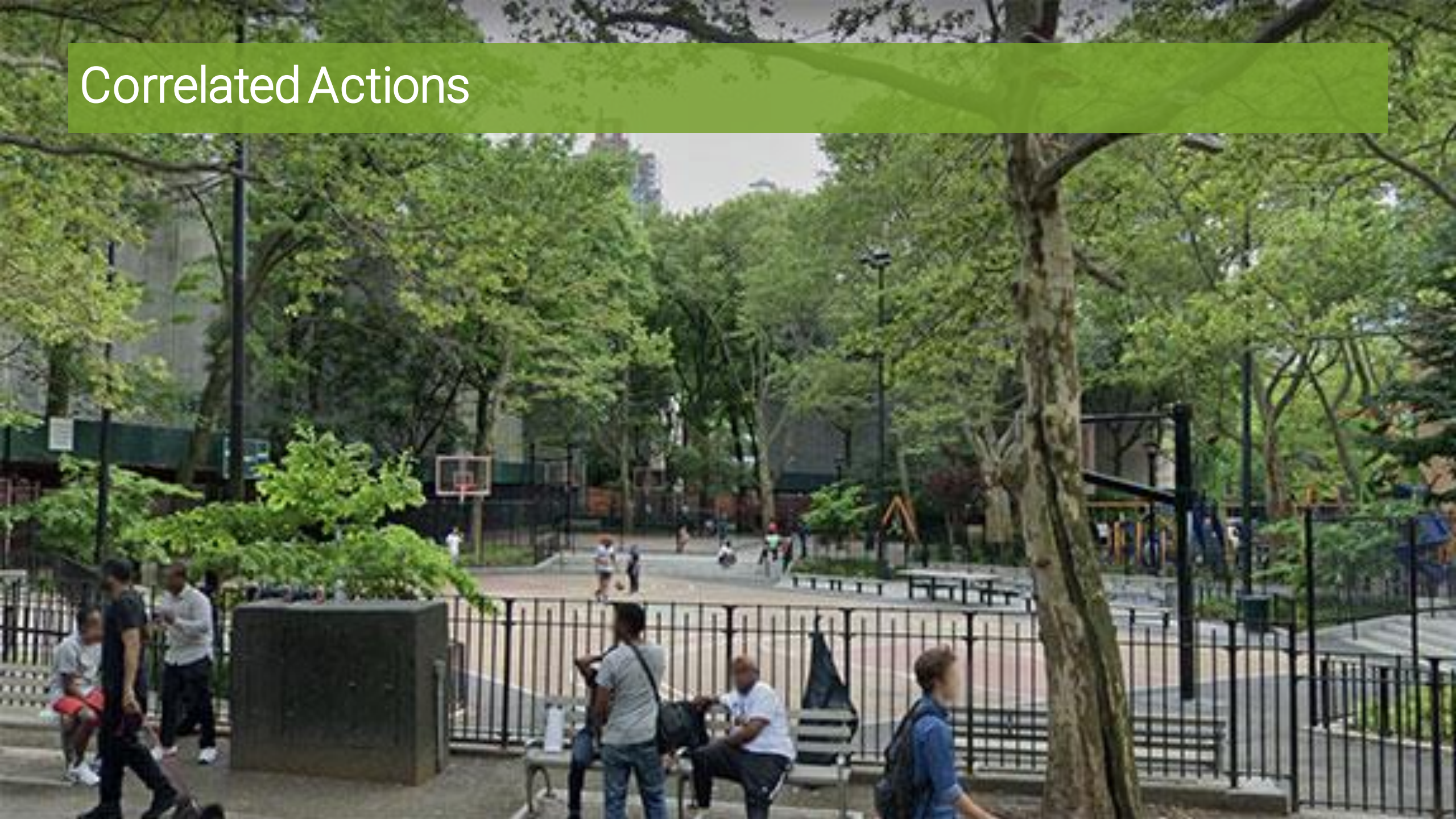
- Regular budget Reforecast
- Seek revenue generation opportunities that maintain public ownership



New York Takeaways

	ASAP	Near-Term (1-2 years)	Mid-Term (2-5 years)	Long-Term (5+ years)
Coping	Assess and stabilize coping strategies			
Landscape	Evaluate planned near-term expenditures for resilience opportunities	Complete baseline assessments, including property-level financials	Expand resilience projects for landscape and buildings	Broaden resilience program and integrate complete community planning
Buildings		Invest in pilot demonstration projects	Align Public Trust and Operating Model with Property Atlas and Monitoring Approach	Strengthen M/WBE and workforce opportunities while furthering buildout
Operations		Establish campus resilience strategy		Operationalize budget forecasting with resilience spend
Financing/Funding		Develop process to systematically integrate resilience into ongoing spending		

Correlated Actions





Correlated Actions – Near Term (1-2 Years)

Near Term	Landscape	Buildings	Operations	Funding/Financing
Assess existing coping strategies and resident coping capacities	Identifies campus resources	Maps building-based behaviors and resources	Identifies priority actions in place and gaps in process	Links city or community resources and programs and resident coping needs
Broaden Communications Program	Sets landscape expectations; Provides training on maintenance	Identifies and reflects chronic issues and expected actions	Create "top 10 list"; Improves coping capacity	Don't commit to long term land or funding strategies
Develop/Refine Shelter In Place (SiP) Plan	Maps accessible route/egress pathways	Identifies building resources to support SiP	Provides redundancy programs	Captures costs of relocation or shelter in place
Conduct Campus-Specific Vulnerability Assessment	Captures tree inventory and canopy risks; captures utility risks	Identifies per building risks	Identifies economic risks; social risks and community resources	Identifies potential losses and leverage points
Crosswalk Operating Budget, PNA, LL97 Reqs, Vulnerability Assessment and Coping Assessment	Highlights the degree to which planned investments and ongoing operations costs address key risk areas and resident coping capacities			



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