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NYC Parks

June 23, 2022
New York City Council Committee on Parks and Recreation
Oversight: Improving the City's Tree Canopy

Testimony by: Sue Donoghue, NYC Parks Commissioner & Jennifer Greenfeld, NYC Parks Deputy Commissioner for Environment and Planning.

[COMMISSIONER DONOGHUE]

Good afternoon, Chair Krishnan, members of the Parks Committee, and other members of the City Council. I am Sue Donoghue, Commissioner for NYC Parks. I'm pleased to be joined today by Jennifer Greenfeld, our Deputy Commissioner for Environment and Planning, as well as our Director of Government Relations, Matt Drury. I want to start by noting our appreciation for the Council's continued advocacy for our City parks, and for the resources and support it has provided for our forestry efforts. The urban canopy is one of the most vital resources the city has in ensuring our neighborhoods are healthy and thriving. It provides numerous measurable benefits to our five boroughs, and I am very proud of the work our Parkies do every day to grow and protect our City's trees.

I am very pleased to introduce the Council to our new Deputy Commissioner for Environment and Planning, Jennifer Greenfeld. Some of you may know Deputy Commissioner Greenfeld from her previous role as Assistant Commissioner for Forestry, Horticulture, and Natural Resources, and her leadership and years of experience at NYC Parks protecting our City's trees and forests has been invaluable. In addition to continuing to oversee our Forestry, Horticulture, and Natural Resources team, DC Greenfeld will also oversee our Planning division, which leads the agency's long-term initiatives and land use procedures, a reflection of the central strategic important role that resiliency, natural resources and the environment serve in our park system. We're delighted to have Jennifer take on this vital leadership role, and I will now turn over the testimony to her.

[DEPUTY COMMISSIONER GREENFELD]

Thank you, Commissioner Donoghue for the kind introduction, and thanks to the Council for convening today's hearing on this crucial topic. My name is Jennifer Greenfeld, Deputy Commissioner for Environment and Planning at NYC Parks. I want to start by echoing the Commissioner's appreciation for the Council's support of our urban tree canopy. Our trees provide a wide variety of benefits to our five boroughs, including improving human health and

well-being, something I am sure we can agree has been of utmost importance as New York City slowly recovers from the COVID-19 pandemic. In my testimony today, I will characterize the portion of New York City's tree canopy managed by the NYC Parks, this administration's work to expand and care for the urban forest, and a snapshot of some our strong partners supporting this work.

NYC's 42,656 acres of tree canopy is a full 22% of the City's land cover and is best defined as the "cover" or shade provided by our City trees. We are excited to report that the city's canopy grew by 3,252 acres from 2010 to 2017. NYC Parks is responsible for just over half of the city's tree canopy - over 22,000 acres. Within that portfolio, NYC Parks manages 7,300 acres of natural area forests (over 4 million trees), over 156,000 park trees and over 666,000 street trees. The rest of NYC's canopy grows on a combination of private and public land parcels such as residential front and back yards, NYCHA campuses, cemeteries, vacant land and on public lands not managed by NYC Parks. This robust urban forest provides an incredible array of environmental, social, and economic benefits such as cleaning and cooling the air, reducing stormwater runoff, shading buildings and conserving energy by reducing heating and cooling costs, traffic calming, protecting city pavement from rain and sun, noise mitigation, increasing property values, and as I mentioned before, benefiting human health and well-being.

Most of the trees under Parks' care are in natural forested areas. For over 35 years, NYC Parks has characterized, monitored and actively managed the 7,300 acres of natural area forests. In fact, these woodlands spread across over 82 parks in every borough, play an outsized role in New York's effort to combat climate change. Forested natural areas make up a quarter of the total tree canopy in NYC but account for 83% of carbon sequestered of trees across the city. We know this and other facts about our natural areas-- for example, that they are essentially healthy, dominated by native tree canopy but still at risk from invasive species--through our partnership with the Natural Areas Conservancy. In 2018, NYC Parks worked in partnership with the NAC to develop the Forest Management Framework to guide forest restoration, management, and public engagement of areas under Parks' jurisdiction. Thanks in large part to the generous support of the City Council through annual Play Fair funding, Parks has cared for 2,200 acres of natural areas across 60 parks, including over 500 acres in areas that had not been cared for in the past ten years. We have planted 100,000 native trees, shrubs, and herbs and produced these native plants at our own Greenbelt Native Plant Center. To accomplish all

this, we deployed a team of dedicated professionals. These incredible green job opportunities were all possible due to the support and funding that the City Council has provided for our forested and natural areas for three fiscal years, which we greatly appreciate.

Closer to home, the trees that grow in the actively used areas of our parks and the trees that line our City streets play a vital role in keeping New Yorkers cool and healthy. The latest park and street trees census tell us that this population is healthy, growing, and diversifying over time. The trees along the streets are more and more spread out across every neighborhood, slowly reversing historical disinvestment in underserved neighborhoods.

This Administration is investing in the expansion of NYC's street tree canopy, adding over $136 million dollars in tree planting funds over the next four years, the highest funding level for tree planting in over 5 years, allowing us to plant 20,000 trees annually. All New Yorkers deserve to enjoy the benefits provided by trees, so our planting programs take an equitable approach, prioritizing neighborhoods suffering from extreme heat that have not been well-served in the past, as well as planting trees where requested by local New Yorkers.

As many of you are aware, in recent years we have faced significant challenges represented by the high cost of planting trees, very much in line with other increasing construction costs around the city. To address this, Parks has introduced several new approaches, including bidding higher value and longer contracts to attract some of the larger construction companies as well as smaller and geographically limited contracts to attract smaller vendors. We are particularly optimistic and proud regarding our efforts to attract new MWBE contractors, and are hopeful that these efforts, along with the newly authorized ability to increase the value of MWBE special procurements, will build upon these encouraging initial results, and allow us to deliver more value with taxpayer dollars.

As important as it is to plant new trees, it is equally important that we maintain our existing trees and preserve the vital benefits provided by our tree canopy in every neighborhood. The most marked increase in tree canopy comes from the natural growth of existing trees. In fact, our partners at The Nature Conservancy identified that up to 87% of canopy growth that occurred between 2010 and 2017 was from the growth of existing trees.

Just as equity shapes our strategic approach to planting, it is also central to our approach to caring for the trees growing along our streets and in the active areas of our parks, such as playgrounds, sports fields, and picnic areas. In caring for our trees, we utilize a Risk Management approach to prioritize the conditions that present the most risk to New Yorkers and address those immediately. This involves a rigorous inspection program by some of the most qualified and credentialed foresters in the country, accompanied by responsive in-house crews complemented with contractors who focus on proactive maintenance - including pest and disease control, tree preservation during sidewalk repair and neighborhood block pruning. Following some temporary COVID-related reductions in FY20 & FY21, I am pleased to report that baseline levels of annual funding have been restored for our block pruning program, which will allow us to maintain a professionally-recommended pruning cycle of 7 years.

I also want to remind the Council of the great tools we have to communicate information about the urban forest. These include our popular online tree map, where you can learn about the tree on your street and from which you can submit a service request; the tree work hub that maps and lists planned and completed work including pruning, planting, trees and sidewalk repair, and stump removal; and the ever-expanding maps of formalized trail networks in Parks' natural areas. Just this June 4, in celebration of National Trails Day, we added four new trail maps online bringing our online maps to 21, making Parks' 300 miles of nature trails even more accessible to New Yorkers.

The success of our continuously improving canopy would not be possible without the diligent work of our numerous Parks stewards and volunteer groups who generously donate their time and energy to looking after our trees. NYC Parks has worked hard to encourage a culture of caring for trees and actively involve New Yorkers in that process. Our Stewardship Team provides support for New Yorkers to care for street trees, natural areas, and trails. We held 148 volunteer events for tree care last fiscal year. While helping us to maintain the vulnerable resources, these events also provide a chance for residents to actively engage in the care of their city, and to have fun and get a workout while doing it. This programming provides a fantastic way for the public to connect with the great outdoors, right here in New York City.

Lastly, we again want to acknowledge the continued support of the Council, which has generously helped provide dedicated funding for tree guards, tree plantings, repairing sidewalks

damaged by trees, and stump removal. We also want to recognize the advocacy of the Forest For All Coalition and the Play Fair Coalition, which led to funding which has contributed directly to the previously mentioned Forest Management Framework and other important investments in tree planting and tree care.

I thank you for the opportunity to allow me to testify here today and I look forward to answering any questions you may have.

New York City Council Oversight Hearing: Improving the City's Tree Canopy
June 23, 2022

Testimony By: Aaron Sanders, Natural Areas Conservancy, Associate Director of Advocacy & Policy

My name is Aaron Sanders and I am the Associate Director of Advocacy and Policy of the Natural Areas Conservancy. Thank you for the opportunity to provide testimony on the topic of Improving the New York City tree canopy, and the importance of forested natural areas in this effort. The Natural Areas Conservancy is a nonprofit organization that was formed in 2012 to increase the capacity of NYC Parks and its partners to restore and manage the 10,000 acres of forests and wetlands under the agency's jurisdiction.

In my testimony today, I wish to highlight the importance of improving New York City's tree canopy and improving equitable access to nature for New Yorkers. Every borough has large natural areas, distributed among more than 50 parks. According to a 2014 study, 50% of New Yorkers experience nature primarily in NYC Parks. I also wish to highlight the work of NYC Parks over the three and a half decades to manage forests, in particular, their accomplishments over the last few years due to increased support from the PlayFair campaign. And I'd like to emphasize the importance of increasing our investment in access to all green space as part of an equitable recovery from COVID-19. Natural area forests make up 7,300 acres of NYC parkland: almost one-quarter of parkland (24%) but receive an average of 0.84% of staffing base-lined resources (an average of 33 staff) to maintain them; this averages out to one person per 218.5 acres of forest for management. While we appreciate the Mayor and City Council's budget proposal for fiscal year 23, we know that long-term funding commitments are needed to protect forested natural areas and increase New York City's tree canopy by extension.

I wanted to provide a brief background on the on natural areas and their existence in New York City. 40.5 percent of New York City landmass is green. 11.6 percent of the city is in natural areas. This is equivalent to 22,220 acres of natural areas that exist within the city that serves as critical components of the city's infrastructure.

As a leading member of the Forest for All coalition, the Natural Areas Conservancy is a supporter of the Urban Forest Agenda. The NYC urban forest spans public and private property and every neighborhood in NYC - from street trees to private backyards to NYC Parks. The NYC urban forest cools the air, offers a shady respite from the heat, sequesters carbon, increases energy efficiency, and contributes to New Yorkers' health and wellbeing, and yet it does not serve New Yorkers equitably. Our urban forest is composed of all 7 million trees in the city, and the physical and social infrastructure that supports them. Of these 7 million trees, 5 million are located within natural area parkland, and the condition of these areas is in decline and requires sustained investment in order to continue to serve our communities.

Given the aforementioned benefits of forested natural areas. Recognizing their importance to the urban forest, we hope this city council will commit to enacting future legislation and allocating adequate funding to support this very valuable resource.

As we look to the future, investing in the care of one-third of our city's park system that is forests and wetlands should be high on the list of priorities for directly addressing issues of equity and access to parks. Investing in consistent access to natural areas in the form of clearly marked trails would allow New Yorkers to more effectively access thousands of acres of existing parks in every borough. And

investing in the care of forests and wetlands also provides countless other benefits to our city, including combating extreme heat, capturing carbon, and strengthening our connection to the natural world.

To achieve these goals would require a new 10-year capital allocation of at least $9 million per year to support forest restoration and improvements to trails, as well as expense funding to bring back the staff needed to support stewardship, conduct ranger programming, maintain trails, plant trees, and provide the basic level of care to our parks that New Yorkers deserve.

Thank you again for your leadership during this challenging time and for the opportunity to testify about this important topic today.

Respectfully submitted,
Aaron Sanders

Committee on Parks and Recreation,

Hello council members and thank you to Council Member Krishnan for the opportunity to testify. My name is Donnie Welch, I'm a volunteer trail maintainer through the Natural Areas Conservancy (NAC) in Inwood Hill Park. In my role, I maintain a section of the Orange Trail beginning just past the park's Gaelic Field and ending at the dramatic Overlook Meadow with views over the Hudson River toward New Jersey's Palisades Park.

The Orange Trail was recently designated a National Recreational Trail by Secretary of the Interior Deb Haaland as it offers New Yorkers and visitors alike a rare opportunity to hike through a primeval forest of towering tulip poplars, pass by unique glacial remnants, and experience the local history of the area. While I've been volunteering for a little under a year, the NAC itself was founded in 2012 and has helped care for 10,000 acres of natural areas in partnership with the New York City Parks Department of which 7,300 acres are forested. These 7,300 forested acres represent an area eight times as large as central park!

I've experienced first had the impact of Inwood Hill's canopy on sweltering summer days. I love stepping into the forest and feeling the immediate wash of cool air and shelter of shade the towering canopy provides. Studies show that natural forests such as Inwood Hill mitigate summer heat by as much as 9 degrees Fahrenheit. This benefits every park user in our community: hikers, birders, and dog walkers deep in the park, the youth in the park's baseball fields and basketball courts on the perimeter of the forest, and the families gathering for barbeques and picnics in the peninsula below the hill. Natural Areas are a vital resource to the city and as their usage increases, with visitation rising by 65% since 2020, we must take measures to ensure these resources remain intact for generations to come.

I urge the city council to consider legislation and funding opportunities that advance, protect, and preserve the tree canopy of New York City. As temperatures continue to rise it's not merely a matter of aesthetics and recreation, but one of community well-being and safety.

Thank you for your time and the opportunity to write on behalf of this invaluable, natural resource.

Sincerely,

Donnie Welch 

Conservation Technician – Riverside Park Conservancy

Volunteer Trail Maintainer – Natural Areas Conservancy

New York City Environmental Justice Alliance
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On the ground – and at the table

New York City Environmental Justice Alliance Testimony on improving the City's tree canopy to NYC Council Committee on Parks and Recreation

June 23, 2022

Founded in 1991, the New York City Environmental Justice Alliance (NYC-EJA) is a non-profit, 501(c)3 citywide membership network linking grassroots organizations from low-income communities of color in their struggle for environmental justice. NYC-EJA empowers its member organizations to advocate for improved environmental conditions and against inequitable environmental burdens by the coordination of campaigns to inform City and State policies. Through our efforts, member organizations coalesce around specific common issues that threaten the ability for low-income communities of color to thrive.

NYC-EJA is a member of the Forest for All NYC (FFANYC) Coalition which seeks to justly and equitably protect, maintain, expand, and promote the NYC urban forest, which is a key asset in climate adaptation and can help New York City's fight against climate change and its disproportionate impacts on disadvantaged communities. As things stand, the NYC urban forest is not distributed evenly or fairly across the many communities in NYC, meaning that its benefits are also not equitably enjoyed. Despite recent efforts to improve tree canopy cover, communities of color and low-income communities still have far less access to greenspace and its benefits than wealthier, whiter communities. Those inequitably distributed benefits include cooling the air, offering shady respite from heat, sequestering carbon, increasing energy efficiency, and contributing to New Yorkers' health and wellbeing. Climate frontline communities have reduced access to benefits of the urban forest and NYC's most heat vulnerable communities tend to have less canopy cover.

The COVID-19 pandemic highlighted the disparities in access to the city's sought-after green and natural spaces, clearly showing who in NYC lacks access to trees and their numerous benefits. In the summer of 2020, the capacity of City cooling centers was reduced to facilitate social distancing; thus, the effect of the urban forest in reducing local temperatures and providing shade and/or respite from the heat became particularly important for New Yorkers. All New Yorkers, particularly those who have been historically and systematically oppressed and deprived, should have access to this wide array of benefits. COVID-19 underscored that access to green space is not a luxury, but rather a necessity for all communities. New Yorkers need walkable access to nature for overall health and well-being, especially individuals and families living in communities that grapple with environmental burdens, climate hazards, and social vulnerabilities. As health concerns increased during the pandemic and outdoor areas were deemed safer than indoors, green spaces became essential, providing a rare sense of relief and community during the city's darkest days. Yet not everyone could enjoy those benefits. Black and brown communities in New York have access to 33 percent less park space than residents in largely white neighborhoods.

Composed of all 7 million trees in the city, the NYC urban forest spans both public and private property, as well as every neighborhood in NYC - from street trees to private backyards to NYC Parks. For the public portions, NYC Department of Parks and Recreation (DPR) manages 53.5% of the total urban forest canopy in the City. Despite its laudable efforts, DPR is chronically underfunded especially for the urban forest. DPR experienced dramatic budget cuts under the COVID-19 constrained budget considering the crucial role parks play in providing safe and healthy respites for New Yorkers during the pandemic and the tiny percentage of the NYC budget for which DPR's budget accounts. DPR needs dedicated and consistent investment in the regular maintenance of parks and the urban forest under its care.

NYCHA's open spaces offer an important opportunity to improve, further green, protect, and enhance access to the benefits of the City's urban forest as they often serve as some of the limited open space in neighborhoods that have less trees and green space, and higher heat vulnerability. Additionally, nature-based jobs can play both a crucial role in providing safe and healthy employment for New Yorkers and in enhancing NYC parks and the urban forest overall improving quality of life during and after the pandemic. We at NYC-EJA are aligned with FFANYC in calling for 30% canopy cover by 2035 to achieve a more just city and encourage the Council to help realize this vision to ensure urban forest equity for New Yorkers.

Investments to manage, protect and expand urban forest canopy are crucial to providing more equitable access to urban forest's benefits - from shade and cooling to mental health, all even more important in the COVID-19 era, particularly in the most heat vulnerable and frontline communities. These actions could also work to better protect environmental justice communities from heat-related co-morbidities and mortality, concerns we helped to uplift by pushing for Int 1945-2020 (to amend annual reporting of heat vulnerability and mortality) and Int 1960-2020 (to create comprehensive cooling and communication plans) to be passed. Improving tree equity could help substantially mitigate extreme heat impacts, improve air quality, and decrease the health disparities seen in disadvantaged communities. NYC's urban forest absorbs about 186,000 tons of carbon dioxide each year (or about 40,500 fewer cars on the road per year) and removes about 1,100 tons of air pollution per year; their structural value is estimated at $5.7 billion by the USDA Forest Service.

It's time that New Yorkers living in communities without sufficient parks and green space have increased nature-based public investment and greater access to the benefits of our urban forest. Now is the moment for New York's leaders to advance the investments and policies needed to protect, maintain, and grow the urban forest – with a focus on environmental justice communities.

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Testimony for NYC Council Committee on Parks and Recreation
Oversight Hearing: Improving the City's Tree Canopy
Emily Nobel Maxwell, Cities Program Director, The Nature Conservancy in New York
June 23, 2022

My name is Emily Nobel Maxwell and I am the director of The Nature Conservancy's Cities Program in New York. The Nature Conservancy's diverse staff, including more than 400 scientists, conserve the lands and waters on which all life depends. We impact conservation in 76 countries and territories, directly and with partners. We have 90,000 members across New York, with 35,000 in New York City. The Nature Conservancy advances strategies that create a healthy, resilient, and sustainable urban environment and is committed to improving New York City's air, land, and water to sustain and support the people and nature of this great city.

We are grateful to Chair Krishnan and the Committee on Parks and Recreation members for holding this oversight hearing on "Improving the City's Tree Canopy." We understand that this is the first time such a hearing has been held, and we congratulate the Committee on this forward-looking review as the urban forest in NYC is critical city infrastructure. The urban forest includes not just the trees and their canopy, but also their physical infrastructure, such as tree beds and soil; the accompanying biodiversity; and a rich social infrastructure, such as the people who dedicate their careers and free time to it. The urban forest includes over 7 million trees, with their canopy covering 22% of the city as of 2017. It spans the whole of the city, crossing jurisdictions and owners, and can be found on our streets, private backyards, New York City Housing Authority (NYCHA) campuses, City parks, schools, institutions, and other sites.

Due to the important nature of the urban forest, The Nature Conservancy's Future Forest NYC program works to assure the future of the New York City urban forest—and the social and environmental benefits it provides—in a just and equitable way. We recently published *The State of the Urban Forest in New York City* (SUFNYC), which provides a new, holistic perspective of the resource based on both new analyses and compilation of existing research and information. We are also sharing our preprint detailing our new analysis of the opportunity to expand the urban forest. In addition to producing sound science, we are a leading member and convener of Forest for All NYC, a broad and diverse coalition of nearly 60 member organizations spanning non-profits, businesses, academia, and government partners working together to protect, maintain, and grow the NYC urban forest. Forest for All NYC aims to ensure the urban forest is a resource that benefits all New Yorkers in a manner that advances equity, health, quality of life, and resilience in an era of climate change and in the face of the COVID-19 pandemic that has tremendously impacted our city. To achieve this vision, Forest for All NYC has set forth a 12-action plan in the *NYC Urban Forest Agenda*, of which a key component is a goal to equitably achieve at least 30% tree canopy cover citywide by 2035 goal (30x35). We submit all three reports for the record and have provided physical copies of *The State of the Urban Forest in NYC* and the *NYC Urban Forest Agenda* for your offices.

The urban forest provides substantial, meaningful benefits (detailed in Chapter 3 of SUFNYC), including for mental and physical health, educational outcomes, community cohesion, climate resilience, and as monuments or cultural symbols, and achieving the visionary goal of 30x35 will

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increase its benefits and offers the potential to provide them more equitably to New Yorkers. While many benefits are difficult to measure or value economically, research published in 2018 by the US Department of Agriculture (USDA) Forest Service for the urban forest as a whole, and released by NYC Parks based on the 2015 street tree census, indicates that its benefits and services of carbon sequestration and mitigation, air pollution removal, avoided stormwater runoff, and reduced energy costs to be worth well over $260 million per year, and the cost to replace this resource if lost would be about $5.7 billion.

Many of the benefits and services of the NYC urban forest, especially temperature reduction and shading, are increasingly important with climate change. The New York City Panel on Climate Change (NPCC) has projected increased temperatures in general for NYC in its 2019 report, with more frequent and longer heat waves. Further, as reported in 2022 New York City Heat-Related Mortality Report, an average of 370 New Yorkers already die prematurely because of hot weather. Stormwater management will similarly become increasingly important in the future, as the 2019 NPCC report projected an increasing number of days with heavy rainfall (≥1"), increasing the need for local flood management strategies.

There are severe inequities in the spatial distribution of the NYC urban forest, and thus meaningful disparities in terms of where benefits and services are provisioned and to whom. In general, areas with lower income residents and higher proportions of people of color, and ultimately more socially and heat-vulnerable communities, tend to have less canopy than other areas, and should be prioritized for potential expansion for the urban forest (see Ch. 4 of SUFNYC). These areas also frequently are the subject of environmental hazards, such as high air pollution, and the disparities are a meaningful environmental justice concern. While past City programs such as Trees for Public Health and Cool Neighborhoods NYC targeted investments for planting in some such areas, there remain major disparities in the canopy cover among neighborhoods. To achieve long-term growth and canopy increases, trees require ongoing care and protection alongside additional plantings. Further, it is critical that investments in greening the landscape be carried out in ways that align with community visions, elevate community leadership, and work to avoid potential adverse impacts on the existing residents, such as economic displacement or gentrification.

The existing urban forest in NYC is generally healthy, and citywide its canopy had a small net increase, from just over 20% in 2010 to 22% in 2017. As part of this trend, there have been increases in street trees from 1995-2015. But these changes varied across the city. Some neighborhoods experienced greater increases than others, and some even lost canopy or had periodic losses in street trees. The urban forest is composed of a rich variety of trees, with almost 300 different kinds (identified to genus, species, or variety) in landscaped portions of City Parkland, and in general, there is a trend toward reduced dominance of any individual kind, which can make the resource more resilient to factors such as pests and disease. However, invasive species pose threats to the integrity of the resource, particularly for forested natural areas, and require persistent, ongoing management, as detailed in the *Forest Management Framework for New York City* from NYC Department of Parks and Recreation (DPR) and the Natural Areas Conservancy. The inventoried trees also exhibit a generally healthy age and size structure, with more smaller trees that can replace older ones as they are felled or die and require removal. Additional details status and dynamics of the trees and their canopy are available in Ch. 2 of SUFNYC.

The potential benefits of the urban forest cannot be fully realized without sufficient commitment to DPR operations and maintenance as well as ongoing capital investments in planting and restoration. Despite the urban forest's essential role in the health and resiliency of our city, it has faced chronic

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underfunding and has been vulnerable to disproportionate cuts during times of financial hardship. The NYC Department of Parks and Recreation is responsible for 53.5% of tree canopy in NYC, but only received an annual average of 0.34% of the total City Other than Personal Services (OTPS) expense budget from FY18 to FY22. The portion allocated to urban forestry work was only 0.04% of the total City OTPS expense budget (or an average of $23 million per year, adjusted for inflation to 2021 dollars). This funding limits critical maintenance activities necessary to keep trees healthy, like pruning, stump removal, and pest and disease management. It also constrains the number of new tree plantings each year despite a large potential for this activity; as of the most recent (2015-2016) street tree census, there was space for an estimated 250,000 more trees to be planted along NYC streets. In addition to limited funding, the urban forest also suffers from inconsistent funding, and is vulnerable to drastic cuts. Between FY20 and FY21, when the City's OTPS expense budget was reduced by 6.2%, DPR's forestry budget was cut by 85% (from $17.4 million, adjusted for inflation to 2021 dollars, to $2.6 million). While the budget was restored in FY22, these funding fluctuations interrupt cycles of regular tree maintenance and long-term planning that are essential to a long-lasting, healthy urban forest. Despite the laudable efforts of this Committee and hundreds of advocacy groups across the city, DPR remains underfunded in spite of managing, caring for and programming, approximately 14% of NYC's land and over half of tree canopy in the city.

While funding is insufficient, so is the policy and management framework for the urban forest. Trees under the jurisdiction of DPR are afforded routine management and some protections, primarily replacement requirements if removed, but trees in other property types, nearly 47 percent of the canopy in the city, are generally not. This canopy crosses jurisdiction, owner, and property type. There are some examples of institutions with exceptional management practices – e.g., The Green-Wood Cemetery, botanical gardens, and some State and Federal agencies have active management of the relatively small portions of the urban forest under their control (see Ch. 7 of SUFNYC). But, most owners and managers have no documented management practices suggesting that vast portions of the urban forest may be un- or under-managed. Importantly, 35% of all canopy in NYC is on private property and just over half of that is on 1-2 family residential properties. Except for select Special Purpose zoning districts in a few select areas in the city, there are no protections for the urban forest in these realms (see Ch. 5 of SUFNYC). This means that substantial portion of the urban forest is susceptible to outright removal with no replacement requirements. As such, there is tremendous potential for incentives and regulations to help maintain and increase the urban forest on private property. Existing protections could be strengthened, and they could be further expanded to cover all property types, such as by extending the protections for trees within the jurisdiction of DPR more broadly (e.g., across all City agencies), adapting tree protection rules associated with certain Special Purpose zoning districts (e.g., the Special Natural Area District; see Ch. 5 of SUFNYC) to fit other parts of the city, and considering enacting policies that have been effective elsewhere that may better protect the urban forest and its benefits.

New York City Housing Authority (NYCHA) is a key leader in relation to the urban forest outside of DPR's jurisdiction, though they are under-resourced for this role. NYCHA campuses play an important role for the urban forest and its benefits for New Yorkers. NYCHA occupies about 1.15% of all land in NYC and is home to about 2.23% of the total tree canopy. Given this, we estimate that NYCHA is one of the largest holders of canopy in NYC outside of the NYC Department of Parks and Recreation, making NYCHA a meaningful urban forestry leader in NYC whose actions not only impact the urban forest both locally and citywide, but also help lead and set precedent for others. NYCHA's trees are meaningful not only for the 339,000 NYCHA residents who may access their myriad benefits, from connecting with nature locally to cooling, but also for the broader communities where they may represent some of the limited vegetation in our most heat vulnerable communities. As such, protecting and maintaining

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NYCHA's trees is vital, and there is also proving to be ample room for new tree planting on NYCHA properties, and given the somewhat homogenous, older age of trees there, planting younger, successional trees there will be crucial for maintaining and expanding the total canopy. Much of this was detailed in a 2021 NYCHA report about the urban forest on their properties based a partial inventory, largely conducted in collaboration with Green City Force who employed local residents, which illustrates just some of the value that monitoring of the resource holds for managing it effectively. Investments to complete the NYCHA tree inventory and create and implement a system-wide management plan are important next steps.

Expanding the canopy equitably means protecting and maintaining that which we have, and strategically adding more — all of which require both paid and volunteer labor. As described in Opportunities for Growth: Nature-Based Jobs in New York City, investing in nature-based jobs, such as City Park Workers, Tree Climbers and Pruners, can play both a crucial role in providing safe and healthy employment for New Yorkers and in enhancing NYC parks and the urban forest to improve quality of life during and after the pandemic. Stewardship groups also play a crucial role in maintaining trees in the city, ranging from Citizen Pruners who care for street trees and volunteers who maintain trails in natural areas to the myriad park conservancies and block associations who tend the canopy across a wide variety of neighborhoods and land types. These groups need ongoing resources to ensure that they can thrive alongside and in service of the urban forest.

There are substantial opportunities to expand the urban forest in New York City, supporting broader realization of its benefits. Our recent work, available in a preprint, to understand potential to increase canopy in NYC suggests that while accounting for conflicting land uses and the built environment, the city's canopy could be nearly doubled by planting trees and nurturing their growth, so long as we also maintain the existing trees we have today. Much of this opportunity is on private property – particularly 1-2 family residential – and suggests a need for both rules and incentives for property owners to both maintain and add trees to their properties.

To attain a more equitable distribution of the urban forest, and to ensure benefits are realized where they are most needed, such as more heat vulnerable communities, it is critical to find additional ways to expand the resource. The City should ensure street trees are planted to capacity, while also working with communities to identify opportunities for streetscape redesign, and redevelopment and rezoning, all of which can be tailored to expand opportunities for trees and canopy. This is particularly important in spaces that are more heavily built. And of note, it is critical that local communities are actively involved from the outset– particularly to help minimize gentrification or other unintended consequences that may accompany investments.

To improve the urban forest, we need to regularly monitor and track it. Characterizing and tracking the extent and distribution of the urban forest is both facilitated and limited by available data. The most recent, holistic dataset for it represents tree canopy and tree canopy change across 2010 and 2017 (available on the NYC Open Data Portal); thus, our collective understanding of it is already five years out of date. This dataset is incredibly accurate and provides a detailed picture of the landscape, as it is based on analysis of both three-dimensional LiDAR data and aerial imagery, and overcomes limits of past datasets in terms of tracking change through time. Though 2017 is already 5 years ago, there is no commitment by the City to updating this dataset, immediately or in the long term, making it impossible to assess changes since 2017. To continue to track change over time and support adaptive management of the urban forest, the City needs to ensure continued collection of comparable aerial imagery (4-band, 6-inch resolution with true ortho rectification) and commit to commissioning both collection of LiDAR

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data and derivation of land cover and tree canopy data products from the imagery and LiDAR data no less than every 5 years. There have also been decadal street tree censuses (most recently in 2015-2016), as well as a single inventory of landscaped park trees (2017-2018) and an ecological assessment of natural areas in City Parkland completed nearly 10 years ago. However, again, there are no ongoing funding or other commitments from the City to ensure these are updated to enable tracking of changes through time. Importantly, urban forest data can have broader uses, such as in understanding heat vulnerability, as employed in the calculation of the Heat Vulnerability Index by the NYC Department of Health and Mental Hygiene.

In summary, NYC lacks a coordinated, long-term citywide plan (encompassing both public and private land) to care for the whole of the urban forest. Public funding dedicated to trees is insufficient and heavily reliant on temporal government initiatives. There are complicated, piecemeal, and inadequate policies that dictate how and where trees are located, regulated, and managed in NYC, alongside a constellation of different landowners bearing responsibility (or not) for trees. Yet, we have some strong building blocks, most notably the leadership and expertise of DPR and a broad range of stewardship groups and institutions across the city. We need a unifying, thoughtful, ambitious, and lasting vision and roadmap that ensures the urban forest's longevity and protects our investments in it to support its myriad benefits for New Yorkers.

To that end, we submit the *NYC Urban Forest Agenda* to help craft a path forward. Its 12 actions, developed by more than 50 diverse organizations with relevant expertise, outline the most important steps that can be taken to protect, maintain, expand, and promote the urban forest to benefit all New Yorkers justly and equitably. We encourage the Committee to strongly consider supporting the implementation of the whole Agenda, and especially the following five priority actions:

1. Equitably achieve at least 30% canopy cover by 2035
2. Establish a master plan for the urban forest
3. Strengthen regulations and establish incentive programs for the protection, maintenance, and expansion of the urban forest across property types
4. Invest in urban forest careers and training programs
5. Increase and equitably fund the urban forest

These actions, if implemented, have the potential to advance the urban forest to support equity, justice, resiliency, health, and quality of life. We are encouraged by the leadership of the five Borough Presidents and many members of this Committee to plant a Million More Trees. This program, if fully funded, would be a critical step towards helping the city achieve 30x35.

I want to thank you again for holding this important hearing. It's an honor to testify before you today, and to learn from those present. The Nature Conservancy is pleased to be part of this important discussion. Thank you for the opportunity to submit testimony. If we can provide any further information, we would be pleased to do so.

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Environmental Justice Initiative

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Testimony of Joel Richard Kupferman, Esq., Executive Director, Environmental Justice Initiative
Before the New York City Council Committee on Parks and Recreation

June 23, 2022, New York, NY

"I am the Lorax. I speak for the trees. I speak for the trees for the trees have no tongues."
- Dr. Seuss

Thank you for holding a hearing to discuss the future of New York City's Tree Canopy. I was pleased to hear to many passionate voices speak to their interests in preserving our natural resources. My name is Joel Kupferman, ED of the Environmental Justice Initiative. We work in EJ communities to ensure that the rights of New York City's most vulnerable citizens are recognized and upheld. For example, our advocacy was instrumental in seeking justice for many living in public housing who were affected by the aftermath of 9-11. I submit this written testimony to implore the Council to consider three proposals: A. Implement a Tree Ombudsman Program; B. Remediate the injustices to the trees at NYCHA Housing; C. Use i-Tree to track and valuate our existing trees to make better decisions about maintenance, protection, and improvements.

We have the tools to improve and equitize our tree canopy, and we need to write the laws that formalize the path to repair. Former Mayor Michael Bloomberg famously said, "If you can't measure it, you can't manage it." While we applaud the efforts that the City has taken to care for and expand its tree stock, including setting audacious goals for the future, we acknowledge that we need stronger guardrails requiring assessment and accountability to get there. We need to continue formally measuring and tracking the environmental benefits of trees and their associated values. This means periodic block-by-block identification of inventory and enforcement of management standards. There are tools readily available, including the USDA's i-Tree, already in use by other government agencies. This will help advise where we need improvements, and will create a sense of urgency to achieve them. I urge the City Council to draft and pass a bill that formally adopts i-Tree as the preferred management software for tracking our tree canopy.

Next, as a step toward addressing our shortcomings, we are asking the NYC Council to introduce and pass a bill to create a Tree Ombudsman Program "TOP" that converts the responsibility of caring for NYC's lush tree canopy from a mostly responsive volunteer stewardship model to a mechanism of accountability and proactive care. Tree Ombudsmen ("Toppers"), as they already do in neighboring Connecticut and Massachusetts, will protect NYC's trees and foster a harmonious relationship between the people of the City with the nature that supports us. Toppers will also help ensure that the practice of caring for, maintaining, and providing new access to trees is done so equitably.

Lastly, we are asking that the Council pay special attention to the tree stock at NYCHA developments. As the largest steward of trees in New York City, second only to the City's Parks

Department, NYCHA is responsible for preserving and maintaining a significant stock of the NYC urban forest and its mature urban trees. Healthy trees, shrubs, and the landscapes they populate provide numerous environmental and ecological benefits as well as positive contributions to the physiological and mental health, and well-being of all New Yorkers. These benefits are all the more important for NYCHA residents who live in the dense urbanized environment of inner-city, high-rise apartment buildings that comprise NYCHA's housing developments throughout the five boroughs. For many of the more than 350,000 NYCHA residents, the only available respite from the sun and heat of summer (and increasingly, the spring and fall) are the shaded courtyards of NYCHA developments. NYCHA has already acknowledged the array of benefits the mature urban trees provide, as described in the October 2021 report NYCHA's Urban Forest, a Vital Resource for NYC. Given the importance of this natural resource residents who live in NYCHA, City Council must aid NYCHA to embark on a new course to dedicate resources to ensure the health of long-neglected and damaged trees, and landscape. Yet we continue to see decline and damage to NYCHA's urban forest. For example, one of our clients, the Smith Houses in downtown Manhattan, has seen in recent years a gross disregard for tree care and health as contractors hired to spend FEMA resilience money instead decimated and damaged the existing tree stock by not following best practices in construction and tree care. This must be amended immediately.

In the following pages, we outline some specifics the City Council can consider as you seek to redress these issues. Thank you.

Urban Canopy Statistics

- In 2017, the Nature Conservancy estimated that over a fifth of NYC comprises tree canopy, valued at almost $6 Billion (p 30) yet this is not reflected in the cost that we reappropriate back to their care. Trees may be the City's most vital, yet under-appreciated, volunteer force there is.
- Approximately two-thirds of that canopy falls within the jurisdiction of NYC parks (54%) or other public properties (11%) (p126) while the remaining canopy is on private land (35%). The public entities, to varying degrees, have clear and coordinated management plans. However, a great deal of NYC's tree canopy relies on the hard work of volunteer tree stewards and there is a lack of accountability for abiding by those plans.
- It is time to move from voluntary stewardship to binding accountability for tree care and health.
- 2021: NYC Urban Forest Agenda[1] sets a goal of achieving a 30% citywide canopy goal by 2035 (p 74). This number was set by a coalition of bought presidents in early 2022 when they introduced their "Million More Trees" initiative asking Mayor Adams to plant a million more new trees by 2030 and to designate 1% of the City's budget to Parks.

[1] The NYC Urban Forest Agenda was published in 2021 by a coalition of 60 organizations, both public and private, as well as government agencies including NYCHA and NYC Parks, NYS DEC, among others.

- There are dozens, if not hundreds, of non-profit organizations and government entities concerned with tree care and positive tree outcomes. The state of urban trees, both public and private, concerns all city dwellers whether we are aware of it or not. The myriad of recent reports and recommendations evaluating and advising on improved tree care is promising, but the suggestions lack methodology for binding accountability practices.

Recommendation A: Develop a Bill to Create an NYC Tree Ombudsmen Program ("TOP")

I. Precedent Programs

- CT DEEP created the State-mandated Connecticut Tree Warden program, effective 2013, to approve the planting, pruning, or removal of trees under their authority.
- Massachusetts Tree Warden and Foresters Association

II. Powers and Duties of Tree Ombudsman ("Toppers")

- Parks will appoint one Topper per borough and allocate budget for that person to have a support staff of 5-7 people. Toppers may also choose work with Parks' existing tree steward volunteers who can report into this program as an expansion of existing duties. Topper may be an existing Parks staff member, but they will need to obtain additional certification to meet Topper qualification requirements.
- Field concerns about trees via 311 and other relevant channels, toward appropriate agencies who care for and control of trees and shrubs within the limits of public streets, roads, grounds, within limit of City/Borough.
- Ensure concerns about tree health are appropriately addressed within a set timeframe.
- Ensure that the broader sidewalk management strategies handled by various other agencies takes into account the needs of the street trees, e.g. Sanitation, City Planning, DOB, etc.
- Provide education and oversight to relevant agencies as to proper placement of other street and sidewalk uses that can interfere with the health of street trees, e.g. trash and recycling collection for sanitation or maintenance of existing trees where there is new construction (DOB).
- In addition to oversight and approval of care and maintenance, the Topper is responsible for enforcing/reporting regulatory violations regarding their tree stock, such as improperly posted signs, or any property interfering with the trees.
- Field reports or make recommendations of trees requiring soil decompaction, root care, pruning, watering, removal, replacement, etc.
- Field complaints around construction practices that affect trees.
- Advise as to recommendations for new tree plantings; ensure equitable distribution of new trees.
- Recommend trees for improved maintenance strategies: adding mulch, compost, nutrients, beneficial plantings, etc.
- Oversee budget and funding partnerships, grant-writing for TOP.
- Create bid proposals for contract tree work.

- Conduct public meetings and tree hearings.
- Create and update tree inventory including using iTree to track monetary value of trees; liaise with existing volunteer tree steward organizations.
- Conduct periodic inspections of trees.
- Ensure that every neighborhood has access to 30% tree canopy by 2030 and that the 30% target is not merely a general average. Develop other equitable goals to strive toward.
- Identify and track repeat offenders to trees, ("bad actor policy"). Ensure City stops doing business with bad actors.

III. Selection and Qualification of Toppers

- Required to complete certification coursework as determined necessary by Parks Department.
- Encourage appointment of women, minority, LGBTQIA+ individuals.
- Require periodic re-certification or professional development/CEU's to maintain status.
- We recommend that Topper will be the individual's only role, but this person may be ported over or promoted from a similar previous position.
- Toppers must be familiar with NYC tree care standards and guidelines.

IV. Accountability

- Toppers must be given enforcement power to ensure accountability. This includes power of issuing violations, fines, tracking bad actors, etc.

V. Budget and Oversight

- Topper program should be a sub-division of NYC
- Advocates for parks and trees are pushing Mayor Adams to allocate 1% of the City's budget for Parks. This bill should solidify that goal. Parks should also look to other funding streams such as Community Benefit Agreements and private grants to supplement.

Recommendation B: Increase support for Tree management at NYCHA

Problems at NYCHA include

- NYCHA's tree inventory is second only to NYC Park Department's
- NYCHA has only one part-time arborist under contract
- There is major mismanagement of trees and landscape
- "Collectively, the estimated 50,000 to 100,000 trees that grow on the New York City Housing. Authority's (NYCHA's) 2,521 acres of land in virtually all of our 345 developments make up what is known as an urban forest. These trees are particularly vulnerable, enduring more stress than trees that grow in natural forests. NYCHA Housing Journal April 2002 p.4
- Example of tree destruction at Baruch Houses.

Figure 1Chainsaw crews have taken down more than 200 mature hardwoods at the Baruch Houses on the Lower East Side NYPost April 27, 2019

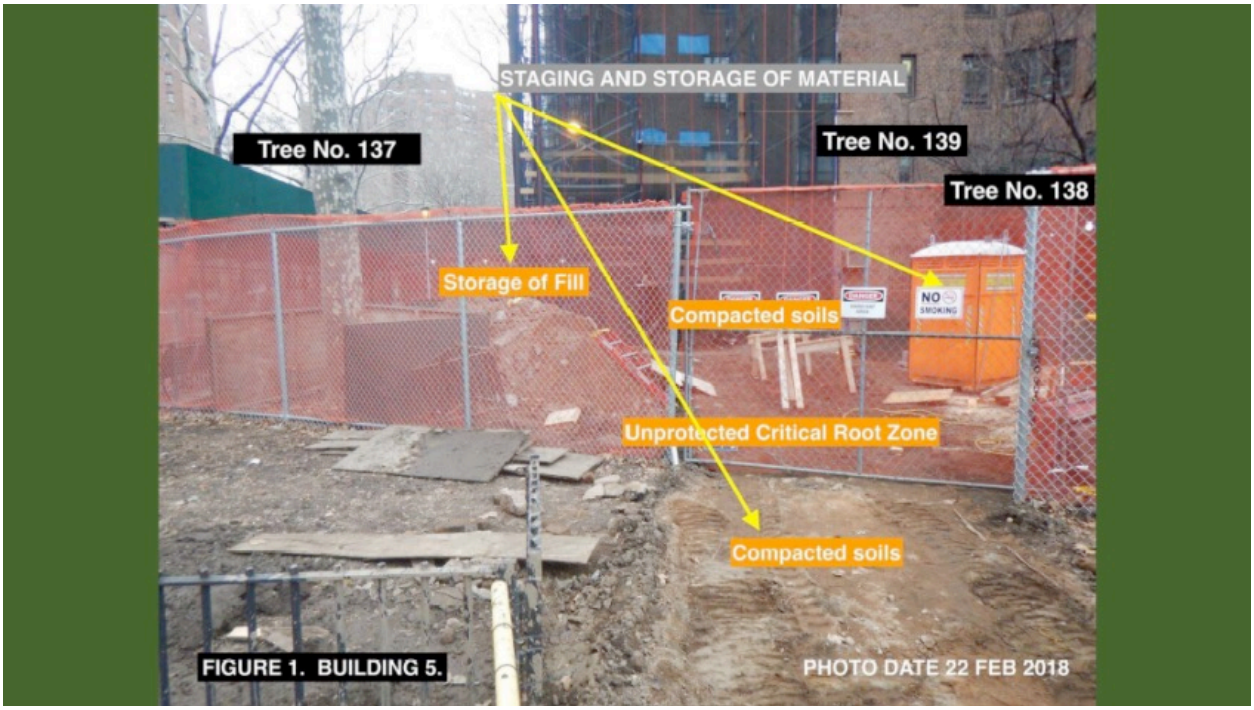

Figure 2- Improper Hurricane Sandy Rebuild contractor work - deleterious impact on trees Smith Houses- Manhattan

Full powerpoint at
https://www.dropbox.com/s/5x8r7pksby116sj/SMITHHOUSES%20%20LANDSCAPE%2C%20TREE%20%26%20AIR%20PROBLEMS%3D.pdf?dl=0

Solution: Hire Certified Arborists Specifically for NYCHA

- NYCHA must retain and sufficiently fund a qualified Consulting Arborist who will work in close collaboration with specially-hired project managers on individual projects.

- Conduct inventory audits and risk assessments on at-risk NYCHA trees as advised by certified arborist.
- Ensure that so-called improvements on NYCHA properties do not negatively traumatize existing tree stock. Further, disruption to the ground for construction activities should not re-suspend soil particles in the air, particularly in light of soil contamination with lead, arsenic, and other heavy metals.
- Convene a meeting to draw upon expertise and resources of HUD, EPA, NYS DEC, US Forest Service, OSHA to determine the best path forward at protecting and preserving NYCHA trees.
- Encourage passage of budget that includes more funding better tree care at NYCHA which includes funding for the remediation of past tree and greenery damage, monetary restitution for the replacement of lost mature trees, and creation of systems designed to ensure future tree health in the face of future severe storms (including stormwater management plans).
- Ensure that every effort is made to hold financially responsible the contractors who have caused past damages.
- Hold stakeholder task force meetings with the authority to implement and oversee critical actions to ensure the viability of the recommendations made here.
- Ensure provisions such that NYCHA tenants are included in these processes to the greatest extent possible. Beyond providing input and direction on landscape plans, hire tenants to perform the work and engage tenants in volunteer stewardship and monitoring activities.

Recommendation C: Use i-Tree to track and make decisions about the City's trees

- i-Tree is a software available in the public domain used by the USDA Forest Service to assess and manage community trees & forests.
- i-Tree uses peer-reviewed research, includes access to technical support, and is continuously improved.
- Using a tree benefit-based approach, i-Tree tools provide a framework for making strategic, management, planning & policy decisions that consider economic value, environmental services, and tree & forest structure. Users can measure performance and adjust plans based on data output.
- The model schematic translates existing data into a statistical estimation of tree benefits, including amounts and monetary value. The monetary value is based on outputs including air quality, carbon sequestration, energy impacts, and human health.
- If NYC trees are properly measured, they can be better managed. I-Tree will help estimate % tree cover, pollution removal, CO2 sequestration, and carbon storage. The easy to interpret reports can help advise on protection, maintenance, budgeting, and improvement activities.

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Testimony of Carlos Castell Croke
Associate for NYC Programs
New York League of Conservation Voters
City Council Hearing of the Committee on Parks and Recreation
Oversight: Improving the City's Tree Canopy
June 23rd, 2022

Good afternoon, my name is Carlos Castell Croke and I am the Associate for New York City Programs at the New York League of Conservation Voters (NYLCV). NYLCV represents over 30,000 members in New York City and we are committed to advancing a sustainability agenda that will make our people, our neighborhoods, and our economy healthier and more resilient. I would like to thank Chair Krishnan for the opportunity to testify today.

Planting trees doesn't just incorporate nature's beauty into our cityscape, but it also benefits our community and creates a greener, more resilient City. Most importantly, trees work to solve a variety of environmental challenges, including air pollution and carbon emissions, energy savings, mitigating stormwater runoff, urban heat, and overall public health.

Trees play an important role in cooling the City, which faces increased temperatures due to the urban island effect. They can lower temperatures in a city 2 to 8 degrees celsius. When planted near buildings, trees can cut AC use by 30%, and reduce heating energy use by a further 20-50%. This is especially important considering heat exacerbates an average of 350 deaths per year, with the highest mortality rates in low-income neighborhoods with less trees.

Urban forests also serve as a large carbon sink while simultaneously supplying wildlife with habitat. One tree has the ability to absorb 48 pounds of carbon dioxide per year, which translates to NYC's trees removing 1,300 tons of pollutants from the atmosphere each year.

Unfortunately, trees are not equitably distributed across the city. Communities with less tree canopy cover often suffer the most risk from heat-related illness or death–the fewer trees, the heightened experience of heat vulnerability. Lower-income households also are exposed to worse air quality without the necessary trees available to absorb harmful pollutants. Thus, the urban forest holds importance especially for environmental justice and frontline communities.

NYC's natural forests are at a critical juncture. Without concerted efforts across the board, it can be challenging to preserve and protect our urban forestry. Between 1984 and 2002 alone, New York City lost 9,000 acres of green open space to competing land uses. But with major

investments now we could see an expanded and healthier urban forest in the coming years that will help us protect New Yorkers and fight climate change.

Through the Play Fair for Parks campaign we have pushed for 1% of the NYC budget for parks. While we didn't see this level of commitment from the City this fiscal year, we hope in the future we will have an investment in parks that will ensure all of our green spaces, especially our trees are properly protected and maintained. Additionally, we stand with the Forest for All NYC coalition to support the goal of 30% canopy cover by 2035, which would be easily achieved through an initiative like Borough President Levine's Million More Trees Initiative.

Protecting and expanding the urban forest will be critical in the near future so that we can improve the resilience of our City and fight climate change. I'd like to thank Chair Krishnan and the Committee for their attention to this issue, and look forward to working with you all closely to ensure NYC has a healthy, thriving forest for generations to come.

My name is Diane Sferrazza Katz, I am the Executive Director of the NY Chapter of the American Society of Landscape Architects. Our organization is a part of Forest for All, a coalition of nearly 50 organizations committed to creating a healthy, biodiverse, accessible, and resilient urban forest that justly and equitably delivers benefits to all residents of NYC. We believe that the NYC Forest for all agenda, specifically, establishing a citywide goal of 30% tree canopy cover by 2035, should be a top priority for the city. Tree canopy cover needs to be increased throughout the city and especially in lower-income communities and communities of color where there is less canopy cover. Neighborhood with fewer trees suffer from higher rates of medical issues like asthma and have to deal with worse urban heat island effects in the summer. The importance of trees to human health and ecological communities is well documented. Trees enhance quality of life and improve health and wellbeing for people by cleaning and cooling the air and reducing heat-related illness. Trees also help tackle the causes and effects of the climate crisis by absorbing stormwater and sequestering carbon dioxide.

As landscape architects, the members of our organization make our cities more livable, our parks and public spaces more enjoyable and functional, and our precious and fragile ecosystems more resilient and sustainable in the face of global climate change. Environmental justice needs to be achieved and this mission must extend to all neighborhoods in all parts of the city. The benefits of trees and nature are not distributed evenly, and their benefits do not currently reach everyone equitably.

ASLA-NY urges the City Council to become familiar with and advocate for the *NYC Urban Forest Agenda* in June 2021. This agenda outlines the steps needed to protect, maintain, expand, and promote the NYC urban forest to benefit all New Yorkers in a way that is just and equitable.

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Testimony of Suzanne Treyger
Senior Forest Program Manager, Audubon New York
Before the Committee on Parks and Recreation
Oversight – Improving the City's Tree Canopy
June 23, 2022

Chair Krishnan and members of the committee, thank you for granting Audubon New York the opportunity to testify. I am Suzanne Treyger and I serve as the Senior Forest Program Manager for Audubon New York, a leading state program of the National Audubon Society.

The National Audubon Society protects birds and the places they need throughout the Americas using science, advocacy, education, and on-the-ground conservation. Audubon's state programs, nature centers, chapters, and partners have an unparalleled wingspan that reaches millions of people each year to inform, inspire and unite diverse communities in conservation action. In New York State, Audubon New York leads a network of 99,000 members, 27 locally affiliated chapters, 7 sanctuaries and nature centers, and thousands of annual visitors, volunteers, and partners throughout the state.

Audubon New York is a member of Forest for All NYC, a diverse coalition of nearly 50 organizations committed to creating a healthy, biodiverse, accessible, and resilient urban forest that justly and equitably delivers benefits to all residents of NYC. We care about the NYC Urban Forest because it provides migration stopover habitat for thousands of birds and is a natural climate solution. To improve upon both of these critical functions, we believe the City needs to set a goal of at least 30% canopy cover by 2035.

Migratory Bird Stopover Habitat
Situated within the Atlantic Flyway and near a coastal migration route, NYC plays an important role for birds during their spring and fall migrations. More than 200 bird species migrate through NYC annually, many stopping in green spaces to rest and eat before continuing their arduous journey (NYC Audubon). Migration is a physically taxing and dangerous period (due to artificial light causing disorientation, window collisions, weather events, predation, etc.) during the full annual life cycle of birds. Many bird species experience higher mortality rates during migration when compared to breeding and wintering phases, with research indicating migration mortality rates as high as 85% (Sillett and Holmes 2002).

Some urban-related risks encountered during migration are being reduced through efforts like Lights Out at night (many migratory passerines travel at night) and safe window and building designs, both helping to prevent deaths caused by collisions. However, much more can be done to enhance urban stopover habitat. To endure the physical stress of migration, birds need quality migration stopover habitat that provides food resources from native trees, shrubs, and herbaceous plants. A diverse selection of native plants will provide nutritious berries, seeds, and nuts, and support native insects – all

important food that help birds replenish fat stores and energy to continue on their journey. Further, increasing native tree species diversity will give migratory birds a variety of food resources and more places to rest and eat safely.

Migration stopover habitat can be improved through the Forest for All NYC coalition, which developed and released the *NYC Urban Forest Agenda* in June 2021 – a roadmap to protect, maintain, expand, and promote the NYC urban forest to benefit all New Yorkers in a way that is just and equitable. The coalition proposes establishing a citywide goal of 30% tree canopy cover by 2035 (up from 22% cover as of 2017). Increasing tree canopy cover can directly benefit birds that use urban forests. With research indicating North America has lost 3 billion birds since 1970, actions that counteract further population declines are critical (Rosenberg et al. 2019).

Natural Climate Solution

The effects and stressors of climate change are impacting environments all over the world, including urban areas. As detailed in Audubon's Natural Climate Solutions (2021) and Survival by Degrees (2019) Reports, birds are climate-vulnerable and at risk for continued population declines due to loss of habitat and shifting temperature and climate envelopes.

Audubon's Natural Climate Solutions Report, the first study of high carbon value areas to factor in projected climate impacts on birds and prioritize natural climate solutions that benefit both birds and people, has identified urban and suburban green spaces as playing an important role in helping birds in the face of climate change. In addition to benefitting migratory birds, urban forests can also provide habitat for resident bird species. To counter carbon emissions that are typically higher in urban environments, planting trees can actually help sequester and store carbon.

As part of Audubon's Natural Climate Solutions work, an analysis was conducted to show different habitat types, including urban and suburban areas, and if they are in need of restoration efforts to increase carbon sequestration and storage. Not surprisingly, the greater NYC metropolitan area shows that climate-smart restoration activities like planting more trees and protecting and expanding green spaces, is needed. In doing so, not only will carbon sequestration and storage increase, but overall resiliency of natural areas, too, benefitting people, wildlife, and climate.

This analysis also highlighted the importance of working with landowners and developing community-supported programs, like planting native trees, since many of the areas in need of restoration are on private or unprotected land. NYC Parks plays a huge role in managing the urban forest, but nearly half is outside of NYC Parks, and isn't well protected, managed, planned for, or understood. That means nearly half of NYC's tree canopy needs protection, a plan, and investment in both management and expansion.

Climate-focused restoration projects are essential to support birds and carbon sequestration and storage, and several climate vulnerable bird species, including American Goldfinch and Song Sparrow can benefit from these actions. Increasing native tree diversity in areas where they are lacking or within urban green spaces can also contribute to climate change mitigation potential, provide health benefits for people, and create habitat for birds so they are better able to adapt to a changing climate.

***

Thank you again for allowing me to testify today, and should you need any additional information, please contact me at 607-778-0461 or suzanne.treyger@audubon.org.

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Dear City Council Committee on Parks & Recreation,

I'm Steven Thomson, President of the Board of Directors of the Brooklyn Queens Land Trust (BQLT). We are proud to be members of Forest for All NYC.

Trees are not a neighborhood amenity. Rather, trees are vital environmental infrastructure and should be stewarded accordingly.

At BQLT, we care deeply about the NYC urban forest because we steward 37 community gardens in Brooklyn and Queens—totaling five acres with more than 230 urban trees within the gardens and additional adjacent street trees. As gardeners, we know the vital role of the urban forest: for shade and cooling effects, for trapping CO_2 and releasing life-giving oxygen, for climate change mitigation, for reducing stormwater runoff, for urban wildlife habitat, and for increasing the walkability and beauty of our New York City neighborhoods.

We believe the City needs to set a goal of at least 30% tree canopy cover by 2035.

BQLT understands that increasing the NYC urban tree canopy is an environmental justice issue. Many of our gardens are in Brooklyn Community Districts (CD17, CD4, and CD3) with low tree canopy coverage [15.8%, 17.2% and 21.8% respectively], which represent Heat Vulnerable Districts and are predominantly made up of people of color. NYC's lowest tree canopy coverage areas need to be addressed aggressively and given highest priority in funding and policy solutions.

We also know first-hand the financial costs and targeted efforts that are required to maintain urban trees. Our regular tree maintenance work is thankfully made possible in part by discretionary funds from City Council members. In addition we were awarded a New York State Department of Environmental Conservation Urban & Community Forestry Grant (totaling $30,940) for our BQLT tree care in 2021-23. This grant paid for professional tree maintenance and tree care education for our gardeners. We partnered with Trees New York to offer a special Citizen Pruner course with 20 BQLT gardeners in March and April 2022. We had course participants from 14 BQLT gardens, in order to spread their new tree knowledge and pruning skills within their own communities.

While impactful, this sole grant-funded project underscores the need for consistent financial resources to keep our city's trees thriving. The 230-plus trees on BQLT-owned community gardens are just a fraction of NYC's seven million trees, which require

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large-scale funding and bold policy solutions to maintain the existing urban trees and to increase NYC's urban forest.

NYC Parks plays an enormous role in managing the urban forest, but nearly half of the city's trees are outside of NYC Parks, and aren't entirely well-managed or understood. NYC Parks needs more resources and the whole urban forest needs protection, a plan, and investment in management and expansion.

Thank you for the opportunity to testify before your committee. We look forward to continuing support of comprehensive tree care and access to nature for all New Yorkers.

Testimony in Support of Setting a Goal for 30% Canopy Cover in NYC by 2035
To the City Council Committee on Parks and Recreation
by Brooklyn Greenway Initiative Stewardship and Naval Cemetery Landscape Manager
Anna Bakis
June 22, 2022

Brooklyn Greenway Initiative (BGI) is a nonprofit organization that for two decades has been focused on the development, establishment, and long-term stewardship of the Brooklyn Waterfront Greenway, a vital and nearly complete component of NYC's greenways network that connects parks and waterfronts, advances climate and sustainability goals, and provides safe mobility options for New Yorkers of all ages and abilities.

BGI proudly stands with our partners in the Forest for All NYC coalition in our collective call for setting a goal of at least 30% canopy cover in New York City by 2035.

BGI enthusiastically cares about the NYC urban forest. Increased tree canopy cover will result in cooler streets and improved health and well-being for our city's residents. As an organization that stewards a waterfront greenway, we also highly value initiatives that help tackle the causes and effects of the climate crisis specifically by supporting energy efficiency, strengthening our shoreline, and absorbing stormwater before it pollutes our waterways and floods our streets. Trees have the capacity to do all of the above. Additionally, trees support wildlife species that can use tree-lined greenways as a conduit to travel between fragmented greenspaces as they provide valuable nesting and foraging opportunities that enable at-risk species to be better supported by the city's system of greenspaces. Greenways already reduce air pollution by providing infrastructure that enables alternative travel, and tree-lined greenways and city streets would amplify that effect by further removing tons of air pollution.

Our coalition of nearly 50 organizations is committed to creating a healthy, biodiverse, accessible, and resilient urban forest that justly and equitably delivers the benefits of increased tree canopy cover to all residents of NYC. Establishing a citywide goal of 30% tree canopy cover by 2035, and increasing and equitably distributing funding for planting and maintenance of the urban forest will yield benefits for all New Yorkers, and will put our city on better footing to face the challenges of climate change.

The New York City Council needs to allocate funding that will enable us to reach the goal of 30% tree canopy cover by 2035. BGI looks forward to continuing to work with our partners in the Forest for All NYC coalition to advocate for investment in the expansion of the city's urban forest.

Thank you to the City Council for considering the importance of this effort, and for dedicating time to the advancement and continued growth of the city's urban forest and sustainability initiatives.

New York City Council Committee
on Parks and Recreation
Hybrid Hearing
Oversight – Improving the City's Tree Canopy
June 23, 2022 at 1:30PM

Testimony of Rev. Gabriella Velardi-Ward
See Bio/credentials attached

As we know, there are many benefits to trees. We know that we are partners in breathing with trees. We breathe out what they need CO2, and they breathe out what we need Oxygen. We know that trees filter pollution from the air. We know that trees and their root systems sequester carbon which helps to reduce the effects of greenhouse gases and climate change. We know that tree roots and the spongy soil in wetlands, filter water which generally flows into another body of water.

We know that forests and their under-story, buffer flood waters as they did in Graniteville during Hurricane Sandy. We in Graniteville were not flooded. We know that trees cool the air in forests and in the areas around the forest. We know that trees communicate with each other through their root systems. They help each other heal. And we know that trees and forests and shrubs heal human beings. They create beauty and their energy lifts the human spirit.

So why do we cut them down?

I worked for the NYC Department of Parks and Recreation, in the Capital Projects Division for 23 years as an architectural designer and construction supervisor. One of the last big projects

that I supervised before retirement was in the forest in Midland Beach. The forest was right on the beach. The Victory Diner project required the cutting down of that forest.

It was a beautiful forest that pheasants and many other animal species visited. It was destroyed for a diner and kiddie Rides. *With climate change, we need to begin to think differently* about where to put things and how we use the shore line.

I was there before, during and after Hurricane Sandy. The effects of that storm surge were horrendous. I know of the filled dumpster that was lifted by the water and landed on an occupied car. The couple inside were crushed. I saw bodies being carried out of their homes having drowned inside their homes. I know of the mother who with 2 toddlers in her arms ran for their lives. The storm surge pulled the kids out of her arms and they drowned. I know of the man who rode the roof of his home to safety. There was no home under the roof, and more. The effects of climate change are no joke.

I tasted the mold in the air for months, as I continued supervising the construction. Some people called the storm surge a Tsunami. It was said that there was 15' of water on our construction site. 24+ people died that day from Hurricane Sandy. Half the people who died in NYC that day, died on Staten Island**. *I can't help but think that if the forest remained, it would have buffered the storm surge and perhaps not as many people would have died.***

Having gone through this experience in Midland Beach, I was very worried about what might happen in Graniteville. I

could not allow that to happen here. I knew that if we lost the freshwater wetland, that protected us during Hurricane Sandy, we would be flooded. So, I co-founded the Coalition for Wetlands and Forests to save the wetland and have been leading it for the last 5 years.

This is the 4th forest I've seen cut down since I moved to Staten Island 17 years ago, Mount Manresa, Snug Harbor next to the Tuscan Garden, Midland Beach Diner Project and the Graniteville Freshwater Wetland. In each of these cases, the community was against these projects.

So, if we know all of the benefits that forests/canopies bring, including buffering the effects of climate change, ***why are we still allowing them to be cut down?*** We lost approximately 1,800 mature trees in the Environmental Justice community of Graniteville. This community has no other open green space and no park. We also have very polluted air and a high incidence of COPD, Asthma and cancer.

After 4 years of fighting this ill-conceived project, the South Avenue Retail Project, by August 31st of 2021, 80% of the trees were cut down and the soil compacted. On September 1st, Graniteville was flooded, badly. We had never been flooded before. We had no flood insurance because we did not need it. But right after the trees were cut down, we were flooded.

The Regal Walk HOA had 80 of their units flooded. People driving on Goethals Road North near Exit 6, had to abandon their cars, because the water was too deep. All of the homes on Amador Street were flooded. We spoke to a few of the residents

on that block. One home had $55,000 worth of damage. A car, was lost. Someone lost their small business. Her stock was in her basement. Someone said that she grabbed her kids and they ran for their lives. She had 5 feet of water in her basement and it was rising. This was not a minor flood. We now have no protection from sea level rise, storm surge or torrential rain flooding. And we have 3 very large bodies of water surrounding us, Arthur Kill, Newark Bay and Kill van Kull as well as creeks and underground streams. We will be flooded again.

In the last mayoral administration, lots of trees/forests were lost. And more are under contract to be cut down. The area of tree canopy mentioned at the hearing is wonderful but it would have been larger if we had not lost so many forests. In addition to the 1800 trees lost in Graniteville, we will be losing about 800 trees in the construction of River North on the north east side of Staten Island. We lost 700 the trees in East River Park and 300 more are in danger of being cut down. Other forests are in danger of being cut down, Inwood Park in Manhattan, Fort Green Park in Brooklyn and probably many more.

When will we take seriously the extreme danger that NYC is in, with its 520 miles of shoreline? When will we protect people from the next storm to come and not the last storm? When will we require the private sector to conform to the requirements of the public sector? When will we consider the lives of people along the NYC shore line as more valuable than the profits of developers? ***When will we take climate change seriously and stop cutting trees?***

My suggestion is, after having been on the front line, that the NYC Parks Department must protect our natural resources, trees, forests, marshes and wetlands and other open green spaces, and not cut them down for the sake of a design. With climate change heavily upon us, we cannot afford to think like that anymore. NYC and NYS must begin to think in terms of purchasing the privately owned natural resources, especially along the shore line, and keep them from development.

Private developers must conform to the regulations of the public sector or we will be getting nowhere fighting the effects of climate change. There must be an agency that monitors new construction for its climate change effect on the communities or neighbors. Perhaps that can be in the Department of City Planning as the first stop. (They can also monitor the underground streams and not build over them.) Perhaps that can also be in the NYC Department of Buildings as the last stop in the process.

There must be a moratorium on construction at a shore line. Shore lines can have systems of storing and distributing water under parking lots, or under recreation courts, like other cities do. We cannot afford to accept business as usual, anymore.

If we are to avoid total disaster from the effects of climate change, in NYC, we must rethink business as usual.

Thank you for allowing the voice of people and communities to be heard. I do wish that those decision makers who left the meeting before people spoke, would be required to stay. Climate

change is such an emergency in NYC that we all need to ***hear*** each other.

Rev. Gabriella Velardi-Ward, BFA, AAS, B. Arch, M. Theo coursework
Coordinator of the
Coalition for Wetlands and Forests
StPraxedisRCC@gmail.com
SICWF2017@gmail.com

Gowanus Canal CONSERVANCY

Testimony
New York City Council
Committee on Parks and Recreation
City Council, NYC Parks Oversight Hearing on “Improving the City’s Tree Canopy”
Thursday, June 23, 2022

Gowanus Canal Conservancy Testimony for City Council, NYC Parks Oversight Hearing

My name is Natasia Sidarta and I am the Community Stewardship & Operations Director at Gowanus Canal Conservancy (GCC), where I oversee community stewardship and volunteer programs to empower local stakeholders in stewardship of local green spaces. We are a proud member of the Forest for All NYC Coalition and the Play Fair Coalition and we believe the City needs to set a goal of at least 30% canopy by 2035. While we commend the increase in the FY23 Parks budget, it falls short of the needed, full capital and expense funding for the urban forest.

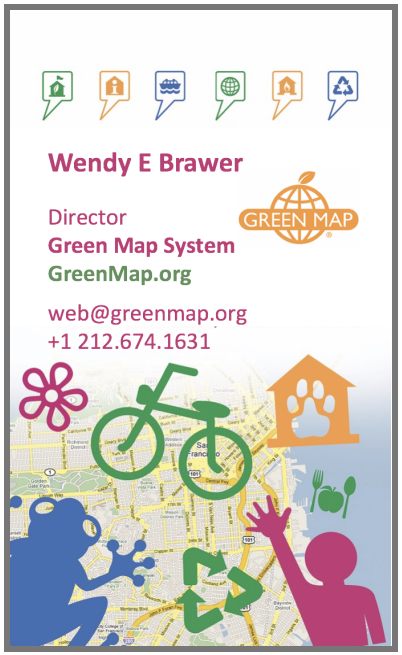
Our urban forest includes more than 7 million trees across public and private lands which provide critical ecosystem services to NYC residents, services that are becoming all the more important as our climate changes. Trees enhance quality of life and improve health and wellbeing for people by cleaning and cooling the air and reducing heat-related illness. They help tackle the causes and effects of the climate crisis by supporting energy efficiency, strengthening our shoreline, and absorbing 186,000 tons of carbon dioxide each year. Trees also absorb stormwater before it pollutes our waterways - this last one is especially critical in Gowanus where the canal receives 363 million gallons of Combined Sewer Overflow per year.

In Gowanus, 670 young trees installed over the past decade are growing to help fill a neighborhood wide gap in the urban canopy, but the neighborhood is rapidly changing in response to the City's recently approved Rezoning, the federal Superfund Clean-up, and brownfield remediation on upland sites throughout the watershed. Demolition and construction activities pose additional threats to mature and newly planted trees and we must ensure adequate protection and replanting in order to sustain the urban forest in this neighborhood. When mature, these trees will provide critical benefits of flood management, cooling, and shade, but surviving to maturity depends on adequate maintenance and protection, from the Parks Department, local organizations and volunteers. In Gowanus, we empower a network of volunteer tree stewards, who water, weed, prune, and remove litter and debris. The Parks

Equity Initiative has provided essential support for this work, as it does for thousands of volunteers across the City. And while we rely on this source of funding, it continues to be insufficient. GCC is fortunate to have the resources to leverage additional state and federal funds, including from the NYS Department of Environmental Conservation (NYS DEC) and US Forest Service (USFS). All of this funding allows us to fill critical gaps in stewardship, including installing tree guards, expanding tree beds, and providing free TreesNY Citizen Pruner training.

However, street trees will always need maintenance that cannot be done by volunteers and small community organizations, such as structural pruning, stump removal, sidewalk repair, and invasive species control. This Council must end the long term underfunding of the Parks Department and the workers who care for these trees, and continue fighting for baselined funding of 1% to Parks, and ensure that our young trees are able to provide essential social and ecological infrastructure equitably across NYC.

Sincerely,
Natasia Sidarta
Community Stewardship & Operations Director
Gowanus Canal Conservancy



NYC City Council Tree Canopy Testimony **June 20, 2022**

As a climate design professional and Lower East Side Hero, I applaud NYC City Council for moving forward on our tree canopy. I urge you to greatly accelerate street tree planting and stewardship training and awareness building in the lowest income communities and keep going until we all have shade, bird song and benefit from the remarkable array of trees' ecosystem services in abundance.

As a 30+ year resident of the Lower East Side, I became concerned about ESCR-related canopy loss in 2019, and presented a draft resolution for more street trees and a robust stewardship program, both to help the trees thrive and to build community resiliency at CB3 that Valentine's Day. It passed! In March 2019, Parks said yes to planting 1000 native species street trees in CB3. Originally, their plan was to start planting in 2020, as then Commissioner Liam Kavanaugh explained, there were many 311 tree requests already in the pipeline, and it takes time for contracts etc. At $3000 or so per tree, this cost was approximately $3 million.

I joined the newly formed LES Street Tree Task Force, and in 2020, Parks said, oh we started planting the LES Canopy Trees in 2019, so right then, the total number of new trees coming to CB3 was diminished by 10%. Then they split CB3's 1000 promised trees with CB6. Some have gone into parks (#500 was planted in Corlears Park), rather than to fill empty street tree beds. 650 are planted and I am glad, but CB3 still has many empty tree beds and terribly hot streets.

IMPORTANT: ESCR has a $32.9 million restitution fund (referenced by AG James in her response to the ESCR DEIS). When I asked about it as a ESCR CAG member: NYC PARKS responded: "Tree restitution funds are used to plant new trees. To date, tree restitution funds have been allocated towards the neighborhood greening initiative to plant 1,000 trees in Community Boards 3 and 6. To date, over 650 trees have been planted on neighborhood streets and in neighborhood parks, with the balance to be planted over the next two years. For more information about NYC Parks guidelines regarding tree valuation and replacement, please see…" Each of the 1000 trees would have to be about $30,000 for this to be correct.

In 2019, I reviewed those replacement rules and found that the LES should be getting a lot more trees. Dr. Amy Berkov has calculated that as per the ESCR's FEIS, East River Park will lose 973 trees with a cumulative DBH of 12,740 inches. To meet the "caliper inch" replacement criterion in the NYC Rules Governing Tree Replacement, the ESCR should plant at least 4,247 three inch saplings as follows: 1,815 trees in the project zone (East River Park), 1000 street trees in each of CB3 and CB6, plus an additional 432 3-inch saplings around NYCHA campuses, in parks, etc (4,247 x 3 inches = 12,740). (The Baruch campus for example lost nearly 300 mature trees for FEMA work in 2019 - this is especially concerning due to the high auto emissions, lack of trees in adjacent East River Park and the vulnerability of residents).

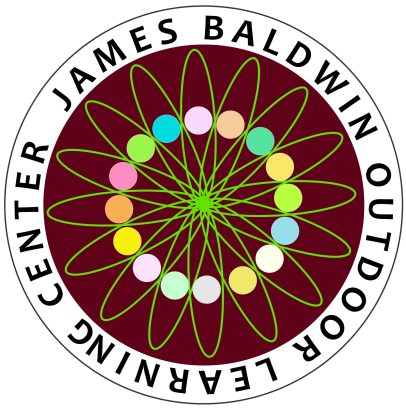
At $3000 per tree, the cost to plant all 4,247 of these would be $12,740,000 (about 35% of the $32.9 restitution fund). Let's use all the restitution funds on the tree canopy, especially in lower income communities on the waterfront.

This Street Tree Guide estimates that a **single tree can return up to $90,000 in lifetime value** – while the ESCR replacement with 4,247 trees may not achieve that $382 million in full, the return will be significant (Parks already values the ecosystem services of street trees at $110 million annually). I urge you to watch the excellent 'Treebinar' produced in May by NYCEM Community Preparedness - watch it at this link - the impacts on environmental justice and public health are profound! It's not been made available to the public but it underscores the benefits and critical importance of planting trees now: https://www.workcast.com/ControlUsher.aspx?cpak=8118158464816670&pak=3000459429415505 (Log in with web@greenmap.org).

Re: stewardship programming, it's not easy to find out about getting involved the 2-3 times per year such events take place in CB3. This is such an important aspect of canopy development! I wish every school child had a class on tree care and respect, as well as messaging for all ages to protect trees. Dog owners need special education if our canopy is to thrive. I urge tree planting to include outreach to building managers (and local residents) so saplings are watched over, kept watered and clean. NYC needs a street tree nursery, too.

My street tree quest was ignited by the Big U's 'upland planting' section - and the saying - 'the best time to plant a tree was 20 years ago, and the second best time is today'. I urge you to move the NYC Canopy forward with a stewardship component so all of us can breathe cleaner, cooler air, knowing stormwater is being sequestered, energy is being saved, habitat is being created, new habits are being made as streets are being calmed and you as Councilmembers have done something truly effective to address climate change. Thank you!

Wendy Brawer



600 West 246th St., # 416
Bronx, New York 10471

June 25, 2022

To Whom It May Concern:

I am writing on behalf of the James Baldwin Outdoor Learning Center a local community (based and centered) non-profit organization (501c3) whose mission is to strive for inquiry and project-based solutions at the juncture of food, environmental and social justice. We are aligned with and partner with Forest For All in the shared belief that all urban environments are greatly enhanced with the presence of healthy trees providing us needed oxygen, cooling canopies and we acknowledge that these benefits are not distributed equally and that, typically, poor and low income communities suffer the most.

We are especially supportive of proper investment into the management and maintenance of existing natural landscapes because this has been the core of our decades long work on the verdant 25 acre campus of DeWitt Clinton High School where we have been caring for trees and garden spaces since 2010. During my 25 year teaching career at DeWitt Clinton I have gone from being an English educator to school gardener and sustainability coordinator and I know first hand the short shrift that environmental education and awareness is given. In an age of environmental collapse, mass extinction, climate change, severe weather, global warming one might think that New York City public schools, of all places, should be optimal sites for environmental awareness and conservation but sadly this is not the case. I have witnessed fully blooming pollinator gardens, elderberry saplings, and fruit trees mowed or ripped out in the flash of an eye.

Most schools with their curriculum centered, high stakes tested, technology and data driven standardized instruction have little time to actually study and experience how actual nature works and what it has to teach. Even students of Living Environment have no time in their studies to actually enter the field to witness the living environments they are supposedly being taught while the natural areas on campus are repeatedly under attack by custodial crews

operating under mandates to make everything look neat. I blame this obvious disconnect on the abject failure of school administrators to understand that learning about natural environments can not be mediated through technology and classroom instruction but must be experienced directly.

Our current work supported by Forest for All is to establish the Mosholu Teaching Forest out of a severely neglected 20 acres of Mosholu Parklands. This forest, in an area of the Bronx that is literally an education zone that includes not only the 4 schools comprising the DeWitt Clinton Educational campus but dozens of nearby schools at all levels including Bronx High School of Science, American Studies High School, Lehman College, PS 42 and Ampak. Not only do we feel that our school aged children deserve this resource but also the entire underserved communities of Norwood, Bedford Park and Kingsbridge deserve this site for learning and caring for our environment.

Furthermore, the best way to indicate to students and community that our natural environments and trees and forests are valuable, is to fund their management and maintenance. Caring for the environment must become a viable and enviable career opportunity. Organizations like ours are literally at the front line of the battle for lives. We need support to wage this battle because if we lose, everything will be destroyed.

Sustainably yours,

Ray Pultinas
Founder and Director
https://www.jamesbaldwinoutdoorlearningcenter.org/

New York City Council
Parks Committee
Board Members

Dear Members,

It is with great enthusiasm the Kips Bay Neighborhood Association supports the naming of Dr. May Edward Chinn Place to be located at the corner of 1st Avenue and E.29th Street. As the committee has presented , Dr. Chinn was an extraordinary women, brilliant researcher, and dedicated doctor. She became all this in spite of the racism and misogyny she had to endure.

We commend the committee in the selection of the location of the proposal as well. Not only was Dr. Chinn the first African American to graduate from the then "Bellevue Hospital Medical College" which informs the location, but also the selected location is adjacent to the DHS Childrens Center. With any luck the young girls passing by will see her name, ask who Dr. Chinn was and find inspiration in her story.

In full support and on behalf of the Kips Bay Neighborhood Association, we request approval for the proposal to name the corner of 1st and E. 29th Street, Dr. May Edward Chinn Place.

Thank you for your consideration,

Karen A. Lee AiA, LEED AP, M.Arch
Executive Director
Kips Bay Neighborhood Association 1915

LES
Ecology
Center

June 23, 2022

To Chair Krishna and the Committee on Parks and Recreation,

My name is Jennifer Bombardier and I am the Education Manager with the Lower East Side Ecology Center. We have been serving the Lower East Side of Manhattan since 1987 working to build a sustainable New York City through community recycling and composting programs, stewardship of urban green spaces, and environmental education programming. We are proud members of Forest for All NYC. Thank you so much for giving me the opportunity to provide my testimony on our urban tree canopy and for creating space for our community to make our voices heard.

We are all fully aware of the many critical benefits that trees provide. Trees, and other urban green spaces filter particulate matter from the air we breathe, provide shade on hot days cooling our bodies and our buildings, absorb stormwater before it overwhelms our treatment facilities and pollutes our waterways, and provides habitat for our diverse wildlife. The choice to plant and protect our trees is not simply a matter of protecting our environment, it is about protecting the health and well-being of our communities.

Our community, the Lower East Side, is an environmental justice community, as defined by DEC *Commissioner Policy 29, Environmental Justice and Permitting*, which states thresholds for EJ communities based on income and minority populations. These neighborhoods are often home to Black and brown communities and due to the racist history of redlining, these neighborhoods have fewer trees and 33% less park space than largely white neighborhoods. This lack of trees and green spaces results in increased air pollution and higher temperatures which can exacerbate respiratory illnesses such as asthma.

Our community has lost nearly 700 trees in East River Park, with hundreds more schedule to be cut down. We have witnessed this beautiful green space, a valuable outdoor refuge for residents, including those in the adjacent NYCHA housing, become a barren construction site in the name of climate resiliency. We have also seen the local Baruch Houses lose over 200 trees with promises of planting new ones but that hasn't happened yet. And even if it does, the impacts of young trees are nowhere as impactful as older, mature trees. We recognize the vulnerability of our community to the impacts of a changing climate, including severe storms, flooding, and increasing temperatures and we believe that action must be taken to protect the people of NYC, especially in low-income neighborhoods and communities of color. But the East Side Coastal Resiliency Project, and the decision making process, pitted people for trees against people for people when the reality is that it's not one or the other.

Assistant Commissioner for Forestry, Horticulture, and Natural Resources Jennifer Greenfield said two things that stood out to me during the hearing. The first thing she said was that much of our canopy comes from mature trees and this is true. Increasing our canopy cannot

be achieved by simply planting new trees - we must invest in caring for the ones that are standing tall and healthy, which until recently included 1,000 trees in East River Park. She also stated that trees don't grow well in coastal parts of the city, including lower Manhattan. If this is true, then why did the city allow these trees that were doing just fine along the coast of lower Manhattan be removed?

At the Ecology Center, we have an education program and we teach students in local schools about our urban environment. I was recently working with a 1st grade class at PS 110 in the Lower East Side, just across the FDR from East River Park, and as we were talking about the role of trees, it became clear that these kids already understood and truly, deeply believed that trees are important. They had an innate enthusiasm for caring for the trees - they didn't need to be convinced. If it can be that obvious for children, I hope that all of us, the adults responsible for their futures, can also see it as clearly.

We believe the city needs to establish a goal of at least 30% canopy cover by 2035 and must invest in the expansion of our urban forest and equitable management and protection of our current trees, one of our most valuable resources, especially in low income neighborhoods and communities of color.

Thank you,

Jennifer Bombardier

Education Manager
LES Ecology Center

MNLA

June 23, 2022

Re: Written Testimony to the New York City Council Committee on Parks and Recreation, Improving the City's Tree Canopy

VIA ELECTRONIC UPLOAD

To whom it may concern,

The future will be hot and our city will need its trees. Hello, my name is Alexis Gagné. As a Landscape Architect living and working in New York City, I would like to take this opportunity to provide testimony on behalf of Mathews Nielsen Landscape Architects, P.C. (MNLA) in support of trees and New York City's urban forests.

By way of this written testimony, MNLA asks for a sustained commitment to protect, expand, and promote New York City's urban forest in order to support healthy communities and greener neighborhoods, more resilient parks and public spaces, and ecologically diverse and environmentally beneficial urban landscapes for all to enjoy.

MNLA advocates for connected communities and purposeful ecological design solutions through thoughtful place-making and inspired transformation of landscapes. For over a quarter century, MNLA has worked to reinvigorate, heal, and mediate places that strengthen and empower communities. We utilize the design process to engage with governing bodies, community stakeholders, and private clients to advocate for incremental and strategic advances in policies and regulations affecting the public realm, as well as ethical design decisions that add long term ecological value and performance to the project. MNLA is a member of the Forest For All NYC coalition and supports their agenda to "protect, maintain, expand, and promote the New York City urban forest to benefit all New Yorkers in a way that is just and equitable", particularly their goal to achieve 30% canopy cover by 2035.

As landscape architects working in and around New York City, MNLA sincerely appreciates the incredible value trees offer as contributors to our city's infrastructure, particularly within harsh urban environments. Trees work hard for our city. They are vital to the function, success, and wellbeing of this place we call home by enhancing quality of life and improving public health, helping the city adapt to climate change, lowering emissions, providing wildlife food and habitat, and offering respite for the community. We see firsthand how important it is for our city to have an abundant, healthy, diverse, and mature tree canopy with equitable

Mathews Nielsen
Landscape Architects, P.C.
120 Broadway, #1040
New York, NY 10271
(212) 431 3609
mnlandscape.com

distribution throughout our communities. Our trees and urban forests clean the air, provide shade and reduce energy demands, absorb stormwater and carbon from the environment, feed insects and birds, and beautify our neighborhoods.

The future of our city matters and so do its trees. Naturally, trees provide benefits to public health by improving air quality, enhancing the quality of life, and beautifying the built environment. Trees are critical components to our green infrastructure systems. They build community resilience through stormwater management, reduce carbon emissions, and mitigate the urban heat island effect. A diverse and healthy tree canopy also provides wildlife habitat for birds and pollinators, especially within seasonal migration corridors. And yet trees – an important and fundamental part of the city's infrastructure – unfortunately lack the support and investment needed to protect their numbers, maintain healthy canopies, and grow equitably. That needs to change.

To re-iterate, MNLA strongly recommends a sustained commitment to protect, expand, and promote New York City's urban forest that will ultimately contribute to a healthier, equitable, and more resilient New York City landscape for all.

Sincerely,

Alexis Gagné, LLA, ASLA
Associate

New York Restoration Project

Testimony before New York City Council, Committee on Parks and Recreation

Oversight- Improving the City's Tree Canopy

6/23/2022

Good afternoon. My name is Cory Hasson, and I am the Government Affairs Manager of the New York Restoration Project (NYRP). Thank you for the opportunity to provide testimony this afternoon, Chair Krishnan. As one of the members of Forest For All NYC, we are advocating in full support of 30% canopy coverage by 2035.

For over 25 years, NYRP has planted trees, renovated gardens, restored parks, and transformed open space for communities throughout New York City. We believe that nature is a fundamental right and for over two decades we have invested in and stewarded open and accessible green space throughout all five boroughs. NYRP levied the power of public and private partnerships to spearhead and successfully complete Million Trees NYC.

As the climate crisis intensifies, trees play an essential role in New York City's environmental resilience by providing shade, creating wildlife habitat, reducing temperatures, improving air quality, and mitigating storm water run-off. This summer NYRP proudly hosted 16 Free Tree Giveaways throughout all five boroughs where we gave away over 2000 native tree species including Serviceberry, River Birch, Hornbeam, Hackberry, Redbud, Persimmon, Eastern Red Cedar, Sweetbay Magnolia, Black Gum, Black Cherry, and Swamp White Oak.

The NYC urban forest is composed of all 7 million trees in NYC, though it is not distributed evenly, and its benefits do not reach everyone equitably. There is generally less canopy in lower-income communities and communities of color. Too many communities have suffered from a lack of tree canopy for generations and deserve the undeniable benefits of increased shade, reduced temperatures, and cleaner air. An equitable distribution of trees is essential for New York City to confront the climate crisis.

Trees operate as the lungs and air conditioning of our urban environment. Together we can work to make our city more equitable and combat environmental injustice in our communities, beginning by investing in our City's urban forest. Thank you.

Testimony for Parks Committee - Tree Canopy
June 23, 2022 at 1:30pm via Zoom

Matt Malina, Director and Founder of NYC H2O.
NYC H2O is a non-profit that provides environmental education and stewardship programs in all five boroughs.

The city has 10,000 acres of forest. Much of it is not taken care of and invasive vines grow on the trees and kill them over time.

A case in point is the 50-acre Ridgewood Reservoir in Highland Park where 500 trees blew over during hurricane Isaias in 2020. The trees were covered in vines which acted like sails by catching the wind and toppling the trees over.

NYC H2O trains high school and college students to do this work and teaches them about biodiversity and why it is important to take care of forests and greenspace. We'd like to be a partner with the City in an official capacity to train more young people to do this work and more.

Whether Parks decided to engage with us or some other organization, the trees need to be taken care of once they are planted. So any plan to plant trees should also include a plan to care for them.

“Improving the City’s Tree Canopy,” NYC Council Hearing, Committee on Parks and Recreation 6/23/2022, 1:30 PM, Hybrid

Testimony of Catherine F. Skopic

Greetings Chair Krishnan, members of the NYC Council and Committee on Parks and Recreation. My name is Catherine Skopic. I’m Chair of the Sierra Club New York City Group and Delegate to Sierra Club Atlantic Chapter.

Most people now acknowledge the importance of trees to our existence. Imagine a spectrum of understanding from the least to the fullest, deepest understanding of trees’ essential importance to us from cleaning the air, absorbing CO2 by the ton, providing foods, transpiration, offering cooling and shade, retaining water in the soil, providing drainage, literally “holding earth together.”

Wherever you are on this spectrum, consider the benefits of trees1. locally and 2. globally
1. Locally, thanks to Parks and Recreation for all the good work they do providing areas where trees are protected, cared for and for planting new trees. They also have been responsible for cutting down mature trees to meet the needs of developers in opposition to the needs of people and planet.

One such example of this is the Graniteville Forested Wetland on Staten Island where the removal of healthy, mature trees on this 19-acre wetland, home to hundreds of species of birds, mammals, amphibians, that also served to absorb excess rain during the increasing number of super storms and protecting local residents from flooding. Trees may have saved lives during Sandy. There are other examples of inappropriate tree removal.

The difference between the amount of CO2 absorbed by a tree seedling and a mature tree with full canopy is beyond the 100th degree. It takes at least 30 years for most trees to approach maturity. Do we have 30 years to halt and reverse our climate crisis? NO. So first principal - **PRESERVE, PROTECT EXISTING HEALTHY, MATURE TREES!**

Who is monitoring to make sure that healthy, mature trees are not slated for removal?

2. Globally. The climate crisis globally has caused the loss of millions of trees because of forest fire, flooding, cedar, bark and other destructive beetles thriving with warm winters. (California alone has lost 60 Million trees). Human development is destroying trees in the Amazon Forest, boreal forests across the globe, wetlands. We here in NYC. are part of the global tree assessment as well. **We need every tree we can save!** Please manage and care for our mature trees responsibly and continue to plant new ones.
Thank you.

The Horticultural Society of New York

June 23, 2022

Improving the City's Tree Canopy

INTRO

We, as city dwellers, live in a unique ecosystem. We inhabit an environment that is built for the social, physical, and cultural needs of human beings. Our network is comprised of roads, buildings, bridges, and other functional structures. Nature has a network of its own that overlaps with our city maps. This is elegantly demonstrated by the tree canopy—a green highway that exists overhead, yet has so many on-the-ground implications.

My name is Sara Hobel, and I serve as the Executive Director of the Horticultural Society of New York. As a service provider with 120 years of experience tending to the nature of New York City, The Hort would like to advocate for the importance of supporting our vital urban tree canopies.

ENVIRONMENTAL BENEFITS

The environmental benefits provided by our urban forest are innumerable. Trees provide shade, which mitigates the damaging heat island effect. Our urban forest naturally cools the air, through the process of transpiration. The canopy absorbs airborne pollutants, sequesters carbon dioxide, and intercepts particulate matter. On the ground, tree pits are mini reservoirs, helping to manage stormwater runoff.

PSYCHOSOCIAL BENEFITS

It is also without doubt that our tree canopy nurtures physical and mental health. As an organization that has pioneered and advanced the field of horticultural therapy for 30 years, we have directly observed the psychosocial benefits that trees and plants bring to communities. Access to nature reduces stress, as measured by reduced heart rate and blood pressure. Green spaces offer cultural gathering places, oases for contemplation, and powerful analogies of growth and endurance that can be applied to human life. Our tree canopy nourishes a more resilient, vital and healthy New York.

OUR ROLE

Through our work, we have observed that the trees and plants on our city streets are the primary access to nature for many New Yorkers. There are currently 650,000 trees growing on city streets. At The Hort, our crews cultivate and maintain [NUMBER] of tree pits across all five boroughs. The tree pit is the home for a tree's roots, determining whether the plant will live or die. Our crews provide water, remove weeds and waste, and install complementary plantings to sustain the holistic health of our urban forest. As this number continues to grow, we need to advocate for tree health from the ground up.

CONCLUSION

To conclude, I point to the benefits of the urban canopy that are still being discovered. Beyond providing habitat and forage for wildlife, the canopy acts an essential pathway for beneficial pollinators and birds to move throughout the city—an understudied topic that we are seeking to advance through our initiative to support native pollinators. For all the reasons known and unknown, we must bolster the quantity of trees and the quality of their care. We wholeheartedly attest that the canopy should be a City Council priority.

From: Allie Ryan <allieryan10@gmail.com>
Sent: Saturday, June 25, 2022 8:13 AM
To: Testimony
Subject: [EXTERNAL] Testimony for 6/23/2022 Parks Committee Public Hearing

Stop Chopping Down Mature Trees.

Hello my name is Allie Ryan and my family lives 2 blocks from East River Park, which is located in Council District 2, represented by Carlina Rivera. I am here today to bring a humanizing perspective to why the City policy of treating mature trees as disposable furniture must stop. I am a skin care survivor. When I was 40 years old and 7 months pregnant, I had a melanoma and a basal cell carcinoma removed. I am 48 years old and last week I had another basal cell carcinoma removed from my shoulder. I tell my children to put on sunscreen and sun hats so they don't get a 4 inch scar on their face or a five inch scar on their back like me.

Stop Chopping Down Mature Trees in East River Park.
Over the past 7 months almost 700 mature healthy 80 year old trees have been chopped down in East River Park, my family's favorite local park. FOIA requests revealed that NYC Parks foresters ok'd this destruction. As these trees were dismembered, they were immediately put through a wood chipper in front of residents. Mature trees provide expansive tree canopies that diffuse light and shade park goers. Over the past month the City has chopped down trees in the open area of East River Park, making it hard for park goers, like me, to find refuge from the sun now that summer is here. On average, a currently standing mature tree canopy in East River Park exceeds the arm span of 4 people, whereas a newly planted tree's canopy is less than the length of an arm.

If you overlay a colonial map of Lower Manhattan (https://www.thirteen.org/dutchny/interactives/interactive-map-manhattan-in-1609/) over a current flood evacuation map, you will see that it's the same coast line. (https://maps.nyc.gov/hurricane/#) You need to prohibit development at the water's edge such as 250 Water St and the four mega towers in Two Bridges Lower Manhattan. Look to the coasts of southern states such as North Carolina and South Carolina and you will see that their coast lines consist of wetlands. We need wetlands not hard edge flood walls for flood protection.

Stop Chopping Down Mature Trees.
"We used to say 50% of skin damage happened by your 20's. Now it's more like 25%," says Susan Chon, MD, "That's because people continue to be active and outdoors more throughout their life." (https://www.mdanderson.org/publications/focused-on-health/sun-damage--does-age-matter-.h28-1593780.html) According to the American Cancer Institute, melanoma is one of the most common cancers in young adults, especially women. (https://www.cancer.org/cancer/melanoma-skin-cancer/about/key-statistics.html)

The NYC Dept of Health states on their website that skin cancer is the most common form of cancer in the United States. "Every year in NYC, over 100 people die from melanoma and nearly 1,000 people are newly diagnosed. I am one of the 1,000 New Yorkers who will be diagnosed with skin cancer this year." (https://www1.nyc.gov/site/doh/health/health-topics/skin-cancer.page)

Stop Chopping Down Mature Trees.
NYC Parks needs to properly care for the trees that are already planted and in the ground. Call for an evaluation of former Mayor Bloomberg's 1 million tree initiative of 2008, 14 years ago. How did that go? Evaluate the City's current policy to treat trees like outdoor furniture and chop them down when inconvenient. (This is not unique to NYC Parks.) Evaluate NYC Parks' policy to turn chopped down trees into wood chips. New Yorkers, young and old, need mature tree canopies for shade to protect themselves from skin cancer.

Stop Chopping Down Mature Trees in East River Park.

Sincerely,

Allie Ryan
Council District 2 resident

Department of Biology

Room J526
City College of New York
Convent Ave. at 138th St.
New York, NY 10031
Tel: 212 650-6800
Fax: 212 650-8585

June 24, 2022

Dear NYC Council Committee on Parks and Recreation,

Thank you for holding a hearing on Improving the City's Tree Canopy. I was particularly pleased to see this topic on the agenda at a time when the city seems determined to eliminate so much of our tree canopy—but unfortunately, I was traveling during the hearing. I've been a resident of the East Village for 43 years, and for the last 20, a member of the Biology Faculty at the City College of New York. My career change, from artist to tropical ecologist, was largely catalyzed by my experiences in NYC gardens and parks. In my classes, I still consider NYC Parks to be our outdoors laboratories. I am deeply appreciative of their importance in education and in the daily lives of our urban population. I am also deeply distressed that, in spite of the growing recognition of the many ecosystem services provided by trees, we offer so little support for the mature individuals that are disproportionately responsible for important services that trees provide.

Decisions about land use in NYC appear to be in the hands of officials that lack a basic understanding of the environment, and I would like to make the following recommendations:

1) **Land use decisions that involve the loss of canopy should not be made solely on the recommendations of engineers. The perspectives of environmental scientists and public health advocates should have equal weight.**

   This might prevent the city from using egregious misinformation to justify their aims. In a hearing on a TRO on the ESCR project at the East River Park, the city's lawyer stated: "The whole purpose of this project is to preserve the park. The park is dying. It floods regularly. The salt water from the river… is killing everything in the park".

   This is patently absurd. The park is not flooding regularly, and the trees were not struggling to survive. One of my botany students re-measured 28 trees, selected to represent as many different species as possible, and found that, since 2015, the mean trunk diameter had increased by >2 inches (16.2 in 2015, vs. 18.3 in 2021). This is hardly consistent with the city's image of a dying park; nor is the extensive community structure, documented on iNaturalist at:
   https://www.inaturalist.org/observations?place_id=132141

2) **The city should not rely exclusively on trunk "caliper-inch" replacement rules in tree removals.**

   According to the NYC Rules Governing Tree Replacement: "In no case shall the number of replacement trees equal less than one caliper inch of replacement tree for each caliper inch of tree removed" (https://rulesofnyc.readthedocs.io/en/latest/c38/#chapter-5-rules-governing-tree-replacement). This fails to take into account that replacement saplings

will do relatively little to provide shade and lower energy costs. They do not have the extensive root systems that enable trees to recycle excess soil moisture back into the atmosphere, thereby mitigating flooding. Caliper-inch replacement rules do not reflect the importance of large canopies in capturing carbon from the atmosphere; thereby addressing the root causes of climate change.

In recognition of the important ecosystem services provided by mature trees, AG James made the following comment in response to the ESCR DEIS (10.0-119: comment 160): "the City should evaluate and use additional metrics, such as tree canopy volume, to develop an appropriate tree replacement plan, rather than simply looking at the number and trunk diameter of the existing and replacement trees."

3) **The city should have a Biodiversity Czar, to represent the interests of the non-human residents of NYC.**

   Most people living in NYC do not fully appreciate the rich biodiversity of our local parks and gardens, and don't realize how much we depend on a functional ecosystem: not just for the ecosystem services mentioned above, but for pollination, nutrient-cycling, and many other functions. Although land-use decisions are, in theory, made after public input, my experience with ESCR has convinced me that public meetings are held to check off boxes or fulfil legal obligations. Biodiversity needs an advocate within the city administration.

4) **In particular, and given the ecosystem services referenced above. the city needs a dedicated arborist to care for the safety and well-being of veteran trees.**

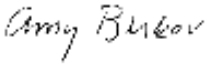
   Most of our street and park trees have potential life spans that are much longer than they will ever reach in NYC (bald cypress and Douglas fir, for instance, can each reach over 1,000 years). Tree life spans could often be extended with appropriate care. We need a shift in paradigm: away from the model of 3" replacement, to a model that acknowledges trees as living beings that provide important services, and are part of complex networks.

5) **We need an Environmental Boot-camp for policy-makers.**

   Given that the coming decades require environmentally literate policy-makers, that many of our policy-makers have urban planning degrees, and that these degrees do not focus on the environment… we should develop a month-long Environmental Boot Camp to support their professional development. (This fantastic idea was proposed by Raymond Figueroa at a recent panel discussion on Green Space and Urban Policy sponsored by Arte Loisaida Foundation and Loisaida United Neighborhood Gardens).

Thanks again for providing a platform for our suggestions on improving our NYC Tree Canopy. Please feel free to contact me with questions or comments.

Sincerely,



Dr. Amy Berkov
CCNY Biology Faculty; Director, CCNY Biology Master's Program

Dear City Councilor and anyone listening who loves trees,

I'm not here as a tree specialist or an environmentalist. I'm an east village resident for forty-five years and a poet. I write about trees quite a lot. I live near the very real very beloved East River Park or John Lindsay Park and in terms of tree canopy it's mostly gone. We lost canopy of about 700 trees, some of them 80, others even one hundred and twenty years old. I know this park intimately and so does my own City Councilor Carlina Rivera who I voted for the first time she ran. She grew up in the neighborhood and played softball in this park. She knows it and she did not fight to save it. She was looking somewhere else. That park and its tree canopy is being destroyed as I speak to protect the neighborhood from flooding and sea level rise. The park was only flooded for three hours during Sandy. The park never should have been destroyed, we should not have lost this tree canopy ever. As someone young in my group once said how do we *know* there will be any more 80-year-old trees. They should never have been cut. It's happening because it's a poor neighborhood. And what used to be East River Park is in fact is really nice piece of real estate. Or a nice consulting job for Jamie Torres Springer. A nice fundraising tool for a mayor or two. I don't trust the institution I'm addressing. We implored Justin Brannan for an oversight hearing because the original Environmental Impact Statement on ESCR

said *it's fine*. Yeah for who? We begged Corey Johnson to intervene and he said I've never heard about this before. Though he voted for it. I've never been involved in New York City politics until I decided to fight for this park and these trees and this canopy and I am still fighting. What are you willing to do for the health and the sanity of the people of New York. As a group you vote for every bad environmental plan that comes across your desk. You destroyed the wetlands in Graniteville for a big box store. You approved the development of Governor's Island, you support the people of Fort Green losing their trees. These are all poor neighborhoods. We need a Parks Department actually run by environmentalists. We need a New York City Tree Board that will not kill a single mature tree without making an informed environmental decision, not an engineering decision, not a contractor's decision. Not a developer's decision. My park was destroyed for political reasons. Now you're having an oversight hearing about tree canopy. While killing 1000 trees. Why don't you come down to the east river and take a look at what you've done. About four hundred mature trees remain in the north end of the park. If you care about tree canopy why don't you stop this clear cutting right now. Otherwise what are you doing here today. Wasting our trees and our time and our air. For what? Ask yourself that, City Council.

Truly,

Eileen Myles

Testimony in front of the City Council Committee on Parks & Recreation

My name is Anna Theofilopoulou and I have been a rent stabilized tenant of Stuyvesant Town since October 1991. I was pleased to hear that the City Council's Committee on Parks & Recreation decided to hold today's hearing on "Oversight: How to Improve the City's Tree Canopy and invited New Yorkers to testify; something that was long overdue.

As some of you may know, in May of this year, the Mayor's office on Climate and Environmental Justice, together with other City Government offices organized a "Treebinar: Safety and Resiliency Under the Urban Canopy". However when I and other participants asked how could the City reconcile the Treebinar's message about the importance of tree canopy for environmental resilience with the destruction, taking place at that very time, of mature trees in both the East River and the Corlears Hook parks under the East Side Coastal Resilience (ESCR) plan, the Treebinar organizers, even those from the Parks Dept., told us that they could not answer our questions because nobody from the City's Dept. of Design & Construction was present. One panelist offered to follow up on our questions if we emailed him. I and others did, asking for a relevant contact in the City Parks Dept. I received an acknowledgement to my email, but no other response to-date.

Currently, again in the name of coastal resilience, the City is rushing to destroy trees in the Wagner Park of Battery Park City, which was not even affected by hurricane Sandy due to its elevation. And plans are still under way to continue destroying, as part of ESCR, the remaining trees and shrubs of the north part of East River Park despite the painfully obvious failure by the contractor to adequately address the unhealthy, toxic fumes emanating from the dug up ground after the demolition of old structures and careless excavations in the southern part of the East River Park.

Being an over 30 years resident in Stuyvesant Town, I experienced firsthand in 2006 when the property was purchased by the private developer Tishman & Speers, what it means to have a large number of healthy, mature, over 50 years old trees chopped down and replaced by small saplings. Living in Stuyvesant Town means literally living inside a park, surrounded by mature trees, shrubs and flowers, where birds, small animals and insects also live. But when the City, under then Mayor Bloomberg, adopted a program offering financial rewards for every new tree that building owners and landlords planted, our landlord started cutting healthy, mature trees and replacing them with a large number of tiny saplings, planted literally on top of each other.

Clearly, this was not what the City had in mind, however this was the unintended consequence of a not well thought-out City decision. The cool and fresh air inside the Stuyvesant Town park that residents had been enjoying in the summers as soon as they came out of their often non-air-conditioned apartments, was transformed into the usual hot blast of air that most New Yorkers, especially those living in less affluent neighborhoods experience. To-date, the then planted saplings still remain tiny and weak compared to the older mature trees.

So I am asking this committee a simple question: What is the connection, responsibility and accountability between City Departments which preach and seek to educate the public about the

importance of tree canopy for heat mitigation, public health and overall environmental benefits and those currently employing and overseeing a contractor destroying existing tree canopy under ESCR in the southern part of East River Park and adjacent communities in the LES and EV?

Is there any coordination between the different agencies, City government departments and the appropriate committees of the City Council, between those "preaching" about the importance of tree canopy with those who go right ahead destroying it, ignoring both science and the wishes of the affected communities?

On paper, there is a long bureaucratic process to obtain permits for tree cutting. In reality, as we have witnessed firsthand, City contractors and even the Con Ed working in East River and Corlears Hook parks, are destroying mature trees for as flimsy reasons as temporary parking, or temporary roads to facilitate the contractors' work.

The majority of City residents are well aware of the importance of tree canopy and this is obvious by the heavy park use everywhere in the City, but especially in communities living in environmental injustice neighborhoods. One does not need a degree in environmental science to know that **tree canopy is provided by mature trees, and not the saplings that City officials at all levels seem to be touting currently as the answer to the excessive heat already plaguing NYC**.

So my plea to all politicians, including the Chairman of this Committee is: Please stop reminding us of the importance of tree canopy for our physical and mental wellbeing, we know. Instead, please take urgent, real action to stop the tree destruction by the City itself, currently happening!

Thank you.

Testimony in front of the City Council Committee on Parks & Recreation

Thank you Chairman Krishnan for organizing these much needed hearings.

I will start by asking this committee **a simple question**: What are the **connections, responsibilities and accountability** between City departments that seek to educate us about the importance of tree canopy for heat mitigation, public health and environmental benefits and those which currently employ and oversee contractors who destroy existing healthy, mature tree canopy, under the East Side Coastal Resilience (ESCR) plan, in the southern part of East River Park and adjacent NYCHA communities, such as Baruch Housing as previous witnesses mentioned, in the LES and EV?

Is there any **coordination** among the different agencies, City departments and committees of the City Council, between those who "preach" about the importance of tree canopy and those who are destroying it?

In May of this year, the Mayor's office on Climate and Environmental Justice, together with other City Government offices organized a "Treebinar: Safety and Resiliency Under the Urban Canopy". However when I and other participants asked how could the City reconcile the Treebinar's message about the importance of tree canopy for environmental resilience with the destruction taking place at that same time, of mature trees in both the East River and the Corlears Hook parks under ESCR, the Treebinar organizers, even those from the Parks Dept., told us that they could not answer our questions because nobody from the City's Dept. of Design & Construction was present.

And now, again in the name of coastal resilience, the City is rushing to destroy healthy trees in the Wagner Park of Battery Park City, which was not flooded by hurricane Sandy due to its elevation. And the City contractors still continue to destroy the remaining 300-400 trees in the north part of East River Park, despite their obvious failure to adequately address the unhealthy, toxic fumes emanating from the ground after the careless excavations and demolitions of old structures in the southern part of the East River Park.

On paper, there is a long bureaucratic process to obtain permits for tree cutting. In reality, as we have witnessed firsthand, the City contractors and even ConEd, working in East River and Corlears Hook parks, are destroying mature healthy trees for flimsy reasons such as temporary parking, or temporary roads to facilitate the contractors' work.

In today's hearings, both Council Members and representatives from the Parks Dept. talked about the need for tree planting, expenses related to it, longevity of the new saplings, but not a word about stopping the City from destroying its own mature, healthy trees.

New Yorkers know about the importance of tree canopy. You don't need a degree in environmental science to know that tree canopy is provided by mature trees, and not the saplings that City officials are touting currently as the answer to the excessive heat already

plaguing NYC. You can tell that by the large number of residents using parks, especially those living in low income, environmental injustice neighborhoods.

The argument used by the Parks Dept. and parroted by politicians and others "We'll replant for each tree cut down" sounds good but it is **grossly misleading**. Trees take decades to reach big tree status. What is taken away in canopy, carbon storage, wildlife habitat, and more in hours, will take decades to replicate. That is an irrefutable fact.

So my **plea** to all politicians, including the Chairman of this Committee is: **Please stop reminding us of the importance of tree canopy for our physical and mental wellbeing. We know. Instead, take urgent, real action to stop the tree destruction by the City itself, which is happening right now!**

Thank you.

Anna Theofilopoulou

From: Carolyn Ratcliffe <nymagnolia@gmail.com>
Sent: Thursday, June 23, 2022 6:35 PM
To: Testimony
Subject: [EXTERNAL] Need for mature tree canopies to fight climate change & heat island impact

My name is Carolyn Ratcliffe and I live on East 9th St. between Ave.s B&C. My neighborhood was inundated with Sandy and we were w/o electricity for a week. Our basements were flooded and boilers damaged, The response by the City/State to help people who lived on the side streets east of Ave. A was minimal to non existent. Neighbors helped one another to pull through. It is not an experience I would like to repeat. However the ESCR plan that has been rammed through as a resolution to any forthcoming 100 year flood events and climate change is in my opinion a disaster in the making. Rather than using the park as an absorbent sponge to put the water back in the East River, they have chosen a cement laden alternative that will increase the heat island impact on the LES.

Mature Trees absorb rain water and their canopies shelter us from the heat and reduce the use of electricity by 15percent according to some studies during hot spells. The destruction of 1000 mature trees in East River Park in the name of surge/flood protection is an ongoing disaster. Creating a park on a cement platform with 60% hard surface, with stainless steel amenities and trying to say that 1800 3.5" saplings will replace 1000 mature trees with significant shade canopies is endangering all of the residents of the LES. The 30' piles of soil dumped in East River Park are uncovered. The winds off the river blow the fine dust and particulate matter into the windows of all who live here. It exacerbates asthma and allergies.

How can NYC say that it espouses creating a shade canopy when policy decisions are made that totally negate that premise? Have you looked at what is being done in the name of flood protection that is destroying natural ecosystems that mitigate both climate change and the impact of heat island impact?

I ask that you stop the destruction of East River Park and the proposed cement platform south of Battery Park. These "engineering marvels" are not based on climate friendly solutions and will only add to NYC's problems in the long run. It will cause numerous health issues for those who live adjacent to these areas with increased heat and particulate matter. Please intervene and look for more climate and environmentally friendly solutions for all of our sakes.

Sincerely,

Carolyn Ratcliffe

Sent from my iPhone

If you care about the "tree canopy" stop killing trees.

I challenge all of you to stop the tree slaughter that is happening now in East River Park and is planned for other disparate neighborhoods—

Since December 7 close to 700 mostly mature healthy trees have been killed and mulched on the spot.

This is an abomination. This is an environmental disaster. Half of a resilient sponge of a park has been completely decimated. It is a wasteland waiting for the next superstorm.

If you are concerned about the tree canopy **change** this project now. It is NOT too late. Over 400 mature healthy trees are still alive.

Who wants all those trees to be gone? Not the people who live here.

The canopy right now in what remains of East River Park is magnificent. It is a success. There are birds and squirrels and bugs that testify to that success. And people. And children playing.

It is all of your jobs to protect nature, to protect these trees and you are failing miserably. You **must** consider the existing 83 year old trees in your decisions. Consider trees.

Environmental concerns need to be integrated into every administration every body, every agency. Parks commissioners must be an environmentalist with sound environmental knowledge not someone with experience in business or commerce. Outside environmental experts are not enough to counter your murderous ignorance that endangers **all** of our lives.

If you want a tree canopy start by preserving the one you've got. We have many healthy 80 year old trees in this city doing a fabulous job for all of us— stop killing them.

Trees have to be considered when you plan anything. Any development and park redesign. Build around trees. Protect trees. Consider trees. They are not furniture and are not replaceable.

All of these city agencies are full of people who are ignorant about the environment. They see a tree as an obstacle to construction. They don't know or care that the tree is alive or what it does for them. This ignorance has to change. Environmental knowledge has to be transversal. We cannot have decisions being made every day, like the 11 people in the room who changed the plan for East River Park, by people who do not know or do not care about the environment.

Who chose this ecocidal plan? Seven engineers, one landscape architect, and two cost estimators at a construction company. Not one climate scientist, not one environmentalist, not one person with knowledge of environmentally sound flood protection, not one community member. **No representation at all from those most affected by the plan.**

Given the grip that real estate developers have on this city and on all of you I'm skeptical of your motives in even having this meeting.

challenge positive policies that protect trees

Harriet Hirshorn
Clinton Street,
New York, NY 10002

If you care one iota about the “tree canopy” stop killing trees.

Educate yourselves about trees and the importance of nature in our city— now more than ever— . This is a climate emergency. The trees can help save us. Not just generally but quite specifically.

I challenge all of you to stop the tree slaughter that is happening now East River Park and is planned for several other disparate neighborhoods—

Since December 7 close to 700 mostly mature healthy trees have been killed and mulched on the spot.

This is an abomination. This is an environmental disaster. Half of a resilient sponge of a park has been completely decimated. It is a wasteland waiting for the next superstorm.

If you are concerned about the tree canopy stop this project now and change it. It’s never too late. Almost 400 mature healthy trees are still alive.

Who wants all those trees to be gone? Not the people who live here. We want them to stay. We appreciate their beauty and their shade. The canopy right now in what remains of East River Park is magnificent. It is a success.
There are birds and squirrels and bugs that testify to that success. And people and children playing.

It is all of your jobs to protect nature, to protect these trees and you are failing miserably. You must consider the existing 80+ year old trees (and not lie to journalists and say they’re sick—) in your decisions. Consider trees.

Environmental concerns need to be integrated into every administration every body, every agency. Outside environmental experts are not enough to counter your murderous ignorance that endangers all of our lives.

In france there are laws that dictate how building can take place— strict environmental calculations about how much concrete can be added and how many square meters have to be returned to earth. Cutting down a tree is a negotiation and the builder will have to pay a tree tax based on how old the tree is. Urban planners and architects are forced by law to consider trees in their plans and decisions.

If you want a tree canopy start by preserving the one you've got and taking it very very seriously. We have many healthy 80 year old trees in this city doing a fabulous job for all of us— stop killing them.

Trees have to be considered when you plan anything. Any development and park redesign. Build around trees. Protect trees. Consider trees.

All of these city agencies are full of people who are ignorant about the environment. They consider a tree is an obstacle to construction. They don't even know the tree is alive or what it does for them. This ignorance has to change. Environmental knowledge has to be transversal. We cannot have important decisions being made every day, like the 11 people in the room who changed the plan for east river park, by people who do not know or do not care about the environment.

At that meeting not one person was a a climate scientist, not one was an environmentalist, not one had any knowledge of environmentally sound flood protection projects that are far superior to this terrible monstrosity that they are now building. The decision to kill east river park was made by 11 engineers and one construction manager. I'm pretty sure they were mostly white men.

Harriet Hirshorn

Lucy Koteen
Lafayette Ave
Brooklyn, NY 11238
lucy.koteen@gmail.com

My name is Lucy Koteen and I have been working with residents city wide to save trees and the natural environment. Today I am not only speaking for myself but I am also speaking for the NYC group of the Sierra Club. The NYC group consists of over 15,000 members across the five boroughs of our City.

There has been much discussion over the years about increasing tree canopy.
At this point everyone should know the importance of trees, **large** trees that is, not saplings, as being one of the most important elements in sequestering carbon, in reducing the heat island effect, in cooling the air, in reducing electricity costs for air conditioning, in decreasing asthma and other respiratory diseases, in improving mental and emotional health, in reducing stormwater runoff, reducing stress and serving as a home for birds and other animals. It has been well established that wealthier communities have more tree coverings than lower income communities. **We also know that urban trees are disappearing around the country!**
I have included several links to articles that are included here for all of you to read later and I hope you all do. But I want to start with what is on the Parks Dept's website which lists the benefits of trees yet does not protect and maintain our trees.

From the Parks Dept Website:

-A large, healthy tree removes almost **70 times more air pollution** each year **than a small, newly planted tree**.
-London plane trees **remove more than 77 tons** of air pollution each year, over one-quarter of all pollutant removal by
-NYC's trees.Each year **272 tons**—the equivalent of 40 adult elephants—of **air pollution are intercepted** or absorbed by trees in NYC
-Average **electricity and natural gas cost savings** in NYC are $47 per street tree
-Each year **313 tons of air pollution** are avoided because of energy savings resulting from reduced emissions
-The average street tree in NYC **intercepts 1,432 gallons of stormwater** each year; all our street trees capture **890 million gallons** per year.

This means that the most important thing is preservation and conservation of large trees.

Knowing all this, why has the city removed so many large healthy mature trees? And without scientific justification. Here are some of the places where trees have been removed:

-Almost 1000 trees slated in East River Park, destroying every living thing in the park supposedly to save the area from flooding. 700 already cut down.
-1800 trees in the Graniteville Wetlands to build a BJs, a parking lot and a gas station
-200 trees at Baruch housing

-removal of about a dozen century old parkland trees at Roosevelt Park

-40-50 healthy trees at Manhattan Beach

-The state removed approximately 2,000 large trees at the Kew Gardens Interchange Grand Central Parkway widening project.

-Many large street trees have been removed without authorization denying communities of the benefits of their large canopies.

-The Parks Dept under Commissioner Mitchel Silver planned to remove 83 mature trees in Fort Greene Park. Halted for the moment by a Sierra Club and community lawsuit. But still being planned. The Parks Dept could stop this destructive plan now instead of wastin $24 million on a horrible plan. Use the money for much needed maintenance.

-The City now plans to demolish the elevated pristine green space of Wagner Park by Battery Park City.

A lawyer and vice president of The Battery Alliance stated-

"During Hurricane Sandy, it did not flood. It was on high ground," he added. "The notion that you need to spend several hundred millions of dollars to tear up one of the most beautiful parks in all of New York City in order to reconstruct it strikes us as a bit of a scam."

https://www.thecity.nyc/2022/5/16/23070850/battery-park-plan-destroy-green-space-resiliency
http://www.tribecatrib.com/content/goodbye-todays-wagner-park-two-years-resiliency-redo-lies-ahead#:~:text=That%20work%20is%20expected%20to,and%20gardens%20and%20dramatic%20vistas.https://www.thecity.nyc/2022/5/16/23070850/battery-park-plan-destroy-green-space-resiliency

The city council should focus on maintaining our urban forest and not just focus on new trees that have a low expectation of survival and take decades to give full benefits to communities.

Furthermore, underlying reports, when Foiled for the East River Park project and Fort Greene Park when released, were heavily redacted by the relevant agency denying the public the underlying information for the decisions that were made. Advocates were then forced to go to court and pay a lawyer to get the unredacted report. These reports are paid for with tax dollars supposedly for the benefit for the taxpayers.

A few of the recommendations of the Sierra Club:

1. Create an Environmental Warden: Enact legislation that creates an independent agency with dedicated financing that will protect the trees and the natural environment. The position must be independent of the Mayor's office and all City Agencies. The clients for the warden are the city trees and the natural world. Tree damage and removal is commonly seen in development areas and in parks. The Warden oversees that native and salt water resistant plantings be phased in and become the default in areas likely to flood. Create an equivalent to 911 number for contact.

2. Transparency: Require All Agencies to publish all studies and reports on their websites and other relevant publication sites. There must be full transparency of how tax-payer money is used by agencies. Taxpayes should not have to Foil and go to court to get what belongs to them.

3. Trees and Tree Risk Assessment: If Parks Department's Forestry Department is removing trees it can only occur if a Tree Risk Assessment has been performed and that the tree is in imminent risk of injuring people or damage to property and utilities. No tree should be removed without inspection by a certified arborist assessing its condition.

4. Global Best Practices: In building out climate protecting infrastructure the City must seek best environmental and climate mitigation practices from around the world. The preservation of land and water animals, insects and green infrastructure need to be designed into all projects.

5. Inclusion of Climate Mitigation infrastructure: All new construction must include climate mitigating elements such as solar panels, green roofs, green walls, rain gardens, rainwater collection systems, plantings that invite diverse species of insects and birds.

Please read the links including the **2006 document** from the U. S. Forest Service that discusses a goal of achieving 30% Urban Tree Canopy cover by **2030**.Written 16 years ago. Please read these documents and articles to add to my testimony.

http://citeseerx.ist.psu.edu/viewdoc/download?rep=rep1&type=pdf&doi=10.1.1.222.8693
SUMMARY On April 12th, 2006, the New York City Department of Parks & Recreation requested that the U.S. Forest Service conduct an analysis of existing urban forest data for the City of New York. The analysis also considered issues associated with the possibility of achieving a goal of 30% Urban Tree Canopy (UTC) cover by 2030: "30 by 30." This goal is based upon Lulely and Bond's (2002) **analysis and recommendation that New York City increase UTC by 10% (a 30% UTC goal)** in order to significantly mitigate ozone related air quality in the City.

Survival Rate of New Plantings

An arborist pointed out that soon after NYC Parks' two-year warranty, 9 out of 10 newly planted saplings died on Ashland Place next to the Brooklyn Hospital.

City trees can offset neighborhood heat islands, Concordia researcher says

A new study shows that **enough canopy cover** can **dramatically reduce urban temperatures**
However, she also notes that **the leafiest areas** tend to be disproportionately in **wealthier neighborhoods**. She would like to see planting distributed more equitably as well as rationally.

Planting **trees in lower-income neighborhoods** would not only help **lower temperatures**, it would also contribute to the **physical and mental health** of the people living there.

How High Heat Can Impact Mental Health

For the nearly **1 in 5** adults who experience **mental illness**, **heat can be dangerous**, according to Ken Duckworth, medical director for the National Alliance on Mental Illness.
"Heat is hard on human beings. **Extreme temperatures** are hard on human beings," Duckworth said. "The particular vulnerability is if you're taking psychiatric medicines, that can actually **make the condition higher risk** for you."

America's Urban Trees Are Disappearing

Urban and **community areas** in the United States are **losing their trees**, according to a new study conducted by the U.S. Forest Service. And this loss is happening at a fast clip—the study finds that, overall, these areas lost around 175,000 acres of tree cover annually between 2009 and 2014. This loss, Forest Service researchers say, equates to the **disappearance of some 36 million trees every year**.

Trees help prevent asthma, respiratory diseases, study says

The amount of tree cover had a significant impact on the levels of nitrogen dioxide in an area and the respiratory health of the residents in that area.

Specifically, the study concluded, because of the city's **existing tree canopy**:

- Children aged 4-12 avoided missing 7,380 school days due to asthma attacks.
- People of all ages avoided 54 asthma-related emergency room visits.
- There were 46 fewer hospital stays for people older than 65 because of respiratory illness.
- All together all those health benefits equaled $6.6 million in savings

https://nypost.com/2019/04/27/uproar-after-city-slaughters-hundreds-of-trees-at-nycha-housing-project/

Uproar after city slaughters hundreds of trees at NYCHA housing project

Chainsaw crews have taken down more than **200 mature hardwoods** at the Baruch Houses on the Lower East Side

How Trees Act As NYC's "Natural Air Conditioning Units"

Throughout the city, tree canopy helps to cool down areas during heat waves. Of course, not all parts of the city are created equally. "Neighborhoods with a majority of people in poverty have 25 percent less tree canopy on average than those with a minority of people in poverty"

Study: The More Trees We're Surrounded By, The Lower Our Stress Levels

Lining city streets with trees reduces physiological symptoms of stress in humans. **The thicker the tree cover, the lower the stress levels**, study finds.

https://www.scientificamerican.com/article/trees-are-missing-in-low-income-neighborhoods/

Trees Are Missing in Low-Income Neighborhoods

More tree cover would lower disproportionately high levels of heat and pollution

https://www.nytimes.com/2021/07/02/climate/trees-cities-heat-waves.html

What Technology Could Reduce Heat Deaths? Trees.

"Trees are, quite simply, the most effective strategy, technology, we have to guard against heat in cities,"

"Countless new developments where trees were in the way. These are often mature trees whose canopy will take decades to replace."
"It's a challenge to get trees to thrive in the city,"
"In addition to reducing heat, trees filter out air pollution, suck up storm water, store carbon, nurture wildlife and even improve people's mental and physical health."
"A tree's shade, that sweet relief from solar radiation, is only part of its cooling power. Trees also evaporate water, pulling it from the ground and releasing it into the air through their leaves. That's why walking through a forest, or just sitting in a playground surrounded by several large trees, feels more refreshing than the shade of a lone tree."

"Carefully positioned trees can reduce a home's energy costs by 25 percent, according to the Department of Energy. Nationwide, urban trees offer an estimated $18.3 billion in air pollution removal, carbon sequestration, lowered energy use in buildings and reduced emissions from power plants."

"Trees also block wind, reducing the force of storms."

"One major challenge is persuading property owners, who own a large share of the land in cities and towns, to plant and maintain trees in their yards. It's important to choose the species carefully. Large shade trees offer more cooling and carbon storage than small ornamentals. For wildlife, oaks are usually the best bet, according to Doug Tallamy, a professor of entomology at the University of Delaware. They feed more than 900 species of caterpillars, which, in turn, feed birds, whose populations have plummeted."

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0215846

Street trees must survive for **several decades** (26–33 years; [27]) **to attain carbon neutrality**.

NYS DOT March 2019 too Present

Approx 2,000 parkway trees (NOT proposed 600) removed at the KEW GARDENS INTERCHANGE GRAND CENTRAL PKWAY WIDENING PROJECT. Most large trees installed in the 1940's.

https://www.qchron.com/editions/queenswide/hundreds-of-trees-cut-down-by-state/article_ed379d2c-db5f-589b-b139-a47a2316ae04.html

https://www.qchron.com/editions/central/highway-plans-will-uproot-600-trees/article_68bcef9e-9f17-52d1-89f2-ce8c66e62d2f.html

Queens Boro Hall Cherry Tree Massacre 2012.

http://awalkintheparknyc.blogspot.com/2012/08/tree-massacre-at-queens-borough-hall.html

http://awalkintheparknyc.blogspot.com/2012/04/queens-bp-changes-story-on-reason-for.html

From: Marcella Durand <durandmarcella@gmail.com>
Sent: Wednesday, June 22, 2022 12:47 PM
To: Testimony
Subject: [EXTERNAL] Improving the City's Tree Canopy testimony

To members of the New York City Council Committee on Parks and Recreation,

Thank you for the opportunity to testify regarding improving the city's tree canopy.

I live in East River Cooperative Housing in the Lower East Side with my husband and son. We moved here one week before Hurricane Sandy hit. We lost electricity and water, so we had to leave our new apartment to stay with a friend in Brooklyn until water and electricity were restored.

Once we settled in, we realized what a wonderful resource East River Park was one block from our home. I was interested to learn about plans to improve the park and include flood control, which seemed at the time a win-win situation. During the pandemic, my family and I took up birdwatching in the park, where I was surprised to discover so many migratory species passing through the mature trees, especially the pin oaks around the amphitheatre. I can honestly say this outdoor family activity kept us sane during the stress of the pandemic.

In 2018, I was sorry to learn that the plan to improve the park changed to a plan to destroy it all then re-cover it with 8 feet of fill and install a "new" park, involving the loss of close to a thousand trees, which started December 2021 and since then, has not stopped.

The loss of all of these trees has been painful, and that emotional impact has been magnified by how little mitigation or compensation there seems to be to make up for that loss. I cannot reconcile what the city and environmental nonprofits are saying about the value of tree canopy with what has happened before my eyes in my own neighborhood. During the last 7 months, it seemed that if a mature tree that provided shade, fresh air and wildlife habitat stood in the way of even minor aspects of ESCR, such as parking for construction vehicles or a new flagpole design, it was chopped down without seemingly a second thought. Trees seemed to fall last on the list of priorities for ESCR, which again, is hard to reconcile with all of the data coming out on the value of trees in cities.

The tree loss seems to be endless and ongoing. Next for the chopping block may be two beautiful old magnolia trees in Corlears Hook Park that have the misfortune to be on the edge of the new flagpole design--yet another "improvement" that doesn't seem to have anything to do with flood control. In the meantime, I see many empty tree pits in the area and long stretches of hot shadeless sidewalk on Grand Street and other neighboring streets. Some trees that were planted, such as the line of baby oaks on Broome Street near Clinton Street, are already dead. Will their replacements be counted in the number that is supposed to be planted in compensation for ESCR? And will their replacements die as quickly due to lack of care in their planting?

The number of trees to be planted in my district to counterbalance ESCR's tree loss has already been diminished and diluted by expanding the ESCR-related tree plantings to other districts. Will the promised tree plantings turn out to be yet more promises broken, like the promise to keep 42% of the park open at all times, or to transplant small trees and shrubs to neighboring parks and gardens instead of just killing them and sending them to a landfill. Or will it be more like how most of the trees around the passive lawn at the Corlears Hook ferry stop were cut down recently without notice or explanation and ahead of schedule, and that lawn cut down to one third its original size?

I feel acutely how little my family's well being and our need for green space, shade and fresh air has seemed to matter to the city thus far, and how poorly our neighborhood has been served, compared to areas like the West

Village, which has plenty of tree canopy and no active threats to its mature trees or park areas. At this point, I urge visible and timely recognition of the massive tree loss in the area, including the mature trees cut in nearby NYCHA campuses, and immediate expansion and implementation of tree plantings, which will not truly replace the mature trees lost, but will at least be the start of true, actual mitigation. Moreover, I urge for care and thoughtfulness with new tree plantings to ensure those baby trees have at least a fighting chance to become mature trees like the ones they are replacing.

Thank you,

Marcella Durand

Dear NYC Council Committee on Parks and Recreation,

Thank you for holding a hearing on Improving the City's Tree Canopy. I was pleased to see this topic on the agenda. My name is Rita Garcia. I'm a pragmatic idealist. I hold a Masters in Nonprofit Management from Milano School of Policy, Management and Environment at New School University, and I am a daughter of immigrants and a lifelong resident of New York City. I grew up in Spanish Harlem and now live in the East Village. I am testifying on behalf of myself in defense of the animals and trees of East River Park.

With the rest of the world planting trees, promoting open green spaces as resilient flood protective sponges and increasing access to nature and biodiversity NYC is EMBARRASSINGLY going in the EXACT opposite direction. If/when the ESCR project is ever completed NYC leaders will be the laughingstock of how cities should NOT handle climate change.

East River Park (ERP) is a slice of heaven for children who live in the Lower East Side. It is difficult to access nearby natural areas. The closest thing to a park is Central Park (too far). ERP is our backyard. We need to conserve and nourish these biodiverse areas instead of destroying them to only rebuild them at high cost. Access to "real" nature needs to be accessible 24x7! And "real" nature is not some architect's glossy idea of hotel courtyards, small sapling islands and boxed off planters in a park that is more asphalt and artificial turf than real grass, mud and sand.

As an inner-city child who grew up in Spanish Harlem, I grew up playing on asphalt hardscape instead of the lush untouched area that East River Park houses. As a result, I failed to form a bond with nature that we as humans often find essential to our existence. Without access to a "real" park, children are unable to learn about the beneficial aspects of pollinators and the cooling impact of urban trees and grasses in the city. The new park will NOT be the living out-door laboratory it once was. Where will the children learn about soil, hydrology, and biology?

And particularly, for girls, green space immediately outside the home can help them lead more effective, self-disciplined lives (Faber Taylor et al., 2001; Faber Taylor et al., 1998). Your inaction will ultimately contribute to lower levels of self-discipline, and potentially to higher rates of negative outcomes for NYC Housing Authority (NYCHA) children. These three forms of self-discipline may play key roles in the likelihood of such negative outcomes as academic underachievement, juvenile delinquency, and teenage pregnancy. Without access to their biodiverse park, you are depriving NYCHA children of a much-needed resource for self-discipline for the psychological capacities that lead to a brighter future.

By not doing ANYTHING to help this park canopy survive you are complicit in destroying the only real park/access to nature the children of this community have in downtown Manhattan. You are complicit in denying thousands of children access to shade, open and cool green space. Without the healing properties of trees and vegetation a community suffers from increased crime, reduced physical and mental health and high asthma and respiratory and heart disease.

Sadly, the most affected by the destruction of ERP are the animals (the squirrels) who are trapped between the river and the FDR drive (9.6-mile parkway) and will have nowhere to go once every tree is cut down. The lack of foresight and compassion exuded by NYC Parks, Forestry, Urban Rangers, and the DDC Community Liaisons has been astonishing. No one

seems to understand or care that the squirrels are losing their habitat and will have nowhere to live. These animals were never considered in this major construction plan, and they have been abandoned, much like the children. In addition to that there are no plans to humanely relocate them to a new park or to address the issue of displacement due to the entire park being destroyed.

I have been advocating for the animals and trees of East River Park for 8 months. Do you know how frustrating it is to see the city government and nonprofits preaching and seeking to educate the public about the importance of tree canopy (for heat mitigation, public health, and overall environmental benefits) **YET** at the same time destroying the existing tree canopy in a disadvantaged community of color? It doesn't make any sense.

So not only have you abandoned the children of this neighborhood, but you have also abandoned the wildlife that the children need for a connection to nature. By demonstrating your lack of respect for the wildlife and natural environment of ERP you are setting a poor environmental example that I certainly hope the children of our community do not follow.

On a hot summer day whenever I am in East River Park, most people (besides the runners, soccer players) are crowded under all the remaining trees and their (tree) canopy. The park is a refuge, but without proper tree canopy people will overheat and no longer feel comfortable going to the park. Why are you allowing the city to destroy hundreds of mature trees? Why are you OK with their answer that they will replace these 100-year-old trees with more trees? Why are we OK with spending money to destroy existing tree canopy and then replanting individual saplings that won't provide shade for many years to come!?

Is there any coordination between the different departments of the City government, including the appropriate committees in City Council between those "preaching" the importance of tree canopy with those who go right ahead destroying it, while ignoring science and the wishes of the local community? The pain and suffering of this community are your legacy and will be your downfall. There was a MUCH better, more ecologically and scientifically sound community approved plan that increased the green space and access to natural biodiverse spaces that was thrown out while you sat idly, but you choose to ignore science and the sound advice of ecologists and let this disaster play out on the most impoverished neighborhood in NYC.

We look to OUR leaders to make innovative and progressive decisions that take a 360-degree look at all the related environmental impacts. There is NO longer ANY wiggle room for poor environmental decisions especially as they pertain to finite and precious resources that are not renewable. So do what you came to the city council to do, be a REAL representative for the people. Question the system, the authorities, and these ill-conceived plans. Be a humble servant for your city. Do not let them destroy the rest of this park! **Fight for the existing canopy of the mature trees at East River Park!**

Thank you for providing a platform for our concerns and suggestions on improving our NYC Tree Canopy. Please feel free to contact me with questions or comments.

Sincerely,
Rita Garcia

Reference: Faber Taylor, A., Kuo, F. E. & Sullivan, W. C. (2002). Views of Nature and Self-Discipline: Evidence from Inner City Children, 60-61

Journal of Environmental Psychology (2002) **22,** 49–63
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Journal of ENVIRONMENTAL PSYCHOLOGY

VIEWS OF NATURE AND SELF-DISCIPLINE: EVIDENCE FROM INNER CITY CHILDREN

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Abstract

Children growing up in the inner city are at risk of academic underachievement, juvenile delinquency, teenage pregnancy, and other important negative outcomes. Avoiding these outcomes requires self-discipline. Self-discipline, in turn, may draw on directed attention, a limited resource that can be renewed through contact with nature. This study examined the relationship between near-home nature and three forms of self-discipline in 169 inner city girls and boys randomly assigned to 12 architecturally identical high-rise buildings with varying levels of nearby nature. Parent ratings of the naturalness of the view from home were used to predict children's performance on tests of concentration, impulse inhibition, and delay of gratification. Regressions indicated that, on average, the more natural a girl's view from home, the better her performance at each of these forms of self-discipline. For girls, view accounted for 20% of the variance in scores on the combined self-discipline index. For boys, who typically spend less time playing in and around their homes, view from home showed no relationship to performance on any measure. These findings suggest that, for girls, green space immediately outside the home can help them lead more effective, self-disciplined lives. For boys, perhaps more distant green spaces are equally important.

Introduction

Children growing up in the inner city are at risk of academic underachievement (Brooks-Gunn, 1986), juvenile delinquency (Berrueta-Clement, 1984), teenage pregnancy (Furstenberg, 1976), and other important negative outcomes, with profound consequences for themselves, those around them, and society. Outcomes such as these often reflect failures of self-regulation, or self-discipline (Baumeister *et al.*, 1994). Could a feature of the physical environment affect inner city children's capacity for self-discipline, and as a consequence, play a role in these outcomes?

This paper explores whether children's self-discipline might be enhanced by contact with nature. Previous research suggests that natural settings and views can help renew the psychological resource used in deliberately directing attention. It has been proposed that self-discipline draws on this same resource (Kuo, 2000); if so, we would expect self-discipline to decline when this resource is depleted or fatigued, and we would expect self-discipline to improve when this resource is renewed. Thus, regular contact with natural settings and views might be expected to enhance children's capacity for self-discipline on a day-to-day basis.

To test this possibility, this study tested for links between the view from home and three forms of self-discipline in children. Specifically, it examined whether, in an inner city neighborhood, children with 'greener' views from home were better able to concentrate, inhibit initial impulses, and delay gratification.

Three forms of self-discipline

Concentrating, inhibiting initial impulses, and delaying gratification are each distinct and important forms of self-discipline. They are distinct forms of self-discipline in that each involves overriding different, unhelpful tendencies. And they are important in that each seems likely to play a pivotal role in the course of a young person's life. More specifically, each seems likely to play an important role in negotiating the risks faced by inner city children:

academic underachievement, juvenile delinquency, and teenage pregnancy.

Concentrating requires overcoming the tendency for the mind to wander, and sustaining attentional focus despite distractions, boredom, frustration, or fatigue. As it involves directing one's thoughts to the topic at hand, concentration is the form of self-discipline that most clearly draws on our capacity to deliberately direct attention. The ability to concentrate is important because it enables an individual to mentally 'buckle down' and stay on a task long enough to make progress and be effective. It also seems to enable an individual to complete tasks more quickly. In children, chronic or acute deficits in concentration could result in valuable time spent in less-than-effective ways. A child too mentally fatigued to concentrate might spend countless hours in front of books and assignments, yet learn very little due to their inability to focus on the task at hand. Indeed, inattentiveness is a significant predictor of academic underachievement (e.g. Mantzicopoulos, 1995; Rowe, 1992).

Inhibiting initial impulses[1] requires overcoming the tendency to jump to conclusions or to act on impulse. It involves overriding one's initial response to a problem or situation, in order to consider alternatives or consider the potential costs and benefits of a course of action. The ability to inhibit initial impulses is important because it gives rise to more prudent and cautious choices, and consequently, more prudent and cautious actions. Chronic or acute deficits in a child's ability to inhibit impulses can have serious, negative long-term repercussions. For example, a child too mentally fatigued to inhibit impulses is more likely to give in to repeated offers of a lit cigarette or other dangerous substance. A diminished capacity to inhibit impulses could also cause a child to accept a dare to jump from one balcony to the next, or to snatch an elderly woman's purse. Consistent with this, impulsivity is consistently linked with risky behavior (Donohew *et al.*, 2000; McCoul, 2000), aggression and violence (e.g. Hynan & Grush, 1986; Markovitz, 1995), and delinquency (Lynam, 2000; Rigby, 1989; White, 1994).

Delaying gratification requires overcoming impatience and the tendency to favor short-term rewards over long-term goals. It involves internalized standards and morals. The ability to delay gratification is important because reaching future goals often requires postponing immediate rewards. It assists the individual in persisting at goal-oriented behaviors for the good of their future. Even a temporary deficit in the ability to delay gratification can have major repercussions. For example, a temporary inability to delay gratification might lead a young couple to give in to immediate desires and engage in unprotected sex, rather than wait until they are better prepared. Consistent with this, poor ability to delay gratification is a significant predictor of unplanned pregnancy (Donoghue, 1993; Shaffer *et al.*, 1978).

In sum, concentration, impulse inhibition, and delay of gratification may play pivotal roles in the course of a young person's life. How might these vital forms of self-discipline be enhanced by the presence of natural elements immediately outside the home? We suggest that each of these forms of self-discipline draws on a resource which can be renewed by contact with nature — the capacity for deliberate or self-directed attention. In the next section, we review the literature on how natural settings and views can renew directed attention; we then consider why self-discipline might draw on this resource.

How natural settings and views restore directed attention

Both theory and evidence suggest that the resource underlying our capacity to direct attention can be renewed by contact with nature. Attention Restoration Theory (Kaplan, 1995; Kaplan & Kaplan, 1989) builds on William James' description of attention to provide an explanation for why natural settings and views might be expected to renew this resource. James observed that certain elements in the environment are effortlessly engaging, and draw on what he called involuntary attention: 'strange things, moving things, wild animals, bright things...' (James, 1962, p. 231). For those stimuli and situations that do not effortlessly engage us, he proposed, we draw on a voluntary form of attention, or what S. Kaplan (1995) calls directed attention.

The mechanism underlying directed attention appears to behave like a mental muscle. With prolonged or intense use, the capacity to deliberately direct attention becomes fatigued and performance declines (Cohen & Spacapan, 1978; Glosser & Goodglass, 1990). In *Attention Restoration Theory*, S. Kaplan proposed that stimuli that draw primarily on involuntary attention give directed attention a chance to rest. Further, he noted that natural settings and views appear to draw on involuntary attention; as a consequence, contact with nature should assist in recovery from the fatigue of directed attention.

Evidence in Adults. A number of studies in adult populations support Attention Restoration Theory. Several studies have shown that nature draws upon involuntary attention (e.g. Kaplan, 1973, 1983; Kaplan & Talbot, 1983, Ulrich, 1981). In addition, a number of other studies have shown that exposure to natural environments can be effective in restoring directed attention from fatigue (Canin, 1991, Cimprich, 1990, Hartig *et al.*, 1991; R. Kaplan, 2001; Kuo, 2001; Lohr *et al.*, 1996; Miles *et al.*, 1998; Ovitt, 1996, Tennessen & Cimprich, 1995).

Of the previous empirical studies linking nature and directed attention, three are particularly relevant to the study presented here. These studies focus on residential nature and residential views of nature. In one study, residents randomly assigned to relatively 'green' high-rise apartment buildings scored significantly higher on an objective measure of attention than did residents assigned to relatively 'barren' buildings (Kuo, 2001). In another study, university students with 'all natural' or 'mostly natural' views from their dormitory room windows scored significantly higher on two objective measures of directed attention than did residents with 'mostly built' or 'all built' views (Tennessen & Cimprich, 1995). And in a third study, residents of low-rise apartment buildings with window views of natural elements or settings rated themselves as functioning better on several indices thought to be related to attention restoration (Kaplan, 2001). Thus, there is some reason to think that residential views of nature might prove restorative in this study.

Evidence in children. Numerous studies have linked directed attention to nature and near-home nature in adults; very little research has been conducted with children. Although Attention Restoration Theory does not exclude children and it has been suggested nature might support directed attention in children (Trancik & Evans, 1995), only two empirical studies have examined this possibility. Wells (2000) examined children who moved from poor quality housing to better quality housing in better neighborhoods. Among these children, those whose move involved the greatest increase in nature had the highest rated levels of attentional functioning post-move. Another study provides three additional pieces of evidence about the link between nature and directed attention in children. That study revealed that exposure to nature through green activity settings was related to better attentional functioning (reduced attention deficit symptoms) in a population of children with Attention Deficit Disorder (Faber Taylor *et al.*, 2001). In that study, parents rated a variety of leisure activities with respect to whether those activities left their child's attention deficit symptoms better than usual, worse than usual, or the same as usual: results indicated that children function better than usual after activities in green settings. Moreover, ratings were higher for those activities conducted in green settings than for those conducted in built outdoor or indoor settings. In addition, the greener a child's usual play setting, the less severe their attention deficit symptoms were rated in general. And most relevant to the current study, several measures of residential greenness were significantly and negatively linked to overall severity of symptoms — but only for girls and not for boys. Multiple potential confounds were evaluated; none could explain the relationships between green settings and better attentional functioning.

In sum, not only do theory and evidence suggest that nature supports directed attention in adults, but there is some evidence that it does so in children as well. Moreover, there is evidence to suggest that near-home nature and residential views of nature can help renew directed attention.

Does self-discipline draw on directed attention?

Might self-discipline draw on directed attention, and hence, be renewed by contact with nature? More than one investigator has proposed that the capacity for self-discipline is a limited but renewable resource (Kuo, 2000; Muraven & Baumeister, 2000). Perhaps it is no coincidence that both what personality psychologists call 'self-control strength' (Muraven & Baumeister, 2000) and what environmental psychologists call 'directed attention' (Kaplan, 1995) are subject to the same patterns of decline and restoration — decline with overuse and renewal with rest. Kuo (2000) has proposed that the mental mechanism that underlies self-discipline and the mental mechanism that underlies directed attention are one and the same.

Although directed attention has been operationalized primarily in terms of effective cognitive performance (e.g. maintaining focus or paying attention, resisting distractions, planning, decision making, remembering things), it is clear from Kaplan's description that the mechanism he proposes may be involved in much more (Kaplan & Kaplan, 1989; Kaplan, 1995). In essence, Kaplan proposes a general control mechanism for directing any of a variety of different forms of mental activity, including thoughts, images, sensations, and

impulses. Thus, the mechanism for directing attention may be involved in the inhibition of any strong-but-unhelpful mental activity in favor of any weak-but-helpful mental activity.

Each of the three forms of self-discipline examined here could plausibly draw on this proposed mechanism. Concentration involves both inhibiting distractions and other task-irrelevant thoughts, and supporting on-task thoughts. Similarly, inhibition of impulses may involve inhibiting initial impulses, blocking out the stimuli that give rise to those impulses, and supporting the consideration of alternatives. And delay of gratification may involve inhibiting impulses, inhibiting unhelpful thoughts and sensations that fan one's desire for immediate gratification (e.g. warm chocolate cake), and supporting thoughts about long term goals (e.g. weight loss).

Consistent with this conception, a number of studies and reviews have linked voluntary or controlled aspects of attention to forms of self-discipline and self-regulation. Mischel and colleagues have shown that children's ability to direct attention away from immediate rewards is pivotal in their ability to delay gratification (Mischel *et al.*, 1972), and that adolescents' attentiveness and ability to concentrate is predicted by their ability to delay gratification as pre-schoolers (Shoda *et al.*, 1990). Two studies have independently linked aspects of attention to more disciplined ways of dealing with anger or conflict (Eisenberg *et al.*, 1994; Kuo & Sullivan, 2001b). In factor analyses of questionnaire data, Rothbart *et al.* (2001) have found a broad effortful control factor, in which attentional focusing clusters with inhibitory control. Posner & Rothbart (2000) review literature suggesting that high-level attentional networks provide the neural basis for self-regulation. And finally, in their review of over 500 books and articles on self-regulation failure, Baumeister *et al.* (1994) conclude that loss of control over attention is a key factor in self-regulation failure.

This study

If nature renews directed attention in children, and if directed attention is indeed involved in self-discipline, as we suggest, then children's self-discipline should be strengthened by contact with nature. This study examined whether near-home nature is related to three forms of self-discipline in both girls and boys. Specifically, we asked

- *Do residential views of nature enhance children's concentration?*
- *Do residential views of nature enhance children's inhibition of initial impulses?* and
- *Do residential views of nature enhance children's delay of gratification?*

This study breaks new ground in two respects. First, previous research has linked concentration to nature empirically, but only in adults with normal attentional functioning and in children with compromised attentional functioning. This study is the first to examine the relationship between nature and concentration in a sample of children with normal attentional functioning. And second, although nature and concentration have been linked in some populations, neither impulse inhibition nor delay of gratification have been linked to nature in any population. The findings of two studies (Kuo & Sullivan, 2001b; Kuo, 2001) are consistent with a link between nature and self-discipline, but neither of these studies directly examined impulse inhibition or delay of gratification.

To examine the relationship between residential views of nature and concentration, impulse inhibition, and delay of gratification in children, we conducted one-on-one tests and interviews with a sample of inner city girls and boys and their mothers. Objective performance measures were used to assess children's concentration, inhibition of initial impulses, and delay of gratification. Mothers' ratings were used to assess the naturalness of views from home.

Methods

Site and design

The site was Robert Taylor Homes, a large public housing development in Chicago, Illinois, USA. At the time of this study, Robert Taylor Homes (RTH) comprised 28 16-story buildings. It had over 12,000 official residents, of whom 31% were children between 5 and 14 years old (CHA, 1995). Almost all of the heads of household (99·7%) were African-American and most (75%) received Aid to Families with Dependent Children (CHA, 1995).

The physical characteristics of RTH help make it an optimal site for studying the effects of near-home nature. When the development was built in the 1960s, trees and grass were planted in the common spaces next to every building. Over the years, for reasons of reducing maintenance and dust, grass in most of the spaces was replaced with pavement, causing many of the trees to die and subsequently be removed. This attrition has left some buildings

barren and others with pockets of green. While the amount of nearby nature varies from building to building, the buildings themselves are nearly identical in architecture, layout, size, and number of residential units. Thus, many would-be confounds are held constant at RTH, allowing for clean comparisons of the effects of near-home nature.

The social characteristics of RTH also help make it an optimal site for studying the effects of near-home nature. The housing assignment practices of Chicago Housing Authority result in *de facto* random assignment of residents to buildings, and residents are not involved in landscaping decisions or maintenance. Previous research at this site with a different sample of residents found no systematic relationships between levels of vegetation outside apartment buildings and residents' age, education, marital status, work status, income, Aid to Families with Dependent Children status, number of children at home, length of residence, or numerous other factors (Kuo & Sullivan, 2001a).

Participants and procedures

To boost rapport between the participants and interviewers, we hired and trained residents of RTH as interviewers. The four interviewers were African-American women between 30 and 45 years old. Each had achieved at least a high school diploma. The interviewers received 40 hours of training in interviewing and administrating objective performance measures from our staff and the National Opinion Research Center.

In order to minimize distractions to interview participants during the interview, we also hired and trained residents to serve as child-care providers. Child care providers accompanied the interviewers to the interviews and kept any children in the apartment who were not being interviewed safe and entertained. All child care providers were at least 18 years old and were completing or had completed high school.

Twelve apartment buildings with varying amounts of vegetation were sampled; we excluded buildings adjacent to parks, police stations or other relatively unique features. Within the selected buildings, sampling was limited to the 2nd, 3rd, and 4th floors because those floors provide residents maximal views of the trees and grass outside their building; there are no residences on the ground floor.

To recruit participants, flyers were posted and interviewers canvassed door-to-door. Interviewers did not canvas or interview in the building in which they lived, and they were instructed not to interview anyone with whom they were acquainted. Parent-child pairs were invited to participate in a University of Illinois study about 'the physical environment of the neighborhood and how it affects mothers and children'. Any 7–12 year old child and their mother or primary caregiver was eligible to participate, so long as they had been residents of RTH for at least a year. Potential participants were told that they could refuse to answer any question, and could stop the interview at any time. Adults received $10 and children received a small gift at the completion of the interview.

Of the eligible adult–child pairs approached, 169 of 174 agreed to participate — a 97% response rate. Ninety one of the child participants were boys; 78 were girls. Both the boys' and girls' mean ages were 9·6 years old (ranges 7·7–11·7 and 7·7 to 12·2 years old, respectively). All participants were African-American.

Interviews and testing were conducted in participants' apartments at the kitchen table. Adult interviews and testing typically lasted a little more than an hour. Child interviews and testing typically lasted 45 minutes.

Measures

We measured near-home nature and three types of self-discipline: concentration, inhibition of initial impulses, and delay of gratification.

Near-home nature. Near-home nature was assessed by asking the adult participants to rate the views from their apartment windows. Ratings in response to two items were combined: 'How much of the view from your window is of nature (trees, plants, water)?' and 'How much of your view from your window is man-made (buildings, street, pavement)?' (reverse-scored). Each item was rated on a five-point scale, from 0 'not at all' to 4 'very much'. Figure 1 shows barren and green areas immediately outside RTH apartment buildings.

Concentration. Concentration was assessed using four tasks. These tasks have previously been used as measures of attention or concentration: Symbol Digit Modalities Test (Cimprich, 1992, Lezak, 1983; Smith, 1968), Digit Span Backwards (Cimprich 1992; Wechsler, 1955), Alphabet Backwards (Cimprich, 1992), and Necker Cube Pattern Control (Cimprich, 1990; Schwartz, 1994; Tennessen & Cimprich, 1995). Phenomenologically, each of these tasks is characterized by the effortful use of attention or paying attention.

FIGURE 1. Views of near-home nature vary from apartment to apartment at Robert Taylor Homes.

In Symbol Digit Modalities (SDM), the participant substitutes numbers for nine geometric symbols, including three mirror image pairs, as quickly as possible (Smith, 1973). Scores on SDM were the number of correct substitutions in a 90-s period. One participant's score was more than 2 S.D. higher than the next highest score; this outlier was excluded from further analysis.

In Digit Span Backwards (DSB), the participant listens to a sequence of numbers two to eight digits long and then repeats the sequence aloud in reverse order (Wechsler, 1955). Scores on DSB were the longest number of digits repeated correctly before two consecutive failed trials.

In Alphabet Backwards (ABK), the participant recites the alphabet backwards beginning with a specified letter (e.g. the letter u) (Cimprich, 1992). In this study, three trials were given; scores were the average number of letters recited in correct (reverse) sequence divided by the average time spent reciting them (i.e. the average speed with which the participant could recite the alphabet backwards).

In Necker Cube Pattern Control (NCPC), the participant attempts to mentally 'hold on to' one interpretation of an ambiguous stimulus (Tennessen & Cimprich, 1995). First, the participant stares at a three-dimensional line drawing of a cube for 30 s, signaling each time the front and back faces appears to reverse. Then, the participant tries to mentally 'hold the cube still' or inhibit it from reversing for 30 s, signaling each time the faces reverse. Scoring for this measure was the percent reduction in the number of reversals from the first task — letting the cube reverse freely — to the second task — holding the cube still. Scores were based on performance of the two tasks after a practice trial.

Scores on SDM, DSB, ABK, and NCPC were standardized and averaged to create a summary index of concentration. Z-scores were used because the four tasks were scored on very different scales.

Inhibition of initial impulses. Inhibition of initial impulses was assessed by combining scores on three established measures of impulsivity or impulse inhibition: Matching Familiar Figures Test (e.g. Welsh *et al.*, 1991; Brown & Quay, 1977; Kagan, 1966), Stroop Color-Word Test (Boucugnani & Jones, 1989; Davies *et al.*, 1984; Dyer, 1973), and Category Matching (Melnyk & Das, 1992). Each of these tasks tends to evoke an initial response that is incorrect or very likely to be incorrect. In each of these tasks, good performance requires avoiding the initial incorrect response in order to discern the correct response.

In Matching Familiar Figures (MFF), the participant is presented with a target figure and a set of six alternatives; the task is to select the single alternative that exactly matches the target figure (Kagan, 1966). Because all the alternatives all look the same at first glance, participants must be careful in evaluating them. For each trial, the number of erroneous choices a participant makes before selecting the correct alternative is recorded. In this study, a participant's score on the measure was the total number of errors over 12 trials. MFF has been found to be a reliable measure: reliability for total number of errors ranges from 0·62 (Block *et al.*, 1974) to 0·78 (Cairns & Cammock, 1978). Matching Familiar Figures has also been found to be a valid measure of impulsivity (Brown & Quay, 1977; although *cf.* Block *et al.*, 1974).

In the Stroop Color-Word Test (Stroop), the participant is given a sheet of paper with 50 color names presented in rows (Dodrill, 1978). Each color name is printed in incongruent ink colors; e.g. the word *red* might be printed in green ink. The participant is first asked to read each of the words on the page aloud, and then asked to name the *ink color* of each

word on the page. The challenge of this task is to avoid the initial impulse to read the words rather than name the ink colors. In this study, a participant's score was the number of ink colors named correctly on first attempt.

In Category Matching (CM), the participant is presented with a sheet containing 84 pairs of icons (Schwartz, 1994; adapted from Melnyk & Das, 1992). The participant evaluates pairs of icons, attempting to circle only those pairs in which the two icons belong to the same conceptual category. Twenty-one of the pairs are target pairs, while the remaining 63 are distractor pairs. The challenge of this task is in resisting the impulse to circle pairs in which the icons are similar in form but not in conceptual category. A participant's score was the number of pairs evaluated in 30 s less any errors.

We created a summary index of inhibition of initial impulses by averaging the *z*-scores of MFF (reverse-scored), Stroop, and CM.

Delay of gratification. A version of Rodriguez *et al.*, (1989) task was used to assess children's capacity to delay gratification. In this task, the challenge is to resist an immediate, smaller reward in favor of a delayed but larger reward. The participant is first asked which of two kinds of candy they prefer. Then, they are shown a very large and a very small bag of their preferred candy, and told that if they can wait long enough, they can have the larger bag; otherwise, they will receive the smaller bag. The test administrator then instructs the child to wait quietly with their eyes closed and leaves the room, taking the candy with her (*cf*. Rodriguez *et al.*, 1989). Scores on this task were the total time waited, with a maximum score of 15 min.

Results

Results are presented in four parts. We begin by presenting preliminary analyses suggesting that the relationship between near-home nature and self-discipline should be examined separately by gender. We then examine relationships between near-home nature and self-discipline for girls and boys. Finally, we address the potential role of age differences in the relationship between nature and self-discipline.

Preliminary analyses: should girls and boys be analyzed separately?

Previous research has hinted at gender differences in the effects of near-home nature on children (Faber Taylor *et al.*, 2001). To determine whether the effects of near-home nature on self-discipline would best be analysed separately for girls versus boys, we conducted a number of preliminary analyses.

First, we used independent *t*-tests to examine gender differences in self-discipline. Did the girls and boys in this study differ in their performance on the three forms of self-discipline? As Table 1 shows, there are gender differences on each of the three forms of self-discipline tested, with girls outperforming boys on two forms and boys outperforming girls on the third. Girls' scores are significantly higher on concentration and marginally significantly higher on impulse inhibition (p=0·08); boys' scores are significantly higher on delay of gratification.

These findings suggest that it would be prudent to take gender into account in testing for links between nature and self-discipline. To do so, we conducted 2×2 factorial ANOVAs examining the

TABLE 1
Means, standard deviations, and mean comparisions between girls and boys on measures of self-discipline

	Means		Standard Deviations			
	Girls¶	Boys**	Girls	Boys	*t*	*p*
Concentrating*	0·15	−0·12	0·58	0·52	3·24	<0·01
Inhibiting impulses†	0·09	−0·09	0·69	0·62	1·79	0·08
Delay of gratification‡	358	454	309	325	−1·95	0·05
Self discipline§	0·03	−0·02	0·53	0·48	0·65	ns

*Concentration summary=average of *z*-scores on four constituent measures
†Inhibition of impulses summary=average of *z*-scores on 3 constituent measures
‡Delay of gratification scores=total time waited in seconds
§Self-discipline summary=average of three *z*-scores: concentration summary, inhibition summary, and delay of gratification.
¶n=78
**n=91

effects of gender and nature on self-discipline. In particular, we were interested in whether any effects of nature might be moderated by gender. Indeed, consistent with previous research, gender by nature interactions emerged for each of the three forms of self-discipline. Findings indicated that girls differed from boys significantly in the effect of near-home nature on concentration, $F(1,165) = 5{\cdot}7$, $p < 0{\cdot}05$, and delay of gratification, $F(1, 165) = 5.4$, $p < 0{\cdot}05$. Girls differed from boys marginally significantly in the effect of nature on impulse inhibition, $F(1,165) = 3{\cdot}6$, $p = 0{\cdot}06$.

Accordingly, we examined the relationships between near-home nature and each of the three forms of self-discipline separately for girls and for boys.

Near-home nature and self-discipline in girls

Concentration. If near-home nature enhances this form of self-discipline in girls, we might expect girls with greener views to perform better, overall, at Symbol Digit Modalities, Alphabet Backwards, Necker Cube Pattern Control, and Digit Span Backwards. We used a simple OLS regression to examine the relationship between parent-rated naturalness of apartment view and a summary index of these four measures of concentration.

Do girls with greener views perform better at tests of concentration? Yes. On average, the greener a girl's view from home, the better she concentrates. As Figure 2 shows, there is a strong positive linear relationship between naturalness of apartment view and girls' performance on the summary index of concentration, $F(1,76) = 10{\cdot}9$, $p < 0{\cdot}01$, and each of the constituent measures echo this pattern. For each scale point difference in rated greenness of view (for example, from 0 'not at all' to 1 'a little'), performance increases by roughly a quarter of a standard deviation, beta = 0·233. Greenness of view explains approximately one-eighth of the variance in concentration scores, R-squared = 0·126.

Inhibition of initial impulses. If near-home nature enhances this form of self-discipline in girls, we might expect girls with greener views from home to perform better, overall, at Matching Familiar Figures Test, Stroop Color-Word Test, and Category Matching. We used a simple OLS regression to examine the relationship between naturalness of apartment view and a summary index combining these three measures of impulse inhibition.

Do girls with greener views perform better at tests of impulse inhibition? Yes. On average, the greener a girl's view from home, the more effective she is at inhibiting impulses. As Figure 3 shows, there is a positive relationship between naturalness of view and girls' performance on the summary index of these three measures; and again, the constituent measures echo this pattern. Naturalness of apartment view significantly and positively predicts impulse inhibition, $F(1, 76) = 3{\cdot}8$, $p = 0{\cdot}05$. Greenness of view explains roughly 5% of the variance in impulse inhibition scores, R-squared = 0·048, with a beta of 0·172.

Delay of gratification. If near-home nature enhances this form of self-discipline in girls, we might expect girls with greener views from home to perform better on the Mischel delay of gratification task.

Are girls with greener views more able to resist the temptation of an immediate-but-smaller reward?

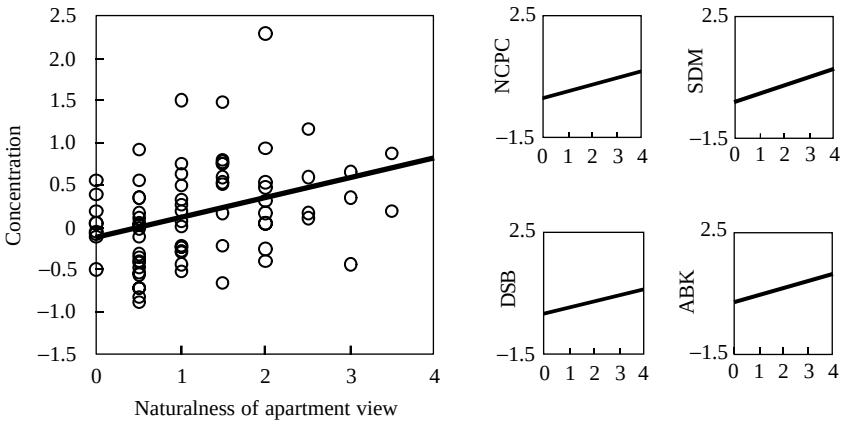

FIGURE 2. OLS regression of naturalness of view on the summary measure of girls' concentration (left) and its four constituent measures. All scores are standardized.

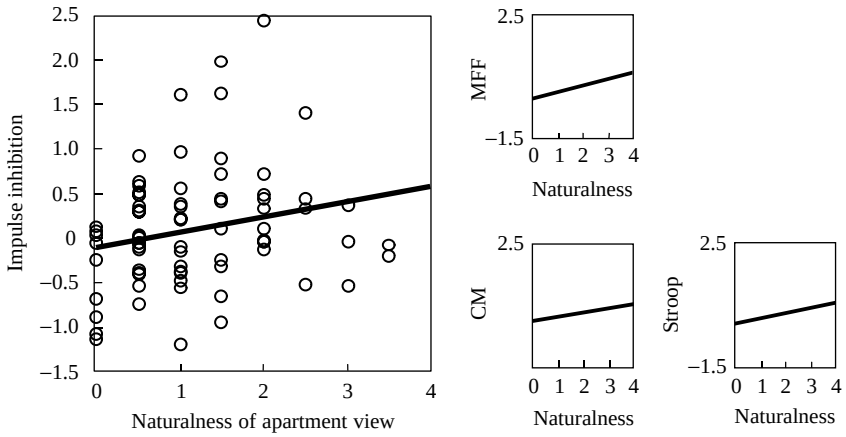

FIGURE 3. OLS regression of naturalness of view on the summary measure of girls' impulse inhibition (left) and its three constituent measures. All scores are standardized.

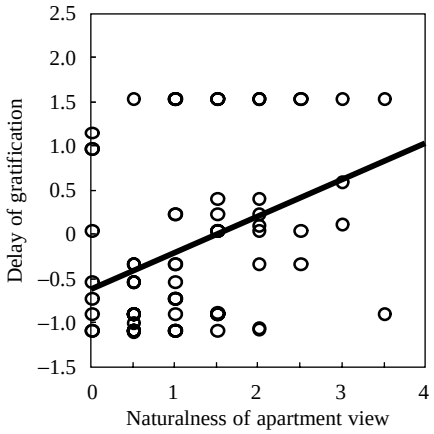

FIGURE 4. OLS regression of naturalness of view on girls' delay of gratification. Delay of gratification scores are standardized.

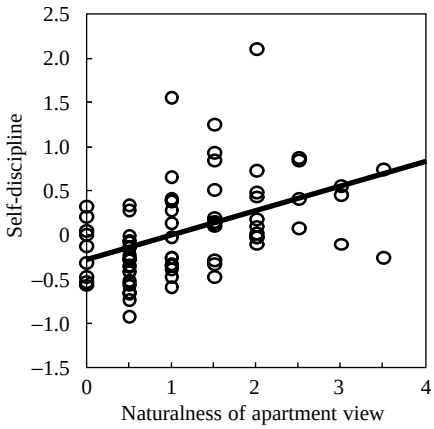

FIGURE 5. OLS regression of naturalness of view on the summary measure of girls' self-discipline. Self-discipline scores are standardized.

Yes. On average, the greener a girl's view from home, the longer she is able to delay gratification. As Figure 4 shows, there is a strong positive relationship between naturalness of view and performance on this task. Naturalness of apartment view significantly and positively predicts delay of gratification, $F(1, 76) = 12{\cdot}7$, $p < 0{\cdot}001$. For each point difference in rated greenness of view (for example, from 0 'not at all' to 1 'a little'), performance increases by almost half of a standard deviation, beta = 0·417. Greenness of view explains roughly one-seventh of the variance in impulse inhibition scores, R-squared = 0·143.

Combined self-discipline measure. To further test the relationship between near-home nature and girls' self-discipline, we created a single index combining scores on the three forms of self-discipline. Do girls with greener views perform better, overall, on these three forms of self-discipline? Yes. As Figure 5 shows, view from home strongly and positively predicts girls' scores on this combined measure, $F(1, 76) = 19{\cdot}4$, $p < 0{\cdot}0001$. On average, the greener a girl's view from home, the better she scores overall on different forms of self-discipline; for each point difference in greenness of view, scores increase by roughly a quarter of a standard deviation, beta = 0·274. Greenness of view explains roughly one-fifth of the variance in self-discipline scores, R-squared = 0·203.

Near-home nature and self-discipline in boys

Table 2 summarizes the findings for the relationship between near-home nature and self-discipline by

gender. As a comparison between the left and right halves of the table shows, the findings for boys stand in startling contrast to the findings for girls. Whereas girls show consistent and often strong links between near-home nature and various forms of self-discipline, boys show only the barest hint of such a link. Beta coefficients for boys hover around zero for concentration, delay of gratification, and the combined self-discipline measure. For impulse inhibition, boys' scores show a slight tendency to increase with naturalness of the view from home, beta = 0·116, but this relationship is not significant, $p = 0{\cdot}13$.

Age, near-home nature, and self-discipline

To address the potential role of age in this study, we conducted 2×2 factorial ANOVAs (age $\times$ nature) for concentration, impulse inhibition, and delay of gratification. Girls' scores and boys' scores were analysed separately. Findings for girls showed, not surprisingly, a main effect for nature view for each of the three forms of self-discipline. Girls' concentration showed a main effect of nature view, $F(1, 74) = 17{\cdot}3$, $p < 0{\cdot}0001$, as did girls' impulse inhibition, $F(1,74) = 4{\cdot}9$, $p < 0{\cdot}05$ and girls' delay of gratification, $F(1,74) = 8{\cdot}6$, $p < 0{\cdot}01$. There was no significant main effect for age, nor was there a significant interaction between age and nature for any of the three forms of self-discipline.

Findings for boys showed, again, no main effect for nature view for any of the three forms of self-discipline. There was a hint of a main effect of age on concentration, $F(1,74)=2{\cdot}8$, $p=0{\cdot}10$, but there were no other significant effects for age on other forms of self-discipline, and no significant interactions between age and nature for any of the measures.

These results indicate that the basic findings of the study do not change when age is taken into account: for girls, near-home nature is consistently linked to self-discipline; for boys, near-home nature is not linked to self-discipline.

Discussion

This study tested for possible links between near-home nature and children's self-discipline, more specifically their capacities for concentration, impulse inhibition, and delay of gratification. Because preliminary analyses indicated gender differences — and, more importantly, interactions between gender and nature — for each of these three forms of self-discipline, we examined the relationship between nature and self-discipline separately for girls and boys.

For girls, views of near-home nature were systematically related to each of these three forms of self-discipline. Girls' performance on each of the following measures was significantly and positively related to nature: a summary measure of concentration (based on Symbol Digit Modalities, Alphabet Backwards, Necker Cube Pattern Control, and Digit Span Backwards); a summary measure of impulse inhibition (based on Matching Familiar Figures, Stroop Color-Word Test, and Category Matching); Mischel's delay of gratification measure; and an index combining the three forms of self-discipline. Differences in girls' near-home nature explained 20% of the variance in overall self-discipline scores.

Findings for boys stood in striking contrast to those for girls. Whereas girls showed significant, positive relationships between near-home nature and each of the outcome measures, boys showed no significant relationships between near-home nature and any of the outcomes. What might account for these gender differences?

One possibility seems promising at first, but becomes less plausible on further inspection – that nature restores directed attention in girls but not boys. First, there is no a priori theoretical reason to expect these effects to be limited to girls. Attention Restoration Theory (Kaplan & Kaplan, 1989; Kaplan, 1995) would suggest that nature supports directed attention in any individual with an intact attentional system. And consistent with this, the empirical work with adults suggests that the

TABLE 2
OLS regression summaries for naturalness of apartment view on measures of self-discipline for girls and boys.

	Girls (78)				Boys (91)			
	R^2	beta	F	p	R^2	beta	F	p
Concentrating	0·13	0·23	10·9	0·001	0·01	0·07	1·2	ns
Inhibiting impulses	0·05	0·17	3·8	0·05	0·01	0·12	2·3	0·13
Delay of gratification	0·14	0·42	12·7	<0·001	0·00	−0·03	0·6	ns
Self discipline	0·20	0·27	19·4	<0·0001	0·01	0·05	0·7	ns

nature-directed attention relationship is true for both males and females (Canin, 1991; Cimprich, 1990; Hartig *et al.*, 1991; Lohr *et al.*, 1996; Miles *et al.*, 1998; Ovitt, 1996; Tennessen & Cimprich, 1995). It is difficult to imagine why nature would affect directed attention in women, men, and girls, but not boys.

Another possible explanation for the lack of relationship between near-home nature and self-discipline in boys seems more promising. That is, perhaps boys are affected by contact with nature in just the way that girls are, but boys have relatively less contact than girls with the nature immediately outside their homes. Studies that have geographically mapped children's play have found that boys typically play farther from home than girls (Hart, 1979; Sobel, 1993); for reviews see Moore & Young, (1978), Wohlwill and Heft (1987). Perhaps boys are unaffected by near-home nature simply because they spend time elsewhere. Consistent with this, findings from a previous study indicated that boys' attentional functioning was not related to the level of nature immediately around their home, but was related to the level of nature in their usual play space (Faber Taylor *et al.*, 2001). Future research should examine the relationship between levels of nature in boys' most typical play spaces and their self-discipline.

The findings in boys notwithstanding, the overall pattern of findings in this study strongly suggests a link between near-home nature and concentration, impulse inhibition, and delay of gratification in girls.

Alternative interpretations

To what extent do the links between near-home nature and these forms of self-discipline reflect a causal relationship between nature and self-discipline? While definitively showing a cause and effect relationship requires a true experimental design, we can begin to address some possible alternative interpretations here.

One possible alternative interpretation for the current findings might be that self-discipline is linked to near-home nature, but not because nature enhances self-discipline. That is, perhaps some form of self-selection is operating: perhaps more effective, more self-disciplined parents find ways to be assigned to greener apartments, or they find ways to create greener surroundings, or the Chicago Housing Authority assigns 'better' prospective tenants to greener buildings. Chicago Housing Authority policies work against each of these possibilities. Apartment assignment policies result in de facto random assignment of residents with respect to levels of nearby nature at RTH. Furthermore, on-going landscape maintenance at RTH is handled by a small landscaping crew; residents are not involved in maintenance and funds are inadequate to fulfill special requests from residents. Thus it seems unlikely that any of these forms of self-selection are taking place. Moreover, it is not clear why, if 'better' parents self-select into, or create, or are assigned to greener apartments, their superior qualities would be reflected only in their daughters.

Another possible interpretation might be that more self-disciplined children actually have the same levels of near-home nature as their less self-disciplined counterparts, and the link between self-discipline and high greenness ratings is an artifact. For example, perhaps more self-disciplined, more effective parents tend to have better lives and be in more positive moods than their less effective counterparts, and these positive moods lead them to be more agreeable, thus leading them to endorse items more highly – including their greenness ratings. Consistent with this, previous research has found links between mood and suggestibility (Tata & Gudjonsson, 1990). However, two considerations render this possibility implausible. First, the measure of naturalness of view in this study was composed of two items, one of which was reverse-scored. To the extent that positive moods induced residents of greener buildings to endorse all items more highly, the inflation in the reverse-scored item should balance the inflation of the positively scored item. And second, again, it is not clear how this explanation could account for the mothers of girls, but not boys, giving higher greenness ratings.

A third possible alternative interpretation might involve some form of experimenter demand. Might the interviewers have somehow influenced mothers with high-performing children to give greener ratings? Alternatively, might they have influenced children from greener buildings to score higher? Although these possibilities cannot be ruled out entirely, neither seems likely. The test administrators did not know the hypothesis of the study and thus would not know which mothers or children to influence, or in what direction to influence them. And yet again, it is not clear how this interpretation could account for the lack of relationship between nature and self-discipline for boys.

In sum, the links between nature and self-discipline found here do not appear to be simple artifacts of self-selection, systematic biases in assignment of participants to conditions, mood-

elevated nature ratings, or experimenter demand. Nonetheless, a causal relationship between nature and enhanced self-discipline — even for girls — remains to be substantiated.

Contributions to the literature

By documenting a systematic, positive link between near-home nature and three forms of self-discipline in girls, this work contributes to the research on the benefits of nature in three ways.

First, the results underscore the potential importance of views of nature. Previous research has shown that a variety of positive outcomes are associated with views of nature in adults in a variety of settings. In residential settings, views of nature have been linked to residential satisfaction, enhanced well-being, more effective patterns of coping, and greater day-to-day effectiveness (Kaplan, 1985, 2001; Kuo, 2001; Tennessen & Cimprich, 1995) respectively. In workplaces, views of nature have been linked to job satisfaction and well-being (Kaplan, 1993); in prisons, to decreased demand for health care services (Moore, 1981); and in hospitals, to faster recovery from surgery (Ulrich, 1984). The findings here add to a growing body of evidence suggesting that views of nature are no mere amenity.

Second, this work contributes to our understanding of the benefits of nature for children. Specifically, the findings from this study combine with the findings from a previous study to suggest that attentional restoration may be an important and universal benefit of nature for children. The current study links nature and superior attentional functioning in a sample of extremely low-income, attentionally normal African American children. The previous study linked nature and better attentional functioning in a primarily middle and upper-income, predominately European American sample of children with Attention Deficit Disorder (Faber Taylor *et al.*, 2001). Together, the two sets of findings suggest the possibility of a nature-attention link that generalizes across socioeconomic status, race, and attentional status, as well as different levels of residential greenness — from the most barren of public housing grounds to the lushest of backyards in wealthy neighborhoods.

Perhaps the most important contribution of this work is to identify two new benefits of nature. Previous research on a nature-directed attention relationship has focused primarily on cognitive outcomes, especially the capacity to pay attention or concentrate. Although previous findings linking nature and reduced aggression are certainly consistent with the hypothesis that nature enhances self-discipline (Kuo & Sullivan, 2001b), to our knowledge, this is the first study to systematically document a link between nature and less cognitive forms of self-discipline, specifically impulse inhibition and delay of gratification. Failure to inhibit impulses can have both immediate consequences and important long-term implications for an individual; similarly, a pattern of failure in the delay of gratification may substantially alter the course of an individual's life and their chances of success in a variety of domains. For example, previous research has indicated that children's ability to delay gratification predicts their academic achievement, social competency, and ability to cope with frustration and stress in adolescence (Mischel et al., 1988). If near-home nature can provide a daily, easily accessible means of supporting impulse inhibition and delay of gratification in a setting where individuals are likely to be chronically mentally fatigued (Kuo, 1992), the implications for individuals, families, and society may be enormous.

This study underscores the potential importance of views of nature, extends previous research on attentional restoration in children to a very different population and setting, and introduces two potential new benefits of nature: enhanced impulse inhibition and delay of gratification. The findings have a number of implications for practice.

Implications for practice

These findings help reinforce the importance of incorporating trees and grass in spaces for children. One implication of this research concerns the design of public housing developments. As a large proportion of urban public housing residents are children (in Chicago family housing in 1995, for example, roughly 60% of residents were 19 years old or younger; roughly 50% were 14 or younger, CHA, 1995), these findings argue for the potential importance of incorporating trees and grass around public housing apartment buildings. Moreover, these findings suggest that designers of public housing should consider more than just ground-level views of common spaces when placing trees and grass; it may be helpful to place trees and grass strategically within view from the surrounding apartments. Along the same lines, the findings here suggest that, in suburban areas and on the urban-rural fringe, the practice of constructing treeless residential developments may have important unintended costs. Previous work has suggested that the urban forest may be a vital part of children's

living environments (Faber Taylor *et al.*, 2001; Faber Taylor et al., 1998); the work here reinforces that notion.

Another implication of this research concerns the design of schoolyards. These findings raise the possibility that incorporating trees and grass in schoolyards could play an important role in the classroom. Perhaps after spending breaks in green schoolyards, children return to their classrooms better prepared to pay attention, to suppress disruptive impulses, and to wait patiently for future breaks. Again, strategic placement may be important here. It may be that an occasional long glance out a classroom window helps support a child's capacity for self-discipline throughout the school day. Perhaps greater benefits from a given investment in landscaping can be obtained by placing vegetation to maximize views of trees and grass through classroom windows.

We close by noting the implications of this study for helping inner city children negotiate the many risks of urban poverty. The findings here suggest that the barrenness of inner city neighborhoods may contribute to lower levels of self-discipline and, potentially, to higher rates of negative outcomes in inner city children. In this study, the greener a girl's view from home, the better her performance on measures of concentration, inhibition of impulses, and delay of gratification. These three forms of self-discipline may play key roles in the likelihood of such negative outcomes as academic underachievement, juvenile delinquency, and teenage pregnancy. Perhaps when housing managers and city officials decide to cut budgets for landscaping in inner city areas, they deprive children of more than just an attractive view. Neglecting landscaping may deprive inner city children of a much needed resource for self-discipline – for the psychological capacities that lead to a brighter future.

Notes

This work was funded through a grant from the National Urban and Community Forestry Advisory Council, grant #NA-95-0333 USDA, and by the Cooperative State Research, Education and Extension Service, U.S. Department of Agriculture under project #65-370NRES. The data presented here were collected as part of the *Growing Hope* archive, a multi-study research effort examining the effects of the physical environment on the functioning of mothers and children living in urban public housing. This research was conducted in partial fulfillment of the requirements for a doctoral degree in Natural Resources and Environmental Sciences at the University of Illinois, Urbana-Champaign. We are grateful for the work done by Dr. Angela Wiley in hiring, training, and supervising interviewers and child care providers, and coordinating and supervising the data collection. We thank the interviewers, child care providers, and the residents of Robert Taylor Homes for their participation, and Chicago Housing Authority for their assistance in the data collection for this research. We are also grateful to Dr. Stephen Kaplan for his helpful suggestions regarding terminology.
Correspondence concerning this article should be addressed to Andrea Faber Taylor, Human Environment Research Laboratory, University of Illinois, 1103 S. Dorner Dr., Urbana, IL 61801, U.S.A. E-mail: afabrtay@uiuc.edu

[1]'Inhibiting initial impulses' has also been labeled 'inhibiting prepotent responses' (Logan *et al.*, 1997).

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I am submitting this written statement as I cannot attend the June 23 (2 pm) hearing hosted by the Parks and Environment Committee.

I live on the Upper West Side and have worked in this neighborhood for the last 16 years at Goddard Riverside for the Green Keepers social enterprise business. We are among the founding members of a coalition group entitled “Love Your Street Tree Day”. For over 6 years we have been hosting large community events to bring awareness to the importance of NYC’s Street trees and the need for more maintenance and care of those trees. There is need to educate the community about how and why neighbors should steward these trees. Recently I volunteered to participate in Gale Brewer's Street Tree Survey and I got my whole family involved.

Green Keepers has been training formerly homeless individuals to steward neighborhood trees, beautify our blocks, streets, and parks, and provide supplemental sanitation while obtaining job placement and a paycheck. For many, this was the first ever job, or a chance to return to the workforce and give back to the community.

The Love Your Street Tree events have been co-sponsored by local block associations, council members, local assembly members, Dept of Parks and many others. These events have been very successful over the years, bringing together many partners and attracting over 100 attendees including young children, a local high school, and a civic minded restaurant.

The Urban Forest Task Force has produced amazing materials on this issue (see their publications the “NYC Urban Forest Agenda“ and “The State of the Urban Forest in NYC”). Now we are called the Forest For All NYC Coalition.

We support the goals and requests delineated in those publications and given our community projects, we especially urge the increase and equitable distribution of funding for not only planting but also maintenance of the urban forest - especially our street trees! We also urge that more free trainings for New Yorkers be offered to teach proper stewardship techniques, and the reasons why New Yorkers should care about the urban forest.

Additionally, NYC should incentivize businesses and buildings to take care of their street.

Thank you for the opportunity to provide this statement. Please forward it to the appropriate City Council Members.

Most sincerely,
Debby Kaplan

From: NYC Council Hearings
Sent: Wednesdav. June 22, 2022 10:41 AM
To: Testimony
Subject: Fwd: [EXTERNAL] Written testimony in support of increasing and maintaining the urban tree canopy - 6/23/22 hearing in Parks Committee

Begin forwarded message:

From: NYC Council Hearings <hearings@council.nyc.gov>
Date: June 22, 2022 at 10:40:25 AM EDT
To: Melissa Elstein <west80sneighborhood@gmail.com>
Subject: Re: [EXTERNAL] Written testimony in support of increasing and maintaining the urban tree canopy - 6/23/22 hearing in Parks Committee

Good morning,

Thank you for writing. Your testimony will be added to the legislative record.

Very best,
New York City Council

On Jun 21, 2022, at 8:32 PM, Melissa Elstein <west80sneighborhood@gmail.com> wrote:

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. Forward suspect email to phish@cyber.nyc.gov as an attachment (Click the More button, then forward as attachment).

Dear NYC Council Members,

I am submitting this written statement as I cannot attend the June 23 (2 pm) hearing hosted by the Parks and Environment Committee.

I am a founding member of the West 80s Neighborhood Association (an all-volunteer nonprofit community group). We helped co-found a larger coalition group entitled “Love Your Street Tree Day”. Under both organizations’ auspices we have been hosting large community events for over ten years in order to bring awareness to the importance of NYC’s street trees and the need for more maintenance and care of those trees. After the Million Trees Initiative (started

under Mayor Bloomberg and completed under Mayor DeBlasio) we saw too many beautiful young trees perish after being planted because proper maintenance and care were not implemented. We felt that there was a need to educate the community about how and why we should steward these amazing trees - both the newly planted ones and older ones as well. Our events have been very successful over the years, attracting over 100 attendees each time.

Please see our website below for more information.

We were thrilled when The Nature Conservancy of NY created an even larger umbrella organization - The Urban Forest Task Force - and invited us to join. They have produced amazing materials on this issue (see their publications the "NYC Urban Forest Agenda" and "The State of the Urban Forest in NYC"). Now we are called the Forest For All NYC Coalition.

We support the goals and requests delineated in those publications and given our volunteer community projects, we especially urge the increase and equitable distribution of funding for not only planting but also maintenance of the urban forest - especially our street trees! We also urge that more free trainings for New Yorkers be offered to teach proper stewardship techniques, and the reasons why New Yorkers should care about the urban forest. More easy to apply for grants to small community groups would also help this cause, as well as urban forest education for school students at every grade. (Young children love our tree care events!)

Additionally, NYC must incentivize businesses and buildings to take care of their street trees!

Providing PSA's and ads in subways would be great marketing in general on this very important green infrastructure issue.

Thank you for the opportunity to provide this statement. Please forward it to the appropriate City Council Members.

Best,

Melissa

Melissa Elstein, Secretary & Co-founder

West 80s Neighborhood Association

P.O. Box 732

NY, NY 10024

www.west80s.org

www.loveyourstreettreeday.com

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 6/23/2022

(PLEASE PRINT)

Name: Susan Donoghue

Address: _____

I represent: Commissioner of DPR

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 6/23/2022

(PLEASE PRINT)

Name: Jennifer Greenfeld

Address: _____

I represent: Deputy Commissioner of Environment + Planning for DPR

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 6/23/2022

(PLEASE PRINT)

Name: Matt Drury

Address: _____

I represent: Director of Govt Relations for DPR - DPR

Address: _____

Please complete this card and return to the Sergeant-at-Arms

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 6/23/2022

(PLEASE PRINT)

Name: Ben Osborne

Address: _____

I represent: Chief of Forestry + Horticulture for DPR

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☒ in favor ☐ in opposition

of the canopy

Date: _____

(PLEASE PRINT)

Name: HARRIET HIRSHORN

Address: [redacted] CLINTON ST [redacted] 10002

I represent: myself

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 6/23/2022

(PLEASE PRINT)

Name: Allie Ryan

Address: [redacted] E. 11th St, [redacted] NY NY 10009

I represent: self

Address: _____

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 6/23/22

(PLEASE PRINT)

Name: STEVEN THOMSON

Address: STERLING PL. BROOKLYN, NY 11216

I represent: BROOKLYN QUEENS LAND TRUST

Address: 20 3RD AVE #842, BROOKLYN, NY 11217

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 6/23/22

(PLEASE PRINT)

Name: Carlos Castell Cruz-C

Address: 30 Broad St 30th Fl NY NY 10004

I represent: New York league of Conservation Voters

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Eileen Myles

Address: E 3 St. NYC 10003

I represent: /

Address: /

Please complete this card and return to the Sergeant-at-Arms