# Procurement of Wood in NYC Agencies & Exploring Potential for Salvaged Wood in Public Projects

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# Executive Summary

New York City management of its urban forest and built environment offers a unique opportunity to transform wood waste into a valuable material resource. With seven million trees and constant construction projects, the City's tree removals and deconstruction produce a substantial amount of wood that contributes to an overwhelmed waste stream and increases greenhouse gas emissions. If the City were to embed salvage practices aimed at recovery, processing and reuse of wood into the lifecycle management of trees and wood materials, this wood could be reintegrated into the City landscape. This report explores NYC's pathways for procuring wood, its uses, and opportunities for integrating urban salvaged wood into city projects. The research methodology involved analyzing public databases and conducting interviews with representatives from various city agencies.

Findings indicate that NYC utilizes a diverse range of commercially-available wood types for various applications, with the largest purchase being Thermally Modified Ash for outdoor projects. Douglas Fir is the most frequently used wood for general construction. Micro-purchases and requirements contracts through the NYC Department of Administrative Services are the primary methods for City wood procurement. However, data fragmentation and a lack of mandatory reporting requirements pose challenges in fully capturing wood use in capital projects.

The report identifies several integration opportunities for salvaged wood, including outdoor and indoor furnishings. Collaboration with park conservancies and educational initiatives targeting architects, landscape architects, and contractors are recommended to promote salvaged wood use. The report also highlights the potential of salvaged wood in contributing to LEED® and Envision® certification for construction projects.

Next steps include:

- Strengthening collaboration with NYC Economic Development Corporation and with the Mayor's Office of Climate and Environmental Justice.
- Piloting salvaged wood use in park conservancies.
- Promoting data collection and standardization.
- Conducting durability assessments of salvaged urban wood species that are outside the standard commercial market.
- Launching awareness campaigns and promoting education opportunities for design professionals and contractors, construction agencies, elected officials, and the public.
- Developing incentives and requirements for salvaged wood.
- Integrating wood salvage and end-use in the Urban Forest Plan.

It's crucial for the City to approach the procurement and use of materials holistically. This means evaluating the best and highest use of solid wood and ensuring that systems, policies, and incentives are in place to guarantee that the wood used in the service of the people of NYC is the most sustainable option available.

# Definitions

**DCAS** Department of Citywide Administrative Services
**DDC** Department of Design & Construction
**DEP** Department of Environmental Protection
**DOB** Department of Buildings
**DOC** Department of Correction
**DOT** Department of Transportation
**DSS** Department of Social Services
**DSNY** Department of Sanitation
**EDC** NYC Economic Development Corp
**FDNY** Fire Department
**NYPD** Police Department
**MOCEJ** Mayor's Office of Climate and Environmental Justice
**OTI** Office of Technology and Innovation
**Parks** Department of Parks & Recreation
**T+G** Town+Gown:NYC

# Introduction

New York City (the City or NYC), like many cities around the world, faces the challenge of balancing rapid urban growth with environmental sustainability. The City has implemented a wide range of initiatives aimed at reducing its carbon footprint, improving air and water quality, and increasing climate resilience. Central to these efforts is the responsible management of natural resources. Wood, a renewable and durable material, plays a significant role in the City's urban infrastructure, from street trees to building materials. However, the existing approach to managing wood, especially its disposal, is not sufficiently sustainable. The lifecycle management of wood—encompassing its use, recovery, processing, reuse, and disposal when necessary—offers an opportunity to enhance sustainability efforts, reduce waste, and store carbon.

By repurposing wood from urban tree removals and salvaged from building deconstruction, NYC can significantly reduce wood waste and contribute to a local, circular economy that effectively restructures the life-cycle management of its trees and its wood materials. This approach reduces reliance on virgin materials, conserves resources, and enhances resilience. Salvaged urban wood also offers a unique opportunity to lower the embodied carbon, or the carbon footprint of building materials. However, effective lifecycle management of this wood requires infrastructure and green jobs that ensure optimal use at every stage. This includes:

1. Urban forest stewardship that not only plants new trees, but keeps our trees healthy and standing for as long as possible.
2. End-of-lifecycle management for planned tree removals and storm-downed trees that salvage the wood for reuse.
3. Operations that manage and manufacture salvaged wood and wood debris for best and highest use, from compost and biochar to architectural products.
4. Reclamation and recycling efforts that process and reuse wood from demolition.
5. Public awareness, policies, and certifications that incentivize, if not require, the use of locally, sustainably sourced wood in NYC.

To better understand how local wood can be transformed from waste to a local resource, this report explores wood use across the public realm. Specifically, how the City and all its agencies procure wood, where it is used, and the opportunities for local wood to be integrated into current uses and procurement processes for public projects.

As the City strives to deepen its sustainability efforts, the need for data-driven decision-making becomes increasingly critical. Quantifying the environmental impacts of various strategies is essential for optimizing resource allocation and measuring progress. Currently, the City's Climate Resiliency Design Guidelines,[1] developed by the Mayor's Office of Climate and Environmental Justice (MOCEJ) in collaboration with NYC agencies, aim to integrate resilient design into existing planning processes. Designers are encouraged to incorporate a range of strategies—both "soft" (e.g., green infrastructure) and "hard" (e.g., built structures)—to address multiple updated and projected climate hazards while also achieving other goals like energy efficiency and greenhouse gas reduction. The Guidelines require that resilient design should be part of project planning, risk management, and financial decision-making to maximize the efficiency and effectiveness of investments into capital projects. Also vital is understanding how these strategies may be in tension or conflict with each other. For example, the School Construction Authority's resiliency planning includes replacing the standard maple gymnasium flooring with rubber in schools at risk for flooding. While this enhances the durability of the school as the City deals with increasingly intense stormwater management pressures, the use of rubber comes with a higher cost of embodied carbon and more challenging future pathway for reuse than wood, a natural atmospheric carbon-reducing material. In other words, as the Mayor's Office, the City agencies, and City Council strive to make a greener, more equitable and resilient city, decisions in material use must be considered holistically.

The core research team includes Alexander Bender, Co-Founder and Managing Partner at Tri-Lox, Liz Zink, Creative Director at Tri-Lox, Sara Evans, Director of the Living Collections and Curator at The Green-Wood Cemetery, and Anna Kramer, Founder and Principal at URBANSEA Consulting. Project partners include Terri Matthews, Director of Town+Gown:NYC, Shino Tanikawa, Executive Director at the NYC Soil & Water Conservation District and Patricia Perone, Administrative Community Relations Specialist at NYC Parks from the Forest For All coalition- Policy and Funding Action Team. This initiative is funded by The Nature Conservancy for the Forest For All NYC coalition and is aligned to Forest for All NYC's broader mission of enhancing and expanding NYC's urban canopy management.

[1] NYC Office of Sustainability. *Climate Resiliency Design Guidelines (CRDG-4-1)*. Mayor's Office of Climate and Environmental Justice, May 2022. https://www.nyc.gov/assets/sustainability/downloads/pdf/publications/CRDG-4-1-May-2022.pdf.
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# Background & Context

NYC contains wood prominently throughout both its built environment and its urban forest, which includes over seven million trees. NYC currently has about 22% canopy cover,[2] with the goal to reach 30% by 2035.[3] With over 138 species of trees, the urban forest contributes numerous essential benefits, including cleaner air, cooler temperatures, and reduced stormwater runoff, among other ecosystem benefits. However, creating a healthier, more robust NYC forest does not simply mean planting more trees, it requires having a system of long-term care that considers the entire lifecycle of the tree, including how to sustainably manage the tree at the end of that lifecycle.

Currently, the lifecycle management of NYC trees and wood from demolition projects end at the point of removal. The wood is chipped and either used for mulch or disposed of in landfills. Despite the high costs associated with disposal, it has been more convenient to pay for wood disposal than to invest in a systems-based infrastructure that supports its salvage and reuse—particularly in a city where time and space are costly commodities. This costs the City in both waste fees and greenhouse gas emissions.

A 2021 assessment[4] conducted by Cambium Carbon in conjunction with NYC Parks found that the City removes an average of 12,500 trees per year. Between 2014 and 2020, NYC Parks spent over $3 million on wood waste management, often relying on private contractors to remove and dispose of the wood waste, an expensive endeavor that includes chipping and trucking the material outside of the City. An average 40-year-old hardwood tree can store approximately 1 ton of carbon. Once a tree is chipped, the carbon is released and, in the case of landfilled wood waste, emits methane, a greenhouse gas up to 86 times more potent than carbon dioxide.

The City contains vast quantities of wood in the built environment as well, with estimates that over 95% of buildings throughout the five boroughs could be constructed at least in part from wood. Approximately 70% of buildings that make up the City were constructed before 1950.[5] These structures contain old growth timber that is no longer available in today's forests. As the City continues to renovate and build, existing wood in the built environment is a durable resource, one that often can only be found through reclamation. Prioritizing if not requiring the

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[2] Forest for All NYC. "NYC Urban Forest Agenda – Forest for All NYC". https://forestforall.nyc/nyc-urban-forest-agenda/.

[3] "NYC should have 30% tree canopy coverage, City Council says" (retrieved from https://www.cityandstateny.com/policy/2023/06/nyc-should-have-30-tree-canopy-coverage-city-council-says/387487/)

[4] Reforestation Hub Assessment Prepared for the Arbor Day Foundation and NYC Parks, Cambium Carbon. Retrieved from https://static1.squarespace.com/static/6319f096404c4d7f70503637/t/63249e429a000a4c9d51a536/1663344194694/New-York-City-Assessment.pdf

[5] 2019 IABSE Congress - The Evolving Metropolis. *Harvesting New York City - Old Growth Forestry.* 2019 Retrieved from https://domicology.msu.edu/upload/Harvesting%20New%20York%20City%20Old%20Growth%20Urban%20Forestry%20Bergsagel.pdf

salvage and reuse of wood from deconstruction reduces city waste and extends the lifecycle of a highly durable, carbon-storing material.

This report builds on previous research from the following studies:

- Tree Salvage Pilot, a pilot that assesses the supply of urban wood by salvaging trees from across public and privately managed land. This work offers a blueprint for the infrastructure and organization required to build a city-wide system of salvage and reuse.
- Cambium Carbon Reforestation Hub Assessment, a report that identifies existing wood waste generation sources and the potential opportunities and barriers around wood reuse.
- New School Capstone summarizes the landscape of stakeholders involved in a system and potential policy pathways for a permanent wood salvage infrastructure.

Understanding the existing demand for wood is critical to developing a program to integrate salvaged wood from felled city trees as well as building deconstruction back into public infrastructure. Below is a review of the policies and practices that currently provide pathways for salvaged wood, lessons learned from models of reuse in other cities, and a material inventory of types of wood currently used on NYC projects.

## Material Sustainability Initiatives and Innovation in NYC

There are several recent initiatives within NYC to drive the City toward a more sustainable future. In 2023, the Mayor's office released an update of **PlaNYC,**[6] a comprehensive and ambitious plan to address the impacts of climate change equitably and improve the lives of New Yorkers. Within this plan, NYC states its commitment to expanding recycling and reuse initiatives to foster a circular economy. A key focus is on the Clean Soil Bank program, which aims to increase the recycling and utilization of soil within City agencies and private resilience projects. The City plans to extend the program's operating days from two to three per week and establish additional soil bank sites based on agency needs. By expanding these efforts, NYC seeks to promote sustainable land management and resource conservation.

In addition to soil recycling, NYC Parks is piloting a program to salvage wood from City trees for reuse in partnership with Tri-Lox. With an estimated 12,400 metric tons of woody debris generated annually by NYC Parks, there is a significant opportunity to divert this waste from landfills and further sequester the carbon captured in the wood. The pilot project aims to develop a comprehensive system for collecting, processing, and finding end users for this salvaged wood material. By establishing a dedicated wood salvage and processing site, the Tri-Lox and NYC Parks hope to maximize the environmental benefits of this initiative and seek to expand this pilot program.

[6] NYC Mayor's Office of Climate and Sustainability. PlaNYC 2023: A New Era of Climate Action. June 2023. Retrieved from https://climate.cityofnewyork.us/wp-content/uploads/2023/06/PlaNYC-2023-Full-Report.pdf.

Incorporating salvaged wood into City projects aligns with PlaNYC's goals by diverting usable materials often considered waste from landfills to a supply chain that can process the material for reuse, reducing the need for virgin materials, and strengthening a local, circular economy. Utilizing salvaged wood can help offset the carbon footprint of construction projects and support the City's commitment to sustainable land management.

In 2016, NYC adopted **Local Laws 31 and 32**[7] to improve the energy efficiency of City-owned buildings. Local Law 32 mandates that most new construction, additions, or substantial renovations of buildings valued at $2,000,000 or more must achieve a LEED® Gold certification or higher. Alternative green building standards may also be considered for certain building types. The use of local, salvaged wood can contribute points towards certification in several ways including, from the *LEED® 4.1 Interior Design and Construction* credit guide, Interiors Life-Cycle Impact Reduction, Responsible Sourcing of Raw Materials, Low-Emitting Materials, and Construction and Demolition Waste Management.[8]

The Mayor's 2022 **Clean Construction Executive Order 23**[9] aims to reduce the greenhouse gas emissions associated with the building materials and equipment used for construction. The order mandates City agencies to use low-carbon materials and to prioritize low-emissions equipment. Additionally, the order requires agencies to track the environmental footprint of building materials and develop plans to further reduce emissions. The Executive Order states that Capital project agencies shall complete a Life Cycle Assessment for applicable projects to quantify the environmental impact of capital projects "that are required to comply with the green building standards" and reduce the impact where possible.

Locally salvaged wood is a carbon negative or low-carbon material, depending on the manufacturing process, that can significantly contribute to meeting the goals of Executive Order 23. By reusing existing wood, construction projects can reduce the embodied energy and emissions associated with producing new materials. Incorporating salvaged wood also aligns with the Order's emphasis on tracking the environmental footprint of building materials.

In conjunction with MOCS, the Mayor's Office of Contract Services, DCAS is working to develop new procurement policies around the requirements of textiles, which might serve as a template for salvaged or recovered wood. This effort is a direct result of the State of New York Textile Act (S.8741A/A.9649A) which is designed to strengthen the connection between local farmers producing plant and animal fibers and the textile industry. This state law aims to support innovation, sustainability, and new market opportunities for New York-grown fibers like hemp, sheep wool, and alpaca. It encourages public agencies to prioritize purchasing textiles made from these locally-grown fibers. The legislation also amends existing economic development laws to boost the expansion of fiber production and textile manufacturing in New York. It builds

[7]NYC Mayor's Office of Environmental Coordination. "Green Building Requirements." NYC.gov, August 24, 2024. Retrieved from https://www.nyc.gov/site/oec/green-building/green-building-requirements.page.

[8] U.S. Green Building Council (USGBC). LEED 4.1 Interior Design and Construction. USGBC, February 9, 2024. Retrieved from https://build.usgbc.org/idc41

[9] NYC Mayor's Office. "Executive Order 23." NYC.gov, September 22, 2022. Retrieved from https://www.nyc.gov/office-of-the-mayor/news/023-002/executive-order-23.

on New York State's Grown and Certified program to enhance marketing support for textiles made from New York fibers. The Act further authorizes the NYS Department of Economic Development (a branch within Empire State Development Corporation) to focus on research and development in fiber production and textile manufacturing and creates a Natural Fiber Textile Working Group chaired by the Commissioner of the Department of Agriculture and Markets. This Working Group aims to increase economic contributions, investment, and job opportunities related to New York-produced natural fibers, while also improving public understanding and expanding market opportunities.

There are several models of innovative practices for salvaged material processing in NYC. For example, Cooper Recycling, NYC's largest construction and demolition recycling facility, exemplifies an approach of reuse and waste reduction. Established in 1986 and now recycling over 95% of the materials it processes, Cooper handles wood as well as concrete, brick, masonry, plastic, metal, and other building materials. Its certification from the Recycling Certification Institute supports recycled deconstruction efforts that can contribute to achieving LEED® certification[10]. With Gold certification as the standard for public construction projects, the opportunity for a local circular system of salvage and reuse has only increased over the past eight years.

Tri-Lox has worked with reclaimed wood from NYC for over a decade. The company got its start developing a local supply chain for water tower wood, creating a partnership with local water tank producers to reclaim and reuse the wood from decommissioned water towers. This wood similarly earns credits towards LEED® certification on a NYC project for both local sourcing and reclamation.

## Existing Models of Wood Salvage

**Baltimore City, MD** is incorporating reclaimed wood into urban projects through the Baltimore Wood Project[11], a pilot model intended for replication in other communities facing similar environmental justice and economic challenges. With over 16,000 vacant properties in Baltimore, the project prioritizes deconstruction over demolition, a process that creates more jobs, is cost competitive, and opens opportunities for those with barriers to employment to build skills and a career. The wood is being salvaged from primarily buildings slated for demolition and tree care operations and removals. The salvaged wood is repurposed and sold locally for sustainable building, furnishings, and energy uses. This system fosters new business opportunities in the local economy and converts wood waste into a community asset, creating a closed loop system. Beyond economic benefits, the project has a positive impact on communities in Baltimore. It contributes to neighborhood revitalization by transforming blighted areas into more attractive and sustainable spaces.

[10] Cooper Recycling, accessed September 5, 2024. Retrieved from https://coopertankrecycling.com/.
[11] Baltimore Wood Project. Baltimore Wood Project — Rethinking Wood in the City. Retrieved from http://baltimorewoodproject.org/.

Two reports are published on economic analyses related to salvaged wood in Baltimore's program. The first, entitled " Fresh Cut: The Business Viability of Processing Freshly Cut Urban Wood in Baltimore City"[12] was funded by the USDA and developed in partnership with Humanim and Baltimore City's Department of Recreation and Parks. The objective of the report was "to assess the viability of investing in an urban wood mill that processes freshly cut wood from live urban trees by utility maintenance, public works, and private arborists" and the report concludes that the proposed model would be profitable after three years with additional quantifiable social and environmental benefits. The second report, "Deconstruct: Urban Wood Disposition Pay for Success Feasibility Report[13]" analyzes the feasibility of scaling up deconstruction operations in Baltimore. It focuses on capturing the holistic value of deconstruction by quantifying increased revenues, avoided costs, and new revenue streams. These include employment and reduced recidivism. The analysis was instrumental in a decision by the state of Maryland to scale up deconstruction operations in Baltimore.

**Milwaukee, WI** began salvaging its urban trees through a series of grant-funded pilots that began in 2010 by testing out the best approach for removal, transportation, and processing. The City of Milwaukee has about 194,000 trees and manages about 3,600 removals per year. Tree removals in Milwaukee Parks are staged in two parts. The first stage is to remove the canopy ensuring that the remaining trunk is safe and stable to stand until the second stage of the trunk removal. The removal of tree trunks is a scheduled seasonal process since highly specialized equipment is needed. This equipment is shared between departments and other agencies. Logs are cut to maximum length and transported to one of three Milwaukee Parks' service yards. From there, the material is placed, unsorted by species, size, or quality, in 30-yard dumpster bins that can be easily transported. In events such as a particularly destructive storm, Milwaukee Parks has set up staging sites where material gets taken and then transferred to the bins.

In 2014, the City of Milwaukee put out a request for proposal for utilizing locally salvaged wood. Parameters for the request required any interested parties to take all of the material regardless of quality, to explain how they would transport the material, and to be able to store and process the material promptly to avoid any rotting or waste[14]. Though Milwaukee has been through a few different partners, ten years later, they contract with a trucking company that transports the wood to two different mills outside of Milwaukee. These mills are under contract

[12]Baltimore Wood Project. Fresh Cut: The Business Viability of Processing Freshly Cut Urban Wood in Baltimore City. Baltimore City Recreation and Park's Forestry Division, Humanim, USDA Forest Service, Prepared by Quantified Ventures, March 17, 2019. Retrieved from http://baltimorewoodproject.org/pdf/FreshCut_BaltimoreUrbanWood_v3_2019.05.14.pdf

[13] U.S. Forest Service. *Urban Wood Disposition: Pay-for-Success Feasibility Report*. Prepared by Quantified Ventures, April 26, 2018. Retrieved from http://baltimorewoodproject.org/pdf/FeasibilityReport_Dconstruct_BaltimoreUrbanWood_042618.pdf

[14] UCF Society. "Trees First. Wood Next: Realizing the Highest and Best Use for Urban Trees". https://ucfsociety.org/event/trees-first-wood-next-realizing-the-highest-and-best-use-for-urban-trees/.

to find the best and highest use for all of the wood they receive, from turning wood chips into animal bedding for nearby farms to placing wood on architectural projects for the City[15].

Ultimately, this does save the City of Milwaukee money on disposal fees, but the savings are marginal, only enough to purchase equipment to sustain this program. Milwaukee instead reallocates the cost of disposal into a system of salvage and a public-private partnership that sets strict parameters to maximize reuse. This system of reuse also has the realized benefit of increasing operational efficiencies for the Parks Department by not having to transport wood to transfer stations. The real savings are in waste reduction, creating a circular system that reduces Milwaukee's organic waste and converting its waste into a resource of higher value and best use.

Each city's unique approach reflects the need for a responsive system tailored to the conditions of the particular environment. Both cases demonstrate that the process of converting wood waste into a local resource simultaneously strengthens a green workforce in and around the municipalities and increases the cultural value of urban forests and wood materials.

# Research Methodology

Efforts were made to collect a comprehensive dataset on wood procurement and use across NYC agencies over the past ten years. However, as research proceeded, the scope of data aggregation shrank significantly. This change is explained in more detail in the "Challenges" section of this document. The methodology combined both quantitative and qualitative approaches to provide a thorough analysis, ensuring a robust understanding of data on wood use and procurement, as well as contextual insights into opportunities and barriers for utilizing urban salvaged wood in City projects.

The process began with desktop research into how materials are procured in NYC and examining any publicly available data related to wood procurement. Next, the focus shifted to identifying agencies involved in significant wood procurement for maintenance and capital projects. Outreach was then initiated through email to arrange interviews with representatives from these agencies. The goal was to gain insights into wood usage, procurement methods, recent trends, and to obtain data not available online.

A semi-structured interview guide was developed, tailored to each agency with open-ended questions. The guide covered current procurement practices, including types of wood products used, the bidding processes, selection criteria, and sustainability goals. It also explored historical procurement practices to understand changes in wood procurement, shifts in product materials, and the key factors influencing these changes.

[15] "Sourcing Urban Wood," WudeWard, accessed September 2, 2024, https://www.wudeward.com/sourcing-urban-wood.

Data was retrieved from the following public databases. Additional resources for qualitative research are listed throughout this report.

- NYC Capital Projects Dashboard
- DCAS Active Requirements Contracts by Title
- NYC Urban Air Quality Assessment: Urban Forest Analysis

Representatives from the following City agencies were interviewed:

- NYC Housing Authority (NYCHA), the
- Department of Sanitation (DSNY), the
- School Construction Authority (SCA), the
- Department of Parks and Recreation (Parks), and the
- Department of Citywide Administrative Services (DCAS).

In addition to these City agencies, non-profit park conservancy groups were also contacted since these organizations play a significant role in the upkeep and management of city parks. Central Park Conservancy responded to our request for an interview and information.

Other agencies that were identified as potentially relevant to the study but were not able to be interviewed within the narrow time frame of the research project were the Landmarks Preservation Commission, the NYC Office of the Comptroller, Public Libraries (Brooklyn, Queens, New York), the Mayor's Office of Management and Budget, the Department of Education, the Department of Corrections (DOC), and the Department of Transportation (DOT). Future research should include these agencies.

# Goods & Construction-Related Services: The Two Pathways for NYC's Wood Procurement

The dynamic between the regulated procurement of goods and services plays a critical role in shaping pathways for urban wood reuse. NYC's procurement system is structured around detailed regulations that distinguish between "Goods" and "Services", each with its own set of rules and procurement processes. The processes are described below and the findings of this research are synthesized and presented in alignment with these two procurement pathways.

## Goods

NYC agencies employ three primary methods to acquire goods. The first and most significant method is through **Requirements Contracts,** a contract that fulfills the City's entire need for a particular good or service through a single vendor, outlined in the NYC Charter and managed by the NYC Department of Citywide Administrative Services (DCAS). For any City purchases exceeding $100,000, DCAS centralizes the procurement process. When a City agency requires a

product not available through an existing contract, it submits a request detailing the item and desired quantity. DCAS then develops an Invitation to Bid which includes all of the specifications and quantities estimated by the requesting City agency. DCAS oversees competitive bidding and awards a contract to the lowest qualified bidder. Generally, contracts are active for a period between two and five years. The awarded vendor is responsible for the delivery of any quantity of material requested by City agencies through purchase orders, whether above or below the estimated contract amounts, and the City is not required to pay the vendor the exact value of the contract. This centralized approach leverages the City's bulk purchasing power, often resulting in lower prices than if agencies procured individually. Therefore, agencies utilize requirements contracts where possible for needed materials. Importantly, any City agency can request from an active requirements contract, regardless of the initial requesting agency. This is done through a purchase order issued to DCAS after which DCAS facilitates the management and delivery of goods through the contracted vendor.

For smaller purchases, agencies have the flexibility of using **micro-purchases**. This method allows agencies to procure goods and services up to $20,000 independently. Each agency manages its micro-purchases, including invoice processing, using City-issued credit cards, and purchase orders through PASSPORT.

Finally, the **M/WBE Noncompetitive Small Purchase Method** provides a streamlined process for agencies to contract with certified Women- or Minority-Owned Businesses (M/WBE). This method allows agencies to bypass the competitive bidding process for purchases up to $1.5 million. Solicitations are posted by city agencies in PASSport, the city's online procurement platform.

### Construction-Related Services

The City's procurement process for construction-related services on public capital projects depends on whether the service is for professional design consultants or contractors for design-bid-build projects (DBB)[16]. While both types of services use competitive procurement methods, the selection of professional design consultant services includes evaluation criteria where price is a factor but not the sole parameter for selection. Whereas DBB projects require price as the single criteria for selection. Design services include architecture, engineering, construction management, and planning. Design professionals working under the design-bid-build (DBB) method are responsible for ensuring compliance with professional and City standards and informing the construction process[17].

[16] An alternative construction-related service, authorized by state law is design-build (DB), which combines the design and construction as a separate procurement method. This method is not specifically considered in this report, but opportunities to utilize salvaged and recovered wood on DBB projects apply in different but related ways to DB projects.

[17] The City of New York. (n.d.). *Primer on wood procurement: Nature Conservancy research project*. NYC Department of Design and Construction. https://www.nyc.gov/assets/ddc/downloads/town-and-gown/PrimeronWoodProcurement_NatureConservancyResearchProject.pdf

# Wood Procurement Findings

The findings are organized and analyzed according to two distinct procurement pathways presented above: Goods and Construction-Related Services. To better understand the scope and impact of these pathways, data on micro-purchases and active requirement contracts for the procurement of wood materials is presented. Within the Goods pathway, micro-purchase data includes details on small expenditures for various wood types, their applications, and purchasing patterns based on information provided by Parks. Active requirements contracts for wood materials are also examined, outlining their uses based on contract details or insights from the agencies utilizing these contracts. In the Construction-Related Services pathway, the focus is on how specialized wood could be integrated into public construction projects.

The analysis also considers historic shifts in City wood procurement, particularly through the acquisition of alternative materials for products traditionally made from wood. By exploring these distinct procurement pathways and policies, this section aims to provide a structured and insightful view of how NYC sources and utilizes wood across various functions and projects.

## Goods

Within NYC's Goods procurement, a diverse range of wood types and products are utilized for various applications. Across the City, the largest purchase of wood is for Thermally Modified Ash. This wood undergoes a heat treatment process that enhances its durability and resistance to moisture and pests, making it ideal for outdoor applications such as boardwalks. Douglas Fir is the most frequent and versatile wood used in both dimensional lumber and plywood. It is commonly employed in construction due to its strength and workability. KD S4S STD & BTR refers to kiln-dried, surfaced-four-sides lumber with standard and better grades. AC 7-ply plywood is a type of plywood with seven layers, offering strength and stability. Southern Yellow Pine (SYP), including pressure-treated options for ground contact and saltwater exposure. Cedar, a naturally rot-resistant wood, is used for a variety of exterior applications, while Red Oak, Poplar, and White Pine are all versatile woods used in a variety of interior applications. A variety of Plywood types, such as AC, BC, Birch, CDX, Fire Rated, HDO, Maple, Oak, and Pre-Finished Birch, serve multiple functions from construction to specialized applications. It should be noted that when a wood species is mentioned by name, that refers to the veneer on the face of the plywood, often 1/42" (.024") thickness. Additionally, Clear Pine and MDF, an engineered wood product made from wood fibers, are used for detailed woodworking and specific project needs. Some wood products listed, such as MDF and various types of plywood are not made of solid wood and are used in goods, like office furniture.

## Micro-purchases

Micro-purchases and purchase order data was provided by the Parks Brooklyn Shops for fiscal years (FY) 2023 and 2024 (Tables 1, 2, 3). Explicit end-use was not provided in the data provided by the Brooklyn Shops, so the applications listed are assumed based on the size and quantity.

1. **Douglas Fir** is commonly used for construction, structural support, and some detailed woodworking.
    - Frequently purchased in sizes like 2"x6"x8', 2"x10"x16', and 2"x4"x96".
    - Used for various applications including general construction, studs, and dimensional lumber.
    - Predominantly bought from Foundation Building Materials and The Home Depot.
    - Notable bulk purchases for specific projects, such as bench slats.
2. **Southern Yellow Pine** is typically used for structural purposes, including ground contact applications, pressure-treated lumber, and boardwalks.
    - Purchased in various sizes such as 2"x6"x16' and 4"x6"x20'.
    - Significant quantities of ground contact and pressure-treated lumber.
    - Mostly sourced from Foundation Building Materials and Ozone Park Lumber / Rockaway Blvd.
3. **Poplar** is typically used for fine woodworking and detailed interior projects.
    - Purchased in board feet and various dimensions like 2"x6" and 8/4".
    - Mostly sourced from Dyke's Lumber.
4. **Plywood** is used in casegoods and general construction, including sheathing and subflooring.
    - Various thicknesses and sizes, such as 3/4"x4'x8' and 1/2"x4'x8'.
    - Significant purchases in bulk, indicating its importance for construction projects.
    - Sourced from multiple suppliers including Ozone Park Lumber / Rockaway Blvd. and Foundation Building Materials.
5. **Pressure Treated Lumber** is used for exterior especially ground contact applications requiring rot-resistance.
    - Purchased in sizes like 2"x4"x8' and 2"x8"x8'.
    - Mainly sourced from The Home Depot.
6. **Thermo-Ash** is used for high-durability exterior applications such as boardwalks and decking.
    - Large quantities purchased for boardwalks and decking, reflecting its specialty applications and high total cost.
    - Mainly sourced from Ozone Park Lumber / Rockaway Blvd.
7. **Eastern White Pine** is used for both general construction and specific applications such as decorative woodworking.
    - Varieties include clear pine for high-quality applications and sanded pine for smoother finishes.
    - Sourced from The Home Depot and Ozone Park Lumber / Rockaway Blvd.

*Table 1: Wood Purchase by Type*

| Wood Type | FY2023 Quantity | FY2024 Quantity | Year Change |
|---|---|---|---|
| Douglas Fir | 1,722 units | 2,934 units | 70.4% |
| Southern Yellow Pine | 5,146 units | 8,215 units | 59.6% |
| Poplar | 283 units | 173 units | -38.9% |
| Plywood | 238 sheets | 146 sheets | -38.7% |
| Pressure Treated Lumber | 31 pieces | 18 pieces | -41.9% |
| Thermo-Ash | 27,324 linear feet | 30,324 linear feet | 11.0% |
| Pine | 103 pieces | 60 pieces | -41.8% |

Note: Units are not standardized as the unit of measurement provided for each line purchase includes sheet, linear feet, board feet, and piece count. The units reflect the total quantity purchased for each wood type in each line item.

*Table 2: Expenditure by Wood Type*

| Wood Type | FY2023 Cost | FY2024 Cost | Year Change |
|---|---|---|---|
| Douglas Fir | $116,136.28 | $139,746.80 | 20.3% |
| Southern Yellow Pine | $152,670.53 | $138,590.44 | -9.2% |
| Poplar | $1,362.31 | $915.17 | -32.8% |
| Plywood | $6,308.76 | $6,553.87 | 3.9% |
| Pressure Treated Lumber | $1,236.73 | $719.14 | -41.8% |
| Thermo-Ash | $274,885.28 | $199,269.28 | -27.5% |
| Pine | $19,776.10 | $21,865.80 | 10.6% |

*Table 3: Average Cost per Unit by Wood Type*

| Wood Type | FY2023 Cost | FY2024 Cost | Year Change |
|---|---|---|---|
| Douglas Fir | $67.42 | $47.65 | -29.3% |
| Southern Yellow Pine | $29.67 | $16.89 | -43.0% |
| Poplar | $4.82 | $5.29 | 9.8% |
| Plywood | $26.40 | $44.89 | 70.1% |
| Pressure Treated Lumber | $39.79 | $40.99 | 3.0% |
| Thermo-Ash | $10.06 | $6.57 | -34.7% |
| Pine | $191.90 | $365.39 | 90.4% |

The overall expenditure on wood products made by Parks Brooklyn Shops division was $539,084.97 in FY2023 and $518,230.80 in FY2024 (as of September when data was collected). Douglas Fir and Southern Yellow Pine are the most frequently purchased wood types, reflecting their broad use in structural and finish work applications. Poplar and Thermo-Ash are both specialized wood types, with Poplar being used for higher-quality and longer lasting wood-working applications and Thermo-Ash used in exterior applications that require high durability.

## DCAS Requirements Contracts

The City maintains public records of active requirements contracts. As of August 24, 2024 the City has four active requirements contracts for wood material and wood products. The subsequent sections reveal the spending on requirements contracts per agency and an analysis of the types of wood being procured by NYC from data shared by DCAS.

*Table 4: Active Requirements Contracts for Wood Products*

| | Title | Awarded Vendor | Start Date | End Date | Estimated Value |
|---|---|---|---|---|---|
| 1 | **Bid 2300144 Lumber, Dimensional & Plywood** | L & W SUPPLY CORPORATION | 3/4/2024 | 3/3/2029 | $1,674,985.90 |
| 2 | **IFB2200149 Boardwalk Lumber, Thermo Ash - 128-13** | ROCKAWAY BLVD CORP OZONE PARK | 2/15/2023 | 2/14/2028 | $2,429,126.00 |
| 3 | **TRADITIONAL WOOD OFFICE FURNITURE Office Furniture** | FURNITURE PRO CORP | 12/1/2022 | 11/30/2024 | $613,058.37 |
| 4 | **IFB 2200126 Dockbuilding Greenheart** | THE PILING COMPANY | 11/1/2022 | 10/31/2025 | $2,822,314.80 |

### 1. *Bid 2300144 Lumber, Dimensional & Plywood*

**Wood Types and Bid Details.** The total contract amount for this requirements contract is $1,674,985.90 as seen in Table 4. The selected vendor is Feldman Lumber in Brooklyn, NY (a division of L&W Supply). Feldman supplies lumber, drywall, board products, building supplies and specialty products to contractors and industrial companies. The wood types, dimensions and total estimated contract amount are shown in Table 5.

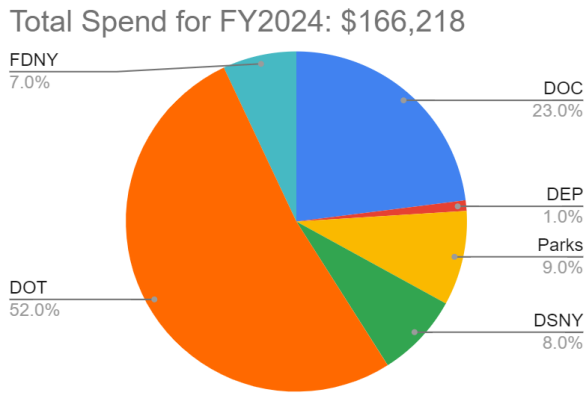
*Table 5: Wood Specifications in Bid 2300144 Lumber, Dimensional & Plywood*

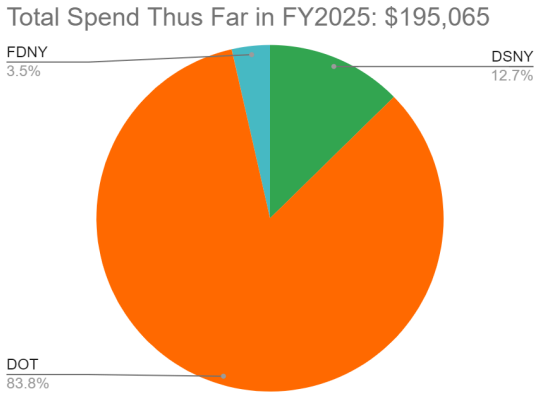
| Wood Type | Sub Type / Grade | Unique Line Items in Bid | Subtotal | Minimum Dimension | Max Dimension |
|---|---|---|---|---|---|
| CEDAR #2 & BTR | | 1 | $6,600 | 2" X 6" X 16' | 2" X 6" X 16' |
| CLEAR PINE | | 4 | $24,620 | 3/4" X 12" X 16' | 8/4" X 12" X 16' |
| DOUGLAS FIR | KD S4S STD & BTR | 17 | $358,109 | 2" X 4" X 10' | 6" X 6" X 16' |
| DOUGLAS FIR | PLYWOOD AC 7 PLY | 1 | $4,712 | 3/4" X 4' X 8' | 3/4" X 4' X 8' |
| MDF | | 1 | $13,920 | 3/4" X 4' X 8' | 3/4" X 4' X 8' |
| OAK | | 15 | $20,805 | 4/4" X 6" X 8' | 4/4" X 10" X 16' |
| PLYWOOD | AC | 5 | $160,608 | 1/2" X 4' X 8' | 5/8" X 4' X 8' |
| PLYWOOD | BC | 3 | $81,720 | 1/2" X 4' X 8' | 3/4" X 4' X 8' |
| PLYWOOD | BIRCH | 2 | $6,744 | 1/2" X 4' X 8' | 3/4" X 4' X 8' |
| PLYWOOD | CDX | 4 | $114,024 | 1/2" X 4' X 8' | 5/8" X 4' X 8' |
| PLYWOOD | FIRE RATED | 1 | $93,600 | 3/4" X 4' X 8' | 3/4" X 4' X 8' |
| PLYWOOD | BIRCH | 1 | $22,080 | 3/4" X 4' X 8' | 3/4" X 4' X 8' |
| PLYWOOD | HDO | 1 | $13,440 | 3/4" X 4' X 8' | 3/4" X 4' X 8' |

| | | | | | |
|---|---|---|---|---|---|
| PLYWOOD | MAPLE | 1 | $20,160 | 3/4" X 4' X 8' | 3/4" X 4' X 8' |
| PLYWOOD | OAK | 2 | $49,440 | 1/4" X 4' X 8' | 3/4" X 4' X 8' |
| PLYWOOD | PRE-FINISHED BIRCH | 1 | $9,135 | 3/4" X 4' X 8' | 3/4" X 4' X 8' |
| Plywood RTD | | 1 | $39,360 | 19/32" X 4' X 8' | 19/32" X 4' X 8' |
| POPLAR #2 & BTR | | 1 | $19,800 | 1" X 16" X 12' | 1" X 16" X 12' |
| RED BIRCH | | 1 | $5,928 | 3/4" X 12" X 16' | 3/4" X 12" X 16' |
| RED OAK | | 14 | $94,832 | 3/4" X 12" X 16' | 8/4" X 12" X 16' |
| ROUGH SAWN SPRUCE | | 3 | $37,422 | 2" X 10" X 16' | 3" X 10" X 16' |
| SYP #2 & BTR S4S KD | ACQ PRESSURE TREATED WOOD | 5 | $84,063 | 2" X 4" X 10' | 2" X 8" X 10' |
| SYP #2 & BTR S4S KD .23PCF | SALT WATER SPLASH MCA PRESSURE TREATED WOOD | 16 | $132,662 | 2" X 10" X 10' | 2" X 6" X 20' |
| SYP #2 & BTR S4S KD .60PCF | CCA | 4 | $94,650 | 4" X 12" X 20' | 12" X 12" X 20' |
| SYP & BTR S4S KD | ACQ PRESSURE TREATED WOOD | 14 | $98,921 | 2" X 12" X 10' | 6" X 12" |
| SYP DI - 65 PLANK | | 1 | $6,660 | 2" X 10" X 13' | 2" X 10" X 13' |
| WHITE PINE #2 & BTR | | 4 | $2,805 | 5/4" X 8" X 16' | 1" X 6" X 16' |

**Agency Spend.** Six agencies spent $166,218 in FY2024[18] on this requirements contracts including DOT, DOC, Parks, DSNY, FDNY, and DEP in descending order according to total spend. The spending in the first two months of FY2025 exceeds the spending of the previous year as seen in Figures 1 and 2. The total spent on this requirement contract since the start date is $361,283.

Figures 1 and 2: Agency Spend on Bid 2300144 Lumber, Dimensional & Plywood for FY2024 and FY2025




Parks provides a look into spending on previous requirements contracts from FY2023. While the spending does not align to the exact requirements contract listed above, the data in Table 6 provides insights into purchasing quantities of Douglas Fir lumber in a variety of different sizes from Boro Sawmill & Timber Company, based in Wayne, New Jersey.

*Table 6: Parks Purchase Orders for Lumber for FY2023*

[18] The fiscal year (FY) for NYC begins July 1st and ends June 30th of the following year.

| Wood Type | Item | Quantity | Price | Spent |
|---|---|---|---|---|
| Douglas Fir | 3x8x8 B&BTR V/G KD S4S Nominal | 200PC | 188.67PC | $37,734.00 |
| Douglas Fir | 3x8x10 B&BTR V/G KD S4S Nominal | 200PC | 235.96PC | $23,596.00 |
| Douglas Fir | 3x8x20 B&BTR V/G KD S4S Nominal | 30PC | 525.82PC | $15,774.60 |
| Douglas Fir | 2x3x8 B&BTR V/G KD S4S Nominal | 1200PC | 19.89PC | $23,868.00 |
| | **Total** | **11,200 Board Ft** | | **$100,972.60** |

**Discussion.** While the exact end use for this material is not disclosed within the bid documents, it was determined through multiple interviews that agencies utilize this requirements contract to procure a wide array of wood building products for many different applications, from furniture components like bench slats to items for rough construction and temporary use.

Wood species on this list such as Oak, Red Oak, and Poplar are found in our urban forest, while others such as Spruce and Douglas Fir are frequently salvaged from deconstruction. The extensive use of Douglas Fir indicates the utility of softwood for many different applications due to ease of construction and stability of a vertical grain (V/G) cut. Softwoods coming from the NYC urban forest and building deconstruction are potential resources to achieve this versatility of application with a more local source.

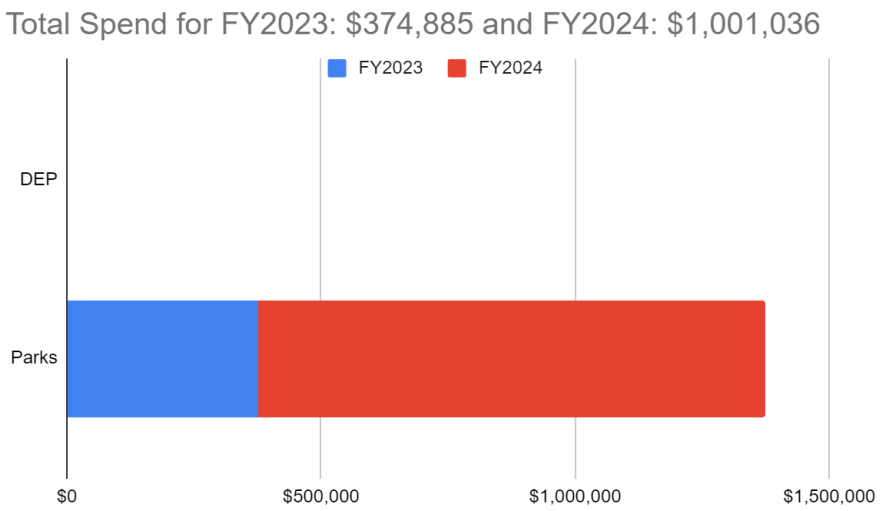
### *2. IFB2200149 Boardwalk Lumber, Thermo Ash - 128-13*

**Wood Types and Bid Details.** Ozone Park Lumber, located in Ozone Park, New York is the supplier of a requirements contract for Thermally Modified Ash. The total estimated quantity in this contract is 177,050 linear feet of 2”x4” Thermally Modified Ash at a total estimated cost of $2,429,126 as seen in Table 4. Thermal modification is a specialized drying process that enhances the durability of select hardwoods, particularly for exterior applications. This process alters the cellular composition of the wood by converting the natural acids and sugars into a form unavailable to mold and fungi that cause rot and decay. This process also makes the wood hydrophobic, which greatly reduces warp and splitting in untreated regional hardwoods that is often caused by seasonal humidity fluctuation. After reaching out directly to the vendor, a representative from the company said the product for this contract is Thermory, an Estonia-based company that sources Ash from North American and Europe, sends the Ash to be processed in Estonia, and then sends the finished product to North America for distribution, thus adding a considerable amount of embodied carbon to the production process.

**Agency Spend.** In Fiscal Years 2023 and 2024, Parks spent $1,374,867 on Thermally Modified Ash while in 2024, DEP spent a relatively insignificant $1,054. While the exact end use for this material is not disclosed within the bid documents, it was determined through separate

conversations with Parks that this quantity of Thermally Modified Ash is used by Parks for the reconstruction and repair of the Coney Island Boardwalk in Brooklyn. The total spent on this requirements contract since the start date is $1,375,921.

Figure 3: Agency Spend on IFB2200149 Boardwalk Lumber, Thermo Ash - 128-13 for FY2023 and FY2024




**Discussion.** The supply of Ash in North America is being rapidly impacted by the Emerald Ash Borer (EAB), a beetle that originated from Asia and was discovered in the United States in 2002[19]. The EAB larvae feed on the inner bark of Ash trees, disrupting their ability to transport water or nutrients. Since its arrival, the beetle has decimated the North American Ash population. Thermory acknowledges this on its website, stating "Thermory is being proactive and is developing sources of ash raw material in Europe." While Thermory is a more sustainable alternative to tropical hardwoods, the product has a global carbon footprint and, with the loss of North American Ash due to EAB, Thermory Ash will most likely be sourced primarily from Europe.

Both Red Oak and Poplar are alternatives to Ash that are abundant in the City and surrounding region of New York. Additionally, there are several companies in the Northeast region that process this wood for thermal modification, providing the expertise in this innovative technology and reducing the need to ship the wood overseas and back as a building product. While use of Thermally Modified Ash reduces City reliance on unsustainable tropical hardwoods, there is a path forward for the wood to be sourced and processed regionally.

### *3. Traditional Wood Office Furniture*

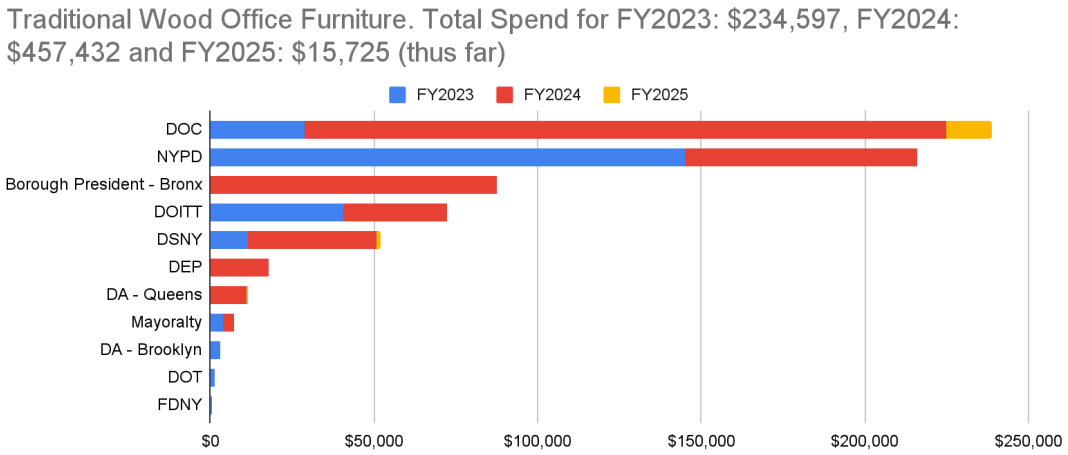
**Wood Types and Bid Details.** Within the requirements contracts, Furniture Pro Corp, agrees to provide any product in the Carmel Furniture Catalog at a 41% discount. No further details are provided on the specific products needed by the City.

[19] Emerald Ash Borer Network. EAB Network - About - Emerald Ash Borer. 2023. Retrieved from https://www.emeraldashborer.info/about-eab.

**Agency Spend.** The total contract amount for this requirements contract is $613,058.37 as seen in Table 4. There are several City agencies that purchased traditional wood office furniture in FY2023 and FY2024 with DOC, NYPD, and the Bronx Borough President with the highest spending total for those two years. The total spent on this requirements contract since the start date is $707,754. Again, while the exact end use for this material is not disclosed within the bid documents, it was determined through the vendor's website that these items include "office desks, files and seating."[20] A brief interview with the vendor revealed that none of these items include solid wood components, but rather wood veneer and/or laminate containing little or no real wood.

**Discussion.** The Carmel Catalog's "laminate series" features furniture constructed with a core material such as plywood or MDF, topped with a thin layer of laminate that imitates natural materials like wood or stone. Although the series offers swatch options in Maple, Cherry, and Mahogany, the furniture itself is not made from solid wood, even though solid wood provides superior durability and longevity compared to composite materials. Its inherent structural integrity makes it more resilient to wear and tear, withstanding dents and scratches better than laminates or composites. Solid wood can be repaired and refinished if damaged, which is not possible with laminate surfaces, leading to easier maintenance and a longer lifespan of the furniture product. Solid wood elements made from salvaged urban wood, such as desk and table tops, could enhance the durability and overall quality of the furniture, offering a more robust and sustainable alternative to the current laminate options.

Figure 4: Agency Spend on Traditional Wood Office Furniture for FY2023 and FY2024




### *4. IFB 2200126 Dockbuilding Greenheart*

**Wood Types and Bid Details.** Greenheart (*Chlorocardium rodiei)* is an imported tropical hardwood often used for hard-wearing and marine applications[21] Table 7 summarizes the

[20] Furniture Pro DCAS Contract. Retrieved from https://furnitureprocorp.com/nyc-dcas/

[21] Marine Construction Supply Company. Greenheart Piling and Timber. https://www.marineconstructionsupply.com/greenheart-piling-timber

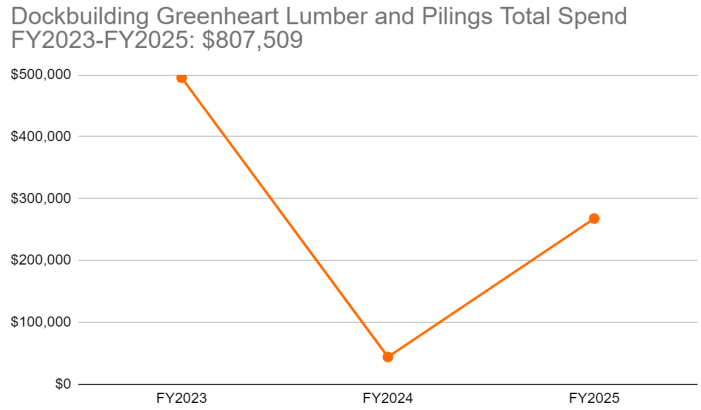
quantities of Greenheart Wood in the requirements contract:

*Table 7: IFB 2200126 Dockbuilding Greenheart Wood Types and Details*

| Type | Dimension | Lengths | Total Quantity |
|---|---|---|---|
| Lumber | 4"TH X 12"W X 20'-24'L | 328 | 28,800 FBM |
| Lumber | 8"TH X 12"W X 20'-24'L | 88 | 15,360 FBM |
| Lumber | 10"TH X 12"W X 20'-24'L | 66 | 14,400 FBM |
| Lumber | 12"TH X 12"W X 20'-24'L | 55 | 14,400 FBM |
| Piling | 45'-53'L | 260 | 12,720 LF |
| Piling | 54'-62'L | 316 | 18,600 LF |
| Piling | 63'-67'L | 464 | 30,150 LF |

**Agency Spend.** The total contract amount for this requirements contract is $2,822,314.80 as seen in Table 4. DOT is responsible for the total spending on this requirements contract since the start date. According to bid documents, the lumber material in this requirements contract is used for "pier impact protection, marine support structures, platforms and platform decks, and as members in other heavy timber construction." DOT generally has jurisdiction over piers across the City. The total spent on this requirements contract since the start date is $807,509 and trends over time can be seen in Figure 5.

Figure 5: DOT Spend on Dockbuilding Greenheart Lumber and Pilings for FY2023 - FY2025




**Discussion.** The Piling Company, based in Tinton Falls, New Jersey, supplies structural products for marine and rail applications. While the company does offer FSC certified wood, the requirements contract does not appear to require any certification for Greenheart, which is being used primarily for structural marine applications like the Brooklyn Bridge Promenade and Staten Island fender racks, bulkheads, and pilings. According to a 2008 memorandum on reducing the City's reliance on tropical hardwoods, DOT has piloted replacing Greenheart with Recycled Plastic Lumber, but RPL was too heavy and difficult to cut and drill. DOT has also looked into substituting domestic hardwoods, though the concern about durability and vulnerability to marine wildlife has made it challenging to find a suitable candidate. Black Locust is a potential hardwood substitute in

terms of durability, but sourcing Black Locust with large enough dimensions for these applications was another road block.[22]

## M/WBE Noncompetitive Small Purchase Method

While all City contracts are publicly accessible in PASSport, specific details about the materials used, such as wood data, are not explicitly listed. To investigate this, we conducted searches using the Keyword feature in PASSport to identify contracts involving M/WBE certified vendors under this procurement method. The keywords included “boardwalk,” “bench,” “wood,” “lumber,” and “door.” From this search, we found only seven active contracts that appeared to involve wood materials based on their titles.[23]

*Table 8: Active M/WBE Noncompetitive Small Purchase Contracts for Wood Products*

| Title | Agency | Program | Awarded Vendor | Start Date | End Date | Current Contract Amount | Total Paid Amount |
|---|---|---|---|---|---|---|---|
| **Hardwood Timber for Fenders** | DOT | Ferries | WILLIAM G MOORE & SON, INC OF DELAWARE | 06/12/2023 | 06/30/2025 | $1,000,000 | $201,181 |
| **057230000552 - Sheetrock, plywood, lumber** | FDNY | FACILITIES - Carpenter | ORIENTAL LUMBER INC | 01/20/2023 | 01/20/2025 | $200,000 | $98,069 |
| **Various Plywood, Hardwood, Lumber, and Accessories** | DOT | Ferries | ORIENTAL LUMBER INC | 03/31/2022 | 09/30/2025 | $300,000 | $200,338 |
| **INSTALLATION & REPLACE OF BIKE RACKS & BENCHES** | DOT | PROGRAM MANAGEMENT | JUAN ALFARO DESIGN INC | 07/01/2023 | 06/30/2025 | $1,000,000 | $993,843 |
| **Blanket Order for Carpentry Materials** | DCAS | CTS-Miscellaneous | ORIENTAL LUMBER INC | 03/11/2024 | 03/11/2025 | $100,000 | $16,457 |
| **057250000189-Purchase of various lumber** | FDNY | DIVISION OF TRAINING - RANDALL'S ISLAND | ORIENTAL LUMBER INC | 09/01/2024 | 08/31/2025 | $100,000 | $0 |

[22]NYC.gov. MEMORANDUM: Tropical Hardwood Reduction Plan To: Mayor Michael R. Bloomberg From: Rohit T. Aggarwala, Director of Long-Term Planning and Sustainability. https://www.nyc.gov/html/om/pdf/tropical_hardwoods_report.pdf

[23] https://a0333-passportpublic.nyc.gov/index.html

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **FY24 BPO FOR VARIOUS LUMBER SUPPLIES** | DSS | (0420) GENERAL SUPPORT SERVICES | ALDORAY & ASSOCIATES CORP | 10/01/2023 | 01/31/2025 | $90,000 | $3,450 |
| | | | | **TOTAL** | | $2,790,000 | $1,513,338 |

*Table 9: Inactive M/WBE Noncompetitive Small Purchase Method for Wood Products*

| Title | Agency | Program | Awarded Vendor | Start Date | End Date | Current Contract Amount | Total Paid Amount |
|---|---|---|---|---|---|---|---|
| **057220000189 - Sheetrock, plywood, lumber** | FDNY | Workforce and Internal Service Continuity | ORIENTAL LUMBER INC | 11/15/2021 | 11/15/2022 | $100,000 | $98,164 |
| **Blanket for Lumber, Plywood, and Building Materials** | DCAS | CTS-Miscellaneous | ORIENTAL LUMBER INC | 12/08/2021 | 12/07/2022 | $99,999 | $59,216 |
| **BWSO Southern Yellow Pine Lumber 4001004X** | DEP | WATER AND SEWER OPERATION | BREIT ENTERPRISES INC | 10/23/2023 | 06/30/2024 | $32,800 | $32,800 |
| **Carpenter Shop Goods** | DCAS | CTS-Shops | ORIENTAL LUMBER INC | 03/01/2023 | 02/29/2024 | $99,999 | $71,249 |
| **INCREASE-Ipe Hardwood Lumber Non DCAS RC Items for Boardwalk** | Parks | Maintenance & Operations | BREIT ENTERPRISES INC | 11/01/2021 | 12/17/2021 | $45,346 | $45,290 |
| **Roofing Supplies and Materials** | DOC | Facility Maintenance & Repair Division (FMRD) | ORIENTAL LUMBER INC | 11/01/2022 | 06/30/2023 | $99,999 | $99,999 |
| **Lumber, Various Types & Sizes** | DOC | Facility Maintenance & Repair Division (FMRD) | ORIENTAL LUMBER INC | 11/01/2022 | 06/30/2023 | $149,050 | $50,000 |
| | | | | **TOTAL** | | $627,193 | $456,718 |

Table 8 presents an overview of active contracts related to timber, lumber, and carpentry materials awarded by various agencies in NYC. The Department of Transportation (DOT), Fire Department of New York (FDNY), Department of Citywide Administrative Services (DCAS), and

Department of Social Services (DSS) have awarded contracts for projects related to ferry fender hardwoods, sheetrock and plywood supplies, bike rack and bench installation, and carpentry materials.

The total contract value across all active M/WBE projects is $2,790,000, with $1,513,338 paid to date. Notably, contracts with FDNY and DSS for various lumber supplies, have significantly lower paid amounts compared to the contract value, suggesting they may be newer contracts.

Table 9 outlines several inactive contracts awarded under the M/WBE Noncompetitive Small Purchase Method for projects under agencies like FDNY, DCAS, the Department of Environmental Protection (DEP), Parks, and the Department of Correction (DOC). The total value of these inactive contracts is $627,193, with $456,718 paid out to date. Most of these contracts were nearly or fully executed, such as those for FDNY, Parks, and DOC roofing supplies, indicating high utilization. However, some contracts, like those for various lumber types under DOC, show lower payment amounts relative to the contract value, indicating incomplete fulfillment before becoming inactive.

The disparity in total contract amounts between the active and inactive contracts in the tables may stem from an increase in the maximum value allowed for noncompetitive purchasing with M/WBEs. The threshold was raised from $500,000 in 2019 to $1,000,000 in June 2023 and then to $1,500,000 in December 2023[24]. This policy change likely enables agencies to procure larger volumes of materials or fund bigger projects directly from M/WBE vendors without the competitive bidding process.

M/WBE Noncompetitive Small Purchase Contracts offer an additional potential pathway for City agencies to source local wood from M/WBE businesses — an intersection of the City's equity and sustainability goals. However, an assessment by the Comptroller's office for the 2023 Fiscal Year finds that implementation of Local Law 174 (LL 174), which established the current M/WBE program, has only narrowly expanded the City's contracts with M/WBE businesses. M/WBEs accounted for just 5.3% of the value of new City contracts and purchase orders. The Comptroller's report identifies several challenges to expanding M/WBE contracts, including no centralized place for businesses to access procurement opportunities and a lack of City agencies utilizing the M/WBE Noncompetitive Small Purchase method[25]. Thus, while the potential for M/WBE contracts is not yet fully realized, it is a pathway for not only a more equitable procurement landscape, but also one that can potentially prioritize climate justice and sustainability goals as it is not constrained by a cost-competitive bid process.

[24] M/WBE Opportunities - Contracting Opportunities with NYC-Certified Minority and Women-owned Business Enterprises, Accessed October 10, 2024 https://comptroller.nyc.gov/services/for-businesses/doing-business-with-the-comptroller/mwbe-opportunities/

[25] NYC Comptroller. "Annual Report on M/WBE Procurement: FY23 Findings and Recommendations." NYC Office of the Comptroller, February 14, 2024. Retrieved from https://comptroller.nyc.gov/reports/annual-report-on-m-wbe-procurement-fy23-findings-and-recommendations/.

### Construction-Related Services

Town+Gown:NYC, which has supported various experimental-learning research projects for its Urban Resource and Recovery Working Group (URR WG), supplied the *Specialized Wood Procurement Primer* as background to support the work of the URR WG and this research project. The primer contextualizes the Construction-Related Services procurement processes for specialized wood on capital projects in NYC. Insights from this background provided the report with a view into the complexities and decentralized nature of public procurement. Additional inquiries regarding data collection across city agencies highlighted the challenges in accessing comprehensive data and a lack of centralized repository for material information used in capital projects, which limited the research team's ability to gather extensive information.

As revealed in the Town+Gown Primer on Wood Procurement[26], two recent examples of the use of specialized wood in the public realm was for a NYC Department of Youth and Community Development conference room and a Parks office. The inclusion of such materials often depends on decisions made by the project's designer or a request of the project owner during the design phase. Both the designer and the project owner play a role in material selection, subject to approval and budget constraints. Additionally, in DBB projects, contractors may propose material substitutions, making it essential to also engage contractors in the discussion of specialized wood.

# Research Challenges

**Data Fragmentation.** One of the primary challenges to the aggregation of procurement data for wood products lies in the fragmented nature of the data itself. The most centralized source of material quantity and cost in NYC is the data associated with requirements contracts. However, this data, managed by DCAS, does not include specificity in how the material is utilized by each agency.

Within agencies requesting material from requirements contracts through purchase orders, data can be scattered across multiple departments or not collected at all, making it difficult to consolidate into a centralized database. This fragmentation is exacerbated by inconsistent data management methods and lack of standardization, as different agencies may employ varying formats or classifications for wood products.

While the research team anticipated data privacy to be an obstacle for data collection, the primary issue research team experienced was that related to both micropurchases and requirements contracts was too difficult to aggregate across departments or did not exist in any format that would be conducive to analysis.

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[26] The City of New York. (n.d.). *Primer on wood procurement: Nature Conservancy research project*. NYC Department of Design and Construction. https://www.nyc.gov/assets/ddc/downloads/town-and-gown/PrimeronWoodProcurement_NatureConservancyResearchProject.pdf

These challenges collectively contribute to the difficulty of obtaining a comprehensive and reliable dataset to analyze wood use in City agencies over the last ten years. Overcoming these obstacles for wood or any material usage will require coordinated efforts to standardize record keeping methods across agencies.

**Capital Project Planning and Delivery.** Understanding the specific types of wood employed in capital projects and design services within NYC is a challenging endeavor due to the absence of mandatory reporting requirements[27]. Currently, agencies are required to report the status of capital projects three times a year, including reasons for any changes in budget or schedule. This information is available to the public and posted in the NYC Capital Projects Dashboard. Whereas this brings fiscal transparency to public capital projects, the information that is required to report is broad and lacks specifics of material tracking, sourcing, or potential environmental impacts.

# Integration Opportunities & Recommendations

While data limitations present challenges in fully capturing the full spectrum of integration avenues for salvaged wood, the findings below highlight its potential as a valuable pathway in contributing to the City's sustainability goals. Below are specific integration strategies for the use of specialized wood, perhaps as a replacement of existing wood materials, within the public realm.

## Goods

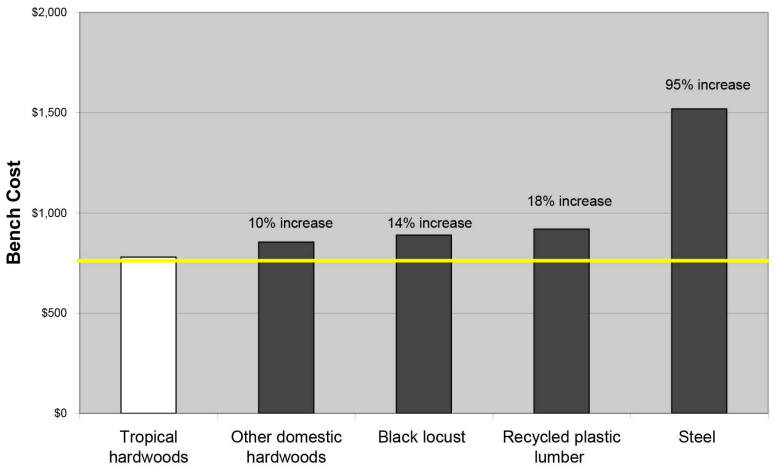
One prominent opportunity to integrate salvaged wood into public infrastructure is in the maintenance of park benches. Parks feature three different styles of benches, each with distinct material requirements. Bench Type B, which includes a backrest, is the only style that currently uses wood slats. These slats are specified to be American White Oak, treated with primer and enamel paint to protect the wood from the elements. Oak is a prominent overstory species in the urban forest, as well as other hardwood species, which can be substituted along with alternative finish treatments to painting that could require minimized maintenance.

In contrast, the backless version of Bench Type B, as well as the 1939 World's Fair and 1964 World's Fair bench styles, use recycled plastic lumber (RPL) made from at least 90% post-consumer and pre-consumer high-density polyethylene (HDPE). According to Parks data from 2023, there are approximately 6,000 linear feet of 1939 World's Fair benches and 5,000 linear feet of 1964 World's Fair benches. The prevalence of RPL in park bench construction is a direct effect of the City's initiative to eliminate the use of tropical hardwoods.

[27] NYC Charter Commission. Chapter 9 - CAPITAL PROJECTS AND BUDGET — NYC Charter 0.0.1 documentation. readthedocs.io, https://nyccharter.readthedocs.io/c09/.

Since 2008, Parks have been phasing out Ipe and other tropical hardwoods as per the Tropical Hardwood Reduction Plan[28] memorandum from the Bloomberg administration. The memo, authored by Rohit T. Aggarwala, then Director of Long-Term Planning and Sustainability, outlines alternatives to Ipe bench slats, including domestic hardwoods such as Black Locust and Recycled Plastic Lumber.

*Figure 6: New Bench Cost by Material (Source: Parks)*




The memorandum includes cost estimates for new benches by material type (see Figure 6) and notes that lifecycle costs are similar across different wood types. While recycled plastic lumber (RPL) has a higher upfront cost compared to regional wood alternatives, it requires less maintenance since it does not need painting or refinishing. However, RPL does not necessarily last longer than other wood products. Trex®, a producer of RPL, offers a 10-year warranty for decking and a 25-year warranty for cladding applications in commercial environments. In contrast, Thermory's Thermally Modified Ash, used for City boardwalks but viable for a wide range of exterior applications, comes with a 20 to 25-year warranty. Because RPL cannot easily be repaired or refinished, damaged RPL must be replaced entirely, leading to higher replacement costs and increased plastic waste. Emerging research[29] highlights the significant environmental risks associated with plastic waste including its persistence in the environment, harmful effects on wildlife, potential to leach toxic substances, and its broader impacts on ecosystems and human health[30]. Addressing these issues with the waste produced from RPL will require utilizing innovative alternative materials to mitigate these negative effects. Implementing a phased-approach to replace the RPL slats with salvaged wood could significantly improve sustainability, reduce waste, and support broader environmental objectives.

## Additional Good Pathways to Wood Reuse in Public Spaces

[28] NYC.gov. MEMORANDUM: Tropical Hardwood Reduction Plan To: Mayor Michael R. Bloomberg From: Rohit T. Aggarwala, Director of Long-Term Planning and Sustainability. https://www.nyc.gov/html/om/pdf/tropical_hardwoods_report.pdf

[29] "From Pollution to Solution: A Global Assessment of Marine Litter and Plastic Pollution," MedBlue Economy Platform, October 2021, https://medblueconomyplatform.org/wp-content/uploads/2021/10/2021_frompollutiontosolution.pdf.

[30] "Impacts of Plastic Pollution," U.S. Environmental Protection Agency (EPA), accessed September 1, 2024, https://www.epa.gov/plastics/impacts-plastic-pollution.

There is an additional avenue to integrating the City's salvaged and reclaimed wood into public spaces through the private organizations that work in partnership with the City as stewards for these public spaces.

Central Park Conservancy, funded primarily by individual donations, acts as the day-to-day steward for Central Park. Like Parks, Central Park Conservancy's material purchases are prioritized according to cost and longevity, with the goal of reflecting the historical design ethos of integrating nature with urban space. This is evident in The Conservancy's decision to keep all outdoor furnishings solid wood. The Conservancy, in compliance with the law, has evolved their wood purchasing to cut out tropical hardwoods and specify durable solid wood alternatives. These woods and their applications are outlined below:

*Wood Types and Applications Used by Central Park Conservancy*
Benches + Bench Slat Replacements: Type B
Previous Wood Type: Ipe
Current Wood Type: Reclaimed Ipe from Central Park, White Oak, Kebony (currently piloting material)

Wooden Decks
Previous Wood Type: Pressure Treated Douglas Fir
Current Wood Type: Accoya

Rustic Structures are handcrafted architectural elements made from unmilled wood, designed to blend seamlessly with the natural landscape. These include benches, bridges, pergolas, and shelters that reflect the style that dates back to the mid-18th century.
Previous Wood Type: Western Red Cedar
Current Wood Type: Black Locust, Cedar

Playground Structures
Wood Type: Douglas Fir, Black Locust

Ultimately, this is a model that has budgeted time and cost to prototype more sustainable wood products and determine the best applications for durability.[31] With a commitment to solid wood, Central Park Conservancy has the potential to benefit both from a salvage program for its trees, and support the Park's pilot program to explore where NYC wood could be placed across these exterior applications. For example, there is a steady supply of Alaskan Yellow Cedar from decommissioned water towers that could be developed into bench slats or components for rustic structures.

Additionally, many salvaged trees from the urban forest have the potential to be used in outdoor settings in the form of dimensional landscape elements, including full-round elements in the shape of a natural log, square elements, flat top, and half-round elements, all that could

[31] Central Park Conservancy, *Central Park*, accessed August 1, 2024, https://www.centralparknyc.org/

be used in seating and playscape applications. A supply of City salvaged Thermally Modified Oak and Poplar offers potential local alternatives to both the Accoya decking and Kebony benches – modified woods that have a global production footprint, and thus more embodied carbon.

Certain wood species found in NYC are candidates for thermal modification, such as Pin Oak and Poplar, and are sustainable, solid wood alternatives for bench slats, as well other exterior applications. Additionally, regional sourcing and commercial supply chains for Black Locust have advanced since the Tropical Hardwoods Reduction Plan memorandum was first issued in 2008. Notable case studies in NYC, such as Little Island in the Hudson River on the Westside of Manhattan, exhibit Black Locust's versatility of application (decking, seating, and landscape timbers) and high-performance attributes in a high-traffic and high-exposure setting.[32] Because Ipe and other tropical hardwoods have become increasingly endangered, expensive, and environmentally destructive, regional suppliers are working to make Black Locust readily available as a local, sustainable alternative.

## Construction-Related Services

Integrating salvaged wood into public capital projects requires a multifaceted approach that emphasizes sustainability, cost-effectiveness, and awareness. Establishing clear procurement guidelines that prioritize the use of salvaged materials in City projects can help create a demand for reclaimed wood. This can be done through leveraging existing policy directives, like Executive Order 23, to include a focus on salvaged wood and its lifecycle costs as an aspect of the Executive Order rollout.

Calculating life cycle costs can significantly support the integration of salvaged wood into public capital projects by providing a comprehensive understanding of its long-term financial and environmental benefits. Unlike traditional materials, salvaged wood often requires a higher initial investment due to the processing and preparation needs of the material. However, life cycle cost analysis can highlight long-term savings associated with reduced disposal fees, lower environmental impact, and potential tax incentives. Furthermore, by evaluating maintenance, durability, and end-of-life costs, decision-makers can assess the full economic value of using salvaged wood compared to new materials. This approach not only helps justify upfront investment in reclaimed materials but also aligns with sustainability goals by reducing waste and promoting resource efficiency over the project's entire lifespan.

Durability assessments of urban salvaged wood offer crucial insights into the expected lifespan and maintenance needs of these materials. By evaluating their performance in real-world conditions, such assessments would aid in the projections of the average lifespan of these wood types, how often they will require maintenance, and their overall cost-effectiveness. This data also supports a sustainability analysis by comparing the long-term benefits and environmental

[32] Tri-Lox, *Featured Material: Black Locust*, accessed September 16, 2024, https://tri-lox.com/featured/featured-material-black-locust/

impacts of urban wood against established products.

Collaborating with NYC agencies, architects, and construction firms to highlight the environmental benefits and unique aesthetic value of salvaged wood can encourage its inclusion during the design phase. Educating architects, engineers, designers, and contractors in NYC about the advantages of salvaged wood can drive broader adoption in construction. This concept first emerged with the DDC Construction and Demolition Waste Manual (2003)[33], which advocated for a comprehensive strategy to reduce construction and demolition (C&D) waste through the principles of Reduce–Reuse–Recycle. Effective management of C&D waste, including wood, requires all stakeholders—DDC, designers, and contractors—to view materials as valuable resources rather than waste.

Typically, design professionals working on public capital projects have flexibility in design and material choices, as long as they adhere to regulations and receive City agency sign-off. By highlighting the environmental advantages, aesthetic appeal, and potential cost savings associated with using a locally sourced product, there is potential for wider adoption in construction. Educational initiatives, such as workshops, webinars, and case studies, can play a crucial role in demystifying the process of sourcing and incorporating salvaged wood into projects, ultimately contributing to a more sustainable and resilient built environment.

### LEED® Construction for Public Buildings

Leadership in Energy and Environmental Design (LEED®) is "the world's most widely used green building rating system".[34] It provides a framework for certification of sustainability achievement and is widely recognized and well established in NYC. Wood salvaged from NYC's urban environment can contribute to LEED® certification on construction projects by contributing to the materials and resources credits, particularly those related to recycled content and local sourcing[35]. Salvaged wood meets the materials reuse criteria which helps achieve the required percentages of materials from responsible sources. If salvaged urban wood were to be certified by the Forest Stewardship Council (FSC®) or USGBC®-approved equivalent body, it would also meet the Wood Products criteria. Wood that is reclaimed from deconstruction and processed within an FSC® certified chain of custody, creates an established pathway to FSC® 100% Recycled certification.[36] However, the chain of custody requirements from salvaged trees yields a more complex chain of custody certification process. A new Urban, Salvaged, and Reclaimed Woods (USRW) Urban Wood Certification is currently in a pilot phase

[33]NYC Department of Design and Construction, *Waste Management Plan*, accessed September 1, 2024, https://www.nyc.gov/html/ddc/downloads/pdf/waste.pdf#:~:text=In%20the%201990s%2C%20tipping%20fees%20for%20disposal%20at,range%2C%20and%20are%20expected%20to%20continue%20to%20rise..

[34] United States Green Building Council, LEED rating system, https://www.usgbc.org/leed

[35] U.S. Green Building Council, "LEED Credits: New Construction, Core and Shell, Schools, Retail, Data Centers," *U.S. Green Building Council*, accessed September 1, 2024, https://www.usgbc.org/credits/new-construction-core-and-shell-schools-new-construction-retail-new-construction-data-26.

[36] Forest Stewardship Council, "Sourcing reclaimed material for use in FSC Product Groups or FSC Certified Projects" https://us.fsc.org/preview.fsc-standard-for-sourcing-reclaimed-materials.a-474.pdf

and charts a path forward for urban wood across tree salvage and deconstruction[37]. If this certification that has been tailored to the conditions of urban wood salvage can be accepted as a USGBC®-approved equivalent to FSC®, the City's urban wood will be a viable option alongside any FSC® product.

Being inherently sourced locally, salvaged wood can double its contributing value under the Local Sourcing criteria. Additionally, salvaged lumber is inherently recycled content which supports recycled content goals, and while not directly related to Extended Producer Responsibility (EPR), salvaged wood further enhances the project's sustainability profile. Using reclaimed wood reduces the demand for new raw materials, thus minimizing the environmental impact of deforestation and resource extraction. This approach aligns with LEED®'s emphasis on sustainability, waste reduction, and promoting a circular economy. Additionally, utilizing local salvaged wood lowers transportation emissions, further supporting LEED® goals for reducing the carbon footprint of building projects. Collectively, these factors position salvaged urban wood as a valuable component in achieving LEED®'s responsible sourcing and lifecycle impact criteria.

## Envision® for Sustainable Infrastructure

Similar to LEED®, Envision® is a credit-based rating system for civil infrastructure, specifically across the sectors of energy, water, waste, transportation, landscape, and information to plan, track, and ensure sustainability standards. Envision®'s 64-credit approach focuses on five categories: Quality of Life, Leadership, Resource Allocation, Natural World, and Climate & Resilience. Across these categories, the focus is on impact, both short- and long-term, of the surrounding environment. This is approached through the lens of a Mitigation Hierarchy – avoidance, minimization, abatement, and offsetting – that seeks to reduce disruption and adverse impacts, to the environment and the community, throughout the project's lifecycle.

The incorporation of salvaged wood from felled city trees or deconstruction would achieve Envision points in Resource Allocation Materials, specifically the actions that support sustainable procurement practices (up to 12 points) and the use of recycled materials (up to 16 points). Utilizing salvaged wood minimizes the environmental impact of a project by avoiding deforestation, lowering energy-intensive production of raw materials, fosters a circular economy, reduces waste, and ensures transparency and accountability of the suppliers and source of wood.

Depending on the size and scope of an infrastructure project, points can also be achieved in Envision's Climate and Resilience category as salvaged wood could reduce the net embodied carbon of a project (up to 20 points). Compared to sourcing new timber, salvaged wood reduces the need for virgin wood extraction and manufacturing, which involves high greenhouse gas emissions during the harvesting, refining, and processing of the wood. Material transportation

[37] USRW North American Standard, "Standards for Certification and Chain of Custody for Urban, Salvaged, and Reclaimed Woods, USRW Certified Urban Wood Version 1", accessed September 13, 2024 https://irp.cdn-website.com/c2c18019/files/uploaded/USRW_standards_06.2022.pdf

efficiency is improved by implementing salvaged wood in a project because it is sourced from the site directly or from the urban forest.

Additionally, for infrastructure projects that require the removal of existing trees for the construction of the project, the development of a plan that salvages wood from the trees and finds the best and highest use after their removal is a critical component of a project's sustainability metric. This approach matches the avoidance and minimization strategies by diverting wood from the waste stream. Specifically, the Climate & Resilience category focuses on minimizing emissions and short- and long-term risks. Incorporating wood salvage and reuse during the pre-construction and construction phase of a project reduces embodied carbon and organic waste in the initial phase of a project lifecycle.[38]

### New York State Policy

The New York Textile Act (S.8741A/A.9649A) and subsequent updates to procurement policies by DCAS is an appropriate model to apply to urban wood salvage. For example, City agencies might be encouraged to prioritize City goods made from salvaged urban wood, potentially making salvaged wood more accessible and promoting their optimal use. Recognizing outstanding contributions in wood salvage and processing through awards could also foster innovation in the field of urban wood. Moreover, incorporating urban salvaged wood into City procurement practices could create a reliable pathway for utilizing these materials effectively.

# Next Steps

The exploration of circular construction practices presents a unique opportunity to promote sustainability, drive innovation, and reduce the environmental impact of the built environment in NYC. Through partnerships and collaborations with key stakeholders such as the EDC and the Mayor's Office of Climate and Environmental Justice, we can foster the integration of new ideas and strategies that promote the use of salvaged wood. The NYCEDC's Circular Construction Guidelines[39] offer a framework for advancing these efforts while creating an ecosystem that supports the use of salvaged materials, fosters public engagement, and incentivizes sustainable practices in the construction industry.

1. **Consideration for Salvage + End Use in an Urban Forest Management Plan:** To minimize waste and maximize reuse of the City's wood, the entire lifecycle of the material, from living tree to salvaged wood, must be considered. Just as a holistic

[38] Institute for Sustainable Infrastructure. (2018). *Envision version 3.9.7: A rating system for sustainable infrastructure*. https://sustainableinfrastructure.org/wp-content/uploads/EnvisionV3.9.7.2018.pdf
[39]NYCEDC Circular Construction Guidelines. March 7, 2024. NYC Economic Development Corporation (NYCEDC). n.d. Retrieved from https://edc.nyc/

approach is needed for evaluating building materials and their impact on a project's carbon footprint through construction, operation, and future demolition, the management of the urban forest must include considerations for the full lifecycle of NYC's trees. A comprehensive management plan for the City's forest should not only address biodiversity and climate adaptability, but also consider tree species for future planting that will have the best pathway to salvage and reuse at the end of their lifecycle. When transformed into a variety of wood products, these trees continue to store the carbon sequestered during their lifetime and foster a circular economy by establishing a source of locally-grown, locally-manufactured wood.

2. **Salvaged Wood Use in Park Conservancies:** Collaborate with conservancies such as Central Park or Prospect Park, which offer a unique opportunity to pilot the use of salvaged wood in high-use public spaces without navigating the complexities of a public procurement process. By establishing a streamlined approach within these conservancies, valuable case studies can be created that demonstrate the feasibility and benefits of using salvaged materials. These projects could serve as models for expanding salvaged wood use in broader public construction initiatives.

3. **Urban Wood Durability and Performance Assessments:** In order to understand the full range of local alternatives to current wood procurement types, a program should be established to test and pilot salvaged wood products. This program would track and evaluate their durability, maintenance requirements, and overall lifespan, providing a set of proven standards and expectations. Regardless of procurement pathway – City goods or services or conservancy procurement for a public space – this information is essential in order for local wood to become a viable alternative to current wood sources.

4. **Salvaged Wood Education Campaign:** In collaboration with Town+Gown and academic design programs, including those at Pratt Institute, develop targeted communications strategies and deliverables for future educational campaigns to raise awareness of circular construction benefits. Engaging communities, architects, and developers through educational events and workshops can help build a wider understanding and adoption of circular construction practices.

5. **Development of Material Requirements for Public Projects:** As the City construction agencies with the MOCEJ develop requirements for the use of sustainable materials in construction and waste management planning under EO 23, collaborate with MOCEJ and with DCAS to bring specific attention to the use of salvaged wood on public projects. This could include setting guidelines and standards for the procurement of salvaged materials, establishing material certification systems, and mandating a minimum percentage of reused or recycled content in new projects on public projects.

6. **Promote Data Collection, Standardization, and Access:** Collaborate with the City to help it address the lack of comprehensive data on material flows by promoting a city-wide effort to collect and standardize data on construction materials. This will help identify trends, track material usage, and support more informed decision-making for

future policy and incentive structures. Without a robust data framework, the success of circular construction will remain difficult to measure and improve upon.

7. **NYCEDC Collaboration and NYCEDC Ideas for Impact RFEI**[40]: Strengthen collaboration with NYCEDC to explore how its Ideas for Impact RFEI can be leveraged to develop feasible systems for circularity within construction projects. Development of an economic assessment for viable wood replacement and infrastructure expansion to support the integration of salvaged wood into public projects.

8. **Incentives for Salvaged Wood on Public Projects:** Develop a system within public construction projects of financial incentives to prioritize the use of salvaged wood, potentially through tax credits, subsidies, or grants.

[40] NYCEDC. Ideas for Impact RFEI. n.d. Retrieved from https://edc.nyc/ideas-impact-rfei