



NYC EO 23 Construction and Demolition Material Guidance

February 2026

Prepared by the Mayor's Office of Climate & Environmental Justice

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Executive Summary

As part of New York City's ongoing efforts to reduce carbon emissions and create sustainable and resilient infrastructure, the NYC Mayor's Office of Climate & Environmental Justice (MOCEJ) is advancing the city's embodied carbon strategy under [Executive Order 23](#) (EO23), the Clean Construction Executive Order (2022). The language of EO23 was focused on the “front end” of the design and construction process. It emphasized low-carbon concrete, environmental product declarations (EPDs), low-emission vehicles and equipment, and life cycle assessments (LCAs), but did not explicitly include the “back end” of demolition, deconstruction, and circularity.

Pursuant to EO23, agencies submitted action plans to outline their implementation timelines and goals. One joint agency action plan addressed waste management and circularity, highlighting the need for linking EO23's wholistic approach to the end-of-life. Thus, MOCEJ sees that a critical component of this strategy is the incorporation of circular economy principles within capital projects to reduce waste and optimize material reuse, promoting a transition towards low-carbon construction practices.

The circular economy approach is fundamental in reducing both waste and carbon emissions from construction throughout New York State (NYS). From a high-level perspective, of the total 42.2 million tons of waste generated state-wide, construction and demolition (C&D) materials comprised 46% --slightly greater than the 45% for municipal solid waste.¹ C&D waste and materials (CDW and CDM, respectively) refer to the waste resulting from the construction, demolition, remodeling, and repair of structures, roads, and utilities. To address the amount of waste derived from C&D, MOCEJ's strategy focuses on waste diversion, material reuse, and recycling to minimize embodied carbon throughout the life cycle of capital projects. This guidance includes strategies and recommendations for agencies to enhance CDM management, increase waste diversion rates, and adopt sustainable material practices, contributing to the city's climate goals of carbon neutrality by 2050.

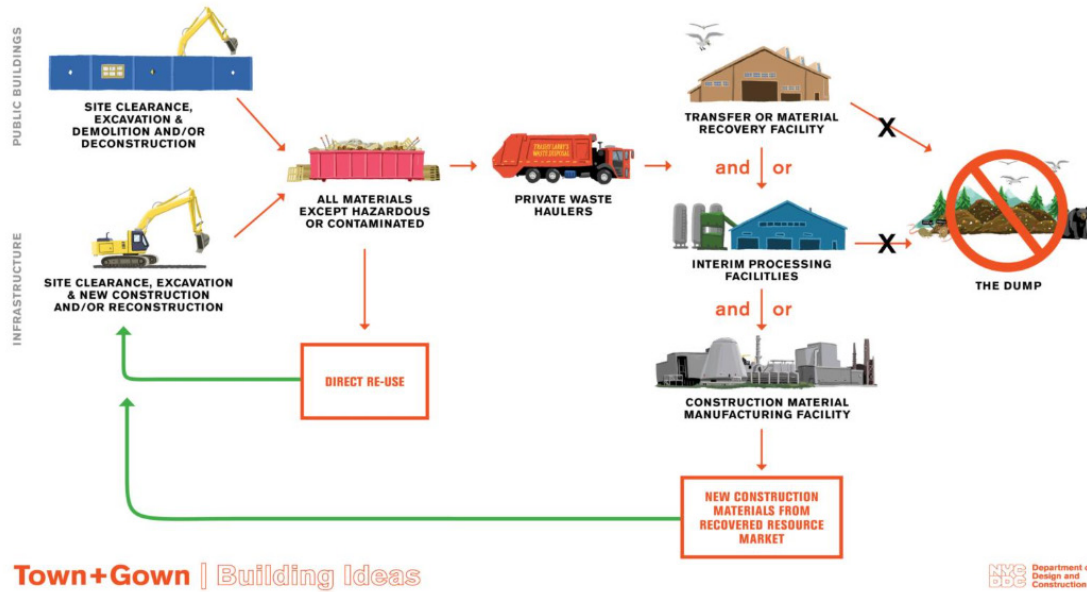
MOCEJ's stakeholder collaborations under EO23 have resulted in strategies that will add to MOCEJ's overall efforts to reduce embodied carbon across all sectors. As a result of the collaborative discussions and co-developed strategies, MOCEJ is providing this guidance document to city capital agencies to enhance their ability to divert and transform their C&D waste into materials for direct and indirect reuse within a circular economy framework. These guidelines can serve as a resource for agencies — and their design and construction professionals — to build on their existing practices and drive their practice to incorporate more circular and/or waste management strategies on capital projects. This document is also an operational toolkit to support design and construction teams' circularity strategies under EO23 and beyond. For all EO23 covered projects (as defined in Chapter 9, Section 210 of the New York City Charter), capital project agencies should refer to the EO23 CDM Guidance Reporting Template for sample spreadsheets to gather appropriate CDM data recommended in this document.

The EO23 CDM Guidance Reporting Template includes several sections to be completed by the project team (including the managing agency team and any consultants). The template is in a Microsoft Excel document format, to be submitted to the project's managing agency in a format that is determined on an agency-by-agency basis. In addition to this data collection, agencies should plan to create and update any specifications relating to CDM following the release of this guidance.

¹ <https://dec.ny.gov/sites/default/files/2023-12/finalsswmp2023.pdf>

Circular Construction and Demolition Materials System- Direct Re-Use + Indirect Re-Use

NYC Capital Projects



The Circular Construction and Demolition Materials System diagram illustrates a streamlined flow of materials from site clearance and construction through to reuse, recovery, and remanufacturing. Emphasizing both direct and indirect reuse, the system integrates municipal recovery facilities, private waste disposal, and interim processing, promoting sustainable material cycles across NYC capital projects. This model supports EO23 goals by reducing landfill reliance, encouraging material recovery, and reinforcing circular economy practices in public building and infrastructure projects.

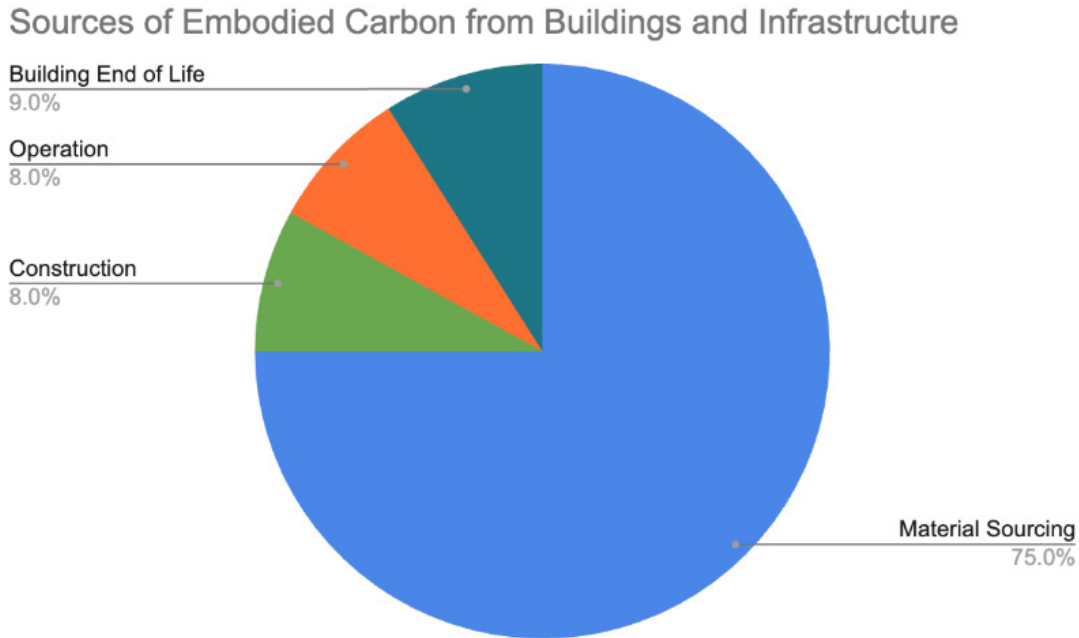
Sources of Embodied Carbon from Buildings and Infrastructure

Embodied carbon emissions arise throughout the life cycle of a project – generally beginning with and/or including raw material extraction and processing, land clearing and excavation, continuing through construction, use, and eventual demolition. In buildings and infrastructure, key sources include materials such as concrete, steel, glass, asphalt, stone, and wood. Waste management planning on capital projects can reduce CDW by embedding circular economy principles into the public design and construction process. This includes using contract provisions and material specifications to facilitate direct reuse or effective recycling/indirect re-use of CDM, in line with NYS Department of Environmental Conservation (DEC) beneficial use determinations (BUDs) rules.

By substituting newly extracted materials with reused or recycled CDM, these strategies reduce additional emissions tied to extraction and landfill disposal. Embodied carbon emission calculations account for emissions across all stages: material sourcing (supply, transport, and manufacturing), construction (transport and installation), operation (maintenance, repair, energy, and water use), and end-of-life (deconstruction and disposal). EO 23 supports and depends on this local circular CDM economy as a way to cut carbon emissions and promote sustainable, resilient public infrastructure citywide.²

² [Beneficial Use Determinations \(BUDs\) - NYSDEC](#)

Another high-level perspective is shown below:



Source: MOCEJ 2025, from NYCEDC 2024 Circular Design and Construction Guidelines data.

Key Existing Material Management City Policies

LEED for Public Buildings. Most new and substantial reconstruction City-owned public building projects are required to achieve LEED certification per the New York City Charter, Chapter 9, Capital Projects and Budget, Section 224.1: Green Building Standards (most recently amended by Local Law 51 of 2023). In Public Buildings, City agencies must build their projects to LEED green building standards as required by Local Laws 31 and 32/2016, which amended Local Law 86/2005, and is codified in the New York City Charter, Chapter 9, Capital Projects and Budget, Section 224.1: Green Building Standards (the Green Building Law, LL51). Since LEED requires some construction material reduction, reuse, and recycling, many existing waste management plan (WMP) provisions in Public Building design and construction contracts and specifications already embed these requirements. All currently open versions of LEED award points for CDM, though the Mayor’s Office of Environmental Coordination encourages that the most recent version be followed.

Envision for Public Infrastructure. Envision provides a consistent framework for construction agencies to assess the sustainability, resiliency, and equity of their civil infrastructure projects. Unlike LEED, at present, New York City capital agencies voluntarily apply Envision to their infrastructure projects. Therefore, many existing WMP provisions in public infrastructure construction contracts and specifications already embed requirements when agencies seek Envision credits. Envision supports higher infrastructure performance through better design and construction choices, including waste management planning. With respect to sustainability features such as CDM management, Envision provides agencies with more flexibility than LEED in obtaining credits.

As a result, New York City agencies have evolved their materials management practices during design and, with their WMP specifications, during construction. These existing practices put NYC capital agencies in an excellent place to improve, collaborate, and take advantage of best practices within NYC Economic Development Corporation's (NYCEDC)'s [Circular Design and Construction Guidelines \(2024\)](#) circular economy application to design and construction of their projects.

Principles of Construction and Demolition Waste Management

On average, New York City produces 10,199 tons of CDW per day from buildings alone (NYCDDC, 2003). NYC's CDW stream presents a significant opportunity to reduce embodied carbon through waste diversion and material reuse.³ Because the CDW stream is so large, there is a need for guidance to outline circular design strategies from the beginning of a project, systematically track CDW data and material reuse potential, and establish circular decision points during New York City capital projects to help evaluate for feasibility and impact within each project's scope (NYCEDC, 2024).

To support this goal, MOCEJ referred to NYCEDC's recently released Circular Design and Construction Guidelines to guide the creation of this document and the decision-making at every stage of the capital project lifecycle. These below principles from NYCEDC inform the recommendations and strategies in the sections that follow, providing a framework for minimizing waste, maximizing reuse, and embedding long-term value into the built environment. Applying these principles to the City's design and construction process requires buy-in, consensus, and a commitment to view construction materials not as waste but as resources with value.

Principles:

1) Build Only What Is Needed

- Reuse, adapt, and transform existing buildings and infrastructure whenever possible.
- During initial programming phases, carefully consider all spaces to be included in the project to ensure efficient sizing.

2) Build With the Right Material

- Use renewable, bio-based materials and low embodied carbon materials.
- Set targets and track material use, reuse, and recycling.
- Consider using material passports⁴ where possible.

³ This number is estimated by applying the percent change in all CDW-related permits from 2003 to 2022 to the 7,500 tons cited in the 2003 DDC Construction and Demolition Waste Manual. However, this estimate is constrained by the limited availability of comprehensive data on construction and demolition waste over the years. Variations in reporting standards, changes in construction practices, and the absence of consistent data collection methodologies hinder precise analysis.

This estimate accounts for permits categorized as NB (New Building), ALT1, ALT2, ALT3 (Alterations), and DM (Demolition). However, it does not include infrastructure-related demolition, such as roadways, bridges, and underground utilities. If infrastructure were included, the total estimate would likely be higher. Further, the Gross Domestic Product (GDP) of New York State has shown significant growth from 2003 to 2023. In 2003, the state's GDP was approximately \$908.5 billion. By 2023, it had increased to approximately \$2.172 trillion. This indicates a growth of about 139% over the 20-year period. If this growth were to be applied to CDW production, we would see an average tonnage per day of over 17,000. Addressing these data gaps is essential for developing accurate assessments and informing policy decisions on waste management in New York City.

<https://www.nyc.gov/assets/buildings/html/dob-development-report.html>

<https://countryeconomy.com/gdp/usa-states/new-york>

⁴ A record of the composition of a proposed building component or structure to enable future deconstruction, reuse, and recycling.

3) Build Efficiently

- Avoid using unnecessary components (e.g. interior finishes, redundancy in spaces)
- Increase material efficiency (e.g. reduce material waste at construction through precise measurements).

4) Build for Long-Term Value

- Design for longevity, adaptability, and disassembly.
- Deliver projects that will be well-used, valued, and preserved.

NYC EO23 Standards and Recommendations

The EO23 capital agency joint action plan focused on waste management planning practices, revealing that many New York City agencies have WMP provisions and specifications in their standard construction contracts. Such existing waste management practices are likely due to the impacts of the Green Building Law on public building projects as well as agencies' voluntary application of the Envision framework to infrastructure projects. These practices provide a baseline for future enhancement under EO23 and beyond.

1. Waste Management Plan (WMP):

Agencies working on capital projects should implement a comprehensive WMP to ensure that CDW is minimized and effectively diverted from landfills. This plan should include a clear framework for CDW diversion goals, identify at least five types of materials targeted for diversion, estimate a percentage of the overall project waste represented by such materials, and define strategies to reduce landfill waste throughout the project's lifecycle. The plan should also specify whether materials will be separated or comingled and identify planned diversion strategies, describing where materials are taken and how the material will be processed in a recycling facility. This is in alignment with LEED's requirements for a construction WMP. Identified project waste management leads tasked with overseeing a WMP should carefully track, document, and verify waste diversion efforts, ensuring alignment with LEED standards. Compliance with LEED ensures that projects contribute to broader sustainability goals, such as reducing carbon footprints, conserving natural resources, and promoting circular construction practices. MOCEJ encourages projects to go beyond compliance by implementing innovative waste management strategies such as deconstruction over demolition, closed-loop recycling systems, and on-site material processing and separation to minimize transportation emissions and disposal costs, as well as maximize diversion (USGBC, 2024; ISI, 2018).

Agency WMPs can be brought into relative alignment through continued collaboration and a collective review of covered agencies' WMP provisions. This effort strengthens the supply side of the circular CDM economy, contributing to carbon emission reductions and maximizing the diversion of valuable CDMs from landfills.

The first area for alignment should include agency application of existing WMP provisions and specifications to project types that currently have no WMP provisions and specifications. Agencies should apply their existing WMP provisions and specifications to their complete project portfolio.

Agencies should then expand waste management practices to achieve higher levels of direct reuse and indirect reuse by adapting leading provisions found in other agencies' WMP provisions and specifications, as highlighted in the below chart.

Agencies should also explicitly refer to the NYS DEC BUD rules in their WMP provisions and specifications, as NYS DEC BUD rules permit a wide range of project-to-project direct reuse of CDMs under lead agency control.

Some leading examples of current New York City Agency construction waste management practices are below:

Agency	Specification Information
DEP	01 74 20 uses a construction WMP for Infrastructure under which waste and recyclables are collected, sorted and deposited to be submitted for review and approval by engineer 30 days after receipt of Notice to Proceed and before any removal of construction waste from project site.
DDC	7.14 uses a Construction WMP to estimate total generated demolition and construction waste to be diverted from disposal, maintain detailed records of all recycled materials –including legible copies of on-site logs, weight tickets and receipts –and employ strategies including but not limited to identifying licensed haulers, transfer stations, processors of recyclables and transportation procedures.
DDC	01 74 19 requires a project-specific plan for the collection, transportation, and disposal of waste generated at public building construction sites with the purpose of reducing the amount of material going to landfills.
Parks	Parks requires a Material Disposal Plan for all C&D Debris and soils (contaminated or not) removed from Project Site. The Material Disposal plan lists all anticipated material proposed for disposal and their respective quantities (either by volume or weight), proposed list of facilities and transporters, and a Waste Tracking Document. The waste tracking document requires the Contractor to list the types of materials, quantity by volume or weight, location of source and facility.
SCA	Section S01524 requires a WMP for waste identification, a waste reduction work plan, and a cost/revenue analysis. There are also separate sections for quantifying demolition and construction waste by weight or volume, requiring the use of the same units of measure throughout WMP.

Examples in table pulled from agency specs or other agency requirements

Spotlight on forthcoming NYC Solid Waste Management Plan 2026 (SWMP26):

The NYC [Solid Waste Management Plan](#) 2026 (SWMP26), spearheaded by the NYC Department of Sanitation (DSNY), supports the City's sustainability goals by promoting the recovery of CDM and scrap metal, aligning with the City's EO23 definition of embodied carbon, which includes material disposal. The data that will be collected through SWMP26 contributes to the City's LCA and greenhouse gas (GHG) inventory efforts, while initiatives to integrate reused and recycled materials into city projects further reinforce the City's circular economy goals. These efforts complement the City's broader environmental and community initiatives and offer an opportunity to advance long-term sustainability objectives.

2. Diversion Targets:

All capital projects should achieve a minimum waste diversion rate of 50% by weight, meaning that at least half of all C&D debris will be either recycled, salvaged, or repurposed rather than sent to landfills or incineration facilities (LEED v5, 2025). However, MOCEJ strongly encourages projects to strive for a 75% diversion rate, which is awarded 2 points under both LEED v4 and v5. For certain high-priority materials, such as concrete, asphalt, and uncontaminated soil, projects should aim for an ambitious 95% diversion rate, given their significant volume in construction projects and high potential for reuse in infrastructure projects such as roadbeds and foundations. These recommendations are in line with NYCEDC’s Circular Design and Construction Guidelines (NYCEDC, 2024). For cases in which the LEED project includes demolition, the minimum diversion target should be even higher as the diversion of demolition materials accounts for a significant weight compared to construction waste.

Un-weighed collections or collections measured in the field might instead capture diverted waste by estimated weight, or equivalent volume using standardized conversion factors (e.g. tons/cubic yard). Final reporting, however, should be by weight. To track compliance with these targets, MOCEJ strongly encourages project teams to require their contractors to maintain and submit to them detailed waste management logs that document the origin, quantity, and final destination of materials removed from the site. Agencies should keep Material Management and Waste Trackers (as defined in the reporting template) digitally, stored in a centralized way on an agency-by-agency basis for final reporting use (See the EO 23 CDM Guidance Reporting Template for assistance in implementing this recommendation in your agency). Waste diversion efforts should be assessed at every phase of construction, including demolition, excavation, material procurement, and final project completion. Additionally, it is important to note that waste audits and third-party verification may be required for projects pursuing higher levels of LEED under LEED v5 (USGBC, 2019; ISI, 2018).

Some leading examples of current New York City Agency diversion targets are below:

Agency	Specification Information
DDC	01 74 19 utilizes diversion targets that depend on the number of materials being diverted in relation to the project type. In this specification, there is either a minimum of 75% of total project CDM (by weight) diverted from landfills or a minimum of 50% of total project CDM (by weight) diverted from landfill for at least 3 listed material types. ACD (agricultural) material does not qualify as material diverted from disposal.
DDC	7.14 requires 25-49% of waste diverted from landfills.
DEP	Section 01 74 20 requires that there must be an approximate percentage of overall project waste that diverted materials represent based off of total Construction and Demolition waste estimates included in the Construction Waste Estimate Report (CWER). This specification also calls for soil diversion on-site and off-site.
Parks	Parks projects are encouraged to outline material diversion goals, all materials to be removed, how materials will be sorted on-site, identify recycling locations, implementation protocols, and parties responsible for implementing the Construction WMP.
SCA	Section S01524 requires that the contractor be responsible for recycling a minimum of 75% non-hazardous demolition and construction waste with a goal of reaching 95%.

3. Material Identification:

Agencies should assess all materials generated throughout a project’s lifecycle to determine their potential for reuse, recycling, or resale. Special emphasis should be placed on high-impact materials, including concrete, asphalt, wood, metals, drywall (gypsum), glass, and various plastics, as these materials are commonly generated in large volumes and have well-established recycling markets. Project teams should also evaluate materials such as insulation, ceiling tiles, carpet, and composite materials, which may require specialized recycling programs or manufacturer take-back initiatives. This information should be tracked and stored digitally in a centralized way on an agency-by-agency basis, since a critical component of sustainable construction is the proper identification of materials that can be diverted from waste streams.

Some leading examples of current New York City Agency material identification practices are below:

Agency	Specification Information
DDC	01 74 19 outlines instances where 3, 4, or 5 materials are identified, structural and non-structural, for diversion. The identification of 5 materials targeted for diversion is the most common instance.
DEP	Section 01 74 20 requires the identification of at least 5 C+D materials (both structural and non-structural) targeted for diversion.
Parks	Parks projects are encouraged to outline material diversion goals, all materials to be removed, how materials will be sorted on-site, identify recycling locations, implementation protocols and parties responsible for implementing the Construction WMP. Materials for disposal are identified during design with a Removals Plan, which details the type of material and estimated quantities.
SCA	Section S01524 requires waste material identification to indicate anticipated types and quantities of materials during construction, demolition, and site-clearing, including estimated quantities and assumptions embedded to create such quantity estimates.

Examples in table pulled from agency specs or other agency requirements

4. Tracking Salvaged Materials:

Salvaging materials for reuse in future projects is a key strategy for reducing construction waste, lowering costs, and preserving valuable resources. To ensure compliance with LEED and Envision wherever applicable, project teams should determine a schema to track quantities, destinations, and end-uses of all diverted materials, prioritizing local recycling and reuse options to minimize the environmental impact of material transportation (USGBC, 2024; ISI, 2018). Salvaged items may include doors, windows, lighting fixtures, structural steel, cabinetry, flooring, and HVAC components, which can often be refurbished and repurposed rather than discarded.

Additionally, flexibility should be provided to contractors to accommodate project-specific material needs, allowing project design teams to explore adaptive reuse options such as incorporating salvaged materials into new construction elements. This process not only supports environmental sustainability but also creates economic opportunities by facilitating material resale, donation, or redistribution to other city projects or community organizations. To improve

tracking accuracy, project teams are encouraged to develop digital inventory systems and/or QR-code tagging for salvaged items, enabling real-time updates on material availability and reuse potential (USGBC, 2024). Agencies should refer to the EO 23 CDW Guidance Reporting Template for assistance in implementing this recommendation in your agency.

Some leading examples of current New York City Agency salvaged materials tracking practices are below:

Agency	Specification Information
DDC	01 74 19 indicates that the WMP should include salvaged materials tracking for material types targeted for reuse, salvage or recycling. The WMP should estimate amounts of salvaged materials for each material type and the percentage of overall construction waste of each material stream.
DEP	Section 01 74 20 requires the WMP to include salvaged materials as a topic under the Design Sustainability Program. The Design Sustainability Program will determine the percentage goal for end-of-project rates of salvaged/recycled construction waste.
SCA	Section S01524 specifies a Waste Reduction Work Plan for each type of waste and whether it will be salvaged, recycled or disposed of in landfill or incinerator; include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

Examples in table pulled from agency specs or other agency requirements

Spotlight: DonateNYC

DSNY’s Resource Recovery Division, and the web platform, “donateNYC,” aims to advance New York City’s waste reduction goals by promoting reuse. Through a combination of online donation tools, nonprofit partnerships, events, and reuse sector research, DSNY helps New Yorkers reduce waste sent to landfill. DonateNYC’s online tools include the Directory for residents looking to give, get, borrow, or repair goods, the Exchange for businesses and non-profits to donate or receive durable goods, and the Food Portal for businesses and non-profits to donate or receive edible food.

From Infrastructure to Art to Playground:

In 2022, Town & Gown connected DSNY with an artist looking for a donation solution for a large art installation at Brooklyn Army Terminal. The installation consisted of a modified concrete catch basin weighing nearly four tons. The modifications meant that the catch basin couldn’t be reused for its original purpose and one previously confirmed donation partner had already backed out at the last minute. The DSNY team posted the item on the donateNYC Exchange and conducted outreach to the donateNYC partners to identify an organization interested in accepting the unique donation. Through one of the donateNYC partners, Big Reuse, the listing was shared with the team at play:groundNYC, who runs the adventure playground The Yard on Governors Island.

The Yard is a self-directed playground that provides interesting materials and tools for children to independently explore and engage with. The artist and The Yard worked together to determine the best way to transport the piece to Governor’s Island, which was no small feat! It was delivered to The Yard and became an immediate hit. The kids rigged it with ropes for climbing, painted it inside and out, and built sculptures into the center. After the donation was completed, the donateNYC team had the opportunity to tour The Yard and see how many items previously destined for landfill had been creatively reused for play. Shortly after this, play:groundNYC joined the donateNYC partnership.



4' x 8' Concrete Structure

Posted on Nov 07, 2022 Closed on Dec 01, 2022

Item Information

Category	Building Products
Product	Asphalt/Concrete/Masonry/Sand
Item Qty	1
Packaging	Loose/Individual Item
Condition	Like New

Listing Description

Cylindrical concrete structure in three pieces totaling 8 feet tall, 4 feet in diameter. The structure weighs 7,300 pounds total and was originally a concrete manhole used in an art exhibit. Modifications have been made to the manhole including several holes drilled into it. base 42" high riser 30" high top slab 24" high Delivery within NYC may be available.



5. Waste Management Leadership:

To ensure effective implementation of waste management strategies, each capital project should designate dedicated waste management leadership roles at both the design and construction phases. This includes a Waste Minimization/Sustainable Materials Manager during the design phase, who would be responsible for integrating waste reduction strategies into project planning, material selection, and procurement decisions. During the construction phase, a designated on-site Waste Minimization Lead should oversee material sorting, diversion tracking, and compliance with recycling requirements. Additionally, the agency Project Manager should dually serve as the connective Waste Minimization Coordinator, ensuring alignment with City policies and directives such as EO23, contractor obligations under agency specifications, and sustainability goals. These designated leads should conduct regular check-ins, waste audits, and where necessary, training sessions for on-site workers and subcontractors to promote compliance with waste management protocols. By embedding waste reduction leadership into every stage of project execution, agencies can drive more effective implementation, oversight, and accountability in sustainable construction practices (NYCEDC, 2024).

Some leading examples of current New York City Agency waste management leadership practices are below:

Agency	Specification Information
DDC	01 74 19 requires that, before demolition and/or construction starts, the contractor must implement the WMP, coordinate the implementation of the WMP with all affected trades, and designate one person as the Construction Waste Management Representative. The Construction Waste Management Representative is responsible for communicating the progress of the WMP with the Commissioner on a regular basis and for assembling the required LEED documentation.
DDC	7.14 recognizes the contractor as the having the same responsibilities.
DEP	01 74 20 requires that the contractor develops and implements the Construction WMP for the project under which waste and recyclable shall be collected, sorted, and deposited.
Parks	Parks projects have the contractor oversee waste management and submit the Construction WMP to Parks prior to work start of application for engineer approval.
SCA	S01524 requires the contractor to implement the WMP as approved by SCA, provide handling, containers, storage, signage, transportation, and other items as required to implement WMP during contract duration. A Waste Management Coordinator is designated by the contractor to be present at project site for full project duration, to be responsible for implementing, monitoring and reporting WMP status. Contractor also trains workers, subcontractors and suppliers on proper waste management procedures as appropriate for work on project site.

Examples in table pulled from agency specs or other agency requirements

Spotlight NYCEDC Battery Coastal Resilience Project:

The City of New York has undertaken an initiative to address the vulnerability of Manhattan’s coastline. NYCEDC’s Battery Coastal Resilience project seeks to strengthen this portion of lower of Manhattan by raising the wharf at the Battery an additional five feet in order to meet the 2100 projected sea level rise.

Using the Envision framework established by the Institute for Sustainable Infrastructure, the project achieved a Platinum rating due to the projects’ material reuse program, alternative delivery methods to reduce delivery trucks on the road, and use of low carbon materials. The team even developed tools for tracking the reused and recycled material, as well as tools to track the life cycle of products and materials.

6. On-Site Separation:

As the area of work allows, agencies should mandate on-site material separation as a best practice to maximize recycling efficiency and improve material recovery rates. Separating materials at the source reduces contamination in recycling streams, increasing the value and usability of salvaged materials. The percentage of commingled waste (waste that is mixed together and requires additional processing at off-site recycling facilities) should be minimized whenever possible given space constraints. Dedicated on-site sorting stations should be prioritized for key materials such as concrete, metals, wood, and drywall, with clear signage and worker training programs to ensure compliance. Waste Minimization Leads should routinely monitor and verify on-site separation efforts, ensuring that the process aligns with LEED v5 standards and municipal recycling guidelines. Additionally, projects could explore advanced waste separation technologies, such as automated sorting equipment and AI-powered material recognition, to further enhance diversion efficiency and reduce dependency on landfill disposal. Agencies should also document any challenges to on-site separation and explore alternative paths to ensure off-site separation where on-site separation is not possible. (NYCEDC, 2024; ISI, 2018).

Some leading examples of current New York City Agency on-site separation practices are below:

Agency	Specification Information
DDC	7.14 emphasizes strategies including composting on site and reusing or recycling materials on site.
DEP	Section 01 74 20 encourages onsite or offsite reuse for soil diversion with the reuse of excess excavated soils on site prioritized over offsite reuse.

Examples in table pulled from agency specs or other agency requirements

7. Reporting Recommendations:

Designated Waste Management Leads on all covered agencies' capital projects should submit a digitized final Waste Diversion Report to their agency's EO 23 lead. This report should detail the total waste generated, the percentage of waste diverted, the types of materials diverted, and the final destinations of recycled or salvaged materials. See the EO 23 CDW Guidance Reporting Template for assistance in implementing this recommendation in your agency. To ensure ongoing accountability, interim progress reports are encouraged at key project milestones. To ensure compliance, these could be tied to payment disbursements, ensuring that contractors produce the interim reports and final report on waste diversion targets before receiving compensation. These interim reports enable project managers to track progress, identify challenges, and adjust waste management strategies as needed to ensure compliance with [LEED v5](#) requirements and EO23 policy.

All covered agencies must require that reports from contractors be digitized, data-driven, and verifiable, per WMP provisions and specifications. This may be done in a manner similar to what Port Authority of New York & New Jersey (PANYNJ) now requires in order to permit city-wide tracking and analysis.⁵ In addition, agencies should provide supporting documentation such as weigh station receipts, invoices from recycling facilities, and if feasible, third-party audit

⁵ Engineering Available Documents | Port Authority of New York and New Jersey

reports. Projects pursuing [LEED certification](#) may also need to submit additional documentation demonstrating adherence to circular economy principles and embodied carbon reduction strategies (USGBC, 2019).

Some leading examples of current NYC Agency reporting practices on CDM during projects are below:

Agency	Specification Information
DDC	01 74 19 requires monthly WMP progress reporting that includes: the project title, the name of the company completing the report, and the period covered by the report, report on disposal of all project site waste using the DDC C+D Waste Management log form for each shipment of material removed from site, and monthly/cumulative project totals of waste, quantity diverted and percentage diverted. There is also a final WMP report.
DDC	7.14 recognizes the contractor as having the same responsibilities.
DEP	Section 01 74 20 requires the contractor to track monthly waste and soil generation/diversion/disposal data (per 01 35 27 – Environmental Health and Safety Requirements, para. 1.07.C. Monthly Contractor EHS Report) and a final submittal of a Construction Waste Management Final Summary Report upon Substantial Completion that tabulates total waste material, quantities diverted from landfill and means by which it is diverted.
SCA	Section S01524 requires reporting to be done concurrently with all payment applications by the contractor.

Examples in table pulled from agency specs or other agency requirements

Circular Construction Process

NYCEDC’s [Circular Design and Construction Guidelines](#) provide an additional framework for New York City agencies covered by EO23 to minimize waste, maximize reuse, and embed long-term value into the built environment by organizing the process of circular construction into four main phases: Preconstruction, Procurement and Construction, Operations, and Decommissioning. C&D waste diversion and material reuse are tracked through each phase, from design through demolition, to ensure that CDW is minimized, and materials are either recycled or reused (NYCEDC, 2024). To the extent practicable without leading to delays in project delivery, MOCEJ recommends that project leads consider these steps:

Phase 1: Preconstruction includes planning and design work prior to procurement of contractors, materials, and equipment. In Phase 1, agencies should consider the following:

- Sourcing low-carbon materials (LCMs) and submitting EPDs.
- Procuring materials that can be reused either onsite or locally.
- Specifying in designs the use of materials that can be reused either onsite or locally that 1) promote improved air quality, 2) require low maintenance and retain durability over time, 3) have been salvaged for reuse from deconstructed buildings or infrastructure, 4) contain low embodied carbon compared to carbon-intensive materials, 5) avoid toxicity both in content and via their productions, 6) are sourced locally, 7) are able to be reused or recycled in the future,

- 8) are capable of biodegrading at the end of their useful life.
- Implementing Onsite and Local Materials Reuse as identified in the design process.
- Using Material Passports (record of the composition of a proposed building component or structure to enable future deconstruction, reuse, and recycling).
- Circularity Audit: Agencies could establish a baseline of material availability within the existing asset and provide an inventory of the quantity and quality of materials that can be retained, reused, recycled, or diverted.
- Sustainability Design Workshop: The project team could establish a preliminary vision for materials reuse throughout the project's lifecycle which could consider design choices and components that improve environmental performance and reduce net embodied carbon.
- Circular Design & Construction Workshop: The project team could finalize the design approach to materials reuse, define embodied carbon performance objectives, and establish the performance management framework. During construction, the embodied carbon of construction materials could be measured and tracked based on the performance objectives identified in the Circular Design and Construction Plan (CDCP).
- Circular Design and Construction Plan (CDCP) --Planning and Design: the result of the Circular Design & Construction workshop will be the outline or framework for the CDCP (see NYCEDC Clean and Circular: Design and Construction Guidelines for further information). See the *EO 23 CDW Guidance Reporting Template* for assistance in implementing this recommendation in your agency.

Phase 2: Procurement, Construction, and Renovation includes procurement of contractors, materials, and equipment and activities relating to construction for both new projects and renovations. In Phase 2, agencies should consider the following:

- After construction contract registration, agencies could work with the Construction Sustainable Materials Manager (SMM) and Construction Manager (CM), suggesting any necessary CDCP adjustments.
- Agencies could provide an approach for the contractor to advance the plan objective through the incorporation of some or all of the following in construction:
 - Sourcing Low-Carbon Materials and submitting EPDs.
 - Procuring materials that can be reused either onsite or locally.
 - Specifying in designs the use of materials that can be reused either onsite or locally that
 - 1) promote improved air quality,
 - 2) require low maintenance and retain durability over time,
 - 3) have been salvaged for reuse from deconstructed buildings or infrastructure,
 - 4) contain low embodied carbon compared to carbon-intensive materials,
 - 5) avoid toxicity both in content and via their productions,
 - 6) are sourced locally,
 - 7) are able to be reused or recycled in the future,
 - 8) are capable of biodegrading at the end of their useful life.
 - Implementing Onsite and Local Materials Reuse as identified in the design process.
 - Using Material Passports (record of the composition of a proposed building component or structure to enable future deconstruction, reuse, and recycling).

Phase 3: Operations include activities required to operate and maintain the building or infrastructure once construction is complete.

Phase 4: Decommissioning and Deconstruction includes activities to manage buildings or infrastructure at the end of their useful life such as:

- Circularity Audit at Decommissioning.
 - Provide an inventory of materials (quantities and quality) that can be retained, reused, or recycled.
- Consider Potential for Building Reuse.
 - Consider building reuse as the first option to capture whole building systems for circularity.
- Prioritize Deconstruction Over Demolition.
 - Intentional recovery of used building materials: extends the life of valuable resources for reuse instead of prematurely disposing of them into landfills or processing them as waste.



Appendix A: Key Resources and Templates (NYCEDC, 2024)

The Circular Design and Construction Plan (CDCP) was originally created in NYCEDC's [Circular Design and Construction Guidelines](#) and serves as a key tool for tracking materials, waste diversion, and material reuse throughout the project lifecycle. It includes provisions for waste management, material identification, and reporting, ensuring that all Capital City projects align with the City's circular economy and sustainability targets. MOCEJ strongly recommends agencies adopt this framework in all major EO 23 covered projects.

CDCP Elements:

- 1. Project Description:** Agencies should provide a brief project description including the following: project name, lead agency, constructing agency, address, location, description of the project site including structures and infrastructure on site, project size and limits, and project scope.
- 2. Circularity Audit:** For projects with existing assets, the results of a Circularity Audit will inform the options for materials reuse in the CDCP. As part of the CDCP, agencies should provide a brief summary of the Circularity Audit, and include a full Circularity Audit report as an attachment.
- 3. Summary of a Sustainability and Circular Design & Construction Workshop:** Agencies should consider conducting at least one Sustainability and Circular Design and Construction Workshop, which will ultimately create the framework for the CDCP. In the CDCP, agencies should provide a summary of the Workshop(s), which could include a discussion of specific project goals/needs, potential circular strategies identified to achieve EO23 goals, results from conducting a basic estimate of embodied carbon of potential construction materials to be used, initial embodied carbon performance objectives, preparation of an estimated inventory of C&D materials to be handled (type, number, utilization) and a general plan for waste minimization.

Material Management and Waste Minimization Tracker: (See the *EO 23 CDM Guidance Reporting Template* for assistance in implementing this recommendation in your agency)

Design Phase:

- State Waste-Diversion Goals: At minimum, recycle or reuse 50% by weight of all construction waste material either on-site or at recycling facilities. Furthermore, MOCEJ recommends agencies consider increasing ambition to recycle or reuse 75% by weight where feasible.
- Create Draft C&D Materials Inventory (See Summary Worksheet below).
- Identify and Confirm Receiving Facilities.
- Summarize Future Waste Handling and Transportation.

Construction Phase:

- Update Design Phase Draft C&D Materials Inventory
- Confirm Waste Handling and Transportation
- Confirm Waste Haulers
- Outline On-Site and Agency Roles and Responsibilities
- Create and Submit Progress Reports
- Create and Submit Final Report

Material Management & Waste-Minimization Plan Summary Worksheet: Under the CDCP, at the Design Phase provide estimates and general information on weights, methods, and facilities. At the Construction Phase, confirm estimates from the Design Phase and update with more detailed information (weights, methods, cost, etc.), as applicable in order to create a draft of the C&D Materials Inventory. For more information, see the EO 23 CDW Guidance Reporting Template for assistance in implementing this recommendation in your agency.

Appendix B: Resources to Assist in CDCP Development

- [Guidelines for the Waste Audits Before Demolition and Renovation Works of Buildings](#)
 - Published by the European Commission to provide information about best practices for assessing C&D waste streams prior to demolition or renovation of buildings or infrastructure.
 - Goal to facilitate and maximize recovery of materials and components for beneficial reuse and recycling without compromising the safety measures and practices outlined in the European Union Construction & Demolition Waste Management Protocol.
- [ASCE Structural Engineering Institute's \(SEI\) Embodied Carbon Order of Magnitude \(ECOM\) estimator](#)
- [CARE Tool](#)

The CARE Tool allows users to compare the total carbon impacts of renovating an existing building versus replacing it with a new one.
- [Environmental Product Declarations \(EPDs\): A Guide for Architects](#)

Discusses EPDs in accordance with the International Standard ISO 14025 and different types of EPDs (industry wide, product specific, etc.).
- [Tech Brief: Environmental Product Declarations](#)

An educational document by the US Department of Transportation Federal Highway Administration summarizing what EPDs are, the different types, potential uses, and additional resources.
- [Embodied Carbon in Construction Calculator \(EC3\)](#)

A free database of construction EPDs and building impact calculator for use in design and material procurement.
- [LCA Practice](#)

Introduces the use of life cycle assessment to analyze the environmental impacts of buildings.
- [Athena Impact Estimator for Buildings](#)

Free software tool that is designed to evaluate whole buildings and assemblies based on internationally recognized LCA methodology.

Appendix C: Sources

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