FINAL | Prepared for

New York City Department of Environmental Protection

BODR Validation Services, Design Services and Design Services During Construction for the

Construction of CSO Abatement Facility at Gowanus Canal OH-007

Construction Waste Estimate Report, CP3 - 100% Design

Contract: CSO-GC-SFS DES OH | PIN: 82620WP01534

September 2026

Hazen

Brown AND Caldwell



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Technical Memorandum

Hazen and Sawyer
498 Seventh Ave, 11th Floor
New York, NY 10018
212-539-7000

Brown and Caldwell Associates
1350 Broadway, Suite 2000
New York, NY 10018
646-367-0673

Prepared for: New York City Department of Environmental Protection

Project Title: Construction of CSO Abatement Facility at Gowanus Canal Outfall OH-007

DEP Contract: CSO-GC-SFS DES OH

Technical Memorandum

Subject: Construction Waste Estimate Report, CP3 90% Design

Date: September 2026

To: Jesse Goldin, P.E., DEP Accountable Manager

From: Eliora Camilleri, P.E., Hazen and Sawyer, Project Manager
Gui DeReamer, P.E., Brown and Caldwell, Design Manager

Prepared by: _____
Sarah Teevan, E.I.T., Hazen and Sawyer

Reviewed by: _____
Nicolette Leung, P.E., ENV SP, Hazen and Sawyer

Reviewed by: _____
Marcella Capuco, E.I.T., ENV SP, Brown and Caldwell

Limitations:

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List of Abbreviations

BODR	Basis of Design Report
BUD	Beneficial Use Determination
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	Chlorofluorocarbons
City	City of New York
CP	Construction Package
CSO	combined sewer overflow
CWER	Construction Waste Estimate Report
DDSW	Deep Dive Sustainability Workshop
DEP	New York City Department of Environmental Protection
DSNY	Department of Sanitation New York
EPA	United States Environmental Protection Agency
FRP	fiber-reinforced plastic
lb/ft^3	pound per cubic foot
ISI	Institute for Sustainable Infrastructure
KPI	Key Performance Indicator
MG	million gallon
mg/kg	milligrams per kilogram
NYSDEC	New York State Department of Environmental Conservation
OH-007	Owls Head
PCB	Polychlorinated Biphenyl
PSW	Preliminary Sustainability Workshop
QEP	Qualified Environmental Professional
RA	Resource Allocation
RD	Remedial Design
RH	Red Hook
ROD	Record of Decision
SERTD	Soil Excavation, Reuse, Transport and Disposal
SOP	Standard Operating Procedure
SOW	Statement of Work
UAO	Unilateral Administrative Order

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Executive Summary

This Construction Waste Estimate Report (CWER) was developed to estimate the amount of waste materials generated by demolition and construction activities for the Owls Head (OH-007) Construction Package 3 (CP-3) Gowanus Combined Sewer Overflow (CSO) Storage Facility, Contract CSO-GC-SFS-DES (project). The 90% Design CWER was completed in accordance with the corresponding New York City Department of Environmental Protection (DEP) Standard Operating Procedure (SOP) 057: Construction Waste Estimate Report, (Revision 9, 3/15/2022), and will be finalized at 100% Design.

During the Preliminary Sustainability Workshop (PSW) on November 11, 2016, a Key Performance Indicator (KPI) waste reduction goal of 90 percent diversion of non-hazardous materials from landfill was established. This includes waste generated from the demolition of existing structures and utilities as well as wasted new material brought onsite for construction. The KPI goals were reviewed at the Sustainability Review Meeting with DEP on October 20, 2021, where it was decided to keep the waste reduction goal and to discuss a soil diversion goal at the Deep Dive Sustainability Workshop (DDSW). At the DDSW on June 6, 2022, DEP established the soil diversion goal to be 100 percent reuse offsite. The waste reduction goal was updated to 100 percent diversion by DEP via email on September 19, 2022.

Diverting demolition and construction waste supports NYC's ZeroWaste initiative defined within OneNYC and as described in SOP 057. Table 1 summarizes the diversion rates for both demolition/construction waste and excavated soils and the corresponding KPI goal. The total construction and demolition waste is approximately 10,095 tons. Waste diversion strategies have been identified for each material stream and incorporated throughout planning and design. At this stage in the design, it is estimated that 99.9 percent of total waste can be diverted from landfills.

At this stage in design, it is estimated that approximately 24,200 tons of soil will be excavated and approximately 194 tons of soil and 49 tons of stone/gravel/planting materials will be wasted from new construction. It is currently assumed that no excavated soil will be reused onsite. 5.5 percent is anticipated to be beneficially reused offsite and 94.9 percent is anticipated to be disposed of. The project wide KPI goal for soil diversion of 100 percent reuse offsite has been updated to 5 percent based on recommendations from the design team in this CWER and DEP guidance.

Waste reduction goals will be enforced through contract requirements and will be accomplished by including a requirement to locally recycle or reuse construction waste in the contractor bid specifications, Section 01 74 20 — Construction Waste Management.

Table 1. Diversion Strategy Summary

Material	Total Weight (tons)[1]	Total Diverted (tons)	Percent Diverted[1]	KPI Goal
Construction Waste	148	123	83.0%	-
Demolition Waste	11,330	11,330	100%	-
Total Waste	11,478	11,453	99.7%	100% diversion from landfill
Soil[2]	24,443	1,343	5.5%	5% reuse off site

1. *Percent Diverted is a current estimate based on information available. This is subject to change based on field conditions and is to be determined during construction.*
2. *Soil includes excavated soil, soil waste from new construction, planting materials, stone, and gravel. Refer to Table 4 for more information.*

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Section 1: Introduction

The following sections provide the project background and an overview of this report.

1.1 Overview

In September 2013, the United States Environmental Protection Agency (EPA), acting under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund), issued its Record of Decision (ROD) describing the selected remedy for the Gowanus Canal Superfund site located in Brooklyn, New York. In May 2014, the EPA issued an Administrative Order for Remedial Design (Index No. CERCLA-02-2014-2019) (RD UAO) that contained a Statement of Work (SOW) specifying the tasks to design the components of the remedy selected in the ROD. As part of the selected remedy, the City of New York (NYC) was directed to institute combined sewer overflow (CSO) controls consisting of the design for construction of retention tanks to intercept discharges from outfalls RH-034 and OH-007. The ROD preliminarily estimated that an 8 million-gallon (MG) tank at RH-034 and a 4 MG tank at OH-007 will provide a 58 percent to 74 percent reduction of CSO solids discharged to the canal. The ROD estimates this volume of CSO solids reduction will prevent recontamination by CSOs of the post-remedy clean surface. The ROD established a preliminary remediation goal of 20 mg/kg for polyaromatic hydrocarbons in post-remedy clean canal surface sediments.

This design contract covers a period of 10 years and will support approximately $600 million for construction. DEP has determined that there will be four design/construction work packages at each site:

- Construction package 1 (CP-1) is a site preparation contract. This contract will demolish existing structures on site, disconnect and/or relocate any in service utilities, and provide a secure site perimeter for work that will follow. It will include the relocation of the existing Department of Sanitation New York (DSNY)-operated winter weather operations (salt shed, plow storage, etc.) to an alternate location, likely South of 5th Street.
- Construction package 2 (CP-2) includes the majority of subsurface work. It includes construction of the support of excavation; the excavation, stabilization and disposal of soils; and construction of the foundation for the facility.
- Construction package 3 (CP-3) includes superstructure construction on the facility itself as well as the conveyance necessary to integrate the facility with DEP's infrastructure. This includes the integration of the replacement for the current Second Avenue pump station into the finished OH-007 facility.
- Construction package 4 includes relocating the compost and Gowanus Canal Conservancy area, as well as general site improvements and the public realm.

The Basis of Design Report (BODR) dated November 2021 outlines the basis of design for the 4 MG OH-007 CSO storage facility, which is required to comply with the regulations identified in the EPA's ROD and DEP design preferences for a CSO facility. As shown on Figure 1, the OH-007 CSO facility is proposed to be located within the OH-4 site, a peninsula composed of a cluster of five properties along 5th Street between 2nd Avenue and the southern side of the Gowanus Canal as it bends toward the west near the 4th Street turning basin. The OH-007 CSO storage facility is proposed to be situated on the property north of 5th Street.

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Figure 1. OH-007 CSO storage facility design

1.2 Report Overview

This CWER approximates the quantity of waste generated during construction of the OH-007 CP-3 Gowanus CSO Storage Facility, based on the latest project design. This CWER was developed for the 90% Design milestone and will be finalized at 100% Design. This CWER was completed in accordance with the corresponding New York City (NYC) DEP Standard Operating Procedure (SOP) 057 (Revision 9, 3/15/2022).

A KPI goal of 90 percent diversion of construction and demolition material to landfill was established at the PSW on November 11, 2016, and confirmed during the Sustainability Review Meeting on October 20, 2021. This includes waste generated from the demolition of existing structures and utilities as well as wasted new material brought onsite for construction. A soil diversion goal was not established at the Sustainability Review Meeting on October 20, 2021. At the DDSW on June 6, 2022, DEP created a soil diversion goal to 100% reuse offsite. The waste reduction goal was updated to 100 percent diversion by DEP via email on September 19, 2022.

Waste diversion goals will be enforced through contract requirements and will be accomplished by including the requirement to locally recycle or reuse construction waste in the contractor bid specifications, Section 01 74 20 — Construction Waste Management. Also, the Contractor will be required to develop a Construction Waste Management Plan (per Section 01 74 20 — Construction Waste Management) and Soil Excavation, Reuse, Transport and Disposal (SERTD) Plan (Per Section 31 23 16 – Excavation). The plans will detail how the Contractor aims to meet the Good Faith Effort minimum required level of diversion from landfill identified in Section 01 35 63 — Sustainability Certification Project Requirements. The Construction Waste Management Plan and the SERTD Plan will be submitted to the engineer for approval prior to substantial commencement.

This report is provided for reference only and is not a contractually binding document. The Contractor will demonstrate good faith efforts to meet the contractual targets stipulated in Section 01 35 63 — Sustainability Certification Project Requirements. The compliance strategy provided in this report is only an example, and the engineer does not attest to the accuracy or feasibility of the numbers provided. It is the responsibility of the contractor to prepare their own compliance plan according to the requirements of Section 01 35 63 — Sustainability Certification Project Requirements and meet the target within their means and methods. The Final CWER will be included in the procurement exhibit documents as a non-contractual document made available to the Contractor for informational purposes only.

The Project is comprised of the following components and anticipated waste materials:

- Asphalt: Demolition of pavement
- Brick: Demolition of combined sewer
- Cast Iron: Demolition of piping
- Concrete: Demolition of retaining walls, walls, slabs, beams, stormwater structures, and water/sewer piping

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- Steel: Demolition of natural gas piping, metal light pole
- Wood: Demolition of sheet piling
- Waste from new construction (see the Sustainable Material Content Plan for a detailed account on the estimated weights of new material).

Section 2: Waste Diversion Analysis

The following sections outline assumptions and calculations used in this report to determine the total estimated quantity of waste or soil generated and diverted for recycling or reuse. The total waste generated by OH-007 CP-3 Gowanus CSO Storage Facility consists of construction waste, demolition waste, and excavated soil.

2.1 Construction Waste Assumptions

Table 2 shows the specific construction waste materials that are expected, the approximate percentage wasted, and a proposed landfill diversion strategy. The OH-007 CP-3 90% Cost Estimate was used as the basis for calculation. Soil excavation values were provided by the remediation design lead.

This CWER assumes that the contractor will obtain written approval from New York State Department of Environmental Conservation (NYSDEC) at the time of construction to pursue alternatives to landfill diversion, according to their means and methods and to fulfill the targets set by their Construction Waste Management Plan. The contractor shall make provisions to locally recycle or reuse minor waste streams not considered by this analysis, such as packaging material, office waste, food/beverage packaging and materials without dimensional estimates, where possible.

Table 2. Construction Waste Assumptions

Item Description	Density (lb/ft³)	Approximate % of New Material Wasted[1,2]	Proposed Landfill Diversion Strategy
Aluminum (Floor Hatches)	168	0.0%	Recycle
Asphalt	145	0.5%	Recycle
Brick	181	0.5%	Recycle
Bronze (Valves)	545	0.5%	Recycle
Cast Iron (Bike Rack)	446	0.0%	Recycle
Cast Iron (Piping/Fittings)	446	5.0%	Recycle
Cast Iron (Manholes)	446	0.0%	Recycle
Cast Iron (Stair Nosings)	446	0.5%	Recycle
Concrete (Structural/ Non-Structural)	116	0.5%	Recycle
Concrete (Precast)	116	0.0%	Recycle
Copper (Piping/Fittings)	560	5.0%	Recycle
Copper (Wire)	560	5.0%	Recycle
Ductile Iron (Piping/Fittings)	449	5.0%	Recycle

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Table 2. Construction Waste Assumptions			
Item Description	Density (lb/ft³)	Approximate % of New Material Wasted[1,2]	Proposed Landfill Diversion Strategy
Ductile Iron (Grates/Frames)	449	0.5%	Recycle
Epoxy	78	0.5%	Recycle
Fiberboard (Duct Insulation)	40.5	0.5%	Recycle
Fiberglass (Copper Piping Insulation)	0.60	0.5%	Recycle
FRP	125	0.5%	N/S
Geotextile	92	0.5%	N/S
Glass	156	0.5%	Recycle
Grout	140	0.5%	N/S
HDPE (Piping/Fittings)	60	5.0%	Recycle
Paint	125	0.5%	N/S
Plywood (Concrete Forms)	37.5	5.0%	Recycle
Porcelain (Tile)	147	0.5%	Recycle
Polished Brass (Roof Manifold/ Flashing)	520	0.5%	Recycle
PVC (Piping)	85	5.0%	Recycle
PVC Coated Rigid Steel Conduit	490	5.0%	Recycle
Reclaimed Timber	37.5	0.0	Recycle
Rigid Galvanized Steel	490	5.0%	Recycle
Roofing Membrane	400	0.5%	Recycle
SS (Overhead Coiling Doors)	480	0.0%	Recycle
SS (Doors/Frames /Hardware)	480	0.5%	Recycle
SS (Floor Grating)	480	0.5%	Recycle
SS (Ductwork)	480	0.5%	Recycle
SS (Gates)	480	0.5%	Recycle
SS (Piping)	480	5.0%	Recycle
SS/Steel (Non-Structural)	490	0.5%	Recycle
Steel (Piping)	490	5.0%	Recycle
Steel (Reinforcing)	490	0.5%	Recycle
Steel (Deck Units)	490	0.5%	Recycle
Steel (Sheet Piling)	490	0.5%	Recycle
Steel (Structural)	490	0.5%	Recycle
Urethane (Anti-Graffiti Coating)	2.0	0.5%	Recycle
Plants and Grasses	100	0.5%	Recycle
Stone	100	0.5%	Recycle
Soil	100	0.5%	Recycle

1. *Wasting of 0.5% is assumed for made to order materials and new materials which don't require cutting onsite.*
2. *Wasting of 5% is assumed for new materials which will be cut onsite.*
3. *Percentage is based on weighted average of individual components that contribute to that category (either 5% or 0.5%)*

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2.2 Calculations

Demolition and construction waste quantities were calculated for each material identified in the cost estimate. Based on these quantities, the diversion rate for each material (Equation 1) and the overall project diversion rate (Equation 2) were calculated. The soil weights were calculated separately from the construction and demolition weights, per SOP 057 requirements.

$$Diversion\ rate = \frac{Estimated\ Material\ Diverted\ from\ Landfill}{Estimated\ Total\ Material\ Produced} \times 100 \qquad \textbf{Equation 1}$$

$$Overall\ Diversion\ rate = \frac{Total\ Estimated\ Waste\ Diverted\ from\ Landfill}{Total\ Estimated\ Total\ Waste\ Produced\ by\ Project} \times 100 \qquad \textbf{Equation 2}$$

This analysis estimates that approximately 148 tons of construction and 11,330 tons of demolition waste will be generated as part of this project, excluding soil. As shown in Table 3 and Attachment G, concrete is expected to be the largest waste stream.

2.3 Results

This analysis estimates that approximately 11,478 tons of construction and demolition waste will be generated as part of this Project, and approximately 24,443 tons of soil, stone, and planting materials, as detailed in Attachment G – Waste Quantities. As shown in Table 3, asphalt, cast iron, and steel are expected to be the largest waste streams, accounting for approximately 28 percent, 33 percent, and 21 percent by weight of the total construction and demolition waste. This analysis suggests that the KPI goal of 100 percent waste diversion is feasible. Recycling material facilities were not found for fiber-reinforced plastic (FRP), geotextile, grout, paint, porcelain tile, and urethane, but these materials count for less than 0.42 percent by weight of the total material waste. Therefore, the Project is currently diverting approximately 99.58 percent of its material from a landfill.

Table 3. Summary of Waste Materials

Material	Construction Waste Weight (tons)[1]	Demolition Waste Weight (tons)[1]	Total Waste Weight (tons)	Waste Diverted (tons)	Proposed Landfill Diversion Strategy[2]	Diversion Rate (%)
Aluminum (Floor Hatches)	0.00	0.00	0.00	0.00	Recycle	100%
Asphalt	15.61	1,636	1,652	1,652	Recycle	100%
Brick	0.18	0.00	0.18	0.18	Recycle	100%
Bronze (Valves)	0.00	0.00	0.00	0.00	Recycle	100%
Cast Iron (Bike Rack)	0.00	0.00	0.00	0.00	Recycle	100%
Cast Iron (Piping/Fittings)	0.48	1,939	1,939	1,939	Recycle	100%
Cast Iron (Manholes)	0.00	0.00	0.00	0.00	Recycle	100%
Cast Iron (Stair Nosings)	0.14	0.00	0.14	0.14	Recycle	100%
Concrete (Non-Structural)	11.64	5,586	5,598	5,598	Recycle	100%
Concrete (Structural)	57.85	87.70	146	146	Recycle	100%
Concrete (Precast)	0.00	0.00	0.00	0.00	Recycle	100%

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Table 3. Summary of Waste Materials

Material	Construction Waste Weight (tons)[1]	Demolition Waste Weight (tons)[1]	Total Waste Weight (tons)	Waste Diverted (tons)	Proposed Landfill Diversion Strategy[2]	Diversion Rate (%)
Copper (Piping/Fittings)	0.03	0.00	0.03	0.03	Recycle	100%
Copper (Wire)	0.00	0.00	0.00	0.00	Recycle	100%
Ductile Iron (Piping/Fittings)	9.63	442	452	452	Recycle	100%
Ductile Iron (Grates/Frames)	0.26	0.00	0.26	0.26	Recycle	100%
Epoxy	0.45	0.00	0.45	0.45	Recycle	100%
Fiberboard (Duct Insulation)	0.06	0.00	0.06	0.06	Recycle	100%
Fiberglass (Copper Piping Insulation)	0.01	0.00	0.01	0.01	Recycle	100%
FRP	0.00	0.00	0.00	0.00	N/S	0%
Geotextile	0.00	0.00	0.00	0.00	N/S	0%
Glass	0.06	0.00	0.06	0.06	Recycle	100%
Grout	24.85	0.00	24.85	0.00	N/S	0%
HDPE (Piping/Fittings)	0.17	0.00	0.17	0.17	Recycle	100%
Paint	0.13	0.00	0.13	0.00	N/S	0%
Plywood (Concrete Forms)	5.04	306	311	311	Recycle	100%
Porcelain (Tile)	0.02	0.00	0.02	0.02	Recycle	100%
Polished Brass (Roof Manifold/ Flashing)	0.00	0.00	0.00	0.00	Recycle	100%
PVC (Piping)	0.33	0.00	0.33	0.33	Recycle	100%
PVC Coated Rigid Steel Conduit	1.53	0.00	1.53	1.53	Recycle	100%
Reclaimed Timber	0.00	0.00	0.00	0.00	Recycle	100%
Rigid Galvanized Steel	0.67	9.29	9.96	9.96	Recycle	100%
Roofing Membrane	0.01	0.00	0.01	0.01	Recycle	100%
SS (Overhead Coiling Doors)	0.00	0.00	0.00	0.00	Recycle	100%
SS (Doors/Frames /Hardware)	0.90	0.00	0.90	0.90	Recycle	100%
SS (Floor Grating)	0.01	0.00	0.01	0.01	Recycle	100%
SS (Ductwork)	0.04	0.00	0.04	0.04	Recycle	100%
SS (Gates)	0.69	0.00	0.69	0.69	Recycle	100%
SS (Piping)	0.41	0.00	0.41	0.41	Recycle	100%
SS/Steel (Non-Structural)	7.31	9.80	17.11	17.11	Recycle	100%
Steel (Piping)	1.10	73.34	74.44	74.44	Recycle	100%

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Table 3. Summary of Waste Materials

Material	Construction Waste Weight (tons)[1]	Demolition Waste Weight (tons)[1]	Total Waste Weight (tons)	Waste Diverted (tons)	Proposed Landfill Diversion Strategy[2]	Diversion Rate (%)
Steel (Reinforcing)	2.76	0.00	2.76	2.76	Recycle	100%
Steel (Deck Units)	0.34	0.00	0.34	0.34	Recycle	100%
Steel (Sheet Piling)	3.10	1,240	1,243	1,243	Recycle	100%
Steel (Structural)	1.74	0.00	1.74	1.74	Recycle	100%
Urethane (Anti-Graffiti Coating)	0.04	0.00	0.04	0.04	Recycle	100%
Plants and Grasses	6.04	0.00	6.04	6.04	Recycle	100%
Stone	43.01	0.00	43.01	43.01	Recycle	100%
Soil	194	24,200	24,394	1,294	Recycle	100%
Total	**391**	**35,430**	**35,921**	**12,796**		

1. *Estimated diversion weights are rounded to the nearest significant digit. Given weights are approximate and should be considered reflective of the estimated order of magnitude of materials to be used for planning and guidance only. Hazen and Brown and Caldwell make no claim regarding the accuracy and/or precision of the values provided. These values shall not be used as the basis for cost estimating by others. Bidders are responsible for generating their own estimates for the purposes of bidding and contracting.*
2. *Multiple recycling facilities near the project site (see Attachment F: Recycling Facilities) have been identified that accept the anticipated non-hazardous waste. Facilities were not found at the time of this submission for materials listed as N/A.*

This analysis estimates that approximately 24,200 tons of soil will be excavated and 243.28 tons of soil waste, planting materials, and stone from new construction will be generated as part of this Project, as detailed in Attachment G.

At this stage in design, no soil is assumed to be reused on site due to lack of soil stockpiling areas and pending soil quality. Approximately 5.5 percent of excavated non-hazardous material or material wasted from new construction will be considered for Beneficial Use offsite according to a NYSDEC Beneficial Use Determination (BUD), either at another DEP site or beneficial use facility. This is based on the latest soil quality information from the remedial design team. This analysis suggests that the KPI goal of 100 percent soil diversion from landfill is no longer feasible and proposes an updated beneficial reuse offsite goal of 5 percent. The KPI values documented in this report have been updated to reflect this new 5 percent goal based on DEP guidance. Opportunities to minimize the import and export of soil materials will be finalized at 100% Design and field verified during construction.

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Table 4. Excavated Soil Diversion[1]					
Material	Quantity (tons)	Reused onsite (tons)	Reused offsite (tons)	Reused onsite (%)	Reused offsite (%)
Excavated Non-Hazardous Soil	24,200	0	1,100	0%	13.8%
Non-Hazardous Soil Waste from New Construction	194	0	194	0%	100%
Planting Materials	6.04	0	6.04	0%	100%
Stone	43.01	0	43.01	0%	100%
Total	**24,443**	**0**	**1,343**	**0%**	**5.5%**

1. *Totals rounded to nearest significant digit. Given weights are approximate and should be considered reflective of the estimated order of magnitude of materials to be used for planning and guidance only. Hazen and Brown and Caldwell make no claim regarding the accuracy and/or prevision of the values provided. These values should not be used as the basis for cost estimating by others. Bidders are responsible for generating their own estimates for the purposes of bidding and contracting.*

Section 3: Contractor Requirements

3.1 Soils

Based on the soil data provided in the Pre-Design Investigation Report (March 2018), it is assumed at this stage in design, that approximately 1,294 tons, or 5.5 percent of non-hazardous excavated soil could be beneficially reused off site under 6 NYCRR (New York Codes, Rules, and Regulations) Subpart 360. Approximately 1,000 tons of this material is assumed to be reused without treatment and the other 100 tons is assumed to be reused with treatment. Approximately 23,100 tons or 94.5 percent of the non-hazardous excavated soil is currently assumed to be disposed of at a landfill due to the chemical impacts of the soil and lack of immediate reuse opportunities. Additional reuse opportunities for this material will continue to be assessed. In addition, it was found that approximately 2,400 tons of excavated soil is determined to be hazardous.

The Contractor's Qualified Environmental Professional (QEP) will coordinate with DEP to identify out-of-state locations or facilities that could beneficially use soil that does not meet the BUD requirements. Based on the Soil Reuse Decision Tree, and that the energy expenditure required to thermally desorb outweighs the benefit of reusing soil, this CWER assumes that soil will not go through thermal desorption. A Soil Reuse Decision Tree and the DEP Guidelines for Soil Reuse per SOP 058 –Soil Management, have been provided as Attachment A and Attachment B, respectively, to aid the Contractor in achieving DEP's preferred approach for beneficial use of excavated soils. Per SOP 058 – Soil Management, the Beneficial Use Evaluation Form and the Site Characterization Form are provided as Attachment C and Attachment D, respectively.

The contractor's QEP will prepare and submit a Field Sampling Plan and a Field Sampling Summary Report for waste characterization per Section 02 24 20 — Soil Sampling and Analysis. To address the requirements of SOP 057, a signed site plan, final site plan, and construction staging areas will be provided for the contractor to obtain cut and fill quantities during construction.

Soil excavation will begin at the Project in approximately 2026.

3.2 Hazardous / Regulated Wastes

A number of potentially hazardous and/or regulated materials and items were identified during a visual assessment of the site which will require remediation and abatement. Preliminary analytical analysis was

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performed on samples of these materials, confirming the presence of asbestos-containing materials as well as other hazardous materials, as summarized in the report "Pre-Demolition Survey, Preliminary Data Summary Report" dated January 2023. Any hazardous materials should be tracked separately during construction and will not be considered for the goal of diverting 100 percent of waste from landfill.

Preliminary analysis has identified the following potentially hazardous/and or regulated items/material:

- Lead/Cadmium/Chromium-Containing Paint
- Polychlorinated Biphenyl (PCB)-Containing Paint
- PCB Light Ballasts
- PCB Caulk
- Containerized chemicals containing various substances including but not limited to paints, thinners, gasoline, diesel fuel, kerosene, hydraulic fluid, lithium grease, lubricants, motor oil, xylene, galvanizing sprays, propane, diesel exhaust fluid (DEP), various aerosol products, antifreeze, cleaning products, brake fluid, diesel injector fluid, power steering fluid, chassis degreaser, windshield washer fluid, cleaning supplies, glue, and roofing adhesive.
- Unidentified/Uncharacterized Containerized Wastes
- Universal Wastes (as defined by 6 NYCRR 374-3.1)
- Mercury-Containing Equipment
- Oil-Containing Equipment
- Chlorofluorocarbons (CFCs)
- Radionuclides
- Lead
- Underground Storage Tank – unlabeled with unknown contents
- Aboveground Storage Tanks – unlabeled with unknown contents
- Pits, Sumps, and Drains – may have accumulated sediment containing hazardous substances

It is the Contractor's responsibility to separate hazardous and non-hazardous soils, to the greatest extent possible, according to the requirements of the contract specifications. The handling and disposal of hazardous materials shall be managed according to Section 01 35 45 — Hazardous Materials Control, which references 6 NYC Rules and Regulations (NYCRR) Part 370, 6 NYCRR Part 374-3 for Universal Waste, and United Stated Department of Transportation 49 CFR Hazardous Materials Transportation regulations.

3.3 Materials Handling Procedures

The Contractors shall manage construction waste so that it can be appropriately recycled, which may include source separation into multiple waste streams. The Contractor shall determine locations of dumpsters for various recyclable waste streams. Separate waste streams may include, but are not limited to, concrete and steel, as required to meet the KPI goal within the Contactor's means and methods. Proposed contractor staging areas have been identified and are provided as Attachment E – Construction Staging.

3.4 Recycling Vendors

All non-hazardous waste that cannot be reused onsite or at another DEP facility is assumed to be diverted to a local recycling facility or appropriate reuse location, as required by the contract documents. There are multiple recycling facilities within a 50-mile radius of the Project that accept the anticipated non-hazardous waste. A list of recycling facilities from the DEP Recycling Database and additional research for the Project is included as Attachment F –Recycling Facilities and the names of example facilities are listed in Table 5.

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At this stage in design, vendors were not found for FRP, geotextile, grout, paint, and porcelain tile. These materials make up less than one percent of the total construction and demolition waste.

Attachment F and Table 5 do not claim to be exhaustive and including specific vendors does not constitute an endorsement by Hazen/Brown and Caldwell. Additionally, Hazen/Brown and Caldwell do not guarantee the availability of the listed facilities at the time of construction. These facilities are possible candidates, and the list will be updated when vendors confirm that they can meet the scope of the Project.

The largest waste stream for reuse/recycle is asphalt. Within Brooklyn there are three recycling facilities that accept asphalt (per DEP's Recycling Facilities Database, Attachment F).

Table 5. Prospective Recycling Vendors

Material	Nearest Recycling Vendor	City/Borough	State	Miles from Site
Aluminum	Duverge Scrap & Metal Removal	Bronx	NY	21.1
	Timpson Trading	Bronx	NY	15.7
	Allocco Recycling Ltd.	Brooklyn	NY	6.5
Asphalt	Allocco Recycling Ltd.	Brooklyn	NY	7
	Durante Bros. Construction Corp.	Queens	NJ	16
	New Style Recycling	Queens	NJ	10
Cast Iron/Ductile Iron	Duverge Scrap & Metal Removal	Bronx	NY	21.1
	Timpson Trading	Bronx	NY	15.7
	Allocco Recycling Ltd.	Brooklyn	NY	6.5
Concrete	Allocco Recycling Ltd.	Brooklyn	NY	6.5
	Atlas Roll-Off Corp.	Brooklyn	NY	8
	DeCostole Recycling & Transfer Station	Brooklyn	NY	5.6
Copper	Duverge Scrap & Metal Removal	Bronx	NY	21.1
	Timpson Trading	Bronx	NY	15.7
	Allocco Recycling Ltd.	Brooklyn	NY	6.5
Glass	New Style Recycling	Staten Island	NY	7.7
	Gaeta Interior Demolition & Sanitation	Queens	NY	22
	Cardella Waste	North Bergen	NJ	11
Plastic	Allocco Recycling Ltd.	Brooklyn	NY	6.3
	DeCostole Recycling & Transfer Station	Brooklyn	NY	5.6
	New Style Recycling	Maspeth	NY	4.9
Misc. Metals	Allocco Recycling Ltd.	Brooklyn	NY	6.3
Stainless Steel/Steel	Allocco Recycling Ltd.	Brooklyn	NY	6.5
	SA Recycling	Brooklyn	NY	6.3
	TNT Scrap Metals	Brooklyn	NY	6.0

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Table 5. Prospective Recycling Vendors				
Material	Nearest Recycling Vendor	City/Borough	State	Miles from Site
Wood	Allocco Recycling Ltd.	Brooklyn	NY	6.3
	DeCostole Recycling & Transfer Station	Brooklyn	NY	5.6
	Junk It Trash It	Brooklyn	NY	4.0

3.5 Third Party Accreditation

The Project will pursue Envision V3 accreditation. The anticipated level of achievement is a Gold Envision award. Please refer to Attachment A of SOP 052 – Sustainability Rating System (Revision 9, 3/15/2021) for specific credit rationale and Envision self-assessment results. The Envision application will be submitted for DEP and the Institute for Sustainable Infrastructure's (ISI) review as part of this 90% milestone.

The credits that are related to the CWER and its results are Resource Allocation (RA) 1.4 – Reduce Construction Waste and RA 1.5 – Balance Earthwork Onsite. Based on the results mentioned in the CWER, it is anticipated that a Conserving level of achievement (16 points) can be achieved for credit RA 1.4, meaning at least 95 percent of waste materials are recycled, reused, and/or salvaged. With an anticipated Project average of zero percent of excavated earthwork reused onsite, no points can be achieved for credit RA 1.5.

Section 4: Conclusions

This CWER demonstrates that opportunities exist for reusing and recycling expected construction waste and demolition waste generated by the OH-007 CP-3 Project. At this stage of design, approximately 11,478 tons of construction and demolition waste is proposed for this Project and 99.6 percent of the waste is estimated to be diverted from landfill. At this stage in design, it is assumed that approximately 24,200 tons of soil will be excavated and approximately 194 tons of soil and 49.04 tons of stone/gravel/planting materials will be wasted from new construction. It is currently assumed that no excavated soil will be reused onsite. 5.5 percent is anticipated to be beneficially reused offsite and 94.5 percent is anticipated to be disposed of. The project wide KPI goal for soil diversion of 100 percent reuse offsite has been updated to 5% based on recommendations from the design team in this CWER and DEP guidance. Soil Reuse Decision Tree Waste Quantities.

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Attachment A: DEP Guidelines for Soil Reuse

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Soil Sampling Workflow for Implementation of SOP 058 Soil Management

	Facility Planning	Design	Construction
Design Engineer (DE)/Qualified Environmental Professional (QEP)	Excavation Required Review SOP 058 Soil Management and 6 NYCRR 360.13 for applicability. Prepare Beneficial Use Evaluation Form as per Section 1.1 in SOP 058. Review existing data and coordinate with CEQR/SEQR per Section 1.2.1. QEP completes Site Characterization Form per Section 1.3 and reviews Guidelines for Soil Reuse. Review sustainability opportunities & project goals. Schedule Preliminary Sustainability Workshop (SOP 050) and discuss initial soil reuse strategies.	Update Beneficial Use Evaluation Form and Site Characterization Form as per section 2.1 in SOP 058. Prepare Cut & Fill diagram detailing excavation, backfill, and excess soil stockpile areas & volumes. SOP 057 CWER completed with soil reuse estimates. Present at Sustainability Deep Dive (SOP 051) Soil meets criteria for onsite Exemption – Part 360.13(c) and Part 360.13(a)(2) for material generated outside NYC with no evidence of historical impacts No Soil Sampling Necessary Excavation in accordance with SOP 058, Guidelines for Soil Reuse, and 6 NYCRR Part 360 Excess soil meets criteria for testing - Part 360.13(d) Soil Sampling Required QEP prepares Soil Sampling Plan which must reflect CEQR/ SEQR requirments as applicable No Excavation Needed As needed, complete EHS Drilling & Boring Checklist per SOP 104. Conduct Soil Sampling per Part 360.13(e) and compare the results to Part 360.13 (f). Soil Sampling results are then incorporated into the contract specifications. Update the CWER in SOP 057 Revise	CM/RE QEP obtains from the DE (i.e. from DSDC) for review, all applicable environmental documents for the proposed excavation, including but not limited to, all previous soil sampling performed by DEP during the SEQR/ CEQR and Design Phase, including soil investigation reports, geotechnical reports, existing soil information from the Operating Bureau, cut and fill drawings and Shop Drawings associated with the Contract.
DSDC/Construction Manager/Resident Engineer		Revise	CM/RE QEP follows SOP 058, revise EHS Drilling and Boring Checklist per SOP 104, Contractor's EP follows contract specifications (02 24 20 Soil Sampling & Analysis), develops Field Sampling Plan for review by DSDC QEP and strategy for reuse on site & beneficial use off site, stockpile soil if necessary. Follow contract specifications 01 74 20 Construction Waste Management and SOP 107 Monthly Metrics for tracking of soil reuse and disposal, follow SOP 106 Waste Disposal Documentation for disposal.
BEDC AM / EHS		BEDC AM Approval BEDC EHS reviews Soil Sampling Plan BEDC AM Approval	BEDC AM reviews disposal documentation & signs hazardous waste manifests BEDC AM Approval

GUIDELINES FOR SOIL REUSE

Guidelines for Reusing Soils Onsite:

1) Material to be excavated and proposed for reuse as fill under a Pre-determined BUD shall meet the solid waste cessation requirements of 6 NYCRR Part 360, Section 360.13:
    a. Applicability, Section 360.13
    b. Waste Cessation, or Section 360.13
    c. Exemption for On-site Reuse of Fill Material. If these criteria cannot be met, material shall meet Section 360.12
    d. Case-specific BUDs – general. Soil not meeting the above requirements for onsite reuse may qualify for reuse offsite under a DEC Case-specific BUD or other out of state agency Beneficial Use Program.
2) It shall be noted that when relocating soils on the same site, hazardous soils, non-soil wastes, or hot spots, as evidenced by visual observation, hand-held instruments or analytical results, must not be incorporated. All such material shall be removed offsite for disposal.

Guidelines for Reusing Soils Offsite:

1) Soil may be reused offsite under 6 NYCRR Part 360, Section 360.13 provided:
    - The soils are determined to be uncontaminated *without sampling* as per the Guidelines for Determining when Sampling is Required found below; or
    - The analytical testing results are used to determine acceptable fill material uses (General fill, Restricted-use fill, and Limited-use fill), as defined in 6 NYCRR Part 360, Section 360.13(f), Table 2: Fill Material Beneficial Use.
2) In the City of New York, NYSDEC must be notified at least five (5) days in advance of transfers of General fill, Restricted-use fill and Limited-use fill material generated in, imported to, or relocated within the City of New York in amounts greater than ten (10) cubic yards as per NYCRR Part 360, Section 360.13(g)(2). Notifications must be made on forms or in a manner acceptable to the DEC, and must include any analytical data.
3) For Restricted-use fill and Limited-use fill material, the NYSDEC must be notified at least five (5) days before delivery of greater than ten (10) cubic yards of fill material state-wide as per NYCRR Part 360, Section 360.13(g)(3).
4) Transport of all fill material originating in the City of New York is subject to the requirements of NYCRR Part 364. Transport of Limited-use fill and Restricted-use fill generated outside the City of New York is also subject to the requirements of NYCRR Part 364.
5) Soil not meeting the above requirements for offsite reuse may qualify for reuse offsite under a DEC Case-specific BUD or other out of state agency Beneficial Use Program. Under 6 NYCRR Part 360, 360.12(d), NYSDEC sets forth the requirements for petitioning NYSDEC to obtain a Case-specific BUD, and the criteria for reviewing, granting, or denying of the BUD.

GUIDELINES FOR SOIL REUSE

6) If applicable, consult with BEDC EHS and Operating Bureau regarding analytical results and applying to NYSDEC for a Case-specific BUD to reuse the soil offsite. If NYSDEC grants a Case-specific BUD, the soil may be taken offsite and reused elsewhere.

7) Similarly, if the soil meets the out of state agency Beneficial Use Program criteria, the soil may be taken offsite and reused elsewhere with out of state agency Beneficial Use Program approval.

8) If the soil is not acceptable to reuse offsite under a DEC Pre-determined or Case-specific BUD or other out of state agency Beneficial Use Program approval, dispose of it at an appropriately permitted facility in accordance with BEDC's Project Delivery System (SOP 106 Waste Management, Disposal Documentation & Reporting) and the Specifications.

Guidelines for Determining when Sampling is Required:

1) Under 6 NYCRR Part 360, Section 360.13, soil may be determined to be suitable for reuse, ***without sampling***, if any of the following criteria can be satisfied:

- Fill material generated outside of New York City with no evidence of historical impacts such as reported spill events, or visual or other indications (odors, etc.) of chemical or physical contamination per Part 360.13(a)(2), and does not originate from a site with industrial land use as defined in 6 NYCRR Part 375-1.8(g)(2)(iv). It should be noted that typical NYCDEP facilities (Wastewater Treatment Plants, Pump Stations, Water Filtration Facilities, and Shafts) are not considered industrial land use, or
- Fill material qualifies for exemption per Part 360.13(c). Specifically, fill material used as backfill for the excavation from which the fill material was taken, or as fill in areas of similar physical characteristics on the project property. If fill material exhibits historical or visual evidence of contamination (including odors), and will be used in an area of public access, the relocated fill material must be covered with a minimum of 12 inches of soil or fill material that meets the criteria for General fill, as defined in 6 NYCRR Part 360, Section 360.13 (f), Table 2: Fill Material Beneficial Use, or
- Fill material generated from a location within the City of New York, if the quantity of fill material does not exceed ten (10) cubic yards from one site, and the ten (10) cubic yards or less of material does not contain historic evidence of impacts such as reported spill events, or visual or other indication (odors, etc.) of chemical or physical contamination per Part 360.13(d)(1).

2) Pursuant to 6 NYCRR Part 360, Section 360.13(e), ***sampling is required*** when the above criteria cannot be met. Fill material samples, at a minimum, shall be analyzed for metals, PCBs/pesticides, and SVOCs, as listed in 6 NYCRR Part 375, Subdivision 375-6.8(b). In addition, and only if site conditions warrant, fill material shall be analyzed for VOCs (if their presence is possible based on site events such as historic petroleum spill, odors, photoionization detector meter, or other field instrument readings) listed in 6 NYCRR Part 375, Subdivision 375-6.8(b), asbestos (if demolition of structures has occurred on the site), and volume of physical contaminants (if present) based on visual observation.

- Unless determined to be suitable for reuse as per ***1)*** above, sampling is required when reusing soils offsite. Parameters analyzed for soils to be reused or disposed offsite shall

be the RCRA characteristics, including ignitability, corrosivity, reactivity, and Toxicity Characteristic Leaching Procedure (TCLP) for metals, SVOCs, VOCs, and pesticides and herbicides, in addition to any other parameters required by the reuse or disposal facility.

- Sampling is performed within the planned excavation boundaries, representing the horizontal and vertical extent of the excavation footprint, at frequencies as defined in 6 NYCRR Part 360, Section 360.13 (e)(1), Table 1: Minimum Analysis Frequency for Fill Material.

Soil Quantity	**Sample Requirements**
0-300 CY	1 composite sample, 2 discrete (VOC) samples
301-1000 CY	2 composite samples, 4 discrete (VOC) samples
1001-10,000 CY	3 composite samples, 6 discrete (VOC) samples
10,001+	One composite sample and two discrete (VOC) samples per every additional 10,000 CY or fraction thereof

- Analytical data is used to determine acceptable fill material uses (General fill, Restricted-use fill, and Limited-use fill), as defined in 6 NYCRR Part 360, Section 360.13 (f), Table 2: Fill Material Beneficial Use.
- NYSDEC Analytical Services Protocols shall be followed by the laboratory which shall have a NYSDOH Environmental Laboratory Approval Program (ELAP) certification where applicable.

3) The subsequent Soil Investigation Report shall include:

- All analytical results compared to:
  - 6 NYCRR Part 360, Section 360.13 (f), Table 2: Fill Material Beneficial Use;
  - Acceptance criteria for all reuse facilities identified in the Soil Sampling Plan;
  - RCRA characteristics, as applicable.
- Determination of soil classification(s) based on analytical and physical characteristics of soil and fill material within the excavation footprint, including General fill, Restricted-Use fill, Limited-use fill as defined in Part 360.13(f) Table 2. If the analytical data exceeds the maximum concentration levels in Table 2, the data shall be further classified as hazardous, nonhazardous contaminated (e.g., petroleum-contaminated, industrial waste, etc.), and non-regulated solid waste.
- Determination as to whether soil qualifies for reuse (onsite and offsite), and whether reuse meets the requirements for a DEC Pre-determined BUD under 6 NYCRR Part 360, Section 360.13 (a), (b) and (c), or requires a Case-specific BUD under NYCRR Part 360, Section 360.12 (d) as described in above Guidelines for Reusing Soils Onsite and Offsite.
- Recommended soil management strategies (reuse onsite, reuse offsite, disposal).
- All soil units should be calculated in tons.

Attachment B: Beneficial Use Evaluation Form

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BENEFICIAL USE EVALUATION FORM

1. Project Name/Contract Number:
2. Project Location (Address):

   2a. In NYC: Borough Block Lot(s)
3. Project/Contract Description (include area, size, type(s) of construction):

4. Site Description/Land Use (site history, include description of current and past known land use, any evidence of historical impacts such as reported spill events, or visual or other indications (odors, etc.) of chemical or physical contamination):

5. Site History/Land Use Researched (dates): ___ Yes ____ No (if Yes) ____Mo _____Yr
6. Phase I Performed (dates):___ Yes ____ No (if Yes) ____Mo _____Yr
7. SEQRA/CEQR Completed/In progress: (date) ____Yes ____ No____
8. Phase II Testing Performed (dates): ___ Yes ____ No (if Yes) ____Mo _____Yr
   a. If Yes, attach brief summary of analytical test results and physical characteristics, including any recommendations for reuse onsite/offsite or if data indicates material is unsuitable for reuse.

9. Existing environmental data, analytical test results and/or physical characteristics from previous BEDC/Operating Bureau contracts (contracts/dates): _____Yes ___ No____
10. Project Location Map Attached: ____Yes
11. Estimated total excavation (Volume): _____ cubic yards
12. Potential On-site Reuse (Volume): _____ cubic yards
13. Potential Off-site Reuse (Volume): _____ cubic yards (excess soils)

BENEFICIAL USE EVALUATION FORM

14. Anticipated Project Schedule:

    Design completion: ___ Mo. _____ Yr

    Procurement Phase: ___ Mo. _____ Yr

    Construction Start: ___ Mo. ___ Yr

    Completion: ___ Mo. ___ Yr

16. Does the Project Warrant Beneficial Use Evaluation?:

____ Yes (e.g., sufficient volume to support effort, possible reuse onsite/offsite)

____ No (e.g., small excavation and no savings or benefit to reuse onsite/offsite)

Completed by Design Engineer (DE) and submit to Accountable Manager (AM)

Name:_____

Title:_____

Date:_____

Attachment C: Site Characterization Form

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SITE CHARACTERIZATION FORM

This Site Characterization Form shall be prepared during Facility Planning. This form should be completed by the Design Engineer, who must have a Qualified Environmental Professional (with an understanding of Environmental Site Assessment (ESA) Phase I and Phase II investigations, and existing project specific environmental data) complete 4-6.

Follow instructions in each section below.

1. PROJECT NAME: Provide the name of the site as it will appear or be referenced in NYCDEP design and construction documents (Should have same name as Beneficial Use Evaluation Form).

2. PROJECT LOCATION (ADDRESS) Lot, Block, and Borough (if in NYC): Provide the mailing address as well as Tax Lot and Block number(s), City Borough and County. Include a USGS Topo or other map format (8 ½ x 11 in.) indicating the site location.

3. PROJECT DESCRIPTION: Provide a description of the project and site setting, including scope of construction, size of property, area impacted by project, and approximate quantity of soil to be managed. Examples:

   (1) The Power Distribution Improvements project is located at the Bowery Bay WWTP and includes the removal and replacement of transformers located within a 300 square foot area of the central portion of the site and installation of new duct banks. Additional work includes replacement of Motor Control Centers, substation disconnects and motors, all located within existing buildings.

   (2) The project is at the Shaft 13B Valve Chamber complex which is located under Central Park. The scope of construction is limited to the construction of an emergency means of egress within a 200 square foot area of the site, adjacent to the existing chamber.

SITE CHARACTERIZATION FORM

4. SITE HISTORY: Use available aerial photographs, Sanborn Fire Insurance Maps, site maps or other drawings to show the site, its past and existing uses, and if filling took place. Note: This section should be brief but depending on the level of detail, size of site and land use variations over time it may be more than one paragraph. Important information to include (if known) would be: historic presence of buildings on the project site, prior demolition activity, chemical or petroleum storage, utilities, areas that have been known to have been excavated or filled, and any evidence of historical impacts such as reported spill events, or visual or other indications (odors, etc.) of chemical or physical contamination. Figures and aerials should identify the specific year and project site to assist in evaluating historic uses and potential impacts.

5. REGULATORY REVIEW: Perform a State database search similar to what would be performed in an ASTM Phase I to determine if a recognized environmental condition exists. Note: The Regulatory Review should satisfy the requirements of the most recent version of Chapter 12 (Hazardous Materials) of the SEQR/ CEQR Technical manual as they relate to the identification of Recognized Environmental Conditions (RECs) and the ASTM E-1527 Phase I ESA. If CEQR is planned, indicate timing.

5. PREVIOUS OR EXISTING DATA SUMMARY: Include a brief summary of existing data (from the Operating Bureau, previous JOCs or BEDC construction contracts, environmental investigation reports, geotechnical reports, available analytical testing results, etc.). Include report titles, dates of the investigation, conclusions and recommendations. Indicate where the reports are available for review.

6. SOIL DESTINATION RECOMMENDATION:

Completed by Design Engineer (DE) and submit to Accountable Manager (AM):

Name:_____ Title:_____

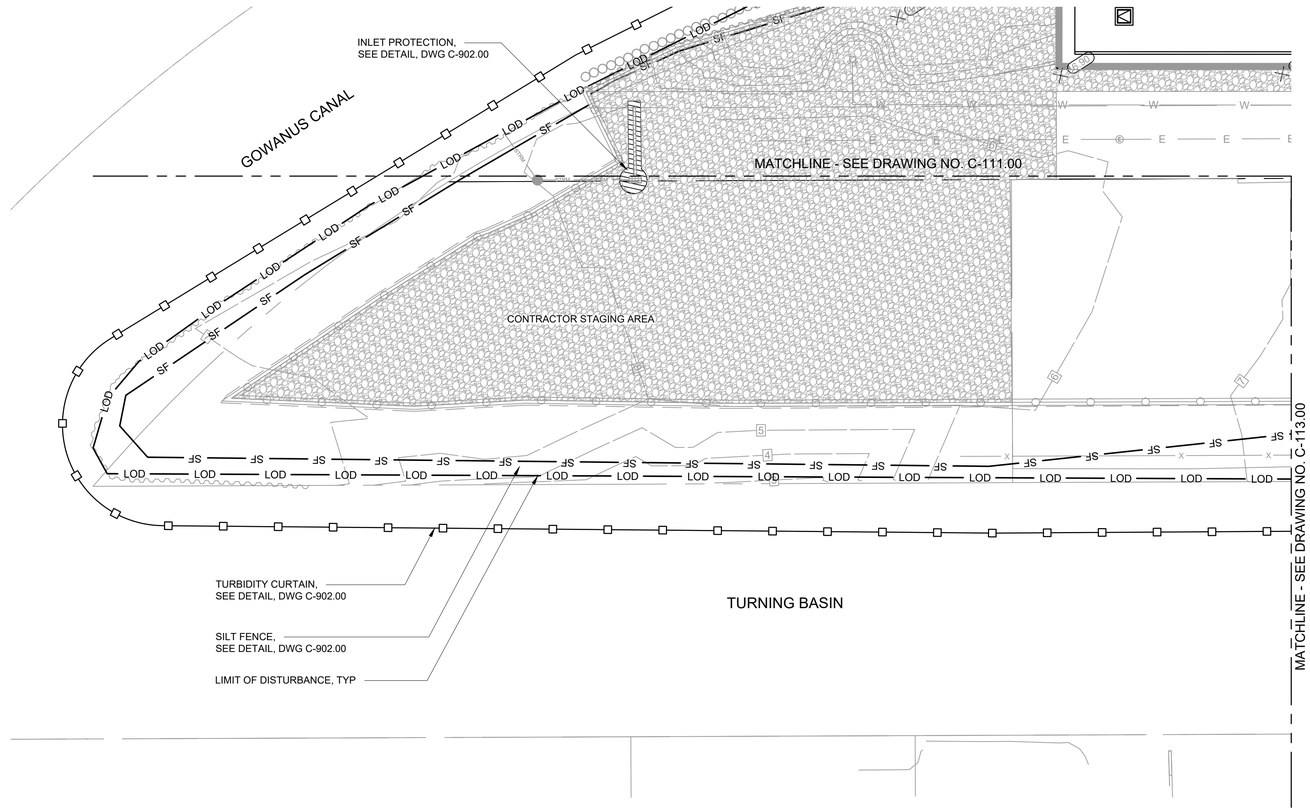
Signature:_____

Date: _____

Attachment D: Construction Staging

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NOTES:

1. EXISTING UNDERGROUND UTILITY INFORMATION AND SITE CONDITIONS HAVE BEEN PLOTTED FROM THE RECORD DRAWINGS SHOWN BELOW.
   A. OH-007 CONTRACT 2455 SHEET A (1897) - GENERAL PLAN OF MAIN RELIEF SEWER FOR THE RELIEF OF THE THIRD AVE. AND FOURTH AVE. SEWERS
   B. OH-007 CONTRACT 2455 (1897) - DETAIL SHEET OF MAIN RELIEF SEWER FOR THE RELIEF OF THIRD AVE. AND FOURTH AVE. SEWERS
   C. WP-288 OWL'S HEAD WATER POLLUTION CONTROL PROJECT (1990) - 2ND AVENUE PUMP STATION TOP PLANS AND PILE PLANS
   D. CONSOLIDATED EDISON LOW TENSION MAINS AND SERVICE PLATE NOS. 39-L AND 39-M
2. EXISTING CONDITIONS ARE THE FINAL SITE PLANS ASSOCIATED WITH BH, CP-1, AND CP-2 CONSTRUCTION.

1"=30' 0 30 60 FT.

90% DESIGN SUBMITTAL

SUBMITTAL DATE: JULY 2023

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
J. PERRUZZA	J. PERRUZZA	P. YOUNG
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
D. SHEERAN	D. SHEERAN	G. DEREAMER

Hazen Brown AND Caldwell

NYC Environmental Protection

ACCOUNTABLE MANAGER: MANUEL LAGO

PORTFOLIO MANAGER: KEVIN CLARKE

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BUREAU OF ENGINEERING DESIGN & CONSTRUCTION
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www.nyc.gov/dep

CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

CIVIL

EROSION CONTROL PLAN

AREA 2

DATE: JULY 2023

SHEET NO:

DRAWING NO. C-112.00

Last Saved By: JTanner
Paper Size Printed/Plotted: PAPPER_SIZE_PRINTED/PLOTTED
Drawing File Name & Drive Location: DWGFILE&DRIVE_LOCATION
Last Date Saved: DATE&TIME_DWG_SAVED
Date & Time Plotted: DATE&TIME_PLOTTED
Plot Scale: PLOT_SCALE
Plot Style Table: PLOT_STYLE_TABLE

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

Attachment E: DEP Recycling Facilities

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Material	Facility Name	Phone Number	Location	Town	Zip	Borough	Nearest WWTP	Distance to WWTP (mi)	Distance to OH-007 site (mi)
Asphalt	Allocco Recycling Construction Debris Transf	(718)-349-3094	540 Kingsland Ave	Brooklyn	11222	Brooklyn	Newtown Creek	0.4	6.5
Asphalt	Durante Bros. Construction Corp.	(718) 762-2500	31-40 123rd St.	Flushing	11354	Queens	Tallman Island	2.1	14.9
Asphalt	New Style Recycling	(718) 326-4175	49-10 Grand Avenue	Maspeth	11378	Queens	Newtown Creek	2.3	4.9
Brick	New York Recycling, LLC	(718) 742-0755	475 Exterior St.	Bronx	10451	Bronx	North River	3	15.7
Brick	Allocco Recycling Ltd.	(718) 349-3094	540 Kingsland Ave	Brooklyn	11222	Brooklyn	Newtown Creek	0.4	6.5
Brick	Durante Bros. Construction Corp.	(718) 762-2500	31-40 123rd St.	Flushing	11354	Queens	Tallman Island	2.1	14.9
Brick	Lou Durante Sr.	(917) 939-3860	4615 104th St.	Corona	11368	Queens	Tallman Island	5.9	11.5
Brick	New Style Recycling	(718) 326-4175	49-10 Grand Avenue	Maspeth	11378	Queens	Newtown Creek	2.3	4.9
Brick	Richmond Recycling	(718) 698-1100	1900 South Ave.	Staten Island	10314	Staten Island	Port Richmond	6.2	18
Brick	Cardella Waste	(800) 548-7001	2400 Tonnele	North Bergen	07047	NJ	Red Hook	8.8	11.1
Bentonite	Russel Reid	(800)-356-4468	430 Raritan Center Parkw	Edison	08837	NJ	Port Richmond	20.5	31.4
Bentonite	DeCostole Recycling & Transfer Station	(718) 241-6428	1481 Troy Ave	Brooklyn	11203	Brooklyn	26th Ward	3.5	5.6
Bentonite	Gaeta Interior Demolition & Sanitation	(718) 720-7220	25 Van St	Staten Island	10310	Staten Island	Port Richmond	0.5	14.2
Concrete	New York Recycling, LLC	(718) 742-0755	475 Exterior St.	Bronx	10451	Bronx	North River	3	15.7
Concrete	Tilcon	(800) 872-7762	980 East 149th Street	Bronx	10455	Bronx	Hunt's Point	1.6	15.6
Concrete	Allocco Recycling Ltd.	(718) 349-3094	540 Kingsland Ave	Brooklyn	11222	Brooklyn	Newtown Creek	0.4	6.5
Concrete	Atlas Roll-Off Corp.	(718) 345-6451	895 Essex St	Brooklyn	11208	Brooklyn	26th Ward	0.9	8
Concrete	DeCostole Recycling & Transfer Station	(718) 241-6428	1481 Troy Ave	Brooklyn	11203	Brooklyn	26th Ward	3.5	5.6
Concrete	Junk It Trash It	(646) 259-5580	1191 Nostrand Ave.	Brooklyn	11225	Brooklyn	26th Ward	4.4	4
Concrete	Boro-wide Recycling Corporation	(718) 416-1656	3 Railroad Place	Maspeth	11378	Queens	Newtown Creek	2.1	6.9
Concrete	Durante Bros. Construction Corp.	(718) 762-2500	31-40 123rd St.	Flushing	11354	Queens	Tallman Island	2.1	14.9
Concrete	Lou Durante Sr.	(917) 939-3860	4615 104th St.	Corona	11368	Queens	Tallman Island	5.9	11.5
Concrete	Gaeta Interior Demolition & Sanitation	(718) 720-7220	25 Van St	Staten Island	10310	Staten Island	Port Richmond	0.5	14.2
Concrete	Richmond Recycling	(718) 698-1100	1900 South Ave.	Staten Island	10314	Staten Island	Port Richmond	6.2	18
Concrete	Cardella Waste	(800) 548-7001	2400 Tonnele	North Bergen	07047	NJ	Red Hook	8.8	11.1
Dirt	New York Recycling, LLC	(718) 742-0755	475 Exterior St.	Bronx	10451	Bronx	North River	3	15.7
Dirt	Tilcon	(800) 872-7762	980 East 149th Street	Bronx	10455	Bronx	Hunt's Point	1.6	15.6
Dirt	Allocco Recycling Ltd.	(718) 349-3094	540 Kingsland Ave	Brooklyn	11222	Brooklyn	Newtown Creek	0.4	6.5
Dirt	Boro-wide Recycling Corporation	(718) 416-1656	3 Railroad Place	Maspeth	11378	Queens	Newtown Creek	2.1	6.9
Dirt	Durante Bros. Construction Corp.	(718) 762-2500	31-40 123rd St.	Flushing	11354	Queens	Tallman Island	2.1	14.9
Dirt	New Style Recycling	(718) 326-4175	49-10 Grand Avenue	Maspeth	11378	Queens	Newtown Creek	2.3	4.9
Dirt	Gaeta Interior Demolition & Sanitation	(718) 720-7220	25 Van St	Staten Island	10310	Staten Island	Port Richmond	0.5	14.2
Fill	Tilcon	(800) 872-7762	980 East 149th Street	Bronx	10455	Bronx	Hunt's Point	1.6	15.6
Fill	Allocco Recycling Ltd.	(718) 418-2190	594 Scholes Street	Brooklyn	11237	Brooklyn	Newtown Creek	2.2	6.3
Fill	DeCostole Recycling & Transfer Station	(718) 241-6428	1481 Troy Ave	Brooklyn	11203	Brooklyn	26th Ward	3.5	5.6
Fill	New Style Recycling	(718) 326-4175	49-10 Grand Avenue	Maspeth	11378	Queens	Newtown Creek	2.3	4.9
Fill	Richmond Recycling	(718) 698-1100	1900 South Ave.	Staten Island	10314	Staten Island	Port Richmond	6.2	18
Glass	New Style Recycling	(718) 326-4175	49-10 Grand Avenue	Maspeth	11378	Queens	Newtown Creek	2.3	4.9
Glass	Gaeta Interior Demolition & Sanitation	(718) 720-7220	25 Van St	Staten Island	10310	Staten Island	Port Richmond	0.5	14.2
Glass	Cardella Waste	(800) 548-7001	2400 Tonnele	North Bergen	07047	NJ	Red Hook	21.3	11.1
Metals	Duverge Scrap & Metal Removal	(347) 945-3058	3416 Olinville Ave	Bronx	10467	Bronx	Hunt's Point	6.5	21.1
Metals	Timpson Trading	(718) 993-0018	671 Timpson Pl	Bronx	10455	Bronx	Hunt's Point	2	15.7
Metals	Allocco Recycling Ltd.	(718) 349-3094	540 Kingsland Ave	Brooklyn	11222	Brooklyn	Newtown Creek	0.4	6.5
Metals	Cropsey Scrap Iron & Metal Corporation	(718) 372-5348	2994 Cropsey Avenue	Brooklyn	11214	Brooklyn	Coney Island	3.9	12.3
Metals	DeCostole Recycling & Transfer Station	(718) 241-6428	1481 Troy Ave	Brooklyn	11203	Brooklyn	26th Ward	3.5	5.6
Metals	Junk It Trash It	(646) 259-5580	1191 Nostrand Ave.	Brooklyn	11225	Brooklyn	26th Ward	4.4	4
Metals	SA Recycling	(718) 251-5800	5709 Preston Ct	Brooklyn	11234	Brooklyn	26th Ward	2.9	6.3
Metals	TNT Scrap Metals	(718) 366-4017	340 Maspeth Ave.	Brooklyn	11211	Brooklyn	Newtown Creek	1.7	6
Metals	A&A Scrap Metals	(718) 721-8885	18-50 43rd Street	Astoria	11105	Queens	Wards Island	6.1	11.5
Metals	Boro-wide Recycling Corporation	(718) 416-1656	3 Railroad Place	Maspeth	11378	Queens	Newtown Creek	2.1	6.9
Metals	CCCScrap Recycling	(800) 631-6936	175-15 Liberty Avenue	Jamaica	11433	Queens	26th Ward	9	16.9
Metals	City Scrap Metal	(212) 777-4100	34-12 Borden Avenue	Long Island City	11101	Queens	Newtown Creek	0.9	7.2
Metals	Gaeta Interior Demolition & Sanitation	(718) 720-7220	25 Van St	Staten Island	10310	Staten Island	Port Richmond	0.5	14.2
Metals	Cardella Waste	(800) 548-7001	2400 Tonnele	North Bergen	07047	NJ	Red Hook	21.3	11.1
Mixed (including Electronics)	New York Recycling, LLC	(718) 742-0755	475 Exterior St.	Bronx	10451	Bronx	North River	3	15.7
Mixed (including Electronics)	Allocco Recycling Ltd.	(718) 418-2190	594 Scholes Street	Brooklyn	11237	Brooklyn	Newtown Creek	2.2	6.3
Mixed (including Electronics)	DeCostole Recycling & Transfer Station	(718) 241-6428	1481 Troy Ave	Brooklyn	11203	Brooklyn	26th Ward	3.5	5.6
Mixed (including Electronics)	SA Recycling	(718) 251-5800	5709 Preston Ct	Brooklyn	11234	Brooklyn	26th Ward	2.9	6.3
Mixed (including Electronics)	Durante Bros. Construction Corp.	(718) 762-2500	31-40 123rd St.	Flushing	11354	Queens	Tallman Island	2.1	14.9
Mixed (including Electronics)	Cardella Waste	(800) 548-7001	2400 Tonnele	North Bergen	07047	NJ	Red Hook	21.3	11.1
Paper	Cardella Waste	(800) 548-7001	2400 Tonnele	North Bergen	07047	NJ	Red Hook	21.3	11.1
HDPE/PVC	Excel Plastics Recycling, Inc	(201) 991-2500	996 Belleville Turnpike	Kearny	07032	NJ	Northwest Bergen County	2.2	6.3
HDPE/PVC	AAA Polymer	(718) 389-2498	68 Freeman St	Brooklyn	11222	NY	Newtown Creek	3.5	5.6
HDPE/PVC	AG Polymers	(914) 328-8600	445 Hamilton Ave	White Plains	10601	NY	White Plains	2.3	4.9
Plastics	Allocco Recycling Ltd.	(718) 418-2190	594 Scholes Street	Brooklyn	11237	Brooklyn	Newtown Creek	0.5	14.2
Plastics	DeCostole Recycling & Transfer Station	(718) 241-6428	1481 Troy Ave	Brooklyn	11203	Brooklyn	26th Ward	21.3	11.1
Plastics	New Style Recycling	(718) 326-4175	49-10 Grand Avenue	Maspeth	11378	Queens	Newtown Creek	3.5	5.6
Plastics	Gaeta Interior Demolition & Sanitation	(718) 720-7220	25 Van St	Staten Island	10310	Staten Island	Port Richmond	2.2	6.3
Plastics	Cardella Waste	(800) 548-7001	2400 Tonnele	North Bergen	07047	NJ	Red Hook	3.5	5.6
Process Equipment Deconstruction	DeCostole Recycling & Transfer Station	(718) 241-6428	1481 Troy Ave	Brooklyn	11203	Brooklyn	26th Ward	4.4	4
Sheetrock	Allocco Recycling Ltd.	(718) 418-2190	594 Scholes Street	Brooklyn	11237	Brooklyn	Newtown Creek	0.5	14.2
Sheetrock	DeCostole Recycling & Transfer Station	(718) 241-6428	1481 Troy Ave	Brooklyn	11203	Brooklyn	26th Ward	21.3	11.1
Sheetrock	Junk It Trash It	(646) 259-5580	1191 Nostrand Ave.	Brooklyn	11225	Brooklyn	26th Ward	21.3	10.6
Sheetrock	Gaeta Interior Demolition & Sanitation	(718) 720-7220	25 Van St	Staten Island	10310	Staten Island	Port Richmond	1	8.3
Sheetrock	Cardella Waste	(800) 548-7001	2400 Tonnele	North Bergen	07047	NJ	Red Hook	1.5	37.5
Steel	Timpson Trading	(718) 993-0018	671 Timpson Pl	Bronx	10455	Bronx	Hunt's Point	2	15.7
Steel	Allocco Recycling Ltd.	(718) 349-3094	540 Kingsland Ave	Brooklyn	11222	Brooklyn	Newtown Creek	0.4	6.5
Steel	Cropsey Scrap Iron & Metal Corporation	(718) 372-5348	2994 Cropsey Avenue	Brooklyn	11214	Brooklyn	Coney Island	3.9	12.3
Steel	SA Recycling	(718) 251-5800	5709 Preston Ct	Brooklyn	11234	Brooklyn	26th Ward	2.9	6.3
Steel	TNT Scrap Metals	(718) 366-4017	340 Maspeth Ave.	Brooklyn	11211	Brooklyn	Newtown Creek	1.7	6
Steel	A&A Scrap Metals	(718) 721-8885	18-50 43rd Street	Astoria	11105	Queens	Wards Island	6.1	11.5
Steel	CCCScrap Recycling	(800) 631-6936	175-15 Liberty Avenue	Jamaica	York	Queens	26th Ward	9	16.9
Stone/Rocks	New York Recycling, LLC	(718) 742-0755	475 Exterior St.	Bronx	10451	Bronx	North River	3	15.7
Stone/Rocks	Allocco Recycling Ltd.	(718) 349-3094	540 Kingsland Ave	Brooklyn	11222	Brooklyn	Newtown Creek	0.4	6.5
Stone/Rocks	Atlas Roll-Off Corp.	(718) 345-6451	895 Essex St	Brooklyn	11208	Brooklyn	26th Ward	0.9	8
Stone/Rocks	Junk It Trash It	(646) 259-5580	1191 Nostrand Ave.	Brooklyn	11225	Brooklyn	26th Ward	4.4	4
Stone/Rocks	Durante Bros. Construction Corp.	(718) 762-2500	31-40 123rd St.	Flushing	11354	Queens	Tallman Island	2.1	14.9
Stone/Rocks	Lou Durante Sr.	(917) 939-3860	4615 104th St.	Corona	11368	Queens	Tallman Island	5.9	11.5
Stone/Rocks	New Style Recycling	(718) 326-4175	49-10 Grand Avenue	Maspeth	11378	Queens	Newtown Creek	2.3	4.9
Stone/Rocks	Richmond Recycling	(718) 698-1100	1900 South Ave.	Staten Island	10314	Staten Island	Port Richmond	6.2	18
Stone/Rocks	Cardella Waste	(800) 548-7001	2400 Tonnele	North Bergen	07047	NJ	Red Hook	21.3	11.1
Tile	Allocco Recycling Ltd.	(718) 418-2190	594 Scholes Street	Brooklyn	11237	Brooklyn	Newtown Creek	2.2	6.3
Tile	Gaeta Interior Demolition & Sanitation	(718) 720-7220	25 Van St	Staten Island	10310	Staten Island	Port Richmond	0.5	14.2
Wood	Allocco Recycling Ltd.	(718) 418-2190	594 Scholes Street	Brooklyn	11237	Brooklyn	Newtown Creek	2.2	6.3
Wood	DeCostole Recycling & Transfer Station	(718) 241-6428	1481 Troy Ave	Brooklyn	11203	Brooklyn	26th Ward	3.5	5.6
Wood	Junk It Trash It	(646) 259-5580	1191 Nostrand Ave.	Brooklyn	11225	Brooklyn	26th Ward	4.4	4
Wood	Boro-wide Recycling Corporation	(718) 416-1656	3 Railroad Place	Maspeth	11378	Queens	Newtown Creek	2.1	6.9
Wood	New Style Recycling	(718) 326-4175	49-10 Grand Avenue	Maspeth	11378	Queens	Newtown Creek	2.3	4.9
Wood	Gaeta Interior Demolition & Sanitation	(718) 720-7220	25 Van St	Staten Island	10310	Staten Island	Port Richmond	0.5	14.2
Wood	Cardella Waste	(800) 548-7001	2400 Tonnele	North Bergen	07047	NJ	Red Hook	21.3	11.1
Mixed	Liotta Brothers Recycling	(516)523-0396	4014 Daly Blvd.	Oceanside	11572	LI	Bay Park	15.9	38.5
Mixed	Cooper Tank Recycling	(718)382-7727	222 Maspeth Ave.	Brooklyn	11211	Brooklyn	Newtown Creek	1.5	5.8

Material	Facility Name	Phone Number	Location	Town	Zip	Nearest WWTP	Distance (mi)
Asphalt	Delaware County Solid Waste Mgmt Center	(607) 746-2128	32230 NY-10	Walton	12856	Margaretville	29.3
Asphalt	Ground Control Excavating, Inc	(845) 661-8118	63 Waterbury Rd.	Warwick	10990	Port Jervis	22.1
Brick	WM Biers Inc	(518) 434-2747	100 Port St.	Albany	12202	Grand Gorge	52.3
Brick	Jerry Hauls it All	(845) 374-6114	68 McVeigh Rd	New Hampton	10958	Port Jervis	18.6
Brick	Delaware County Solid Waste Mgmt Center	(607) 746-2128	32230 NY-10	Walton	12856	Margaretville	29.3
Brick	Ground Control Excavating, Inc	(845) 661-8118	63 Waterbury Rd.	Warwick	10990	Port Jervis	22.1
Concrete	WM Biers Inc	(518) 434-2747	100 Port St.	Albany	12202	Grand Gorge	52.3
Concrete	County Waste & Recycling	(888) 549-2783	465 Ross Ruland Rd.	South Cairo	12482	Tannersville	15.3
Concrete	Jerry Hauls it All	(845) 374-6110	68 McVeigh Rd	New Hampton	10958	Port Jervis	18.6
Concrete	Delaware County Solid Waste Mgmt Center	(607) 746-2128	32230 NY-10	Walton	12856	Margaretville	29.3
Concrete	Ground Control Excavating, Inc	(845) 661-8118	63 Waterbury Rd.	Warwick	10990	Port Jervis	22.1
Dirt	WM Biers Inc	(518) 434-2747	100 Port St.	Albany	12202	Grand Gorge	52.3
Dirt	County Waste & Recycling	(888) 549-2783	465 Ross Ruland Rd.	South Cairo	12482	Tannersville	15.3
Dirt	Jerry Hauls it All	(845) 374-6112	68 McVeigh Rd	New Hampton	10958	Port Jervis	18.6
Glass	WM Biers Inc	(518) 434-2747	100 Port St.	Albany	12202	Grand Gorge	52.3
Metals	Sims Metal Management	(518) 465-2288	140 Port Road South	Albany	12202	Grand Gorge	53.1
Metals	County Waste & Recycling	(888) 549-2783	465 Ross Ruland Rd.	South Cairo	12482	Tannersville	15.3
Metals	Advanced Recovery	(845) 858-8809	41 Mechanic St	Port Jervis	12771	Port Jervis	2.0
Metals	Delaware County Solid Waste Mgmt Center	(607) 746-2128	32230 NY-10	Walton	12856	Margaretville	29.3
Mixed (including Electronics)	County Waste & Recycling	(888) 549-2783	465 Ross Ruland Rd.	South Cairo	12482	Tannersville	15.3
Mixed (including Electronics)	Advanced Recovery	(845) 858-8809	41 Mechanic St	Port Jervis	12771	Port Jervis	2.0
Mixed (including Electronics)	Jerry Hauls it All	(845) 374-6111	68 McVeigh Rd	New Hampton	10958	Port Jervis	18.6
Mixed (including Electronics)	Delaware County Solid Waste Mgmt Center	(607) 746-2128	32230 NY-10	Walton	12856	Margaretville	29.3
Paper	County Waste & Recycling	(888) 549-2783	465 Ross Ruland Rd.	South Cairo	12482	Tannersville	15.3
Paper	Delaware County Solid Waste Mgmt Center	(607) 746-2128	32230 NY-10	Walton	12856	Margaretville	29.3
Steel	Sims Metal Management	(518) 465-2288	140 Port Road South	Albany	12202	Grand Gorge	53.1
Steel	Delaware County Solid Waste Mgmt Center	(607) 746-2128	32230 NY-10	Walton	12856	Margaretville	29.3
Stone/Rocks	WM Biers Inc	(518) 434-2747	100 Port St.	Albany	12202	Grand Gorge	52.3
Stone/Rocks	Jerry Hauls it All	(845) 374-6113	68 McVeigh Rd	New Hampton	10958	Port Jervis	18.6
Stone/Rocks	Ground Control Excavating, Inc	(845) 661-8118	63 Waterbury Rd.	Warwick	10990	Port Jervis	22.1
Tile/Ceramic	WM Biers Inc	(518) 434-2747	100 Port St.	Albany	12202	Grand Gorge	52.3
Wood	WM Biers Inc	(518) 434-2747	100 Port St.	Albany	12202	Grand Gorge	52.3
Wood	County Waste & Recycling	(888) 549-2783	465 Ross Ruland Rd.	South Cairo	12482	Tannersville	15.3
Wood	Delaware County Solid Waste Mgmt Center	(607) 746-2128	32230 NY-10	Walton	12856	Margaretville	29.3

Attachment F: Waste Quantities

For review purposes only. Use of contents on this sheet is subject to the limitations specified at the beginning of this document.
CSO-GC-SFS DES OH-TM-CWER CP3 100per

SOP 057 - CONSTRUCTION WASTE ESTIMATE REPORT
TEMPLATE SPREADSHEET

Project ID: OH-007, CP-3
AM: Jesse Goldin, P.E.
Project Milestone: 100%

Demolition Material	Quantity	Unit	Density (lb/ft3)	Volume (ft3)	Weight Total* (tons)	Weight Diverted (tons)	Diversion Rate (%)	Proposed Landfill Diversion Strategy
Asphalt	1,636.47	tons	145	474,576,300	1,636.47	1,636.47	100%	Recycle
Cast Iron (Piping/Fittings)	1,938.76	tons	446	1,729,375,704	1,938.76	1,938.76	100%	Recycle
Concrete (Non-Structural)	5,586.39	tons	116	1,296,042,898	5,586.39	5,586.39	100%	Recycle
Concrete (Structural)	87.70	tons	116	20,345,472	87.70	87.70	100%	Recycle
Ductile Iron (Piping/Fittings)	442.40	tons	449	397,273,923	442.40	442.40	100%	Recycle
Plywood (Concrete Forms)	306.28	tons	37.5	22,971,094	306.28	306.28	100%	Recycle
Rigid Galvanized Steel	9.29	tons	490	9,103,792	9.29	9.29	100%	Recycle
Steel (Piping)	73.34	tons	490	71,877,267	73.34	73.34	100%	Recycle
Steel (Sheet Piling)	1,239.65	tons	490	1,214,857,980	1,239.65	1,239.65	100%	Recycle
SS/Steel (Non-Structural)	9.800	tons	490	9,604,000	9.80	9.80	100%	Recycle
Materials Total	**11,330**	**tons**		**5,246,028,429**	**11,330**	**11,330**	**100%**	

Construction Material Material	Quantity	Unit	Density (lb/ft3)	Volume (ft3)	Weight Total* (tons)	Weight Diverted (tons)	Diversion Rate (%)	Proposed Landfill Diversion Strategy
Aluminum (Floor Hatches)	-	tons	168.00	0	0.00	0.00	100%	Recycle
Asphalt	15.61	tons	145.00	4,526,806	15.61	15.61	100%	Recycle
Brick	0.18	tons	181.00	64,962	0.18	0.18	100%	Recycle
Bronze (Valves)	0.00	tons	545.00	1,574	0.00	0.00	100%	Recycle
Cast Iron (Bike Rack)	-	tons	446.00	0	0.00	0.00	100%	Recycle
Cast Iron (Piping / Fittings)	0.48	tons	446.00	428,356	0.48	0.48	100%	Recycle
Cast Iron (Manholes)	-	tons	446.00	0	0.00	0.00	100%	Recycle
Cast Iron (Stair Nosings)	0.14	tons	446.00	127,445	0.14	0.14	100%	Recycle
Concrete (Non-Structural)	11.64	tons	116.00	2,701,637	11.64	11.64	100%	Recycle
Concrete (Structural)	57.85	tons	116.00	13,421,298	57.85	57.85	100%	Recycle
Concrete (Precast)	-	tons	116.00	0	0.00	0.00	100%	Recycle
Copper (Piping / Fittings)	0.03	tons	560.00	35,234	0.03	0.03	100%	Recycle
Copper (Wire)	0.00	tons	560.00	3,126	0.00	0.00	100%	Recycle
Ductile Iron (Piping / Fittings)	9.63	tons	449.00	8,651,709	9.63	9.63	100%	Recycle
Ductile Iron (Grates/Frames)	0.26	tons	449.00	232,786	0.26	0.26	100%	Recycle
Epoxy Use	0.45	tons	78.00	70,059	0.45	0.45	100%	Recycle
Fiberboard (Duct Insulation)	0.06	tons	40.5	4,799	0.06	0.06	100%	Recycle
Fiberglass (Copper Piping Insula	0.01	tons	0.60	6	0.01	0.01	100%	Recycle
FRP	0.00	tons	124.86	270	0.00	0.00	0%	N/A
Geotextile (Including Jute Mesh	0.00	tons	92.00	125	0.00	0.00	0%	N/A
Glass	0.06	tons	156.19	19,567	0.06	0.06	100%	Recycle
Grout	24.85	tons	140.00	6,958,915	24.85	0.00	0%	N/A
HDPE (Piping / Fittings)	0.17	tons	60.00	20,115	0.17	0.17	100%	Recycle
Paint	0.13	tons	125.00	31,488	0.13	0.00	0%	N/A
Plywood (Concrete Forms)	5.04	tons	37.50	377,806	5.04	5.04	100%	Recycle
Porcelain (Tile)	0.02	tons	146.71	6,228	0.02	0.02	100%	Recycle
Polished Brass (Roof Manifold/	0.00	tons	520.00	286	0.00	0.00	100%	Recycle
PVC (Piping)	0.33	tons	85.00	56,156	0.33	0.33	100%	Recycle
PVC Coated Rigid Steel Conduit	1.53	tons	490.00	1,501,740	1.53	1.53	100%	Recycle
Reclaimed Timber	-	tons	37.50	0	0.00	0.00	100%	Recycle
Rigid Galvanized Steel (Conduit	0.67	tons	490.00	654,150	0.67	0.67	100%	Recycle
Roofing Membrane	0.01	tons	400.00	9,488	0.01	0.01	100%	Recycle
Stainless Steel (Overhead Coilin	-	tons	480.00	0	0.00	0.00	100%	Recycle
Stainless Steel (Doors/Frames/I	0.90	tons	480.00	862,848	0.90	0.90	100%	Recycle
Stainless Steel (Floor Grating)	0.01	tons	480.00	5,085	0.01	0.01	100%	Recycle
Stainless Steel (Ductwork)	0.04	tons	480.00	35,772	0.04	0.04	100%	Recycle
Stainless Steel (Gates)	0.69	tons	480.00	665,232	0.69	0.69	100%	Recycle
Stainless Steel (Piping)	0.41	tons	480.00	392,015	0.41	0.41	100%	Recycle
Stainless Steel/Steel (Non-Struc	7.31	tons	490.00	7,164,759	7.31	7.31	100%	Recycle
Steel (Piping)	1.10	tons	490.00	1,074,814	1.10	1.10	100%	Recycle
Steel (Reinforcing)	2.76	tons	490.00	2,703,974	2.76	2.76	100%	Recycle
Steel (Deck Units)	0.34	tons	490.00	329,445	0.34	0.34	100%	Recycle
Steel (Sheet Piling)	3.10	tons	490.00	3,041,097	3.10	3.10	100%	Recycle
Steel (Structural)	1.74	tons	490.00	1,701,135	1.74	1.74	100%	Recycle
Urethane (Anti-Graffiti Coating	0.04	tons	2.00	175	0.04	0.04	100%	Recycle
Materials Total	**148**	**0**		**57,882,483**	**148**	**123**		
Percent Diverted	**83%**							

C&D Total									
Soils	**Quantity**	**Unit**	**Density (lb/ft3)**	**Volume (ft3)**	**Total Weight (tons)**	**Reused on Site (tons)**	**Reused Off Site (tons)**	**Reuse on site (%)**	**Reuse off site (%)**
Excavated Soil	**24,200**	**tons**	**100**	**4,840,000,000**	**24,200.00**	**0**	**1,100.00**	**0%**	**4.5%**
Soil Waste from New Construction	**194.23**	**tons**	**100**	**38,846,385**	**194.23**	**0**	**194.23**	**0%**	**100%**
Plants and Grasses	**6.04**	**tons**	**100**	**1,207,579**	**6.04**	**0**	**6.04**	**0%**	**100%**
Stone	**43.01**	**tons**	**100**	**8,601,207**	**43.01**	**0**	**43.01**	**0%**	**100%**
Soils Total	**24,443**	**tons**		**4,888,655,172**	**24,443.28**	**0**	**1,343.28**	**0%**	**5.5%**

*Calculation of diversion rate by volume is possible, but requires justification and approval from the BEDC Sustainability Division.
**See C&D Recycling Database for locations based on material