

**1. A detailed description of the proposal, including:**

**a. the essential elements of the proposed facility or waste management infrastructure;**

This request for \$3,347,876 would fund the purchase and installation equipment at the New Haven Solid Waste and Recycling Authority (NHSWRA) transfer station to sort colored materials collection bags and to build a structure to house this equipment. The addition of this equipment would allow the City of New Haven to pursue residential co-collection of food scraps and in the future provide capacity to support the co-collection of other material streams. Installing the proposed infrastructure at NHSWRA could also benefit the region, providing neighboring cities/towns with an accessible option should they pursue food scrap diversion through co-collection. Previous efforts to spearhead city-wide curbside food scrap collection for all residential homes have been stymied by a lack of affordable options. A centrally located sorting site allows City vehicles to collect source-separated, bagged food scraps without the expense of new trucks, running additional routes for food scrap collection, or extending existing collection routes to dispose of material. The structure housing the sorting facility would be located on the NHSWRA transfer station site across the elevated drive from the existing scale house and tipping floor (see *Attachment A: Site Plan* for detail). Situating the sorting facility at this location would enable the City to make use of the foundations of the former incinerator that stood here until its demolition in 2015.

Residents would continue to put trash out on their current trash day, but would be asked to separate their food scrap material into special semi-transparent but well-marked food scrap bags and each week place the food scrap bags inside their City issued trash cans with their municipal solid waste (MSW). Trucks would follow the same collection routes and pick up waste at the curb as they currently do. The food scrap bags and bags of MSW would be tipped at the NHSWRA transfer station on a new tipping floor. All material would be loaded onto a conveyor system using an electric compact wheel loader. Bags of food scraps would be pulled off of the conveyor system by transfer station contractors and dropped through chutes into a tractor trailer, which would convey the food scraps to the nearest organics processor. MSW would continue off the end of the conveyor belt, where it would be picked up by a second electric compact wheel loader and deposited into a tractor trailer, which would convey the MSW to an incinerator.

**b. the components of the waste stream that will be diverted and directed towards reuse repair, recycling, composting, or captured for other waste management options;**

Approximately 32,500 tons of waste (roughly one ton per household) is collected by the City's refuse division annually, the great majority of which is from residential properties of 6 units or less. Recognizing that approximately 22% of residential waste is food (approximately 7,000 tons annually), this project would use the sorting station to capture a sizable portion of available food scraps. Initially the material will likely be diverted to Quantum Biopower to be turned into

electricity and digestate for composting. As more geographically convenient options become available, the City can then evaluate its processing partner options. A sorting facility for co-collected materials is an important step forward for New Haven's materials management goals as currently single stream recycling and seasonal yard waste are the only diversion options available through municipal curbside collection.

The implementation of future diversion programs in addition to food scraps would benefit from sorting infrastructure and facilitate the recycling of other materials such as textiles, hard to recycle plastics, redeemable cans and bottles, or other material streams that may be subject to future EPR. A co-collection sort operation allows new material streams to be added to the City's program - bagged in separate colored bags and recovered as recycling technologies improve, enabling New Haven to get closer to zero waste without the addition of separate trucks and separate routes. In Norway, Sweden, France, and Italy, multiple items can be source separated in the home or business by using different colored waste bags, and collected using the same same truck. Co-collection is a cost effective system which has little additional carbon impact, and is easy to understand for residents. One of the optional pathways for the City of New Haven to manage costs and reduce waste includes Unit Based Pricing (UBP). Although the City has not determined if UBP or a hybrid UBP program would be implemented, if one was, it would incentivize reduction, reuse and repair of many items as well as participation in the food scrap separation and the separation of any other additional co-collected bagged materials.

**c. the proposed location for the subject waste management facility or infrastructure;**

Equipment would be installed at the NHSWRA transfer station located at 260 Middletown Avenue in New Haven, Connecticut. The transfer station currently receives residential and commercial waste from within the City limits including MSW, single stream recyclables (from one to six unit properties), yard waste, and other recyclables such as mattresses, textiles, and electronics. The transfer station is operated by a quasi-governmental organization, NHSWRA, which has a mayoral-appointed board. NHSWRA is dedicated to environmentally solid waste management and resource conservation. An existing site plan showing the layout of NHSWRA has been attached to this application (*Attachment A: Site Plan*).

**d. the expected municipalities, regions, and/or non-governmental entities served;**

This operation would initially serve the residents whose MSW and recycling is collected by the City's refuse division, approximately 32,500 units generating approximately 32,500 tons of waste annually. As NHSWRA operators adapt and improve the co-collection sorting process, the facility could expand its reach. Due to New Haven's central location and the transfer station's proximity to interstates 91 and 95, the NHSWRA transfer station could offer processing regionally to other residential communities or haulers with the potential to include commercial businesses (NHSWRA currently accepts MSW from neighboring municipalities, including North Haven). This would be dependent on NHSWRA's approval, contract and disposal arrangements with other municipalities, and agreements with haulers. It is the intention of the City to maximize

the use of the grant investment as much as possible by processing as much material as possible.

**e. an explanation of how the proposed facility or infrastructure will improve, expand, or provide waste reduction, recycling, or organics management services.**

Providing an accessible and fully equipped sorting station enables source separated food scrap bags to be cost-effectively captured from the waste stream. This is critical to kickstarting co-collection in the state of Connecticut. Diverting food scraps reduces greenhouse gas emissions (the methane caused from food scraps contributes to over 50% of all methane landfill emissions, over 1/3 of all waste in CT is transported out of state). The facility would allow for collection of food scraps to all residential homes served by City crews. Without sorting infrastructure, the estimated annual net cost for City collected properties would be approximately \$2.5 million per year in total, whereas the estimated cost for co-collection is approximately \$400,000 per year. The spread between tipping fees for MSW and food scraps is expected to increase at a rapid pace due to the national waste crisis. The full impact to the residential taxes will depend on which of several pathways the City takes and is described in question 11 in more detail. As mentioned in the previous section the addition of other colored bags of recyclable materials could be introduced as the program matures, which would further improve the net financial benefit of the sorting facility. Nearly 20 years ago, the City of Oslo Norway moved to a co-collection system for two primary reasons: financial cost and environmental impact. The financial cost of separate food scrap collection routes, both the vehicles and labor is high and difficult to justify and the environmental impact of increased truck emissions is significant if diesel vehicles are utilized. Similar to Oslo, both financial and environmental costs are very important to the City of New Haven. A sort station located at the transfer station is a critical component to facilitating food scrap diversion for the City.

**2. A description of the need for the proposed facility or infrastructure and how it has been identified, including any relevant data;**

The need for the proposed facility is based on the following three factors:

*Economic:* As noted above, the proposed project would provide the most cost effective way to deliver curbside food scrap collection to all of its residents served by City refuse collection. A sorting facility is a critical first step toward better materials management. As the cost of the waste crisis continues to increase, having a cost effective sorting option will mitigate long-term expenses to all residents and provide an easy way to add new material streams to continue to increase diversion of valuable materials.

*Environment:* New Haven's 2018 Sustainability and Climate Framework proposes a Zero Waste approach to materials management. The City's goal is to manage materials effectively by recognizing their value. A city-wide food scrap diversion program would realize a greater value for a large portion of the waste stream that is currently incinerated, contributing significantly to local air quality improvements as the majority is incinerated in Bridgeport. The program would also reduce the state's self-sufficiency deficit, resulting in decreased transportation-related

emissions and methane emissions due to landfilling. The City recognizes the regional and national waste crises and seeks to reach the state's diversion goal of 60%.

*Equity:* Some New Haven homes have the financial capability to hire a service for separate food scrap collection and have done so already. However, there are many homes that are not in the same financial position. The City would like to provide equal opportunity for food scrap diversion to all residents. The City also recognizes the state's goal of self-sufficient management of waste within its borders as out-of-state waste shipments often end up at facilities located in environmental justice communities. The City would like to be a leader in waste reduction efforts in Connecticut.

**3. If full site control for the specific location for the proposed facility or infrastructure has not been achieved, a detailed description of the status of the efforts to date to secure site control and a roadmap of steps that must be completed to achieve full site control;**

NHSWRA is a municipal resource recovery authority independent of the City. It has a close working relationship with the City as an affiliated entity whose purpose is to further “the health, safety, and welfare of the residents of the City of New Haven... by exercising supervision and control over the administration of solid waste in the City,” whose board is made up of New Haven residents appointed by the Mayor and confirmed by the Board of Alders, and whose staff work in tandem with City staff. NHSWRA’s mission statement to “achiev[e] the most environmentally sound solid waste management and resource conservation program,” involves daily collaboration with the City on operational issues as well as larger capital projects, such as the recent refurbishment of the residential dropoff area or the 2015 demolition of the former New Haven incinerator. The City Engineer and Executive Director of Climate and Sustainability have briefed the board of NHSWRA regarding this proposal and reviewed the plans for the sorting facility with the NHSWRA Executive Director and board chair. In order to secure site control, the City will need to obtain formal approval from the NHSWRA board to utilize the site and implement the project. The City will also need to obtain approval from the Executive Director as to the appropriate structure for administration of the project. As the City and the Authority share administrative functions for risk management and procurement, the most efficient pathway for the City Engineer to implement these plans is likely through a City-administered RFP with a contract whose provisions protect both the Authority and the City.

**4. An estimate of the types and amounts of materials expected to be diverted annually from traditional MSW disposal means such as waste to energy and landfilling;**

This is dependent on which waste management pathway the City chooses. Pathways are discussed in detail in Question 11. In parallel with this application, the City, through SCRCOG, is working with Waste Zero to evaluate waste management pathways in partnership with staff and residents to provide feedback on the different pathways forward. The approach recommended by these stakeholders (whether it be co-collection, co-collection Unit Based Pricing, or another approach) will need to be adopted and approved by the Board of Alders. It is possible the approach will take steps toward some type of Unit Based Pricing system, such as



an “overflow” pricing system. However, any changes to the current system would systematically evolve at a pace that provides extensive education to residents. The goal is for the City to develop a balanced and equitable materials management system that encourages food waste diversion and waste reduction and that recognizes the educational challenges inherent to educating the many diverse and unique communities within New Haven that make up the city.

**5. A description of how the feasibility of the proposed facility or infrastructure has been evaluated, including information on the likelihood of community support and the establishment of partnerships necessary for successful implementation.**

**a. Identification of proposed equipment**

The City received pricing (see *Attachment D: Sorting System Quote*) from a mechanical contractor with experience designing and installing material sorting systems. The City Engineering Department developed the attached draft plans (*Attachment A: Site Plan* and *Attachment B: Section*) based on multiple conversations with Waste Zero and the mechanical contractor regarding the area needed for the secondary tipping floor, the space requirements and height differentials required to install the infeed conveyor/hopper and line pick conveyor, and the capacity of the electric compact wheel loaders needed to move material onto the infeed hopper and into the trailer conveying MSW. The budget includes all necessary design, surveying, permitting, and inspections and estimates the necessary site preparation, stormwater management, and retaining wall construction needed to support the construction of the sorting facility and the installation of a second scale to improve traffic flow at the transfer station. The location for the sorting facility was chosen to minimize impacts on existing traffic patterns and to take advantage of the preexisting foundation of the incinerator formerly on site, which reduces the costs associated with constructing the foundation for the sorting conveyor and the tensile structure that houses it. The budget includes lighting, heating, electrical, and fire safety systems as well as electric vehicle supply equipment for the compact wheel loaders and an emergency shower and eye wash system to protect staff from exposure to hazardous material. The construction budget includes a 25% contingency, which is reasonable to estimate costs at the programmatic concept phase of design development.

City staff have briefed NHSWRA board on the proposal. NHSWRA board members agree on the need for New Haven to develop organics diversion capacity. As noted above, the successful of the proposal is dependent on NHSWRA’s approval of the installation of this infrastructure as well as the development of plans for operations and maintenance. The City will work closely with NHSWRA on all aspects of design and implementation of any program.

Community support for a co-collection program will be evaluated as part of the WasteZero and SCRCOG engagement. The City is in the process of assigning an advisory committee as outlined in the SCRCOG engagement to evaluate and gain feedback from key stakeholder groups/ partnerships including community members, City officials, and members of the NHSWRA board. The advisory committee will also spearhead residential outreach as soon as a specific pathway for implementation is narrowed down. The experience of residents in West Hartford’s Sustainable Materials Management outreach process, in communities that have added food scraps at the transfer station, and in Middletown’s UBP co-collection program shows that once educated, most residents are willing to try food scrap separation. There is strong

interest in food scrap diversion within New Haven as evidenced by the success of private food scrap adoption. Reducing food waste and increasing composting was a key focal point of the City's recent community-led application to the EPA's Community Change Grant program. Implementation of any program will take place in stages. The City understands that it will need to provide a robust and sustained multi-year education program which would prioritize multilingual communications to reach the City's diverse population and recognize the relative transience of its population as an urban center where more than  $\frac{2}{3}$  of residents rent.

**6. A description of any proposed facility construction, facility renovations, or other improvements, including a site plan clearly showing all existing relevant facilities and the changes that will result from the proposal;**

The proposed improvements at the Transfer Station are specifically designed to minimize disruption of the new sorting facilities for the existing traffic flow and operations, both during construction and operation (see *Attachment A: Site Plan*). Traffic would continue to enter the site from Dump Road and stop at the weigh scale near the transfer station entrance. The trucks with mixed waste would then tip at a new tip floor across the drive from the existing transfer station facility, and then loop around and exit the site across a new, second scale that would provide truck tare weights.

The new sorting facility would measure approximately 120'x60', built upon part of the footprint of the former incinerator building that was abated and demolished approximately 10 years ago. The new sorting facility would have three zones (see *Attachment B: Section*): (1) a tipping floor accepting mixed waste from refuse vehicles, (2) a conveyor belt sorting area for separating co-collected materials, and (3) an outfeed area for MSW for loading into trailers to be shipped to a disposal facility. The design takes advantage of both the grades on the site and the existing incinerator footprint to create a compact and cost-efficient layout. The co-collection facility will require the construction of additional retaining walls within the footprint of the facility, and will have a tensile hoop structure over it to protect the facility from the elements. The facility will require the extension of electricity, water, and data utilities to it, and also tie drain systems into existing systems on site suitable for this type of facility. Finally, the facility will be all-electric, relying on both the electric conveyor system and two electric wheel loaders to handle material. The wheel loaders will have Level 2 EVSE stations in the facility for charging.

**7. An explanation of how the proposal and any existing facilities and operations tie together and complement one another;**

The proposed expansion at the NHSWRA complements existing infrastructure at the transfer station, which already processes residential and commercial waste and recyclables. The central location will keep costs down as waste flow for co-collected materials does not need to be transferred to an intermediate sorting facility before reaching the destination where it will be processed. Co-locating at the transfer station also brings the benefit of resiliency: in the event of the sorting conveyor malfunctioning, solid waste can still be tipped at the adjacent tipping floor, ensuring that critical refuse collection and disposal continues uninterrupted.

Since 2008, NHSWRA has received materials from New Haven residents and commercial customers. Given the existing relationship with the City, NHSWRA would be a

trusted partner to host the sorting station and help implement co-collection in New Haven. NHSWRA's public decision making processes, including setting rates for disposal of materials and budgeting, provide transparency and accountability to the administration of new materials management activities. NHSWRA could amend its agreement with CWPM, its transfer station operator with experience in co-collection operations, to accommodate the sorting of materials and the transportation of food scraps out to the appropriate processing partner. Expanding infrastructure to include food scrap diversion is a logical next step for the facility in fulfilling its organizational mission. To assist with the change in traffic flow at the site, the City and the Authority have proposed to install a second scale at the transfer station. In the long run, this will also help to accommodate additional municipalities as they adopt co-collection and send materials to this centrally-located sorting facility.

**8. The number of estimated residents who will be able to utilize the proposed facility or infrastructure;**

All residential properties of six units or less (32,500 units) are eligible for City provided curbside collection and would also be able to participate in the new curbside food scrap program once fully implemented. The City intends to begin implementation by focusing education on one of the City's five residential refuse collection days with 6 routes comprising roughly 6,500 of these households.

**9. A qualitative discussion and, where feasible, a quantitative analysis of the ameliorating impacts on identified environmental justice issues accomplished by the proposal;**

New Haven's disadvantaged communities suffer the air quality and health impacts of living at the confluence of multiple sources of pollution, including an expanding airport, rail lines, petroleum tanks, industrial properties, and roadways. City air consistently exceeds National Ambient Air Quality Standards for particulate matter, CO, NO<sub>2</sub>, SO<sub>2</sub>, and lead. The confluence of Interstates 95 and 91 sees 140,000 cars a day. Diverting food waste in New Haven, and, over time, in the region from incineration will provide one of several strategies for improving local air quality through reducing smog forming emissions. With high rates of asthma and heart disease, New Haven's environmental justice communities experience lower life expectancies than wealthier communities within the city or in surrounding suburbs. Along with transportation electrification and improvements to New Haven's aging housing stock, sustainable materials management can play a role in improving local air quality and positively affecting health outcomes. In addition, as anaerobic digestion and composting reduce greenhouse gas emissions relative to incineration and landfilling, food scrap diversion also plays a vital role in climate change mitigation. New Haven's environmental justice communities are disproportionately exposed to risks of extreme heat, flooding, and coastal storm impacts. Investing in step changes to the region's materials management infrastructure will also support climate change mitigation and play a role in mitigating climate-related risks that threaten the most vulnerable.

**10. A description of the data gathering and record keeping systems that will be used to measure the amount of materials diverted from traditional waste disposal, and the related cost savings realized by the participating entity(ies) to report to DEEP;**

The City and NHSWRA will be able to track tonnages by material: waste, recycling, and food scraps year over year. Since waste can change year over year, if the City moves forward, a month over month comparison to the previous two years will help establish a baseline. The City is requesting a second scale at the transfer station in order to make weighing materials more accurate. The City will also compare year to date daily and by route MSW weight information during the first months of the first year of a program, to better understand diversion and behavior so that targeted education can be developed by neighborhood. Weight information will be compared on a monthly basis to assess month over month diversion rates and cost impacts. The reporting format can be developed in advance and then submitted to DEEP on a quarterly basis.

**11. An explanation of how the project will impact the current and future operating costs of the expected municipalities, regions, and/or non-governmental entities served by the proposed facility or infrastructure, including any financial pro formas or supporting materials that have been developed;**

Because of the City's commitment to sustainability, moving forward with curbside food scrap collection is a priority. Based on estimates proposed during the DEEP Sustainable Materials Management pilots, a city-wide separate food scrap collection program would cost about \$85 per household per year, as opposed to a co-collection program which would cost about \$15 per household per year. The estimated net cost after waste reduction would be \$2.5 million and just above \$400,000 respectively. The net cost of \$400,000 is based on the assumption of a 23% food waste capture rate, which is reasonable based on the experience of other co-collection pilots (West Hartford experienced a 60% capture rate and West Haven experienced a 18% capture rate, Ansonia had a 22% capture rate).

Co-collection infrastructure would allow the City to move forward with a cost effective city-wide curbside program immediately without any type of mandatory change to residents. However, if the city chooses a UBP program, overflow UBP program or a standardized bag program there would be no cost to the city, but instead there is a savings depending on which pathway is chosen. The annual savings to the municipal budget could range from \$500,000 to \$3 million depending on which form of UBP is adopted. See the cost estimate (see *Attachment E: Cost Estimate*) and tonnage estimate (see *Attachment F: Tonnage Estimate*) tables below for more details. With or without UBP, the City feels that in the long run co-collection infrastructure would allow for a financially sustainable city-wide curbside food scrap collection program, although in the early years additional resources will be required to fund a sustained multi-year education program. The City will continue working with WasteZero the SCRCOG engagement to review all pathways forward.

We estimate that the net annual cost to provide the food scrap sorting service and to operate the sort-system is just above \$400,000 (\$12 per household) annually. These costs can be offset by any of the following:

1. Adding other waste material streams i.e. textiles that can provide additional revenue/ cost savings within the existing operational cost and footprint,
2. Instituting various forms of unit based pricing including overflow or uniform bags,
3. Charging an additional fee for the new services through the general fund tax base - similar to the way that most new services are funded, or
4. Any combination of the above.

**12. Identified level of grant funding requested, and if the requested grant funds are to be integrated into a larger financial structure with other funding sources, a detailed description of how the grant funds would be integrated and utilized within the overall capital stack; and**

Please see the attached budget in *Attachment C: Budget*.

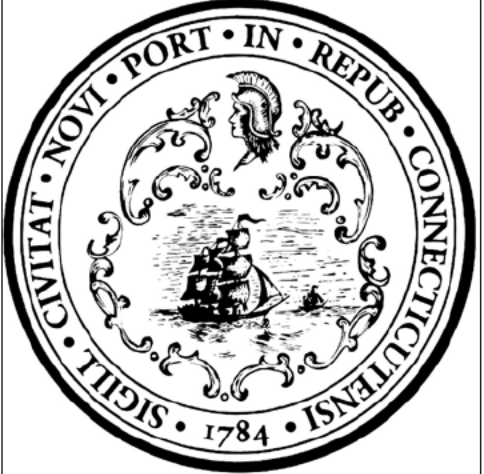
**13. The timeline for the development and implementation of the proposed waste management facility or infrastructure that includes a permitting timeline for all necessary federal, state and local authorizations.**

The expansion of a transfer station is a permitted use in the existing Heavy Industry Zone (IH) and will require a Special Exception from the Board of Zoning Appeals and associated Special Permit, Site Plan, and Coastal Area Management review and approval from the New Haven City Plan Commission. It will also require a solid waste permit from the Connecticut Department of Energy and Environmental Protection. Preparation of the permit applications and associated design will commence on award and be completed to a level required for both processes within two months when it will be submitted for consideration. Based on discussions with local and state officials regarding another transfer station facility in an IH zone, the timeline for securing these approvals, which can be processed simultaneously, ranges from 4 to 5 months for the City approvals and 3 to 8 months for state approvals, with the latter timeline depending largely on the volume of work facing the state.

## Attachment A: Site Plan



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No.	Revision/Issue	Date



CITY OF NEW HAVEN  
DEPARTMENT OF ENGINEERING



THE HONORABLE JUSTIN ELICKER, MAYOR  
GIOVANNI ZINN, P.E., CITY ENGINEER

Project Name and Address  
  
CO-COLLECTION  
FACILITY AT  
TRANSFER STATION

Drawn By	ZSHAPIRO
Designed By	ZSHAPIRO
Date	12/5/2024
Project Number	

Professional Seal

Sheet Title  
SITE PLAN

Sheet Number

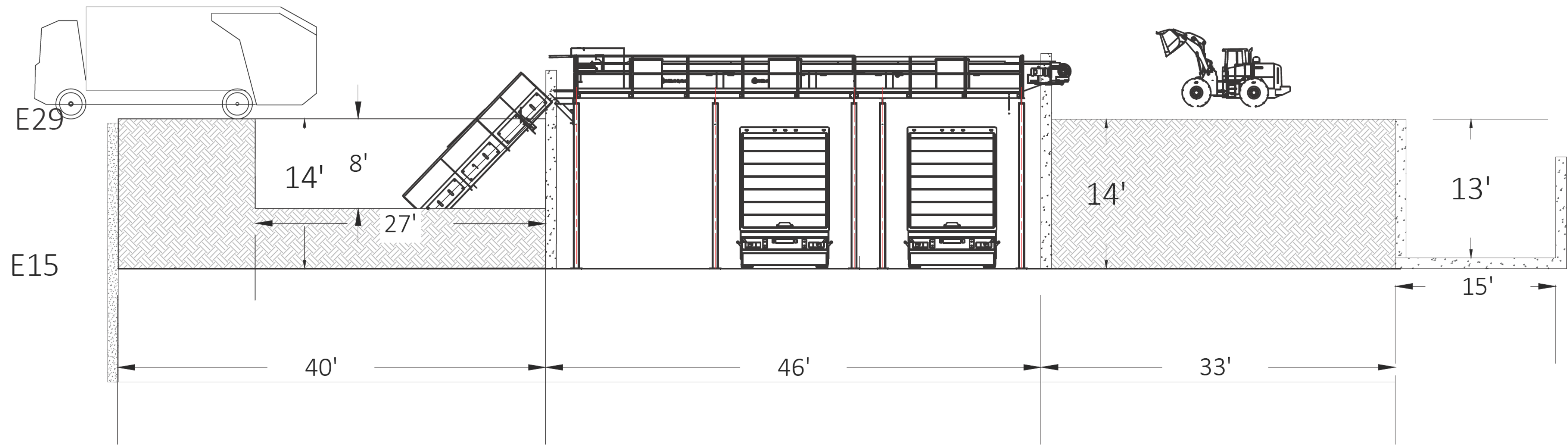
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## Attachment B: Section



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No.	Revision/Issue	Date



CITY OF NEW HAVEN  
DEPARTMENT OF ENGINEERING

THE HONORABLE JUSTIN ELICKER, MAYOR  
GIOVANNI ZINN, P.E., CITY ENGINEER



Project Name and Address  
  
CO-COLLECTION  
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TRANSFER STATION

Drawn By	ZSHAPIRO
Designed By	ZSHAPIRO
Date	12/5/2024
Project Number	

Professional Seal

Sheet Title  
SECTION

Sheet Number

XS1

## Attachment C: Project Budget



## ENGINEERING DEPARTMENT

City of New Haven  
 200 Orange Street, Rm 503  
 New Haven, CT 06510  
[www.newhavenct.gov](http://www.newhavenct.gov)



Justin Elicker  
 Mayor

Giovanni Zinn, P.E.  
 City Engineer

### RECYCLING TRANSFER STATION ESTIMATE

### H3 OCCUPANCY CLASSIFICATION - COMBUSTIBLE FIBER STORAGE

6,100.00 sf building

	QUANTITY	UNIT	UNIT COST	EXTENSION	
<b>Design and Inspection</b>					<b>\$ 29,500.00</b>
survey	1	ls	\$ 6,000.00	\$ 6,000.00	
geotech	1	ls	\$ 2,000.00	\$ 2,000.00	
permitting	1	ls	\$ 1,500.00	\$ 1,500.00	
design	1	ls	\$ 10,000.00	\$ 10,000.00	
special inspections	1	ls	\$ 10,000.00	\$ 10,000.00	
<b>Construction</b>					<b>\$ 2,885,384.43</b>
<b>Site Work</b>					<b>\$ 913,508.22</b>
w beam guiderail	150	lf	40	\$ 6,000.00	
saw cut	150	lf	7	\$ 1,050.00	
asphalt pavement	423	tn	200	\$ 84,558.22	
floor drain	43	lf	\$ 150.00	\$ 6,450.00	
catch basin	1	ea	\$ 1,500.00	\$ 1,500.00	
retaining wall	4106	sf	\$ 75.00	\$ 307,950.00	
circulation signage	4	ea	\$ 6,500.00	\$ 26,000.00	
weigh in scale	1	ls	\$ 150,000.00	\$ 150,000.00	
loaders	2	ea	\$ 165,000.00	\$ 330,000.00	
<b>Building Structure</b>					<b>\$ 709,202.21</b>
foundation insulation	3080	sf	\$ 4.00	\$ 12,320.00	
foundation wall	36	cy	\$ 2,100.00	\$ 74,666.67	
footing	18	cy	\$ 1,400.00	\$ 24,888.89	
concrete repair to existing wall	79.254	cf	\$ 135.00	\$ 10,699.29	
tensile structure	6100	sf	\$ 55.00	\$ 335,500.00	
conc slab	680	sy	\$ 120.00	\$ 81,600.00	
excavation	397	cy	\$ 50.00	\$ 19,857.41	
compact process	1,440	cy	\$ 80.00	\$ 115,169.96	
door	6	ea	\$ 4,500.00	\$ 27,000.00	
utility room	100	sf	\$ 75.00	\$ 7,500.00	
<b>Mechanical, Electrical, Plumbing</b>					<b>\$ 1,262,674.00</b>
conveyance system & structure	1	ls	\$ 852,918.00	\$ 852,918.00	
infared heat	6	ea	\$ 3,500.00	\$ 21,000.00	
lighting	1	ls	\$ 45,000.00	\$ 45,000.00	
electric base board heater	1	ea	\$ 1,200.00	\$ 1,200.00	
electric service	1	ls	\$ 50,000.00	\$ 50,000.00	
level 2 electric charger	2	ea	\$ 4,000.00	\$ 8,000.00	
garage doors	5	ea	\$ 15,000.00	\$ 75,000.00	
6" pvc drain	40	ft	\$ 40.00	\$ 1,600.00	
sump pump	1	ea	\$ 12,000.00	\$ 12,000.00	
water pump	1	ea	\$ 6,000.00	\$ 6,000.00	
water line & spigots	912	lf	\$ 33.00	\$ 30,096.00	
sprinkler system	31	ea	\$ 260.00	\$ 8,060.00	
emergency wash	1	ls	\$ 1,800.00	\$ 1,800.00	
metal stairs	2	ea	\$ 30,000.00	\$ 60,000.00	
exhaust system	1	ls	\$ 90,000.00	\$ 90,000.00	
<b>Contingency</b>					<b>\$ 432,991.61</b>
<b>Total cost</b>					<b>\$ 3,347,876.04</b>

## Attachment D: Sorting System Quote

# Mid Atlantic Mechanical, LLC

**Quotation:** 24-1126-01

December 3, 2024  
Mr. Steve Winter  
City of New Haven  
New Haven CT

Subject: SAC-SORT Organics Sorting System

Dear Mr. Winter

We are pleased to provide you a proposal for a SAC-SORT Organics Sorting System.

The SAC-SORT System is designed to process 50,000 tons of bagged waste a year. The System is designed to process a bagged waste stream consisting of 80% waste and 20% organics.

Thank you for your interest and if you have any questions, please do not hesitate to contact us.

Sincerely,

William A Cooper  
843-359-1374  
[williamacooper@midatlantic-mechanical.com](mailto:williamacooper@midatlantic-mechanical.com)

cc Richard Howard



















## Attachment E: Cost Estimate

	<i>Do Nothing</i>	<i>Food Scraps with Co-collection with Full UBP</i>	<i>Food Scraps with Extra Route with Full UBP</i>	<i>Food Scraps Extra Route with no UBP</i>	<i>Overflow UBP with Food Scrap Co-Collection</i>	<i>Food Scraps Only, Co-Collection</i>	<i>Uniform Bag - Food Scraps Co-Collection, Free Bags*</i>
<b>Expense</b>							
Waste Disposal	\$3,900,000	\$2,145,000	\$2,145,000	\$3,510,000	\$2,964,000	\$3,510,000	\$3,081,000
Recycling Disposal	\$780,000	\$1,253,850	\$1,253,850	\$819,000	\$1,042,080	\$819,000	\$960,180
Food Scrap Disposal	\$0	\$190,125	\$190,125	\$118,300	\$141,960	\$118,300	\$133,088
Food Scrap Sorting	\$0	\$455,000	\$0	\$0	\$637,000	\$637,000	\$455,000
Food Scrap Collection	\$0	\$0	\$2,762,500	\$2,762,500	\$0	\$0	\$0
<b>Sub Total Expense</b>	<b>\$4,680,000</b>	<b>\$4,043,975</b>	<b>\$6,351,475</b>	<b>\$7,209,800</b>	<b>\$4,785,040</b>	<b>\$5,084,300</b>	<b>\$4,629,268</b>
<b>Revenue</b>							
Net Revenue From Bags	\$0	\$2,341,571	\$2,341,571	\$0	\$962,280	\$0	\$0
<b>Sub Total Revenue</b>	<b>\$0</b>	<b>\$2,341,571</b>	<b>\$2,341,571</b>	<b>\$0</b>	<b>\$962,280</b>	<b>\$0</b>	<b>\$0</b>
<b>Net Impact (revenue + savings)</b>		<b>\$2,977,596</b>	<b>\$670,096</b>	<b>(\$2,529,800)</b>	<b>\$857,240</b>	<b>(\$404,300)</b>	<b>\$50,733</b>
<b>Savings / Cost</b>							
<b>Estimated Reduction</b>		<b>45%</b>	<b>45%</b>	<b>10%</b>	<b>24%</b>	<b>10%</b>	<b>21%</b>
<b>*Free Bags /year (if you decide to add free bags,</b>							
<b>12</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$113,100</b>
<b>Net</b>							<b>(\$62,369)</b>
<b>50</b>							<b>\$471,250</b>
<b>Net</b>							<b>(\$420,518)</b>

**Assumptions:**

Households	32,500	
Waste Tonnage	32,500	
Waste Tip and Transport	\$120	
Recycling Tonnage	6,500	
Recycling Tip Cost/ton	\$120	
Food Scrap Tip/ton	\$65	
Food Scrap Collection Cost	\$85	
Sort Cost /household	\$14	\$19.60 (higher rate for non-standard bags)
*Free 13 Gallon Bags	0.29	Cost for bag and distribution to resident

## Attachment F: Tonnage Estimate



# New Haven

Material Disposition By Approach *High Level Initial Estimates*

	Do Nothing	Food Scraps with Co-collection with Full UBP	Food Scraps with Extra Route with Full UBP	Food Scraps Extra Route with no UBP	Overflow UBP with Food Scrap Co-Collection	Food Scraps Only, Co-Collection	Uniform Bag - Food Scraps Co-Collection, Free Bags*
Materials/Tons							
Trash	32,500	17,875	17,875	29,250	24,700	29,250	25,675
Recycling	6,500	10,449	10,449	6,825	8,684	6,825	8,002
Recycling Rate	17%	33%	33%	18%	24%	18%	22%
Food Scrap	0	2,925	2,925	1,820	2,184	1,820	2,048
Food Scrap Recovery	0%	38%	38%	23%	28%	23%	26%
Estimated Percent Reduction		45%	45%	10%	24%	10%	21%

Key Elements

Food scrap per capita to be audited (estimated at 24%)