

ENVIRONMENTAL PROTECTION AGENCY (EPA)
Solid Waste Infrastructure for Recycling Cooperative Agreement 2022
Summary Page

- i. **Project Title:** Bowley’s Lane Composting Facility
- ii. **Applicant Name:** Mayor and City Council of Baltimore
- iii. **Eligible Entity Type:** Local Government
- iv. **Qualification for Program Track:** Track 1- EPA’s EJ Screening Tool shows that areas most positively affected by the proposed infrastructure are neighborhoods of Baltimore City that have been disproportionately impacted by social, health and environmental inequities, largely due to a history of racially driven underinvestment.
- v. **Qualification for Statutory Set-Aside.** South Baltimore is in the 99th percentile for asthma, 97th percentile for low-income, and 96th percentile for proximity to hazardous waste facilities.
- vi. **UEI Number:** JJ4HYFQTAG24
- vii. **Project Summary:** The City of Baltimore is requesting \$4 million dollars to develop a solar-powered, scalable composting facility co-located with the new East Side Transfer Station at Bowley’s Lane. The proposed development leverages funds from the transfer station development project, and through partnership with Baltimore’s Department of Parks and Recreation.
- viii. **Contact Information:**
 - a. Department of Public Works: 200 Holliday Street, Baltimore, MD 21202
 - i. Jason Mitchell, Director, Jason.Mitchell@baltimorecity.gov; 410-396-3310
 - ii. Toya Sykes-Coates, Chief of Administration Bureau of Solid Waste; ToyaY.Sykes-Coates@baltimorecity.gov; 410-627-6280
 - iii. Sophia Hosain, Zero Waste Manager, Bureau of Solid Waste; Sophia.Hosain@baltimorecity.gov; 410-394-3939
- ix. **Project Location:** 6101 Bowleys Ln, Baltimore, MD, 21206
- x. **Total Project Cost:** \$8,127,000
- xi. **EPA Funding Requested:** \$4,000,000
- xii. **Project period:** October 2023 to October 2026
- xiii. **Program Objective Elements:** Establish capacity for sustainable materials management by developing a composting facility for local organics diversion
- xiv. **Strategic Plan Elements** Composting facility development in Baltimore will advance EPA’s strategic Goal 1, objective 1.1: Aggressively reduce the emissions of greenhouse gases from all sectors while increasing energy and resource efficiency and the use of renewable energy and Goal 2, objective 2.1: promote and embed environmental justice and civil rights at the local level.
- xv. **Cooperative Partners:**
 - a. BCRP, Camp Small, Shaun Preston, 443-934-4128
 - b. SBCLT, Greg Sawtell, 513-683-7107

Criterion 1: Project Summary and Approach (35 points)

South Baltimore is home to a concentration of industrial activity, including multiple waste processing facilities, and is in the 99th percentile for asthma, 97th percentile for low-income communities, and 96th percentile for proximity to hazardous waste facilities. South Baltimore residents have been advocating for a just transition from extractive, polluting practices to regenerative waste management to alleviate the negative environmental externalities they face as a result of their proximity to facilities that burn and bury trash. In 2020, after a decade of advocacy, residents, activists, and community leaders collaborated to write Baltimore's Fair Development Plan for Zero Waste. The plan provides a practical roadmap, centered on equity, for a just transition away from trash incineration through the development of Zero Waste infrastructure and investment, with a particular focus on food waste diversion and composting.

Since 2016, The City of Baltimore has steadily moved the needle on food rescue, donation, and composting, most notably receiving funding from NRDC's Food Matters program in 2019 to implement multi-sector wasted food prevention, reduction and diversion programs. Since then, the work has gained traction within the Department of Public Works (DPW) with the Food Matters program graduating from the Office of Sustainability (BoS) into DPW's new Office of Waste Diversion.

With this shift in priority, DPW has been developing strategic partnerships in the Baltimore community, collaborating with colleges and universities and dialoguing closely with zero waste advocates in the City to align community needs with DPW programming to promote sustainable materials management and environmental justice. As a result of this on-going effort, DPW distributed free recycling carts to all single-family residences in 2021, hired its first Zero Waste Manager in November of 2022, and established five public food-scrap drop off locations, with five more scheduled to come online in 2023 thanks to funding from the USDA.

New legislation has emphasized the need for local organics recycling markets with the passage of MD HB 264- Solid Waste Management – Organics Recycling and Waste Diversion – Food Residuals in 2021, an organics diversion mandate requiring large-scale food waste generators to divert their organic residues to a local composting facility if one exists within 30 miles. Although the law went into effect January 1, 2023, it remains unenforced because no qualifying facility exists within a 30-mile radius of Baltimore City.

Compostable materials constitute nearly 40% of the City's residential solid waste stream, but only a portion of the City's organic waste is being diverted. Camp Small, a Baltimore City Recreation & Parks (BCRP) program, is one of DPW's partnering agencies working to divert organic waste. Camp Small focuses on the highest and best use for felled trees in the City. Currently, as the Emerald Ash Borer devastates the local population of Ash trees, Camp Small is transforming this loss into a circular system of resource recovery. They plane, kiln dry, and sell Ash lumber to generate revenue for their small but mighty two-person operation. They also sell wooden furniture, playground elements, woodturning bowl blanks, and wood chips. Despite developing these diversion and reuse pathways, Camp Small only uses 10% of the wood materials brought to their site, leaving an excess of logs and chipped wood crowding their 4 acres without the proper equipment to manage it. Camp Small receives 9,000 tons of wood waste annually from BCRP maintenance activities. To alleviate this challenge and enhance Camp Small's ability to prioritize highest and best reuse for felled trees, there is an opportunity to

leverage this existing carbon bank for composting with the development of a local composting facility.

As a part of Baltimore's new East Side Transfer Station redevelopment project, a 4-acre parcel of land has been approved for the construction of a mid-scale composting facility. DPW is currently vetting contractors to design plans for the new transfer station that includes the design of a composting facility as part of the scope of work. The City has secured funding for the transfer station through a combination of Capital Improvement Project (CIP) and State grant funds, but no funding has been allocated for a composting facility. DPW has requested \$8 million in funding for composting infrastructure for the CIP planning period of 2026 to 2029, however, the deliberation on CIP funding allocations will not result until July 2024.

To close the loop on the new food waste diversion mandate, the excess of carbon-rich materials at Camp Small, and the 40% of compostable materials in Baltimore's solid waste stream, the City of Baltimore is requesting \$4 million dollars in EPA funding to develop a solar-powered, scalable composting facility co-located with the new East Side Transfer Station at Bowley's Lane. Funding this project now will allow DPW to leverage the construction costs and contracts associated with the transfer station development project to develop a composting facility at the same time, moving the City of Baltimore one step closer to reaching its goal Food Waste and Recovery Strategy goal of 90% organics diversion and Climate Action Plan goal of 25% reduction in greenhouse gases by 2030.

The proposed infrastructure development meets EPA's approved scope of work objective to establish capacity for sustainable materials management by developing a composting facility for local organics diversion. The development of a composting facility in Baltimore links to the National Recycling Strategy Objective B1.4: to increase collection and improve materials management infrastructure by making sure that communities in Baltimore have access to organics recycling infrastructure. Composting activities in the proposed location will work to remediate legacy environmental pollution, improve air quality, and create low-barrier, higher-paying green industry jobs. Composting facility development in Baltimore will advance EPA's strategic Goal 1, objective 1.1: Aggressively reduce the emissions of greenhouse gases from all sectors while increasing energy and resource efficiency and the use of renewable energy and Goal 2, objective 2.1: promote and embed environmental justice and civil rights at the local level.

Composting locally will prevent organic materials from being landfilled or burned, reducing the amount of greenhouse gasses (GHGs) and other toxic pollutants emitted in South Baltimore, where many industrial waste processing facilities are currently located, creating a disproportionate environmental impact on low-income communities. The proposed facility will be solar powered, effectively reducing long-term energy costs, increasing energy efficiency, and reducing the City's dependence on combustion-based power.

The most effective, resilient urban waste management systems design out the concept of waste by creating circularity in waste management strategies. Organic waste diversion presents a timely, impactful waste reduction goal that has climate, economic and equity benefits. Recovering organic materials and recycling them into compost will regenerate local soils by

increasing its capacity to sequester carbon, slowing the impacts of climate change. Compost application will also improve the soil's water retention capacity, which reduces run-off, protects the local watershed, prevents flooding and improves soil health. In addition, making compost available locally will bolster the local food production and security, by enhancing urban farmers' and gardeners' crop yields and creating more nutritionally dense food.

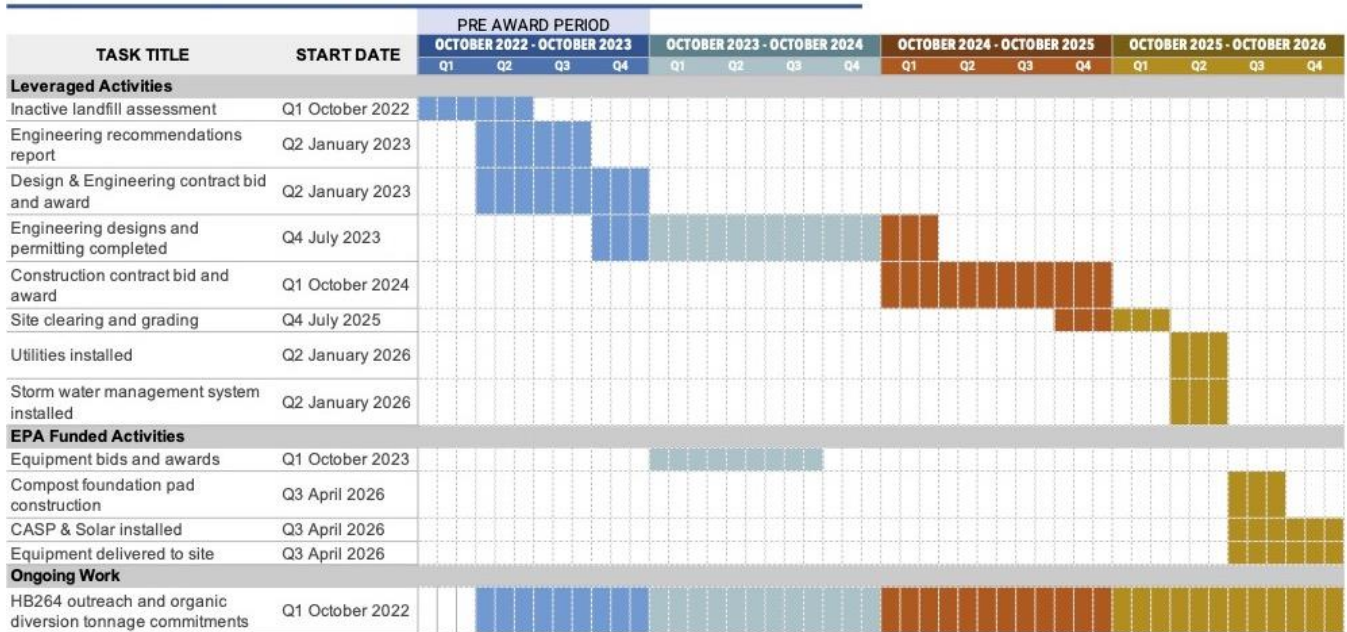
Positive, persistent pressure from residents in South Baltimore, who created the Fair Development Plan for Zero Waste in 2020, later adopted by the City Council, has informed our waste diversion strategies. The plan calls for expanded recycling and composting capacity, a transition away from waste incineration, cleaner air, more jobs, and less waste. The proposed plan to create organics diversion capacity within the City has the power to advance each of these goals, aligning government support with community-led action to build a new resource management system embedded with environmental justice and civil rights.

At the current level of funding, the composting facility will have the capacity to compost approximately twelve thousand tons of organic materials per year, create 4-5 permanent full-time positions, reduce GHGs by 6,000 tons, and improve environmental conditions for South Baltimore communities currently experiencing environmental injustices as a result of waste management practices.

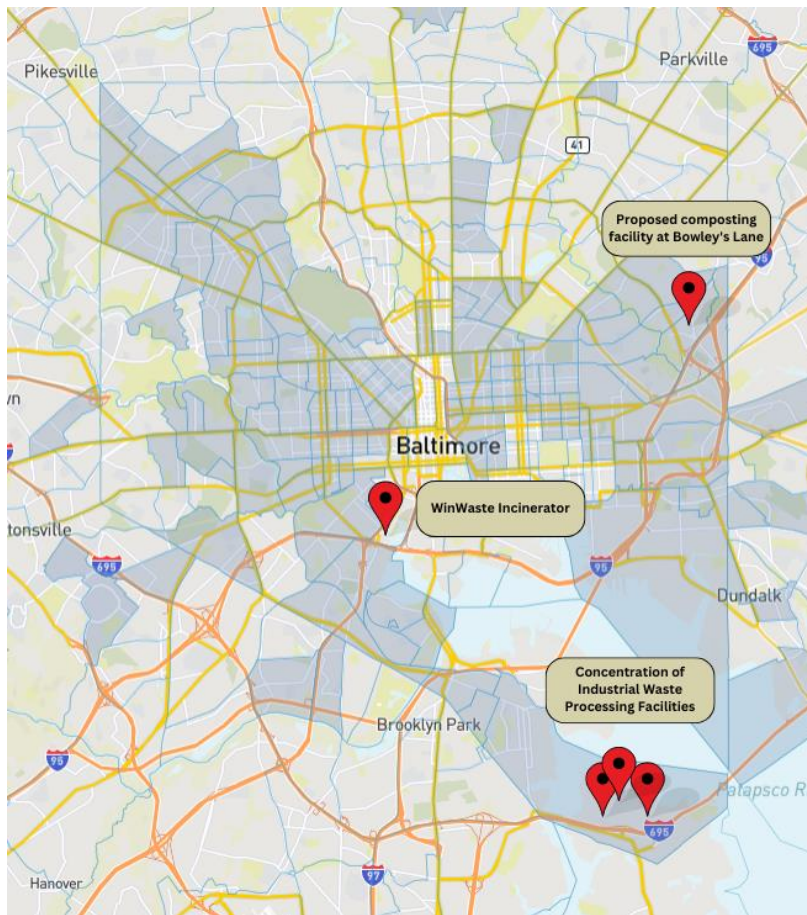
The City's 2020 GHG inventory, indicated that waste-related emissions comprise nearly 10% of total emissions, when separated out. Baltimore currently has interim GHG reduction targets to achieve a 30% and 60% reduction in emissions in 2025 and 2023 respectively, and carbon neutrality by 2045.

Many steps for facilities development are already underway, such as geotechnical assessments, engineering contract bids, and preliminary design scopes. Please see the Gantt chart below (and attached) for more detail on project milestones and timelines.

Bowley's Lane Composting Facility Project Timeline



Criterion 2: Environmental Justice (15 points)



The EPA’s EJ Screening Tool shows large dark swaths covering the majority of Baltimore except for the middle corridor, a phenomenon popularly referred to as the “Black Butterfly.” The shaded areas are disproportionately impacted by social, health and environmental inequities, largely due to a history of racially driven underinvestment.

South Baltimore is home to a concentration of industrial activity, including multiple waste processing facilities, and is in the 99th percentile for asthma, 97th percentile for low-income, and 96th percentile for proximity to hazardous waste facilities.

DPW's proposed facility would create concentrated positive environmental impacts in the South Baltimore neighborhoods surrounding the incinerator, as well as in the Northeast neighborhoods surrounding the proposed composting facility. We anticipate that composting locally will reduce the amount methane released when food rots in an uncontrolled environment, decrease the amount of GHGs emitted by burning organics, and reduce the quantity of material being sent to the incinerator. In addition, we anticipate that applying compost in Baltimore will help sequester more carbon in the soil, protecting our local climate and watershed. Upon completion, the facility is anticipated to create five low-barrier green industry jobs in low-income, high-unemployment areas of the City.

To support community-led development, DPW regularly dialogues with zero waste advocates representing South Baltimore communities. Many of these community leaders work together through the South Baltimore Community Land Trust (SBCLT) to strategize and build alignment with DPW on waste diversion priorities. When EPA's SWIFR grant was released, the Office of Waste Diversion consulted with the advocates to get input on DPW's proposal. Although DPW was interested in funding both composting and recycling infrastructure, SBCLT and other community leaders advocated for the full funding amount be allocated towards compost facilities development. With this feedback, DPW adjusted course to maintain alignment with the explicit community desire for a local composting facility.

In 2020, SBCLT published the Fair Development Plan for Zero Waste and soon after secured food waste tonnage diversion commitments from local businesses and universities. The commitments are conditional, requiring diversion to a compost facility that achieves operational excellence to generate high quality, nutrient rich compost, cost effectiveness, a local hiring commitment, and representation from community and workers in governance. DPW is pleased to share that SBCLT and other community stakeholders who provided input on DPW's SWIFR grant proposal support the proposed facility's development at Bowley's Lane in alignment with their equity and fair development criteria.

To build alignment with SBCLT's operational equity requirements, DPW has requested funding through EPA's REO to develop a compost operator training facility to support local workforce development and empower advocates and residents to become involved with the proposed composting facility in an operational capacity. In addition, DPW and SBCLT have proposed to develop a Zero Waste Coalition (ZWC) comprised of stakeholders across the City who will play a collaborative role in planning current and future zero waste and waste diversion programs. The purpose of the ZWC will be to build a framework for cooperative governance and meaningful partnership between residents and City government to advance sustainable and just resource management strategies.

Criterion 3: Performance Measure: Anticipated Outcomes and Outputs (10 points)

At the current level of funding, the composting facility will have the capacity to divert twelve thousand tons of organic materials per year from the landfill and incineration streams, reducing 6,000 tons of GHG emissions. In addition, it will create 4-5 permanent positions in low-income communities currently experiencing environmental pollution as a result of outdated waste management practices. With additional investment, the total processing capacity at the 4-acre site

is approximately twenty-four thousand tons per year. All tonnages of organic waste tipped at the composting facility will be captured through the transfer station scale house and data tracking software. DPW anticipates that at least 9,000 tons of organic waste will be composted at the facility within its first year of operation.

Currently, food waste haulers in the City drive their waste materials to the Prince George’s County Facility, approximately 40 miles from city center. The development of an eastside composting facility would reduce that distance to less than 5 miles from the City center. This would allow for a measurable reduction in fossil fuel emissions from transporting organics out of the City, and an additional measurable reduction in methane emissions associated with the transportation of raw food waste.

Please see attached logic model for more detail on outcomes and outputs.

Criterion 4: Programmatic Capability and Past Performance (10 points)

DPW raises between \$5 million and \$10 million annually from grants for various DPW programs. Detailed information from several (5) federal and non-federal grants from the past three years is shown below. In addition to these grants, since 2017 DPW has received almost \$725,000,000 from the EPA in Water Infrastructure Finance Innovation Act (WIFIA) loans through four rounds of funding.

Funder	Grant Program	Purpose	Grant Award(s) Amount(s) and Year(s)	Compliance
EPA	State Environmental Justice Cooperative Agreement (SEJCA)	To expand the scope and reach of DPW’s YH2O program	FY21: \$200,000	DPW submits semi- annual fiscal and narrative reports to this funder. To date, reports have been submitted in a timely manner. DPW also meets monthly with an EPA program manager to discuss progress.
HUD	Community Development Block Grant (CDBG) Program	DPW cleans and boards vacant housing in CDBG eligible neighborhoods throughout Baltimore City.	FY20: \$1,100,000 FY21: \$1,100,000 FY22: \$1,045,000	DPW submits quarterly narrative and financial reports to this funder. All grants are audited and monitored by the funder on an annual basis, and annual requirements have been met.
Natural Resources Defense Council (NRDC)	Food Matters	Implement multi-sector wasted food prevention, reduction and diversion programs in Baltimore City.	FY19-21: \$800,000	In partnership with the Office of Sustainability, DPW submitted data, narrative and financial reports as per the grant agreement.

DPW’s Fiscal Office, and Program Managers who oversee agency programs, ensure that all grant monies are expended in a timely manner and that stated goals are reached, and all

compliance requirements are met. In addition, all grant and cooperative agreements awarded to DPW must be approved by the Baltimore City Board of Estimates, the fiscal policy body of the City. The President of the City Council serves as the President of the Board of Estimates, and the Mayor, City Solicitor, Comptroller, and Director of Public Works serve on this body as well. Please see the chart above (4b) for specific compliance information for the five grants from the past three years that was requested.

DPW has experience in successfully completing large scale recycling and waste diversion projects. In 2021, for example, thanks to funding from The Recycling Partnership (\$1.65 million in grant funds and \$1.35 million in-kind support); the Closed Loop Infrastructure Fund (\$3 million in zero interest loans); and additional funding from the City's Stormwater Enterprise Fund, DPW successfully planned for, secured, and distributed more than 190,000 recycling carts citywide. The project ensures that every single-family residence in Baltimore City has access to curbside recycling. Thanks to an additional (\$250,000) grant from The Recycling Partnership for an anti-contamination campaign, DPW was also able to educate the City's residents on how to recycle correctly and reduce contamination.

In order to successfully develop a composting facility within the grant period, DPW has completed all the foundational and investigative work to have a shovel-ready project by the time funds are awarded. By October 2023, DPW will be in the process of developing engineering and design plans and pursuing permitting for the transfer station and composting facility. All permit requirements have been discussed with Maryland Department of the Environment (MDE) to ensure that plans are developed in accordance with regulatory compliance requirements. DPW has several in-house engineers who will be consulting closely as the project breaks ground.

Staff expertise/qualifications to successfully achieve the goals of the proposed project:

- Sophia Hosain (she/her) brings plethora of skills to her role as DPW's zero waste manager, including creative problem solving, adaptive leadership, and whole systems thinking. She has extensive experience with coalition building, policy advocacy and community facilitation. She also brings a wealth of technical composting expertise as a certified compost operator with fluency in hot, passive, and vermicomposting methods across a variety of scales and systems. She practices clear planning, communication, delegation, and prioritization with her team using Asana for project management. She leads the Office of Waste Diversion and will oversee the implementation the proposed grant programming with the support of her administrative and program analysts.
- James Woods, P.E. has over 12 years of experience in the field of solid waste management. He has diverse project experience working on the State and local level to lead design, construction, permitting, and operation of solid waste management facilities, including landfills, material recovery facilities, composting facilities, waste transfer stations, and tire recycling facilities. He will be managing the East Side Transfer Station development project and will coordinate closely with Sophia to ensure that all grant timelines are met.
- Shaun Preston began implementing the Baltimore City Recreation and Parks program, Camp Small, in 2016. He manages the urban wood recycling program which has become a national model for municipal sort yards and sawmills. Camp Small works with City

agencies, community leaders, residents, and local businesses to help meet their project needs using sustainable and hyper-local wood products.

Criterion 5: Budget and Expenditure of Awarded Grant Funds (10 points)

- Please see Budget Table and Description in attachments

Criterion 6: Project Sustainability (10 points)

DPW's solid waste mater plan, Less Waste Better Baltimore, report recommends four mid-scale facilities with an average processing capacity of twenty thousand tons per year to meet the composting needs of the residential and public sectors. To scale up the facility to reach its full twenty-four ton per year processing capacity, DPW has requested Capital Improvement Project (CIP) funding in the amount of \$8 million from 2026 to 2029. These funds will also be used to replicate the solar powered CASP composting facility once more potential development sites are identified.

To support the long-term sustainability of the proposed composting facility, DPW will create an operational cashflow to forecast and track annual operating costs and revenue from compost sales. In addition, through partnership with SBCLT, several institutions have committed to divert their food waste tonnages to process at Bowley's Lane, greatly reducing their transporting distances. Beyond those tonnage commitments, HB 264 will go into effect once the facility is built and operational, meaning that all large-scale food waste generators producing at least one ton of food waste per week will be required to separate and divert their food waste. The Office of Waste Diversion has begun gathering data to determine eligible businesses who will be obligated by the mandate. Staff is also planning for proactive and supportive outreach in the months leading up to the facility's completion. DPW anticipates that the facility will reach its twelve thousand ton per year capacity within its first two years of operation.

Criterion 7: Innovative Approaches and Solutions (5 points)

To demonstrate circularity and model renewable energy systems, DPW proposes powering the CASP composting systems using only solar panels and batteries, with backup generators on site as needed. Solar facilities development provides an opportunity to use portions of the capped landfill area with low grades for power generation, taking advantage of otherwise unusable land. It also reduces ongoing electrical utility costs and reduces combustion-based energy dependence. In the transfer station facilities' design scope, DPW will also be exploring the possibility of rainwater catchment to use in the composting process.

In addition, by diverting wood waste from Camp Small for composting, DPW will be supporting their creative reuse business and alleviate their challenges around storing excess unusable material. To that end, the Office of Waste Diversion is also in conversation with Biohabitats, a local ecological restoration firm, to explore the possibility of using wood waste to build aquatic habitats for shoreline restoration projects in the Bay.

Criterion 8: Replicability (5 points)

The most replicable aspect of the proposed development is its scalable infrastructure, which will allow communities or municipalities to scale up capacity as funding becomes available. CASP systems are particularly useful for small spaces because of their hyper-efficiency, maximizing throughput potential. They also eliminate common nuisance concerns like malodors and rodent attraction if best management practices (BMPs) are followed, making them great choices in urban environments. In addition, solar-powered operations create flexibility in siting facilities, removing the electrical access barrier for development. Because of the simple design of CASP systems, they can also be moved with relative ease, if locations are only available temporarily. All in all, the proposed system design is low-cost, low-barrier, and very flexible, suitable for a variety of locations.

Criterion 9: Leveraging (5 points)

The proposed composting facility development would not be possible without leveraging additional funds from our partners at BCRP, and from our existing East Side Transfer Station development project.

BCRP's Camp Small has agreed to share 50% of the cost of a horizontal grinder, an estimated \$627,000 contribution, which will allow DPW to grind trees and yard waste on site and mix carbon and nitrogen inputs to the right ratio for composting. This arrangement will allow DPW to utilize excess woody materials generated by BCRP to facilitate the composting process. In return, DPW will provide BCRP with all mulch and wood fiber materials necessary to meet its annual revenue needs. DPW anticipates that even with supply chain issues, this equipment will go through bidding and procurement within the three-year grant period.

Additional financial resources are being leveraged from the East Side Transfer Station development project. The costs of all engineering investigations, facilities design, site clearing, MS4 systems, utilities hook up, scale houses, scale house staffing, and more, will come from the East Side Transfer station development budgets. This amounts to approximately \$3.5M amount of additional funds leveraged. Designs for the facilities will be completed by December 2024 and construction is slated to start by mid-2025. Due to the straightforward scope proposed within this funding request, DPW anticipates the foundation to be laid and equipment bid for and procured well within the three-year grant period.

All wages and fringe costs for project personnel will be in kind, amounting to approximately \$298,601.

All funds leveraged are in hand and ready to spend.