Lexington Fayette Urban County Government
RFP#38-2022 Feasibility Study for an In-Vessel Waste Composting Digester Solution
GT Project Number: 1117-01

PROJECT OVERVIEW

GT Environmental, Inc. (GT) is pleased to provide Lexington Fayette Urban County Government (LFUCG) with this proposal in response to RFP#38-2022 Feasibility Study for an In-Vessel Waste Composting Digester Solution. This RFP was motivated by a tour of the Sevierville, Tennessee in-vessel system that manages waste and biosolids.

To reach greater diversion and potentially solve municipal wastewater sludge management LFUCG is exploring whether in-vessel digesters for municipal solid waste and biosolids is an economically viable and environmentally beneficial option. LFUCG oversees the provision of services for solid waste management in Lexington with a primary goal of landfill diversion. Currently LFUCG is transporting waste and municipal wastewater sludges out of county for disposal.

The recent characterization of municipal solid waste identified approximately 22% of organics being landfilled that if diverted would increase LFUCG's 16%[1] diversion rate. This proposal lays out a scope of services and cost to evaluate the feasibility of an in-vessel waste composting solution for the disposal of solid waste generated by residential and commercial customers.

Our approach is to provide LFUCG with a study to make an informed decision of the feasibility of an in-vessel waste composting digester. With strong project management capabilities our approach will investigate, research, examine, and evaluate in-vessel waste composting digesters. Our approach will use data analysis, experience, and knowledge from the Project Team to look at every angle to best equip LFUCG with a final report for decision making.

PROJECT TEAM

What sets us apart is the assembled Project Team of qualified experts with decades of relevant experience. Teaming together, GT and Coker Composting and Consulting capitalize on familiarity and experience with the LFUCG waste management system through team members past project work.

[1] Diversion rate = (Recycle + Compost) / Waste Generated *100%
16% = (25,000 + 14,033) / (25,000+14,033 + 197,000) *100%

GT Environmental, Inc.
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Ms. Zawila is familiar with opportunities and challenges in Lexington Fayette bringing past work experience to the project. In addition to the strong communication, leadership, time management, organization, and problem-solving project management skills, she is a civil engineer. Being effective at these technical and interpersonal skills serve Ms. Zawila in leading projects to optimum results.

Mr. Coker also is familiar with Lexington Fayette and previously assisted MSW Consultants to prepare the 2018 Organics Feasibility Study. Mr. Coker also conducted an evaluation of the Siever Solid Waste, Inc solid waste management system which included an evaluation of the rotary drum facility. His technical expertise and acumen contribute to his notoriety in the organics field.

The Project Team is 'up-to-speed' and does not need time to 'catch-up' on the current LFUCG organics landscape. Additionally, the Project Team has a strong relationship with local and national composting technologies, operators, and product marketer businesses. Bringing in Ms. Goldstein on the project with her insights-driven organic research will provide increased quality to conduct this feasibility study.

GT ENVIRONMENTAL

GT Environmental, Inc. (GT), established in 1995, provides environmental consulting services to state and local governments, Fortune 500 companies, mid-size to small businesses, hospitals, educational institutions, and professional associations. GT Environmental is comprised of experts in waste recycling and recovery, planning economics, organics and technical analysis. GT has provided over 25 years of technical and best management practice support to local governments as they design, implement, evaluate and optimize their systems. We understand the broad range of responsibilities and priorities local government solid waste departments have in providing efficient and effective service. Our area of expertise includes:

- Waste characterization studies
- Waste assessments and audits
- Market analysis
- Solid Waste Management Planning
- Volume based billing program design and assessments
- Solid waste collection routing studies
- Organics feasibility studies
- Review and negotiate hauler contracts
- Material collection studies
- Waste minimization/zero waste studies
- Materials management planning
- Grant writing
- Community based social marketing outreach program design
- Meeting facilitation
- Curbside and drop-off feasibility studies

Coker Composting & Consulting (CC&C), a sole proprietorship consultancy, was founded by Craig Coker in 2005 to give organic materials recovery and recycling facilities access to qualified professional consulting assistance at affordable prices. CC&C handles a wide variety of specialized projects for the composting and digestion industries, including: site evaluations, facility planning, design, and construction management, operational evaluations, design and conduct of pilot tests, preparation of cost estimates, equipment alternatives evaluations, facility operations manuals, start-up support, operator training, and product marketing and sales support.

PROJECT RESUMES AND AWARDS

The Project Team specializes in issues related to project management, facility and collection operations, composting, organics recycling, anaerobic digestion, zero waste, circularity, and materials management planning. The team has backgrounds working, volunteering, and writing publications on recycling and composting collection operations, diversion programs, and sustainability planning.

The Project Team members have a proven track record working with commercial and municipal clients as advisors, engineers, and consultants to provide comprehensive solutions in sustainable materials management, zero waste and solid waste planning, organics diversion, organics facility planning, design, and management.

Jamie Zawila is Vice President and Principal Consultant with GT Environmental. She brings 25 years of professional experience in sustainable materials management solutions for diverse industrial and public sector clients. Past consulting projects put Ms. Zawila at the forefront of zero waste planning, forecasting, modeling, and sustainability program evaluation. She has conducted work examining and authoring more than a dozen solid waste management plans, organized, and facilitated stakeholder outreach engagements, conducted program gap analysis, feasibility studies, and circular economy planning. Ms. Zawila holds a Bachelor of Science in Civil and Environmental Engineering from the University of Cincinnati and is a certified Zero Waste Practitioner by SWANA and CRRA.

TOPICAL EXPERTISE

- Project Management
- Municipal Solid Waste/Recycling
- Forecasting & Modeling
- Outreach & Education
- Stakeholder Engagement
- Benchmark, Gap, and Data Analysis
- Greenhouse Gas Metrics

EDUCATION/CERTIFICATION

UNIVERSITY CINCINNATI
Bachelor of Science in Civil/Environmental Engineering

SWANA and CRRA
Zero Waste Practitioner

Dan Graeter is a Senior Manager at GT Environmental and has 30 years of experience in the private and public sectors managing solid waste in Ohio. Mr. Graeter managed the Montgomery County Solid Waste District recycling programs and solid waste planning for 16 years. He also managed the fleet and scale operations for the North and South Solid Waste Transfer Stations and the McMrf reuse facility. At GT, Mr. Graeter has managed transfer station and recycling center feasibility studies, facility design, and upgrade projects. He has expertise in solid waste facility operations, solid waste commercial collection systems, district planning and program development, financial systems and controls, solid waste planning, solid waste transfer station design and operations, feasibility studies, strategic planning, environmental education, public involvement, and communications programs. Mr. Graeter has a bachelor's degree in Accountancy and a master's degree in Business Management. Mr. Graeter is a CPA and is SWANA certified in Landfill Management, Recycling, Transfer Stations, C&D Recycling, and Zero Waste Principles and Practices.

TOPICAL EXPERTISE
- Project Management
- Municipal Solid Waste/Recycling
- Regulatory Compliance
- Transfer Station Design and Operation
- Solid Waste Collection and Routing
- Yard Waste Feasibility

EDUCATION/CERTIFICATION
WRIGHT STATE UNIVERSITY
Master of Business Administration
Bachelor of Science in Business Accountancy
CPA-Ohio
CDL-B
SWANA and CRRA
Zero Waste Practitioner
SWANA
Landfill Management, Recycling, Transfer Stations, C&D Recycling

Awards

- 2007 SWANA Buckeye Chapter "Solid Waste Professional of the Year"
- 2004 State of Ohio, Department of Natural Resources "Program Employee of the

Ben Dawson is an Environmental Planner I with GT Environmental, Inc. Mr. Dawson specializes in materials management and sustainability, working on solid waste management planning, annual solid waste district reporting, and geographic information systems mapping and analysis. Mr. Dawson earned a Bachelor of Science Degree in Environment, Economy, Development and Sustainability (EEDS) from The Ohio State University in 2022. Prior to joining GT Environmental, Mr. Dawson worked at Limbach LLC as a Controls Intern. Here, he worked with Project Managers on project planning, forecasting, cost estimates, and communication as well as supporting Engineers on projects by maintaining project equipment in Automated Logic's Building Management System. While attending The Ohio

TOPICAL EXPERTISE
- Data Analysis
- ArcGIS Network Analyst
- Greenhouse Gas Metrics
- Research

EDUCATION/CERTIFICATION
OHIO STATE UNIVERSITY
Bachelor of Science in Environment, Economy, Development and Sustainability

State University, he completed a capstone project with Jackie O's Brewery in Athens, Ohio. At Jackie O's, Mr. Dawson worked closely with the CEO to lead a team of students focused on assessing Jackie O's sustainability efforts, benchmarking and analyzing the environmental impacts of the company's manufacturing, transportation, and utility usages.

Craig Coker has over 45 years' experience in the planning, permitting, design, construction, and operation of organics recycling facilities processing animal manures, animal mortalities, food wastes, biosolids, yard trimmings and source-separated organic solid wastes, as well as in the marketing and sales of compost and compost-amended horticultural soil products. Mr. Coker has experience with windrow composting, aerated static pile composting, aerated composting bins, and in-vessel systems along with anaerobic digestion.

TOPICAL EXPERTISE

- Food Waste Facility Analysis & Design
- Yard Waste Facility Analysis & Design
- Biosolids Facility Analysis & Design
- Animal/Ag Waste Facility Analysis & Design
- Marketing of Compost

EDUCATION/CERTIFICATION

UNIVERSITY OF VIRGINIA
Bachelor of Arts in Environmental Science

GEORGE WASHINGTON UNIVERSITY
Master of Science in Sanitary Engineering

Licensed Virginia Class 2 Waste Management Facility Operator

Certified Virginia Nutrient Management Planner

BioCycle, Senior Editor

USCC/SWANA
Certified Compost Systems Manager

Prior to opening CC&C, he worked for a large industrial composter in NC, developed and ran his own composting facility in NC, served as the first Organics Recycling Coordinator for the NC DEQ, was CEO of an industrial waste compliance specialty consulting firm, was a Senior Associate at Parsons/Engineering Science specializing in biosolids composting, and worked in biosolids composting in the Washington DC metro area.

He holds an undergraduate degree in Environmental Science from the University of Virginia (1975) and a Master Degree in Sanitary Engineering from George Washington University (1980). Mr. Coker is a licensed Virginia Waste Management Facility Operator, a certified Virginia Nutrient Management Planner and a USCC/SWANA Certified Compost Systems Manager (the precursor program to the current CCOM certification from the USCC). Mr. Coker is also a Senior Editor at *BioCycle* (J.G. Press).

Mr. Coker has been a recognized authority in the composting industry for many years. In 1981, he was awarded an Outstanding Employee Award by the Montgomery County, Maryland government for his work in getting the Dickerson Interim Sludge Composting facility online and operating. In 2011, he was awarded the USCC Hi Kellogg award which recognizes individuals who have left a lasting and positive impact on the U.S. composting industry. In 2022, he was awarded the Jerome Goldstein Lifetime Achievement Award for significant contributions over his professional career by achieving excellence in the

fields of composting, environmental stewardship and natural resources sustainability.

Mr. Coker is a native of New Zealand and has lived in the U.S. since 1955. He and his wife reside in the Blue Ridge Mountains of Virginia near the City of Roanoke.

AWARDS

- Montgomery County, Maryland Outstanding Employee Award, 1981
- US Composting Council Hi Kellogg Award, 2011
- US Composting Council Jerome Goldstein Lifetime Achievement Award, 2022

Nora Goldstein has 44 years of experience in the field of organics recycling, writing, and editing case studies and how-to articles on topics such as food recovery; food waste recycling; organics separation, collection and preprocessing; composting; anaerobic digestion, codigestion, and energy recovery; biosolids management; and markets for and uses of compost, digestate and other recycled organics. Ms. Goldstein also has been conducting national and state-by-state surveys to collect data on the recycling and organics recycling industries since the 1980s.

TOPICAL EXPERTISE

- Food Waste Management
- Organics Recycling
- Organics Policy

EDUCATION/CERTIFICATION

UNION COLLEGE
Bachelor of Arts in Political/History Science

BioCycle, Editor

One area of specialization is writing case studies about organics recycling and food recovery initiatives, from facility profiles to municipal programs to business features. Case studies are written for BioCycle as well as contracted projects. Ms. Goldstein has completed and worked on a range of contract and consulting projects including surveys and data collection, primers and guidance documents, technology developments and inventory of systems and equipment for organics recycling, and public participation and perception related to residuals recycling.

As editor of BioCycle she is responsible for editorial content, graphics and production of BioCycle CONNECT, an e-newsletter, and management of BioCycle.net, a website that houses the archives of all BioCycle content since 2004.

Ms. Goldstein is widely recognized as a leading authority on food waste management, organics recycling, including industry activity and trends; current research and projects; and local, state and federal policies and regulations.

AWARDS

- US Composting Council Hi Kellogg Award, January 2014

- American Biogas Council Biogas Visionary Award, October 2013

ABOUT GT

GT, formed in 1995, has a strong foundation led by two owners, Jamie Zawila and Ron Hansen. The company follows a hierarchical structure with centralized chain of command and decisions. GT provides environmental consulting through two business units: permitting and compliance and materials management and sustainability.

GT has been working on projects for over 25 years allowing us to develop a consistent and successful methodology for managing projects on a timely basis, within assigned budgets, and with a high level of quality. With a staff of 10, new projects are proposed and accepted only if the firm has the bandwidth to provide support and a quality deliverable. This project will be led by Jamie Zawila and supported by a group of team members with core competencies in composting technologies.

QUALIFICATIONS

Siever Solid Waste, Inc Operational Assessment

Sevierville, TN

Coker Composting and Consulting conducted a study to evaluate the Siever Solid Waste (SSWI) solid waste management system to both optimize and extend current systems and facilities, and to provide input on the longer-term evolution of the system. The evaluation was comprehensive and spanned SSWI, the individual waste management services and systems of each of the Owners (Sevier County and the cities of Gatlinburg, Pigeon Forge and Sevierville), and also the framework in which these entities operate in Sevier County. The evaluation encompassed extensive review of system documentation, customized analysis of certain operating parameters, evaluation of the SSWI rotary drum composting facility, identification of compost and landfill engineering best practices, and interaction with SSWI and Owner stakeholders.

Lorain County SWMD, Compost Feasibility Study

Lorain County, OH

GT conducted a feasibility study for the development of a Class II Compost Facility to be developed and located in Lorain County, Ohio. The study evaluated the feasibility of a facility to process up to 18,000 tons of yard waste alone or 13,400 tons of yard waste and 10,000 tons of food scraps annually. A site design and operations plan developed with an evaluation of the Class II licensing process.

The team assessed feedstock requirements including meeting with key stakeholders and generators of organic waste. Current and projected organic waste volumes were analyzed in the County and region. Evaluations were conducted for compost site operators in the region that could be potential partners with the District on the proposed facility and for the local and regional solid waste hauler infrastructure for organic waste collection. A detailed financial proforma was prepared for the development and operation of the proposed facility.

Greene County SWMD, Facility Evaluation for Recycling and Yard Waste Programs
Greene County, OH
GT evaluated the Greene County, Ohio Recycling and Yard Waste Facility and made recommendations for program and operational improvements. Also, GT evaluated a potential relocation with estimated cost for a new facility.

GT performed a SWOT analysis of current programs and services with Greene County Staff. The analysis included reviewing best practices from similar SWMD and comparing these best practices to the current programs and services. Recommendations included operational equipment, facility changes, campus flow and layout changes. The alternate site review included a detailed estimate of the site development costs, building costs and equipment costs.

The recommendations included a multi-functional customer service canopy that could be scaled up or down based on the number of expected customers which could vary greatly based on the event or service. Operational equipment recommendations included compactor systems for key recyclable materials minimizing operational expenses.

GT also evaluated the current yard waste drop-off and processing and provided recommendations for changes in traffic flow and customer contact. The evaluation included an analysis of processing yard waste with county labor and capital investments versus third party contracting.

Pike County SWMD, Yard Waste Feasibility Study
Pike County, Ohio
GT is evaluating the Pike County Solid Waste Management District's (District) current yard waste program. Pike County currently has multiple sites operated by local governments that accept and process yard waste. The goal of the Study is to evaluate the current yard waste system for Pike County and make recommendations for improvements to help formulate a long-term and sustainable materials management approach for yard waste.

Included in the evaluation is a review of three sites for a potential yard waste processing site that will provide for yard waste recycling for the District. The evaluation will include site development costs and operations cost evaluations.

Indiana Department of Environmental Management (IDEM) Recycling Infrastructure & Economics Study
GT partnered with IUPUI and the Indiana Public Policy Institute to evaluate Indiana's recycling infrastructure in the context of the state's needs, and the evaluation includes an analysis of Indiana's recycled materials and organics markets so that the state can evaluate investment needs and recycling economic development opportunities in the circular economy. The study has two primary goals 1) Determine Indiana's MSW waste, recycling, and organics infrastructure and 2) Study the economic impact of recycling and organics on the state's economy.

The study included a significant data collection piece that was performed by over fifty IUPUI students. Once the data was collected it was used as inputs into an Implan economic forecasting model to estimate the economic impact. The study included mapping locations of the recycling and organics infrastructure servicing residents of Indiana and the flow of recycled material collected, processed, and used as feedstock for Indiana businesses. Also, included were recommendations for further development of data collection systems, solid waste management, the circular economy, and other recycling enhancements.

The IDEM link below provides additional information and a copy of the report.
IDEM: Recycle Indiana: Recycling Infrastructure and Economics Study

Environmental Law Institute, Evaluation of Business Case for Co-Digestion of Various Feedstocks with Sewage Sludges at Water Resources Recovery Facilities
National
Coker Composting and Consulting co-authored this evaluation. The goals of this report were 1) to provide insights about successful business strategies that WRRFs in the US have employed to create value and manage the risks of adopting co-digestion of food waste -- including fats oils and grease (FOG), food manufacturing residuals, and food scraps -- with wastewater solids to enhance recovery of biogas, soil amendments and nutrient products; and 2) to present a framework for WRRFs to analyze the opportunities co-digestion could provide in their own institutional, market and policy contexts. The framework was intended to help WRRFs develop a long-term business strategy and implementation plan that leverages those opportunities in a way that advances their mission and long-term goals.

City of Appleton, WI, Organics Recycling Facility Planning and Design
Appleton, WI
Coker Composting and Consulting completed this biosolids recycling facility planning and design. The Appleton WI Wastewater Treatment Plant (AWWTP) has relied on land application to recycle the dewatered biosolids it produces (23,177 wet tons in 2017), with a portion going to a small composting facility at the Outagamie County landfill (~1,500 wet tons per year), since 2010. The City was interested in exploring alternatives to continued land application. This municipal project prepared project process design and layout alternatives for future site selection, evaluated the suitability of four (4) biosolids composting approaches, reviewed the suitability of multiple City-owned sites to accommodate the proposed composting facility developed capital and operating estimates for four composting alternatives, evaluated non-financial considerations using a weighted criteria evaluation matrix, and evaluated GHG emissions aspects of all alternatives.

PRIOR LFUCG-FUNDED CONTRACTS

Jamie Zawila, served as project manager and managed a team of experts while employed at Resource Recycling Systems for the following LFUCG-funded contracts:

Material Recovery Facility Advisory Services

- Material Recovery Facility Upgrade Justification
  Prepared a technical memo evaluating adding paper back to the current MRF operations under two scenarios – the first being a minimum investment approach that relies heavily on added staff and the second being Option 4 plus Glass that includes additional MRF improvements, requiring less staffing and reduced maintenance.
- Planning Level Cost Assessment
  Prepared a cost comparative analysis for the operations of the material recovery facility which included current state compared to three other capital investment options. This included modeling three capital and operation scenarios to determine net operational costs per ton. Developed a memo and conducted stakeholder engagement to vet the options.
- SMART Material Recovery Facility Investment
  To assist with stakeholder engagement prepared a briefing memo that focused on the following highlights: why action is needed, what outcomes are needed, investment, returns, and recommendations. This memo vetted the minimum investment option against needed capital investments to bring paper back to the curb that would also reduce labor.
- Request for Information and Participation in a Pre-Procurement Market Sounding for Public-Private Partnerships for Increasing the Effectiveness of Landfill Diversion Programs.
  Assisted in preparing Request for Information documents to advertise, vetting submittals, and conducting interviews of responders.
- Request for Proposal for Material Recovery Facility Design Build Fiber Line Upgrade
  Assisted in preparing Request for Information documents to advertise, vetting submittals, and conducting interviews of responders.
- MRF Upgrade Design Build Coordination and Oversight
  Provided oversight and project coordination for the $4.1 million single-stream Material Recovery Facility upgrades. Directed and coordinated a team of internal staff and external vendors to meet client expectations.
- Operations Assessment
  Led the team to assess the operations of the material recovery facility and provide a recommendation memo for increasing operational efficiency. Developed a production log to track uptime that is necessary for monitoring downtime reasoning to be able to adjust for more efficient operations.

Municipal Solid Waste Characterization Study

From the direction of Lexington-Fayette Urban County Government (LFUCG), prepared sampling plan and analysis for a one-season waste sort. Developed the sample allocations and schedule based on tonnage data by sector. Prepared the materials list, field forms and oversight for the sampling team. Analyzed data using industry-standard statistical procedures and extrapolated to provide compositions for the waste sectors into a final report.

COKER COMPOSTING AND CONSULTING

Evaluation of organics recycling options for food wastes, yard wastes, and biosolids

As a subconsultant to MSW Consultants, Coker prepared a preliminary evaluation of the feasibility of developing a source-separated organics diversion program in the LFUCG service area, which included identification and quantification of sources of organic material that could be collected for processing, evaluation of options for collecting organics, especially from the business sector, and evaluation of organics processing options available, both existing and potential facilities, and operations which included options for management of contamination. The study also described the kind of program necessary to ensure proper participation and compliance with the design and operation of an organics collection and processing system, and included eight case studies describing successful organics programs, including collection, processing and marketing.

While not LFUCG-funded, Coker has worked in the Lexington area as a consultant working on marketing strategies for Creech Hay Services' compost (2007-2008).

PROPOSED SCOPE OF SERVICES

This proposed scope of services is divided into six tasks. Interim deliverables are planned for each of the six tasks as noted in the task scopes. The intent is to combine the interim deliverables into one final report deliverable.

Task 1 – LFUCG Waste Management Evaluation

To initiate this task, GT proposes a kick-off meeting to review the project workplan, goals, timeline, and communications.

LFUCG operates a comprehensive system for waste management. LFUCG owns and is responsible for the operations of the following infrastructure:

- Bluegrass Regional Transfer Station
- LFUCG Recycling Center
- Haley Pike Waste Management Compost Facility
- E-waste Collection Facility
- Haley Pike Landfill (closed)

Lexington oversees the public-private partnership for operation of the Bluegrass Regional Transfer Station and the Haley Pike Waste Management Compost Facility. The Project Team will review all information, data, and reports available of the current facilities and waste management to document existing baseline conditions. In addition, to the municipal waste management, the Project Team will request and review the municipal wastewater sludge management and handling. The Project Team will evaluate the waste management system and wastewater sludge ascertaining operational costs and tonnage numbers.

Assumptions

- One Project Team member plans to attend kick-off meeting in person. Remaining Project Team plans to meet virtually.

Deliverables

- Kick-off meeting prep and facilitation.
- Summary memo of data review and evaluation.

Task 2 – In-Vessel Composting Case Studies

The Sevier Solid Waste, Inc. installation is based on a rotary drum composting technology developed by Bedminster Bioconversion Inc. in the 1990's. There were, ultimately, ten Bedminster facilities constructed (Sevierville, TN; Marlborough, MA; Nantucket MA; Truman MN; Rapid City SD; Columbia Co. WI; Pinetop – Lakeside, AZ; Cobb County, GA; Sumter County FL; and Edmonton Alberta, Canada). Only two remain in operation today.

Other technologies have been used to compost a mixed MSW waste stream, notably tunnel reactors, agitated bay systems and rotary drums made by others: Mariposa Co. CA (ECS); Dodge County MN (Nature Tech); Truman MN (OTVD); West Yellowstone MT (ECS); West Wendover NV (cement kilns); Delaware Co NY (Conporec/IPS).

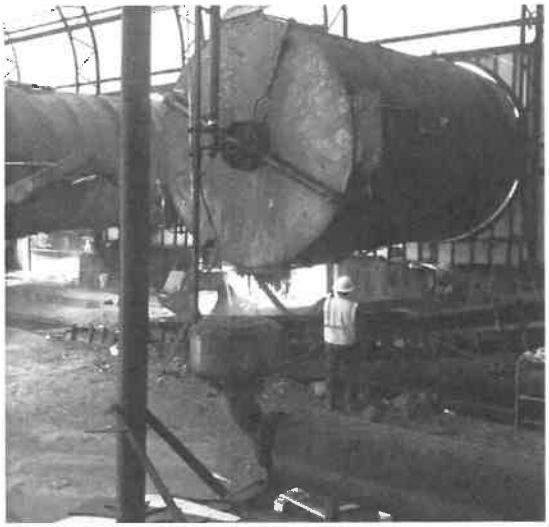


Figure 1 In Vessel Rotary Drum

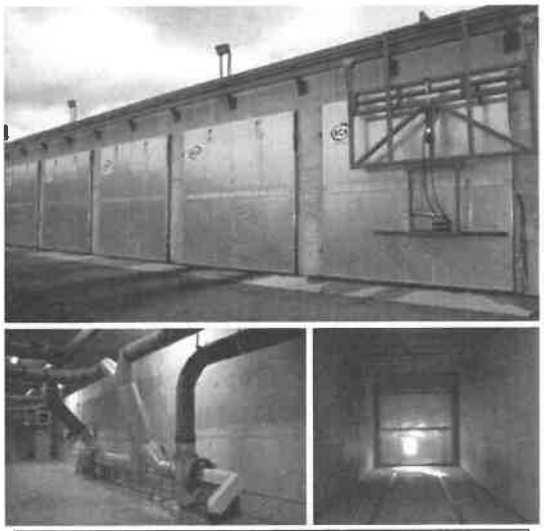


Figure 2 In Vessel Tunnel Reactors

Assumptions

- GT will assist LFUCG in identifying four localities of interest to prepare detailed case studies.

Deliverables

- Matrix identifying challenges and benefits of the identified in-vessel systems constructed and operated over the past 25 years to compost mixed MSW.
- Detailed case studies (1-2 pages) of four localities that highlight the features of the

chosen mixed MSW composting systems.

Task 3 – In Vessel Composting Evaluation

There are two mixed waste in-vessel composting systems the Project Team will evaluate: rotary drum and tunnel reactor. These two systems each will be examined for potential hurdles as noted in this RFP. In addition to evaluating mixed waste in-vessel composting the Project Team will compare these two systems to a source-separation and composting diversion program (SSO). The mixed waste will be referred to as Option A and the SSO will be referred to as Option B. For the purposes of this study, both options will be assumed to be located at the Hedger Lane solid waste complex, although, as noted below, other LFUCG properties will be examined for potential suitability.

Option A – Mixed waste in-vessel composting

Two conceptual alternatives will be evaluated and costed out at a preliminary facility planning level of accuracy (i.e., +50% / -30%):

1. Composting in a rotary drum arrangement similar to Sevier Solid Waste, Inc (SSWI) with enclosed waste receipt and enclosed finishing and curing as shown in the concept sketch below.

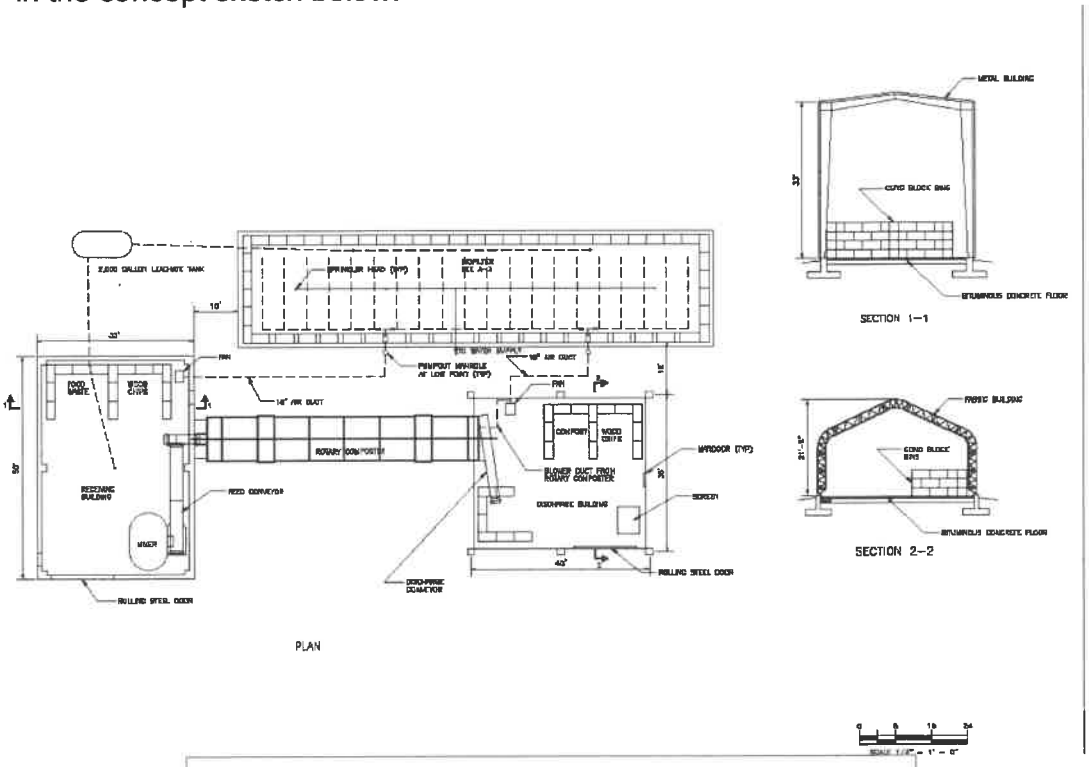


Figure 3 In Vessel Rotary Drum Concept Sketch

2. Composting in a tunnel reactor system similar to Mariposa County, CA as shown in photo below.

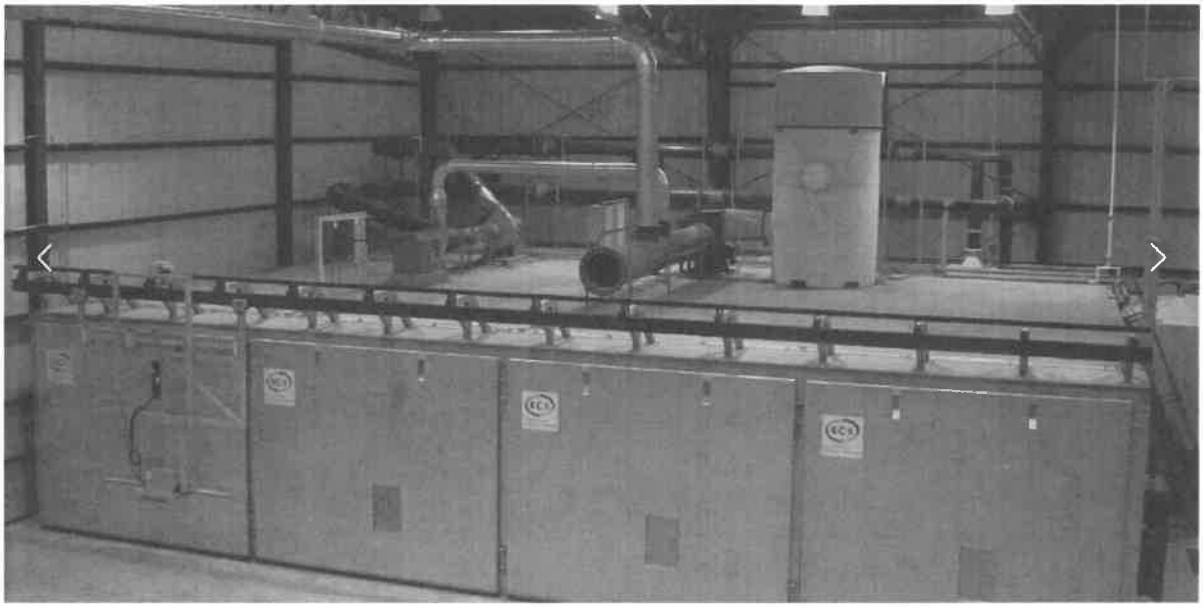


Figure 4 In Vessel Tunnel Reactor System

Both options would be preceded by a pick-line negative sort system to remove the worst of the contaminants.

Option B – Source-Separated Organics (SSO) Aerated Static Pile Composting

This Option would be based on the recommendations from the 2018 Organics Feasibility Study prepared by MSW Consultants and Coker Composting and Consulting, which recommended:

- A voluntary sign-up SSO collection program, starting with downtown commercial businesses and institutions like the University of Kentucky, then later expanding to residential customers. This SSO diversion program would be based on a curbside roll-cart diversion program with LFUCG providing education and outreach and SSO collection. This SSO diversion program would be supplemented by a SSO drop-off station at the citizen convenience center. The costs for this were identified in the 2018 study and would be updated to current costs.

- A composting system based on forced-air Aerated Static Pile (ASP) with turned trapezoidal pile curing similar in configuration to the photo below:

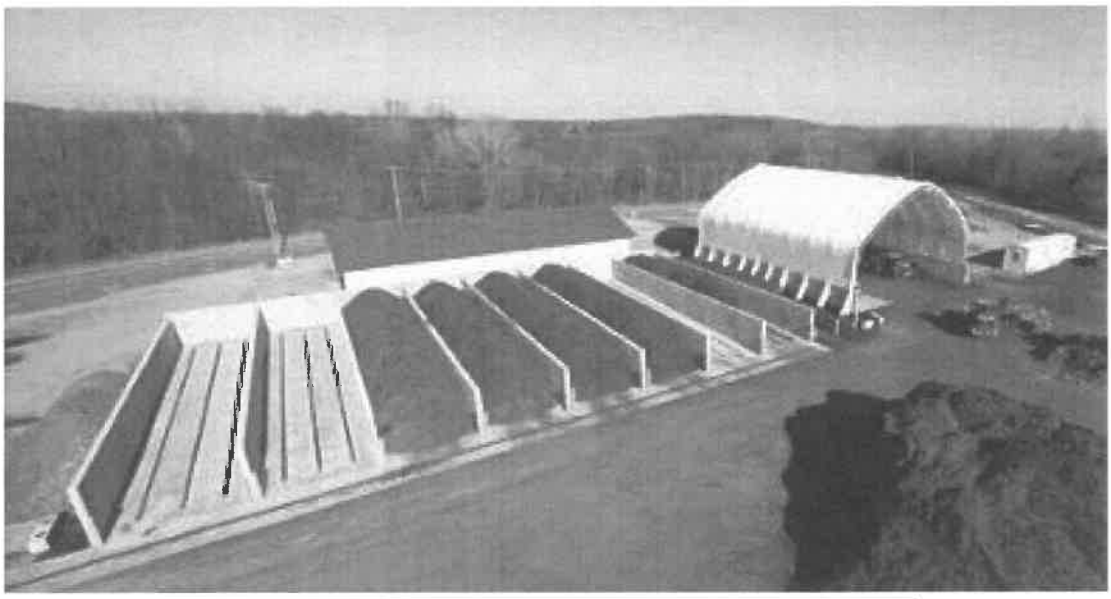


Figure 5 Aerated Static Pile

As a part of this feasibility assessment, the Project Team will evaluate the various issues noted in the RFP as described below:

- Whether or not to include wastewater sludges as a feedstock.
  - Several of the MSW composting systems built in the U.S. since the 1990's have been used to compost sewage sludges. However, in recent years, there has been some regulatory concern expressed in some states about the presence of per- and polyfluoroalkyl substances (PFAS) in sewage sludges contaminating composts made from sludges. U.S. EPA has not yet completed any risk assessments to public health or the environment from the presence of PFAS chemicals in sludge compost, so it may be advisable for LFUCG to hold off on including sewage sludges in its composting plans until those risk assessments are completed. Recent evaluations (CDM, 2020) have shown that municipalities may see a significant cost increase in biosolids management and that beneficial reuse programs will see higher costs than landfilling. The GT Environmental team will research and present information to LFUCG on PFAS, microplastics and other pollutants of concern (POCs).

- Contamination issues (of feedstocks and finished products).
  - Contaminants in compost severely affect the potential uses for the product. Contaminants include any man-made inert materials (e.g., glass, plastic, metal) or chemicals (e.g. persistent herbicides, petroleum products, heavy metals). Mixed MSW compost has had challenges with contaminants, which is one reason several of them are no longer operating.

- The SSWI facility compost does not meet the specifications of the U.S. Composting Council for a high-quality compost. A December 2020 lab analysis of the compost showed the following results:

Parameter	Units	12/2/20 Sample	Preferred*
pH	- -	5	6.0 - 7.5
Moisture	%	44.5	35 - 55
Particle size	- -	<3/8"	<1"
Stability	- -	Moderately unstable	Stable to highly stable
Maturity - germination/growth	%	100/37	>80/>80
C:N Ratio	- -	27.0:1	12.1-16:1**
EPA 503 metals	Pass/Fail	Pass	Pass
Soluble salts	dS/m	10.47	< 3
Pathogens	Pass/Fail	Pass	Pass
Man-made inerts (e.g., Glass)	%	2.23	< 0.5

*U.S. Composting Council, "Field Guide to Compost Use", 1996

The results show elevated levels of soluble salts and man-made inerts and a lower-than-desirable pH and less-favorable seedling bioassay results.

- The SSWI compost was also tested for toxic chemicals, with the following results:

Category	Constituent	Units	Analysis Results	Possible Sources
Volatile organics	1,2,4-Trimethylbenzene	Parts per billion (ppb)	29.2	Gasoline additive
	2-Hexanone	ppb	252	Solvent, paints
	p-Cymene	ppb	28.9	Essential oils
	Xylene	ppb	43.8	Petrochemicals
	Styrene	ppb	29.3	Foods
	Toluene	ppb	21.2	Petrochemicals
	Xylene	ppb	43.8	Petrochemicals
	Butanone (MEK)	Parts per million (ppm)	210	Solvents, paints
	Acetone	ppm	14.9	Solvents, cleaners
Semi-volatile organics	Phenol	ppm	8.1	Petrochemicals
	Hexadecane	ppm	13.8	Petrochemicals
	Octadecane	ppm	9.4	Petrochemicals
	Bis(2-ethylhexyl) phthalate	ppm	71.5	Plasticizers
	Benzoic acid	ppm	44.3	Food preservative

Category	Constituent	Units	Analysis Results	Possible Sources
Nonhalogenated organics	Diesel fuel organics	ppm	7,780	Petrochemicals

While the concentrations of these chemicals do not make the compost a hazardous material, they do have potentially significant impacts on product marketability.

If LFUCG decides to compost mixed MSW, a robust public education campaign would be recommended to minimize the presence of physical and chemical contaminants in the compost feedstock, e.g., outreach to increase recycling, scheduling household hazardous waste collection days. The Project Team will evaluate how successful these outreach campaigns have been in other jurisdictions.

- Odor control concerns
  - Odor management is always a priority in composting solid wastes, whether mixed MSW or source-separated organics (SSO). Odor management is normally managed by good attention to process design and control but when odor control systems are needed, the Project Team will review the applicability of biofiltration, chemical scrubbing and vapor-phase odor neutralizers to the concept design for the composting facility.

- Facility siting – locations of viable city-owned properties.
  - There are many issues to consider in siting a composting facility (Coker, 2022). In recognition of this, some municipalities are looking to lease public land to private composting and/or anaerobic digestion developers to design/build/own/operate organics recycling facilities. The Project Team will explore the suitability of lands owned by the LFUCG for use as a composting facility. For example, there might be suitable land at the Hedger Road landfill that was not used for landfilling MSW.

- Markets for the finished product (landscapers, agriculture/silviculture, mine reclamation, fill for road projects).
  - As noted above, markets for compost made from mixed MSW are somewhat limited due to contamination. MSW composts are more suitable for non-public access situations (e.g., landfill intermediate and final cover, disturbed land reclamation, highway roadside soil amendment, etc.). To sell MSW compost into the higher-end markets of landscaping and agriculture will take a combination of public outreach to minimize contamination, front-end pre-processing (e.g., contaminant removal) and aggressive multiple product screening steps and other contaminant removal systems (e.g., ballistics separators) to remove potentially harmful contaminants like broken glass. The Project Team will develop a preliminary market strategy for MSW compost, identifying potential projects in the future that might be

able to use the compost. The team will also evaluate how the LFUCG could process the compost to reach higher-end markets.

- The team will identify and evaluate initiatives and policies to promote the use of compost or digestates as landscaping soil amendments in the LFUCG service area. These include initiatives like a minimum soil organic matter content for new developments that improves rainfall infiltration, reduces storm water runoff, and improves runoff water quality.

➢ Other technologies that could be considered by Lexington, including aerobic vs anaerobic systems. Explain options for systems and pros and cons of each option specific to Lexington's waste stream. The Project Team will:

- Evaluate the current potential for development of an anaerobic digestion system with renewable energy capture in a public-private partnership at Hedger Lane or at another site; and
- Evaluate the potential for a processing facility handling the separated organics to manufacture an animal feed product.

➢ Methane capture and beneficial re-use.

- SSWI is an aerobic composting system so methane is not a product or byproduct of the process. Anaerobic digestion (such as is practiced at MAC Farms in Campbellsville) will produce a methane-rich biogas that can be combusted to generate electricity or cleaned up to pipeline standards and injected into a natural gas pipeline. An anaerobic digestion (AD) project is being proposed by a Cincinnati-based firm, Synthica Energy, at a distillery in Lebanon Junction. Private developers are the main drivers behind the growth in solid waste AD systems. The Project Team will provide details and insights into how these projects work and whether they might be one of the processing options for LFUCG.

➢ Variation in expected system output based on feedstocks (i.e.: percent sludge vs percent MSW vs percent other organics), heat and retention time in the vessel, the incline of the vessel, and other design factors.

- Rotary drum composting technologies were developed in the 1980s as a means of meeting the Federal standards for pathogen kill to enable the beneficial use of sewage sludges. Drums have a limited residence time (RT) by design. A minimum of four days RT is needed to ensure temperatures exceed 55°C for three days (the Federal standard). A steeper drum incline will shorten residence time, but a shallower incline risks feedstocks congealing in the drum. Adding sewage sludges and some industrial food processing residuals will increase the rate of temperature rise but with some impact to product quality, as discussed above. Drum systems with a longer RT can compost more completely and, thus, need less finishing and curing time to make a market-ready product.

➢ Capability to meet state and federal environmental standards for compost quality.

- The only Federal regulations that would apply would be the 40 CFR Part 503 regulations for the beneficial use of sewage sludges if that was a feedstock to an LFUCG composting facility. The pathogen and heavy metals constraints in those regulations would apply. As the SSWI compost produced from MSW in its service area meets those standards, it is likely a LFUCG compost made from mixed MSW and processed properly would meet the standards also.
- Kentucky regulations governing use of recycled organics are heavily oriented toward the land application of wastes to cropland (401 KAR 30:031, 401 KAR 48:200) so they are focused on heavy metal contents and agronomic application rates. Heavy metals of concern are Cadmium, Copper, Lead, Zinc and Nickel. Assuming an LFUCG compost would be similar in quality to SSWI compost, the compost would meet KY Class I standards:

	KY Compost Standards (all data expressed in mg/kg)			
Element	Class I	Class II	Class III	SSWI Compost
Cadmium	≤ 10	≥ 10; ≤ 30	≥ 30	1.1
Copper	≤ 450	≥ 450; ≤ 900	≥ 900	144.5
Lead	≤ 250	≥ 250; ≤ 500	≥ 500	102.6
Nickel	≤ 50	≥ 50; ≤ 100	≥ 100	30.2
Zinc	≤ 900	≥ 900; ≤ 1800	≥ 1800	402.2
* SSWI data an average of monthly samples 2000 - 2017				

However, there are other compost quality issues with SSWI-type compost made from mixed MSW as noted above that may have a negative product marketing perspective.

Additionally, state regulations often lag behind newly discovered environmental issues (e.g., biosolids pollutants of concern, PFAS in biosolids and food wastes, microplastics from food waste depackaging, etc.). The Project Team will review available product quality data from other mixed MSW composting facilities and compare that data with Federal and State standards.

➢ Durability of the vessel, particularly issues with interior damages and cracking due to abrasion and corrosion. Overall operation and maintenance costs / life cycle assessment.

- Rotary drum reactors are normally made of plain steel for cost reasons. Plain steel is subject to corrosion from exposure to low-pH and high-moisture materials. Plus, rotary drum systems can be subject to uneven loading stresses depending on the nature of the introduced feedstock. In September 2020, SSWI suffered a fracture and break on Digester #5 (Figure 1), but that drum was an old cement kiln drum purchased in 1989 for the SSWI project but one that had been made in 1963 (Widell, 2022).

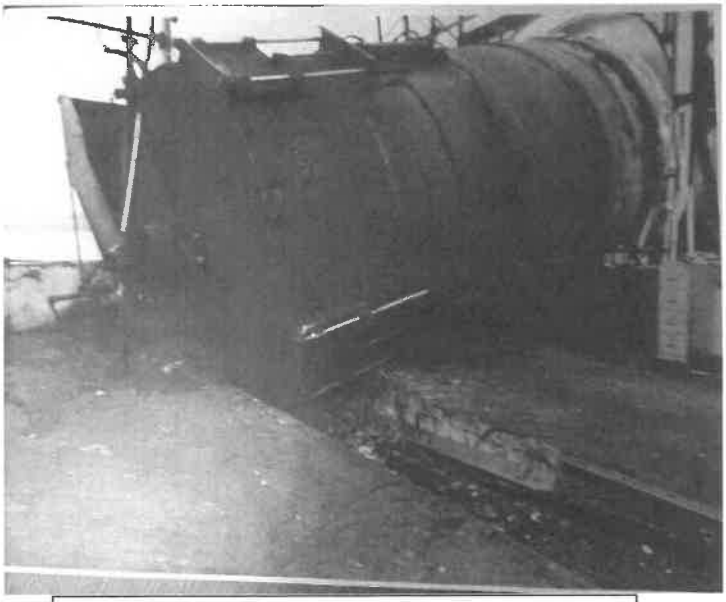


Figure 6 SSWO Drum Failure

The Project Team will use available financial records from other SSWI-style rotary drum installations to project capital and O&M costs, from which they will conduct a life cycle assessment.

References:
Coker, C., "Composting Site Selection", BioCycle, July 27, 2022, at https://www.biocycle.net/composting-site-selection/
Camp, Dresser, McKee, "Cost Analysis of the Impacts on Municipal Utilities and Biosolids Management to Address PFAS Contamination", October 2020, at https://www.cdmsmith.com/en/Client-Solutions/Insights/PFAS-Biosolids?utm_source=Marketo&utm_campaign=PFAS&utm_medium=Email&utm_content=Button&utm_term=2020-11-Newsletter&mkt_tok=MjQwLU9VVi00OTYAAAGF5Md42-4Z-77xbHj3GIp06Qdk5dfLifkxtByBs0g4sRrehTH5kknqA5MRC1CC6bzXqmTZqZYzs79r0_WB2IxQEDMq0cbPuGHIdE4_O_xvog
Personal communication, Mr. Nelson Widell, Ex-Bedminster Bioconversion Inc., November 10, 2020

Assumptions

- Assume location is at the Hedger Lane solid waste complex for preliminary facility siting.
- LFUCG to provide a list of city-owned property locations.

Deliverables

- Draft and final report detailing the two mixed waste in-vessel composting systems (rotary drum and tunnel reactor) compared to a source separated composting system that evaluates the various issues described above.

Task 4 – Tonnage Analysis

The Project Team will determine the currently available material and potential future growth for the same material for capture and potential/realistic through-put. This effort will analyze the quantity and character of the available organics, MSW, and biosolids streams. The analysis will include an investigation of potential commercial, institutional, and industrial organics waste capture sources for greater landfill diversion.

One potential advantage of partnering with industries to capture compostable feedstocks that may be now going to other disposal sites is the benefit to the composting process. For example, at SSWI, they accept waste candy-making materials from a local industry. The sugars and starches in the candy wastes are highly biodegradable and accelerate the temperature rise so that pathogen-killing temperatures are reached sooner and last longer.

Effects on performance for Option A and B with potential institutional or industrial sources will be identified.

Assumptions

- Potential feedstock investigation is limited to the Lexington-Fayette metropolitan statistical area.

Deliverables

- Preparation of low and high feedstock tonnage scenarios.
- List of potential feedstocks from institutional and industrial partnerships.
- Matrix identifying feedstock potential and effects on performance.

Task 5 – Scalability Investigation

All in-vessel composting systems, whether rotary drums, tunnel reactors or horizontal bioreactors, are machines of a fixed capacity. When that capacity is reached, the only solution is to install a second, or third, or fourth machine. Consequently, in-vessel systems are often best suited to sites with little need for expandability. If expandability or scalability is important, then a very careful analysis is needed of future waste projections and the non-composting site infrastructure needs to be designed to accommodate additional in-vessel systems in the future.

The purpose of a pilot-scale demonstration is to verify that some aspect of the composting process needs to be proven, e.g., a particular compost recipe, or that a particular approach to materials handling will scale up. In the case of the former, any composting approach will suit to prove or disprove a process question. In the latter case, it may be necessary to purchase a smaller-sized drum to verify the materials movement question. The Project Team is not aware of any rental rotary drums that could be used for a materials handling demonstration but will investigate this as part of this task.

An ASP composting system designed to compost SSO is very scalable as the number of composting bunkers can be expanded as the SSO diversion program grows. For the purposes of evaluating Option B above, the Project Team will develop projections for "capturable" SSO over the ten-year period from 2025 to 2035.

Deliverables

- Memo investigating scalability of in-vessel system.
- Modeled projections of capturable SSO from 2025 to 2035.

Task 6 – Recommendations

Taking the information researched and evaluated in Tasks 1 through 5, the Project Team will make a recommendation of the most viable technology. The Project Team will provide a preliminary estimate of construction and operating costs including debt service.

Assumptions

- ProForma model will not include cost of land and will feasibly level lump sum costs for site acquisition and site improvements / remediation.

Deliverables

- Preparation of capital cost estimates, operating cost estimates and project revenues from tip fees and product sales of recommendation.
- Draft and final feasibility study report.
- One in-person meeting to present final recommendations.

SCHEDULE

Upon receipt of a signed Contract, GT and LFUCG will identify a start date agreeable to both parties. The following preliminary project timeline will be discussed and confirmed at project authorization.

Task No.	Task Description	Month					
		1	2	3	4	5	6
1	LFUCG Waste Management Evaluation	X					
2	In-Vessel Composting Case Studies	X	X	X			
3	In Vessel Composting Evaluation		X	X	X		
4	Tonnage Analysis	X	X	X			
5	Scalability Investigation			X	X		
6	Recommendations				X	X	X

PROJECT BUDGET

GT proposes to complete this project on a time and materials basis for a not-to-exceed cost of **$66,875.** Any work that falls outside of this scope of work will be subject to a change order process where the specific project assignment and budget will be outlined and authorized by both parties.

Task No.	Task Description	Labor Costs	Expenses	Total Task Cost
1	LFUCG Waste Management Evaluation	$3,820	$200	$4,020
2	In-Vessel Composting Case Studies	$8,425		$8,425
3	In Vessel Composting Evaluation	$31,690		$31,690
4	Tonnage Analysis	$11,745		$11,745
5	Scalability Investigation	$3,120		$3,120
6	Recommendations	$7,475	$400	$7,875
Total		**$66,275**	**$600**	**$66,875**

This cost estimate is based on the following assumptions:

- Includes two in-person meetings.
- Interim task deliverables and final report deliverables.

penalty to the LFUCG thirty (30) days after written notice to Contractor of the unavailability and non-appropriation of public funds. It is expressly agreed that the LFUCG shall not activate this non-appropriation provision for its convenience or to circumvent the requirements of this contract, but only as an emergency fiscal measure during a substantial fiscal crisis, which affects generally its governmental operations.

In the event of a change in the LFUCG's statutory authority, mandate and mandated functions, by state and federal legislative or regulatory action, which adversely affects the LFUCG's authority to continue its obligations under this contract, then this contract shall automatically terminate without penalty to the LFUCG upon written notice to Contractor of such limitation or change in the LFUCG's legal authority.

Contention Process

Vendors who respond to this invitation have the right to file a notice of contention associated with the RFP process or to file a notice of appeal of the recommendation made by the Director of Central Purchasing resulting from this invitation.

Notice of contention with the RFP process must be filed within 3 business days of the bid/proposal opening by (1) sending a written notice, including sufficient documentation to support contention, to the Director of the Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his/her contention with the RFP process. After consulting with the Commissioner of Finance the Chief Administrative Officer and reviewing the documentation and/or hearing the vendor, the Director of Central Purchasing shall promptly respond in writing findings as to the compliance with RFP processes. If, based on this review, a RFP process irregularity is deemed to have occurred the Director of Central Purchasing will consult with the Commissioner of Finance, the Chief Administrative Officer and the Department of Law as to the appropriate remedy.

Notice of appeal of a RFP recommendation must be filed within 3 business days of the RFP recommendation by (1) sending a written notice, including sufficient documentation to support appeal, to the Director, Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his appeal. After reviewing the documentation and/or hearing the vendor and consulting with the Commissioner of Finance and the Chief Administrative Officer, the Director of Central Purchasing shall in writing, affirm or withdraw the recommendation.

AMERICAN RESCUE PLAN ACT

CERTIFICATION OF COMPLIANCE FOR AMERICAN RESCUE PLAN ACT EXPENDITURES

The Lexington-Fayette Urban County Government ("LFUCG") may classify the subject matter of this bid as an expenditure under the American Rescue Plan Act of 2021. Expenditures under the American Rescue Plan Act of 2021 require evidence of of the contractor's compliance with Federal law. Therefore, by the signature below of an authorized company representative, you certify that the information below is understood, agreed, and correct. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

The bidder agrees and understands that in addition to all conditions stated within the attached bid documents, the following conditions will also apply to any Agreement entered between bidder and LFUCG, if LFUCG classifies the subject matter of this bid as an expenditure under the Amerian Rescue

Plan Act. The bidder further certifies that it can and will comply with these conditions, if this bid is accepted and an Agreement is executed:

1. Any Agreement executed as a result of acceptance of this bid may be governed in accordance with 2 CFR Part 200 and all other applicable Federal law and regulations and guidance issued by the U.S. Department of the Treasury.

2. Pursuant to 24 CFR 85.43, any Agreement executed as a result of acceptance of this bid can be terminated if the contractor fails to comply with any term of the award. This Agreement may be terminated for convenience in accordance with 24 CFR 85.44 upon written notice by LFUCG. Either party may terminate this Agreement with thirty (30) days written notice to the other party, in which case the Agreement shall terminate on the thirtieth day. In the event of termination, the contractor shall be entitled to that portion of total compensation due under this Agreement as the services rendered bears to the services required. Either party may terminate this Agreement for good cause shown with forty-five (45) days written notice, which shall explain the party's cause for the termination. If the parties do not reach a settlement before the end of the 45 days, then the Agreement shall terminate on the forty-fifth day.

3. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

(1) Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
(6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in

whole or in part, and the contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

Provided, however, that in the event a contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

4. If fulfillment of the contract requires the contractor to employ mechanic's or laborers, the contractor further agrees that it can and will comply with the following:

(1) *Overtime requirements: No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such a workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such a workweek.*

(2) *Violation: liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.*

(3) *Withholding for unpaid wages and liquidated damages. LFUCG shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.*

(4) *Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower-tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.*

5. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

6. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency Regional Office.

7. The contractor shall include these requirements in numerial paragraphs 5 and 6 in each subcontract exceeding $100,000 financed in whole or in part with American Rescue Plan Act funding.

8. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

9. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency Regional Office.

10. The contractor shall include these requirements in numerical paragraphs 8 and 9 in each subcontract exceeding $100,000 financed in whole or in part with American Rescue Plan Act funds.

11. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

12. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency regional office.

13. The contractor shall include these requirements in numerical paragraphs 11 and 12 in each subcontract exceeding $100,000 financed in whole or in part with American Rescue Plan Act funds.

14. The contractor shall include this language in any subcontract it executes to fulfill the terms of this bid: "the sub-grantee, contractor, subcontractor, successor, transferee, and assignee shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, which are herein incorporated by reference and made a part of this contract (or agreement). Title VI also includes protection to persons with 'Limited English Proficiency' in any program or activity receiving federal financial assistance, 42 U.S.C. § 2000d et seq., as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, and herein incorporated by reference and made a part of this contract or agreement."

15. Contractors who apply or bid for an award of $100,000 or more shall file the required certification that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency. *Each tier certifies to the tier above that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier, up to the recipient. The required certification is included here:*

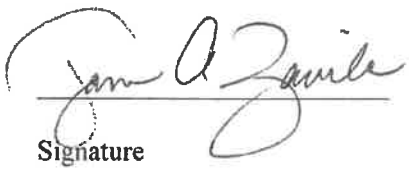
a. The undersigned certifies, to the best of his or her knowledge and belief, that:
   (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal

grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

b. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.



Signature

8/9/2022

Date

SELECTION CRITERIA:

1. Cost to complete the study. (30%)
2. Specialized experience and technical competence of the person or firm (including a joint venture or association) with the type of service required. (25%)
3. Capacity of the person or firm to perform the work. (10%)
4. Past record and performance on contracts with the LFUCG or other governmental agencies and private industry with respect to such factors as control of cost, quality of work and ability to meet schedules. (10%)
5. Proposed approach to completing the work. (25%)

Proposals shall contain the appropriate information necessary to evaluate based on these criteria. A committee composed of government employees as well as representatives of relevant user groups will evaluate the proposals.

Questions shall be submitted via IonWave at: https://lexingtonky.ionwave.net

AFFIDAVIT

Comes the Affiant, GT Environmental, Inc., and after being first duly sworn, states under penalty of perjury as follows:

1. His/her name is Jamie Zawila and he/she is the individual submitting the proposal or is the authorized representative of GT Environmental Inc., the entity submitting the proposal (hereinafter referred to as "Proposer").

2. Proposer will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.

3. Proposer will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.

4. Proposer has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.

5. Proposer has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of a contract to the Proposer will not violate any provision of the campaign finance laws of the Commonwealth.

6. Proposer has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as "Ethics Act."

Continued on next page

7. Proposer acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Further, Affiant sayeth naught.

Jamie Zawila

STATE OF Ohio

COUNTY OF Franklin

The foregoing instrument was subscribed, sworn to and acknowledged before me by Jamie Zawila on this the 9th day of August, 2022

My Commission expires: Oct. 24, 2023

NOTARY PUBLIC, STATE AT LARGE

NOTARY PUBLIC STATE OF OHIO

TIFFANY MILLER
Notary Public, State of Ohio
My Comm. Expires Oct. 24, 2023

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped and aged persons.

James A Zavala

Signature

GT Environmental, Inc.

Name of Business

WORKFORCE ANALYSIS FORM

Name of Organization: GT Environmental, Inc. and Coker Composting & Consulting

Categories	Total	White (Not Hispanic or Latino)		Hispanic or Latino		Black or African-American (Not Hispanic or Latino		Native Hawaiian and Other Pacific Islander (Not Hispanic or Latino		Asian (Not Hispanic or Latino		American Indian or Alaskan Native (not Hispanic or Latino		Two or more races (Not Hispanic or Latino		Total	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Administrators			2														
Professionals		6	3														
Superintendents																	
Supervisors																	
Foremen																	
Technicians																	
Protective																	
Para-																	
Office/Clerical																	
Skilled Craft																	
Service/Maintena																	
Total:		6	5														

Prepared by: Tom A Zawila **Date:** 8/9/2022

(Name and Title)

Revised 2015-Dec-15

Firm Submitting Proposal: GT Environmental, Inc.

Complete Address: 2400 Corporate Exchange Dr. Suite 150, Columbus OH 43231
Street City Zip

Contact Name: Jamie Zawila Title: Principal Consultant

Telephone Number: 614-794-3570 Fax Number: 614-899-9255

Email address: Jzawila@gtenvironmental.com

Lexington-Fayette Urban County Government
MWDBE PARTICIPATION GOALS

A. GENERAL

1) The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE), Woman-Owned (WBE), Disadvantaged (DBE) Business Enterprises and Veteran-Owned Small Businesses (VOSB) as subcontractors or suppliers in their bids.

2) Toward that end, the LFUCG has established 10% of total procurement costs as a Goal for participation of Minority-Owned, Woman-Owned and Disadvantaged Businesses on this contract.

3) **It is therefore a request of each Bidder to include in its bid, the same goal (10%) for MWDBE participation and other requirements as outlined in this section.**

4) The LFUCG has also established a 3% of total procurement costs as a Goal for participation for of Veteran-Owned Businesses.

5) **It is therefore a request of each Bidder to include in its bid, the same goal (3%) for Veteran-Owned participation and other requirements as outlined in this section.**

B. PROCEDURES

1) The successful bidder will be required to report to the LFUCG, the dollar amounts of all payments submitted to Minority-Owned, Woman-Owned or Veteran-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)

2) Replacement of a Minority-Owned, Woman-Owned or Veteran-Owned subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor / supplier with another MWDBE Firm; this is subject to approval by the LFUCG. (See LFUCG MWDBE Substitution Form)

3) For assistance in identifying qualified, certified businesses to solicit for potential contracting opportunities, bidders may contact:

    a) The Lexington-Fayette Urban County Government, Division of Central Purchasing (859-258-3320)

4) The LFUCG will make every effort to notify interested MWDBE and Veteran-Owned subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid date, and all other pertinent information regarding the project.

C. DEFINITIONS

1) A Minority-Owned Business Enterprise (MBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by persons of African American, Hispanic, Asian, Pacific Islander, American Indian or Alaskan Native Heritage.

2) A Woman-Owned Business Enterprise (WBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by one or more women.

Not Applicable

LFUCG MWDBE PARTICIPATION FORM
Bid/RFP/Quote Reference # 38-2022

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWDBE Company, Name, Address, Phone, Email	MBE WBE or DBE	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1.				
2.				
3.				
4.				

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

GT Environmental, Inc
Company

8/9/2022
Date

Jamie Zawila
Company Representative

Principal Consultant
Title

Not Applicable

LFUCG MWDBE SUBSTITUTION FORM
Bid/RFP/Quote Reference # 38-2022

The substituted MWDBE and/or veteran subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project.

SUBSTITUTED MWDBE Company Name, Address, Phone, Email	MWDBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1.					
2.					
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

GT Environmental, Inc
Company

8/9/2022
Date

Jamie Zawila
Company Representative

Principal Consultant
Title

Not Applicable

MWDBE QUOTE SUMMARY FORM
Bid/RFP/Quote Reference # 38-2022

The undersigned acknowledges that the minority and/or veteran subcontractors listed on this form did submit a quote to participate on this project. Failure to submit this form may cause rejection of the bid.

Company Name	Contact Person
Address/Phone/Email	Bid Package / Bid Date

MWDBE Company Addres	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event etc)	Total dollars $$ Do Not Leave Blank (Attach Documentation)	MBE * AA HA AS NA Female	Veteran

(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

GT Environmental, Inc.
Company

Jamie Zawila
Company Representative

8/9/2022
Date

Principal Consultant
Title

Not Applicable

LFUCG SUBCONTRACTOR MONTHLY PAYMENT REPORT

The LFUCG has a 10% goal plan adopted by city council to increase the participation of minority and women owned businesses in the procurement process. The LFUCG also has a 3% goal plan adopted by cited council to increase the participation of veteran owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MWDBE and Veteran contractors on a monthly basis. By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentation may result in termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims. Please submit this form monthly to the Division of Central Purchasing/ 200 East Main Street / Room 338 / Lexington, KY 40507.

Bid/RFP/Quote # 38-2022

Total Contract Amount Awarded to Prime Contractor for this Project _____

Project Name/ Contract #	**Work Period/ From:** **To:**
Company Name:	**Address:**
Federal Tax ID:	**Contact Person:**

Subcontractor Vendor ID (name, address, phone, email	Description of Work	Total Subcontract Amount	% of Total Contract Awarded to Prime for this Project	Total Amount Paid for this Period	Purchase Order number for subcontractor work (please attach PO)	Scheduled Project Start Date	Scheduled Project End Date

By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

GT Environmental, Inc.
Company

8/9/2022
Date

Jamie Zawila
Company Representative

Principal Consultant
Title

LFUCG STATEMENT OF GOOD FAITH EFFORTS
Bid/RFP/Quote # 38-2022

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE and Veteran-Owned business enterprises on the project and can supply the appropriate documentation.

_____ Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.

_____ Included documentation of advertising in the above publications with the bidders good faith efforts package

_____ Attended LFUCG Central Purchasing Economic Inclusion Outreach event

_____ Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned Businesses of subcontracting opportunities

_____ Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses

__X__ Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).

_____ Contacted organizations that work with MWDBE companies for assistance in finding certified MWBDE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

_____Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

_____ Followed up initial solicitations by contacting MWDBEs and Veteran-Owned businesses to determine their level of interest.

_____ Provided the interested MWBDE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

__X__ Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items

into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce

_____ Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

_____ Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

_____ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

_____ Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

X ___Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

_____ Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE **and Veteran participation.**

NOTE: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to approval by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

GT Environmental, Inc.	**Jamie Zawila**
Company	**Company Representative**
8/9/2022	**Principal Consultant**
Date	**Title**

Good Faith Effort Documentation

GT Environmental, Inc. is a 50/50 owned company with one of the partners being a woman. The Project Team includes Coker Consulting who included a women-owned business, BioCycle, in the Project Team. However, BioCycle is not a certified woman owned business.

Additionally, GT reached out to obtain a list of MWDBE and outreached via phone calls to request expertise and assistance for this project. Documentation is included on the following page.

Tiffany Miller

From: Sherita Miller <smiller@lexingtonky.gov>
Sent: Thursday, July 28, 2022 2:46 PM
To: Tiffany Miller
Subject: RE: LFUCG Certified MWDBE's
Attachments: LFUCG Certified List_June 2022_.xlsx

Good afternoon Tiffany,

Attached is a copy of LFUCG' certified list of minority, women and veteran owned businesses. This is an overall list of businesses with various specialties.

Thanks, Sherita

Sherita Miller, MPA, CPSD
Minority Business Enterprise Liaison
Central Purchasing

859.258.3323 office
lexingtonky.gov

LEXINGTON

From: Tiffany Miller <tmiller@gtenvironmental.com>
Sent: Thursday, July 28, 2022 2:23 PM
To: Sherita Miller <smiller@lexingtonky.gov>
Subject: LFUCG Certified MWDBE's

Hello,

We are searching for MWBE's in the engineering, composting, recycling, or waste management areas of expertise. We would appreciate it if you could send us a list of businesses that work in those disciplines.

Thank you,

Tiffany Miller
Office Manager, GT Environmental, Inc.
614-794-3570 Ext 110 | tmiller@gtenvironmental.com
www.gtenvironmental.com
2400 Corporate Exchange Dr., Suite 150, Columbus, OH 43231

be signed by a duly authorized officer, agent or employee of the Respondent.

16. Governing Law: This Contract shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky. In the event of any proceedings regarding this Contract, the Parties agree that the venue shall be the Fayette County Circuit Court or the U.S. District Court for the Eastern District of Kentucky, Lexington Division. All parties expressly consent to personal jurisdiction and venue in such Court for the limited and sole purpose of proceedings relating to this Contract or any rights or obligations arising thereunder. Service of process may be accomplished by following the procedures prescribed by law.

17. Ability to Meet Obligations: Respondent affirmatively states that there are no actions, suits or proceedings of any kind pending against Respondent or, to the knowledge of the Respondent, threatened against the Respondent before or by any court, governmental body or agency or other tribunal or authority which would, if adversely determined, have a materially adverse effect on the authority or ability of Respondent to perform its obligations under this Contract, or which question the legality, validity or enforceability hereof or thereof.

18. Contractor understands and agrees that its employees, agents, or subcontractors are not employees of LFUCG for any purpose whatsoever. Contractor is an independent contractor at all times during the performance of the services specified.

19. If any term or provision of this Contract shall be found to be illegal or unenforceable, the remainder of the contract shall remain in full force and such term or provision shall be deemed stricken.

20. Contractor [or Vendor or Vendor's Employees] will not appropriate or make use of the Lexington-Fayette Urban County Government (LFUCG) name or any of its trade or service marks or property (including but not limited to any logo or seal), in any promotion, endorsement, advertisement, testimonial or similar use without the prior written consent of the government. If such consent is granted LFUCG reserves the unilateral right, in its sole discretion, to immediately terminate and revoke such use for any reason whatsoever. Contractor agrees that it shall cease and desist from any unauthorized use immediately upon being notified by LFUCG.

Signature

8/9/2022
Date

Supplier Information

Company Name: GT Environmental, Inc

Contact Name: Jamie Zawila

Address: 2400 Corporate Exchange Drive
Suite 150
Columbus, OH 43231

Phone: 614-794-3570 Ext. 115

Fax: 614-899-9255

Email: Jzawila@gtenvironmental.com

Supplier Notes None

ONLY ONLINE BIDS WILL BE ACCEPTED! By submitting your response, you certify that you are authorized to represent and bind your company and that you agree to all bid terms and conditions as stated in the attached bid/RFP/RFQ/Quote/Auction documents.

JAMIE A. ZAWILA
Print Name

Signature