Request For Proposals
North Carolina Food Recovery and Organics Recycling Infrastructure Assessment

Deadline: January 13th, 2027 – 5:00 p.m. EST

Contact Information

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I. Introduction

North Carolina Department of Environmental Quality (NCDEQ) has been awarded grant funding through the Environmental Protection Agency (EPA) Solid Waste Infrastructure for Recycling (SWIFR) program to conduct long-term planning and data collection. Projects are expected to facilitate progress toward the National Recycling Goal (increase the national recycling rate to 50% by 2030) and the Food Loss and Waste Reduction Goal (reduce food waste by 50% by 2030).

While NCDEQ has a robust dataset of solid waste and recycling data from local governments and annual reports from permitted organics recycling facilities, further details are lacking from the composting industry. Further, NCDEQ staff does not have access to data from the state's food recovery network and school systems. NCDEQ proposes to conduct a North Carolina Food Recovery and Organics Recycling Infrastructure Assessment (Study) to better understand the state's food recovery, food waste diversion, and organics recycling infrastructure including the current landscape, operational capacity, economic contribution, infrastructure gaps, and opportunities for growth.

Collecting this information will facilitate a more comprehensive statewide planning process to set informed and strategic goals to reduce wasted food, recover valuable resources, and return materials back into economic use.

Applicants should carefully read this entire RFP prior to submitting a proposal.

Topics: sustainable management of food, food recovery, wasted food, organics recycling, composting, anaerobic digestion.

II. Who Is Eligible?

Applicants must be a North Carolina college or university capable of conducting the necessary research and/or subcontracting university partners, consultants, or other experts for areas in which they lack capability. Applicants must be capable of producing a comprehensive report(s) detailing the findings of the study.

III. How to Submit a Proposal

One electronic copy of the proposal must be submitted to Christine Wittmeier at christine.wittmeier@deq.nc.gov as an attachment via email. Please submit electronic versions as Microsoft Word (preferred) or Adobe (PDF) attachments. Please refrain from using shareable links (e.g., Google Docs, Dropbox) to send documents.

Only one proposal per eligible entity will be accepted.

Deadline for Proposals:

Proposals must be received by 5:00 pm EST on Wednesday, January 13, 2027.

Any proposals received after the deadline will NOT be considered. Receipt of all proposals will be acknowledged by email. It is the responsibility of anyone submitting a proposal to contact DEACS if they do not receive confirmation. If you do not receive confirmation, contact Christine Wittmeier at christine.wittmeier@deq.nc.gov or 919-707-8121 as soon as possible.

IV. How Are Proposals Evaluated?

A selection committee will use the pre-established criteria below to rank proposals and make award decisions.

Evaluation Criteria	Total
Preliminary Study Design and Scope of Work	40
Experience/Area of Expertise	35
Price Proposals	15
Proposed Timeline	10
Total	**100**

Expertise needed: Knowledge and experience in food systems, with a particular emphasis on food recovery and organics recycling. Experience working with or gathering data from stakeholders, ability to analyze systems and recycling data, ability to conduct an economic impact or market analysis, and expertise to recommend best management practices and strategies for organic and food waste recovery for North Carolina.

The Study will focus on three (3) primary research areas as defined below. Ideally one proposal will be awarded to address all three research areas; however, the Agency reserves the right to separate the awarding of individual research areas to different institutions.

V. If Selected for Funding

Respondents should provide separate scopes, deliverables, schedules, and costs for each research area listed below. Researchers may propose modifications or additional deliverables where appropriate.

If an applicant is chosen to conduct the Study, DEACS will notify the applicant with a formal offer by email. If accepted, NCDEQ will prepare a Task Order or Memorandum of Understanding between the Department and the applicant. DEACS may work with the

applicant to refine the initially submitted proposal before entering into an agreement. Any changes to initial proposals must be agreed upon by both parties and the resulting final proposal will become an attachment to the agreement. Ideally one proposal will be awarded to address all three research areas; however, the Agency reserves the right to separate the awarding of individual research areas to different institutions.

VI. Project Scope

The Study will comprise of three research areas:

1. **Food Recovery Analysis:** characterize and quantify the flow of recovered edible food through North Carolina's seven food banks and their partner-agency networks including logistical factors, capacity, and economic impact.
2. **Organics Recycling Analysis:** evaluate North Carolina's organics recycling industry including economic contribution, processing capacity, food waste acceptance, contamination, and end markets.
3. **K-12 School Food Waste Analysis:** evaluate the amount of food available for recovery, the number of current food recovery and composting programs, and barriers to expanding recovery and landfill diversion in the North Carolina K-12 school system including public, private, and charter schools.

Please review Appendix A and B for Research Questions and Definitions.

VII. Anticipated Timeline and Deliverables

Timeline:

Item	Anticipated Date
Proposals Due	January 13, 2027
Research Partner Selected	Mid-February
Task Order or MOU signed	March 2027
Work on project begins	April 2027
Regular meetings (at least monthly) and quarterly progress reports will be required throughout the project	April 2027 - June 2029
Deliverables Due	June 2029

Deliverables: Raw data collected, report(s), summarizing data, written summaries addressing above research questions, and recommendations for making progress in source reduction and food waste diversion activities. Drafts of all reports and written summaries should be provided to NCDEQ for review and comment before finalizing. Final

deliverables must comply with the Americans with Disabilities Act (ADA) Title II digital accessibility requirements for state and local governments.

Planned use of results: Reports will be used by NCDEQ internally to inform programmatic decisions and shared externally on the NCDEQ website, in addition to sharing with external partners including local governments, recycling businesses, industry organizations, and other interested parties.

Funding: A maximum of $250,000 in funding is available from the EPA Solid Waste Infrastructure for Recycling Grant. NCDEQ is the recipient of this grant and would disburse funds for the work performed.

VIII. Proposal Requirements

Proposals shall include the following information. NCDEQ reserves the right to negotiate a final scope based on selected tasks.

1. **Research Scope** – Indicate which research area(s) will be analyzed.
2. **University or College Qualifications** – Describe the university or college's experience with the research areas and ability to conduct research.
3. **Relevant Project Experience** – Providing a minimum of two relevant examples but no more than four.
4. **Proposed Project Team -** Should include resumes or short bios**,** relevant credentials, education, and work experiences of university or college research team members.
5. **Technical Approach –** Explain the proposed approach for answering each research question (see Appendix A). Please note, due to the Paperwork Reduction Act, identical surveys of 10 or more participants are not allowed for this Study, however, interviews are an allowable activity.
6. **Timeline** – Include a proposed timeline including task order or MOU execution, major project milestones, and a date to submit the draft report(s) to DEACS for review. Please give at least 45 days to review any draft report prior to the end of the agreement term. This enables DEACS staff sufficient time to review and make comments. NCDEQ requests final deliverables to be complete no later than June 30, 2029.
7. **Deliverables –** Include proposed deliverables to satisfy the requirements and if applicable, may include ones not specified in the RFP.
8. **Cost Proposal** – For each Study research area, please complete the pricing associated to conduct the analysis.

8.1 Food Recovery Analysis:

Category	Cost Estimate
Supplies	$
Labor	$
Sub-Total	$

8.2 Organics Recycling Analysis:

Category	Cost Estimate
Supplies	$
Labor	$
Sub-Total	$

8.3 K-12 School Food Waste Analysis:

Category	Cost Estimate
Supplies	$
Labor	$
Sub-Total	$

Complete Proposal Bid (Total of All Applicable Research Areas 8.1 + 8.2 + 8.3):

Total	**$**

Appendix A: Research Questions

Research Area 1: Food Recovery Analysis:

1. **Donations and Distribution**
    a. How many tons of recovered food are donated to North Carolina's seven food banks annually, and how many meals does the recovered food equate to (using the Feeding America conversion factor that 1.2 pounds of food equals one meal)? Who are the retail, distributor, foodservice, manufacturing, and farm donors of recovered food and where are those donors located?
    b. How many tons of recovered food are distributed annually through food banks to partner agencies, and which partner agencies participate in the network?
    c. What proportion of food distributed through food banks is recovered versus purchased? Has that volume changed over the past five years? If any changes occurred, what are the potential causes (e.g., efficiency, depackaging)?
2. **Operational Capacity**
    a. What percentage of operations are dedicated to recovery of surplus food?
    b. What is the current operational capacity of North Carolina's food banks and partner agencies for recovered food (e.g., dry and cold storage, transportation, staff, volunteers)?
    c. What are the projected capacity needs for recovered food over the next 10 years?
    d. What additional capacity or infrastructure is needed to increase the amount of recovered food that can be accepted and distributed at food banks and partner agencies?
3. **Food Quality and Handling**
    a. What logistical challenges affect the transportation of recovered food from retailers and other donors to food banks and from food banks to partner agencies?
    b. What transportation, storage, refrigeration, staffing, or other operational constraints limit the amount of recovered food that can be handled?
    c. What geographic factors, including distance to donors of recovered food or partner agencies, affect food recovery?
    d. How do food banks use date labels to sort donations? Do local ordinances affect their process?
4. **Food Waste and Disposal**
    a. What percentage and amount of food received by food banks and food pantries is unsuitable for human consumption or distribution? How many meals does the amount of inedible food equate to (using the Feeding America conversion factor that 1.2 pounds of food equals one meal)?

b. How much (in tons) of this organic material is currently landfilled? How much is diverted to other pathways (e.g., upcycling, animal feed, depackaging, composting, anaerobic digestion)? Where do food banks send inedible material?
c. How many food banks currently compost food waste on-site? For those that do not, how many are interested and have a viable site to do so?
d. What are the barriers and opportunities for increasing food waste diversion among food banks and partner agencies?
e. How much do food banks currently spend on organics diversion and/or disposal at a landfill, organics recycling facility, or other pathway?

5. **Economics**
    a. What is the estimated economic impact of food banks and their partner agencies on local and regional economies?
    b. What is the current economic contribution of North Carolina's food banks and partner agencies?
    c. How many jobs are supported by the industry? What are the wages associated with the industry?
    d. What annual sales and tax revenue is generated by the state's food banks and partner agencies?
    e. How much capital investment (e.g., equipment) has been made in North Carolina food recovery infrastructure over the last 10 years?
    f. How much money has been saved in the last 10 years due to the recovery of food (e.g., cost avoidance through reduced disposal costs)?
    g. What is the monetary value of the food recovered by food banks annually?

<u>Research Area 2: Organics Recycling Analysis</u>:

1. **Hauler network**
    a. How many and which haulers do NC composters work with? Classify these haulers by size, including small businesses to national corporations.
    b. How far does each hauler travel to deliver collected organic material to a composting facility? To an anaerobic digestion facility?
2. **Customer Markets**
    a. Which sectors (e.g., farm, retail, food service, manufacturing, residential) are currently served by organics collection and processing infrastructure?
3. **Processing Capacity**
    a. What is the current total processing capacity at permitted compost and anaerobic digestion facilities in North Carolina?
    b. How much of that permitted capacity is currently utilized in annual operations?
    c. How much material is being processed at exempted facilities?

d. How much additional capacity could existing facilities accommodate without major capital investment (e.g., shift changes, timing of receiving material)?
e. How many established composting and anaerobic digestion facilities have the physical and operational ability to expand?
f. What are the primary barriers to expansion, including land availability, permitting, financing, feedstock availability, transportation, labor, equipment, and markets for finished compost?
g. What is the current processing capacity for food waste at permitted compost and anaerobic digestion facilities in North Carolina?
h. Where are the largest geographic gaps between food waste generation and processing facilities?

4. **Food Waste Capacity**
    a. Why do facilities permitted to accept food waste choose not to accept it?
    b. What operational, regulatory, financial, infrastructure, contamination, or market barriers limit acceptance of food waste?
    c. What changes or investments would be necessary for facilities to begin accepting additional food waste feedstocks?
5. **Contamination rate**
    a. What is the contamination rate at each of North Carolina's composting and anaerobic digestion facilities? What is the average contamination rate at North Carolina composting and anaerobic digestion facilities?
    b. How does contamination vary by feedstock source and collection model?
    c. What contaminants (physical and chemical) cause the greatest operational problems at NC organics recycling facilities?
    d. What are the direct and indirect costs of contamination, including labor, equipment, disposal/tipping fees, lost product, and reduced processing capacity?
    e. What strategies are facilities currently using to reduce contamination? Which approaches have demonstrated success?
6. **Economics**
    a. What is the estimated economic impact of composting and anaerobic digestion facilities on local and regional economies?
    b. What is the current economic contribution of North Carolina's composting and anaerobic digestion industry?
    c. How many jobs are supported by the industry and how does this compare to what is reported in the Compost Facility Annual Reports? What are the wages associated with the industry?
    d. What annual sales and tax revenue is generated by the state's composting and anaerobic industries?

e. How much capital investment (e.g., equipment) has been made in North Carolina composting and anaerobic digestion infrastructure over the last 10 years?
f. How much money has been saved in the last 10 years due to the use of compost (e.g., cost avoidance through reduced fertilizer use, irrigation)?

7. **End Markets**
    a. What is the total quantity of finished compost/blends produced in North Carolina from permitted and exempted facilities and how does this compare to tonnage reported in the Compost Facility Annual Reports?
    b. What are the current end markets for finished compost/blends produced in North Carolina? Where, outside of the state, are North Carolina-generated compost/blends sold? What percentage sold is only compost vs blends?
    c. What are the end markets for digestate produced at anaerobic digestion facilities?
    d. How many vermiculture operations are there in North Carolina? What is the volume of worm castings sold in North Carolina and/or outside of the state?
    e. How many Black Solider Fly Larvae (BSLF) operations are in the state? What is the volume of frass and other products sold in North Carolina and/or outside of the state?
    f. What volumes and/or tonnage of compost are sold or distributed into each market?
    g. What potential markets (e.g., sectors not currently using North Carolina compost that could, customers outside of each facility's immediate geographic area) could absorb additional compost production?
    h. What is the current and projected demand for finished compost in North Carolina and the broader Southeast?
    i. What barriers prevent compost producers from accessing markets (e.g., contamination, cost, distance to consumers, consumer education)?
    j. How could an increase in food waste processing affect the volume, quality, and marketability of finished compost (e.g., contamination)? Would additional products oversaturate the market and lead to decreased value?

Research Area 3: K–12 School Food Waste Analysis:

1. How much surplus food is generated annually during breakfast and lunch periods by public, private, and charter North Carolina K–12 schools?
2. How much K-12 school breakfast and lunch waste consists of:
    a. Edible food suitable for rescue?
    b. Inedible food scraps?
    c. Non-recyclable paper and other compostable materials?

3. How much edible food is currently recovered for human consumption? How many food recovery programs exist in North Carolina schools?
4. How much food waste is currently composted from schools?
5. What collection, transportation, infrastructure, staffing, and funding barriers limit recovery?
6. What is the potential volume and weight available for food rescue or composting?

Appendix B: Definitions

- **Anaerobic Digestion Facility** – a facility that processes food waste from outside sources using a method without oxygen that produces biogas.
- **Economic impact** – jobs, wages, capital expenditures, product sales and tax revenue, equipment purchases, and cost avoidance.
- **Exempted facility** – small food waste compost facility that is exempted from acquiring a permit to operate if conditions outlined in NC Compost Rules are met.
- **Operational capacity** – maximum current output of a facility under normal working conditions, factoring in constraints such as maintenance, staffing capacity, and equipment downtime.
- **Permitted capacity** – maximum allowable limit of material that can be processed onsite determined by the regulatory authority.
- **Recovered food** – Edible food from donors that would have otherwise been landfilled/disposed of.
- **Surplus food (at schools)** - uneaten or unused food generated at North Carolina schools during breakfast and lunch periods (i.e., food purchased and served by the school), including edible and inedible parts.
- **Upcycling** - ingredients that otherwise would not have gone to human consumption are procured and produced using verifiable supply chains and have a positive impact on the environment to create a value-added product.

  The definitions listed above are not exhaustive and NCDEQ staff will work with the selected applicant(s) to clarify the scope of work throughout the task order or MOU period.

Appendix C: Data

The following data is available from NCDEQ:

- Annual data from every local government in the state about solid waste management and recycling programs, including the amount and types of materials recycled, via Local Government Annual Reports.

- Annual data from permitted solid waste facilities about the amounts of materials managed, via Solid Waste Facility Annual Reports. Permitted facilities include landfills, solid waste transfer stations, and compost facilities.
- The above data is summarized and submitted to the NC General Assembly annually in the Consolidated Waste Management Report.
- Information is also available about the locations of organics recycling facilities throughout the state, via the NCDEQ Permitted Compost Facilities Map.

Appendix D: Resources

- National Strategy for Reducing Food Loss and Waste and Recycling Organics
- NCDEQ Waste Characterization Report
- State Solid Waste and Materials Management Plan
- NC Climate Action Plan
- NC Local Food Infrastructure Inventory Map