



# **REQUEST FOR QUALIFICATIONS**

**(#24-046)**

**PLANNING & ENGINEERING SERVICES for**



**BEYOND THE SOUTH WAKE LANDFILL STUDY**

May 17, 2024

**REQUEST FOR QUALIFICATIONS (RFQ #24-046):  
PLANNING & ENGINEERING SERVICES FOR  
BEYOND THE SOUTH WAKE LANDFILL STUDY**

April 1, 2024

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## **I. Study**

Planning and Engineering Services for Wake County's Beyond the South Wake Landfill

## **II. Summary of Study**

What will Wake County do when the South Wake Landfill (SWLF) is filled and permanently closed shortly after 2040 (or thereabout)? Is there land for the County to build another landfill? Do we simply "ship" our waste out of the county to a regional landfill somewhere else in NC? Or do we look at an Waste to Energy (WTE) alternative to landfilling or a host of other "emerging technologies"?

These are important questions that Wake County continues to evaluate. This is not a new topic for Wake County as some similar questions were asked when the County made the decision in the late '90's and early 2000's regarding building the South Wake Landfill. Ultimately the decision at that time was to proceed with building a landfill due to cost considerations and availability of land to build a landfill. The discussion is much different now in that the County doesn't have available land to build a new landfill.

## **III. Request for Qualifications**

Wake County Government hereby requests qualifications from engineering/planning consultant firms for providing project feasibility and scoping associated with assisting Wake County in evaluating what type of disposal system(s) the County should consider as the SWLF nears capacity over the next 20 ± years. Anticipated services include the following at a minimum:

- Evaluating solid waste management and disposal options
- Developing and implementing public communication and regulatory strategies
- Exploring regional partnerships for waste management and disposal
- Evaluating energy markets
- Identifying a preferred, long-term solid waste management and disposal option and developing local and regional partnerships.

## A. Background of the South Wake Landfill

Wake County currently owns and operates the SWLF in southern Wake County. Planning for the SWLF began in the 1980's with the purchase of land for the future facility. Ultimately, for a variety of reasons, the construction of the landfill was delayed until 2007.

Prior to starting construction, the County worked on two key elements related to the SWLF. First, the development of an Interlocal Agreement (ILA) with all of the municipalities in Wake County was considered essential for the success of the landfill. Effectively the ILA committed the County to providing the SWLF specifically for municipality use. Further, the municipalities committed to hauling or directing their contract hauler to bring all MSW they collected to the SWLF. In return the County shares a portion of the landfill tip fees in the form of rebates with each participating municipality. Ultimately all municipalities joined except Holly Springs. Secondly, the County pursued a long-term contract for the purpose of building, operating and maintaining the landfill. Through an extensive, multi-year procurement process, Waste Industries (now GFL Environmental) was selected to provide these services to Wake County. A 25-year contract that started on February 7, 2008, when the SWLF opened, is in place for the purpose of designing, building, operating and maintaining the SWLF, with five-year automatic renewal options thereafter.

The SWLF was initially designed by CDM (now CDMSmith) on behalf of Wake County. Design drawings go back as far as 1992. At that time the landfill was planned as a five (5) phase 180 + acre facility with significant buffers per NCDENR landfill rules and regulations (G.S. 130A-294). Ultimately Waste Industries (now GFL Environmental) and their local engineering firm, Smith+Gardner, has broken the phases into smaller segments for construction and operational purposes. The total size of the landfill has been reduced to 179 acres which reflects slightly less existing stream modifications than the original plans. SWLF phasing and future capacity is shown below:

**Table 1 – SWLF Phasing and Capacity**

<b>Landfill Unit</b>	<b>Area (Acres)</b>	<b>Gross Capacity (Cubic Yards)</b>
<b>Phase 1</b>	47.4	4,731,465
<b>Phase 2</b>	45.9	6,447,522
<b>Phase 3</b>	18.4	5,435,797
<b>Phase 4</b>	37.6	8,413,726
<b>Phase 5</b>	30	6,046,702
<b>TOTAL</b>	179.3	31,075,212

The landfill has a capacity of approximately 31 million cubic yards (CY) of waste. Based on the design and the anticipated waste volumes during the 2000 to 2005 timeframe, the landfill was considered to be suited for a 25-year life (2008 to 2033). This was primarily due to an anticipated growth of waste in the range of 2.8% per year and a starting waste mass of approximately 450,000 tons per year. In addition, the contract requires GFL Environmental to provide a minimum density of 1,100 pounds per cubic yard. Annual waste volume, waste volume growth and landfill density all impact the potential life of the landfill significantly.

Based upon actual waste volumes and current density efforts, we are now anticipating that the SWLF will be available for use for approximately 40 years (2008 to 2048). There are numerous reasons that we are now projecting that the landfill will last many more years than the original design. First, since the initial full year of disposal in FY 2009, waste volumes declined through FY 2013 per the table below:

**Table 2 – SWLF Actual Annual Tonnages**

<b>Fiscal Year</b>	<b>Annual MSW (Tons)</b>	<b>Cumulative MSW (Tons)</b>	<b>Growth per Year (%)</b>
<b>2008</b>	95,471	95,471	-
<b>2009</b>	463,126	558,597	2008 not a full year
<b>2010</b>	439,069	997,666	-5.2%
<b>2011</b>	426,901	1,424,567	-2.8%
<b>2012</b>	414,156	1,838,723	-3.0%
<b>2013</b>	400,717	2,239,440	-3.2%
<b>2014</b>	406,711	2,646,151	1.5%
<b>2015</b>	418,545	3,064,696	2.9%
<b>2016</b>	436,632	3,501,328	4.3%
<b>2017</b>	442,659	3,943,987	1.4%
<b>2018</b>	463,683	4,407,670	4.7%
<b>2019</b>	506,577	4,914,247	9.3%
<b>2020</b>	529,870	5,444,116	4.6%
<b>2021</b>	556,635	6,000,751	5.1%
<b>2022</b>	545,071	6,545,822	-2.1%
<b>2023</b>	530,741	7,076,563	-2.6%

For FY 2014, the SWLF saw the first increase in waste volumes, but only in the order of 1.5%. There were several explanations for the decline in waste volumes between FY 2009 through FY 2013:

- Economy - During that time period the community, in fact the world, was experiencing the Great Recession. Effectively, if people are not buying commodities, they are also throwing away less, hence a significant reduction in the waste volumes at the SWLF.
- Recycling Markets and Right-sizing Containers - Between the opening of the SWLF in 2008 and 2014, all municipalities in Wake County converted to using larger collection containers for recycling services, effectively moving from the 18 ± gallon bins to 65 ± gallon or even 95 ± gallon recycling carts. In addition, all entities moved away from separating the various recyclable materials to commingling all recycling. This allowed the municipalities and the various contract haulers to be much more efficient in the collection of recyclables, but more importantly, allowed residents to consider recycling many more items that were previously going in the trash.
- Landfill Density - Through working with our landfill contractor, we have been able to obtain a much denser landfill than the contract requires. The density is measured on an annual basis through surveying and tonnage calculations as shown in the table below:

**Table 3 – SWLF Density**

<b>Fiscal Year</b>	<b>Cumulative In-Place MSW Density (lbs/CY)</b>
<b>2009</b>	945
<b>2010</b>	1,104
<b>2011</b>	1,158
<b>2012</b>	1,255
<b>2013</b>	1,296
<b>2014</b>	1,325
<b>2015</b>	1,374
<b>2016</b>	1,362
<b>2017</b>	1,363
<b>2018</b>	1,438
<b>2019</b>	1,417
<b>2020</b>	1,421
<b>2021</b>	1,420
<b>2022</b>	1,367
<b>2023</b>	1,382

By exceeding the contract required density of 1,100 lbs/CY, we have added at least 5 years onto the landfill design life, with lower than anticipated waste volumes due to the economy and better recycling making up an additional 10 years. It is also important to note that density has fluctuated since reaching a maximum of 1438 in 2018 due to new landfill phases and the

elimination of Posi-shell as a cover material in FY2021. As stated previously, we now anticipate the SWLF to last close to 40 years, in lieu of the original design life of 25 years.

## **B. Study Alternatives**

Development of a new municipal solid waste (MSW) landfill within Wake County is not expected to be a viable solution once the South Wake Landfill reaches capacity. Future solid waste management and disposal options available to the County may include disposal at an out-of-county landfill, development of a local or regional waste-to-energy facility (WTE), or possibly one or more emerging technologies.

Wake County has conducted previous evaluations of the WTE as the primary, next disposal option for the County and its municipal partners as part of their *2012 Solid Waste Management Plan* and *2020 Comprehensive Solid Waste Management Plan*. The evaluations included a summary of various waste conversion technologies, the MSW pre-treatment requirements associated with each technology, and the state of commercial development of waste conversion technologies. Traditional massburn combustion technology received focused evaluation. A detailed financial model was prepared in 2012 and updated in 2020, which included numerous assumptions and projections for the performance, cost, and revenues of an 1,800 tons per day (tpd) massburn WTE facility.

The selected consultant will further explore the technical and financial feasibility of long-term waste management and disposal options including confirming whether or not an additional MSW landfill in Wake County is viable, evaluating out-of-county landfill disposal and the development of a WTE facility, assist with public communication and outreach to receive stakeholder input, help Wake County identify potential local and regional partners, and establish a path forward for development of the preferred long-term disposal option. Based on the results of the study, the selected engineering consultant may be engaged to support the County in future phases that, depending on the outcome of the study, may include preliminary design, permitting, procurement, and/or serving as an owner representative.

## **IV. Consultant Qualifications**

The engineering/planning consultant firm and proposed staff to be assigned responsibilities on this Study must be highly qualified and experienced in all phases of the planning and design of similar facilities. In addition, the consultant firm and proposed staff must have extensive experience in all aspects of solid waste planning and engineering on similar projects, extensive knowledge of the regulations governing the design, bidding, and construction of such facilities, and a proven capability to effectively and efficiently manage projects of similar complexity to produce reports, studies, or designs with and meeting the needs and goals outlined by Wake County.

## **V. Scope of Work**

### **A. Evaluating solid waste management and disposal options.**

The consultant will build upon previous Wake County evaluations of long-term disposal options. Disposal options to be considered include but are not limited to (a) confirming viability (or lack thereof) of establishing a new MSW landfill in Wake County, (b) MSW hauling and disposal at one or more out-of-county landfills, (c) mass-burn WTE, and (d) other emerging and potentially viable MSW processing and disposal technologies. The consultant will initially identify and evaluate options based on technical and economic feasibility. Other evaluation criteria will be identified through facilitated discussion with Wake County, its municipal partners, and input from the community, and may include long-term environmental implications of each option, such as criteria pollutant and greenhouse gas (GHG) emissions, as well as sociodemographic impacts and the generation of renewable energy. The use of the municipal solid waste decision support tool (MSW DST) developed through collaboration between EPA, RTI, and NCSU should be considered for use to quantify the material and energy balance across the waste management (WM) infrastructure. The DST can be used to compare options for how solid waste is managed in Wake County considering different options that are protective of human health and the environment and meet the growing needs of the county to manage solid waste over the next decade. The consultant will be responsible for facilitating discussions between Wake County, its municipal partners, and other stakeholders to identify evaluation criteria.

### **B. Developing and implementing public communication and regulatory strategies**

Public perception and the degree of public acceptance is an important consideration of a long-term waste disposal strategy. Similarly, the regulatory landscape must be understood before advancing too far down a specific disposal pathway, especially if it involves new or emerging technology, or technology not current used in North Carolina. For this task consultant will:

- Work with Wake County to develop and implement a public outreach and communication strategy that is intended to:
  - Inform the public on the need for long-term solid waste disposal options.
  - Educate the public on options available (based on the results of Task A) and help clear up misconceptions about solid waste management and disposal options.
  - Solicit input from the public on criteria that are important to them in selection the next long-term disposal option.
  - Solicit input from the public on long-term options for waste management and disposal including hauling and disposal at an out-of-county landfill, development of a



local or regional WTE facility, and other potential emerging technologies if identified in Task A.

As part of this task, the consultant will also:

- Review and summarize state and federal regulations related to waste management and energy production.
- Identify major permits or approvals, and approach to permitting required for a WTE facility, or other emerging and promising technology, if identified in Task A.

### **C. Exploring regional partnerships for waste management and disposal**

Economy of scale can have a positive impact on overall project and program costs. Other neighboring communities may benefit from aligning with Wake County to collaborate in a regional waste disposal approach. The Consultant will assist in the exploration of regional partnerships, in part, through its knowledge and experience of the local regional solid waste management landscape. The consultant will:

- Support Wake County in identifying potential partners, stakeholders, and investors interested in waste-to-energy projects.
- Evaluate existing regional infrastructure, regulations, and market demand.
- Facilitate workshops with Wake County, the municipalities within the County, and potential regional partners to identify opportunities and challenges of implementing and operation a regional solution to waste management and disposal.

### **D. Evaluating energy markets**

The amount of revenue received from generating energy is a key criterion in determining whether Wake County and its potential partners should proceed with development of a WTE facility. A WTE facility can convert waste into electricity and is classified as a renewable energy source by the USEPA. For this task the consultant will:

- Investigate the local and regional energy markets in the Wake County region.
- Estimate the potential WTE facility capacity, efficiency, reliability, and energy output available for marketing.
- Identify potential buyers for the energy generated by the plant (e.g., utilities and/or industrial consumers).
- Explore co-generation opportunities (e.g., selling steam to nearby facilities).
- Estimate the potential revenue from energy generated on-site.
- Identify the status for classification of WTE as renewable energy by North Carolina.

## **E. Identifying a preferred, long-term solid waste management and disposal option and developing local and regional partnerships**

Consultant will prepare a report that synthesizes and summarizes the information and results of Tasks A through D. The report should include the following:

- A preliminary determination of partners, stakeholders, and potential investors (where appropriate) for implementing the next waste management and disposal option.
- An evaluation of existing infrastructure, regulations, and market demand needed to support the next management and disposal option.
- The governance alternatives for a regional approach to waste management and disposal.

## **VI. Study Schedule**

The duration of this initial phase of study is anticipated to be between 24 to 36 months.

## **VII. Proposal Format Requirements**

All proposals shall be submitted on 8½" x 11" paper, side bound with Table of Contents and reference tabs for key sections. The total submittal shall not exceed either fifty (50) double-sided or one hundred (100) single-sided pages with text, consecutively numbered (front/back covers, cover letter, Table of Contents and Tab pages are excluded from these totals). Submittals must include responses to each of the following:

### **A. Letter of Interest**

Letter of interest including information about the engineering/planning consultant's firm such as history/background, years of service, number of employees, number of locations, certifications, professional memberships, and other relevant information which the engineering consultant believes to be of importance.

### **B. Study Organization and Staffing of Design Team**

Provide the following:

1. Organization chart listing all assigned staff including job titles.

2. Detailed resumes of all assigned staff with list of completed projects and years of experience.
3. Description of responsibilities to be fulfilled by each assigned staff member.
4. Current workload of staff members.

### **C. Experience**

Provide summary of at least three (3) representative projects for which the engineering/planning consultant was responsible. Each of the project summaries shall include the following:

1. Description of facility, project or study including size, functions housed, original project budget, actual project cost, and year completed,
2. Description of services provided,
3. Summary of client's program along with key design/planning elements and how they were addressed,
4. List of staff assigned to the study, project, or facility,
5. Degree of involvement (prime or associate),
6. Associate firms involved and their assigned responsibilities,
7. Principal and associate staff involved along with their assigned responsibilities, and
8. References including names, addresses (including e-mail addresses) and telephone numbers.

### **D. Study Approach**

Provide the following at a minimum:

1. Describe your approach to the study to assure the Owner's requirements are satisfactorily addressed for the Study.
2. Describe the process by which your firm will develop alternative disposal solutions for the Study.
3. Describe any modeling or design technology that will be used by your firm and that of your associates.
4. Explain how your firm will prepare estimates of cost for various scenarios considered and control costs to assure the study budget is not exceeded.
5. Explain the management tools, techniques, and procedures your firm uses to maintain the study's schedule.
6. Describe your firm's approach to seeking public input for a study of this type.
7. Explain why you believe your firm is the most qualified firm to provide the requested services for this Study.

**E. Consultant Litigation, and Workload**

1. List any pending or settled lawsuits, mediation or arbitration cases in which the firm was involved during the past ten (10) years.
2. List current and proposed projects including man-hour estimates, scheduled completion dates, and assigned team members. Provide workload chart indicating monthly commitments of team members for next twelve months to eighteen months.

**VIII. Selection of Planning/Engineering Firms**

**A. Process**

Procedures similar to those followed by Wake County in the selection of design consultants will be followed. This will ensure that the planning/engineering firms are selected in a fair and uniform manner and have appropriate qualifications and experience.

A Selection Committee comprised of County staff and other associated agencies has been established. Upon receipt of proposals from respondents, Selection Committee members will review the proposals in detail and identify (“short list”) those firms that appear to be most qualified to provide services for the Study. Separate presentations and interview sessions will then be scheduled with the “short-listed” firms to permit the Selection Committee to further evaluate each firm’s qualifications. From these interviews, it is anticipated that the Selection Committee will select one (1) firm/team to perform the referenced work. Upon selection, the Solid Waste Division of the Environmental Services Department will then negotiate terms, conditions and fees of a professional services agreement with the selected firm. In the event negotiations of specific contract terms and conditions prove unsuccessful with a selected firm, the Selection Committee will select another firm with which to begin contract negotiations.

**B. Timeline**

The key activities and milestone dates for the selection process are listed below:

<u>Activity</u>	<u>Milestone Date</u>
Announce Request for Qualifications	May 17, 2024
Deadline for Respondent Questions	May 28, 2024
<b>Proposal Submission Deadline</b>	<b>June 20, 2024</b>
Selection Committee meeting to determine short list	Late June, 2024
Selection Committee presentation/interviews sessions	July, 2024
Announce Firm Selections	August, 2024

## **IX. Evaluation Criteria**

- A. The following criteria will be the basis on which firms will be selected for further consideration (percentage represents weighting of this evaluation criteria):
- 1) Appropriate qualifications and expertise of key professional staff in solid waste management consulting, engineering, and planning (16%).
  - 2) Experience and past performance of firm on similar studies in municipal solid waste management consulting, engineering, and planning (37%).
  - 3) Performance history, responsiveness of the firm and familiarity of its staff members with Wake County and other clients. Project Quality Control plan including recent experience with cost control, change orders, and maintaining design and construction schedules (26%).
  - 4) Record of successfully completed studies without major legal or technical problems (13%).
  - 5) Current workload (3%).
  - 6) Quality/Completeness of the Response to RFQ, and ultimately the interview (5%).

## **X. Submission of Proposals**

Seven (7) complete packages along with one (1) digital copy must be received at the following address by **4:00 p.m. on Thursday, June 20, 2024**.

County of Wake  
Solid Waste Division of Environmental Services  
336 Fayetteville Street, WCOB 7<sup>th</sup> Floor,  
Raleigh, North Carolina 27601  
Attention: Mr. John Roberson, Solid Waste Management Director

## **XI. Professional Services Agreement**

Professional services required to complete the proposed studies will be authorized through the County's standard form of Agreement for Professional Services. The terms of the Agreement will be a three-year period. Wake County will retain the option to renew at the end of the three-year term. Implementation of projects will be accomplished by amendment to the base Agreement.

## **XII. General Comments**

- A. Any cost incurred by respondents in preparing or submitting a Request for Qualifications for the Study shall be the respondents' sole responsibility.
- B. All responses, inquiries or correspondence relating to this Request for Qualifications will become the property of Wake County when received (subject to Section XIII – Confidentiality).
- C. Wake County has sole discretion and reserves the right to reject any and all responses received with respect to this Request for Qualifications and to cancel the process at any time prior to entering into a formal agreement. The County reserves the right to request additional information or clarification of information provided in the response without changing the terms of the Request for Qualifications.
- D. Please refer to the following website location for a copy of the Request for Qualifications and any other related information. If a question of general concern is asked by any firm, an addendum will be issued to include a copy of the written response.

<http://www.wakegov.com/finance/business/rfp/Pages/bids.aspx>

- D. Below is a list of electronic files that can be accessed on the following website (note that the WTE information is primarily in an Appendix of each of the documents):
  - [2012 Wake County Solid Waste Management Plan](#)
  - [2020 Wake County Comprehensive Solid Waste Management Plan](#)
- F. Respondents are advised to refrain from contact with Selection Committee members. Any specific questions regarding the Request for Qualifications should be directed to the Study Manager at the following addresses:

John Roberson, PE  
Solid Waste Management Director  
Wake County Government  
Solid Waste Division of Environmental Services  
Wake County Office Building, 7<sup>th</sup> Floor  
P.O. Box 550  
Raleigh, NC 27602  
TEL (919) 856-6365  
[john.roberson@wake.gov](mailto:john.roberson@wake.gov)

### **XIII CONFIDENTIALITY OF DOCUMENTS**

In general, documents that are submitted as part of the response to this Request for Qualifications will become public records, and will be subject to public disclosure. North Carolina General Statutes Section 132-1.2 and 66-152 provide a method for protecting some documents from public disclosure. If the engineering consultant firm follows the procedures prescribed by those statutes and designates a document “confidential” or “trade secret”, the County will withhold the document from public disclosure to the extent that it is entitled or required to do so by applicable law.

If the County determines that a document that the engineering consultant firm has designated “confidential” or “trade secret” is not entitled to protection from public disclosure, the County will provide notice of that determination to the contact person designated by the firm, in any reasonable manner that the County can provide such notice, at least five business days prior to its public disclosure of the document. If the firm does not designate anyone to receive such notice, or if, within five business days after the designated person receives such notice, the firm does not initiate judicial proceedings to protect the confidentiality of the document, the County will not have any obligation to withhold the document from public disclosure.

By submitting to the County a document that the engineering consultant firm designates as “confidential” or “trade secret”, the firm agrees that in the event a third party brings any action against the County or any of its officials or employees to obtain disclosure of the document the firm will indemnify and hold harmless the County and each organization’s affected officials and employees from all costs, including attorney’s fees incurred by or assessed against any defendant, of defending against such action. The firm also agrees that at the County’s request the firm will intervene in any such action and assume all responsibility for defending against it, and that the firm’s failure to do so will relieve the County of all further obligations to protect the confidentiality of the document.