

REQUEST FOR PROPOSAL

BIOSOLIDS MANAGEMENT AND OUTSIDE WASTE PROCESSING FACILITY FEASIBILITY STUDY

BID # 2022-21

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1. LEGAL NOTICE

**CITY OF WEST HAVEN
REQUEST FOR PROPOSAL

BIOSOLIDS MANAGEMENT AND OUTSIDE
WASTE PROCESSING FACILITY
FEASIBILITY STUDY

BID # 2022-21**

The City of West Haven (here after referred to as the City) is soliciting a Request for Proposals for feasibility study for biosolids management and outside waste processing facility.

Responses to this RFP shall be submitted to the City of West Haven's Finance Director's Office, due not later than Friday, July 8, 2022 at 1:00pm. All proposals must be clearly marked **RFP – WEST HAVEN BIOSOLIDS MANAGEMENT AND OUTSIDE WASTE PROCESSING FACILITY FEASIBILITY STUDY**. No oral, telephonic, emailed, or faxed responses shall be considered. No oral, telephonic, emailed, or faxed corrections, deletions, or additions to any response shall be accepted. The City reserves the right to reject any or all responses, and to waive any or all formalities in connection with this request. Any responses received after the above scheduled due date and time shall not be accepted or considered.

A non-mandatory pre-bid conference will take place at the West Haven Wastewater Treatment Plant, 2 Beach St, West Haven, CT 06516 on June 30, 2022 at 10:00am.

Respondents are required to submit three (3) copies of a sealed proposal by no later than July 8, 2022 at 2:00pm at West Haven City Hall, Office of the Finance Director, 3rd floor, 355 Main Street, West Haven, CT 06516, clearly marked "**RFP – WEST HAVEN BIOSOLIDS MANAGEMENT AND OUTSIDE WASTE PROCESSING FACILITY FEASIBILITY STUDY**". Proposals received after this time and date will be rejected.

The City reserves the right to reject any or all proposals if it deems such to be in the best interest of the City of West Haven. Questions regarding the Request for Proposals should be directed to Rick Spreyer, Director of Procurement, by e-mail at rspreyer@westhaven-ct.gov.

Rick Spreyer
Director of Procurement

2. PROJECT OVERVIEW

The City of West Haven Water Pollution Control Commission and the City of West Haven Commissioner of Public Works is considering options for the final stage of sludge disposal and municipal food waste collection, and is seeking a comprehensive study of the alternatives available and associated cost models.

The City of West Haven Water Pollution Control Facility (WPCF) processes municipal sanitary waste for the City of West Haven, a Federal Reservation, and the Town of Orange, which results in approximately 1,900 dry tons (DT) per year of bio-solids which require management.

The WPCF, located at 2 Beach St. West Haven, CT was originally constructed with an on-site sludge incinerator which converted the biosolids into ash, thereby significantly reducing the amount of material requiring disposal. Due to aged equipment and infrastructure, regulatory changes, and difficulties with meeting air quality standards, the City discontinued incinerator operation in 2017 in favor of hauling dewatered sludge (approximate solids content of 15%) off-site for further processing and incineration by a third party under contract. Though commercial disposal has been a reasonable approach in past years, the associated costs have been increasing beyond the rate of inflation, and are projected to increase at a significant rate for the immediate future. Therefore, the City seeks to consider alternative bio-solids management strategies.

Concurrently, the City of West Haven Department of Public Works manages curb collection and disposal of household waste. Recent regulatory and environmental efforts have been aimed at reducing the quantity of solid waste disposed of from Connecticut sources with the primary focus being separation of food waste from the solid waste stream.

The City of West Haven is also considering required separation of food waste for curbside household collection, and needs to study methods of organic waste disposal.

Among the alternatives for handling the diverted organics is utilization of anaerobic digestion facilities for processing organics or composting. The City has been contacted by several entities interested in partnerships to develop these types of composting or digesting facilities and the City is also aware of other local municipalities that may consider supplying materials (both food waste and/or biosolids) into a regional processing facility. Though the ability to accept these materials could provide a source of revenue to support the project construction and operations, the cost and complexity to develop facilities capable of processing these materials is significant and needs to be carefully considered.

The following scope of work has been developed with the goal of reaching an environmentally sound, secure, sustainable, and cost-effective wastewater solids processing and management program and organic household waste management program for the City of West Haven

3. SCOPE

TASK 1: Establishment of Goals and Analysis of Current Sludge Operations

This task will focus on establishing a progressive, collaborative approach toward the development and prioritization of the City's goals and strategies to economically process and dispose of wastewater sludge, to advance the City's commitment to sustainability, and to recover resources to offset treatment costs. Subtasks required to complete this work are as follows:

1.1 Project Kick-off Workshop No. 1

Immediately after the notice-to-proceed is issued by the City, a kickoff meeting will be held with project stakeholders within the City of West Haven's wastewater utility (City's project team) and the chosen Study Team to identify project critical success factors and to develop project goals, milestones, responsibilities, and plan for the execution of the project. This meeting will be held in-person at the West Haven WPCF.

1.2 Current and Future Sludge Quantities

- Monthly operating reports from the past five years shall be collected and analyzed to estimate current sludge production and sludge peaking factors; and
- The Study Team will review existing population and plant flow projections to assist in estimating potential future sludge production. Future plant flows will be projected based on past engineering reports prepared for the City, 20-year population projections, City Master Plans, and/or discussions with City staff.

1.3 Existing Solids Processing Facilities Condition Assessment

- The Study Team will perform a review of the City's current sludge processing operations to assess general physical condition, structural integrity, risk of flood and other storm hazard, estimated useful life and functionality. Specifically, the following will be reviewed under this task:
 - Sludge thickening equipment;
 - Sludge pumping systems;
 - Belt filter press;
 - Centrifuge;
 - Sludge conveyance systems;
 - Sludge truck and roll-off container loading systems;

- Building infrastructure structural and MEP functionality; and
- Flood and Storm resilience.
- Based on a review of available existing plant construction drawings, existing shop drawings, O&M reports, site observations and staff interviews, ascertain an estimate of the remaining useful life of each system;
- As part of the conditions assessment, a review of future potential expansion opportunities and/or areas will be conducted as it pertains to the potential for development of solids processing facilities at the WPCF site.
- Data and conclusions related to solids systems developed during recent studies will also be reviewed and considered as part of this task. These studies will include, but not be limited to:
 - o Conceptual Plan and Cost Estimate for Air Pollution Control Upgrade (2017, CDM Smith);
 - o Preliminary Evaluation of Centrifuge versus Belt Filter Press Operation (2020, CDM Smith); and
 - o Solid Waste Demonstration Project Permit (2021, CDM Smith)

1.4 Biosolids PFAS Sampling

The Study Team will provide guidance to the City for sampling of the existing biosolids generated from the WPCF for the presence and level of per- and polyfluoroalkyl (PFAS) compounds. As there is currently no EPA approved method for sampling PFAS in sludge, and CT DEEP has not established any screening limits for sludge, or which compounds will be monitored in the future, the Study Team will provide sampling protocol and procedures for collecting and preparing sludge samples for lab analysis that reflect CT DEEP and EPA requirements/recommendations at the time of sampling. A list of labs will be provided capable of completing this analysis. In the absence of further clarification from CT DEEP or EPA, Modified method 537.1 will be used for analysis and the appropriate sample collection procedures will be provided. The cost of sampling and analysis will be included in this study.

1.5 Technical Memorandum and Workshop No. 2

Following completion Task 1 activities, the Study Team will document the findings of the project goals and conditions assessment within a Technical Memorandum (TM). This TM will be submitted to the City for review and comment. Following receipt of review comments, the Study Team will facilitate a workshop with the City's project team to discuss comments and coordinate next steps. This workshop will be held in person.

Task 2: WPCF Biosolids Management Options

The Study Team will explore several different alternative biosolids management strategies which would serve to reduce the volume of materials, and ultimately costs, to be managed by the City of West Haven at the existing WPCF site. It is the intent of this task to review biosolids alternatives (which would not

involve organic waste processing or receipt of outside wastes) and would be limited to solutions at the existing WPCF site.

2.1 WPCF-Based Biosolids Management Alternatives

The Study Team will conduct evaluations of options based on the outcome of Task 1 to provide conceptual layouts for viable biosolids system improvements or expansion projects at the WPCF. The solids treatment/stabilization alternatives to be reviewed and screened under this task would include the following:

- commercial disposal (hauling of thickened or dewatered sludge);
- incineration;
- anaerobic digestion (to be initially limited to single stage, high-rate mesophilic process);
- thermal Drying; and
- WPCF Incinerator re-start or re-build--the Study Team will conduct evaluations of the physical plant involved in incineration, consider replacing the incinerator infrastructure, and consider the permit and regulatory climate for incinerator operation. The Study Team will examine the ash disposal cost and disposal options in the near future, and also consider PFAS contamination of the ash waste, if any.

The impact of side stream return flows and loads will be incorporated into the analysis giving a wholistic picture of the feasibility of each alternative.

Facility site requirements and conceptual layouts will be developed and presented for each option. Cost models both in capital expense and operating budget shall be included.

2.2 Biogas Utilization Alternatives Review

Gas generated by the anaerobic digestion of organic solids is often referred to as biogas. The Study Team will evaluate the feasibility of three main biogas utilization options for West Haven, including:

- Renewable Energy Market incentives and saleable credits;
- Boilers for process and building space heating;
- Combined Heat and Power (CHP);
- Renewable Natural Gas (RNG) to Pipeline; and
- Compressed Natural Gas (CNG) to Fueling Station.

Findings of this review will be incorporated into the conceptual layouts developed under Task 2.1 and costs will be coordinated with estimates developed under Task 2.3 below.

2.3 WPCF Biosolids Project Cost Estimates

The Study Team will develop capital and O&M cost estimate for each alternative, considering the technologies required, mechanical process requirements, and any infrastructure related costs. These capital and O&M costs along with potential savings and credits will be presented based on an assumed 20-year project lifecycle.

Task 3: Off-Site and Outside Waste Based Project Options

The receipt of outside wastes in the form of FOG, or biosolids from other WPCFs can serve to improve the finances of the development of a related processing facility project. For the City of West Haven, it is assumed that the materials would be processed using an anaerobic digestion process and that incorporating the additional required infrastructure (both size and extent) may not be capable of being located at the existing WPCF site. As a result, this task will include a review of alternative sites, develop conceptual capital project layouts and estimate the associated transportation and management costs in incorporating outside wastes into the facility planning.

3.1: Alternative Site Review

The Study Team will visit and perform a cursory review of available sites as part of this study. This site review will include:

- Assessment of space available for development based on GIS zoning and assessor mapping;
- Present use of land and review of practical space constraints;
- Review of an existing available data or reports related to environmental site contamination or geotechnical foundation requirements; and
- Site accessibility or other transportation considerations.

3.2 Outside Waste Availability Review

The Study Team will conduct an evaluation of potential organic materials which could be considered for processing at an off-site facility. These organic wastes typically include high strength liquid waste and FOG collection waste, but could also involve receipt of other organic materials compatible with sludge digestion.

3.3 Off-Site and Outside Waste Based Project Alternatives

The Study Team will conduct evaluations of off-site options involving the receipt of outside wastes based on the outcome of Tasks 3.1 and 3.2. Conceptual layouts for each of the two sizing options will be developed.

Similar to the WPCF-based options, the management, conveyance and impact of side stream return flows and loads back to the WPCF will be incorporated into the analysis giving a wholistic picture of the

feasibility of each alternative. Biogas treatment and utilization systems will also be included with this alternatives review.

It should also be noted that “raw”, non-liquid wastes are notoriously difficult to handle with high levels of contamination requiring pre-processing of the material prior to anaerobic digestion. As a result, the scope of this task will include development of conceptual layouts for the required pre-processing facilities.

3.4 Off-Site and Outside Waste Based Project Costs

CDM Smith will develop capital and O&M cost estimate for each off-site alternative, considering the technologies required, mechanical process requirements, and any infrastructure related costs. These capital and O&M costs along with potential savings and credits will be presented based on an assumed 20-year project life-cycle.

3.5 Technical Memorandum and Workshop No. 3

Following completion Task 2 and Task 3 activities, CDM Smith will facilitate a workshop with the City’s project team to present findings. This meeting will be held in-person at the West Haven WPCF.

Following the workshop, the Study Team will document the findings of the project layout and cost estimates within a Technical Memorandum (TM). This TM will be submitted to the City for review and comment.

Task 4: Organic Waste Disposal Options

The Study Team will conduct an evaluation of the City’s potential to remove household organic materials from the waste stream with separate curbside collection, and to evaluate disposal options, including but not limited to:

- Aerated Static Pile Composting along with yard waste collections at the current City compost facility located on Kimberly Avenue;
- constructing an anaerobic digester facility;
- trucking the material to commercial anaerobic regional digesting facility; and
- constructing a regional anaerobic digester facility in cooperation with other municipalities.

The Study Team shall also consider opportunities for revenue from tipping fees, sales of renewable energy credits, sales of composted output, and shall consider feed stocks such as pre- or post-consumer food waste materials from sources such as industrial producers, grocery stores, educational institutions, hospitals, etc.

In addition to the technologies reviewed under Task 1, this task will also consider relocating the current aerobic City owned and operated composting facility to an alternate location for the purpose of utilizing the current site for alternative purposes.

Task 5: Project Development Considerations

4.1 Ownership Options

In addition to the costs and availability of funding sources for development of a project of this nature, allocation of project responsibility and risks is expected to be a major factor for consideration. This study will review the related potential ownership options, including:

- Public Implementation
- Private Implementation
- Public Private Partnership/Co-Development
- Energy Performance Contracting

4.2 Regulations and Permitting

As part of this study, an initial assessment will be completed related to the regulatory trends and drivers related to development of either an incineration facility, or biosolids/organics processing facility in West Haven along with the potential permitting associated with development of the facility. This review will include:

- Regulatory Trends
- State and Local Permits Required
- Electrical Interconnection Requirements
- Public Participation

4.3 Implementation Recommendations

This task will include a summary of findings related to the WPCF- based and off-site location-based alternatives reviewed under this study. The summary will include a comparison of the relative project life-cycle costs along with a summary of additional non-cost factors related to each alternative reviewed in this study. Recommended next steps will be provided.

4.4 Presentation of Findings to City's Project Team and Workshop No. 4

The Study Team will compile results from all study tasks and prior technical memoranda into a single draft report to be delivered to the City for final review and comment. Following receipt of review comments, the Study Team will facilitate a workshop with the City's project team to discuss comments. This meeting will be held in-person at the West Haven City Hall. Following the meeting a final report will be issued to the City.

4.5 Public Meeting Presentation

Following approval of findings by the City's Project team, the Study Team will prepare for and deliver a (town hall style) presentation at two public meetings (to include live web broadcast provide by the City) to discuss the various biosolids management alternatives reviewed under this study. It is currently assumed that members of the City's Project team will participate in the presentation and that comments will be verbally addressed as part of the presentation, however, this scope of work is not intended to include revisions to the study or alternatives analysis resulting from the public comments.

4. RFP TIMELINE

- RFP Published – June 23, 2022
- Non-Mandatory Site Visit – June 30, 2022, 10:00am at Wastewater Treatment Plant, 2 Beach St, West Haven, CT 06516
- RFP Due Date – July 8, 2022

5. SUBMISSION OF PROPOSALS

General Requirements:

Proposals must include a concise description of the Company's ability to meet the requirements of this Proposal. Submittals shall be double-sided, include a Table of Contents, clearly tabbed for each section of the provided technical specifications and Required Components in the bid package, as well as the requirements listed below. Include a letter of interest providing a brief background of the Company. Respondents shall submit Three (3) double-sided copies and one (1) electronic copy (1 compiled PDF file) of their proposals.

Tabbed sections should also include the sections as follows:

Company Information -- The respondent shall provide a brief summary of its company, including the following information:

- Name of company and parent company, if any.
- Any prior name(s) by which the company was known and the corresponding years.
- Name(s) of any subsidiary companies owned or controlled by responding company.
- Legal form of ownership. If a corporation, where incorporated and when.
- Indicate the years engaged in construction services under the present name.
- Names, titles, and contact information for the principal members of the company, including officers. Indicate which individuals are authorized to bind the company in negotiations with The City of West Haven
- Address of principal office from which the Project will be managed.
- Name, address, telephone number and email address of key personnel contact, to receive notifications and to reply to inquiries from the Town. Sub-Contractors
- Names, titles, and contact information for the principal members of the company, including officers. Indicate which individuals are authorized to bind the company in negotiations with The City of West Haven
- Name, address, telephone number and email address of key personnel contact, to receive notifications and to reply to inquiries from the City.

Estimating/Cost Management

- Discuss company's ability to perform project and to accurately estimate costs associated with "Scope of Work" section of this RFP.
- Provide final cost and relevant methods to stay at or below your estimated budget. The City of West Haven is exempt from Federal Excise Taxes and Connecticut Sales and Use Tax.

Schedule and Phase Management

- Provide a preliminary schedule that identifies each phase of the above "Scope of Work" and projected time to complete.
- Identify potential issues that could negatively or positively affect the proposed completion date.

Related Experiences and References

- List correlating projects completed by your company for a minimum of the past two years.
- Include contact information (Name, phone number, email) of a key individual associated with each project. Note if any claims, disputes or litigation has occurred on any of these projects, including the parties involved, and the current status of each.
- Identify any prior projects performed for the City of West Haven.

6. METHOD OF SELECTION

The City will evaluate each proposal based on the following criteria:

- The respondent's ability to develop accurate cost estimates.
- The respondent's proven record of satisfactory completion of previous similarly scoped projects.
- The respondent's ability to submit cost-effective solutions.
- The respondent's key personnel assignment.
- The respondent's provided references.

Telephone, Fax, or electronically transmitted submittals will not be accepted, and no proposals received after the closing date and time will be considered. Failure to comply with these instructions will result in the rejection of your proposal.

The City of West Haven reserves the right to accept and bid or part of bids, to reject any, all or any part of the bids, to waive formalities or informalities in the bidding process and to award the bid deemed to be in the best interest of the Board.

7. PROPRIETARY INFORMATION

This RFP and one copy of each original proposal received, together with copies of all documents pertaining to the award of a contract, shall be retained by the City of West Haven and made part of a file or record which shall be open to public inspection after contract is awarded.