Request for Information

Phase I Portland Water District Biosolids Processing Facility

Acronyms

DCAF	Department of Agriculture, Conservation and Forestry
DEP	Department of Environmental Protection
FOG	Fats, Oils, and Grease
MeWEA	Maine Water Environment Association
MGD	Million Gallons per Day
PFAS	Per and polyfluoroalkyl substances
PFBS	Perfluorobutane sulfonic acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonic acid
PWD	Portland Water District
RFI	Request for Information
RFP	Request for Proposals
TS	Total solids
VS	Volatile Solids
WAS	Waste Activated Sludge
WTPD	wet tons per day
WWTF	Wastewater Treatment Facility
WWTP	Wastewater Treatment Plant

Defined Terms

Landfillable	Biosolids product that meets Maine Chapter 409 requirements and landfill operator criteria (to be further defined if project is advanced).

Owner	Portland Water District (PWD); Portland, Maine.
Owner's Advisor	Brown and Caldwell (BC).
Phase 1	Step one to inform an eventual Request for Proposal (RFP) process.
Response	A response to this Request for Information (RFI) submitted by Responders for the Project.
Responder	An entity responding to this RFI.
RFI	This document is being issued to inform PWD of commercially available and viable technologies and implementation options for off-site biosolids processing.
RFP	Future document that may establish a formal agreement for off-site processing of PWD's wastewater solids with the basis of design reflecting the best value processing configuration selected in this RFI process.
Service Provider	An entity providing third-party, off-site services for processing PWD's biosolids.
Biosolids Processing	Receipt and treatment of dewatered solids to generate a Landfillable product, recover resources from the solids, and manage Per- and polyfluoroalkyl substances (PFAS) to meet Maine DEP requirements.
Regional Solids	Dewatered wastewater solids generated from other Wastewater Treatment Plants (WWTP) in Maine that could be co-processed at the PWD Biosolids Processing Facility.

1.0 Overview

1.1 Introduction

This Phase 1 Request for Information (RFI) requests certain information from potential Service Providers (Responders) interested in receiving and processing undigested dewatered wastewater solids produced by Portland Water District (PWD) and potentially additional Regional Solids. These services would generate a Landfillable biosolids product, although PWD has interest in products that can be sustainably or more resiliently managed and will consider Responses that involve alternative beneficial reuse solutions.

This Phase 1 RFI specifically asks for information from Responders generally regarding:

- The types, cost, and development status of processing technology the Responder can implement.
- Current data available for polyfluoroalkyl substances (PFAS) fate through the proposed process technology through solid, liquid, and gaseous phases.
- The types of products generated to meet landfill requirements and the potential marketability or commercial viability for alternative beneficial use solutions to provide more sustainable or resilient management.
- The project structure and business arrangement desired to provide services.

PWD will use this information to narrow the range of potential technical solutions and business/contractual arrangements prior to issuing the Phase 2 Request for Proposal (RFP), which may request more specific information that may relate to such items as the proposed approach to providing the required services, qualifications, experience, and pricing to negotiate and establish a formal agreement with one or more Service Provider(s).

1.2 Background

PWD engaged Brown and Caldwell (BC) to take a comprehensive approach to assess and develop a strategic plan that outlines the necessary upgrades, process modifications, and state-of-good-repair projects that PWD must undertake at their two largest (East End and Westbrook) facilities during the next 20-year planning period. This planning effort was initiated in response to regulatory and legislative action in the State of Maine that has severely restricted PWD's access to biosolids management options outside limited landfill applications due to restricted capacity. Rising costs and the risk of not having biosolids management outlets necessitated a comprehensive review of solids planning needs. To accomplish this, BC collaborated with the PWD project team to develop solids handling and process alternatives for the wastewater treatment facilities (WWTFs) and other treatment plants through a larger and consolidated regional approach to realize project efficiency and economies of scale to provide stable and reliable operation and achieve project objectives and goals in the form of a dynamic roadmap.

1.2.1 PWD Facilities

PWD provides wastewater services to the towns and cities of Cape Elizabeth, Cumberland, Gorham, Portland, Westbrook, and Windham. The system consists of four WWTFs providing treatment across the service area, totaling more than 25 million gallons per day (mgd) of capacity. The facilities include East End, Westbrook-Gorham, Cape Elizabeth, and Peaks Island.

The East End WWTF (East End) is Maine's largest wastewater facility with an average design flow of 19.8 mgd. As shown in Figure 1-2, Solids from Peaks Island and Cape Elizabeth are hauled to East End and received at the head of the facility. The solids produced in the facility are thickened in gravity thickeners for primary sludge (PS) and gravity belt thickeners for waste activated sludge (WAS). After thickening the raw sludge is dewatered in a rotary press then sent to the landfill for disposal. The two smaller facilities, Cape Elizabeth and Peaks Island, have an average design flow of 0.52 mgd and 0.20 mgd, respectively. They are both secondary-only facilities, with rotary drum thickeners. Currently, PWD is evaluating dewatering upgrades at East End to reduce the volume of solids to be managed and water hauled, which was identified in the master plan as a "no regrets" project, as increased solids handling capacity and solids content will reduce volume of wet cake in the nearer term and will support any of these proposed future options.

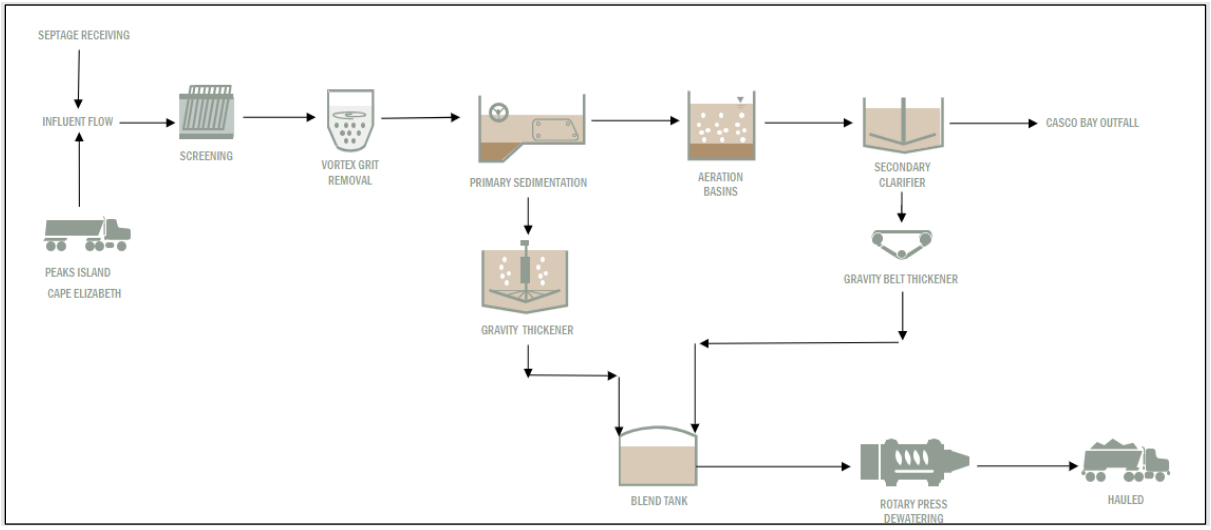

Figure 1-1. East End WWTF Process Flow Diagram

The Westbrook-Gorham Wastewater Treatment Facility (Westbrook) is a secondary-only facility, with an average design flow of 4.54 mgd. The solids produced are thickened and then dewatered via screw press prior to landfilling, as noted in Figure 1-2.

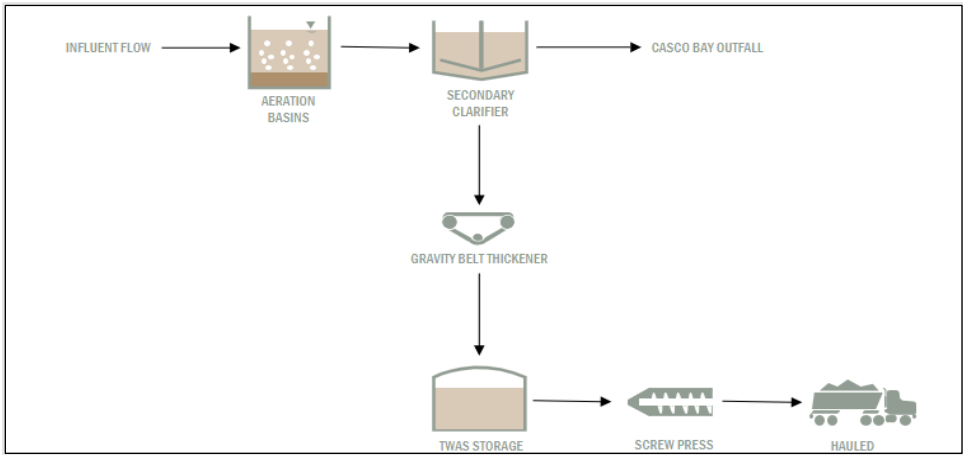

Figure 1-2. Westbrook-Gorham WWTF Process Flow Diagram

1.2.2 Regulatory Impacts

Concerns of Per- and polyfluoroalkyl substances (PFAS) in residuals prompted regulatory and legislative action to prohibit land application of biosolids and residuals in Maine (LD 1911[An Act to Prohibit the Contamination of Clean Soils with So-Called Forever Chemicals]). The Legislature passed this bill in April 2022, and it is currently in effect. LD 1911 also requires Maine DEP to develop a plan to ban the land application of septage by January 2023. This leaves Maine utilities with landfill as the only option for biosolids management within the state.

The ability to landfill biosolids was impacted by a solid waste bill, LD 1639, also passed in April 2022 and went into effect on February 8, 2023. This bill restricts the importation of out-of-state oversized bulky waste for landfill disposal in the state of Maine. Biosolids cake is considered a "wet waste" and landfills may only accept a certain amount of these wastes daily. Imported wastes (oversized bulky waste), such as construction and demolition waste, can serve as blend materials for wet wastes, thus, a reduction in their volume triggers a corresponding reduction in the volume of biosolids that can be accepted at a given landfill. By the end of February, Maine Water Environment Association (MeWEA) was messaging members about landfill capacity concerns as there was not enough bulky material to provide a stable mix for the increased biosolids. Given that PWD has not had land-applied solids in over a decade, it is these landfill impacts that are driving the need for the current planning study, as landfill options dwindled, and costs increased.

1.2.3 Other Studies in Maine

In a parallel study, Maine has a biosolids, septage, and leachate study to evaluate these waste streams that have been impacted by these new regulations. The study will examine the current and long-term capacity at Juniper Ridge Landfill and others active landfills in the State. The study will also help quantify volumes of septage and biosolids in Maine that need to be managed. It will evaluate different technologies and associated additional costs to reduce or treat PFAS in the various waste streams. The data produced from this study could provide additional information for future phases of PWD's decisions.

1.3 Anticipated Solids and site assumptions

Based on the maximum design capacity of East End and Westbrook, Table 1-1 summarizes the anticipated solids processed from PWD facilities. The table includes the current percent total solids (%TS), hauled cake in wet tons per day (wtpd), and the estimated percent volatile solids (%VS) based on similar facilities as PWD does not currently measure VS; therefore, a range of potential VS is provided in the table. As noted above, PWD is evaluating upgrades to East End's dewatering, which should improve the %TS. For this RFI, use the value provided for %TS and VS so that all submittals are using the same units but note that these values can change.

Table 1-1. Anticipated PWD Only Solids Loading		
	East End	Westbrook
Current Solids Loads		
Cake (wtpd)	56	12
Cake solids content (%TS)[b]	20% (20 – 26%)	20% (20 – 26%)
Volatile solids content (%VS)[a]	65% (50 – 75%)	65% (50 – 75%)
Future Solids Loads		
Cake (wtpd)	91	23[c]
Cake solids content (%TS)[b]	20% (20 – 26%)	20% (20-26%)
Volatile solids content (%VS)[a]	65% (50 – 75%)	65% (50 – 75%)

a The %VS content was used as a conservative assumption based on measured data from similar facilities. A range of potential %VS are included as the value could vary.

b Historical %TS from the Fournier presses is 20%. Note the solids content at East End will improve with the upgrades. This is reflected in the range provided.

c This includes the estimated 2 wtpd at 20% TS from North Windham.

Table 1-2 provides the total anticipated solids for a regional facility. This includes an assumption of facilities in the southern portion of Maine that may utilize a regional facility.

Table 1-2. Anticipated Regional Facility Solids Loading in Future		
	PWD	Other Maine Facilities
Hauled Cake		
Cake (wtpd)	114[c]	97
Cake (wtpy)	42,000	35,000
Cake solids content (%TS)[b]	20% (20 – 26%)	21% (17 – 30%)
Volatile solids content (%VS)[a]	65% (50 – 75%)	65% (50 – 75%)

a The %VS content was used as a conservative assumption based on measured data from similar facilities. A range of potential %VS are included as the value could vary.

b Historical %TS from the Fournier presses is 20%. Note the solids content at East End will improve with the upgrades. This is reflected in the range provided.

c This includes the estimated 2 wtpd at 20% TS from North Windham.

In addition to the anticipated solids loadings, a specific site has not been identified. However, for this initial response, the following assumptions can be made about the site:

- Land will be made available to use for the facility.
- It will be permittable.
- It will have sufficient utilities to serve the site and anticipated facilities.
- Access to sewers will be available.
- There will be community support.

1.4 Schedule

Upgraded dewatering at East End are anticipated to be fully operational by 2027 with commissioning as early as mid to late 2026.

Following advancement of future processes that may include a Phase 2 RFP and Service Provider selection (key milestones provided later in this document), PWD would require a Biosolids Processing Facility implemented by the Service Provider be commissioned within 3 years of execution of the Agreement.

1.5 Objectives

PWD will evaluate RFI Responses to identify whether advancing an offsite Biosolids Processing facility is warranted. If the Biosolids Processing is advanced, PWD would seek to incorporate the following objectives to the maximum extent practicable with respect to the requested services:

- Enter into an Agreement with one or more Service Provider(s) for construction and commissioning of the Biosolids Processing Facility within three years after executing the Agreement and providing operations and maintenance services for an initial five-year term.
- Enter into an Agreement with one or more Service Provider(s) capable of and willing to provide the guarantees necessary to assure PWD and potential regional partners of reliable, long-term performance.
- Utilize commercially proven processing technologies (having at least two commercial scale installations at a global WWTP greater than 5 mgd average dry weather flow) to achieve mass reduction, resource recovery, and meet Maine DEP requirements for PFAS control.
- Evaluate the potential to destroy PFAS using emerging high-temperature thermal or other processes (considering technologies with at least one full month of operating data at demonstration scale [having greater than 1 dry ton per day capacity]).
- Generate a landfillable biosolids product with potential to transition to alternative beneficial use solutions to provide greater sustainability and market resiliency.
- Minimize impacts on surrounding communities (e.g. by controlling odors, emissions, and truck traffic etc.) and improve the sustainability of biosolids management in the region.

2.0 Potential Project Outline

2.1 Potential Process Overview

PWD anticipates conducting a possible two-phase procurement process that may result in the selection of one or more teams to provide the required services.

- **Phase 1.** During Phase 1, PWD will be collecting information from Responders to inform several key decisions regarding the scope, allowable technical approaches, and preferred business arrangements for the required services. PWD will also use the information from Phase 1 Responses to determine whether or not there would be sufficient competition if a Phase 2 RFP were to require that a single party be responsible for the full range of desired services and whether or not new sites and/or facilities would likely need to be developed to provide services.

- **Phase 2.** If an offsite Biosolids Processing facility were determined to be beneficial to PWD, PWD could issue one or more RFPs for the desired services. The time frame for issuing Phase 2 RFP(s) would in part depend on whether or not new facilities and sites would likely need to be developed to provide the required services. In order to propose during a Phase 2 RFP process, Responders **must** have submitted a compliant response to this Phase 1 RFP.

2.2 Potential Project Schedule

Table 2-1 indicates the preliminary procurement schedule for the required services. This schedule is subject to modification for any reason by PWD.

Table 2-1: Potential Schedule

Table 2-1. Anticipated Procurement Schedule	
Activity	**Time Frame**
RFI Issued	June 28, 2023
Pre-submittal Meeting (Optional)	July 11, 2023 9 – 10 am EST
Letter of Intent to Attend due for Technology Summit	July 14, 2023
Last Day to Submit Questions	August 1, 2023
Technology Summit	Week of August 1, 2023
Phase 1 Response Submittal Date	August 9, 2023 5pm EST
Evaluation of Phase 1 Responses	August 15, 2023

If the project were to be advanced, a Phase 2 RFP would likely be issued in late 2023 to early 2024; however, anticipated timing for issuance of Phase 2 RFP would in part depend on Phase 1 responses.

2.3 Phase 1 RFI Process

2.3.1 Project Contact and Communications Protocols

All communications regarding wastewater solids production from PWD or regional facilities, including data related directly or indirectly to the PWD dewatering improvements under consideration, as well as this RFI, shall comply with the following communications protocol:

- All questions related to this solicitation shall be submitted via email to Project Lead contact detailed below, with the Subject line: “Regional Facility RFI Question”.

Questions received less than seven (7) days prior to the Response Deadline (defined in Table 2-1) may not be considered; however, Responders are encouraged to submit all questions for consideration. Clarifications deemed to be material shall be answered via addendum and provided via https://www.pwd.org/infrastructure-projects. Only questions answered by formal written addenda shall be binding. Oral and other interpretations or clarifications shall be without legal effect. It is the Responder’s responsibility to be informed if any addenda that have been issued.

- Upon release of this RFI, Responders, agents of Responders, and consultants of Responders shall only make inquiries to the designated Contact Person.
- Any oral communication will be considered unofficial and non-binding to PWD.
- Any verified allegation that a Responder or an employee, agent, advisor, consultant, or subcontractor of a Responder has engaged in prohibited communications or an attempt to unduly influence the selection process may be cause for PWD to disqualify Responder, at PWD's discretion.

The Designated Contact for this RFI is:

Brown and Caldwell
Attn: Tracy Chouinard, Project Manager
200 Brickstone Sq, Ste 403
Andover, MA 01810
978-983-2047
tchouinard@brwncald.com

2.3.2 Optional Pre-submittal Meeting

An optional RFI Pre-submittal informational meeting will be held on July 11, 2023 at 9-10a EST, to brief all interested parties. This meeting will be virtual on the Microsoft Teams platform. This meeting is not mandatory, but all potential Responders are encouraged to attend. Email your request to access the virtual RFI Pre-submittal Meeting to the Contact listed in Section 2.3.1.

2.3.3 Request for Clarification

PWD may ask for clarification on the information provided as part of Responder's submittal. Clarification requests may include, but are not limited to, holding discussions or meetings with Responders, requesting additional information from Responders to support the information included in the Submittal and requesting resubmission of Submittals.

2.3.4 Addenda

PWD will provide written responses to any questions, submitted in writing, on the RFI to all Responders. Where inquiries lead to changes in the RFI, such changes will be issued by PWD via addendum.

2.3.5 Optional Technology Summit Participation

In addition to the formal RFI responses, PWD would like to invite Responders to participate in a technology summit the first week of August. Participation in the summit is not a requirement for RFI submission and consideration. If a Responder decides to participate, the Responder must notify the Contact via email (subject line to be "Technology Summit LOI") with a Letter of Intent to present by the date stated in Table 2-1. The summit will be open to a broad audience. Each participating Responder will be asked to cover the same material for their technologies and be given the same amount of time. Potential topics to be covered can include but are not limited to:

- Status of technology
- PFAS treatment ability
- Operation and maintenance requirements, challenges, and overview

Further details of the summit will be transmitted to Responders after receiving their notice of intent.

2.3.5 Response Evaluation Process and Committee

PWD has established an Evaluation Committee responsible for reviewing and evaluating the Submittals for this RFI and recommending submittals that meet PWD's objectives. The Evaluation Committee consists of individuals selected by PWD at its sole discretion.

Following receipt of Submittals, the Evaluation Committee will review and evaluate based on the criteria in Table 2.2. The evaluation criteria may include but not be limited to the proposed approach, project features, demonstrated quality and performance, capacity, and schedule. The Evaluation Committee will screen Responders, eliminating those not deemed qualified based upon their submittals. Only qualified Responders will be eligible to proceed to Phase 2.

2.3.7 Evaluation Criteria

Submittals will be scored by the Evaluation Committee based on the required Response content indicated in Section 3.2 according to the weighting system listed in Table 2-2 below.

Table 2-2. Evaluation Criteria for Responses

Section	Weight
Executive Summary	N/A
Team Structure, Business Approach and Financial Information	20 percent
Proposed Technical Approach	20 percent
Lifecycle Costs	20 percent
PFAS Control	20 percent
Availability of Service Delivery	5 percent
Contractual Arrangements	5 percent

2.4 PWD Rights

PWD reserves the right to waive any and all requirements in this RFI document in the sole interest and determination by PWD.

2.5 Confidentiality of Responses

PWD is a public entity and Responders should expect that information provided in the RFI responses could be made publicly available.

3.0 Phase 1 Response Submittal Requirements

3.1 General Requirements:

3.1.1 Date, time and location to submit

Responders must submit the required documentation in PDF via email to the Contact as noted in Section 2.3.1 on or before the Submittal Deadline in Table 2-1. Please include the subject line "RFI Submittal for PWD". Any Submittal received after the deadline will not be considered. No exception will be made to this policy.

3.1.2 Page limitations, format requirements

Page limitations have been provided in Table 3-1. Note that financial reports are not included in the overall page count.

3.2 Required Response Contents

For the purposes of this Phase I RFI, Responders will provide their proposed approach to accomplish the PWD's desired outcomes, including processing technologies, desired contractual arrangement(s), and any service elements that would not be provided or would be subcontracted. Responders should provide sufficient information to allow PWD to understand and evaluate the approach. Table 4 sets forth the required contents of submittals, including the key questions that PWD desires to have answered and how responses will be evaluated.

3.3 Processing Functionality

As part of the Biosolids Master Plan, Brown and Caldwell developed an initial processing scheme for the offsite Biosolids Processing Facility, described below to meet PWD's goals and objectives. Responders are invited to submit equivalent or improved processing schemes. Evaluations will consider functionality and technology development status.

3.3.1 Dewatered Solids Receiving and Reliquification

- Enclosed dewatered solids receiving bays for odor control.
- Dewatered solids rewetting and liquification to a consistency suitable for anaerobic digestion.
- Capability to receive and transfer dewatered, digested biosolids to post-digestion treatment.

3.3.2 Anaerobic Digestion and Re-Dewatering

- Provides mass reduction, enhances product quality, and generates renewable fuel in biogas.
- Capable of co-processing FOG, food waste, and industrial organic wastes.
- Provides a homogenous feed to post-dewatering treatment.

3.3.3 Thermal Drying

- Provides further mass reduction.

- Generates a Landfillable product also suitable for non-land application beneficial reuse.
- Risk: generates stack emissions that must be considered for PFAS release.

3.3.4 Pyrolysis or Gasification

- Provides a potential means of PFAS destruction.
- Provides further mass reduction and a biosolids product potentially free of PFAS.
- Generates a renewable fuel in syngas or biochar.
- Risk: Not yet proven at a large scale and generates stack emissions that must be considered for PFAS release.

Table 3-1. Phase I RFP Submittal Requirements

Section	Submittal Requirements
Table of Contents **No page limit**	Provide a Table of Contents that includes major headings of the Response and associated page numbers as well as lists of tables, graphics, figures, photos, and any appendices.
Executive Summary **2-page limit**	Provide a summary of the overall approach and role of the Responder and Responder's Team. The Executive Summary shall not be used to communicate information not found elsewhere in the Response.
Team Structure, Business Approach and Financial Information	
10-page limit*	**Objectives:** Ideally, PWD would like to engage a single Service Provider for receipt, processing, and generation of a biosolids product that is Landfillable and capable of transitioning to alternative beneficial use solutions. **In reviewing this section, PWD will be looking to address the following questions: 1) Are you proposing a comprehensive solution to construct, operate, and maintain a Biosolids Processing facility to receive dewatered solids and generate a Landfillable product? Or are you offering a partial solution that would be paired with a larger team or another entity? 2) If you would pair with a team or other entity, what team structure would you prefer to deliver the full suite of services and do you maintain relationships with individual entities that could be combined to form your preferred team? 3) How would the team interact to deliver the services?** **Submittal Requirements:** 1. **Team Structure**: Provide a conceptual overview of your proposed team structure. Clarify if you are proposing a complete solution or a portion of the solution. If you are proposing a portion of the solution but require that either PWD or another service provider(s) also provide a portion of the solution, please identify what services you are assuming will be provided by either PWD or another service provider 2. **Qualifications**: Provide relevant qualifications to the services being proposed. Provide references able to attest to the relevant qualifications. Prefer at least three references but not more than five. 3. **Financial Information**: PWD wants to ensure that Responders have sufficient financial strength to deliver the proposed solution and guarantee performance. In the event that the Responder does not have sufficient financial strengths and assets, a parent or affiliated company guarantee will be required. Responders should provide one of the following (*Note that the financial submittals below are excluded from the page count for this section*): a. Financial statements for the past 3 years. PWD will keep financial data confidential, to the extent practical and allowed by law, and limited to review by the evaluation committee and PWD's financial officer. b. Letter from a surety company confirming your ability to bond/insure a project of this scale. 4. **Coordination and Communication**: Describe your proposed approach to coordinating with PWD and other Service Providers (if required) in order to successfully deliver the service(s).
Proposed Technical Approach	

10-page limit	**Objectives:** PWD is seeking a Service Provider with biosolids processing experience capable of proving a long-term, reliable Biosolids Processing Facility meeting their goals and objectives. **In reviewing this section, PWD will be looking to address the following questions: 1) Is your solution compatible with PWD's current goals? 2) What advantages does your proposed processing technology offer? 3) What is the resulting product and can it transition to alternative beneficial use solutions?** **Submittal Requirements:** 1. **Core Processing Technologies**: Describe the main processing technologies to be employed in the proposed processing train, addressing the compatibility of this technology with undigested, dewatered solids and PWD's goals for resource recovery. 2. **Potential PFAS Destruction Technologies**: If you are proposing a technology to destroy PFAS describe your processing conditions, gas handling strategy and emissions control devices. If you are proposing an emerging or unproven technology, how would you plan development and implementation? 3. **Final Product**: Describe, at a high level, the anticipated characteristics of the resulting final product. Address the desired compatibility with regional landfills. Describe potential target markets for alternative beneficial use solutions, the compatibility of the product with those target markets, and anticipated demands for the target market(s) relative to the supply under a PWD-only or PWD with Regional Solids scenario. Provide a dimensional layout drawing showing equipment footprint, working clearances and a process flow diagram(s) for your processing technology train.
Life Cycle Costs	
10-page limit	**Objectives:** PWD would like to understand and compare 10-year lifecycle costs for the processing equipment trains proposed by the Responder under the two loading scenarios; (1) a PWD-Only scenario and (2) a Regional Solids scenario. PWD is requesting Responders provide a complete set of answers to the lifecycle cost questions below separately for the two loading scenarios per the capacity requirements provided in Table 2-1. 1. **PWD-Only** a. Undigested solids b. 50/50 split of primary sludge and conventional WAS 2. **PWD and Regional Solids plus 20,000 gallons/day of FOG** a. Undigested wastewater solids b. FOG as grease trap waste, 5%TS c. 25/75 split of primary sludge and conventional WAS **Submittal Requirements for Each Scenario:** 1. **Equipment Cost:** Provide a breakdown of equipment costs for the equipment in your proposed processing train. Include overview and cost of recommended spare parts. 2. **Annual Cost and Revenue Factors:** Provide the following operational data for operation at the annual average loading for each scenario with as much supporting detail for each category as possible: a. Proposed Operational Schedule (assumes solids are received 24/7/365) b. Total Electricity Consumption Per Operating Day (excluding impact of potential electricity generation from biogas utilization) c. Total Natural Gas Consumption Per Operating Day (excluding impact of potential useful heat generation from biogas)

	d. Total Chemical Consumption Per Operating Day (e.g., ferric, polymer, dedusting oil, etc.) and expected unit costs e. Product Disposal Per Operating Day (provide final product mass and bulk density) f. Potable Water Demand Per Operating Day (provide required flow rate and pressure) g. Treated WWTP Effluent Demand Per Operating Day (provide required flow rate and pressure) h. Annual Operations Labor (provide estimated number of Full Time Equivalents required to operate the facility to provide 24/7/365 availability. i. Annual Maintenance Costs (provide estimated, annualized cost of replacement parts over a 10-year operating window at steady state conditions (provide as much detail as currently available; e.g., current replacement cost, expected replacement intervals) j. Annual Maintenance Labor (provide estimated number of Full Time Equivalents required to provide required maintenance at the facility to provide 24/7/365 availability). k. Potential Utility Savings from Biogas or High Temperature Processes (if applicable, provide proposed energy recovery strategies and expected generation of useful heat, electricity or renewable natural gas to offset utility costs or generate revenue). l. Potential Revenue from Alternative Beneficial Use Strategy (if applicable, provide estimated fee or shared revenue available from proposed alternative beneficial use solutions per ton of product generated).
PFAS Capabilities	
5-page limit	**Objectives:** PWD will work with Maine DEP to outline a PFAS permitting pathway for the Biosolids Processing Facility and seeks to implement a processing scheme that reflects the current state of the science to support the permitting process. **In reviewing this section, the PWD will be looking to address the following question: 1) Have you conducted PFAS testing on core processing technologies and/or PFAS destruction processes, and 2) do you have operating facilities at commercial scale with your proposed technologies that could be tested for PFAS emissions to support project permitting?** 1. **Existing PFAS Data**: If you have conducted PFAS testing at bench or commercial scale for the biosolids processing technologies you are proposing will you make that data available to the PWD and Maine DEP as part of the RFP process? If yes, provide an overview of the testing conducted including feed characteristics, operating conditions, test duration, sampling points and analytical techniques. 2. **Ability to Collect PFAS Data**: If requested as part of the RFP process, would you be able to perform PFAS testing at bench or commercial you're your proposed biosolids processing technology? If yes, provide a summary of the installation(s) available for testing including feed characteristics, operating conditions, operating capacity and installation date. If there are limitations on the sampling points or ability to make data public provide those clarifying details.
Availability of Service Delivery	
15-page limit	**Objectives:** PWD would like to develop a processing concept that can be advanced for facility permitting and siting. PWD is exploring several options for facility siting but is interested to

	understand if Service Providers have existing property, or the means to acquire property, they would recommend for consideration during this Phase 1 evaluation. **In reviewing this section, PWD will be looking to address the following question: 1) Have you considered the facility development components (i.e., siting, permitting) or are you expecting PWD to provide these elements? 2) Describe options for providing these components if willing at this time.** 1. **Site Acquisition**: If you have already secured or developed a site for processing, and are willing to share this information with PWD, describe the site and associated property rights (be clear as to whether you hold all property rights necessary to implement the solution). If you do not have a proposed site, provide an overview of the anticipated site needs that may not have been clear in the lifecycle operating cost response section. 2. **Permitting**: If you have conducted preliminary work in obtaining the permits for an Offsite Biosolids Processing Facility and are willing to share with PWD, identify the current status of permits or investigation activities. As you are willing to share, describe the steps you identified to advance the permit process and the type of permitting assistance that you believe would be most beneficial from PWD. 3. **Marketing and Distribution**: If you are proposing alternative beneficial use solutions have you developed a marketing and distribution plan (including any product permits/registration)? How would you expect to grow an alternative beneficial use market and mitigate risks with the current regulatory environment.
Contractual Arrangement	
5 page limit	**Objective:** At this time, PWD is flexible with regards to contractual arrangement. For example, PWD would consider entering into a long-term service agreement, a DBO Agreement for development of processing facility(ies) or an arrangement with private financing. Information submitted as part of this RFI will be used to determine the contractual arrangement(s) solicited in the Phase 2 RFP. PWD prefers a 5-year initial contract term and is currently contemplating the possibility of up to two 5-year extensions. **In reviewing this section, PWD will be looking to address whether Responders have a preferred contractual arrangement and preference regarding the contract term.** **Submittal Requirements:** 1. **Type of contract**: Responders should address the form of contract you expect to be entered into with the PWD, whether: a. an agreement for services, or b. a contract where facilities are all or partially paid for by the PWD during development, followed by services provided by the service contractor (i.e., a DBO or P3-type contract, depending on who is providing financing). c. Include your rationale for the type of contract selected, including benefits to the PWD, financing, or other implementation considerations. 2. **Contract Term**: Provide any additional input, as desired, regarding PWD's proposed contract term.

	3. **Merchant Solutions**: Address whether your preferred technical solution is part of a larger, regional solution or unique to/for the PWD. If a regional solution is preferred, provide information as to what other commitments of biosolids or other organics would be required, in addition to PWD's, to make the solution feasible.
Additional Information	
5-page limit	Responders may provide any additional information deemed pertinent to evaluating the proposed solution.

* Financial information does not count against the page limit. Financial information is not evaluated; however, evaluation scoring will take into account if Responder provided it in the Submittal.