Attachment 1 to Solicitation
Summary Statement of Work for
Design-Build Construction of
Sewage Treatment Plant Modernization

1.0 **Project Scope**: Provide an Operational/Function Sewage Treatment Plant

The base scope of work consists of providing the labor, materials, equipment, and incidental services necessary to design and construct the specified infrastructure necessary to modernize the Oak Ridge National Laboratory's Sewage Treatment Plant (STP). The new sewage treatment infrastructure deliverables are anticipated to include, but are not limited to:

- A minimum of two sequencing batch reactor (SBR) tanks with flow measurement, valve actuation, mixing, decanting, sludge wasting and aeration equipment. Designer shall reserve area in the site plan and provide grading (backfill, compaction, etc.) and connections necessary for the future expansion (an additional 50% of design capacity) of the system.
- A post equalization basin (Post EQ) and an aerobic digester.
- A tertiary disk filter system.
- Plant wastewater transfer pumps as necessary.
- Solids transfer pump(s) to convey flow to existing dewatering facility.
- Installation of new effluent flow monitoring with Parshall flume and new outfall line to tributary of White Oak Creek.
- New peracetic acid (PAA) contact basins and the replacement of the existing PAA building and its equipment.
- Replacement of Environmental Compliance testing & measurement laboratory.
- A standby power system for the sewage treatment plant capable of providing full standby power to the sewage treatment plant including, but not limited to, SBRs, Post EQ, aerobic digester, tertiary filter, PAA building, pumps, environmental compliance building, instrumentation, controls, and site lighting.
- Installation of electrical building for switchgear and controls.
- Other electrical equipment, including switchgear, instrumentation and controls to allow monitoring of treatment plant equipment.

The work requirements are described in the 'Sewage Treatment Plant Modernization Design-Build Specification,' dated February 2021 (Attachment 2 to the solicitation).
The design and construction of the new treatment plant must yield a treated effluent water stream meeting the State of Tennessee Department of Environment and Conservation’s (TDEC) National Pollutant Discharge Elimination System (NPDES) permit requirements. A draft of the TDEC NPDES permit for this new plant is will be available in March 2021, and will be provided to interested bidders when it becomes available.

The work is to be performed by the successful firm or team as a turn-key design-build project. The base scope is to encompass the entire project from design through turnover to the ORNL operations.

Innovative design and construction techniques shall be included in the base scope to ensure that at least the minimum requirements for the STP are met. The successful bidder is expected to be an experienced design-build team with sufficient specialization in the design and construction of modern wastewater treatment facilities.

The Company expects the successful bidder to develop a full functional design based on the Company Design-Build Specifications, as well as to propose additional design improvements, and increase the overall quality of the design using the talents, skills, and experience that the successful bidder brings to the project.

There are also additions to the base scope, termed Additive Alternate Options, including:

- **Add Alt Option1:** Construct influent equalization tank;
- **Add Alt Option 2:** Construct influent equalization tank walkway/bridge;
- **Add Alt Option 3:** Design-Build Intermediate Lift Station upgrades;
- **Add Alt Option 4:** Increase size of post EQ basin by 50%;
- **Add Alt Option 5:** Increase size of anerobic digester basin by 50%;
- **Add Alt Option 6:** Add secondary access stairwell & platform on SBR basins;
- **Add Alt Option 7:** Add full perimeter walkways on SBR basins.

Additionally:

1) The design work includes the development of the complete design package (drawings, specifications, and calculations). Design documents are to be completed at the following stages of development:
   - Schematic Design (30% design);
   - Design Development (60% design);
• Construction Documents (90% or pre-CFC); and
• Certified for Construction (CFC; final or 100% design).

The design package shall be prepared in accordance with the STP Modernization Design Build Specification (Solicitation Attachment 2).

The Schematic Design shall be created to establish a complete facility and site development design to meet the program and the budget. It shall be based on the STP Modernization Design Build Performance Specification (Solicitation Attachment 2).

The Design Development, Construction Documents, and CFC Documents continues the design process with the creation of design development drawings and specifications (60%), construction documents and technical specifications (90%), and final Certified for Construction (CFC) design drawings and technical specifications.

The Design Development/Construction Documents process will include Company/Owner design and constructability reviews of design drawings, calculations, and technical construction specifications. The design review process will use Specification Section 01 80 00, Design Build Requirements, as a guide. Modifications or deviations from these criteria are acceptable with coordination with, and approval by ORNL.

2) As part of this solicitation, the Company (ORNL/UT-Battelle, LLC) is providing additional information that may inform the bid process and pricing as a series of additional attachments to the Solicitation:

• **Attachment 3 – ORNL Primary Treatment Project 2018 As-Built Infrastructure:**
  o Drawings and specifications for the construction of the new Primary Treatment Headworks and associated pump station infrastructure built in the 2017-2018 timeframe. In addition to providing relevant information as to the STP's current infrastructure configuration, it would be required to assess the scope of Add Alt Option 3 (Design-Build Intermediate Lift Station Upgrades).

• **Attachment 4 – ORNL Primary Treatment Project Scope Not Built in 2018:**
  o Drawings and specifications for additional STP infrastructure that was designed in concert with the 2017-2018 Primary Treatment Headworks infrastructure design and construction, but which was not actually built. This information is relevant to assess the scope of Add Alt Options 1 & 2 (Construct influent equalization tank and walkway/bridge).

• **Attachment 5 – Existing ORNL Maps (Topo, Utilities):**
  o Drawing maps providing context information related to existing utility infrastructure and topographic information for the STP site.

• **Attachment 6 – Report of Geotechnical Exploration ORNL Sewage Treatment Plant (SHIELD 1205020-01), dated 30 July 2020:**
  o A geotechnical evaluation of the subgrade at the site for the new sewage treatment plant infrastructure.
• **Attachment 7 – Additional ORNL Related Documents:**
  - Additional information related to ORNL-applicable codes and standards including:
    - codes for mechanical systems code;
    - erosion control requirements consistent with the current TDEC NPDES storm water pollution prevention requirements at ORNL.

3) Construction of the new facilities is to include all aspects required to safely construct the new infrastructure. ORNL standard construction requirements are included in the STP Modernization Design Build Performance Specification (Solicitation Attachment 2) and are to be made part of the design technical specification. The A-E shall provide an appropriate level construction administration during the construction of the facility; construction administration includes, but is not limited to, CFC Requests for Information, Submittal and Shop drawing reviews for conformance with specifications, and finalization of an as-built set of design documents (drawings and specifications).

4) The Seller's work includes health and safety documentation, field oversight, construction waste disposition, and site restoration of areas disturbed during construction.

5) All work is to be performed in accordance with the STP Modernization Design Build Specification requirements (Attachment 2). The Seller shall:
   1) Provide all required submittals in accordance with the specifications.
   2) Mobilize effort after Notice to Proceed.
   3) Perform the work scope defined herein this Summary Statement of Work and the other attachments to the solicitation.
   4) Demobilize.

6) The Seller shall provide:
   - A sufficiently detailed work schedule to allow efficient integration and coordination of the Seller’s work with that of the Company;
   - Accurate as-built drawings and records reflecting the as-constructed work.

7) The proposed site footprint for the STP modernization work is adjacent to ORNL areas that have a history of chemical and/or radiological contamination from legacy operations. No known legacy hazardous materials or contamination (radiological, asbestos, lead/lead paint, beryllium, etc.) above levels of concern for future land use, or at levels that would impact normal construction activities, are known to be present in the site footprint for the STP modernization work.

8) The entirety of the STP modernization construction work is in direct proximity to existing ORNL Sewage Treatment Plant operations. Work in and around these operating areas shall be coordinated with the Company so as to minimize disruption of the ongoing operations.
9) Where the contract documents (specifications, etc.) reference the term ‘Owner,” it is synonymous with the term ‘the Company” (ORNL/UT-Battelle, LLC) -- and they are interchangeable.

10) Where the contract documents (drawings, specifications, etc.) reference the terms “General Contractor,” “Contractor” or “Subcontractor,” they are synonymous with the term ‘Seller” – and they are interchangeable.

11) Where the contract documents (drawings, specifications, etc.) reference the terms “Contract” or “Subcontract,” they are synonymous and interchangeable.

12) Where contract documents reference the terms ‘Option” or ‘Additive Alternate,” they are synonymous and interchangeable.

13) With regard to special inspections or testing associated with construction field operations, ORNL waives primary jurisdiction to directly retain its own special inspection and testing services (e.g., soils, structural steel inspection, concrete testing, etc.). All these special construction inspection and testing services that are required to meet applicable construction codes and standards shall be provided by the Seller utilizing inspection and testing agencies that are approved by ORNL.
   • Seller shall submit the name(s) and qualifications of special inspection and testing agencies for ORNL approval.
   • Special inspection and testing agencies shall meet accepted industry standards with their respective discipline.

   Note: Where factory acceptance testing of a system is necessary prior to delivery to the site, the Company/ORNL would expect to participate in witness testing/inspection as may be appropriate.

2.0 Project Schedule

The Design Build period of performance is estimated to be July 2021 to December 2023.

The deliverables are to be provided to ORNL in accordance with the STP Modernization Design Build Performance Specification (Solicitation Attachment 2). The offeror's proposal is to include a sufficiently detailed schedule showing work activity sequences and logic demonstrating the validity of proposed delivery dates required to meet the overall project schedule for the design and construction deliverables:
   • Schematic Design (30%)
   • Design Development (60%)
   • Construction Documents (90%)
   • CFC Documents (100%)
   • Construction
The design schedules should accommodate appropriate and reasonable periods of time for Company review of the design deliverables (typically ~1-2 weeks).

The target goal is that all work associated with this project shall be Substantially Complete (i.e., facility suitable for Company occupancy/use) by approximately October 15, 2023, and that Final Completion shall be December 31, 2023.

Bidders proposals to accelerate the target completion date schedules (e.g., using fast track design build) or to reduce net project cost by offering alternative project completion dates will be factored into the technical evaluation of the approach to work and methodology in the offeror's proposal.
LIST OF ATTACHMENTS TO THIS SOLICITATION

This solicitation contains numerous attachments that provide information relevant to both:

- Providing a proposal/offer in response to this solicitation;
- Background information about existing infrastructures and designs that have bearing on designing and construction the STP Modernization.

These attachments include:

1. **Attachment 1**: Summary Statement of Work for Design-Build Construction of Sewage Treatment Plan Modernization, Revision 0, dated February 2021.

2. **Attachment 2**: Sewage Treatment Plant Modernization Design Build Specifications, dated February 2021.

3. **Attachment 3**: ORNL Primary Treatment Project 2018 As-Built Infrastructure.

4. **Attachment 4**: ORNL Primary Treatment Project Scope Not Built in 2018.

5. **Attachment 5**: Existing ORNL Maps (Topo, Utilities).


7. **Attachment 7**: Additional ORNL Related Documents.