September 26, 2023
Ms. Novella Randall
Department of Enterprise Services
1500 Jefferson Street SE
PO Box 41476
Olympia, WA 98504-1476

SUBJECT: Detailed Investment Grade Audit Fee Proposal
City of Lynden WWTP –Oxidation Ditch MLE Upgrade

Dear Ms. Randall:

We are pleased to submit this Investment Grade Audit (IGA) Proposal for energy improvements at City of Lynden's Wastewater Treatment Plant (WWTP) located at 800 S 6th St, Lynden, WA 98264. The City needs to increase the capacity of the WWTP to treat projected increases in flows and loads from a growing population and increased industrial activity. This project will implement the Modified-Ludzack Ettinger (MLE) improvements described in the Wastewater Treatment Plant Expansion Project Engineering Report (BHC Consultants, August 2022) as the preferred method to reduce long-term risk and costs for the City. Trane will provide scope of work documents, project development, cost estimating, energy/operational savings calculations, pre-retrofit measurement and verification, support with grant applications if applicable, and coordination with the utility provider if applicable for the subject project in accordance with the following:

Trane will undertake a detailed Investment Grade Audit (IGA) of specific systems within the WWTP. The primary focus of the IGA includes the elements listed below to assemble a project that meets the defined cost effectiveness criteria, achieves the operational goals of City, and may be submitted for applicable utility incentives and grants and loans.

Primary IGA Focus/Scope of Work

The Energy Conservation Measures (ECMs) to be studied as part of this IGA are summarized below.

ECM-1. Upgrade Oxidation Ditch:

The intent of this measure is to upgrade the existing Oxidation Ditches system with new equipment to increase biological treatment capacity and nitrogen removal within the existing oxidation ditch footprints using a non-proprietary MLE process. The current brush rotor aerators have reached their load capacity. The new blowers will be more energy efficient than the existing brush rotor aerators and will allow for variable airflow control to further improve performance and efficiency in comparison to expanding the oxidation ditch process. A new facility will be constructed to house the blowers and electrical gear. The electrical gear will include a replacement for existing motor control center (EMCC #1) with a new MCC #1 located in the new blower building. Trane will select new blowers and diffusers to satisfy the 20-year load projections for the plant and that optimize future energy use and maintenance costs.

1. Scope of Work Development
    a. Procure and manage sub-consultants
    b. Conduct a design workshop with the City and DES to review design features, equipment options, and operational requirements
    c. Work with City staff to identify and apply for applicable grants and/or loans as applicable.
    d. Conduct meetings and site visits throughout the IGA as needed to provide information to the City and DES at key points: a preliminary design workshop (described under item b), site visits to create the preliminary scope documents, preliminary design review meeting with the City and DES, a formal pre-bid meeting and contractor site walk, and presentation of guaranteed cost and savings.

e. The final preliminary design documents are estimated to be approximately ~~5~~0% and will include the following drawings, however the actual drawing index may vary during the course of the IGA. The preliminary design effort will include the following elements:

Drawing #	Drawing Name	Drawing Title
GENERAL (G) DRAWINGS		
1	G-1	Cover Sheet, Index of Drawings, Location and Vicinity Map
2	G-2	Legend, Symbols, and Designations
3	G-3	Site Map, Abbreviations, and General Notes
4	G-4	Process Flow Diagram and Design Criteria
5	G-5	Hydraulic Profile
6	G-6	Equipment List
DEMOLITION (D) DRAWINGS		
7	D-1	Demolition Site Plan - West
8	D-2	Demolition Site Plan - East
9	D-3	Demolition Plan and Section – Biotower
10	D-4	Demolition Plan – Oxidation Ditches
11	D-6	Demolition Plan and Section – Selectors
12	D-7	Demolition Plan and Section – Maintenance Building
CIVIL (C) DRAWINGS		
13	C-3	Site and Yard Piping – West
14	C-4	Site and Yard Piping – East
ARCHITECTURAL (A) DRAWINGS		
15	A-1	Architectural Code Summary
16	A-2	Architectural Plan – Blower Building
17	A-3	Architectural Roof Plan – Blower Building
18	A-4	Architectural Building Elevations – Blower Building
STRUCTURAL (S) DRAWINGS		
19	S-1	Structural General Notes
20	S-3	Structural Floor and Foundation Plan - Blower Building
21	S-4	Structural Roof Framing Plan - Blower Building
22	S-5	Structural Plan – Aeration Basin Upgrades
23	S-6	Structural Partial Plans and Sections - Aeration Basin Upgrades
24	S-7	Structural Plan – Selector Upgrades
25	S-8	Structural Partial Plans and Sections - Selector Upgrades
PROCESS MECHANICAL (M) DRAWINGS		
26	M-1	Equipment Installation Plan and Section – Anoxic Selector

27	M-2	Equipment Installation Plans – Aeration Basins #1: Aeration Piping and
28	M-3	Equipment Installation Plans – Aeration Baffles Basins #2: Aeration Piping and
29	M-4	Equipment Installation BafflesSection – Aeration Basins
30	M-6	Equipment Installation Plan and Section – Clarifier Splitter Box
31	M-7	Equipment Installation Plan and Section – RAS/WAS Pump Room
32	M-8	Equipment Installation Plan – Blower Building
33	M-9	Equipment Installation Section – Blower Building: Blowers
HVAC (H) DRAWINGS		
34	H-1	HVAC Schematic
35	H-2	HVAC Plan
PLUMBING (PL) DRAWINGS		
36	P-1	Plumbing Schematic
37	P-2	Plumbing Plan
ELECTRICAL (E) DRAWINGS		
38	E-1	Demolition Electrical Temporary Phasing Plan
39	E-2	Electrical Site Plan – West
40	E-3	Electrical Site Plan – East
41	E-4	One-line Diagram Sheet 1
42	E-5	One-line Diagram Sheet 2
43	E-6	One-line Diagram Sheet 3
44	E-9	Motor Control Center MCC-600 Replacement EMCC #1 Elevation(s)
45	E-10	Motor Control Center MCC-200 Elevations(s)
46	E-12	Electrical Plan – Aeration Basin #1
47	E-13	Electrical Plan - Aeration Basin #2
48	E-14	Electrical Plan – Blower Building
PID (I) DRAWINGS		
49	I-1	Process and Instrumentation Symbols and Abbreviations
50	I-2	Process and Instrumentation Diagram – Anoxic Selectors and Aeration
51	I-3	Process and Instrumentation Diagram Basin #2– Aeration Basin #1 and Clarifier
52	I-4	Process and Instrumentation Splitter BoxDiagram – RAS WAS Piping
53	I-5	Process and Instrumentation Diagram – Aeration Blowers

2. Energy/Operational Savings Calculations
    a. Calculate energy and operational savings for the ECMs listed above
    b. Create pre- and post-retrofit measurement and verification plan
    c. Coordinate with City regarding historical operational costs
    d. Implement pre-retrofit M&V activities
    e. Coordinate with local utility provider regarding applicable incentives
3. Cost Estimating
    a. Collaborate with the City and DES to put together a list of preferred contractors per trade
    b. Create RFP documents, receive and review proposals, determine costing per trade
    c. Ensure that contractors are aware of all Ecology and Federal funding requirements:
        i. Standard Contract Clauses
        ii. SRF Pre-selection Insert
        iii. SRF Service Contract Insert
        iv. SRF Specification Insert
        v. American Iron and Steel Requirement
    d. Coordinate subcontractor site visits, respond to bidder questions, evaluate proposals, prepare GMAX costing and financial analysis
    e. Prepare project financial analysis, review project scope, financing options, and pricing with City and DES, and develop final guaranteed maximum project pricing and project financial pro forma

4. Pre-Construction
    a. Coordinate with subcontractors and vendors post-Energy Services Proposal and in advance of the Notice to Proceed.
    b. Develop construction schedule with City
    c. Review and route contract documents
    d. Review construction logistics with City
    e. Develop preliminary safety plan and identify safety requirements for the RFP

5. IGA progress meetings with the DES and City as required. Assumptions:
    a. City staff will provide requested information to the extent that the information is available.
    b. Trane will design around one equipment make and model for all improvements, however “equivalent” and “equal” equipment will be considered and evaluated by Trane, the DES, and City.

6. Energy Services Proposal

    Trane will present to City and Department of Enterprise Services (DES) a written Energy Services Proposal (ESP), including the IGA documentation. The ESP will set forth at least the following:

    1. Executive Summary of the audit findings;
    2. A description of the Facility including type of use, square footage and location
    3. A description of those buildings and systems which shall receive Trane Equipment and Trane Services;
    4. The Baseline Energy Consumption for the Facility, including the data, methodology and variables used to compute the Baseline, and the Baseline calendar period which shall not be less than twelve (12) months, and must be multiples of (12) months if longer than (12) months;
    5. Utility rate schedules and/or Tariffs;
    6. A list of applicable building, mechanical, energy or other pertinent state and local codes that the facility currently does not meet or that may impact the project costs.
    7. The Guaranteed Energy Savings and estimated Energy Cost Savings that are expected to result from the installation of Trane Equipment and from Trane Service. Include an explanation of the method(s) used to determine energy savings and utility rate assumptions used to calculate the cost savings;
    8. The method by which Energy Savings and Energy Cost Savings will be calculated during the term of the Energy Services Authorization;

9. Description of the Cost Effective ECMs to be installed or caused to be installed by Trane;
10. Description of the ECMs analyzed but disqualified under the cost effectiveness criteria.
11. Trane's Measurement and Verification (M&V) Plan for documenting energy savings, including specifying utility rates to be used, methodology, post-construction equipment adjustment and any recommendation to continue or discontinue M&V reporting beyond the first twelve months post-installation, consistent with the International Performance Measurement and Verification Protocol (IPMVP), specifying how the cost of M&V was determined;
12. Financial analysis of ECMs.
13. Summary table with measure name, installed cost, energy savings by utility, and O&M savings;
14. The services that Trane will perform or cause to be performed on or in the Facility, including but not limited to engineering, construction management, the operations and maintenance procedures for use on Trane Equipment, training for Facility personnel, providing warranty service, and equipment maintenance;
15. The Guaranteed Maximum Project Cost, itemized in detail (including but not limited to: labor, material and equipment, Construction Contingency, performance bond, design, construction management, and overhead and profit), which may be amended to represent actual costs;
16. Recommendations for replacement of Existing Equipment, along with recommendations for improvements to Existing Equipment and Operating Conditions;
17. A description of how Trane will finance its acquisition of Trane Equipment and when title to Trane Equipment will pass to the Owner;
18. A description of how Energy Savings will be guaranteed by Trane;
19. A description of how Trane proposes to be compensated;
20. The term of the Energy Services Authorization;
21. The Termination Value for each year during the term of the Energy Services Authorization;
22. The schedule for project completion;
23. The nature and extent of the Work and equipment that Trane anticipates it will receive from other firms under subcontract;
24. A project specific Diverse Business Inclusion Plan;
25. IGA report will be prepared by a person acting as the auditor of record, who must be a qualified energy auditor having training, expertise, and three years of professional experience in building energy auditing, and being any one of the following:
    a. A licensed professional architect or engineer
    b. An energy auditor, assessor, or analyst certified by the Association of Energy Engineers (AEE)

City Responsibilities:

1. Provide access to record drawings, O&M data, submittals, startup/TAB reports, etc. as required to allow Trane to fully develop the baseline operation of the existing systems to be studied.
2. Provide access to 24 - 36 months of historical utility data (electricity, natural gas, water, and sewer).
3. Provide access to staff and occupants with knowledge of history and operation of the systems to be studied as part of this IGA.
4. Provide access to the sites, buildings, and systems to be studied as required.
5. Provide access to City stakeholders during the IGA phase.

Fixed Fee for IGA before tax (all fees subject to WSST):

BHC Design Fee:.....$631,647
Trane Technologies Project Development:.....$244,183

Total Fixed IGA Fee:..... $875,830

The above price remains valid for 60 days after the date of the proposal. After that time, Trane reserves the right to change the price. The BHC design fee will be billed regardless of whether the project moves to construction or not, the Trane project development fee will be billed based on whether the project meets the cost effectiveness criteria below.

Cost Effectiveness Criteria:

The cost of the Investment Grade Audit will be rolled into the final cost of the project should the City proceed with implementation of the subject project. Should Trane complete the scope outlined in this IGA Proposal and identify a project that meets the identified Cost Effectiveness Criteria, and the City chooses not to implement subject project with Trane, the City will reimburse Trane the entire IGA fee within 60 days after the submission of the ESP. If Trane is unable to identify a project that meets the identified Cost Effectiveness Criteria, the City will not be financially obligated to Trane for the Investment Grade Audit, but would still be obligated to pay BHC their design fee.

The cost effectiveness criteria for this IGA is divided into two categories, Technical and Financial. Trane will provide the following to the City as part of the IGA and future construction of selected ECM's.

- Technical: Use equipment selected by the City, provide a guaranteed maximum price and minimum energy savings identified prior to construction start, replace aging infrastructure, improve operation and reduce maintenance burden, risk transfer to Trane. Example of risk transfer may include, financial (guaranteed maximum cost), legal (Trane is managing and contracted with all subs-not the City), safety and additional management resources (Trane provides project management, site supervision, and safety)
- Financial: The ESP will demonstrate that the project is lifecycle cost effective (LCCA) over the expected life of the installed equipment and infrastructure. Lifecycle cost effectiveness will be defined by the following formula, where deferred capital cost is equal to the total project cost associated with delaying the project for 5-years. LLCA = (total project cost – utility incentives – grants – deferred capital cost) / (annual energy + identifiable O&M savings). In addition, Trane will complete energy and O&M savings calculations assuming an elevated baseline for future projected flows and plant loadings. ****Only energy savings will be guaranteed.

Schedule for IGA Services:

Substantial completion of this IGA will be within 300 days, and full completion within 350 days, of Notice to Proceed.
We at Trane appreciate the opportunity to provide these services. If this IGA proposal is satisfactory, please forward contract documents.

Sincerely,

Angie Estey
Senior Account Executive
Trane Technologies