RFQ Response for Project 2013-133

February 22, 2013

State of Washington
Department of Enterprise Services
Division of Engineering & Architectural Services
Energy Program
Olympia, WA

Presented by: Mr. Don Mitchell
Director Strategic Solutions
Trane Northwest – Hawaii District
Trane U.S. Inc.

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ESCO SUMMARY SHEET

Trane is pleased to resubmit our qualifications to the State of Washington's RFQ for ESCO Selection to identify, finance, design and install energy and utility efficiency measures for Project No. 2013-133. We have enjoyed working with the DES Energy Program's staff over the past six years and look forward to bringing in substantial growth through Trane for this program in the near future. The following response demonstrates how Trane is well positioned to provide the outlined energy conservation projects for public facilities across the State.

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State of Washington's Contractor License:	TRANE**934RE Construction Contractor TRANE**925BD Electrical Contractor
Federal ID Number:	25-0900465

HISTORY OF TRANE

Trane U.S. Inc., a business of Ingersoll Rand, is a corporation committed to sustainable business practices within our company and for our customers. Established in 1913 and incorporated in the State of Delaware in 1929, our story began as a classic American success story that grew globally through heating, ventilation and air conditioning. The industry's most significant advancements occurred because Trane pushed the limits to create more comfortable and cost effective spaces where people live, work and play for 100 years. With HVAC averaging 40% of energy costs for our customers, the energy industry was a natural growth area for our business.

TRANE'S COMMITMENT TO PERFORMANCE CONTRACTING

Trane's Comprehensive Solutions business (also known as Performance Agreements for Comfort from Trane, or "PACT™") was introduced in 1994 and has provided total facility systems upgrades in hundreds of building throughout North America. Trane's proven approach has delivered projects meeting customers' most critical needs including energy efficiency, modernization, improved comfort, reliability and sustainability. This business continues to be Trane's largest business growth area for developing its organization.

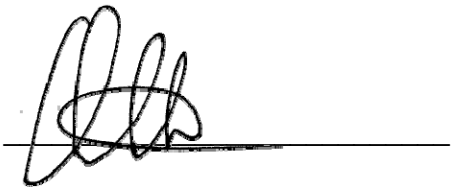
Trane's PACT™ program customizes a total Trane solutions offer, addressing facility infrastructure concerns and improving operating efficiencies. The energy and operational cost avoidance savings associated with these efficiency improvements and upgrades reduces capital investment required to modernize facilities, allowing Trane's customers' management teams to invest their scarce capital in other core business requirements. Trane guarantees its solutions, reducing risk and liability to its customers. By alleviating operating and reliability concerns, Trane helps its customers to focus on core business issues. For over 100 years, Trane's hallmark has been a spirited drive for achieving excellence and World Class performance.

Thanks in part to the DES ESPC contract; the Seattle District Office of Trane has aggressively grown our owner-focused services, which we call "Comprehensive Solutions". This has included the addition of several key individuals to our staff who bring the experience needed in order to develop and deliver on large, bundled facility improvement and energy/operational efficiency projects. By working in tandem with our Regional and National resources, this team has the ability to bring to our customers the full spectrum of facility initiatives, from simple VFD installations to Digester Gas Cogeneration plants. All projects, however, will continue to be managed by our local staff, and our Seattle office will be the single point of contact for all opportunities and needs.

The bottom line is that Trane-Seattle is eager to continue the growth of our local portfolio of ESPC projects. We will pursue all viable opportunities and will leverage our past successes and industry partnerships through our service, parts, contracting and controls businesses to introduce the State's program to even more customers.

We look forward to continuing to apply this philosophy in helping the State of Washington achieve its energy reduction, infrastructure improvement, renewable energy and economic improvement through unemployment reduction goals.

Sincerely,



Don Mitchell
Director of Strategic Solutions
Trane Northwest – Hawaii District

TRANE EXPERIENCE

1. Project Experience

The ESCO's experience in auditing and identifying energy efficiency projects. Provide a list of all energy performance contracting projects completed in the past two years (if the ESCO has completed more than 15 projects within Washington State in the past 2 years, the ESCO may list just the Washington State projects, in either case the list should be no longer than the most recent 30 projects), including contract value, client contact and client phone number.

Trane has provided many projects in Washington State and across North America over the last two years. Washington state energy performance contracting projects completed or in the final stages of completion in the past two years include:

Project	Project Amount	Contact	Phone #
Edmonds Community College	$4.5M (3 phases)	Mr. Kevin McKay	(425) 640-1547
Renton School District	$4.9M (2 phases)	Mr. Jonathan Stine	(425) 204-4421
Keyport NUWC	$14.7M	Mr. Phil Beste	(360) 396-5170
Sequim School District	$742K	Mr. Brian Lewis	(360) 582-3266
Lake Washington School District	$2.6M (2 phases)	Mr. Chuck Collins	(206) 351-1507
Rochester School District	$1.8M	Larry Quarnstrom	360-273-6940
Lake Stevens School District	$1.3 Million	Rob Stanton	(425) 335-1506
Sultan School District	$502K	Charlie Weaver	(360)-793-9820
Sumner SD	$3.7 Million	Jay Donnaway	(253) 891-6018
Steilacoom SD	$972K	LeeRae Ball	(253) 983-2209
Chehalis SD	$1.06 Million	Heather Pinkerton	(360) 807-7207
Ocosta SD	$850K	Steve Schmeling	(360) 268-9125 x240
Seattle School District (2 phases complete)	$9,940,878	Mr. Steven Cole	(425) 503-3393
Budd Inlet / Lott Alliance Wastewater Treatment Plant	$3.2M	Laurie Pierce	(360) 528-5727

Additional PACT projects completed in the last two years include:

City of Caribou	Warrick County Jail
State Fair Community College	Adams State College Ph2 (ARRA)
City of Winter Park	City of Manhattan
Martin County Board of County Commissioners - Phase 2	Greater Clark County Schools HVAC
Osceola Public Schools	Greenville Schools
Dothan City Board of Education - NHS & VoTech	Dothan Schools
Clayton County Ph2-Landfill	City of Lynn Elementary School
City of Chesapeake Ph2	Greater Clark County Schools

2. Matrix of Capabilities

Provide a matrix of the range of energy and utility management services provided by the ESCO, including the ESCO's capability to provide the following services: energy auditing, financing, design, general contracting, construction management/administration, testing and balancing, commissioning, warranty services, measurement and verification of savings, energy savings guarantees and facilitating utility participation to maximize utility rebates and incentives.

ENERGY AUDIT

Trane will approach the energy audit process based on the strengths of our team members. We will evaluate all of the disciplines of energy, utilities, infrastructure, and operations to address the needs and goals of each facility included in the phase of implementation. We will utilize the historical energy data provided by the customer and the local utility to develop a historical baseline from with the performance and results of each Energy Conservation Measure (ECM) will be measured. Our audit team will survey each facility to discover and develop ECM's from each discipline, which will be incorporated into the overall energy strategy for the facility. These surveys will include detailed investigations into the existing building conditions, detailed data acquisition through the use of data gathering equipment, and the analysis of historical facility performance records. Through the use of direct measurement and calculations, if appropriate, and the development of comprehensive energy models using thermal modeling programs, a comprehensive list of ECM's will be developed and evaluated. From the comprehensive list, Trane, the State, and the customer will select and build the final Scope of Work together, based upon the ECM's ability to meet the overall project goals. This selection process will be based upon providing the customer with the overall value that meets the objectives of the project. From the final Scope of Work, a financial model will be evaluated and finalized, which will clearly demonstrate the economic value of the program, in meeting the requirements of the enabling legislation and the financial goals of the customer.

FINANCING

Trane facilitates the financing by introducing our customers to third-party lenders that are qualified to provide financing appropriate for the project and the customer. The customer may provide its own financing or work with one of the third-party lenders to whom we have introduced to the customer. The financing contracts are between the customer and the lender and are separate from Trane's agreement with the customer.

DESIGN

Trane will retain the services of a registered professional engineer to support the investment grade audit with Trane and to prepare construction drawings and specifications for the various energy conservation measures to be installed under the performance contract. Having a separate engineering firm involved in the audit and engineering phases of the project provides a check and balance that helps protect our customer's interests. The design documents will be complete in all respects, stamped by the engineer, and utilized for subsequent subcontractor bidding and installation. Finally, these documents will be updated to reflect 'as-built' conditions and submitted to the customer as record drawings.

GENERAL CONTRACTING

Trane has been actively practicing general contracting for many years and is duly licensed to practice as a general contractor in the State of Washington (License No. TRANEDA974Q4).

Trane has managed over $1.8 billion dollars in Comprehensive Solutions and Energy Service Performance Contracts and has been the prime contractor on projects ranging from very small to nearly $50 million dollars in scope.

CONSTRUCTION MANAGEMENT/ADMINISTRATION

The success or failure of this Energy Performance Contracting Program will ultimately rest in the ability of the selected firm to design and develop an effective plan and deliver a working project schedule for implementation of the energy saving measures. Performing construction projects in public facilities can entail some of the most difficult scheduling challenges possible. Trane and our team members have already developed several options for overcoming these types of challenges. Some of the planning and scheduling approaches we have identified to meet the requirements of our customers include:

- Optimize Phase I Audit analysis and design to maximize resources and provide ongoing utilization of all resources.
- Pre-fabricate installation materials in preparation for high periods of construction activity.
- Schedule and phase major construction during holidays and unoccupied times.
- Employ night and weekend schedules to maintain progress throughout the year.
- Perform building-wide lighting and water retrofits early in the project schedule in order to speed up realization of energy savings to customer.

Because of our experience and proven track record of planning, scheduling, and successfully implementing Energy Performance Contracting Programs for similar facilities and on a similar scale as the State of Washington will require, Trane is confident our project management approach will meet the demands of project resulting from this contract.

Once the scope of a project is defined by the customer, the State, and Trane, a project responsibility and organizational chart will be established. Trane utilizes a process-based design/build turnkey approach to the project implementation. An outline of the process protocol is as follows:

- Validation – insures constructability of the project and the alignment of customer expectations with the designed deliverable
- Planning – work breakdown structures and CPM schedules are utilized to insure timely delivery of materials, to control construction activities, and to allocate adequate manpower loading
- Execution – progressive construction activities including engineering, construction, commissioning, check out, monitor & control, communication, program safety protocol, and customer training

- Change Control – process to properly recognize, plan, and execute alternate plans as conditions arise that are contrary to the original implementation plan
- Close-Out – transitioning from the implementation phase to the monitor & measurement phase; includes initiation of all appropriate warranty documents, final inspections and certifications, and customer acceptance of the implemented project
- Commissioning and Transition to Post—Retrofit Services
- Proves that the project performs according to the design intent
- Establishes the service relationship between Trane and the customer
- Provides implementation of the savings measurement and verification processes

TESTING AND BALANCING

Trane will contract certified air side, hydronic and sound-vibration Test and Balancing (TAB) services to insure that the energy efficiency of items listed under the scope of the State of Washington's Project 2013-133 related activities are operating at peak efficiency. Trane will utilize an Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB) certified TAB agency to insure proper test and balance. Trane's approach to system test and balance will:

- Ensure proper staging of certified TAB resources in conjunction with the project construction schedules such that TAB operations are performed when the building envelope is complete, including the installation of all windows and door systems, all elevator / mechanical shafts and ventilation systems. This will insure a correct and sustainable balance of air side and building pressurization systems in particular.
- Ensure that all duct and piping systems in scope have been flushed / properly cleaned and vented to provide optimal heat transfer and air / hydronic fluid flow.
- Verify that all air and hydronic balancing devices such as balancing valves, manual volume air dampers, actuated air dampers, test ports, gauge cocks, strainers, vents, air control, automated flow-control devices…etc. are in place to facilitate proper test and balance.
- Verify that the locations of these balancing devices are readily accessible, or that access doors are provided, and appropriate for effective balancing to produce, and maintain, efficient system operations.
- Ensure that all mechanical systems, air distribution, pumps and piping and associated controls are functional for proper TAB activities and that all equipment under the scope of the awarded project is commissioned by Trane / per the manufacturer's recommendations.
- Ensure that all instrumentation used to perform TAB activities are properly calibrated, functional and documented.
- Ensure that the proper sheaves, drives, belts…etc. are furnished and installed to balance the system to function within required specifications.

REPORTING

- A complete test and balance report showing the final state of balanced systems and components shall be provided to the customer.

- A listing of test and balance devices used, and associated calibration procedures, shall be provided.
- All systems / components in scope shall be clearly identified / coordinated with the equipment designations outlined on the construction documents for convenient reference.

Balancing devices shall be permanently marked with suitable identification to show final settings / balance points.

ACCEPTANCE

- TAB Activities will be considered complete by Trane when all measured flow quantities are within the agreed upon ± % of the design specification quantities.
- Any deficiencies or non-compliance, beyond the control of TAB resources, is noted and documented.
- The final TAB Report is delivered to the customer.

COMMISSIONING

During the commissioning process, Trane verifies that each component of the total project is complete and fully operational. Commissioning proves that the project is operating according to the intent of the technical design and that the equipment and systems function properly. Also included in Trane's commissioning process is the creation of detailed operations and maintenance manuals (O&M's) containing product submittal data, warranty information, project completion certificates, manufacturer's recommended operations and maintenance data, as-built construction documents, functional performance test documentation and commissioning checklists, and copies of maintenance agreements for the project. Further, commissioning includes an evaluation of the post-retrofit services including the savings measurement methodology, electronic monitoring and trending of facility operation, staff training services, and maintenance services included in the project.

WARRANTY SERVICES

Equipment installed hereunder and the associated workmanship included within the Services (i) shall be free from defects in material, manufacture, and workmanship and (ii) shall have the capacities and ratings set forth in manufacturer's catalogs and submittals for the specified warranty period.

MEASUREMENT AND VERIFICATION OF SAVINGS

Trane's approach to savings measurement is designed to ensure that maximum energy savings are realized throughout the term of the agreement for the benefit of the customer. For a detailed description of Trane's M&V procedures, please refer to Section 3.

ENERGY SAVINGS GUARANTEES

Through our extensive building systems energy retrofit experience, Trane is able to guarantee energy savings. Our guarantee process manages the construction and performance risk of the project and provides security that the project will meet each customer's financial and operational expectations as further defined in section 29.

FACILITATING UTILITY PARTICIPATION TO MAXIMIZE UTILITY REBATES AND INCENTIVES

Trane has a comprehensive listing of utilities distributing power within the Washington State area and, as ESPC contracts are awarded to Trane, we will aggressively investigate the available incentives / rebates to compliment the energy / cost savings measures identified by Trane and assist with obtaining those rebates / incentives from the applicable utility for the customer's benefit. Trane will specifically consider potential incentives related to;

- Implementation of high efficiency equipment, lighting or premium efficiency motors that may be eligible for rebates
- Implementation of Variable Speed Drive (VSD) controllers to maximize energy savings and capture potential rebates
- Incentives / rebates available as a result of demand side management or demand shifting (to off peak periods)
- Incentives related to the use of "green" power technologies / environmentally favorable technologies
- Incentives related to power quality improvements
- Incentives related to water conservation efforts also to include process changes
- Benefits related to use of technology and process change that reduces operating or maintenance costs for the State and its customers

Additionally, where technologies or control strategies are identified that can save the State and its customers operating / energy costs, Trane will provide training to key personnel to assure that these technologies / processes are maintained to sustain the benefits identified. As outlined earlier in this proposal, Trane has been instrumental in securing utility rebates / incentives for our Comprehensive Solution / Energy Service Performance Contract customers and we would pursue these opportunities for the State and its customers as part of awarded ESPC contracts under Project 2013-133.

Please see below for a matrix of capabilities.

TECHNICAL CAPABILITY	Studies		Design		Installation	
	In-house	Sub-contracted	In-house	Sub-contracted	In-house	Sub-contracted
Lighting	X	X	X	X	X	X
Specialty Lighting / Outdoor	X	X		X		X
Exit Signs	X	X		X	X	X
Electrical Wiring	X	X		X	X	X
Generators	X	X	X	X	X	X
Transformers		X		X		X
Building Electrical Systems	X	X		X		X
Power Factor Correction	X	X		X	X	X
Demand Limiting	X	X	X	X	X	X
Security and Fire Detection	X	X	X	X	X	X
Fire Suppression		X		X		X
Plumbing	X	X		X		X
HVAC Air Distribution	X		X		X	X
Duct Work	X	X		X		X
ATC / BAS	X		X		X	X
Chillers	X		X		X	X
Steam Heating	X	X		X	X	X
Heat Pumps	X		X		X	X
Heat Recovery	X		X		X	X
VFDs	X		X		X	X
VAVs	X		X		X	X
Hot Water Heating	X			X	X	X
Central Chiller Plants	X		X		X	X
Cogeneration	X	X		X	X	X
Coal Fired/Stoker Fired		X		X		X
Gas/Oil Fired	X	X	X	X	X	X
Steam to Hot Water Conversions	X	X	X	X	X	X
Package Boilers	X		X		X	X
Water Conservation	X			X	X	X
Toilet/Shower Replacements	X			X	X	X
Laundry Equipment Upgrades	X			X		X
Pool Equipment Improvements	X			X	X	X
Kitchen Equipment Replacement	X	X		X	X	X
Water Treatment	X		X		X	X
Sewage Treatment		X		X		X
Solid Waste Management		X		X		X
Building Envelope	X		X	X		X
Windows	X	X		X		X
Roofing	X	X		X		X
Doors	X	X		X		X
Ceilings	X			X		X
Telecommunication		X		X		X
Sound systems		X		X		X
Geothermal Well Fields	X			X	X	X
Ground Source Heat Pumps	X	X	X	X	X	X
Solar Renewable Energy	X	X	X	X	X	X

3. M&V Process Experience

The ESCO's experience with measurement and verification (M&V) processes. The ESCO should describe its familiarity with M&V protocols and when each is most appropriately applied.

THE PROCESS AND THE TEAM

Every M&V plan is unique. We will develop a project-oriented M&V plan and team specifically for each customer. This team includes highly qualified, experienced engineers and other ESPC specialists.

OUR APPROACH TO MEASUREMENT & VERIFICATION

Trane has a standardized and disciplined approach to both energy engineering and guarantee development. Both of these critical program components are developed locally by in-house personnel, with assistance from other Trane offices or outside consultants when needed. Once engineering and savings calculations are completed locally, they are "scrubbed" through a rigorous peer and internal review process where the same people whose skill and ability have created Trane's extraordinary success rate of 99.98%, personally review and approve all calculations prior to presentation to our customers.

GUARANTEED ENERGY SAVINGS INFORMATION:

Projects currently under M & V contract - As of December, 2012, Trane is currently tracking 172 projects with an outstanding liability of $607 Million over the next 20 years. Total liability for all projects is $818 Million.

M & V Guarantee Total Since Inception- As of December, 2012, Trane has booked more than $818 Million in energy savings. To date, those projects have delivered more than $223 Million in savings—as projected.

Trane complies with the International Performance Measurement & Verification Protocol (IPMVP), to validate your ESPC guarantee. Our accreditation by the National Association of Energy Service Companies (NAESCO) further shows our adherence to industry best practices.

Savings are calculated by comparing actual energy usage after project completion with a baseline. The baseline is the amount of energy the facility would have used if the project had not been implemented. We determine the baseline using pre-project utility bills, adjusting for factors that affect energy consumption such as unseasonable weather and changes in production schedules and usage of the facility, and the like. These refinements ensure that the guarantee is fair to both the customer and Trane.

Any operational savings that are not energy-related and are agreed to by the customer, the State, and Trane are included in the PACT™ contract documentation. These could include reductions to subcontracted maintenance labor and materials costs.

Each year after the PACT™ Guarantee begins; Trane will reconcile any difference within 90 days following completion of the guarantee year. All savings generated by the project are the customer's property. In the unlikely event of a shortfall, the customer will be paid by check.

THE MEASUREMENT & VERIFICATION PLAN

To determine results for the PACT™ savings guarantee, Trane monitors, measures, and verifies the performance of the project. The M&V team does this by surveying energy usage after installation of all ECMs in accordance with the guarantee documents.

We verify the potential of each ECM to perform and generate savings by confirming that (a) baseline conditions are accurately defined and that (b) appropriate equipment components or systems have been properly installed, are performing per specification, and have the potential to generate the predicted savings.

THE IPMVP

A second responsibility is implementing an International Performance Measurement and Verification Protocol (IPMVP)—a standardized, industry-recognized guideline process for monitoring, quantifying, and confirming energy use.

The IPMVP contains four distinct M&V procedures. Each can be applied to various kinds of public and private ESPC projects, and each provides an explicit method for comparing energy use before and after an ECM is installed. On the award of a performance contract to Trane, we will select the IPMVP method most suitable for the project in question.

We have a mix of all of the protocols in our portfolio with most of them being Option A, some with Option B and D of nearly equal share, and a smaller percentage of the Option C protocol measures. We have a mix of Municipal, Federal Government, Education, Healthcare, and some Manufacturing and Industrial customer types. We apply our experiences to help our next customer in meeting their project needs and requirements.

APPLYING THE M&V PROTOCOLS

Our customer needs and project requirements vary for each project, but there are some consistencies to employing protocols with all of the considerations considered.

It is with the protocols in mind that we determine the measurement boundary for the ECM or the group of ECMs for the facility. If the focus is upon a piece of equipment or an operating system, then Option A or B of the IPMVP is considered. If the whole building is considered due to many ECMs with interactions, then Option C or D is considered. The responsibilities for the different parties for energy use, the ability of the installed and recommended meters or instruments to track changes within the boundary, and the interaction of the ECMs/FIMs to each other are considered.

For Option A protocol for ECMs, we choose the relevant Independent variable.

This is applied to ECMs where there is one specific and key variable that best indicates the potential for energy savings. Examples include lighting retrofits where there are not significant hours of use changes. We will measure the RMS wattage before the retrofit and after the retrofit. This can also be applied to motor replacements where the hours of use do not vary during the baseline period and only the power consumption of the motor is the key variable to be measured. This could be applied to an air conditioning unit where the unit is a single stage unit and power consumption is the key variable. We will measure the wattage before and after. This assumes that the load the unit sees is very predictable during the baseline and post-retrofit as the hours of run time would be stipulated. These are typically the least costly M&V protocols.

For Option B protocols for ECMs, we choose the relevant independent variables (two or more).

This is applied to ECMs where there are multiple variables and are applied in a lighting retrofit when the desire or requirement is to measure both the wattage before and after as well as the baseline hours of usage and post-retrofit hours of use. This could also be applied to heating systems and cooling systems where there are multiple variables such as outdoor air temperature, equipment capacity at part loads, and varying load conditions.

For Whole Facility protocols, we recommend calibrated simulation models, Option D more often than Option C protocols.

Option C protocol is a guarantee as measured by the whole building meters and is challenging for Energy Service Companies due to the usual cost for monitoring Client consumption patterns to ensure that changes in use have not occurred outside of weather or variance in production (and other variables). We have recommended and implemented this protocol, but it is used significantly less often than Option D. Option C is applied when there many interactive ECMs/FIMs and the cost for measuring the many variables and the subsequent analysis is relatively high.

Option D is the second most common protocol employed on Trane's projects. Energy simulation tools can be used for whole building models, zone level models, as well as room level models. Energy simulation models consider the interactive effects of multiple ECMs and once the baseline is calibrated, energy models are fairly easy to modify during the guarantee period for the many variables. This protocol is employed in many buildings where there are lighting retrofits, controls modifications, and some HVAC improvements or changes. Envelope ECMs are easily modeled as well, but are not that common due to their high cost for installation.

While the four protocols can be applied in many different ways, the type and quantity of measurements needed as well as the duration of variable measurements are considered in the selection of the protocol for a particular situation. The quality of the instrumentation/metering needed for the recommended/required accuracy and confidence are also considered. Sampling analysis is done to determine the quantity of measurements based upon the desired confidence level. The resultant costs are estimated to help determine the specifics for the M&V Plan. The accuracy, availability, credibility, and cost are considered in each case for data sources. The

appropriate data analysis method is used based upon many factors. Uncertainties exist in errors due to measurements, sampling, modeling, rounding, and error propagation, but our processes are employed to process the data to minimize uncertainties and report accurate results.

4. Experience Designing, Costing & Managing Construction

The ESCO's experience designing, costing and managing the construction of heating plants(including steam), chilled water plants, heating ventilation and air conditioning systems, heat recovery, energy management and control systems, lighting and lighting control systems, water efficiency, and other utility system improvements including renewable.

Trane has successfully studied, designed, implemented, and validated the construction of heating system upgrades (including steam), chilled water system upgrades, heating, ventilation and air conditioning systems, heat recovery, energy management and control systems, lighting and lighting control systems, water efficiency, and other utility system improvements including renewable energy. We also have experience in cogeneration, tri-generation, solar thermal, solar photovoltaic, and wind generation. Trane also manufactures, installs, and supports advanced Building Automation Control Systems to control all types of heating, ventilating and air conditioning systems, lighting systems and building security.

Through these projects, each of the initiatives in the question above have been successfully studied, designed, implemented, and validated. One of our most recent projects is a renewable energy project using digester gas cogeneration.

Trane's comprehensive Energy Services Performance Contracting (ESPC) experience will help Washington's state agencies, colleges, schools, and municipalities accomplish their goals as part of Project 2013-133.

Below are some highlights of Trane's ESPC contracting experience.

HIGHLIGHTED TRANE ESPC CREDENTIALS

Trane has constructed over $650,000,000 of commercial and Government ESPC projects.

Our referenced projects demonstrate our ability to successfully develop, construct, and manage a diverse range of ESPC projects, incorporating multiple Technology Categories (TC's) and Energy Conservation Measures (ECM's) targeted at maximizing site wide energy and energy related savings. Trane received the distinguished *2009 Presidential Award for Leadership in Federal Energy Management* for the Naval Air Station Oceana – Dam Neck Annex ESPC project (performed under the U.S. Department of Energy's master IDIQ ESPC contract program).

A history of innovative and renewable technology implementation through over 7,500 tons of Geothermal Heat Pump ESPC projects along with innovative energy saving solutions such as Server Virtualization at Edmonds Community College and Cogeneration at the LOTT Alliance.

Small Disadvantaged Business Enterprise goals have been met, or exceeded, for all Trane ESPC projects. In fact, our $24M Charleston AFB ESPC project achieved 84% SBE utilization.

The Trane High Performance Workshop Series minimizes costs by including key customer stakeholders in the Investment Grade Audit (IGA) decision process and throughout the ESPC process.

As a leading manufacturer of energy efficient HVAC systems, compressed air / industrial products, controls etc., Trane is able to provide equipment without a “double” markup. Many ESCOs must source their equipment from manufacturers like Trane and must place their additional markups on the equipment. This is a significant cost savings value to our clientele.

Trane has over 700 LEED Accredited Professionals, over 70 Certified Energy Managers and approximately 70 registered Professional Engineers, many whom directly support our ESPC projects.

Because of Trane’s technological diversity in performance contracting experience, its depth of technical expertise to provide engineered solutions in global markets and its single source solutions expertise (which ranges from small residential systems through large centrifugal chiller plant solutions and associated Energy Management Controls), Trane is uniquely qualified to meet the needs of Agencies and their associated facilities.

5. Utility Incentives Experience

The ESCO’s experience securing utility incentives for its customers. Discuss successful strategies implemented for maximizing utility incentives.

Trane has a comprehensive listing of utilities distributing power and water within the Washington State area and, as ESPC contracts are awarded to Trane, we will aggressively investigate the available incentives / rebates to compliment the energy & water / cost savings measures identified by Trane and assist with obtaining those rebates / incentives from the applicable utility for the customer’s benefit.

Trane has developed and maintains good working relationships with regional utility contacts. Trane ensures incentive knowledge is up to date by reviewing incentive program web information often and through regular communication (email, phone, face-to-face meetings) with the utilities. Trane effectively communicates any new incentive information learned with its internal teams.

During the Preliminary Phase, Trane engages the utility/utilities by inviting utility representatives to accompany Trane on the high-level site walk and to meet with the customer’s representatives. In this way, the utility gains direct knowledge of the customer’s concerns and priorities and has the opportunity to analyze the proposed measures, offer suggestions, and share expertise. With the customer’s permission, Trane can also work directly with the utility during this phase to obtain

accurate historical utility data and to continue communicating the measures being considered for utility incentives.

During the Detailed Phase, Trane ensures utilities continue to be involved by engaging their experts in reviewing energy savings calculations and assumptions against utility-determined project life cycle or simple payback criteria. Trane continues its work with the utility and the customer to ensure that the proposed projects meet the customer's needs and that the projects are considered viable by the utility for energy savings incentives.

To further ensure utility participation and buy-in, Trane obtains a funding estimate letter from the utility for the measures being reviewed, before the Energy Services Proposal is presented to the customer. We also take this one step further by sharing our Measurement & Verification plan with the utility to ensure measurement methodology and savings approach are within utility guidelines and incorporate any utility-required methodology into final documents.

Trane will specifically consider potential incentives related to:

- Implementation of high efficiency equipment, lighting or premium efficiency motors that may be eligible for rebates
- Implementation of Variable Speed Drive (VSD) controllers to maximize energy savings and capture potential rebates
- Implementation of controls, control strategies and retro-commissioning to ensure systems maintain energy savings over time
- Incentives / rebates available as a result of demand side management or demand shifting (to off peak periods)
- Incentives related to the use of "green" power technologies / environmentally favorable technologies
- Incentives related to power quality improvements
- Incentives related to water conservation efforts
- Benefits related to use of technology that reduces operating or maintenance costs for the State and its customers

Additionally, where technologies or control strategies are identified that can save the State and its customers operating / energy costs, Trane will provide training to key personnel to assure that these technologies / processes are maintained to sustain the benefits identified.

As outlined earlier in this proposal, Trane has been instrumental in securing utility rebates / incentives for our Comprehensive Solution / Energy Service Performance Contract customers and we would pursue these opportunities for the State and its customers as part of awarded ESPC contracts under Project 2013-133.

6. Key Staff Experience

A description of the experience key staff have, who are responsible for administration of any potential work awarded thru this project. This is to include any sub-consultants routinely used for execution of performance contracting work. This is not to be the resumes or curriculum vitaes (CVs) of personnel. Resumes or CVs may be attached as an appendix. Please indicate if the experience was obtained at other than this ESCO. Please identify the responsible licensed P.E.

Trane will assemble a professional project team that consists of local and national resources, each of whom will play a major role in the development, implementation and validation of its projects. Below are those who will assume the leadership assignments shown throughout the duration of each project;

Name	Title	Project Experience
Eric Bauer	Comprehensive Solutions Leader	26 years of experience with 18 years direct ESPC (1+ year with Trane)
Angie Estey	Comprehensive Solutions Account Executive	14 Years of Experience; Project experience ranges from large, complex facilities to small school districts. She is actively involved in PNCWA/WEF, NAIOP, Seattle 2030 District, APPA, WSHE, Climate Solutions, and is a member of the Innovators Network for Cancer research.
Jim Kershner LEED AP	Comprehensive Solutions Account Executive	14 Years of Experience in the Heating and Air Conditioning Industry and has been developing and implementing Energy Savings Performance Contracting (ESPC) projects with Trane for the last three years, mostly within the K12 market. He possesses direct and indirect experience working with owners, contractors and engineers offering energy savings and facility infrastructure improvement solutions for existing buildings.
Debbie Chambers CEM, LEED AP, CSBA, BSME	Project Development Engineer	20+ years in Mechanical Engineering, consulting, facilities, and Energy Efficiency project design, analysis, life cycle, and sustainability. Recent projects resulted in over $2 million in annual energy savings.
Scott Eisenhauer	Project Manager	Has successfully managed over $50M worth of performance contracting projects.
Jim Sutull, PE	Project Manager	10+ years in project engineering and management.
Shawn Kelly	District Contracting Manager	25+ years experience in management
Don Mitchell, LEED AP	District Strategic Sales Leader	30+ years in management of energy related sales and project development.
Steve Savory	District Operations Manager	10+ years in operations
Warren Michelsen	District Office Manager	20+ years with Trane in energy management and leadership

Name	Title	Project Experience
Tim Swanson	Territory Contracting Solutions Leader	30+ years experience in construction management
Jared Peters	Territory Project Engineer	6+ years experience in engineering and energy industry
Linda Yoon	Territory Project Engineer	10+ years experience in engineering and project development of energy projects
Mike Mendenhall	Territory Project Developer	25+ years experience in energy industry and project development
Craig Howe CEM	Territory Project Developer	20+ years experience in energy industry and project development
Joe Leichner	Corporate Project Developer	15+ years experience in energy industry in identifying, developing, financing and implementing complex performance based design-build renewable energy and traditional power solutions projects
Neil Maldeis, PE, LEED AP	National Energy Engineering Manager	15+ years in detailed analysis and modeling to develop conservation projects.
David Sprinkle	M&V Team Leader/Energy Engineer	29+ years in engineering in the energy conservation field.
Clayton Dumcum	Energy Engineer	10 years of experience in Energy Efficiency and Performance Contracting solutions, resulting in over $20 million of energy savings.
Brad Swanson	Environmental Health & Safety Manager	Environmental Safety and Health Manager, Brad brings to Trane the experience he has gained over the last 15 years as the Safety Director for the largest commercial general contractor in the state of Washington.

SUBCONSULTANTS

Trane's expertise in chilled water and air handling systems in particular makes our company a valued resource and partner for engineering firms statewide. Over the years, Trane has built a level of trust and rapport that supports an efficient, collaborative approach to project development that is unique in the industry. The following list is just a small indication of the design engineering firms with whom Trane maintains the high level of working relationships that will most benefit our customers via the State ESPC contract. We provide our clients with flexibility when it comes to subconsultants as our objective in the development stage is to leverage the strongest resources amongst the customer's team. If our client has a strong relationship with a consultant, and that consultant has intimate knowledge of their facility, it serves us best to leverage that knowledge versus trying to have all the expertise in-house.

Engineering Firm	WA Location	Projects
HDR	Bellevue	LOTT Alliance Cogeneration Project
CDi	Lynnwood	Seattle Justice Center, Providence Medical Center, Skagit Valley Hospital, Valley Medical Center, UW Medical Center, Anacortes Library, SEATAC Airport
AEi	Seattle	UW School of Medicine, UAA Integrated Science Facility, Batelle Labs

Engineering Firm	WA Location	Projects
Hultz/BHU Engineers	Tacoma	Dimmit Middle School, Concrete School District
BHC Consultants	Seattle	City of Lynden, City of Bremerton
Metrix Engineers	Renton	Ocosta School District
Wood Harbinger	Bellevue	Benson Elementary, Mt. Vernon HS, Olympic College
Hargis Eng.	Seattle	Highline Medical Center, Island Hospital, Seattle Public Schools, Foss HS, Lincoln HS,
BCE	Tacoma	Pierce College, Ridgeline Middle School, Coupeville Middle School, Orting Middle School, Sumner School District
Coffman Engineering	Seattle	University of Washington, Boeing, St. Francis
Cross Engineers	Tacoma	Timberline High School, Bainbridge High School, Port of Seattle
Tres West Engineers	Tacoma	Pierce County Emergency Operations Center, Reeves Middle School, Pioneer Elementary,

7. EPA's Energy Star Portfolio Manager

A description of te ESCO's familiarity with EPA's Energy Star Portfolio Manager and other benchmarking tools.

Trane has several Energy Star Portfolio Manager Users. We are proficient with the tool and with CBECS, both of which we use within our benchmarking process. Customers with Energy Star Rated buildings or with buildings already using Portfolio Manager reduce our process time for data gathering, utility bill analysis, energy benchmarking, and utilities cost analysis (rate modeling).

Trane has our own spreadsheet analyses for utilities and meter information as well for end-use disaggregation. These tools feed our business systems and are required for our process.

The Portfolio Manager and CBECS tools are primarily used for Trane's preliminary analyses. We have our own tools for meter reconciliation, guarantee documentation, energy savings calculations and analysis, project development, construction cost estimating, construction cost tracking, and the Measurement and Verification process from start to the completion of our Performance Period. We use a database with spreadsheet analysis for our monthly utility bill information and we use another program for our performance period monitoring.

For customers that use Portfolio Manager, we have assisted them with data entry, analysis, and tracking of energy, water, and green house gas emissions. Some customers prefer the Statements of Energy Performance, but Trane produces specialized reports for the information in our statements of performance during the guarantee period.

8. Problem Solving on Projects

A discussion of problems experienced on projects and the remedy for those problems.

Due to the complexity of "Design-Build" Energy projects and the dynamic environments in which they are installed, issues are sometimes unavoidable. Trane takes pride in remedying these situations so as to continue to "over perform" and "earn the right" to be invited back to perform Phase 2 and Phase 3, or at a minimum, have a customer reference for the State of Washington ESPC program. We have listed a few examples as follows;

At the Sequim School District ESPC project, we attempted to get the project installed during the summer months to meet the customer's timeline. In hindsight, we would work with DES and the customer to set a more reasonable timeline to ensure we had more time to get the project done right the first time. On this project, we had a safety issue with the General Contractor (local contractor recommended by the customer) and had to terminate their contract and hire an alternative contractor. While we appreciate getting recommendations from the customer on local contractors, we need to stick with our pre-qualification process so we do not have these issues in the future. In addition, there were comfort issues in the classrooms and Trane (at no additional cost to the owner) reengineered the control system and wall sensors, reconfigured the ductwork, modified the units and condensate drains to prevent water leakage and installed additional sound attenuation. After making these modifications we hired MENG analysis to do a complete system recomissioning to ensure that the system was operational. Bottom line, Trane stands by our customer commitments.

At Renton School District Hazen Boiler project, we were provided information for the gas meters during the project audit that were not correct. In this case, Trane did not validate this information with enough additional research and made energy savings calculations and models based on incorrect data. We have met with DES and the customer multiple times and are still completing additional evaluation of the system modifications that we made as well as other changes made to the heating system to help identify the true energy savings. Trane has invested many additional hours in redoing the energy model of the buildings (including system changes made after our project), verifying the current operating conditions within these buildings and evaluating previous ESPC project at this site to put "all of the pieces together". We will be scheduling another meeting with DES and the customer to share our findings regarding the true energy savings and what operational changes should be made to ensure the system is operating as initially engineered to meet the energy saving objectives. Trane will continue to work with all parties to remedy the situation.

At the City of Kirkland, the customer did not accept the M&V report results and needed additional clarification prior to acceptance. We worked with DES to setup a meeting with the City to sit down with them and review the M&V methodology and results. At that meeting, the City agreed that the savings were valid and has accepted the report thanks to support from Lisa Steel.

9. Total Project Team Makeup

What is the makeup of a typical project team with regards to local (WA, ID, OR) vs outside the region staffing.

Trane's ESPC approach provides our customers with the confidence that they have formed a partnership with a local team of skilled and credentialed professionals that understand all of the factors required to successfully develop and complete the project. Our local team is headquartered out of Redmond with personnel residing in all regions of the State so we are intimately familiar with the local needs and requirements of our customers here in Washington.

Our local Washington ESCO team is also supported regionally (by our Territory team) and nationally (by our Comprehensive Solutions team of subject matter experts). This allows the local Trane team to “cost-effectively” bring best practices, technology, and services from across the country and customize them locally.

The local Trane ESCO team is structured for optimal efficiency.

The local team consists of the following individuals and their respective roles;

Name	Title	Location
Eric Bauer	Comprehensive Solutions Leader	Local – Resides in Washington
Angie Estey	Comprehensive Solutions Account Executive	Local – Resides in Washington
Jim Kershner	Comprehensive Solutions Account Executive	Local – Resides in Washington
Debbie Chambers	Project Development Engineer	Local – Resides in Washington
Scott Eisenhauer	Project Manager	Local – Resides in Washington
Jim Sutull	Project Manager	Local – Resides in Washington
Shawn Kelly	District Contracting Manager	Local – Resides in Washington
Brad Swanson	Environmental Health & Safety Manager	Local – Resides in Washington
Don Mitchell	District Strategic Sales Leader	Local – Resides in Washington
Steve Savory	District Operations Manager	Local – Resides in Washington
Warren Michelsen	District Office Manager	Local – Resides in Washington
Tim Swanson	Territory Contracting Solutions Leader	Regional – West Territory
Jared Peters	Territory Project Engineer	Regional – West Territory
Linda Yoon	Territory Project Engineer	Regional – West Territory
Mike Mendenhall	Territory Project Developer	Regional – West Territory
Craig Howe	Territory Project Developer	Regional – West Territory
Joe Leichner	Corporate Project Developer	Corporate
Mike Ketcham	Director of Power Generation and Renewable Solutions	Corporate
Neil Maldeis, PE	National Energy Engineering Manager	Corporate
David Sprinkle	M&V Team Leader/Energy Engineer	Corporate

Name	Title	Location
Clayton Dumcum	Energy Engineer	Corporate

LOCAL DESIGN AND CONSULTING ENGINEERS

Trane's expertise in infrastructure systems makes our company a valued resource and partner for engineering firms statewide. Over the years, Trane has built a level of trust and rapport locally that supports an efficient, collaborative approach to project development that is unique in the industry. The following list is just a small indication of the local firms with whom Trane maintains the high level of working relationships that will most benefit our customers via the State ESPC contract.

Engineering Firm	WA Location
HDR	Bellevue
BHC	Seattle
CDi	Lynnwood
AEi	Seattle
Glumac, Inc.	Seattle
Stantec / Keen Eng.	Seattle
Wood Harbinger	Bellevue
Hargis Eng.	Seattle
Harris Group	Seattle
BCE	Tacoma
Coffman Engineering	Seattle
Sazan	Seattle
Cross Engineers	Tacoma
Tres West Engineers	Tacoma

MANAGEMENT APPROACH

10. Organizational Structure and Management Approach

The ESCO's organizational structure and management approach to the project. Clearly describe the roles and responsibilities of typical ESCO staff who will be assigned to any project obtained under this selection and of any sub-consultants included on the ESCO's team. For subconsultants, describe the ESCO's prior experience working with the sub-consultant.

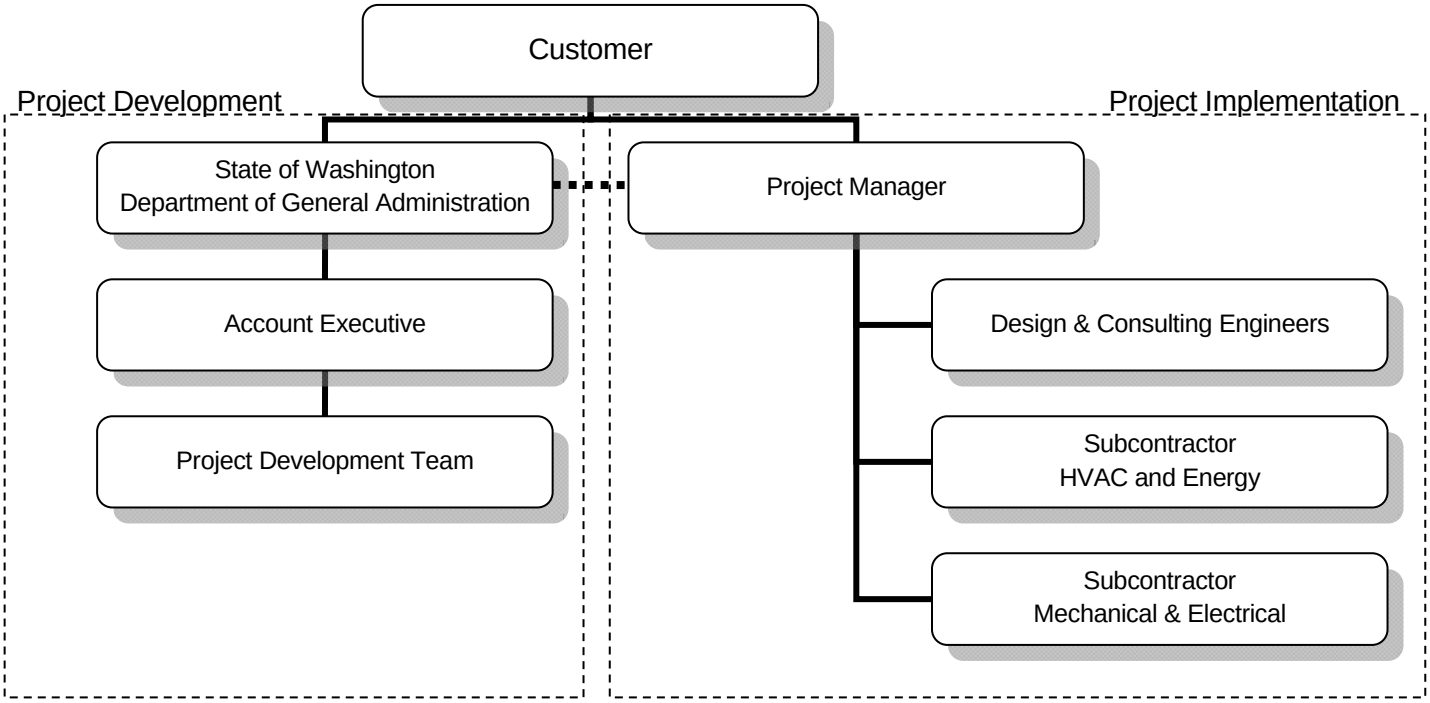
Trane will assemble a professional project team that consists of local and national resources, each of whom will play a major role in the development, implementation and validation of its projects. Below are those who will assume the leadership assignments shown throughout the duration of each project;

Name	Title	Responsibilities
Eric Bauer	Comprehensive Solutions Leader	Work with customer, CSAE and Trane resources to develop projects that meet both their operational and financial needs
Angie Estey	Comprehensive Solutions Account Executive	Work with customer to develop projects that meet both their operational and financial needs
Jim Kershner	Comprehensive Solutions Account Executive	Work with customer to develop projects that meet both their operational and financial needs
Debbie Chambers	Project Development Engineer	Develop conceptual solutions, budgets and savings for conservation measures. Provide quality control of energy engineers and M&V development
Scott Eisenhauer	Project Manager	Manage project development, costing, and installation to ensure on-time, on-budget delivery.
Jim Sutull	Project Manager	Manage project development, costing, and installation to ensure on-time, on-budget delivery.
Shawn Kelly	District Contracting Manager	Manage project and cost control through the development and installation.
Don Mitchell	District Strategic Sales Leader	Overall management of sales and marketing, project development, and customer satisfaction.
Steve Savory	District Operations Manager	Overall management of project implementation, management, M&V and on-going maintenance.
Warren Michelsen	District Office Manager	Assume ultimate responsibility for all sales, operations, and customer satisfaction for the State of Washington.

Name	Title	Responsibilities
Tim Swanson	Territory Contracting Solutions Leader	Support local Trane offices and oversees implementation of ESPC projects
Jared Peters	Territory Project Engineer	Support Project Developers with technical and financial project development of multi-million dollar energy retrofit design-build construction projects
Linda Yoon	Territory Project Engineer	Support Project Developers with technical and financial project development of multi-million dollar energy retrofit design-build construction projects
Mike Mendenhall	Territory Project Developer	Manage internal and external technical and financial resources in the project development of multi-million dollar energy retrofit design-build construction projects
Craig Howe	Territory Project Developer	Manage internal and external technical and financial resources in the project development of multi-million dollar energy retrofit design-build construction projects
Joe Leichner	Corporate Project Developer	Manage internal and external technical and financial resources in the project development of multi-million dollar energy retrofit design-build construction projects
Mike Ketcham	Director of Power Generation and Renewable Solutions	Develop conceptual solutions, budgets and savings for measures involving renewable energy and power generating solutions
Neil Maldeis, PE	National Energy Engineering Manager	Provide engineering support and oversight of building system design.
David Sprinkle	M&V Team Leader/Energy Engineer	Support local Trane offices and oversees implementation and M&V of projects.
Clayton Dumcum	Energy Engineer	Support project development and engineering
Brad Swanson	Environmental Health & Safety Manager	Manage safety and health for all projects and responsible for safety planning.

Trane's ESPC approach provides our customers with the confidence that they have formed a partnership with a global team of skilled and credentialed professionals that understand all of the factors required to successfully complete the project.

The team is structured for optimal efficiency as indicated by the organizational following chart:



Trane's "Best-in-Class" ESPC process is described below;

PROJECT DEFINITION - STEP 1

Our first step in the process is to establish a mutually agreed upon team with members from the customer and Trane that will jointly establish the desired goals and outcomes of the performance based contract. The team will be responsible to define both the technical and financial objectives for the contract.

PROJECT DEVELOPMENT - STEP 2

Investment Grade Audit

Once a decision has been made by the customer to continue with the project, the process moves into the Investment Grade Audit phase. During this phase, the team, led by the Project Development Engineer (PDE), investigates/collects all required information necessary to evaluate and design Energy Efficiency Measures. At this stage the team should have a contractual and an excellent working relationship established and should clearly be focused on the goals of the program culminating in successful project implementation.

PROJECT IMPLEMENTATION - STEP 3

For the Implementation Phase, the Trane Operations team interfaces with the State, Owners and Contractors on a project through dedicated functions. The enabling team consists of a Project

Manager, a Project Administrator, and all project-required centers of excellence (engineers, technicians, etc.). Contractors, subcontractors, and owner interface is ultimately the responsibility of the Project Manager, while document control is the responsibility of the Project Administrator.

Trane's operations team will document all aspects of the project. Through careful document control, we minimize confusion and maximize efficiencies in dealing with non-Trane entities on a project. Through careful scrutiny of our own processes and their impact on the project's other contractors, we can increase the satisfaction that contractors have with Trane and the end product for the customer. Project Managers use Microsoft Project to schedule and plan all of the activities that Trane, as the Prime Contractor, is responsible for on a project. The project manager coordinates this plan with the overall project plan and integrates them with the other contractor's plans to avoid any conflicts. Copies of the plan and schedule are provided to the owner and the other contractors for their use and potential input.

Regular attendance at site meetings and using AIA standard documents are additional ways of integrating and interfacing with other contractors on a project. Trane project managers schedule and attend project meetings to ensure Trane's adherence to the project schedule, and to address any Trane related issues.

SUBCONSULTANTS

Trane's expertise in chilled water and air handling systems in particular makes our company a valued resource and partner for engineering firms statewide. Over the years, Trane has built a level of trust and rapport that supports an efficient, collaborative approach to project development that is unique in the industry. The following list is just a small indication of the firms with whom Trane maintains the high level of working relationships that will most benefit our customers via the State ESPC contract.

Engineering Firm	Responsibilities
HDR	Wastewater and Water engineering support for IGA and final engineering
BHC	Wastewater and Water engineering support for IGA and final engineering
CDi	Mechanical design and electrical engineering support for IGA and final engineering
AEi	Mechanical design and electrical engineering support for IGA and final engineering
Glumac, Inc.	Mechanical design and electrical engineering support for IGA and final engineering
Stantec / Keen Eng.	Mechanical design and electrical engineering support for IGA and final engineering
Wood Harbinger	Mechanical design and electrical engineering support for IGA and final engineering
Hargis Eng.	Mechanical design and electrical engineering support for IGA and final engineering
Harris Group	Mechanical design and electrical engineering support for IGA and final engineering
BCE	Mechanical design and electrical engineering support for IGA and final engineering
Coffman Engineering	Mechanical design and electrical engineering support for IGA and final engineering
Sazan	Mechanical design and electrical engineering support for IGA and final engineering
Cross Engineers	Mechanical design and electrical engineering support for IGA and final engineering
Tres West Engineers	Mechanical design and electrical engineering support for IGA and final engineering

11. Management & Implementation Policies

The ESCO's policies and procedures for managing and delivering its committed work products in a timely fashion within contractual obligations, including project development, construction, and post implementation verification.

Trane has many proven policies regarding the management and implementation of our Project Development, Engineering, Construction, Service, and M&V work products. The procedures employed to be in adherence with our policies are generally described and included throughout this response in the appropriate sections of this RFP.

The documented procedures that Trane's roles are trained to execute include process flow diagrams, step by step descriptions, and training aids. These are very voluminous and summarized in other sections of our response.

Our local team leaders are responsible to ensure all policies and procedures are adhered to and are audited by not only our District team but also our territory and corporate teams to protect our customer's interests.

12. Marketing the DES Energy Program

The ESCO's approach to marketing the DES Energy Program to potential client agencies in conjunction with DES personnel.

As a Director of Strategic Solutions for Trane's Comprehensive Solutions Team, Don Mitchell's primary focus is to drive the marketing and growth of Trane's Energy Conservation business. The DES Energy Program is a critical component for Trane's success in this area as it provides an efficient methodology to engage potential customers in the public sector. For this reason, Trane actively markets its status as a pre-approved ESCO on the DES contract through industry organizations and events, such as WASA, WSHA, IFMA, and AWC, as well as through individual customer marketing.

In addition to Mr. Mitchell's efforts, Trane has over 30 additional sales professionals across Washington who carry this message to their owner, consultant and contractor customers. The State ESPC is seen by Trane's entire Washington team as a value-added resource that they can bring to their clients to help them meet their business objectives. Given that over half of Trane's sales people are LEED Accredited Professionals, it should be evident that the importance and benefits of energy efficiency are well understood.
Upon receiving interest from a prospective customer, our first step is to contact Roger Wigfield with the Dept. of Enterprise Services to find out who the Program Manager is for that entity. We then invite the assigned PM to our an introductory meeting/conference call to run through the State ESPC program which includes slides dedicated to the DES role in this program.

We typically will have a brief pre-call meeting with the DES PM prior to our meeting with the customer to go over the flow of our presentation with the customer. This is a team presentation

where the PM will discuss their role in the program and Trane will discuss our role as the ESCO and go through the ESPC process together. We have found that teaming with the DES PM from the beginning has created the most success with our customers in feeling that we have a cohesive team in place. A successful ESPC program functions as a "three legged" entity; The Customer – Trane – DES. It is critical that all three legs are in sync and that the project is clearly the "Customer's project" and not Trane's or DES's.

We look forward to continuing to work with the DES Energy Program's staff to be more effective in our marketing approach in a collaborative effort.

13. Minimum Project Size Considered

What is the minimum size project your firm would consider viable.

Trane's recognizes the varying size and complexity of our customers in the State of Washington. Our experience and best practices have helped us conclude that there is "NO" minimum ESPC project size. We are committed to maximizing our value to our customers and we will collaboratively work with our clients to determine whether or not we can meet their cost effectiveness criteria regardless of project size. There is value in going through the ESPC discovery process with our clients as their funding requirements or needs frequently change on an annual basis, and Trane desires a positive ESPC experience no matter where we are at in the development process.

14. Communication with DES Energy Program

The ESCO's approach to effectively communicate project information with the DES Energy Program prior to sharing with client agency.

We work as a team with our Program Manager's throughout the entire process from initial meeting to project close and M&V. We have specific steps along the way to have 'internal' workshops to review all information prior to client meetings. This means that as we move through preliminary findings, investment grade audit and energy services proposal, we have stop point workshops with the Trane team and DES PM to run through the details and ensure that we are all on the same page. We will send out documents to be reviewed by our DES PM Partner prior to our 'internal' workshop, then we are prepared to go through any comments and changes to the information during our meeting as to be most productive. Whenever possible, we meet with our DES PM partner a day or two prior to each meeting - in addition to just prior to the meeting - to re-confirm our strategy, roles and responsibilities for the client meeting. We recognize that our public sector clients value the integral involvement of DES throughout the entire project development process.

15. Project Approach

The ESCO's approach to project development from marketing to delivering the ESP.

Trane's strategy includes broad based vertical market focus as well as targeted marketing in pursuing performance contracting and comprehensive solutions business. When the mutual goals

for the customer and Trane coincide, then we determine the method for performing business as legislation and customer needs dictate.

Trane uses specialized roles during the Project Development and execution process. We have defined the Preliminary Analysis and Investment Grade Audit (Detailed Audit) phases and process steps along with the role within Trane that is primarily and secondarily responsible for the process step. Through the project development phase, , the Trane team populates this matrix with the team members that will work with the Client towards our mutual goals for the opportunity. Some of the steps actually contain many sub-steps and we have chosen to limit the number of steps to those found below so that the customer and reviewers have a reasonable amount of detail about Trane's process steps.

1.0 Discovery Phase
1.1 Consultative Discovery
1.2 Preliminary Phase Planning
1.3 Internal and Client Approval

2.0 Preliminary Phase
2.1 Gather Data and Initial Benchmarking
2.2 Audit Activities - Conduct Audit Only If Preliminary Phase Audit is required
2.3 Initial Analysis and Reporting
2.4 Detailed Phase Planning
2.5 Internal and Client Approval

3.0 Competitive Phase (if a client requirement)
Guide client through legislative and procurement requirements
Help client define evaluation and selection criteria
Coach client for RFP/RFQ solicitation based on template documents
Execute competitive phase as required

4.0 Detailed Phase
4.1 Detailed Phase - Internal Kick Off
4.2 Detailed Phase - Client Kick Off
4.3 Perform Client Meeting 1 - Existing Conditions - Data Collection - May be Two Parts (preview - what to look for - and confirmation - what we saw)
4.4 Perform Client Verification Meeting 2 - ECM Options - Future Conditions Confirmation
4.5 Conduct the 30% Client Verification meeting - Project Potential and Initial Results
4.6 Perform Client Meeting 3 - Contract Terms and Conditions Agreement
4.7 Perform Client Meeting 4 - Project Funding Options Definitions
4.8 Perform Client Verification Meeting 5 - Energy Calculations and Guarantee Type agreement
4.9 Perform Client Verification Meeting 6 - Operations and Maintenance impacts agreement

4.10 Conduct the 60% Client verification - Confirming Direction for Detailed Development
4.11 Perform Client Verification Meeting 7 - Equipment Selection Confirmation (Owner Project Design Requirements)
4.12 Perform Client Verification Meeting 8 - Project Scoping Meeting and Agreement
4.13 Conduct 90% Client Verification Meeting
4.14 Internal and Client Approval

5.0 Implementation Phase
5.1 Customer Kick off meeting – expectations, safety plan, minimize impact on clients business, points of contact, etc.
5.2 Review project schedule and customer coordination
5.3 Weekly customer meetings to coordinate all activities
5.4 Daily safety meetings
5.5 Project closeout procedures
5.6 Third party commissioning of all systems and initial M&V review

6.0 Measurement and Verification Phase
6.1 Initial review of system performance 3 months after completion
6.2 Data logging or trend reviews at intervals as determined per contract
6.3 Annual report preparation and review with customer on minimal annual basis depending on contractual requirements.

16. Fair Contracting & Pricing Methods

The method for contracting the installation of the measures, maintaining cost competitive pricing, and whether the ESCO uses open book pricing.

Trane uses open book pricing with the belief that “transparency” is the key to ensure that customers clearly understand what is going into their project and its impact on the financial and operational results. As a leading global provider of indoor comfort systems, Trane has the ability to provide financial advantage to customers who chose to install the systems that Trane manufactures as part of the project. By involving the customer early in the decision-making process (from choosing equipment to selecting subcontractors), Trane maintains the “transparency” that allows the customer to make the choices that best suit their specific needs. Furthermore, in order to assure that the customer is receiving the best value, Trane presents an open book Project Pricing proposal. We do this by providing linked spreadsheets that represent a breakdown of project costs, pricing, mark-ups, pro forma detail, savings, and termination implications.

We will also provide an Amortization Engine, Construction Draw Schedules and Rate Calculations within the spreadsheets. Additionally the Selection Memorandum, Investment Deal Summary and Standard Financing Offer (when applicable) are contained within this section of the Trane proposal.

The following are a few of the processes that Trane will utilize in order to optimize the value returned from the customers’ investments:

- Trane will propose a list of pre-qualified subcontractors which will include consideration of minority owned and women owned business enterprises.
- Subcontractors will be evaluated and qualified to insure adequate licensing, bonding, insurance, etc.
- Trane will develop a detailed subcontracting plan.
- Trane will always prepare specification for all equipment to provide best life cycle solutions for the customer and facilitate a public bid opening for equipment procurement even when Trane is one of the qualified equipment manufacturers.
- Subcontractor proposals will be reviewed jointly with the customer and the State and final selection also made jointly (as desired).
- We will provide quotations from multiple equipment and controls manufacturers, where customer does not have a preference for one single manufacturer, to allow the customer to select best value equipment for the project.
- Trane will use its national distribution and manufacturing capabilities to provide the best possible availability and equipment delivery cycles for the customer.

17. Closeout of Construction Projects Delivery

The ESCO's procedures for timely closeout of construction projects delivery of O&M manuals, commissioning reports and other pertinent paperwork to the DES Energy Program and the client agency.

Trane utilizes established processes to drive the closeout through a full commissioning process for each project. This validates that all work has been completed to ensure that the energy savings are achieved. In addition we complete the State ESCO Completion Checklist and provide project books containing all pertinent documents, including O&Ms, warranty letters, and as-built drawings, at the customer's closeout meeting. We then work with the State Project Manager to review and validate project documents per the Washington State ESCO Completion Checklist.

18. Timely Documentation Submittal Procedures

The ESCO's procedures for timely submittal of required documentation to Departments of Revenue, Employment Security, and Labor and Industries.

Trane assists the owner through this process by providing the Trane and subcontractor's LNI Affidavit numbers and any other documentation needed. The customer then signs and submits this State Form F215-038-000 11-2010, Rev 31 002e at project completion. When this is complete, the 45 day timeline for release of retention is initiated.

19. Risk Mitigation Approach

The ESCO's approach to mitigate risks associated with guaranteed cost, savings, and performance.

APPROACH TO MITIGATING RISK ASSOCIATED WITH GUARANTEED COST

Trane controls and manages the risks for our customers and for our project development, construction, and service teams by clearly defining the scope for the work to be done with our customers, installation teams, and service teams. This is done so that all of the conditions including the schedule and timing for the work for the contracting and service activities are quantified prior to finalizing our cost estimating.

We consider both direct and indirect costs to perform the services including safety, project reviews and meetings, quality control reviews, and many other elements of cost.

During our internal, two-step project and service review process, we analyze our risks using two different risk assessment tools. We use an Areas of Risk spreadsheet that contains a list of many of the risks we have experienced in the past. This is reviewed during the scope development process. Then we apply the specific area of risk to an analysis tool that helps quantify the potential impacts from the risk. Finally, during the first District Office Level risk review (called our Level of Authority (LOA) review process) we complete an Areas of Risk slide in a power point presentation to the Contracting and Service Managers for our business. The sales and management teams also participate in this review. If this review passes approval, then we perform the last risk review prior to the contract signing with the Territory Leadership Team. A very important part of this process is the scope reviews with the customer's installation teams, operations and maintenance teams, and authorized representative enabled to authorize the approval for the project.

If the risks are identified as requiring contingency funds, we have a few approaches depending upon the customer's preference and required approach. We commonly include a value in our estimates and this can be shared with our customer in terms of both the order of magnitude for the value assigned and the shared risk/reward for unused contingency depending upon the required or preferred customer approach.

APPROACH TO MITIGATING RISK ASSOCIATED WITH GUARANTEED SAVINGS

This approach is very similar to our cost risk analysis process. The scope for the ECM or FIM is clearly defined and this establishes the boundary for the calculations and M&V activities. We mitigate risk by performing the appropriate level of detail for the analysis and by choosing the appropriate calculation methodology. We mitigate the risk for our customer and Trane by logging, trending, and measuring variable values and through understanding schedules, operating modes and frequency, and doing our best to analyze the seasonal variations in production, weather, and building operational usage. During the calculation selection process, an evaluation is made of the appropriate measurement and verification method given the customer required or desired protocol along with our experiences. We attempt to include audit measurements of sufficient detail for the appropriate level of understanding of the energy savings risks for the ECM/FIM. Audit measurements and their subsequent analysis and the level of detail for data collection both impact

the cost for the audit and Trane tries to strike a balance between the level of risk and the cost for these activities. Nearing the end of the project development process, the data gathering, analysis, calculations, M&V protocol, and scope are finalized and the preparation of our risk tools begins.

We use the Areas of Risk template to identify the areas of risk for each ECM/FIM and the Risk Analysis Tool to quantify the order of magnitude of the risks. When the culmination of the risks is summarized, a determination is made for the individual and sum of the guaranteed savings risks and a Guarantee Factor is applied appropriately. The size of a self-funding project can be impacted if the guaranteed savings risk is high and an effort to analyze the appropriate level of Guarantee Factors is made to protect customer and Trane Risk, while maximizing the benefits of the overall program size for the customer. After this is complete, then the two internal levels of review are completed for the local office and the Territory and Corporate Level of Authority Review. The required attendees and reviewers for this meeting are based upon the size and complexity of the project and the order of magnitude of the risks. For very large projects, the President of Trane and CEO may be required in the review process.

APPROACH TO MITIGATING RISK ASSOCIATED WITH PERFORMANCE

There are many aspects of performance and we will respond about the Project Development Phase, Implementation Phase, and Performance Phase briefly.

Performance for the Project Development can be measured by ability of the customer and Trane team to accomplish the Customer's goals for the project. Facilities can be operated efficiently and this may limit the ability of the project team to develop sufficient energy savings to self-fund projects. Equipment age, capacity, and operation all vary and there are many factors when considering the performance of the Project Development Team in meeting the scope, schedule, and budget for the project goals. We hire and develop the education and skills and do our best to provide experiences for our teams to perform their roles proficiently.

Performance for the Implementation Phase can be measured by accomplishing the construction portion of the goals for the project in a safe, timely, and cost-managed manner. We carefully assess the scope of the project, the safety aspects of implementing the project, and manage to our schedules and budgets throughout the process. We hire the best candidate for the role, assess the skill sets for the project and assign the proper resources for the customer and mix of projects, and conduct training for our teams to continue their education, practice their skills, and increase their experience in performing the Project Manager role.

Performance during the Guarantee Phase is highly dependent upon the successful completion of the defined project scope and verification of the proper completion through start-up, testing and balancing, and the Post Retrofit Measurements. Once the contract is signed, the kick off meeting happens and then the Pre-retrofit Measurements are made. After the Post Measurements are made and the final baseline adjustments are discussed and quantified, the final analysis is completed. The Final Report for the project is then prepared and delivered to the customer. This report is discussed with the customer and Trane so that there is complete understanding of the final conditions for the guaranteed project.

During the Project Development Phase, the monitoring scope is determined with the customer and Trane to ensure that the critical temperatures, flow, and pressures are monitored for set points and operation during the guarantee period. The cost, risk, and benefits to the monitoring activities are weighed and the final scope is constructed and commissioned during the implementation phase. At the completion of the implementation, the controls and instrumentation are verified for proper operation. The set up of the event logs and trends are verified and these are demonstrated during the transition to the monitoring period with the customer system operations and maintenance teams.

Trane offers and provides Trane Intelligent Services for remote monitoring and diagnosis of alarms and critical events, if it is included in the scope of services for the project. We have a large staff of people, 24-hours per day, whose function is to continuously monitor and assess building performance. Trane has one of the largest monitoring centers in the World located in Columbus Ohio and over the past few years have refined our processes of notifying the Trane Technicians and customer Operators of critical issues identified in systems being monitored. In working with the customer and their teams, the Project Development Team, the Measurement and Verification Team, and the Service Team, we assess the needs for the monitoring for guarantee risk, customer needs, and critical alarms affecting building performance or safety.

20. Sharing EPACT Tax Credits Approach

The ESCO's approach to sharing EPACT tax credits with client agencies.

Trane will work with our client agency owners to help them qualify and maximize the available EPAct §179D Tax Deductions. Designers/Builders can claim federal tax deductions for certain energy-efficient features in public schools, public universities and government buildings of all kinds. As far as "sharing EPAct tax credits", Trane's objective is to provide our client agency owners with the most "Cost-Effective" solution that meets their specific business and financial criteria. If this means that we can meet the EPAct criteria and can take and transfer these tax credits, thus reducing the project/program cost, then this adds value to our client.

Our objective is to exhaust all potential "revenue streams" for our client's in the form of energy and operational savings, utility and grant savings, EPAct tax reductions where applicable, and ultimately yielding the best ROI "life-cycle" energy project for our clients.

21. Chapter 39.04.320 RCW Requirements Approach

The ESCO's experience and approach to meeting the public works requirements for apprenticeship training programs as directed by Chapter 39.04.320 RCW.

With Trane US, Inc. being a national signatory for the United Association of Plumbers & Pipefitters, via the Local Union 32 chapter, we actively support and participate in their apprenticeship training program. In regards to remaining in compliance with RCW 39.04.320, which establishes the minimum required apprentice utilization as a percentage of total project labor on Public Works projects, this need is identified in the development stage of the project.

If it is established that the project will meet the contract threshold requirements for apprentice utilization, the participation level (which is dependent upon project contract value and the state entity owning the project) will be included in all contract documents, including those supplied to all subcontractors.

For each project that has apprentice utilization requirements Trane shall submit a "Statement of Apprentice/Journeyman Participation" on forms provided by the GA with every request for progress payments. We will also submit consolidated and cumulative data collected from all subcontractors utilized on the project.

The only requirement by Chapter 39.04.320 RCW is that for projects exceeding $1M in value, Trane must utilize 15% Apprentices on the project. This is validated by a certified payroll attached to every Pay Application submitted to the State of Washington for ESCO Work.

22. MWBE Policy

How Minority and Women Owned Business (MWBE) enterprises will be utilized on the project.

Social responsibility is an important business requirement for Trane. We work pro-actively to develop and maintain a strong and vibrant business community through the direct employment of diverse individuals and the utilization of diverse businesses, contractors and suppliers. Trane provides opportunities for minority owned Small Business Enterprise (SBE), Historically Underutilized Business Zone Small Business (HZSB), Small Disadvantaged Business (SDB), Women-Owned Small Business (WOSB), Veteran-Owned Small Business (VOSB) and Service Disabled Veteran-Owned Small Business (SDVOSB). As we do with other governmental and commercial organizations, we work to understand each customer's social responsibility goals and objectives and support them.

Trane is committed to utilizing MWBE enterprises in our business operations and subcontracting activities. We develop subcontracting plans tailored to our client's specific needs with close consideration of MWBE concerns as follows:

- Trane works to establish the program goals and ensures the team sets up a regular communication and review process.
- Trane identifies qualified MWBE contractors, both from past work experience with Trane and new, qualified entrants, who would be interested in working with Trane on this project.
- Trane initiates contact with qualified MWBE firms inviting them to participate in this project.

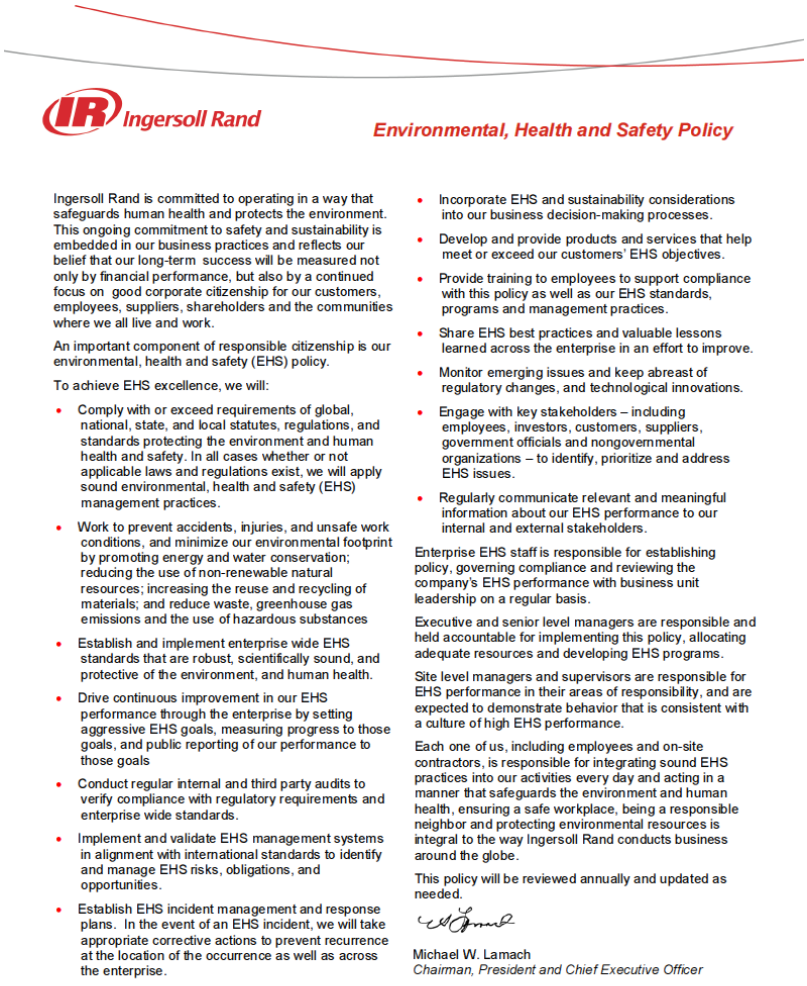
Additionally, Trane already has specific subcontracting plans and metrics in place for its Federal Contracting Vehicles including the GSA Federal Supply Schedule and the Department of Energy Super ESPC IDIQ contracts and diligently seeks to continue utilizing small and minority business concerns in meeting specific subcontracting plan goals for those. Trane complies with, Executive Orders 11246 and 11458 regarding EEO and Affirmative Action Guidelines for Federal Contractors / Subcontractors Regarding Race, Color, Gender, Religion, and National Origin. Trane's subcontractor identification process (as described above) targets subcontracting candidates by

their past experience with Trane. Those candidates, who have already established a track record with Trane, are strategically selected on a project by project basis. The criteria for their selection are experience, ability, history, and potential business impact. Utilizing this process, and having already identified MWBE firms, we continue to seek opportunities to utilize these resources.

23. Recycling Materials

The ESCO's policies and procedures for recycling materials such as lamps, ballasts, fixtures, ceiling tiles, and other recyclable material.

Waste Management, Reuse, and Recycling: Green thinking permeates the Trane approach. We achieve sustainability not only through ECMs, which reduce your carbon footprint, but also through waste reduction, including recycling and reuse of materials. Our Policy Statement follows below:



Ingersoll Rand

Environmental, Health and Safety Policy

Ingersoll Rand is committed to operating in a way that safeguards human health and protects the environment. This ongoing commitment to safety and sustainability is embedded in our business practices and reflects our belief that our long-term success will be measured not only by financial performance, but also by a continued focus on good corporate citizenship for our customers, employees, suppliers, shareholders and the communities where we all live and work.

An important component of responsible citizenship is our environmental, health and safety (EHS) policy.

To achieve EHS excellence, we will:

- Comply with or exceed requirements of global, national, state, and local statutes, regulations, and standards protecting the environment and human health and safety. In all cases whether or not applicable laws and regulations exist, we will apply sound environmental, health and safety (EHS) management practices.
- Work to prevent accidents, injuries, and unsafe work conditions, and minimize our environmental footprint by promoting energy and water conservation; reducing the use of non-renewable natural resources; increasing the reuse and recycling of materials; and reduce waste, greenhouse gas emissions and the use of hazardous substances
- Establish and implement enterprise wide EHS standards that are robust, scientifically sound, and protective of the environment, and human health.
- Drive continuous improvement in our EHS performance through the enterprise by setting aggressive EHS goals, measuring progress to those goals, and public reporting of our performance to those goals
- Conduct regular internal and third party audits to verify compliance with regulatory requirements and enterprise wide standards.
- Implement and validate EHS management systems in alignment with international standards to identify and manage EHS risks, obligations, and opportunities.
- Establish EHS incident management and response plans. In the event of an EHS incident, we will take appropriate corrective actions to prevent recurrence at the location of the occurrence as well as across the enterprise.
- Incorporate EHS and sustainability considerations into our business decision-making processes.
- Develop and provide products and services that help meet or exceed our customers' EHS objectives.
- Provide training to employees to support compliance with this policy as well as our EHS standards, programs and management practices.
- Share EHS best practices and valuable lessons learned across the enterprise in an effort to improve.
- Monitor emerging issues and keep abreast of regulatory changes, and technological innovations.
- Engage with key stakeholders – including employees, investors, customers, suppliers, government officials and nongovernmental organizations – to identify, prioritize and address EHS issues.
- Regularly communicate relevant and meaningful information about our EHS performance to our internal and external stakeholders.

Enterprise EHS staff is responsible for establishing policy, governing compliance and reviewing the company's EHS performance with business unit leadership on a regular basis.

Executive and senior level managers are responsible and held accountable for implementing this policy, allocating adequate resources and developing EHS programs.

Site level managers and supervisors are responsible for EHS performance in their areas of responsibility, and are expected to demonstrate behavior that is consistent with a culture of high EHS performance.

Each one of us, including employees and on-site contractors, is responsible for integrating sound EHS practices into our activities every day and acting in a manner that safeguards the environment and human health, ensuring a safe workplace, being a responsible neighbor and protecting environmental resources is integral to the way Ingersoll Rand conducts business around the globe.

This policy will be reviewed annually and updated as needed.

Michael W. Lamach
Chairman, President and Chief Executive Officer

Our practices include:

- **Codes and Regulations:** Before starting construction, renovation, or demolition, Trane will contact local building officials and permitting authorities for regulatory and compliance information.

- **Recycling Plan:** Trane will coordinate a recycling plan based on customer needs and requirements for materials recovery, reuse, and recycling.

- **Waste Disposal:** We will send job-site solids with no reuse or recycling potential to appropriate "Inert landfills," which manage concrete, asphalt, masonry, ceramics, glass, aluminum, stainless steel, and the like. Or the same materials will be delivered to "Limited Purpose" landfills, which also accept industrial and demolition waste, scrap wood, and "problem waste."

- **Federal Compliance:** Trane will also comply fully with EPA, OSHA and local and state jurisdictions governing material handling and proper waste disposal.

- **Refrigerant Management:** Taking proper care of refrigerants and related oils is critical to protecting the environment—and to sustaining the optimized energy efficiency of equipment that uses refrigerant. That's why Trane technicians, licensed and certified in compliance with 40 CFR, Part 82, Subpart F of the Federal Clean Air Act, follow a documented, step-by-step process for recovering, reclaiming, and recycling refrigerants. The process involves four steps:
  (1) Identification and tagging of refrigerants for tracking purposes.
  (2) Appropriate recovery, reclamation, or recycling.
  (3) Reporting, including use of Trane Refrigerant Management Software.
  (4) Auditing, to ensure process compliance.

  We use the following template for our Waste Management Plan:

WASTE MANAGEMENT PLAN (template)

District:
Completed by:
Date:

Type of Waste	Highly Regulated	Waste Classification	Container	Label Type	Transportation	Disposal Company	Record Keeping	Specific Procedure
Used Oil	**x**	Used Oil (in most states)	Covered jug, drum or carboy	**Used Oil**	Transport covered and labeled as Used Oil. Not a DOT hazmat **except** in states where categorized as hazardous waste	Safety Kleen OR Heritage Enviornmental	x	Used Oil E-xx-xxxx
Used Oil Filters		Collect as Used Oil Filters if not drained. If drained, in most states, municipal solid waste	Open top drum with cover	**Used Oil Filters**				Used Oil E-xx-xxxx
Soiled Rags		In most states, municipal solid waste if no free-flowing liquids.	If rags are collected, open top drum.	**Soiled Rags**		If rags have free flowing liquid, collect and dispose with Used Oil vendor or laundry.		Used Oil E-xx-xxxx
Used Absorbents (oil and other liquids)		Hazardous waste if used to absorb hazardous waste. If used to absorb oil, municipal solid waste if no free-flowing liquids.	If collected, open top drum (with cover)	**Used Oil (or other liquid) Absorbents**		If absorbent is used for hazardous waste, then follow HW procedure. Otherwise, collect and dispose with Used oil vendor		Used Oil E-xx-xxxx
Spent Bulbs (fluorescent)	**x**	Universal Waste (in most states)	Original bulb boxes or order boxes from waste vendor	**Universal Waste – Spent Fluorescent Bulbs (with accumulation date)**		Safety Kleen OR Heritage Environmental	x	Universal Waste E-xx-xxxx
Mercury (from spill)	**x**	Hazardous Waste	Follow spill kit instructions - Use double-bag (Ziplocs) provided in spill kit and put in leak-proof container with floor dry	**Hazardous Waste – Mercury**	**x**	Safety Kleen OR Heritage Enviornmental	x	Hazardous Waste E-xx-xxxx
Mercury-containing devices	**x**	Universal Waste	Bag and put in leak-proof container with floor dry	**Universal Waste – Mercury-containing devices**	**x**	Safety Kleen OR Heritage Enviornmental	x	Universal Waste E-xx-xxxx
Aerosol cans [2]		*If not empty or still pressurized*, Universal Waste. If not pressurized and empty, recycle as scrap metal	Open top drum (with cover)	**Universal Waste – aerosol cans**	**x**	Safety Kleen OR Heritage Enviornmental	x	Universal Waste E-xx-xxxx
Batteries (all types)	**x**	Universal Waste	Open top drum	**Universal Waste – spent batteries**	**x**	Safety Kleen OR Heritage Enviornmental	x	Universal Waste E-xx-xxxx
Refrigeration equipment		If "empty" – oil and refrigerant have been removed, can be recycled as scrap metal	N/A	Refrigerant and oil should be removed by a certified technician. Use RAR to record refrigerant and oil removal. Write "Refrigerant and oil removed" and date on equipment with permanent marker or label.			x Record Refrigerant and oil removed on RAR form.	Refrigerant Management E-xx-xxxx
Empty Containers (drums, jugs, cylinders)		If "empty" – recycle or can be disposed in municipal trash [3]	N/A	Remove all labels, tags, identifying markings prior to disposal or recycling				
Computers and other electronics		Universal Waste (e-waste) in some states	N/A	**Universal Waste - Electronic Waste**	**x**	Safety Kleen OR Heritage Enviornmental	x	Universal Waste E-xx-xxxx
Lithium Bromide (and other liquid wastes not otherwise categorized)		Special Waste - because of high liquid content, cannot be disposed as municipal solid waste.	Closed-top drum	**Waste Lithium Bromide Solution or Waste (other liquid)**	**x**	Safety Kleen OR Heritage Enviornmental	x	
Contaminated Refrigerant	**x**	Refrigerant should be recovered and sent to certified refrigerant reclaimer	Gray with yellow top refrigerant cylinder or drum	Refrigerant type and appropriate label.	**x**	Reclaim vendor	x	Refrigerant Management E-xx-xxxx
Paper		Municipal Solid Waste				Local MSW hauler and disposal company or recycling company. Auditing is not required		
Cardboard		Municipal Solid Waste				Local MSW hauler and disposal company or recycling company. Auditing is not required		
Plastic, Glass, Metals		Municipal Solid Waste				Local MSW hauler and disposal company or recycling company. Auditing is not required		

[1] Pressure should be released and contents drained out prior to recycling.
[2] Aerosol cans which contained flammable materials (flashpoint less than 140 F) and are not empty must be disposed of as hazardous waste.
Aerosol cans that are not empty (and still pressurized) are universal waste. Empty aerosol cans relieved of pressure can be recycled as scrap metal .
[3] "empty" containers mean all that can be removed by dumping, pouring, pumping has been removed. It is not necessary to rinse containers with water or solvent prior to disposal.
Prior to disposing of empty containers, ensure all markings are removed.

Waste Management Plan Template Instructions

1.0 List of Wastes

1.1 The ***Waste Management Plan Template*** (*the template*) lists wastes generated by a typical field services location.

1.2 Each district will review the list and:

Add wastes to the list which are not listed.

Eliminate wastes listed which are not generated in the district.

Note: if wastes are added to the list, contact the Environmental Manager for assistance completing the template.

1.3 Each waste on the list is classified by Type of Waste (hazardous, used oil, universal, special and municipal).

1.4 Definitions and regulatory reference for classification of wastes are included in specific procedures for each waste type.

1.5 Wastes profiles for highly-regulated wastes are completed by the CS Environmental Manager and are completed by corporate EHS and available on the Environmental portal site (see links).

2.0 Containers, Labeling and Transportation

2.1 *The template* specifies appropriate Containers and Labeling requirements for the wastes listed. Additional information about ordering specific labels and containers is included in specific procedures for each waste type.

2.2 Wastes may be generated at a job site and transported by CS to a district location (such as used oil). Wastes are also offered for transport to the disposal company (CS is the shipper under DOT). Wastes that have restrictions or requirements for transport are indicated under the Transportation column of the Plan. Specific requirements for transport are included in procedures for each waste type.

3.0 Recycling and Disposal of Wastes

3.1 *The template* requires corporate-approved vendors for disposal of highly-regulated waste types. These are listed in the Disposal Company column.

3.2 For other wastes (such as municipal solid waste), the facility should indicate which vendor they are using for disposal of each listed waste.

3.3 If the vendor is listed as a corporate- approved vendor, corporate EHS audits the disposal company and their waste sites. No additional auditing is required by the district.

3.4 If the district is using a waste company not listed as corporate-approved (there are several locations where corporate-approved waste vendors are not available), contact the Environmental Manager to determine whether the vendor and its waste sites have been audited.

3.5 For other, less regulated waste types, a waste site audit is not required for Field Operations.

4.0 Record-Keeping

4.1 For each waste indicated as "highly-regulated", the district must keep records of shipments sent off- site for disposal or recycling.

4.2 The record may be in the form of a bill of lading, a uniform waste manifest or a DOT Hazmat shipping paper(s).

4.3 The site should request a copy of the record when the vendor picks up the waste.

4.4 These records should be kept in a file for 10 years.

Note: Field Operations typically generate limited wastes which are regulated (and usually no hazardous wastes), and so in most states, no licenses/permits are required. There are a few state by state exceptions - see specific procedures for waste types.

24. Hazardous Material Experience & Policies

How potential hazardous materials encountered in the installation of energy efficiency measures will be managed; and whether the ESCO has been cited by the Washington Department of Ecology, Federal Environmental Protection Agency, or any other regulatory agency for inappropriate handling, transportation or disposal of hazardous materials. If cited what was the ESCOs remedy. Being cited does not automatically constitute disqualification as an ESCO.

The Trane NW-HI District office, which manages all ESCO work in the state of Washington, Alaska and Hawaii, has never been cited by any local or federal environmental or safety regulatory agency.

Trane shall not perform any identification, abatement, cleanup, removal, transport, treatment, storage, or disposal of Hazardous Materials unless expressly included in Trane's Scope of Services for a specific project. The Customer will be responsible for removal and disposal of any fixtures, components, or equipment containing or contaminated with the hazardous substances and/or materials encountered during Trane's performance that require special handling. Trane's services expressly exclude any work connected or associated with Hazardous Materials. Hazardous Material means any pollutant, contaminant, toxic or hazardous substance, material or waste, any dangerous, potentially dangerous, noxious, flammable, explosive, reactive or radioactive substance, material or waste, urea formaldehyde, asbestos, asbestos-containing materials ("ACM's"), polychlorinated biphenyl ("PCB"), and any other substance, the manufacture, preparation, production, generation, use, maintenance, treatment, storage, transport, disposal, handling, or ownership of which is regulated, restricted, or prohibited, by any federal, state, or local statute, law, ordinance, code, rule or regulation now or at any time hereafter in effect, and as may be amended from time to time, including but not limited to, the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. §§ 9601 et seq.), the Hazardous Materials Transportation Act (49 U.S.C. §§ 1801 et seq.), the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901 et seq.), the Federal Water Pollution Control Act (33 U.S.C. §§ 1251 et seq.), the Clean Air Act (42 U.S.C. §§ 7401 et seq.), the Toxic Substances Control Act, as amended (15 U.S.C. §§ 2601 et seq.), and the Occupational Safety and Health Act (29 U.S.C. §§ 651 et seq.).

The Customer warrants and represents that there are no Hazardous Materials on the Customer's premises in areas within which Trane will be performing any part of the Energy Conservation Services under Project 2013-133. The Customer will, at all times, be and remain the owner and generator of any and all Hazardous Materials on the Customer's premises and shall be responsible for compliance with all laws and regulations applicable to such Hazardous Materials. Should Trane become aware of or suspect the presence of Hazardous Materials in the course of performing the Services which present or may present a hazard to or endanger health welfare or safety, Trane shall have the right to immediately stop work in the affected area and shall notify the Customer. The Customer shall be responsible for taking any and all action necessary to remove or render harmless the Hazardous Materials in accordance with all applicable laws and regulations. Trane shall be required to resume performance of the Services in the affected area only in the absence of Hazardous Materials or when the affected area has been rendered harmless. The Customer shall

compensate Trane for any additional costs incurred by Trane as a result of work stoppage, including demobilization and remobilization and for all fines, suits, actions, claims, penalties, and proceedings of every kind, and all costs associated therewith (including attorneys' and consultants' fees) arising out of or in any way connected with or related to: (1) any leak, deposit, spill, discharge, or release or disposal of Hazardous Materials except to the extent such Hazardous Materials were brought onto the Premises by Trane; and/or (2) the Customer's failure to identify and disclose Hazardous Materials and to fully comply with all foreign or domestic, federal, state, and local statutes, laws ordinances, codes, rules and regulation now or at any time hereafter in effect regarding Hazardous Materials. The Customer's removal of all hazardous substances shall be performed in a manner so as not to reasonably interfere with the performance of Trane's Services.

COMPUTATION OF ENERGY BASELINE & POST-INSTALLATION ENERGY USE

25. Baseline Energy Use & Savings Methodology

Describe the methodology used to calculate baseline energy use and savings of different types of EEMs. This should include a description of various software tools that are utilized in the calculation process. Include the methodology used for campus settings that are master metered.

BASELINE CALCULATION METHODOLOGY

For the terms of a Performance Contract, a Baseline is a set of conditions that define the energy consumption, demand, equipment, equipment operation parameters, energy rates and facility use patterns for a building or set of buildings. The term "baseline" also can refer to how frequently and what tasks are performed for preventive maintenance and operating inspections as well as other tasks.

For the creation of the baseline of the facility there are generally three steps: Field Data Gathering, Analysis and Agreement to the observed findings.

For a typical performance contract, establishing the baseline consists of the following tasks for field data gathering:

- Creating or verifying the inventory for all HVAC equipment and the operating parameters (set points) for control devices (and thermostats)
- Recording time clock settings and behaviors of the custodial and maintenance crews who normally turn on and off the lighting systems and HVAC equipment that is manually controlled
- Interviewing of the facilities, energy management, and occupants of the facilities in regards to when they turn their lights on, how they use the computer and other energy using equipment in their space, and how they adjust or control any room mounted ventilation fans, portable space heaters, window a/c units, windows, drapes, printers, copiers, coffee makers/warmers, portable refrigerators, etc. and documenting the interview findings
- Querying the Energy Management and Controls System (Direct Digital Control System) for set points, operating schedules, sequences of operation like night setback, and trend/alarm histories and documenting the findings
- Making a complete inventory of the light fixtures, occupancy sensors, time clocks, switching and day lighting controls for interior and exterior lighting
- Creating or verifying the inventory for all non-HVAC energy consuming equipment including, but not limited to: kitchen appliances, laundry equipment, dishwashing equipment, domestic hot water, pools, elevators/escalators, emergency generators, electricity generators, conveying systems, process equipment, etc. and the operating parameters (schedules and loading) and documenting the findings
- Creating or verifying the inventory for all water users on the site or in the building and how the fixtures or devices are used or controlled

- Creating or verifying the square footage of the facility and which spaces are ventilated, which spaces are only heated, which spaces are both ventilated and heated, and which spaces are air-conditioned
- Taking representative measurements for the temperatures, lighting levels, ventilation quantities, etc. that are maintained for the various types of use for the building(s) and documenting them
- Setting measurement devices to verify when devices are turned-on and off and when people are actually occupying rooms for representative samples of room usage and documenting them
- Identifying all utility meters, recording their current readings, and obtaining any rate/rider/attachments to contracts for utility supply from on-site personnel
- Obtaining a physical copy of all utility bills for the previous 3 years
- Reviewing and documenting the construction attributes for the building envelope including windows, doors, wall construction types, roof types, sky lights, landscaping, awnings, shading, window films, etc.
- Reviewing equipment submittals, testing and balancing reports, commissioning reports, maintenance logs and repair activities, operating logs, and facilities analysis reports to indicate energy consuming features.
- Taking pictures of the exterior exposure for all walls and the roof of the building to indicate current condition as of the date of the photos.
- Meeting with the customer Representative and facility users to verify what we have seen, been told, have measured, and seeking agreement to operating conditions.
- Discussion and documentation of the future plans for the construction and occupation of the buildings in the foreseeable future.
- Expectations for future standards of performance for thermostat settings, ventilation quantities, and other service levels are discussed and documented
- Discussion and agreement as to the most representative time period for the "Baseline" annual consumption patterns (consideration for construction and remodeling projects, changes in facility use that were one-time events, etc.)

It then includes a discussion about the calculation methodology and data analysis and is described in the following tasks that occur in sequence:

- An analysis of the building features and uses along with the consideration for the various means available for performing calculations that can define the acceptable amount of variance and reliability for the intended results. An Excel spreadsheet may be acceptable for straight-forward (on or off) calculations to all parties as they are well-suited for equipment that runs very predictably and can be measured easily. But, heating, ventilation, and air-conditioning systems are very dynamic and an energy model should be used to best model weather and occupancy patterns, equipment density, etc. The measurements for dynamic systems are also much more difficult. The complexity of the model also should be discussed (room by room, zone modeling, or block modeling and hourly or day-type analysis, etc.)
- An agreement to the suitability of the calculation methodology for a level of acceptable risk to the performance contractor and of suitable reliability for predicting future performance for the customer and Trane.

- Determination of the method for measuring and verifying the energy conservation strategies.
- Agreement of the method of measurement and verification by all parties and the suitability for the energy calculations to provide the reliability results required.
- Input of the physical characteristics of the building, its occupant and equipment loads, and current usage into the energy modeling program
- Input of the energy bills for the given "Baseline" period.
- Tuning of the energy models to reach a match to the monthly bills within 10% of the monthly values and within 15% overall for the year (unless agreed to otherwise to be more or less accurate).
- The final step in baseline creation is the review of the baseline and its many features and acceptance of the baseline by the customer. The operating parameters are clearly defined for existing conditions for all of the facilities included.

SAVINGS CALCULATIONS

During the baseline creation, the calculation method models the existing building consumption with consideration for the energy savings projections and the M&V methods employed. Baseline water use calculations and operations and maintenance costs are normally performed with a spreadsheet calculation so that the values used can be easily modified to accommodate measurement variations and assumption changes during validation of the assumptions with the customer.

For customer satisfaction, Trane also recommends that future expectations from the customer, occupants, and facility users are discussed and documented prior to beginning identification and quantification of the savings measures.

Maintenance and operations tasks should be discussed and agreed for continuance of service levels. Lighting levels expected in the future are defined acceptably to all parties.

Expectations for temperature settings and facility operation schedules should be clearly defined and documented. This will improve the success of the partnership agreement and improve the discussion of baseline adjustments that may occur in the future due to changes in use, equipment replacement, construction activities, and other factors that usually occur.

Once the initial list of Energy Conservation Measures, Water Conservation Measures, and Operations and Maintenance Savings Measures are created, the individual measures are discussed with the customer for acceptability of proposed changes. Trane will arrive at the recommended project to analyze, but prefers to discuss them prior to investing the time and money to measure parameters, gather additional information, and prepare to model the intended changes. If there are HVAC, lighting, and other retrofits or changes that affect a dynamic energy consumption pattern, an energy simulation program will be recommended, discussed, and employed. The interactions of various energy conservation measures must be considered in order to be somewhat accurate with the projection of energy savings. Block models or models of a large zone or an entire building can be used to account for simple changes to a building's operation including interactive measures similar to lighting retrofits' impact on chilled water consumption.

More detailed, zone by zone models can be made; but this requires more data gathering and further disaggregation of the end uses for each energy source. Finally, a room by room analysis rolled up to the zone and then whole building model is the most accurate, but most costly energy modeling than is normally performed. As the majority of buildings have more complex and dynamic energy consumption patterns, Trane is recommending zone energy simulation models for the large and complex buildings. Hourly analysis programs provide the most detailed energy analysis and we are also recommend the use of hourly models for projecting the costs under a time of use electricity and natural gas rate structure. If additional measurements are needed to accurately model the energy savings measures and the Direct Digital Control System is not determined to be a viable or comprehensive enough measurement tool, then specialized loggers, monitors, and recorders will be used to determine the existing conditions for the operation being analyzed. Trane uses calibrated instruments for all pre-measurements for performance contracting projects. Water savings calculations will also be made in comparison to the agreed upon baseline. Measurements are typically made, but many times the hours that the fixtures or devices are used are stipulated. The stipulated hours are discussed with the customer and these are mutually agreed to and documented for future post-installation measurements.

O&M savings calculations are made in comparison to the agreed upon baseline cost elements. Trane will make a recommendation to the customer to consider the labor reduction, materials savings, energy rate switching, or other operations changes. The savings calculations are normally performed using an Excel Spreadsheet so that changes can be made easily. These savings are normally stipulated between the customer and Trane and this means that once agreement is met, the savings are deemed to have occurred during the life of the guarantee period. Operations and Maintenance impacts can occur several years after the initial installation and over the life of the guarantee should be discussed and agreed upon.

After the additional information is collected in order to accurately create the energy model, an additional discussion is made relative to the modeling sequence. The modeling sequence is the order that the interactive measures will be modeled in comparison to the baseline and then subsequent energy conservation measures. This is very important and warrants a specific meeting with the customer and Trane. The interactive affects can contribute to the viability of an ECM more favorably in one position in ranking than another. The first ECM to be modeled is normally the lighting retrofit or the controls improvements as they have the best overall contribution to a project most of the time. After these two measures, then more cost-intensive measures are included for energy modeling.

Major assumptions will be clearly stated once the cost savings measures are specifically identified. The energy modeling activities normally coincide with scoping and cost estimating. Once the models are complete and the rate structure analyzed, discussed, and modeled, then an analysis of the projects to be included in the program can be made.

SOFTWARE TOOLS

During the preliminary analysis stage and development of a project, Trane will perform utilities analysis in a spreadsheet. This is normally then disaggregated by end use to show the

consumption and demand for the lighting, cooling, heating, plug loads, kitchen loads, etc. This tool gives us an indicator of the opportunity for savings based upon benchmarking the facility consumption.

Trane will discuss with the customer the application of the proposed contract calculation methods for each ECM or set of ECMs for a particular building during a dedicated working meeting.

For ECMs that are agreed to use an Option A or B protocol, stand-alone excel spreadsheet calculations are normally used. The formulae are shown for each calculation in the contract along with the statement of the measured variable along with the pre and expected post measurements. ECMs that typically are Option A or B protocols with stand alone spreadsheet calculations include: Lighting Retrofits, Motor Replacements, Schedule Changes on motors or lighting systems, occupancy sensors, and other more simplistic ECMs.

For ECMs and buildings with a recommended Option C or D protocol, bin calculations and energy simulation programs are used. The buildings with these protocols normally have several ECMs that interact and a block, zone, or room level analysis can be made depending upon the desired accuracy and level of detail specified or desired. Option C type guarantees are normally modeled for risk management and contain a block model for the building. Option D guarantees are modeled for both risk and the guarantee mechanisms and these are usually zone-level models representing each major air handling system type so that the specifics of the ECM and their interactivity can be analyzed.

Operations and Maintenance Savings measures typically employ excel spreadsheet calculations so that the before and after parameters are clearly indicated.

CAMPUS SETTINGS

Trane has extensive experience with multiple building campus applications. When they are master metered (normally there is one meter for the electricity for the entire campus and sub-meters for larger individual buildings OR buildings where there is tenant billing) there are challenges with allocating a consumption and demand profile to individual buildings without meters. Spot measurements can be employed to help disaggregate the loads to the building. Trane has done this for electricity, natural gas, and water utilities. Sometimes this requires the shut-down of the services to the building so the meters can be inserted; otherwise loggers and non-intrusive meters can be employed. Block models are very helpful for this allocation process. If there are zones (departments) within a building that require allocation, this can be very costly as lighting and power circuits and appliance loads will require auditing that may be more extensive than a typical audit that is all inclusive for a building level allocation.

Chilled water, hot water, steam and other utilities can be analyzed for allocation as well.

26. Potential Scenarios of Modifying Baseline

Describe potential scenarios where a modified baseline may be proposed.

There are several scenarios where a modified baseline could be proposed as the baseline in the performance contract. This response assumes that this topic applies to the original baseline; not the adjusted baseline during the performance contract guarantee period.

SCENARIO 1 – MISSING DATA IN THE CHOSEN BASELINE

Sometimes meter readings are missed by the utility company and they submit and bill from an estimated meter reading. This can be due to several causes, but nonetheless needs to be clearly stated and shown in baselines chosen with estimated bills and all reports. These are normally indicated by a highlight in the report with an explanation of the approach taken to handle this situation. The baseline description in the Investment Grade Audit report should clearly state this situation and the Final, Post-Retrofit Report and all subsequent Annual Reports are to show and describe how the missing utility information was handled. Its significance should be discussed and any best estimates made should be reported as estimates.

Sometimes the weather data or other measured variable to be used was gathered from a sensor that had gone out of calibration or had erroneous readings that are not explainable. Attempts should be made to choose an alternate source for the data that is mutually agreeable to both parties. If a portion of the data is deemed to be unreliable or erroneous and a decision to use the data relevant to the base year is made, then this situation requires an explanation of the data to be used in the report and resultant calculations used for the reconciliation of avoided costs. Again, the data that is to be used for the baseline calculations must be described and the method used to complete the data must be clearly defined. The reason for the use of the data is also important so that reviewers not engaged directly with the situation can also understand why measured data was estimated or filled-in in the place of actual, verified, reliable data.

Controls systems in buildings sometimes lose power or logs for data intermittently are interrupted resulting in missing data. Sensors and transmitters in the controls sometimes also fail. Furthering data related issues are calibration issues. These all can also contribute to reasons to modify a baseline for a particular retrofit and its associated M&V protocol.

SCENARIO #2 – SIGNIFICANT CHANGES IN OCCUPANCY, OPERATING SCHEDULES, SET POINTS, AND PRODUCTION FLUCTUATIONS DURING THE BASE YEAR

The Base Year should be chosen carefully and most of the time, the most recent 12 months are most representative of facility baseline conditions that are weather dependent for whole building protocols. However, careful analysis of significant variations in base line conditions should be made for the determination of adjusting the base line in a performance contract.

If the facility experienced a one-time event that is not likely to occur in future years, it is worth considering adjusting the baseline. An example is a Client that has multiple facilities and during the base year, they conducted their annual event at the building in question. They may have add 100 additional people for an entire week, extended occupancy hours for lighting and HVAC systems,

excessive elevator and escalator usage, more rooms cooled to a cooler temperature or warmer temperature, and extended common area usage resulting in increased infiltration to the building. In this case, the energy management system could have logged the many changes and tracked the many adjustments. This data could be analyzed for the week before and after the event and if the impact was significant enough, a recommendation to adjust the baseline could be made. Another example could be a production facility that has one, large primary manufacturing line that has had a failure resulting in shut-down of the facility for a two-week period. If the remainder of the base year was normal for operating conditions and production conditions, then the relevant baseline data could be clearly shown as adjusted in the IGA and reports. A description of the event and how it was handled should be included.

SCENARIO #3 – CODE COMPLIANCE ADJUSTMENTS

During the audit, the site visits are completed and sometimes code compliance issues are identified. Outside air ventilation in air handling systems serving occupied areas are required to have a minimum level of outdoor air ventilation, depending on the room classification by the building codes. When we identify outdoor air dampers that are fastened closed or the damper linkages and operators are not functioning, we will make note of it in the audit and discuss it with the customer. Outdoor air ventilation conditioning impacts energy consumption significantly in hot or cold climates and this is one of the most common code compliance adjustments.

27. M&V Processes Utilization

Describe the ESCO's utilization of M&V processes in the establishment of baseline energy use and the post installation energy use.

Trane's implementation of measurement and verification protocols begins with the determination by the client of the need for a performance guarantee. Once this is determined, then an assessment is made of the many factors considered by Trane in the accuracy, confidence, and cost for sufficient measurement and verification for the Client's needs/requirements and Trane's Risk Management Team's recommendations in compliance with applicable legislation.

Our staff contains Certified Measurement and Verification Professionals through the Association of Energy Engineers (AEE) and our association and leadership in the National Association of Energy Services Companies (NAESCO) is assurance of our quality and performance. Many of our technical staff maintains licenses for professional engineering in their disciplines. We also have many Certified Energy Managers for our sales, project development, energy engineering, and M&V positions.

As a result of our educational and applied technical experience, we closely follow the International Protocol for Measurement and Verification Professionals (IPMVP) and Federal Energy Management Protocol (FEMP) where they are specified by the statutes or required by our Clients. ASHRAE Guideline 14 is considered but has not been widely adopted by states as a regulatory requirement.

It is with these standards in mind that we determine the measurement boundary for the ECM or the group of ECMs for the facility. If the focus is upon a piece of equipment or an operating system, then Option A or B of the IPMVP is considered. If the whole building is considered due to many ECMs with interactions, then Option C or D is considered. The responsibilities for the different parties for energy use, the ability of the installed and recommended meters or instruments to track changes within the boundary, and the interaction of the ECMs/FIMs to each other are considered.

Option A. Partially Measured Retrofit Isolation. The verification techniques for Option A determine energy savings by measuring the capacity or efficiency of a system before and after a retrofit, and multiplying the difference by an agreed-upon or stipulated factor, such as hours of operation or load on the system. The baseline is created using the pre-retrofit measurements. Careful review of ECM design and installation ensure that stipulated values fairly represent the probable actual value.

Option B. Retrofit Isolation. Verification techniques for Option B are designed for projects where long-term continuous measurement of performance is desired. Under Option B, individual loads are continuously monitored to determine performance, the values are used in the creation of the baseline, and this measured performance is compared with a baseline to determine savings. Option B M&V techniques provide long-term persistence data on ECM operation and performance. This data can be used to improve or optimize the operation of the equipment on a real-time basis, thereby improving the benefit of the retrofit. Option B also relies on the direct measurement of affected end uses.

Option C. Whole Facility. Verification techniques for Option C determine savings by studying overall energy use in a facility and identifying the effects of energy projects from changes in overall energy use patterns. This approach is intended for measurements of the whole-facility or specific meter baseline energy use, and measurements of whole-facility or specific meter post-implementation (Post) energy use can be measured. The methodology to establish baseline and Post parameter identification, modeling approach and baseline or model adjustments are discussed elsewhere. Periodic inspections of baseline energy usage, operating practices, and facility and equipment, and meter measurements of the will be necessary to verify the on-going efficient operation of the equipment, systems, practices and facility, and saving attainment.

Except as otherwise provided, actual energy savings will be calculated for each month of each guarantee years as the product of (a) “units of energy saved” (kWh, Therms, GJ, etc.) multiplied by (b) applicable Base Utility Rates.

Units of energy saved are computed by an accounting software application. Units of energy saved are calculated by subtracting current period measured units of energy consumed from the adjusted base facility utility consumption units of energy. Adjustments to the base facility utility consumption units of energy are based on factors such as weather, occupancy, operating hours, etc.

Option D. Calibrated Simulation. Option D is intended for energy retrofits where calibrated simulation of baseline energy use and calibrated simulations of post-installation energy consumption are used to measure savings from the retrofit. Option D can involve measurements of energy use both before and after the retrofit for specific equipment/systems or whole-building data for calibrating the simulation(s). Simulation routines must be demonstrated to adequately model actual energy performance measured in the facility. This option usually requires considerable skill in calibrated simulation. Energy use simulation is calibrated with hourly or monthly utility billing data and/or end use metering.

The type and quantity of measurements needed as well as the duration of variable measurements and the quality of the instrumentation/metering needed for the recommended/required accuracy and confidence are considered. Sampling analysis is done to determine the quantity of measurements based upon the desired confidence level. The resultant costs are estimated to help determine the specifics for the M&V Plan. The accuracy, availability, credibility, and cost are considered in each case for data sources. The appropriate data analysis method is used based upon many factors. Uncertainties exist in errors due to measurements, sampling, modeling, rounding, and error propagation, but our processes are employed to process the data to minimize uncertainties and report accurate results.

We clearly document the recommended protocols in the M&V Matrix. This will indicate the protocol recommended by building and Energy Conservation Measure (ECM) or Facilities Improvement Measure (FIM). Once the Client representatives agree that the IPMVP protocol recommended is suitable for their needs, then a specific M&V plan is created. The M&V Plan is reviewed with the Client and the cost implications for the project and the on-going reports and contents for the reports are finalized prior to the final scope for the performance contract.

There are several phases for the role of M&V in the baseline creation. Measurements conducted in the audit are used in the calculations for the baseline, once the baseline year and conditions have been determined and have reached concurrence with the Client team. These are not the Pre-Retrofit measurements.

The M&V process includes the following general steps once Trane has been selected:

1. Determination of Guaranteed Project (determined by legislation or Client need)
2. Utility analysis and benchmarking
3. Site surveys and discussions
4. Preliminary ECM Matrix
5. Preliminary M&V Matrix
6. Final Scope for Detailed Audit (Buildings, Systems, Technologies, etc.)
7. Finalize ECM List
8. Finalize calculation methodology for ECMs/FIMs
9. Base year determination and adjustments agreement
10. Draft and review M&V Plan

11. Discuss M&V Plan with Client Team and Representatives
12. Finalize M&V Plan (scope and cost determined and agreed, reporting finalized)
13. Plan Audit Measurements
14. Conduct Audit Measurements and document
15. Create and analyze baseline in energy calculations (using measurements as applicable)
16. Calibrate the models
17. Finalize Contract Scope and Costs
18. Project Kick Off Meeting and Expectations
19. Coordinate and Perform Pre-Retrofit Measurements
20. Coordinate and Perform Post-Retrofit Measurements
21. Perform consumption and demand analysis for each measure, calculate cost avoidance
22. Prepare Final Report for As-Built ECMs/FIMs
23. Gather information, conduct periodic measurements, prepare and deliver Annual Reports

During the post-installation, the Post-Retrofit Measurements are made. These are input into the energy calculations applied to the ECMs/FIMs which may include an energy simulation model. The calibrated Base Year models are then compared to the post-retrofit conditions and the post retrofit consumption is calculated. The “Energy Savings” is calculated by subtracting the base condition to the post-installation condition using the base year weather with applicable adjustments. If there were any adjustments to the scope of work or the Client has modified their facilities and operating conditions, then adjustments are made to the base model and the adjusted base model is used for the post retrofit calculations. From these the Final Report for the project is made and the conditions are documented for the subsequent periodic M&V reports.

SAVINGS AND EQUIPMENT PERFORMANCE GUARANTEES

28. Project Cost Guarantee Policies & Procedures

The ESCO's project cost guarantee policies and procedures; including remedies when project costs exceed ESCO estimates.

Trane is responsible for determining project construction costs and will guarantee the project to come in within budget or Trane will absorb the cost overrun (unless such costs are due to State / customer initiated change orders or circumstances beyond Trane's control such as force majeure). In a fixed-price turnkey contract, the customer assumes little responsibility for cost overruns. However, if preliminary construction estimates are significantly greater than originally assumed, Trane may find that the project or measure is no longer viable and remove it from the scope of agreement prior to developing / issuing project construction documents for bid.

The Energy Savings and Performance Contract (ESPC) projects will typically be proposed as fixed price, turnkey installations with Performance Period savings. It is expected that this will result in zero change orders unless the State or the customer implements or requests changes or modifications after final approval of designs for installation. A licensed professional engineer, working with Trane and duly registered to perform design work in the State of Washington, will perform all design work and is accountable as the engineer of record. All construction documents will contain the professional engineer's stamp / signature. The engineer's designs are reviewed by Trane and then presented to the customer for review and approval / comment. Trane works with the engineer to produce a "design development," or preliminary cost estimate, early in the design process to help insure against project cost overrun. We then issue a RFP to multiple contractors so secure not to exceed prices for the implementation of the specified scope of work. Trane applies a detailed Quality Control (QC) program, which includes all aspects of project management and document control from design to project closeout. The QC program is customized to be project-specific, generated following the contract award, and presented to the customer prior to the start of construction activities.

29. Energy Savings Guarantee Policies & Procedures

The ESCO's energy savings guarantee policies and procedures, including remedies when actual savings are lower than the ESCO's estimates and guarantees, and the length of the savings guarantees.

Through our extensive building systems energy retrofit experience, Trane is able to guarantee energy savings. The length of the savings guarantee ranges from one year to as long as 20 years, as Trane is doing for our numerous Federal ESPC projects.

The Trane PACT Guarantee documentation clearly communicates the energy and operational savings processes and clearly defines the responsibilities of both parties. Disclosure of this

information is critical to the long-term success of the project and a key aspect of Trane's approach to performance contracting.

GENERAL DESCRIPTION

The PACT Guarantee from Trane works in a straightforward manner. In the event calculated energy savings are less than the guaranteed amount, Trane will pay the difference between the guaranteed amount and the calculated energy savings. The guarantee is monitored monthly, recorded quarterly and reconciled annually.

Savings are calculated by comparing actual energy usage after project completion with a Baseline. The Baseline is the amount of energy the facility would have used if the project had not been implemented. The Baseline is a 12 calendar month period of pre-project utility bills. The Baseline is adjusted for factors that affect energy consumption including unseasonable weather, changes in production schedules, change in usage of the facility, and others. This ensures that the guarantee is fair to the customer and fair to Trane. Any operational savings that are not energy-related are agreed to by the State and the customer and included in the PACT Guarantee documentation.

GUARANTEE RECONCILIATION

The PACT Guarantee is reconciled annually within ninety (90) days of the anniversary of the guarantee commencement date. All savings generated by the project are the property of the customer. If the total savings are less than the guaranteed amount, the shortfall will be paid by Trane in the form of a shortfall compensation check.

30. Equipment Performance Guarantee Policies & Procedures

The ESCO's equipment performance guarantee policies and procedures, including remedies when performance of equipment is not met.

EQUIPMENT PERFORMANCE GUARANTEE

Trane guarantees that, as a result of the equipment and services provided by Trane on an ESPC, the customer will realize the Energy Savings (calculated using Base Utility Rates) in each of the consecutive twelve-month periods following the Commencement Date (each such twelve-month period being hereafter referred to as a "Guarantee Year") for the Guarantee Term.

Equipment, installed hereunder and the installation work included within the Services (i) shall be free from defects in material, manufacture, and workmanship and (ii) shall have the capacities and ratings set forth in the manufacturer's catalogs and submittals for the specified warranty period namely Performance Period for Trane Equipment and One Year Warranty for Trane Controls. ("Warranty Period(s)").

31. Warranty Enforcement Role & Responsibility

Provide information on the ESCO's warranty enforcement role and the ESCO's responsibility, if any, when there is an equipment failure beyond the warranty period when the client agency has financed the project and assumed ownership of the installed equipment.

WARRANTY ENFORCEMENT

Trane actively manages the warranty for the entire project from equipment, regardless of manufacturer, to all work self-performed or by our subcontractors. The customer has one number to call, Trane, for **all** warranty support. We do not encumber our customer with any of the warranty management for the project and will work with our subcontractors or equipment manufacturer where there is cause for remedy after the one year warranty period.

A Trane Extended Parts, Labor and Refrigerant Warranty can be included in the installation price of the project. The Trane Extended Warranty Program shifts all the maintenance and repair risk to Trane. As a manufacturer, Trane is able to offer this coverage for our equipment at a price that delivers tremendous value to the customer. Manufacturers of non-Trane equipment are often unwilling or unable to provide Trane or the customer with extended warranty coverage for the full term of this contract. However, we will explore these same extended warranty programs for all non-Trane equipment.

During final design after award, Trane reserves the right to substitute Trane equipment for non-Trane equipment in the proposed specification, upon approval of customer and the State of Washington.

TRANE EXTENDED WARRANTY PROGRAM

Trane equipment installed on this project can be covered through the Extended Warranty Program which commences when the standard factory warranty on the equipment is complete and runs through the duration of the Performance Period or upon earlier contract termination / cancellation. Trane equipment not installed within this project is excluded from this extended warranty. Existing Trane equipment not installed within this project is excluded from this extended warranty.

The Trane controls hardware and software are provided with a one year manufacturer's warranty. One exception is a Trane factory installed unit controller that is considered an integral part of the Trane equipment and therefore part of the Extended Warranty Program. A field installed and programmed Trane controller (for control of air handling units, pumps, boilers etc.) is not considered to be an integral part of the Trane equipment.

Trane equipment not installed within this project is excluded from this extended warranty. General building materials that are installed on this project but are not an integral part of the Trane equipment, are specifically excluded from this warranty coverage (piping, valves, strainers, water balancing devises, wire, conduit, disconnect switches, circuit breakers, ductwork, dampers, louvers, diffusers, etc.).

TERMS AND CONDITIONS OF TRANE'S EXTENDED WARRANTY

The Trane Extended Warranty contains the following terms and conditions:

1. Requires Trane Service Pre-Start-Up and Start-Up Inspection / Logging Inspection results.

2. Equipment Inspection-Check Program requires (1) annual inspection of the units covered. The price of this inspection is included in the warranty price.

3. Unit models and/or quantities are subject to change during final design and approval. The warranty price is firm and any substitution of equipment models will be covered by the final proposal price.

4. Requires that the Maintenance Agreement outlined in the Service and Maintenance section of this Proposal is in force for the duration of the contract term. The Maintenance Agreement is paid for during the performance period out of the guaranteed savings. In the event that a bilateral agreement occurs between the customer and Trane that would reduce the term of the performance contract, the customer could choose to pay for the annual maintenance contract amount, in order to keep the warranty in force for the full term. (Such option would not extend the Savings Guarantee term of the contract). Since savings would no longer be generated under this contract, the customer would have to find other sources of funds to pay Trane for this annual maintenance contract. Trane will make no adjustment to the price of the Extended Warranty but will negotiate the maintenance contract.

Warranty covers manufacturer defects only. Trane’s warranty expressly excludes any remedy for damage or defect caused by corrosion, erosion, or deterioration, abuse, modifications or repairs not performed by Trane, improper operation, or normal wear and tear under normal usage. All parts are subject to inspection by Trane.

Trane or the Trane-affiliated commercial Service Company, Seattle-Trane, must perform all warranty service or the warranty will be voided.

POST WARRANTY SUPPORT

Trane will provide the customer with Service – Maintenance plan agreement options to insure continued operation and optimized continuance of energy savings beyond the initial performance period at such time the customer wishes to explore this beyond the initial performance period covered by the extended warranty program identified herein.

FINANCING ABILITY

32. Project Financing Capability

The ESCO's project financing ability. Describe capability for carrying costs until completion of the installation of energy efficiency measures. Describe capability and willingness to fully finance project over a financing term including how the interest rate the ESCO would use is determined. Provide letters of commitment from funding sources or from ESCO's Chief Financial Officer if self-funded. Tax-exempt municipal lease financing does not qualify for ESCO financing ability.

Trane does not directly provide long-term financing for Energy Savings Performance Contracting projects, with the exception of US Government projects. Trane facilitates the financing by introducing our customers to qualified third-party lenders to provide appropriate financing for the project and the customer. The Customer may provide its own financing or work with one of the third-party lenders to whom we have introduced the customer. The financing contracts are between the customer and the lender and are separate from Trane's agreement with the customer.

For projects that do not allow the customer to be billed until the project (or ECMs) are complete, Trane can finance the construction period costs. The interest rate and terms that would be applied will be discussed with the customer and GA during the IGA and the appropriate costs will be factored into the project proforma.

Trane's goal is to develop a project that best meets the customer's priorities and needs with special consideration given to their specified financial goals. As Trane is not a party to the long-term financing, we are able to help our customers secure cost effective financing from the marketplace without any hidden markups or fees.

On a daily basis, we deal with all the large, reputable providers of financing to the marketplace. We are aware of the costs, issues and requirements for securing financing for our customers. We work with our customers and their chosen lender to facilitate financing that is done in a transparent, economical, and timely fashion. We desire to work with our customers throughout the financing process to facilitate financing tailored to the needs of the particular project. We have successfully used this process for the benefit of our customers for over 20 years.

Possible Sources of Financing

- State Treasury Financing
- The State Treasury's LOCAL program is an excellent option for funding. The two major benefits of financing through the Washington State Treasury are simplicity, and low cost of financing.

Private Leasing Companies

- Types of leases offered include:
- Capital Lease (also known as a Finance Lease or Money-Over-Money Lease)
- Operating Lease (also known as a True Lease, FMV Lease or Off-Balance Sheet Lease)
- Tax Exempt Lease

Trane routinely works with a number of financial institutions specializing in energy equipment leasing and ESCO type financing such as Bank of America, Hannon & Armstrong, Saulsbury Hill, and many others.

Utility Rebates and Other Energy Programs - Trane will pursue utility rebate opportunities and other energy and water conservation programs that may be available for each proposed improvement measure. Trane will assist the customer in applying for such opportunities.

Bank of America
Merrill Lynch

Geoffrey R. Culm
Senior Vice President
Energy Services

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February 15, 2011

To Whom It May Concern:

Re: Performance Contract Financing For Trane

As part of our longstanding and highly valued banking and credit relationship with Trane and its corporate parent Ingersoll Rand, Bank of America, N.A. and its affiliated companies including most notably our specialized public purpose equipment finance subsidiary, Banc of America Public Capital Corp ("BAPCC") regularly extend credit to finance energy efficiency and renewable energy projects for Trane performance contracting customers across the U.S. We have found Trane's staff to be highly professional and we regularly receive positive feedback from their customers regarding the projects that Trane has installed.

BAPCC is a leading provider of tax-exempt equipment finance solutions to the municipal/tax-exempt market, with annual fundings in excess of $1.5 billion. Furthermore, our Energy Services team offers a wealth of financial, structural and general industry expertise to assist transaction/project teams with smooth closings, and we are confident that our partnership with Trane provides you with exceptional resources for the success of your project. We are also proud of our company's $20 billion, 10-year lending and investment commitment for environmental saving initiatives and we are interested in the opportunity to learn more about the proposed transaction with Trane in support of our mutual goals of energy and cost saving initiatives.

Please note that this letter is not a commitment or offer to finance, and does not create any obligation of Bank of America or BAPCC. A final term sheet will be provided upon request. The proposed opportunity is subject to all internal approval requirements.

Please do not hesitate to contact me at any time with any questions.

Sincerely yours,

Geoffrey R. Culm
Senior Vice President

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APPENDIX A. SAMPLE PERFORMANCE CONTRACTING

a. *Preliminary Audit Findings – See file folder "Appendix A" and file "Appendix A – a. Preliminary Audit Findings.pdf"*
b. *Audit proposal – See file folder "Appendix A" and file "Appendix A – b. Audit Proposal.pdf"*
c. *Measurement and Verification plan including key variables to be measured – See file folder "Appendix A" and file "Appendix A – c.d. e. Energy Services Proposal.pdf" and reference Exhibit B-2*
d. *Investment Grade Audit findings – See file folder "Appendix A" and file "Appendix A – c.d. e. Energy Services Proposal.pdf"*
e. *Energy Services Proposal with detailed cost breakdown – See file folder "Appendix A" and file "Appendix A – c.d. e. Energy Services Proposal.pdf"*
f. *Measurement and Verification Report – See file folder "Appendix A" and file "Appendix A – f. M&V Report"*

APPENDIX B. RESUMES

Resumes or CVs of key personnel and sub consultants, indicate if experience was not obtained in house. – See file folder "Appendix B. Resumes"

APPENDIX C. FEDERAL FORM 330

See file "Appendix C – SF330 2013.pdf"

Angie Estey

Account Executive
Trane

PROFESSIONAL:

2011 to Present: Account Executive, Trane.
2008 to 2011: Account Manager, Optimum Energy
2005-2008: Chase Bank
2004-2005: Lakeview Mortgage
2003-2004: Wells Fargo
2001-2003: Bank of America

RESPONSIBILITIES / EXPERIENCE:

Responsible for building Trane's Comprehensive Solutions/ performance contracting business in the State of WA focusing on local governments, commercial owner occupied buildings and higher education.

Over 14 years of experience in sales with over 4 years of complex sales experience. Most recent experience includes working with wastewater treatment facilities in maximizing their revenue opportunities as well as their capital dollars to improve critical infrastructure. Responsibilities included working with our customers to define and develop a project that meets their cost effectiveness criteria, identifying and incorporating customer requirements, analyzing the financial feasibility of the recommended measures, and working with sub-consultants and sub-contractors throughout the process to define the customer's optimal project. This includes working through preliminary feasibility assessment, investment grade detailed audit, energy services agreement, and fulfillment/construction.

EDUCATION:

Washington State University 1993-1997 International Business and Japanese
Numerous sales and negotiations courses

PROFESSIONAL MEMBERSHIPS:

WET
PNCWA
NAIOP
Seattle 2030 District

Debbie Chambers

Project Developer
Trane / Ingersoll Rand

PROFESSIONAL:

2012 to Present: Project Developer / Energy Engineer, Trane, Seattle WA
2010-2011: Senior Energy Engineer, SEA, Boston MA & Birmingham AL
2009: Director of Sustainable Solutions, CCI, Seattle WA
2000-2008: King County Library System, Seattle WA
1997-1999: Consulting Engineer, Los Angeles area, various
1991-1994: Facility Engineer, Resort at Squaw Creek, Squaw Valley CA
1985-1990: Consulting Engineer, Los Angeles area, various

RESPONSIBILITIES / EXPERIENCE:

Responsible for the technical development and energy analysis of contracting solutions projects for the Northwest Hawaii District. This includes identifying, evaluating, and verifying the application of energy conservation measures to existing facilities. Also member of the district M&V team, to ensure district M&V activities stay on track to ensure customer satisfaction and contractual obligations are met and exceeded

Diverse experience as an engineer in the consulting, facilities, and energy conservation fields, within the institutional, high-rise commercial, high-rise residential, municipal, retail, central plant, healthcare, resort, and historic preservation sectors. Recent experience with federal projects conducting energy audits at large military installations. Other experience within the sustainability sector. Responsibilities include building systems design and analysis, facility operations and maintenance, utility bill analysis, client meetings and site visits, identification and calculation of Energy Conservation Measures, including feasibility studies, life cycle cost analysis, and report generation.

Experience includes energy efficient design, new construction, retrofit options, and operations / maintenance alternatives that include HVAC systems, central plants, envelope, DDC, thermal storage, fuel switching, heating & domestic hot water, and renewables, to find solutions that properly match each client's needs and overall goals, and bring a reasoned and measured perspective to energy efficiency solutions that work for each individual customer.

EDUCATION:

BS Mechanical Engineering – University of Southern California
Numerous professional workshops, seminars, classes

PROFESSIONAL MEMBERSHIPS & CERTIFICATIONS:

Certified Energy Manager (CEM)
LEED AP BD+C
Certified Sustainable Building Advisor (CSBA)
American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)
Association of Energy Engineers (AEE)

Don H Mitchell

8630 NE 157th St
Kenmore, WA 98028
Phone 425-503-9958
E-mail: dmitchell@trane.com

PROFESIONAL PROFILE

Sales and Operations Management Executive with progressive experience in multiple sectors in the building energy services and contracting marketplace. Distinctive competencies in organizational leadership, business development, marketing, sales and operations. Demonstrated performance in:

- Sales & Operations Management
- P & L Responsibilities
- Motivating and Coaching Teams
- Fostering Teamwork
- Value Pricing Strategies
- Negotiations
- Strategic Planning
- Process Improvement
- Business Development

PROFESSIONAL EXPERIENCE

Trane US, Inc. Redmond, WA **2006 - Present**

Director Strategic Solutions NW- HI District 2006 - Present

Responsible for the strategic direction and business development of the National Account and Energy Services business in Washington, Oregon, Alaska and Hawaii.

- Develop and implement business development plan
- Manage business development and operations teams to implement solutions that improve our customers building environment through financial solutions
- Change agent who redirects the business mission, strategy and tactics utilizing a combination of market research and customer contact.
- Identify new business partner strategic alliance opportunities.
  Focused the collective talents of sales teams on high-value market driven opportunities and effective territory/account management.

JOHNSON CONTROLS, Inc. Milwaukee, WI 1982 - 2006

Healthcare Solutions Manager-Western US 2003 - Present

Responsible for the strategic direction and business development of a regional management team and sales force providing bundled solutions to the "C" Suite in healthcare organizations.

- Change agent who redirected the business mission, strategy and tactics utilizing a combination of market research and customer contact.
- Identified new business partner strategic alliance opportunities.
- Increased sales revenue by 20% during the past two years.
- Closed the first Public Private Partnership Acute Care Hospital project in Canada - $9M project with $3M annual operational revenues for 30 years
- Developed marketing plans, pricing options, revenue forecasts, budget development, product enhancement and execution of new product initiatives
- Focused the collective talents of sales teams on high-value market driven opportunities and effective territory/account management.
- Recruited and mentored high performance sales managers to exceed customer and business plan expectations.

Healthcare Vertical Market Manager – Northwest Region 2001 - 2003

Responsible for marketing and sales of a 7 representative team in a four state, three province region providing bundled solutions to healthcare executives

- Forged relationships with customers, strategic partners and others by investing time to evaluate their needs, offering customized solutions and providing exceptional service.
- Exceeded yearly sales goal by 3M in FY03; doubled sales in FY02
- Negotiated the first "Greenfield" design build operate and maintain central plant project for $10M
- One – third of the sales team was awarded the Master's Club distinction – each producing annual margin of over1.3M
- Developed new position that was adopted nationally for project development manager – expanding the size of projects, freeing up sales resources and adding clinical impact to our solutions

Federal and Healthcare Sales Manager – Northwest Region 1999 - 2001

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Dual function position responsible for leading and managing both of these vertical market teams

- Exceeded team sales volume and margin goals by 30%
- Achieved over 270% growth of the federal market for FY01
- One – third of the sales team was awarded the Master's Club distinction – each producing annual margin of over1.2M
- Negotiated first federal performance contract for new construction for $5.5M

Area Installation Manager – Northwest Region 1997-1999

Managed all aspects of project installation and operations including: customer satisfaction, staffing, subcontractor negotiations, developing and managing strategic partnerships and budget integrity.

- Reduced Gross profit variance by 150%
- Increased customer satisfaction levels from 55% to 95%
- Built project teams centered around vertical market accounts and sales teams
- Recruited and developed advanced solutions project management teams
- Developed new position that was adopted nationally for installation coordinator – freeing up project management resources, increasing customer satisfaction and reducing costs

Branch Manager – Washington 1992-1997

Full P&L responsibility for the Seattle and Spokane Branch offices including sales, marketing operations and administration

- Tripled sales in Spokane branch in the first 2 years
- Turned Spokane branch P&L from negative to positive 9% gross margin in 2 years
- Doubled sales in Seattle branch over 3 year period
- Recruited and developed vertical market specialty sales force

Sales and Sales Management positions 1982-1992

Responsible for both sales management and direct customer sales

- Top sales performer in Washington 4 consecutive years
- Developed a new owner focused sales strategy resulting in increased sales, margins and customer satisfaction

EDUCATION

B.S. Mechanical Engineering, University of Washington
Seattle, Washington

PROFESSIONAL ORGANIZATIONS

Active member of the Electric League, WSSHE and NEEC; Volunteer member of the National Ski Patrol; Certified Advanced First Aid Instructor

Eric D. Bauer

18009 NE 25th St.
Vancouver, WA 98684
Home Phone 360-604-3150
Cell Phone 503-318-6607
E-mail: bauerej@aol.com

PROFESIONAL PROFILE

Business Development Director with proven experience in multiple sectors in the building efficiencies and construction marketplace. Competitive, persistent, self-starter being well organized, highly motivated, outstanding relationship building skills, strong presentation skills and RESULTS ORIENTED. Demonstrated performance in:

- Sales & Operations Management
- P & L Responsibilities
- Motivating and Coaching Teams
- Fostering Teamwork
- Value Pricing Strategies
- Negotiations
- Strategic Planning
- Process Improvement
- Business Development

PROFESSIONAL EXPERIENCE

2010 – Present Commercial Energy Solutions BDD, Johnson Controls, Inc.

Responsible for developing and driving sales within the Private Sector Market as part of a National Sales team, managing project development teams, business plan development for new vertical market, and delivering monthly, quarterly, and yearly sales forecasts and results.

- #1 sales margin producer for National Sales team for FY 2011
- Q4 Assigned Fortune 150 Corp Accounts Manager to drive portfolio business
- Developed first large-scale Commercial project west of NYC
- Co-Developed and rolled out Commercial Energy Solutions training to all branches located in PNW & West Regions (WA/OR/CA/AZ/CO/UT)
- Teamed with internal Facilities Management Division to develop/deliver innovation services and implement Account Management practices to existing customer base resulting in 80% growth and expanded executive level relationships

2008 – 2010 Strategic Initiatives BDD, Johnson Controls, Inc.

Responsible for developing and driving relationships within the C40 cities in the US and directly driving sales/revenue within markets where Clinton Climate Initiative & PACE were a focus, business plan development centered around augmenting regional plans by bringing in additional revenue, and delivering monthly, quarterly, and yearly sales forecasts.

- Enabled policy change to take place within City of Los Angeles and resulted in 75% growth within service/systems business
- Closed first Higher Ed PC business in LA County
- Presented in numerous education seminars / board-association-city-county-owner meetings
- Advanced alliance partnerships (technology providers / program administrators - consultants / various associations)

2006 – 2008 Facility Services Business Development Manager, McKinstry Co.

Responsible for developing and driving corporate sales of Facility/DBOM Services including; P & L management, Emerging market expansion, Forecasting, and Staffing.

- Developed and executed business plan for Facility Services and captured Critical Environment presence within 10 months of plan implementation resulting in 120% revenue growth
- Closed first Critical Environment DBOM project for the company
- Developed Facility Services training program and cross-teaming approach for all offices.

2003 – 2006 GNW Healthcare Solutions Manager, Johnson Controls, Inc.

Responsible for developing and driving sales of a 5 representative team in 13 state region, managing project development team, business plan development, P & L management, and delivering monthly, quarterly, and yearly sales forecasts.

- Reorganized and Restructured newly expanded Region while still securing $18M sales quota for FY 05
- Executed 2004 plan and exceeded market segment profitability; growth; penetration; account mgmt; opportunity mgmt; and customer satisfaction objectives for FY 04.
- Awarded 2004 Co-Sales Manager of the year - $13M FY04 Closed Business
- Fostered cross-teaming amongst 3 business units in 11 states (Solutions, Service & Construction)
- 7-yr ACHE member and 2-yr local Regents Advisory Council member for State of Oregon, HFMA member, Sales Mgmt training, SPIN selling, Six Sigma.

1998 – 2003 Healthcare Account Executive, Johnson Controls, Inc.

Responsible for driving all lines of businesses for the State of Oregon and SW Washington for all targeted and managed healthcare accounts.

- Develop and present customized presentations and proposals to all levels of economic Buyers (Hospital & County Boards, CEO'S, CFO'S, V.P.'s).
- Garnered a 62% Market Share for the State of Oregon vs. Nat'l average of 40%.
- #1 Healthcare Sales Exec (64 reps) – 2003 $14.5M to include 1st new bundled solution, Masters Club member.
- #2 Sales Executive in Area (26 reps) for New Business within first 9 months on the job. Landed Legacy Health System Account in Portland and Sacred Heart in Eugene.

1997 – 1998 Commercial Sales, General Electric Capital Modular Space

Responsible for Selling and Leasing of infleet and custom designed modular office buildings within the commercial market.

- Teamed with Inside Sales representatives in order to better serve the customer and maximize sales and leasing opportunities.
- Developed and presented comprehensive detail proposals and bids to all levels of buyers (CEO's, CFO's, & Purchasing Managers).
- #4 Representative in the Nation on Sales Plan achievement within 10 months.
- #2 Representative in Division on new business and finance leases closed.
- Graduated from GE Capital Six Sigma program.

1989 – 1997 Territory Sales Manager, Wyeth-Ayerst Labs., A.H. Robins

Developed and expanded relations with major clinics, hospitals, and pharmacies throughout Oregon and Eastern Washington.
Developed marketing programs specific to Cardiology line

- Coordinated and drove group presentations locally and regionally.
- Maintained a high level of ever-challenging product knowledge.
- #2 Representative – Western Region Cardiology (83 Representatives).
- #5 Representative – Western Region (83 Representatives).
- Integrated Selling Skills graduate.

1985 – 1989 Professional Baseball Player, San Diego Padres

- Competed as a pitcher and achieved All-Star selection in three consecutive years.
- Contributed to promotional developments. Hosted teaching and coaching clinics.
- Exercised marketing responsibilities through ticket sales office.
- Injury driven retirement.

EDUCATION

1983 – 1985 B.A Business Administration: Management, Eastern Washington University, Business School, Cheney, WA.

Courses of study: Sales management, Marketing, Communications, Statistics, Personnel Management, Organizational Development, Small Business Mgmt.

1981-1983 Undergraduate Courses, Whitman College, Walla Walla, WA.

Jim Kershner

Account Executive
Northwest District Office
Trane

PROFESSIONAL:

Seattle Trane – Account Executive	2004 – present
Pacific Air Control – Account Manager	2002 - 2004
Performance Heating & A/C – Service Manager	1998 - 2002
Keg Restaurants – General Manager	1989 - 1997
US Air Force – Staff Sergeant	1979 - 1987

RESPONSIBILITIES / EXPERIENCE:

Jim has worked in the Heating and Air Conditioning Industry for the past 14 years, and has been developing and implementing Energy Savings Performance Contracting (ESPC) projects with Trane for the last three years, mostly within the K12 market. He possesses direct and indirect experience working with owners, contractors and engineers offering energy savings and facility infrastructure improvement solutions for existing buildings. He is dedicated to developing a team environment within the organization in order to build long-term business relationships with customers that continually exceed their expectations. In his current position he works on the Comprehensive Solutions team serving the Public Sector in Western Washington. Jim's solid mechanical background, coupled with his education in Business Administration, have proven to be a valuable combination when assisting customers with capital budgeting and planning for the replacement and upgrade of their mechanical systems based on energy and operational savings.

EDUCATION:

High School Graduate – Lynnwood Sr. High School
US Air Force Technical Training – Electronics Technician
Bachelor of Science in Business Management (BSBM) – Southern Illinois University
Numerous Professional Development and Leadership Courses

PROFESSIONAL MEMBERSHIPS:

LEED AP
WAMOA

RECENT PROJECTS:

Renton School District Phases One and Two, $3.5 million ESPC via DES Contract
Rochester School District, $1.8 million ESPC via DES Contract
Sumner School District, $3.4 million ESPC via DES Contract

Joe Leichner PE

Energy Engineer
Americas Services and Contracting
Trane

PROFESSIONAL:

2010 to Present: Project Development/Program Manager/Energy Engineer, Trane.
2008 to 2010: Audit and Sales Manager, APS Energy Services
2006 to 2008: Project Development Program Manager, Trane
2003 to 2006: Service Solutions Manager, Trane
2002 to 2003: Vice President of Operations, Midstate Mechanical
1999 to 2001: Director of Energy Project Development and Construction, Enron
1998 to 1999: Sr. Program Manager, JB Rogers/Kinetic Systems
1995 to 1998: Operations Supervisor, Siemens Building Technologies
1993 to 1995: Sr. Energy Engineer, Johnson Controls
1992 to 1993: Project Manager, Alvine and Associates
1989 to 1992: Project Engineer, Farris Engineering
1988 to 1989: Sales Engineer, Honeywell
1986 to 1988: Sales Engineer, Mechanical Sales
1984 to 1986: Project Engineer, Waldinger

RESPONSIBILITIES / EXPERIENCE:

Responsible for the sales and development of energy related facilities improvements in a variety of different vertical markets. Responsibilities have included hiring and developing teams of acquisition and fulfillment resources along with business management for energy service solutions for client needs. Experiences have included envelope, renewable energy, lighting, controls, mechanical and electrical system improvements, as well as operational and maintenance efficiency analysis and implementations. Healthcare, Education Facilities, Municipal Buildings and Functional Infrastructure, Manufacturing, and Industrial efficiency improvements have been included in the energy and sustainability focused projects.

EDUCATION:

Bachelor of Science, Construction Engineering Technology- University of Nebraska
Seminars and Courses – Certified Measurement and Verification Professional, Certified Energy Manager, Certified Indoor Air Quality Manager, NEBB Certified Supervisor, Six Sigma Quality White Belt, Renewable Energy Generation, Strategic Sales, Negotiation, and other specialized financial and management courses.

PROFESSIONAL MEMBERSHIPS:

Registered (Licensed) Mechanical Engineer in Nebraska and Arizona
Association of Energy Engineers

Appendix C: Federal Standard Form SF 330

ARCHITECT - ENGINEER QUALIFICATIONS

PART I - CONTRACT-SPECIFIC QUALIFICATIONS

A. CONTRACT INFORMATION

1.	TITLE AND LOCATION *(City and State):*	**13/15 Biennial ESCO Selection RFQ, State of Washington**
2.	PUBLIC NOTICE DATE:	**February 1, 2013**
3.	SOLICITATION OR PROJECT NUMBER:	**Project No. 13-133**

B. POINT OF CONTACT

4.	NAME AND TITLE:	**Don Mitchell, Director Strategic Sales**
5.	NAME OF FIRM:	**Trane**
6.	TELEPHONE NUMBER:	**425-586-1632**
7.	FAX NUMBER:	**425-643-4314**
8.	E-MAIL ADDRESS:	**dmitchell@trane.com**

C. PROPOSED TEAM

(Complete this section for the prime contractor and all key subcontractors.)

9a.	PRIME (CHECK HERE): **XX**	
9a.	JOINT-VENTURE PARTNER (CHECK HERE):	
9a.	SUBCONTRACTOR (CHECK HERE):	
9a.	FIRM NAME:	**Trane U.S. Inc.**
9a.	IF BRANCH OFFICE CHECK HERE: **XX**	
10a.	ADDRESS:	**2021 152nd Ave. NE , Redmond, WA 98052**
11a.	ROLE IN THIS CONTRACT:	**Project Leadership, Energy Consulting, Engineering Support & Fulfillment**
9b.	PRIME (CHECK HERE):	
9b.	JOINT-VENTURE PARTNER (CHECK HERE):	
9b.	SUBCONTRACTOR (CHECK HERE): **XX**	
9b.	FIRM NAME:	**Licensed Architectural Engineering Firms**
9b.	IF BRANCH OFFICE CHECK HERE:	
10b.	ADDRESS	
11b.	ROLE IN THIS CONTRACT	**A/E Services**

Trane U.S. Inc. (herein after referred to as Trane) in association with licensed Architectural Engineering firms to be determined on a project by project basis is submitting our collective qualifications, experience, and expertise for consideration by the State of Washington to perform ESCO consultant services for Project No. 13-133 at various state agencies, colleges, schools, and municipalities.

Trane is a qualified DOE ESCO and the qualifications herein demonstrate our ability to perform ESCO consulting services and illustrates some of the Trane's representative experience comprised of the collective individuals' and company's experience doing energy projects. Trane will act as the Prime Contractor on this project and has identified various A/E firms to supplement Trane's experienced ESCO team. Trane will provide project management, energy consulting, engineering and overall leadership in identifying, financing, design and installation of energy conservation measures on the project. Technical and financial support will be solicited to augment team.

D. ORGANIZATIONAL CHART OF PROPOSED TEAM *(Attached; check here)*

See attached organizational chart submitted along with this document in response to Notice to Energy Service Companies.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

Resumes of Key personnel in Form 330 format are provided following this page. The proposed individuals from Trane will play an integral part for this contract are:

	Name/Title		Project Assignment
1.	Eric Bauer	Account Executive	Business Development
2.	Jim Kershner	Account Executive	Business Development
3.	Debbie Chambers	Project Development Engineer	Project Development & Engineering Support
4.	Scott Eisenhauer	Project Manager	Project Management
5.	Jim Sutull	Project Manager	Project Management
6.	Shawn Kelley	Contracting Manager	Manage Project cost and Schedule
7.	Don Mitchell	Director Strategic Sales	Business Development
8.	Tim Swanson	Territory Contracting Leader	Support of Local Office for Implementation
9.	Neil Maldeis	National Energy Engineering Mgr	Engineering Oversight
10.	Clayton Dumcum	Energy Engineer	Project Development & Engineering Support

Personnel from licensed Architectural-Engineering firms will augment Trane's core team and will be tailored to the specific ESCO project service needs on the State of Washington's Project No. 13-133. A list of firms that are experienced and Trane will consider using to execute project are shown below:

	A/E Firm Name	Location
26.	Engineering Economics, Inc.	Seattle, WA
27.	HDR, Inc	Bellevue, WA
28.	Affiliated Engineers, Inc.	Seattle, WA
29.	Hultz/BHU Engineers Inc	Tacoma, WA
30.	BHC Consultants	Seattle, WA
31.	Metrix Engineers	Renton, WA
32.	Wood Harbinger	Bellevue, WA
33.	Hargis Engineers	Seattle, WA
34.	BCE	Tacoma, WA
35.	Cross Engineers	Tacoma, WA
36.	Tres West Engineers	Tacoma, WA

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

1. NAME: Eric Bauer

13. ROLE IN THIS CONTRACT: Project Director

14a. YEARS EXPERIENCE – TOTAL: 18

14b. YEARS EXPERIENCE – WITH CURRENT FIRM: 1 Year
15. FIRM NAME AND LOCATION *(City and State)*: Trane (Redmond, WA)

16. EDUCATION *(DEGREE AND SPECIALIZATION*): BSBA – Pre-Engineering

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE):*
18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*: ACHE, HFMA, BOMA, IFMA, Clinton Climate Initiative, Seattle 2030 District

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19a(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State): City of Bremerton WWTP*

19a(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2013 Investment Grade Audit w/ DES

19a(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable): Currently In construction*

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Director
Waste Water Treatment Plant Energy Efficiency program. Primary Effluent Pump System replacement/retrofit.
Project Size $3M, roughly 75% energy savings for the PE pump system.

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: **X**

19b(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State): City of Lynden*

19b(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2012 Investment Grade Audit w/ DES

19b(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable): Awaiting Grant results from Dept of Commerce*

19b(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Director
Waste Water Treatment Plant Energy Efficiency program. Aeration Fine Bubble diffuser and Blower replacement/retrofit and exterior lighting retrofit. Project Size $2.4M, roughly 26% energy savings on the plant

19b(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: **X**

19c(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State): Lake Haven Water District*

19c(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2013 Investment Grade Audit w/ DES

19c(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable): Awaiting Grant results from Dept of Commerce*

19c(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Director
Waste Water Treatment Plant Energy Efficiency program. Aeration Fine Bubble diffuser replacement/retrofit.
Project Size $1.4M, roughly 20% energy savings on the plant

19c(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: **X**

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

2. NAME: Jim Kershner

11. ROLE IN THIS CONTRACT: Account Executive/Business Development

14a. YEARS EXPERIENCE - TOTAL: 14

14b. YEARS EXPERIENCE - WITH CURRENT FIRM: 8

15. FIRM NAME AND LOCATION *(City and State)*: Trane (Redmond, WA)

16. EDUCATION *(DEGREE AND SPECIALIZATION*): BSBM

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE):*

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*: LEED AP

29. Organizations: WAMOA

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Renton School District Phase I*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): 2010*

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Account Manager
Project includes, lighting, chiller plant upgrades, boiler installation and controls retro-commissioning. Project size is about $1.6 million.

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19b(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State): Renton School District Phase 2 KEC*

19b(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2010

19b(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable):* 2011

19b(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Account Manager.
Project includes chiller replacement, upgrades to server room HVAC and server virtualization. Project size is about $1.5 million
19b(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: X

19c(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Renton School District Phase 2 Dimmit*

19c(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19c(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable):* 2011

19c(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Account Manager.
Project included boiler plant upgrades including high efficiency modular boilers, window wall upgrade to double pane low-e windows, Gymnasium lighting at various schools.
Project size was about $2.0 million.

19c(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19d(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Rochester School District (High School)*

19d(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19d(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): 2011*

19d(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Account Manager and Sales Leader –
Project includes, interior and exterior lighting, cooling tower and water source heat pump replacement, new DDC controls, IT upgrades (thin client).
Project size is about $1.8 million.

19d(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

3. NAME: Debbie Chambers

ROLE IN THIS CONTRACT: Project Developer - Energy Engineer/Business Development

14a. YEARS EXPERIENCE - TOTAL: 20+

14b. YEARS EXPERIENCE - WITH CURRENT FIRM: <1

15. FIRM NAME AND LOCATION *(City and State)*: Trane (Redmond, WA)

16. EDUCATION *(DEGREE AND SPECIALIZATION*): BSME

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE):* EIT

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*: CEM, LEED AP BD+C, CSBA

30. Organizations: ASHRAE, AEE

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Shoreline Community College, Shoreline, WA*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2012-13

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable):*

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Developer/ Energy Engineer
Due to short time frame before grant deadlines, only three measures were included in this round: campus-wide upgrade of exterior lighting, campus wide water conservation, and server room power upgrade from single-phase. Project size is about $1.1 million.

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Queets Clearwater School, Queets, WA*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2012-13

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable):*

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Developer/ Energy Engineer
Project includes campus-wide upgrade of lighting, campus wide controls, and energy efficient windows retrofit. Project size is about $225,000.

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): various military sites, US*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2011-12

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable):*

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Senior Energy Engineer
Projects include over 1.6 million sf of energy audits on military installations made up of large maintenance facilities, hangers, workshops, a waste water treatment plant, central plants, data rooms, cafeterias, restaurants, office spaces, classrooms, training spaces, barracks, and officers lodging. Measures include chiller plant and cooling tower upgrades, controls, compressors, boiler system upgrades, steam/HHW/DHW systems, VFDs and motor upgrades, HVAC equipment upgrades (air handling systems, CRAC units, packaged units, etc.), commercial kitchen equipment, heat recovery, infrared heating, renewable studies (wind, solar PV and solar HW, methane gas capture), lighting, water conservation, envelope, and retro-commissioning. Projects totaled about $17 million, with annual savings approximately $1.6 million.

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm:

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

4 . NAME: Scott Eisenhauer

15. ROLE IN THIS CONTRACT: Project Manager

14a. YEARS EXPERIENCE – TOTAL: 32

14b. YEARS EXPERIENCE – WITH CURRENT FIRM: 6

15. FIRM NAME AND LOCATION *(City and State)*: Trane (Redmond, WA)

16. EDUCATION *(DEGREE AND SPECIALIZATION*): BS Civil Engineering, MS Human Resource Management

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE):* n\a

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Project Management Professional Certification– Project Management Institute
OSHA-30

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Sumner School District*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2013

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): 2013*

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Manager – Scheduling and implementation of entire project. Project included Irrigation and Water Conservation, HP Replacement, Lighting, Block Heater Upgrade, CO2 controls. Project size was about $5.2 million.

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19b(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Renton School District Phase II (KEC, Dimmitt, and Other Energy Upgrades*

19b(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2011

19b(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): 2011*

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: *In construction*. Project Manager – Scheduling and successful implementation of entire project. Project includes, Lighting, Window Replacement, chiller plant upgrades, Boiler Plant Upgrades, Server Virtualization, Data Room Build Out.

boiler installation and controls retro-commissioning. Project size is about $3.4 million.

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19c(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State*): LOTT Alliance – Aeration Blower (Olympia, WA)

19c(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2011

19c(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable):* 2011

19c(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Manager. Contract Value: $648,486. Scope includes design and installation of Aeration Blower, and MCC Upgrade.

19c(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: X

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

5. NAME: James Sutull

13. ROLE IN THIS CONTRACT: Project Manager

14a. YEARS EXPERIENCE – TOTAL: 16

14b. YEARS EXPERIENCE – WITH CURRENT FIRM: 2
15. FIRM NAME AND LOCATION *(City and State)*: Trane – Redmond, WA

16. EDUCATION *(DEGREE AND SPECIALIZATION*): Bachelor of Science – Mechanical Engineering

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE): State of Washington – Professional Engineer*
18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

- Certificate in Project Management, University of Washington - Extension

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19a(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State): Edmonds Community College Phase II and Phase III. Edmonds, WA*

19a(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:

19a(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable): 2012*

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Manager for Phase II and Phase III. With Phase I, the $5.3 Million conservation project included boiler replacements, chiller optimization, lighting upgrades, window films, and Server virtualization.

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: With Current Firm

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19b(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State): Rochester High School, Rochester, WA*

19b(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:

19b(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable): 2011*

19b(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Using energy conservation incentives Form Puget Sound Energy Company, the school district was able to implement a $1.7 Million retrofit improvement project. This included the removal Of 22-year old heat pumps to install new efficient heat pumps. A new energy efficient cooling tower, computer upgrades, and variable frequency Drives were also installed.

19b(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: With Current Firm

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19c(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State): Ocosta School District, Ocosta, WA*

19c(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:

19c(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable): On-going – scheduled for 2013*

19c(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Manager for this $800K energy Conservation project that incorporates DDC controls for the high and elementary schools, a new cooling tower, heat pumps to reduce the boiler Usage, and lighting and water conservation measures.

19c(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: Yes

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19d(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State): Chehalis School District, Chehalis, WA*

19d(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:

19d(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable): On-going – scheduled for 2013*

19d(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Manager for $1 Million energy Conversation project that includes district lighting upgrades, digital clocks, water conversation, and glazing upgrades.

19d(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: Yes.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

6. NAME: Shawn Kelley

13. ROLE IN THIS CONTRACT: Comprehensive Solutions Manager

14a. YEARS EXPERIENCE – TOTAL: 26

14b. YEARS EXPERIENCE – WITH CURRENT FIRM: 10

15. FIRM NAME AND LOCATION *(City and State)*: Trane (Redmond, WA)

16. EDUCATION *(DEGREE AND SPECIALIZATION*): BSBIS

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE):* none
18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Extensive knowledge and experience of HVAC practices and procedures

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19a(1) RELEVANT PROJECT - TITLE AND LOCATION (*City and State)* Keyport NUWC (*Keyport, WA*)

19a(2) RELEVANT PROJECT - YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT - YEARS COMPLETED – CONSTRUCTION: 2010

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION (*Brief scope, size, cost etc.)* $14.7M, 37 buildings total – Complete upgrade of HVAC systems and controls, including high efficiency chillers, boilers, and ground source heat pumps

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION: check *if project performed with current firm:* X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State*): LOTT Alliance – BITP Cogen (Olympia, WA)

19a(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2009

19a(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable):* 2009

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Contracting manager.
Contract Value: $2,300,000. Scope includes design and installation of digester gas cogeneration system, gas scrubber, controls, and high-efficiency boilers.

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: X

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

7. NAME: Don Mitchell

13. ROLE IN THIS CONTRACT: Director Strategic Sales – NW-HI District

14a. YEARS EXPERIENCE – TOTAL; 30

14b. YEARS EXPERIENCE – WITH CURRENT FIRM: 7

15. FIRM NAME AND LOCATION: Trane (*Redmond WA)*
16. EDUCATION: B.S. Mechanical Engineering

17. CURRENT PROFESSIONAL REGISTRATION:

18. OTHER PROFESSIONAL QUALIFICATIONS: LEED AP, Active involvement with the Electric League, Northwest Energy Efficiency Counsel and Washington Society of Healthcare Engineers.

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Renton School District Phase I & 2*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: Phase 1 - 2010, Phase 2 - 2011

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable):* Phase 1 - 2010, Phase 2 - 2011

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Team Leader
Phase 1 Project includes lighting, chiller plant upgrades, boiler installation and controls retro-commissioning. Project size is about $1.6 million.
Phase 2a Project includes boiler plant upgrades including high efficiency modular boilers, window wall upgrade to double pane low-e windows, Gymnasium lighting at various schools. Project size was about $2.0 million.
Phase 2b Project includes chiller replacement, upgrades to server room HVAC and server virtualization. Project size is about $1.5 million

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State*): LOTT Alliance – BITP Cogen (Olympia, WA)

19a(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2009

19a(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable):* 2009

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Team Leader
Contract Value: $2,300,000. Scope includes design and installation of digester gas cogeneration system, gas scrubber, controls, and high-efficiency boilers.

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION (*City and State)* Keyport NUWC (*Keyport, WA*)

19a(2) RELEVANT PROJECT - YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT - YEARS COMPLETED – CONSTRUCTION: 2010

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION (*Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Team Leader. $14.7M, 37 buildings total – Complete upgrade of HVAC systems and controls, including high efficiency chillers, boilers, and ground source heat pumps

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION: check *if project performed with current firm:* X

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

8. NAME: Tim Swanson

13. ROLE IN THIS CONTRACT: Director, Contracting – West Territory

14a. YEARS EXPERIENCE – TOTAL: 30+

14b. YEARS EXPERIENCE – WITH CURRENT FIRM: 15

15. FIRM NAME AND LOCATION *(City and State)*: Trane Company (Carrollton, TX)

16. EDUCATION *(DEGREE AND SPECIALIZATION*): AA Construction Management

17. CURRENT PROFESSIONAL REGISTRATION *(None):*

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Rummler-Brache Process Improvement Facilitator Certification, Project Management Institute - Member.

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Edmonds Community College Phase I (Edmonds, WA)*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): 2010*

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: West Territory Contracting Director.
Project included High efficiency boilers, DDC controls, VFD's, campus lighting, and server virtualization.
Project size was about $1.8 million.

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19b(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Renton School District Phase I*

19b(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19b(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): 2010*

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: West Territory Contracting Director
Project includes, lighting, chiller plant upgrades,
boiler installation and controls retro-commissioning. Project size is about $1.6 million.

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State*): LOTT Alliance – BITP Cogen (Olympia, WA)

19a(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2009

19a(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable):* 2009

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: West Territory Contracting Director.
Contract Value: $2,300,000. Scope includes design and installation of digester gas cogeneration system, gas scrubber, controls, and high-efficiency boilers.

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION (*City and State)* Keyport NUWC (*Keyport, WA*)

19a(2) RELEVANT PROJECT - YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT - YEARS COMPLETED – CONSTRUCTION: 2010

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION (*Brief scope, size, cost etc.)* $14.7M, 37 buildings total – Complete upgrade of HVAC systems and controls, including high efficiency chillers, boilers, and ground source heat pumps

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION: check *if project performed with current firm:* X

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

9. NAME: Neil Maldeis

12. ROLE IN THIS CONTRACT: National Energy Engineering Manager, Americas Services and Contracting

14a. YEARS EXPERIENCE – TOTAL: 26

14b. YEARS EXPERIENCE – WITH CURRENT FIRM: 10

15. FIRM NAME AND LOCATION *(City and State)*: Trane (St Paul, MN)

16. EDUCATION *(DEGREE AND SPECIALIZATION*): BSME – Bachelor of Science – Mechanical Engineering

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE):* Minnesota, Mechanical Engineering #24081

12. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Certified Energy Manager (CEM), Active Member of the Association of Energy Engineers (AEE)

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): YMCA Dallas – Dallas, TX*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2005

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): In construction*

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: National Energy Engineering Manager. Provided quality control and risk review for all savings calculations used to develop project. Responsible to insure and recommend to Trane business leaders a viable risk managed project. Facilities in multiple locations around Dallas metropolitan area, project consisted of a wide range of conservation measures from lighting retrofits to HVAC system replacements specific to the individual building types and needs. Project cost $2.8M

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19b(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): SVTC Southside Virginia Training Center , Richmond, VA*

19b(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2005

19b(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): In construction*

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: National Energy Engineering Manager. Provided quality control and risk review for all savings calculations used to develop project. Responsible to insure and recommend to Trane business leaders a viable risk managed project. Large multi-facility campus, project consisted of a wide range of conservation measures from lighting retrofits to HVAC system replacements. Complex project involving large central steam and chilled water plant improvements. Project cost $13.4M

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION (*City and State)* Keyport NUWC (*Keyport, WA*)

19a(2) RELEVANT PROJECT - YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT - YEARS COMPLETED – CONSTRUCTION: 2010

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION (*Brief scope, size, cost etc.)* AND SPECIFIC ROLE: National Energy Engineering Manager. $14.7M, 37 buildings total – Complete upgrade of HVAC systems and controls, including high efficiency chillers, boilers, and ground source heat pumps

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION: check *if project performed with current firm:* X

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

10. NAME: Clayton Dumcum

13. ROLE IN THIS CONTRACT: Measurement and Verification Manager, Americas Services and Contracting

14a. YEARS EXPERIENCE – TOTAL: 10

14b. YEARS EXPERIENCE – WITH CURRENT FIRM: 7

15. FIRM NAME AND LOCATION *(City and State)*: Trane (St Paul, MN)

16. EDUCATION *(DEGREE AND SPECIALIZATION*): BSME – Bachelor of Science – Mechanical Engineering

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE): Professional Engineer, Minnesota*

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Certified Energy Manager (CEM), Active Member of the Association of Energy Engineers (AEE)

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Edmonds Community College Phase I (Edmonds, WA)*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): 2010*

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Manager – M&V Engineer.
Project included High efficiency boilers, DDC controls, VFD's, campus lighting, and server virtualization.
Project size was about $1.8 million.

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19b(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Renton School District Phase I*

19b(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19b(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): 2010*

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: M&V Engineer
Project includes, lighting, chiller plant upgrades,
boiler installation and controls retro-commissioning. Project size is about $1.6 million.

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State*): LOTT Alliance – BITP Cogen (Olympia, WA)

19a(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2009

19a(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable):* 2009

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: M&V Engineer.
Contract Value: $2,300,000. Scope includes design and installation of digester gas cogeneration system, gas scrubber, controls, and high-efficiency boilers.

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION (*City and State)* Keyport NUWC (*Keyport, WA*)

19a(2) RELEVANT PROJECT - YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT - YEARS COMPLETED – CONSTRUCTION: 2010

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION (*Brief scope, size, cost etc.)* $14.7M, 37 buildings total – Complete upgrade of HVAC systems and controls, including high efficiency chillers, boilers, and ground source heat pumps

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION: check *if project performed with current firm:* X

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME: Neil Maldeis

13. ROLE IN THIS CONTRACT: National Energy Engineering Manager, Americas Services and Contracting

14a. YEARS EXPERIENCE – TOTAL: 30

14b. YEARS EXPERIENCE – WITH CURRENT FIRM: 14

15. FIRM NAME AND LOCATION *(City and State)*: Trane (St Paul, MN)

16. EDUCATION *(DEGREE AND SPECIALIZATION*): BSME – Bachelor of Science – Mechanical Engineering

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE):* Minnesota, Mechanical Engineering #24081

13. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Certified Energy Manager (CEM), Active Member of the Association of Energy Engineers (AEE)

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): YMCA Dallas – Dallas, TX*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2005

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): In construction*

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: National Energy Engineering Manager. Provided quality control and risk review for all savings calculations used to develop project. Responsible to insure and recommend to Trane business leaders a viable risk managed project. Facilities in multiple locations around Dallas metropolitan area, project consisted of a wide range of conservation measures from lighting retrofits to HVAC system replacements specific to the individual building types and needs. Project cost $2.8M

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19b(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): SVTC Southside Virginia Training Center , Richmond, VA*

19b(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2005

19b(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): In construction*

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: National Energy Engineering Manager. Provided quality control and risk review for all savings calculations used to develop project. Responsible to insure and recommend to Trane business leaders a viable risk managed project. Large multi-facility campus, project consisted of a wide range of conservation measures from lighting retrofits to HVAC system replacements. Complex project involving large central steam and chilled water plant improvements. Project cost $13.4M

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION (*City and State)* Keyport NUWC (*Keyport, WA*)

19a(2) RELEVANT PROJECT - YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT - YEARS COMPLETED – CONSTRUCTION: 2010

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION (*Brief scope, size, cost etc.)* AND SPECIFIC ROLE: National Energy Engineering Manager. $14.7M, 37 buildings total – Complete upgrade of HVAC systems and controls, including high efficiency chillers, boilers, and ground source heat pumps

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION: check *if project performed with current firm:* X

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME: Clayton Dumcum

13. ROLE IN THIS CONTRACT: Measurement and Verification Manager, Americas Services and Contracting

14a. YEARS EXPERIENCE – TOTAL: 10

14b. YEARS EXPERIENCE – WITH CURRENT FIRM: 7

15. FIRM NAME AND LOCATION *(City and State)*: Trane (St Paul, MN)

16. EDUCATION *(DEGREE AND SPECIALIZATION*): BSME – Bachelor of Science – Mechanical Engineering

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE): Professional Engineer, Minnesota*

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Certified Energy Manager (CEM), Active Member of the Association of Energy Engineers (AEE)

19a(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Edmonds Community College Phase I (Edmonds, WA)*

19a(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): 2010*

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: Project Manager – M&V Engineer.
Project included High efficiency boilers, DDC controls, VFD's, campus lighting, and server virtualization.
Project size was about $1.8 million.

19a(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19b(1) RELEVANT PROJECT – TITLE AND LOCATION *(City and State): Renton School District Phase I*

19b(2) RELEVANT PROJECT – YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19b(2) RELEVANT PROJECT – YEAR COMPLETED – CONSTRUCTION *(If applicable): 2010*

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: M&V Engineer
Project includes, lighting, chiller plant upgrades,
boiler installation and controls retro-commissioning. Project size is about $1.6 million.

19b(3) RELEVANT PROJECT – BRIEF DESCRIPTION – Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION *(City and State*): LOTT Alliance – BITP Cogen (Olympia, WA)

19a(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2009

19a(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION *(If applicable):* 2009

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION *(Brief scope, size, cost etc.)* AND SPECIFIC ROLE: M&V Engineer.
Contract Value: $2,300,000. Scope includes design and installation of digester gas cogeneration system, gas scrubber, controls, and high-efficiency boilers.

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION - Check here if project performed with current firm: X

19a(1) RELEVANT PROJECT - TITLE AND LOCATION (*City and State)* Keyport NUWC (*Keyport, WA*)

19a(2) RELEVANT PROJECT - YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

19a(2) RELEVANT PROJECT - YEARS COMPLETED – CONSTRUCTION: 2010

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION (*Brief scope, size, cost etc.)* $14.7M, 37 buildings total – Complete upgrade of HVAC systems and controls, including high efficiency chillers, boilers, and ground source heat pumps

19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION: check *if project performed with current firm:* X

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

D. EXAMPLE PROJECT KEY NUMBER: 1

D. TITLE AND LOCATION (*City and State): Edmonds Community College – Phase I*

E. YEAR COMPLETED - PROFESSIONAL SERVICES: 2009

F. YEAR COMPLETED - CONSTRUCTION *(If applicable): 2010*

23a. PROJECT OWNER'S INFORMATION - PROJECT OWNER: Edmonds Community College

23b. PROJECT OWNER'S INFORMATION - POINT OF CONTACT NAME: Mr. Kevin McKay

23c. PROJECT OWNER'S INFORMATION - POINT OF CONTACT TELEPHONE NUMBER: 425-640-1547

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost): $2.0M, 6 buildings total (300,000 sq/ft) - Campus-wide efficiency improvements and infrastructure upgrades. This project included two new innovative measures that had never been done through the State ESPC contract; Server Virtualization and a Greenhouse Gas Audit. Additional improvements included: Replacement of a 25MBtu Boiler; high-efficiency Chilled Water System, DDC Controls, Lighting, and HVAC System upgrades.*

25. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
Trane US, Inc.	Redmond, WA	Prime Contractor

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

12. EXAMPLE PROJECT KEY NUMBER: 2

D. TITLE AND LOCATION (*City and State): Renton School District – Phase I*

E. YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

F. YEAR COMPLETED – CONSTRUCTION *(If applicable): 2010*

23a. PROJECT OWNER'S INFORMATION – PROJECT OWNER: Renton School District

23b. PROJECT OWNER'S INFORMATION – POINT OF CONTACT NAME: Mr. Jonathan Stine

23c. PROJECT OWNER'S INFORMATION – POINT OF CONTACT TELEPHONE NUMBER: 425-204-4421

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost):*
Project includes high efficiency boilers, lighting, high efficiency chiller, and controls retro-commissioning. Project size is about $1.7 million.

25. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
Trane US, Inc.	Redmond, WA	Prime Contractor

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

D. EXAMPLE PROJECT KEY NUMBER: 3

24. TITLE AND LOCATION (*City and State): Keyport NUWC*

25. YEAR COMPLETED – PROFESSIONAL SERVICES: 2009

26. YEAR COMPLETED – CONSTRUCTION *(If applicable):* 2010

23a. PROJECT OWNER'S INFORMATION – PROJECT OWNER: US Navy

23b. PROJECT OWNER'S INFORMATION - POINT OF CONTACT NAME: Mr. Phil Beste
23c. PROJECT OWNER'S INFORMATION - POINT OF CONTACT TELEPHONE NUMBER: 360-396-5170

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost):*
This project encompassed 37 buildings totaling over 1,000,000 sq/ft with a project cost of $14.7M. The project included ground-source heat pumps, solar hot water, lighting, and high efficiency chillers & boilers. Additional technologies analyzed by Trane include green roofs, PV, wind, and ocean-coupled systems.

25. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
Trane US, Inc.	Redmond, WA	Prime Contractor

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

12. EXAMPLE PROJECT KEY NUMBER: 4

D. TITLE AND LOCATION (*City and State): LOTT Alliance – Budd Inlet Treatment Plant Cogeneration*

E. YEAR COMPLETED - PROFESSIONAL SERVICES: 2009

F. YEAR COMPLETED - CONSTRUCTION *(If applicable):* 2010

23a. PROJECT OWNER'S INFORMATION - PROJECT OWNER: LOTT Alliance

23b. PROJECT OWNER'S INFORMATION - POINT OF CONTACT NAME: Mr. Howard Weisberg

23c. PROJECT OWNER'S INFORMATION - POINT OF CONTACT TELEPHONE NUMBER: 360- 528-5701

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost): Project cost - $2.6M*
The largest conservation grant in PSE's history, over $1.7M, went to this customer as a result of this project. The scope included the design and installation of a high efficiency, digester gas cogeneration system, consisting of; a new gas treatment system, a new 335 kW reciprocating engine with a heat recovery unit, and two small 1.5 MMBtu natural gas boilers.

25. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
Trane US, Inc.	Redmond, WA	Prime Contractor

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

E. EXAMPLE PROJECT KEY NUMBER: 5

F. TITLE AND LOCATION (*City and State): Edmonds Community College – Phase 2*

G. YEAR COMPLETED - PROFESSIONAL SERVICES: 2010

H. YEAR COMPLETED - CONSTRUCTION *(If applicable): 2012*

23a. PROJECT OWNER'S INFORMATION - PROJECT OWNER: Edmonds Community College

23b. PROJECT OWNER'S INFORMATION - POINT OF CONTACT NAME: Kao Saeteurn

23c. PROJECT OWNER'S INFORMATION - POINT OF CONTACT TELEPHONE NUMBER: 425-640-1520

11. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost): Project included boiler replacement (central plant), VFD's, parking lot & batting cage lighting, HVAC re-commissioning. Project size was $1.8 million.*

25. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
Trane U.S. Inc	Redmond, WA	Prime Contractor

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

I. EXAMPLE PROJECT KEY NUMBER: 6

J. TITLE AND LOCATION (*City and State): Edmonds Community College – Phase 3*

K. YEAR COMPLETED - PROFESSIONAL SERVICES: 2010

L. YEAR COMPLETED - CONSTRUCTION *(If applicable): 2012*

23a. PROJECT OWNER'S INFORMATION - PROJECT OWNER: Edmonds Community College

23b. PROJECT OWNER'S INFORMATION - POINT OF CONTACT NAME: Kao Saeteurn

23c. PROJECT OWNER'S INFORMATION - POINT OF CONTACT TELEPHONE NUMBER: 425-640-1520

12. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost): Project included cooling tower* repairs, window film, server room HVAC upgrade, water conservation, AHU control re-commissioning
Project size was $1.2 million.

25. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
Trane U.S. Inc	Redmond, WA	Prime Contractor

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

G. EXAMPLE PROJECT KEY NUMBER: 7

H. TITLE AND LOCATION (*City and State): Renton School District – KEC*

I. YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

J. YEAR COMPLETED – CONSTRUCTION *(If applicable): 2011*

23a. PROJECT OWNER'S INFORMATION – PROJECT OWNER: Renton School District

23b. PROJECT OWNER'S INFORMATION – POINT OF CONTACT NAME: Mr. Jonathan Stine

23c. PROJECT OWNER'S INFORMATION – POINT OF CONTACT TELEPHONE NUMBER: 425-204-4421

25. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost):*
Project includes chiller replacement, upgrades to server room HVAC and server virtualization. Project size is about $1.5 million

25. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
Trane US, Inc.	Redmond, WA	Prime Contractor

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

G. EXAMPLE PROJECT KEY NUMBER: 8

H. TITLE AND LOCATION (*City and State): Renton School District – Dimmit*

I. YEAR COMPLETED – PROFESSIONAL SERVICES: 2010

K. YEAR COMPLETED – CONSTRUCTION *(If applicable): 2011*

23a. PROJECT OWNER'S INFORMATION – PROJECT OWNER: Renton School District

23b. PROJECT OWNER'S INFORMATION – POINT OF CONTACT NAME: Mr. Jonathan Stine

23c. PROJECT OWNER'S INFORMATION – POINT OF CONTACT TELEPHONE NUMBER: 425-204-4421

13. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost):*
Project included boiler plant upgrades including high efficiency modular boilers, window wall upgrade to double pane low-e windows, gymnasium lighting at various schools.
Project size was about $2.0 million.

26. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
Trane US, Inc.	Redmond, WA	Prime Contractor

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

D. EXAMPLE PROJECT KEY NUMBER: 9

E. TITLE AND LOCATION (*City and State): Rochester School District*

F. YEAR COMPLETED - PROFESSIONAL SERVICES: 2010

G. YEAR COMPLETED - CONSTRUCTION *(If applicable):* 2011

23a. PROJECT OWNER'S INFORMATION - PROJECT OWNER: Rochester School District School District

23b. PROJECT OWNER'S INFORMATION - POINT OF CONTACT NAME: Mr. Larry Quarnstrom

23c. PROJECT OWNER'S INFORMATION - POINT OF CONTACT TELEPHONE NUMBER: 360-273-6940

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost):*
Project includes, interior and exterior lighting, cooling tower and water source heat pump replacement, new DDC controls, IT upgrades (thin client). Project size is about $1.8 million.

14. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
Trane US, Inc.	Redmond, WA	Prime Contractor

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

H. EXAMPLE PROJECT KEY NUMBER: 10

I. TITLE AND LOCATION (*City and State): Sumner School District*

J. YEAR COMPLETED - PROFESSIONAL SERVICES: 2012

K. YEAR COMPLETED - CONSTRUCTION *(If applicable):* 2012

23a. PROJECT OWNER'S INFORMATION - PROJECT OWNER: Sumner School District

23b. PROJECT OWNER'S INFORMATION - POINT OF CONTACT NAME: Mr. Jay Donnaway

23c. PROJECT OWNER'S INFORMATION - POINT OF CONTACT TELEPHONE NUMBER: (253) 891-6018

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost):*
Project includes replacement of air to air heat pumps in two elementary schools, water conservation, lighting upgrades, bus block heater control, demand control ventilation
Project size: $742K.

15. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
Trane US, Inc.	Redmond, WA	Prime Contractor

G. KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS

16. NAMES OF KEY PERSONNEL (From Section E, Block 12)	17. ROLE IN THIS CONTRACT (From Section E, Block 13)	18. EXAMPLE PROJECTS LISTED IN SECTION F (Fill in "Example Projects Key" section below before completing table. Place "X" under project key number for participation in same or similar role.)									
		1	2	3	4	5	6	7	8	9	10
Eric Bauer	**Account Executive**										
Angie Estey	**Account Executive**										
Jim Kershner	**Account Executive**		X					X	X	X	X
Debbie Chambers	**Project Development**										
Scott Eisenhauer	**Project Management**		X	X	X				X		X
Jim Sutull	**Project Management**					X	X	X		X	
Shawn Kelley	**Contracting Manager**	X	X	X	X	X	X	X	X	X	X
Don Mitchell	**Business Development**	X	X	X	X	X	X	X	X	X	X
Tim Swanson	**Program Management**	X	X	X	X	X	X	X	X	X	X
Neil Maldeis	**Project Development**	X	X	X	X	X	X	X	X	X	X
David Sprinkle	**Measurement & Verification**						X	X	X	X	X
Clayton Dumcum	**Project Development**	X	X	X	X	X	X	X	X	X	X

19. EXAMPLE PROJECTS KEY

NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)	NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)
1	Edmonds Community College Phase 1	6	Edmonds Community College Phase 3
2	Renton School District Phase 1	7	Renton School District - KEC
3	Keyport NUWC	8	Renton School District - Dimmit
4	LOTT Alliance – Budd Inlet Treatment Plant Cogeneration	9	Rochester School District
5	Edmonds Community College Phase 2	10	Sumner School District

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c(1). No. of Employees - Firm	c(2). No. of Employees - Branch
02	**Administrative**	**337**	**9**
18	**Cost Engineer/Estimator**	**127**	**4**
42	**Mechanical Engineer**	**852**	**17**
48	**Project Manager**	**355**	**24**
53	**Scheduler**	**116**	**2**
58	**Technician**	**1832**	**25**
	Other Employee		

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index
A12	**Automation; Controls; Instrumentation**	**10**
D04	**Design Build**	**10**
H04	**Heating; Ventilation; Air Conditioning**	**10**

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,00
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

3. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown above)

11a. Federal Work: 10

11b. Non-Federal Work: 10

11c. Total Work: 10

4. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts.

12a. SIGNATURE: _____

12b. DATE SIGNED: _____

Digester Gas Co-Generation for Budd Inlet Treatment Plant

Preliminary Report

September 24, 2008

Discussion Points

- Introductions
- Project Overview & Objectives
- Preliminary Status Report
- Next Steps
- Q&A

The Cogen Team

- LOTT's Facilities and Engineering group
- TRANE, Inc.
  - HDR Engineering
  - Allied Electric
- Puget Sound Energy
- Department of General Administration

Goals & Objectives

- Most efficient use of the available digester gas to provide heating for BITP facilities and processes.
- Reduce energy costs, emissions, and pollutants
- Reduce/eliminate need to flare excess gas
- Support the LEED accreditation and construction timeline for the Administration/Education Building
- Maximize system life and reliability
- Establish “District Heating” Plant
- Upgrade Gas Filtration System

Background

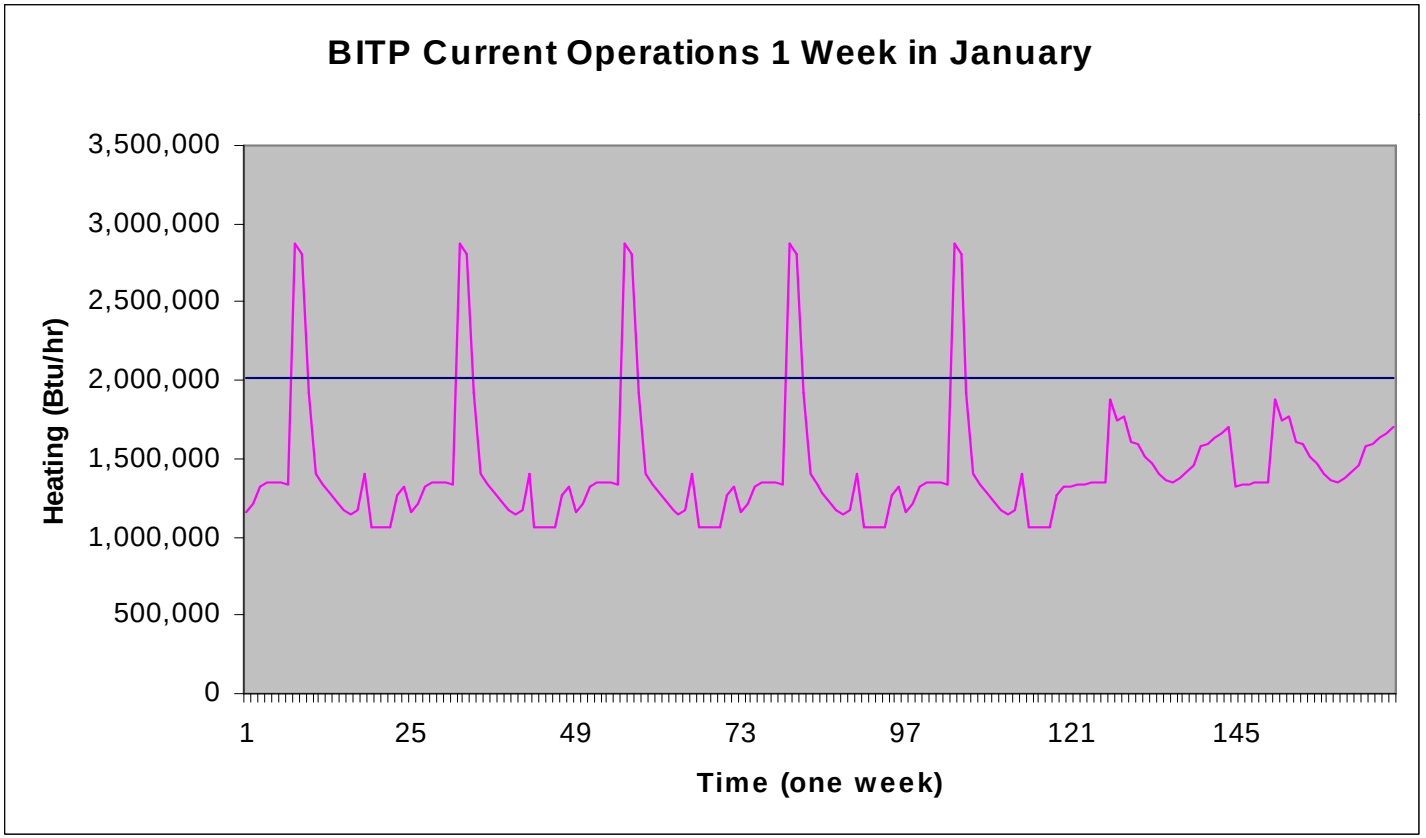
- BITP generates 127,000 cubic feet / day digester gas with a methane content of 560 Btu/cf.
- The total available gas as fuel is 2,960,000 Btu/hr
- Digester gas is currently burned in one of two 4.2 MMBtu/hr water boilers to provide heat to the process and heat to the building HVAC loads on a continuous basis
- The volume of digester gas available exceeds the heating requirements most of the year and the excess digester gas is flared
- Public perception is that flaring is wasteful and not environmentally friendly

Existing Hot Water System

- 2.96 MMBtu/hr fuel provided to a 4.2 MMBtu/hr boiler at an estimated 68% system efficiency will yield 2,102,800 Btu/hr of useful heat
- This heat is transferred into the High Temperature Loop (HTL).
- There is a Low Temperature Loop (LTL) that also takes heat from the HTL through a plate and frame heat exchanger.
- The digesters require 1,060,000 Btu/Hr continuously, which is provided via the HTL
- The building connected heating load along with various other smaller systems is 2,063,000 Btu/hr – this represents the low temperature loop
- The combination High Temperature Loop Load and Low Temperature Loop Load is 2,160,000 Btu/hr, which is a good match for the current peak hot water output

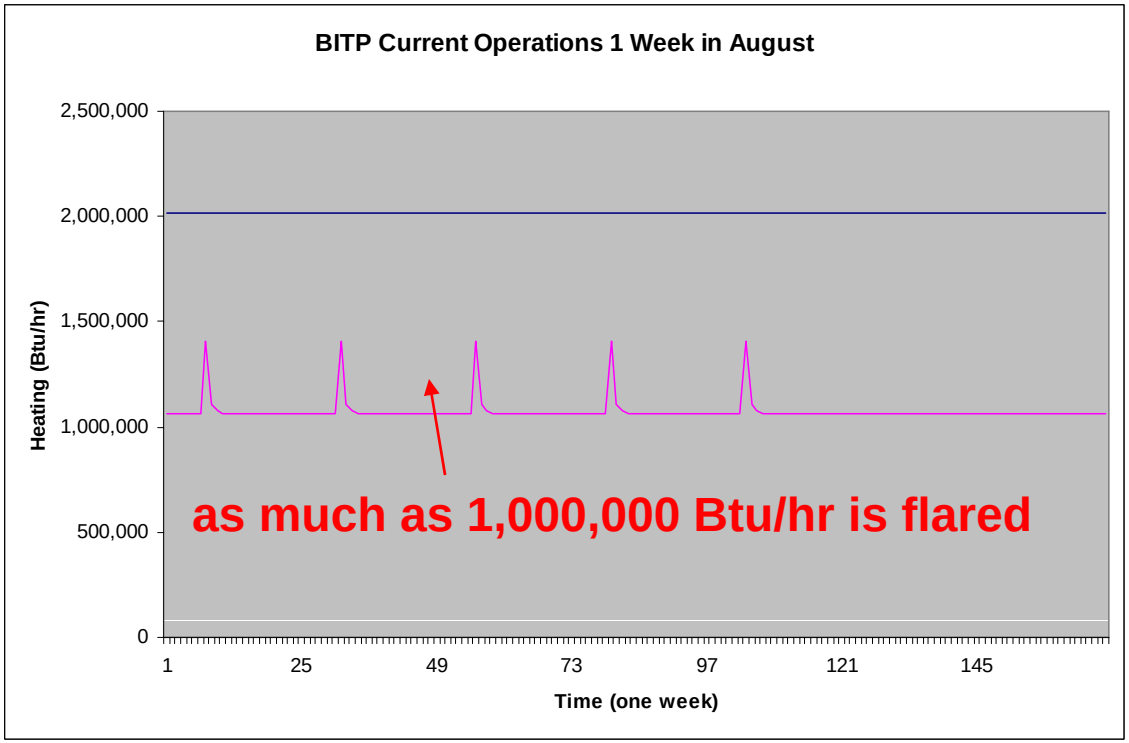
Existing System Challenges

- The maximum thermal output available from the plant is only required less than 5% of the year.



Existing System Challenges

- The remainder of the year, the excess digester gas is flared. Useful energy is wasted and additional pollution is generated.

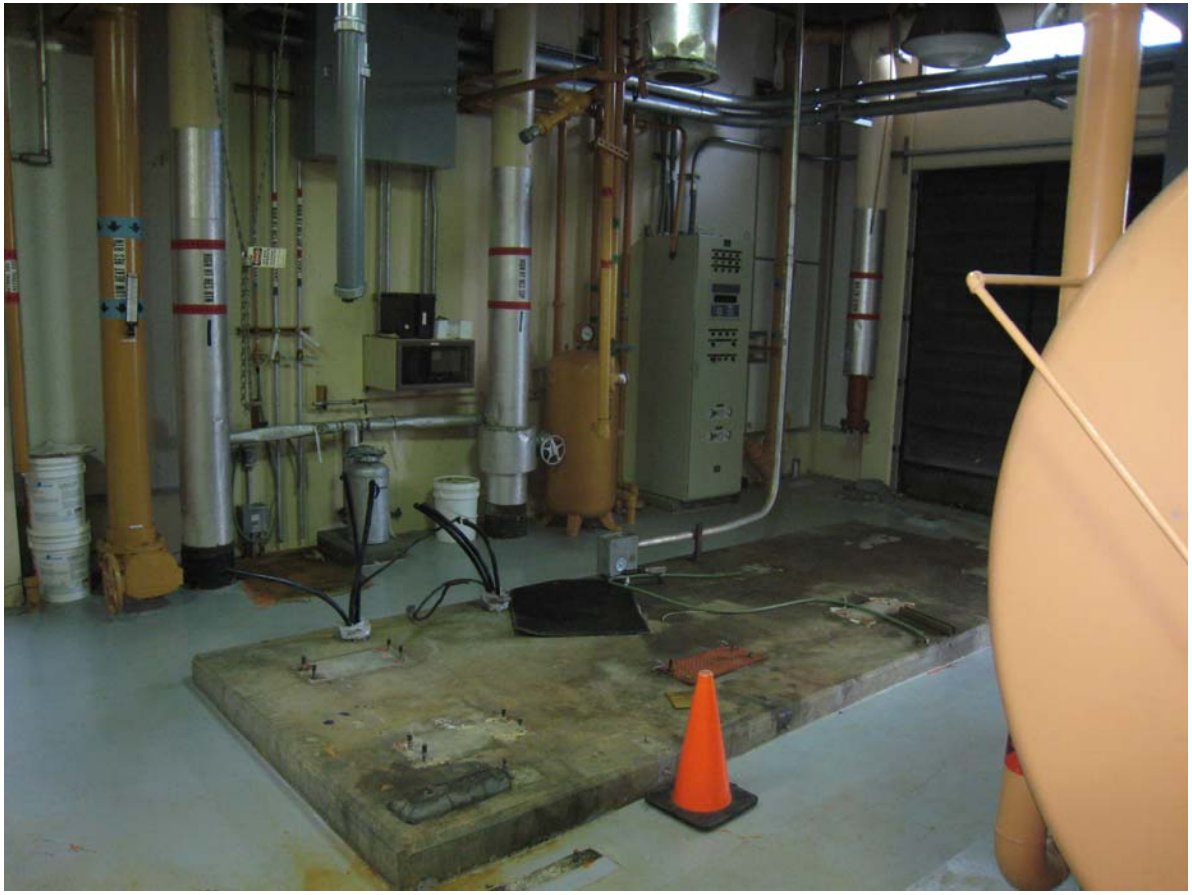


Existing System Challenges

- The digester gas boilers are getting old and are inefficient compared to current standards.

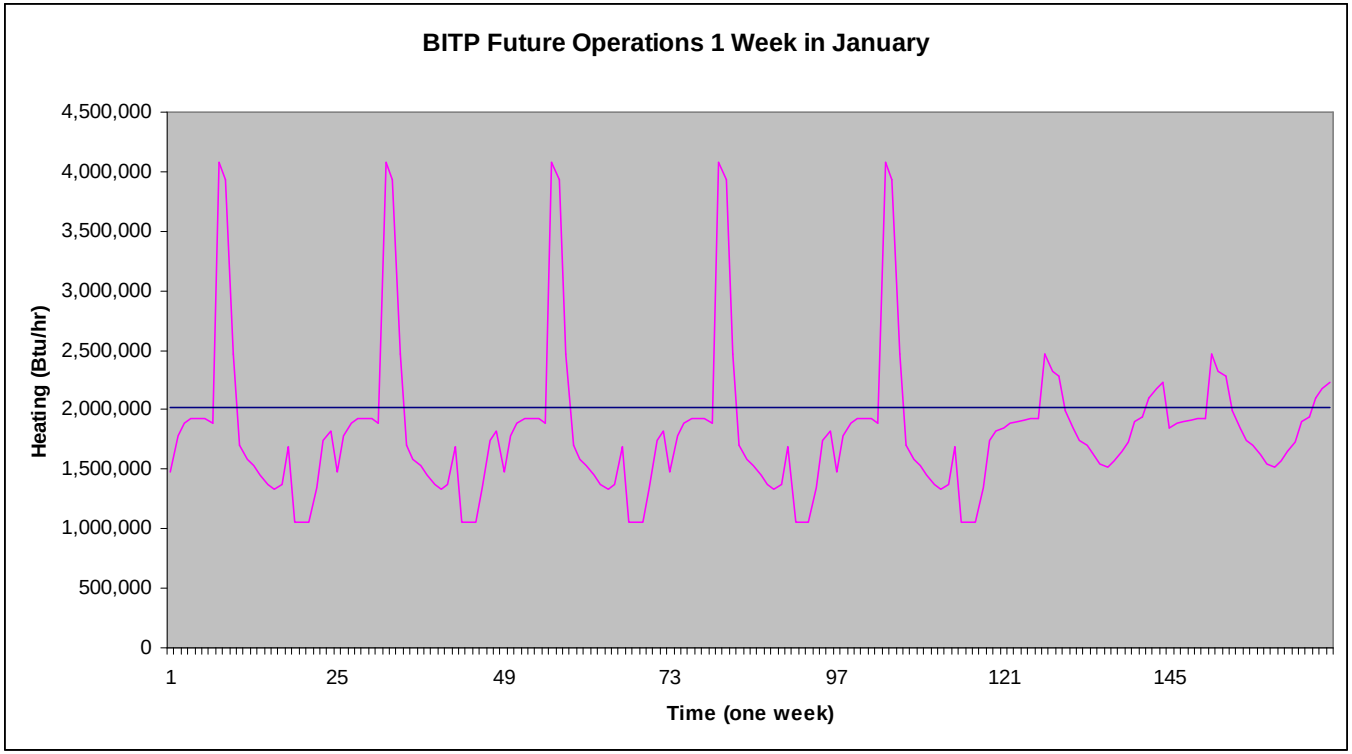
Existing System Challenges

- There was an old cogeneration plant that has since been removed.



Future Challenges

- With the additional load of the planned new buildings, the existing system will not be able to provide sufficient heat during the coldest days. Supplemental (natural gas) boilers will be required.



Project Approach

- Re-evaluated site information provided by Brown & Caldwell and PAE in previous studies
- Collected current gas flow and field data which was used in conjunction with the original data
- Trane / HDR Completed 30% Engineering Design
- Two technologies were evaluated for cogeneration – Gas Engines and Gas Turbines
- Operational strategies and annual cost savings values were calculated

Proposed Solution

– **New Cogeneration System**

- 335kW reciprocating engine
- Heat Recovery Unit (HRU); makes hot water
- Hot water will be connected to the existing and expanded High Temperature Loop

Proposed Solution…

- **Replace Defunct Gas Scrubbers with New Gas Treatment System**
  - **Added capability**
  - **Required for Cogen system**

Proposed Solution…

– **Two (2) small Natural Gas Boilers**

- Will replace one (1) large and aging digester gas boiler
- Will provide back up to both the cogeneration heating and remaining digester gas boiler
- Will be able to meet short term peaks for building space heating during the coldest weather

Benefits

- ✓ Most efficient use of the available digester gas to provide heating for BITP facilities and processes.

- ✓ Reduce energy costs, emissions, and pollutants
  - ✓ 2,365,200 kWh year reduction in electricity required from PSE
  - ✓ Approximately $190,000 per year in electric bill savings
  - ✓ Annual Greenhouse Gas Reductions:
    - ✓ Over 1,800 metric tons of Carbon Dioxide (equivalent to 244 homes)
    - ✓ Over 2,400 pounds of Nitrogen Oxides
    - ✓ Over 1,600 pounds of Sulfur Dioxide
  - ✓ Toxic metals pollution reduction: over 24,000 mg of mercury

Benefits

- ✓ Reduce/eliminate need to flare excess gas
- ✓ Potentially adds 4 LEED points to the Administration/Education Building
- ✓ Maximize system life and reliability
  - ✓ New cogen unit with 20+ year life
  - ✓ Replaces old, inefficient boiler
  - ✓ Provides additional redundancy
- ✓ Establish “District Heating” Plant
- ✓ Upgrade Gas Filtration System

Project Status

- Solicited Construction cost proposals from several contractors based on the preliminary engineering and cogeneration technology
- Solicited construction cost proposals for gas treatment system
- Currently evaluating/qualifying bids
- Estimated Cost (preliminary):
  - Before incentives/grants: $2.3M +/- 10%
  - After incentives/grants: $900K - $1.3M
- Updated pricing to be complete October 3, 2008

Next Steps

- Confirm / Finalize Total Construction Costs
- Determine and secure PSE Rebates
- Update project proforma to reflect actual cost and savings values
- Finalize the Detailed Investment Grade Audit (IGA) Report
- Present Findings to the Board October 8, 2008
- Implement Project

July 11th, 2008

Mr. Jim Hayes
Department of General Administration
206 General Administration Building
P.O. Box 41012
Olympia, WA 98501

SUBJECT: Detailed Investment Grade Audit Fee Proposal
Budd Inlet Treatment Plant – Digester Gas Cogeneration

Dear Jim:

We are pleased to submit this proposal for the audit phase of Energy Services for the Budd Inlet Treatment Plant (BITP) Digester Gas Cogeneration. TRANE will provide engineering services for the subject project in accordance with the following:

TRANE will undertake a detailed Investment Grade Audit (IGA) of the Facility. The primary focus of the IGA includes five elements (listed below). However, TRANE will also seek to identify other cost effective Energy Conservation Measures (ECM's).

Primary IGA focus:

1. Treatment, compression, and possible storage of the digester gas stream.
2. Cogeneration Plant Architectural /Mechanical and Electrical Design and Construction. This includes interconnection to the electric utilities and permitting.
3. Boiler Plant analysis and proposed modifications and heat backup strategy
4. Connection to the existing BITP hot water loop and connections and capability of warm temp loop.
5. Strategies for fulfilling all temperature requirements of BITP processes and warm temp loop.

Digester Gas Cogeneration Scope:

The overall design scope of the proposed new plant(s) will include the following:

1. The Cogeneration Plant will be designed by Trane and its subcontractors.
2. All preliminary building block loads for the Administration Building and Hands On Children's Museum (HOCM) will be generated by other consultants.
3. The plant will provide the site with the following services:
    a. Electric Power (480 Volts) – (capacity to be determined)
    b. Heated Water supply and return (capacity to be determined)
    c. Potentially, Chilled Water supply and return (feasibility to be determined)
4. The plant will include all electrical and mechanical equipment (generators, electric distribution gear, boilers, chillers (if required), heat exchangers, water heaters, pumps, gas conditioning equipment etc required to generate and distribute the above services.
5. The electrical system will be to PSE standards and will include the interconnection equipment.
6. Plant will be permitted to ORCA and other permit standards

TRANE will present to the Owner a written Energy Services Proposal, including the IGA Documentation. The Energy Services Proposal will set forth at least the following:

1. A description of the Facility and a description of those buildings and systems which will receive TRANE-provided Equipment and/or TRANE-provided Services;
2. The Cost Effective ECM's to be installed or caused to be installed by TRANE and a description of the ECM's analyzed but disqualified under the cost effectiveness criteria.
3. The services that TRANE will perform on or in the Facility, including but not limited to engineering, construction management, the operations and maintenance procedures for use on TRANE-

provided Equipment, training for Facility personnel, providing warranty service, and equipment maintenance;

4. The Maximum Allowable Project Cost;
5. Recommendations for replacement of Existing Equipment, along with recommendations for improvements to Existing Equipment and Operating Conditions;
6. The standards of comfort and service appropriate for the Facility;
7. The Baseline Energy Consumption for the Facility, including the data, methodology and variables used to compute the Baseline, and the Baseline calendar period which will not be less than twelve (12) months;
8. The estimated Energy Savings and Energy Cost Savings that are expected to result from the installation of TRANE-provided Equipment and from TRANE-provided Service, and an explanation of the method used to make the estimate;
9. The method by which Energy Savings and Energy Cost Savings will be calculated during the term of the Energy Services Agreement;
10. A description of how TRANE will finance or cause to be financed its acquisition of TRANE-provided Equipment and when title to TRANE-provided Equipment will pass to the Owner;
11. A description of how the Energy Cost Savings will be guaranteed by TRANE;
12. A description of how TRANE proposes to be compensated;
13. The term of the Energy Services Agreement;
14. The Termination Value for each year during the term of the Energy Services Agreement;
15. The schedule for project completion.

The IGA will provide detailed documentation of fieldwork for the audit, calculation input and output in support of the recommendations made in the Energy Services Proposal, economic and engineering assumptions, sketches, floor plans, a one line diagram showing the process and system layout, equipment sizing and descriptive information, and any other information developed in the course of the Audit.

Fixed Fee for IGA Services: $48,400 (non taxable)

It is understood by TRANE that payment and terms are contingent upon the requirements set forth in the Energy Services Proposal.

Schedule for IGA Services:

Substantial completion of all portions of the IGA will be within 60 days, and full completion within 75 days, of Notice to Proceed.

We at TRANE appreciate the opportunity to provide these services. If this proposal for Audit Services is satisfactory, please forward contract documents.

Sincerely,

Scott Harbers
Business Development Manager
TRANE
2021 152nd Ave. NE
Redmond, WA 98052

Attachment: Potential Team List

BITP Cogeneration Project
Potential Team List

The following is an overview of the consultants and contractors that Trane recommends for consideration as part of the overall project team. Trane proposes to complete an RFP for each of the services below and to review the final recommendations with the Owner.

Potential Engineering Consultants	HDR, Inc. 626 Columbia Street NW, Suite 2A Olympia, WA 98501	All Engineering Trades
	D. Hittle and Associates 19101 36th Ave W #209 Lynwood CA 98036	Electrical Engineering
	EYP Mission Critical Facilities 49 Stevenson Street San Francisco CA 94105	All Engineering Trades
	MPE Engineering 17065 Camino San Bernardino San Diego Ca 92127	Electrical Engineering
	PID Engineering 9625 Black Mountain Road San Diego Ca 92126	All Engineering Trades

Gas Treatment Consultant	Applied Filter Technology 19524 75th Ave. S.E. Snohomish, WA 98296	

Energy and Permitting Consultant	Allied Electric, LLC Chuck Collins Olympia, Washington	Cogen and digester gas analysis and environmental permitting support

Mechanical Contractor	TBD
Electrical Contractor	TBD
Prime Mover	TBD
HRU	TBD
Ancillaries	TBD

Budd Inlet Wastewater Treatment Plant
LOTT Alliance

Energy Services Proposal
Digester Gas Cogeneration Project

Department of General Administration
206 General Administration Building
P.O. Box 41012
Olympia, Washington, 98501

Prepared By:

Trane U.S. Inc.

Date
12/16/08

1. Executive Summary

Trane is pleased to provide the following results of our detailed investment grade audit (IGA) for the installation of a digester gas cogeneration system at BITP in Olympia, Washington. The scope and costs herein reflect our work to date and are proposed as the guaranteed maximum (G-Max) project cost and guaranteed minimum savings per the State ESPC contract. We will continue to work with you throughout the final engineering and implementation process to deliver the best overall project; specifically tailored to LOTT Alliance.

Trane's project development team has teamed with HDR Engineering, Inc and Allied Electric to complete a detailed analysis of the energy utilization profile and opportunities for the BITP. This included interviews with LOTT's Facilities and Engineering staff; who have been instrumental in shaping the scope and direction of this project. The previous two analyses completed separately by Brown & Caldwell and PAE Engineering were also greatly beneficial and combination of their recommendations have been incorporated into our design.

The key objectives of this project, as defined by LOTT's Facilities and Engineering team, are:

- Best overall utilization of the available digester gas to provide heating for the digester and facilities
- Support the LEED objectives for LOTT's new Administration/Education Building
- Reduce BITP's energy costs on an ongoing basis
- Maximize system life and reliability and address existing system needs
- Meet the construction schedule required to support the Administration/Education Building
- Maximize available energy conservation incentives from Puget Sound Energy
- Final capital cost (after utility incentives) in the range of $1.1M
- Eliminate the need to flare unused digester gas
- Coordinate design and development proactively with regulatory agencies
- Reduce BITP's pollutants and emissions

Our detailed Investment Grade Audit (IGA) has confirmed that the best solution for meeting all of these objectives is the installation of a combined, high-efficiency cogeneration system. Through the IGA it was also determined that any solution should include the revision or replacement of the existing gas treatment system since the longevity of any proposed solution will be greatly affected by the quality of gas that can be provided. Overall emissions from the site can also be greatly reduced through digester gas treatment.

Based on these findings, TRANE proposes to design and install a high efficiency cogeneration system, consisting of; a new gas treatment system, a new 335 kW reciprocating engine with a heat recovery unit, and two small 1.5 MMBtu natural gas boilers. The highlights of this combined system are:

- Savings to LOTT/BITP of nearly $180,000 per year in electricity costs
- Enable the boiler plant to provide all of the heating required at the site as a "district heating" plant
- Eliminate the need to flare excess digester gas
- Greatly reduce BITP's annual emissions, including over 1,800 metric tons of Carbon Dioxide (equivalent to over 240 homes)
- PSE confirmed energy conservation incentives totaling 70% of the project cost

The new plant will have a useful life of 25 to 30 years. The guaranteed maximum cost of $2.382M will result in a 20 year life cycle cost benefit in excess of $7 million. The simple payback, after accounting for anticipated utility incentives, is estimated to be just over 5 years, which equates to an Internal Rate of Return (IRR) of over 34%.

2. Project Development Team

Our Project Development Team has many years of experience with industrial applications and large central plant. We have selected team members by reviewing their experience with LOTT and BITP as well as overall capability.

Below is the listing of the companies who are involved with the project through this development stage along with key individuals.

LOTT Alliance	Contract Loan Administrator: Howard Weisberg Facilities Director: Laurie Pierce Engineering Director: Brian Topolski Senior Engineer: Eric Hielema Facilities Engineers: Mike Seelig, Wayne Robinson, Ben McConkey
State of Washington Department of General Administration	GA's Energy Team Project Manager: Jim Hayes
Prime Contractor and All Major Equipment	Seattle Trane 2021 152nd Ave NE Redmond, WA 98052 Project Executive: Scott Harbers Project Engineer: Mike Joyce Project Developer: John Gabbard, PE
Engineering	HDR Project Engineer: Jeremy Holland, PE Project Engineer: Lowell Shelton, PE Regional Manager: Pat Roe, PE
Permitting and Utility Coordination	Allied Electric Principal: Chuck Collins
Utility Provider and Incentive Funding	Puget Sound Energy Major Account Manager: Kathy Larson Sr Energy Management Engineer: Chao Chen
Regulatory Authority	Olympic Region Clean Air Agency (ORCAA) Mark Goodin

3. Background Information

TRANE, Inc. was selected, through the State of Washington's Energy Savings Performance Contracting program, to identify, design, and implement the best overall solution for utilizing digester gas at the Budd Inlet Treatment Plant. In addition to meeting the current heating and process needs at BITP, the system is to be designed to support the LEED Platinum goals for the new LOTT Administration Building and Laboratory and, potentially, the heating needs for the proposed Hands-On Children's Museum or other "Energizing East Bay" facilities.

3.1 - Existing Facility Description

BITP is a 15,000,000 gallon per day municipal wastewater treatment plant (WWTP) located in Olympia, Washington. Bio solids processed by the plant are stabilized by anaerobic digesters that historically have produced about 100,000 to 160,000 cubic feet per day (cfd) of combustible, methane rich digester gas. Current data indicate that the anaerobic digesters generate approximately 127,000 cubic feet per day. The available digester gas energy is estimated to be 2,960,000 Btu/hr based on a gas lower heating value (LHV) of 560 Btu/cubic foot.

The methane rich digester gas is currently combusted in a boiler to provide heat for the BITP buildings and to maintain the anaerobic digesters at their optimal process temperature. The facility has two (2) existing 4.3 MMBtuh water boilers for this purpose.

BITP EXISTING HW BOILERS

	Design Capacity (Btu/hr)	Average Fuel Flow (Btu/hr)	Current Peak Output (Btu/hr)	Percentage of Design (%)
Boiler 1	4,284,000	2,960,000	2,012,800	46.98%
Boiler 2	4,284,000	0	0	0.00%

* Based on an estimated boiler efficiency of 68%

Boiler 1 and Boiler 2 are dual fuel Cleaver Brooks boilers that will also burn natural gas. The boiler operation is alternated, so only one boiler is operated at a time. The other boiler is a redundant back up. The boilers provide 180 degrees F hot water to the high temperature loop on a constant basis. The high temperature hot water loop is distributed underground throughout the facility to provide hot water to several areas using a number of circulation pumps and heat exchangers.

The system supplies 1,060,000 Btu/hr continuously to the digesters. This load is assumed to be constant for the full 8,760 hours per year.

Previously, the Brown and Coldwell study indicated an average gas flow of 117,000 cfd that could generate 2,400,000 Btu/hr. This would represent a boiler efficiency of 88%. Later, the PAE Peer Review indicated a gas flow of 113,000 cfd and a hot water capacity of 2,196,000 Btu/hr, which assumes a boiler efficiency of 80%.

The digester gas flow we have determined through our study is 127,000 cfd and is estimated based on the current actual output data. Since the 4.248 MMBtu boilers are operating at much less than 50% capacity we estimate the actual boiler efficiency to be 68%. The total heating capacity of the plant is therefore 2,012,800 Btu/hr.

A low temperature loop (95 F supply and 85 F return) is connected to the high temperature loop to provide heating to heat pumps, blower lube coolers and other miscellaneous mechanical equipment. This loop takes heat from the high temperature loop during the heating season, and

dumps heat through a plate and frame heat exchanger into a reclaimed water system during the cooling season. The list of items and systems included in the low temp loop are included below:

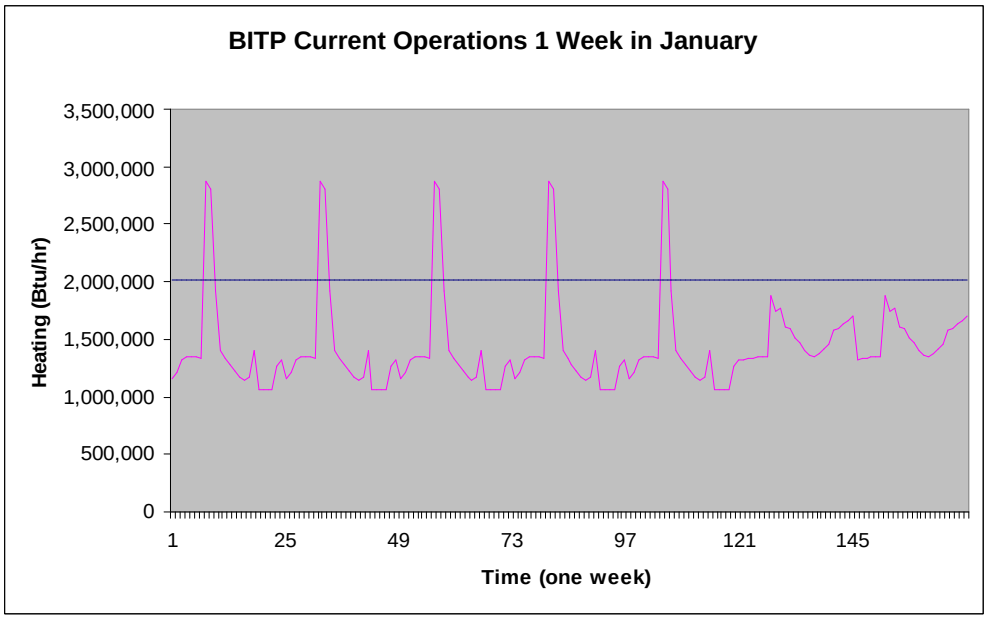
LOW TEMPERATURE LOOP LOADS

Item	Description	Design Heat Capacity (Btu/hr)
Building 1 - Administration		
MME1-01	WSHP	53,400
MME1-02A	WSHP	49,700
MME1-02B	WSHP	49,700
MME1-03	WSHP	53,400
MME1-04	WSHP	53,400
MME1-05	WSHP	53,400
Building 2 - Headworks		
HC2-98	Heating Coil	354,000
MME1-99	WSHP	20,000
Building 3 - Digester Control Rm		
HC2-57	Heating Coil	89,000
Building 4 - Solids Handling		
HC4-50	Heating Coil	334,000
MME4-53	WSHP	58,000
Building 5 - Maintenance		
MME5-50	WSHP	14,000
AHU5-45	Air Handling Unit	197,000
MME5-58	WSHP	31,000
MME5-60	WSHP	21,000
MME5-63	WSHP	31,000
HC5-68	Heating Coil	300,000
Building 8 - Blower		
AHU-8-74	Air Handling Unit	0
Building 12 - Effluent Pump		
AHU-12-17	Air Handling Unit	214,000
AHU12-30	Air Handling Unit	87,000
Building 15 - Int. Pump Station		
AHU15-30	Air Handling Unit	0
TOTAL ALL LOADS		**2,063,000**

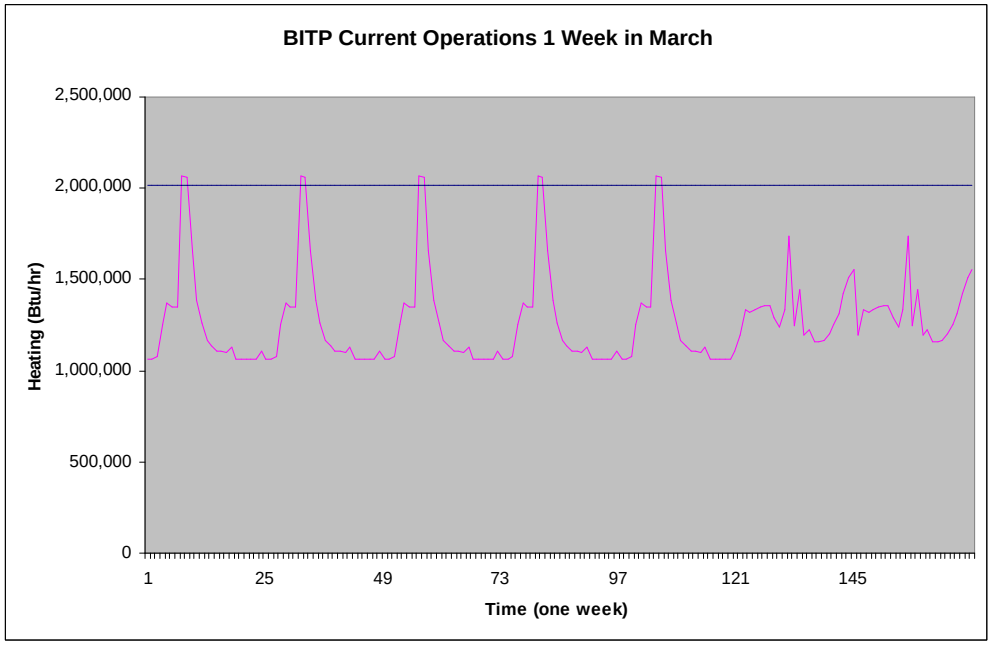
The diversity for these existing low temperature loop loads is 50%. The combination of the low temperature heat loads and the digester heat load is approximately 2,000,000 Btu/hr which, during the peak heating season, matches up very well with the heat provided from the digester gas through the hot water boilers.

During times that are not peak heating, the plant must flare the excess digester gas. The public perception is that flaring is wasteful and not environmentally friendly.

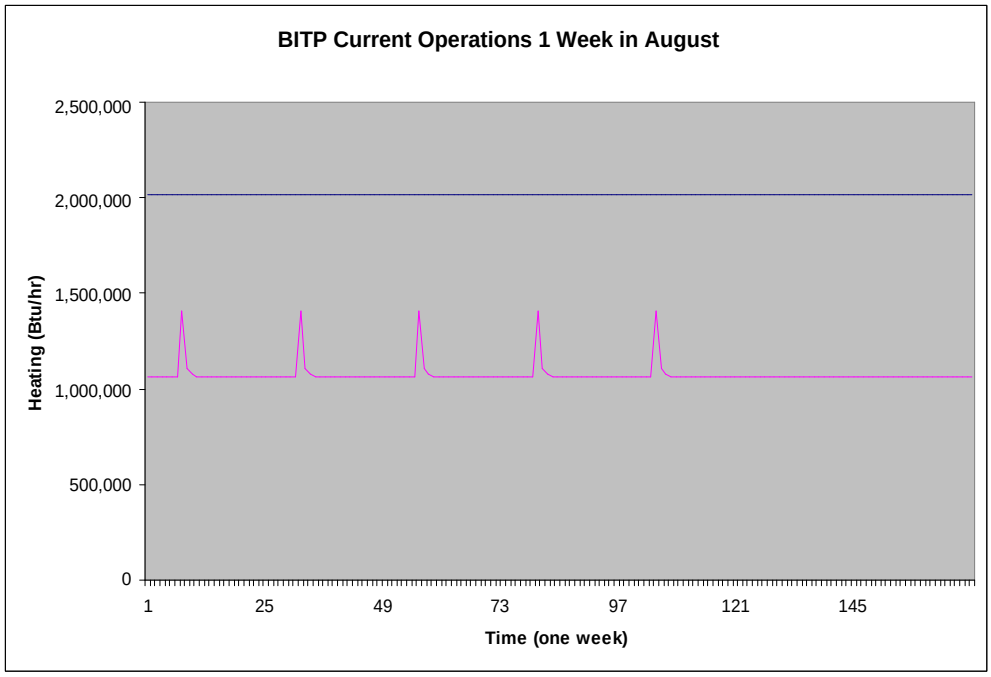
A Trace Model was developed to simulate the heating loads for the existing facilities. This load was added to the constant baseload of the digesters and compared to the existing boiler output. Three diagrams are included below: one for January, which would be a peak cooling month; one for March, which would represent a spring or fall month; and one for August, which would represent a summer month.



During a peak winter month, the heating load is provided by the boilers. The peaks that extend beyond the load of the boilers are for an hour or two and are easily corrected as the loads are reduced. The area between the two curves represents the times when excess gas is flared.



During the spring and fall months, the heat from the boilers matches the peak load pretty well. The quantity of flared digester gas is greatly increased.



During a summer month, the heat generated by the boilers is almost double the load. During this type of operation the facility is flaring nearly half of the digester gas generated.

3.2 - Future Proposed Facilities

LOTT Alliance is planning two additional building additions to the site; a 24,000 square foot Administration Building, and a new Laboratory Building. The new Hands On Children's Museum (HOCM) may also be tied into the BITP heating loop, so it was included in this analysis. We were provided a LEED Energy Analysis that was generated by PAE Consulting Engineers for the new Administration Building and Laboratory. The loads for the HOCM were estimated from the load for the new Administration Building.

A summary of the buildings along with the estimated peak heating loads as calculated by PAE are listed below:

LOTT Alliance Proposed New Buildings

	Building Area (sf)	Number of Stories	Peak Heating Load (Btu/hr)
Administration	24,000	4	655,000
Laboratory	7,800	1	185,000
Children's Museum	26,000	1	750,000

The specifics of the (HOCM) were not provided for this analysis, the square footage is estimated based on the peak heating load provided by PAE.

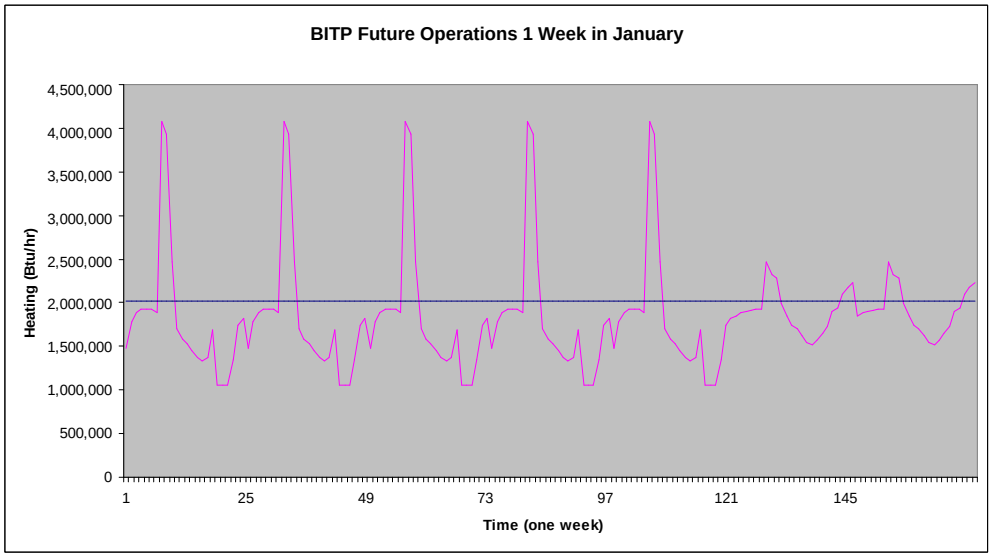
Trace models were developed for all three buildings to simulate the full year heating loads. We used the information provided as a guideline for our models. The summaries are included below:

Heating Load For New Buildings

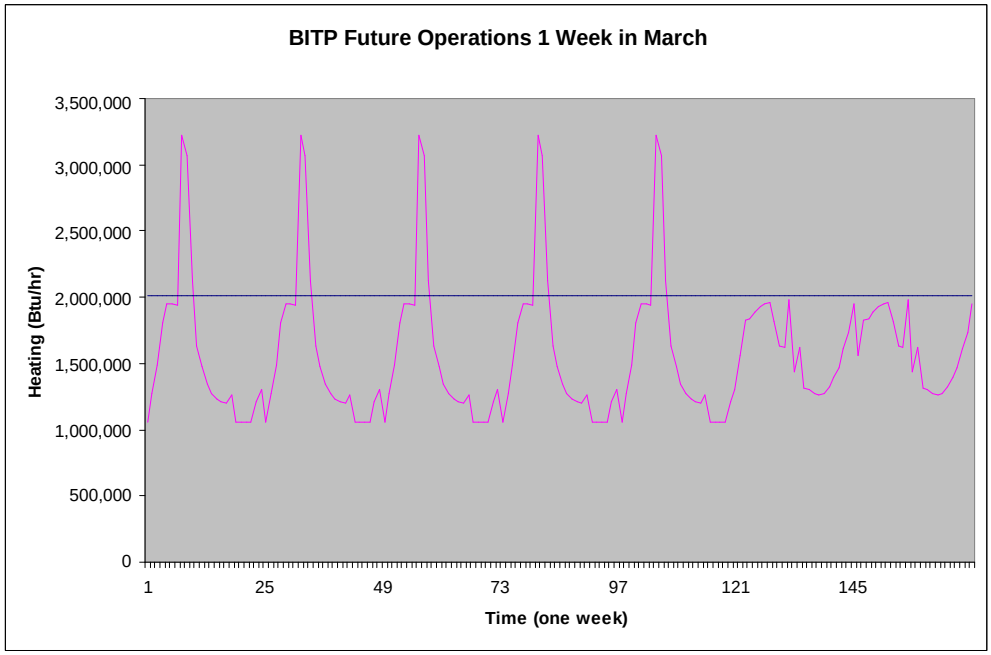
	Peak Heating Demand (Btu/hr)	Annual Heating (MMBtu/yr)
Administration	604,837	715
Laboratory	217,321	714
Children's Museum	641,100	271

The numbers generated using the Trace model are very close to those estimated by PAE. The Trace output provides hourly heat loads for each building which can be added to the existing heating baseline.

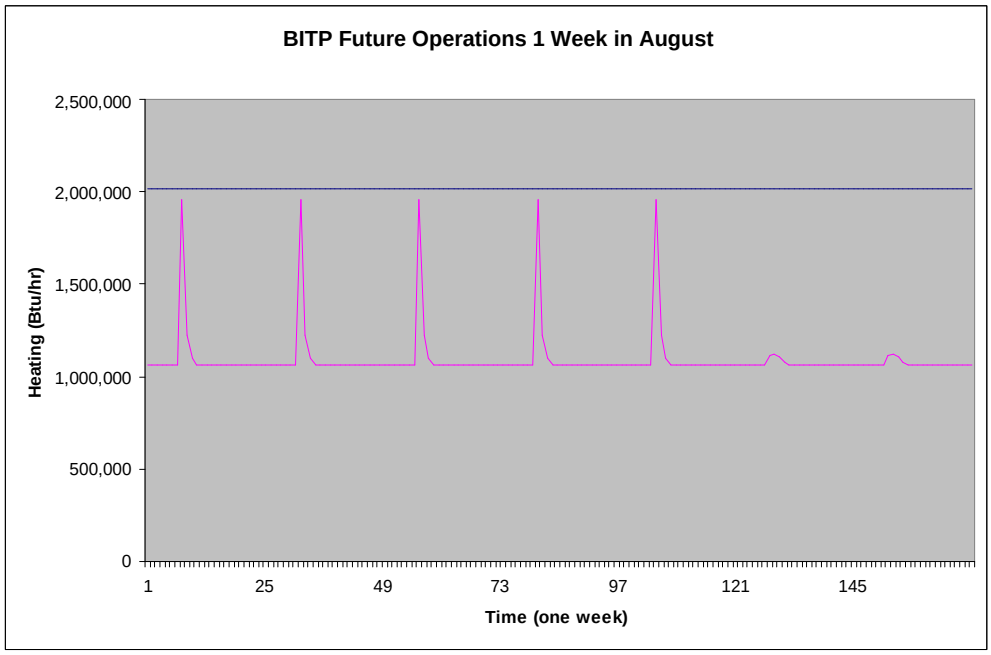
The new model for the existing plant with the new loads were added together and plotted along with the heat output from the existing boilers to simulate operation. Once again, this information is base plotted for a January, March and August. PAE's analysis assumed that the existing boilers would meet the future heating loads and, therefore, left new boilers out of their analysis. The figures are included below:



The data for January indicate that the peak heating demand will be nearly twice the boiler output. In addition, the loads during the non peak times are very close to the boiler output. The existing system will no longer be able to meet the building loads. Therefore, to meet the peak heating loads, additional boiler capacity will be required.



Although the spring and fall loads will be a better match up for the existing system, it will still be insufficient and a new smaller boiler will also have to be operated during the peak heating times.



For the summer months, the boilers will still be generating excess heat and digester gas will be flared.

Ultimately, even though there are new loads that will require hot water from the existing plant, the load profiles are such that they do not match up well with the generation of digester gas. The heating loads of the buildings are high for only a short period of time each day. The system, as it is currently designed, cannot meet these peaks. Additionally, during the summer, a significant quantity of digester gas would still be flared.

4. Existing Energy Usage

4.1 - Electricity

The facility gets its electrical power from PSE. The utility bills for the period May 19, 2006 through June 18, 2008 were provided for this analysis. The following is a summary for the last year from the period of June 20, 2007 through June 18, 2008.

Electrical Summary

Start Date	End Date	Days	Demand	Usage	Cost	Rate	kWh/Day
6/20/2007	7/20/2007	30	1,951.2	1,087,200	$80,706.51	$0.0742	36,240
7/20/2007	8/20/2007	31	1,840.8	1,120,800	$82,861.79	$0.0739	36,155
8/20/2007	9/19/2007	30	2,198.4	1,072,800	$83,432.60	$0.0778	35,760
9/19/2007	10/18/2007	29	2,193.6	1,065,600	$87,739.67	$0.0823	36,745
10/18/2007	11/16/2007	29	2,318.4	1,082,400	$92,084.13	$0.0851	37,324
11/16/2007	12/19/2007	33	3,182.4	1,257,600	$110,852.10	$0.0881	38,109
12/19/2007	1/17/2008	29	2,248.0	1,142,400	$95,586.33	$0.0837	39,393
1/17/2008	2/19/2008	33	2,073.6	1,252,800	$101,655.01	$0.0811	37,964
2/19/2008	3/19/2008	29	1,864.8	1,056,000	$86,675.79	$0.0821	36,414
3/19/2008	4/17/2008	29	2,124.0	1,096,800	$88,925.17	$0.0811	37,821
4/17/2008	5/19/2008	32	1,819.2	1,180,800	$91,782.92	$0.0777	36,900
5/19/2008	6/18/2008	30	1,816.8	1,099,200	$86,169.59	$0.0784	36,640
		364	**3,182.4**	**13,514,400**	**$1,088,471.61**	**$0.0805**	**37,127**

The annual usage for the years 2006 – 2007 and 2007 – 2008 are nearly identical. The peak demand at the facility is 3.2 MW and the annual usage is approximately 13,514,000 kWh. The blended rate for power is 8.05 cents per kWh.

4.2 - Current Natural Gas

Natural Gas is provided to the boiler plant but the gas is not used. Monthly gas bills were not provided for this analysis and it is estimated that gas is not used. The heat generated by the boilers using the digester gas is adequate for the entire existing facility.

4.3 - Future Electrical Usage

When the future buildings are brought on line, the electrical usage of the facility will increase. Analysis of the build out electrical usage is not part of this IGA. The Trace models indicate that the electrical demand will increase by 350 – 400 kW and the annual usage will increase by 600,000 – 750,000 kWh. This increase will be approximately 5% - 10% of the existing electrical load.

4.4 - Future Natural Gas Usage

The future natural gas usage is part of this study since there will be periods of time, after the addition of the new buildings, when the digester gas will no longer be sufficient to meet all the heating requirements. For the new buildings, new boilers totaling 1.5 MMBtu will be required. The total installed cost of these boilers is estimated to be $125,000.

In reality, the boilers would only operate about 800 to 900 hours per year, and only during the peak load times. The total heat load to be provided by the new natural gas boilers would be 642

MMBtu per year. The natural gas that would be required during these periods is estimated to be 802 MMBtu (using 80% efficiency). The cost of this natural gas is estimated to be $7,225 per year.

5. Energy Services Contract Proposal – Digester Gas Cogeneration

The analysis of the existing system, and proposal of the new cogeneration system, is based around the concept of two distinct sets of requirements for the completed cogen system due to the fact that the system will come on line prior to the completion of the Admin/Education Bldg. However, the scope of the proposed project includes all work for both sets of requirements and the project itself will be completed in a single phase. The two, primary sets of requirements for this project are:

1. New digester gas cogen system for the existing heating needs: This is the analysis of the needs of the existing systems at the BITP that are currently served by the heat generated by the existing digester-gas-fired boilers and the impact on these systems of the proposed cogeneration system.

2. Additional peak heating capacity to serve the planned buildings: This analysis focuses on the future, expanded heating needs that will result from the proposed addition of the Admin/Education Bldg, the Lab Bldg, and, potentially, the Hands on Children's Museum.

5.1 - Project Overview:

5.1a - New Cogeneration System Description: Serving Existing System Needs

For the costs defined in Section 6.1 below, Trane proposes to design and install a new digester-gas-fired cogeneration system at BITP to use all of the digester gas on a continuous basis to make electricity for the site. The heat rejected by the system will be recovered and used to serve the building and process heating loads.

The system selected includes a reciprocating engine that will generate approximately 335 kW of electricity, 1,408,000 Btu/hr of high temperature hot water, and 242,000 Btu/hr low temperature hot water continuously. The supply fuel will be the 127,000 cubic feet per day of digester gas.

The system philosophy is as follows:

- Utilize all of the digester gas all of the time and eliminate flaring of excess gas.
- Reduce plant emissions
- Serve all of the thermal loads from a central "district heating" plant
- Improve the overall efficiency and operations of the plant
- Support the LEED accreditation goals of the new Admin Building

The following is an overview of the improvements proposed:

- Removal and Disposal of the existing digester gas filtration and compressor systems.
- Removal and Disposal of the remaining elements of the old Waukesha cogeneration system.
- A new digester gas filtration system.
- A new 335 kW (nominal) cogeneration plant that includes a heat recovery unit that will produce high temperature hot water. The plant includes all of the necessary ancillary equipment.

- The installation of new hot water distribution piping from the new HRU to the high heat loop system.
- Installation of a new central controls system for the cogeneration plant and connection of the new ancillary equipment to the existing controls system.
- Site plumbing including, domestic water, and sewer required for the plant.
- Site electrical including connection to existing electrical services provided by Puget Sound Energy (PSE), and all required switchgear and transformers.

5.1b - Scope of Work Overview – New Boilers

Based on the analysis performed and summarized in Section 3, new water boilers will be required for the additional buildings. This is due to the fact that the loads peak during three or four hours of the day during the heating season. It is estimated that the peak heating load will increase from 2.1 MMBtu to 4.0 MMBtu. To meet this additional load the project includes replacing one (1) of the older and less efficient, oversized boilers with two (2) small high efficiency natural gas boilers.

The new plant operation will utilize all of the digester gas to generate power and hot water for the plant. When the hot water output is not adequate, one of the smaller natural gas boilers will be operated for three to four hours to meet the load. If the cogeneration unit is down for service or repair, the remaining digester gas boiler will be utilized to generate hot water similar to the current operation. Even in that scenario, the smaller hot water boilers will be required during peak periods.

The following is an overview of the improvements proposed for the new boilers:

- Removal and Disposal of one (1) 4.3 MMBtu/hr digester gas water boiler and associated pumps.
- Two (2) new 1.5MMBtu/hr natural gas boilers and two (2) hot water pumps.
- The installation of new hot water distribution piping from the new boilers to the high heat loop system.
- Installation of controls for the new boilers.
- Plumbing including, natural gas, domestic water, and sewer required for the new boilers.

5.2 - Detailed Scope of Work:

The schedule for the major portions of work, assuming Trane's receipt of contract in December, is as follows:

	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Receipt of Contract											
Engineering											
Ordering of Engine and Scrubber											
Onsite work											
Substantial Completion											

5.2a - Engineering and Permitting

Project shall meet all applicable codes and regulations.

5.2b - Gas Filtration System

The gas filtration plant will include, at a minimum, the components listed below or an equivalent system with equal performance, not to exceed $320,000.

- Two (2) H2S Scrubbers
- Two (2) Digester Gas Pressure Boosters
- One (1) Digester Gas Cooling Chiller and circulation pump.
- One (1) Digester Gas Moisture Separator
- Two (2) Siloxane Scrubbers
- Two (2) Particulate Filters
- One (1) Digester Gas Reheat Heat Exchanger
- Mechanical Piping and Ancillaries required for the plant
- Electrical wiring and connections required for the plant
- Electrical Switchgear and Motor Control Center for the central plant only
- Controls system
- Civil site work including excavation, concrete, storm drain and patching required for the construction of the plant.
- Crane and Rigging as required to accomplish this work.
- Testing, adjusting and balancing of the systems
- Start up and Commissioning

However, the final design and selection of the system will be accomplished through collaboration between LOTT, GA, and Trane and its subcontractors in order to best meet the project goals and requirements.

5.2c - Cogeneration Plant

The cogeneration plant will include the following:

- One (1) 335 kW (nominal) digester gas fired reciprocating engine Caterpillar, Jenbacher or equivalent.
- One (1) Heat Recovery Unit (HRU)
- Installation of new Automatic Transfer Switch and Breakers for connection to the existing electrical system.
- Mechanical Piping, Insulation and Ancillaries required for the plant, which includes pumping and piping for connection to the high temperature hot water loop.
- Exhaust ductwork and breeching as required for the cogeneration unit exhaust.
- Ventilation of the boiler plant.
- Electrical wiring and connections required for the plant
- Site plumbing including natural gas, domestic water, and sewer
- Site electrical including connection to the electrical panel in the Administration Building.
- Additional controls in the existing system.
- Rigging.
- Testing, adjusting and balancing of the systems
- Start up and Commissioning

5.2d - Water Boiler System

- Two (2) 1.8 MMBtu/hr input / 1.5 MMBtu/hr output natural gas boilers
- Two (2) hot water circulation pumps, 100 gpm at 60 ft hd.
- Hot water piping and insulation
- Electrical connections

- Testing, adjusting and balancing of the systems
- Start up and Commissioning
- Testing of the two (2) existing boilers will be completed to determine which unit is to be removed.

5.3 - Operational and Design Considerations:

5.3a - Digester Gas Considerations

Digester gas contains contaminants that cause operation and maintenance problems when burned in digester gas burning equipment. The primary contaminants that cause maintenance problems on digester gas burning equipment include moisture, hydrogen sulfide, siloxanes, and particulates. Moisture is an inherent component in digester gas due to the fact that the gas is leaving a hot, wet environment in the digesters so will carry with it significant amounts of water vapor. Hydrogen sulfide is a byproduct of the biological process and causes problems when it dissolves in water to create sulfuric acid. Siloxanes are organic silicon based compounds. The constituents are found in personal care products and are volatilized in the digestion process. When digester gas is burned the siloxane compounds precipitate out on the gas burning equipment, coating surfaces with either dust or glass like fouling. This fouling significantly degrades performance and increases maintenance.

Gas analysis conducted on the BITP digester gas concluded that there were sufficient concentrations of hydrogen sulfide and siloxane constituents to require gas treatment. Gas analysis indicated a hydrogen sulfide concentration of 500 ppm and total siloxane concentration of 4 ppm. These levels require gas treatment in order to avoid excessive maintenance costs of the cogeneration engine and potential voiding of engine warranty for providing out of spec fuel. Common gas treatment technologies include scrubbers to remove hydrogen sulfide and siloxanes, gas chillers and moisture separators to remove water, and compressors to boost pressure to that required by gas burning equipment. Typically a final polishing step will be to use particulate filters to remove any remaining particulate that could foul fuel injection systems. Alternative gas treatment can be achieved through low temperature gas cooling, although this requires additional energy costs associated with cooling gas to subzero temperatures.

The existing digester gas system includes a gas filtration system and several old gas compressors. The existing gas filtration system had failed several years ago and is no longer in use. Although this system could be repaired, it was difficult to maintain and only removed hydrogen sulfide, with no positive means of reducing moisture to below the gas dew point and no means of removing siloxane; both of which are requirements for the use of current, high-efficiency cogeneration systems.

Therefore, the proposed cogeneration facility will be equipped with gas treatment in order to provide a higher quality fuel source to the digester gas burning equipment and reduce maintenance costs for that equipment.

5.3b - Water Boilers

The cogeneration plant will be installed in the boiler room and will utilize the digester gas to generate electricity and hot water for the plant.

During the peak building heating times it may be necessary to shut down the cogeneration plant and run the digester gas directly to the existing hot water boilers. This will occur when the peak heating load exceeds 1,600,000 Btu/hr for more than one hour.

This operation will eliminate the requirement for the use of natural gas, and based on the analysis done in Section 2, it is estimated that this will occur for only 80 hours per year.

5.3c - Electricity

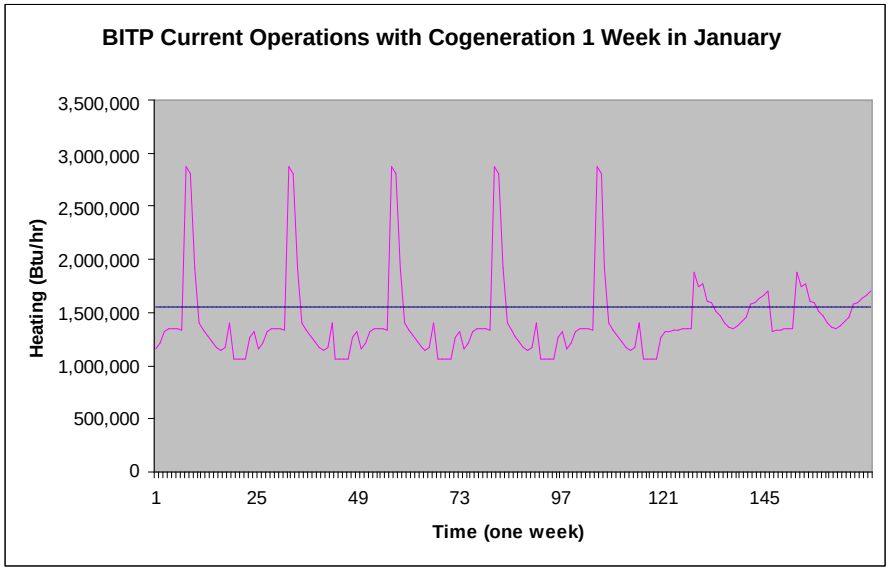
The electricity generated will be about 15% - 18% of the total facility load. Since the electricity generated is such a small percentage of the total load, the interconnection can be accomplished at the main switchgear on site. An interconnection agreement with PSE will be required.

5.4 - Revised Heating Profiles

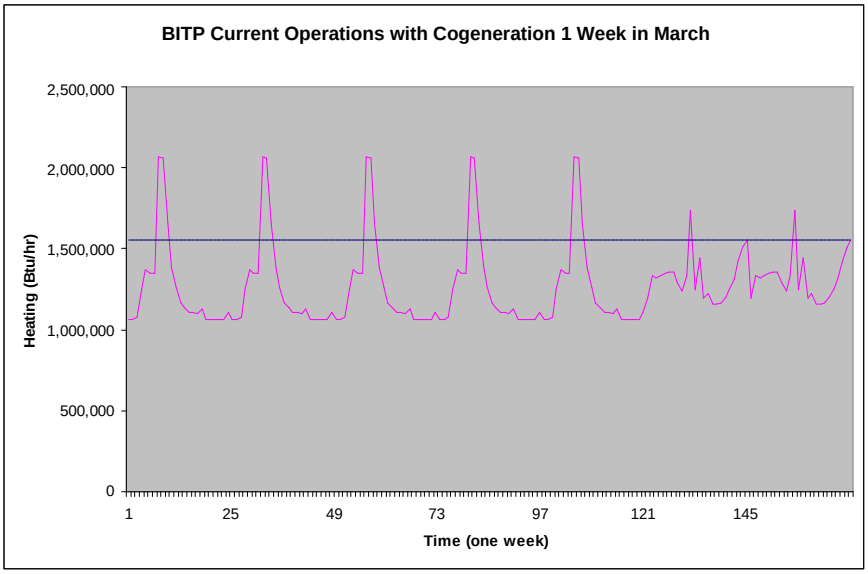
Heating profiles were generated for the cogeneration case. The three plots are identical to the three plots in section 3 and represent a winter month, a spring or fall month and a summer month. The plots are included below:

5.4a - Revised Heating Profiles – Existing System Loads

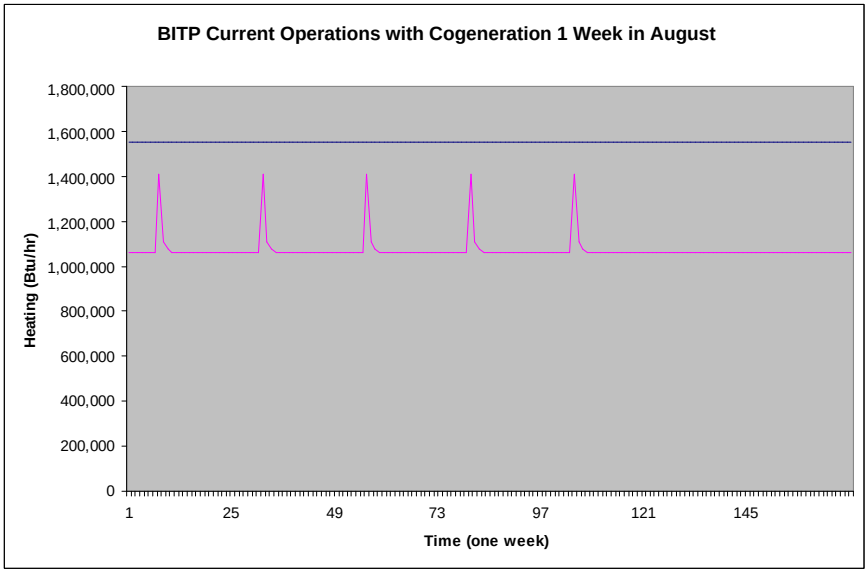
Heating profiles were generated for the cogeneration case. The three plots are identical to the three plots in Section 2 and represent a winter month, a spring or fall month and a summer month. The plots are included below:



For the peak heating month, the cogeneration output will provide all of the base load heating. The area above the line indicates periods when the cogeneration unit will be shut down and the digester gas re-directed to the boilers. This occurs for three hours on the peak heating days only.



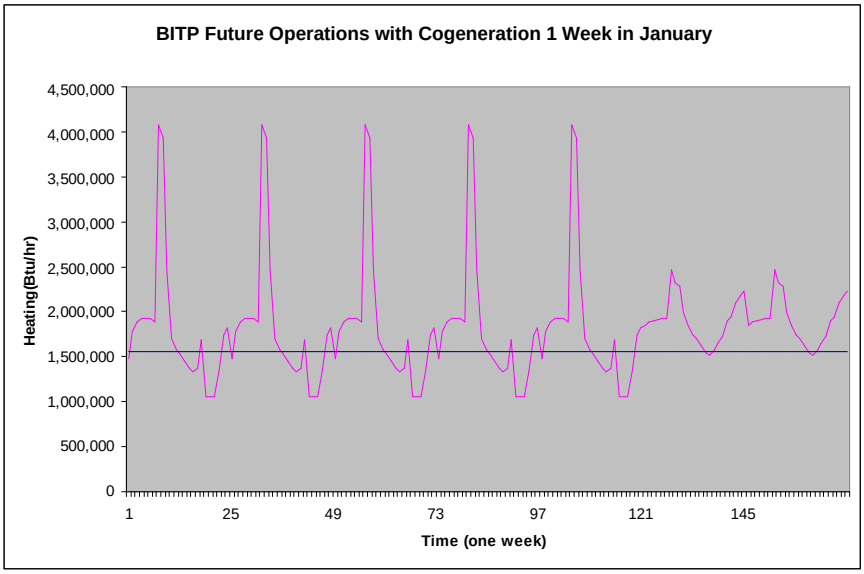
During the spring and fall, the cogeneration heat output matches up very well with the loads. Most of the high spikes can be met by the system, the digester gas will not have to be redirected to the boilers.



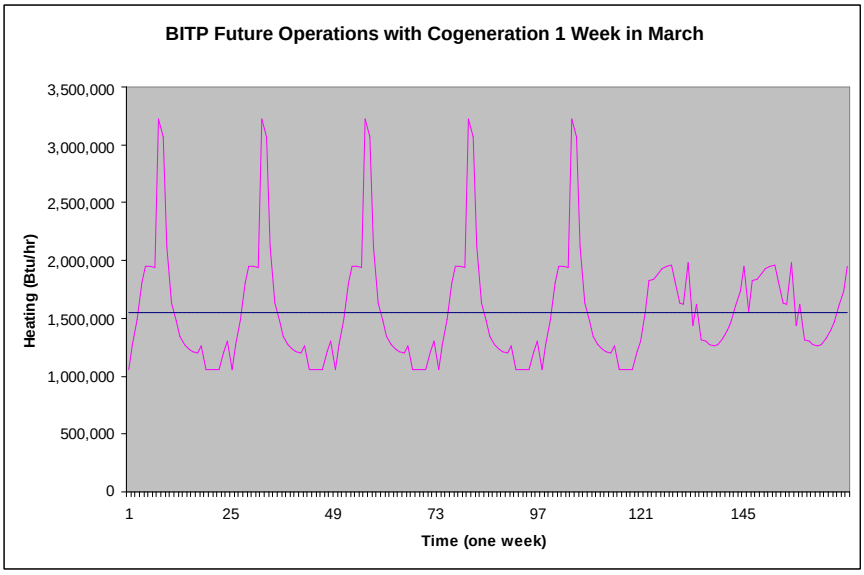
For the summer month, the cogeneration system will be generating more heat than the plant requires. The maximum excess heat will be approximately 480,000 Btu/hr. One of the benefits of the new cogeneration system is that the heat will be “dumped” into the plant effluent via a plate and frame heat exchanger. This will eliminate flaring of the gas.

5.4b - Revised Heating Profiles – With Admin Bldg

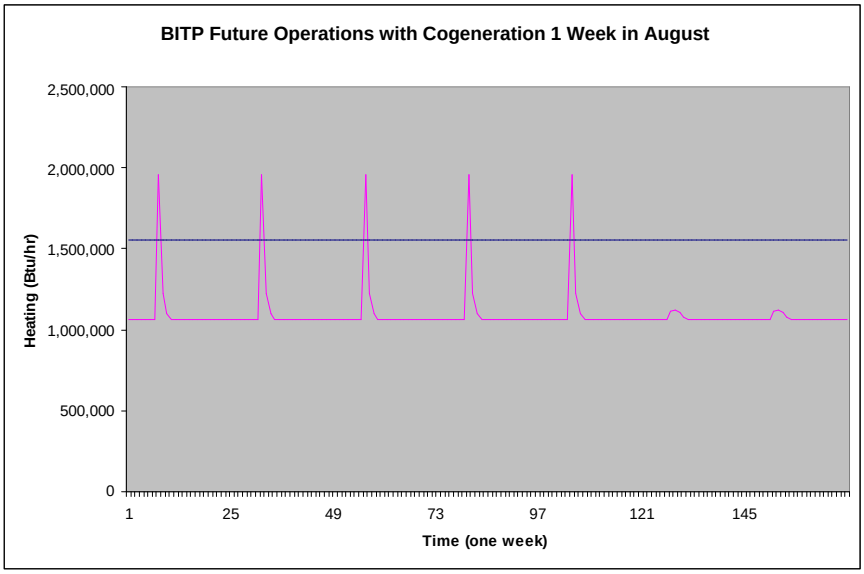
Heating profiles were generated for the cogeneration case after the new buildings are built. The three plots are identical to the three plots in Section 2 and represent a winter month, a spring or fall month and a summer month. The plots are included below:



For the peak heating month, the cogeneration output will provide most of the base load heating. However, similar to the existing boiler configuration, new natural gas boilers will be required for the peak loads.



During the spring and fall, the cogeneration heat output matches up very well with the loads. Most of the “low” spikes can be met by the system but the natural gas boilers will be required occasionally for the “high” spikes.



For the summer month, the cogeneration system will be generating more heat than the plant requires. The maximum excess heat will be approximately 480,000 Btu/hr. One of the benefits of the new cogeneration system is that the heat will be "dumped" into the plant effluent via a plate and frame heat exchanger. This will eliminate flaring of the gas.

6. Financial Analysis

6.1 - Project Capital Costs

Trane utilized HDR Engineering to complete a preliminary design of the new systems outlined in Section 5. The preliminary design documentation was used to solicit equipment and installation prices from local contractors to develop the costs for the project.

The guaranteed maximum capital cost of the new plant is $2,382,027 (excluding tax and GA fees). The spreadsheet below details the individual components of the overall project cost.

Budd Inlet Treatment Plant
Cogeneration System
Date 12/10/2008

A. CONSTRUCTION COSTS		Mechanical	Electrical	Controls	Gen'l	Total
Mechanical Installation		425,000				425,000
Electrical Installation			280,000			280,000
Controls; Tom Damon				38,500		38,500
Cogen Engine 335 kW		456,000				456,000
Gas Scrubber System		347,000				347,000
Site Supervision					50,000	50,000
Subtotal Labor and Materials Cost						1,596,500
Construction Bond	2.0%					31,930
TOTAL CONSTRUCTION COST						1,628,430
B. ESCO FEES						
Audit Fee		48,400				48,400
Design M,E,C	12.0%	185,580				185,580
Construction Management	5.0%	77,325				77,325
Overhead and Profit	18.0%	287,370				287,370
Cogeneration Study		60,000				60,000
TOTAL ESCO FEES		658675				658,675.00
C. OTHER COSTS						
Project Contingency	5.0%	81,422				81,422
ESCO M and V Costs (Year 1)		13,500				13,500
TOTAL OTHER COSTS						94,921.50
D. TOTAL GUARANTEED CONSTRUCTION & ESCO SERVICES						**$ 2,382,027**
E. NON-GUARANTEED COSTS						
Sales Tax Construction	8.4%	200,090				200,090
GA Admin. Fee		59,900				59,900
GA M and V Fee		2,000				2,000
TOTAL NON GUARANTEED COSTS		259,990				261,990
				Waukeshaw engine credit		(40,000)
F. TOTAL PROJECT COST						**$ 2,604,017**

6.2 - Utility Rebate

PSE has approved an incentive amount of up to $1,700,000 or 70% of the project cost, whichever is lower. This is an exceptional level of support and is indicative of the value of this project to help offset electrical consumption.

6.3 - Annual Electrical Cost Impact

The new cogeneration plant will offset 290 kW and 2,235,922 kWh (net after ancillaries) on an annual basis. The annual cost savings for this offset is estimated to be $179,992 per year using 8.05 cents per kWh blended.

6.4 - Annual Natural Gas Cost Impact

For either option; status quo (using the existing boilers), or cogeneration, new small boilers will be required to meet the heat load of the future new Administration Building, Lab Building and, potentially, the HOCM. The natural gas boilers will only be operated during the peak heating season.

Natural Gas Usage and Cost

Case	Natural Gas Uasge (MMBtu)	Annual Cost ($)
Existing DG Boilers with Add'l Bldgs	802	$6,817
Cogeneraiton Plant with Add'l Bldgs	685	$5,823

The first case – "Exiting DG Boilers with Additional Buildings", assumes that the existing boilers continue to run status quo. New standard efficiency boilers will be installed at each new building and connected to the high temperature loop. During the periods when the DG boilers cannot meet the load, the small boilers will operate. It is estimated that the boilers will operate for 800 – 900 hours per year.

For this case, the plant must continue to flare nearly 40% of the digester gas.

The second case – "Cogeneration with Additional Buildings", assumes that the cogeneration plant uses the digester gas base loaded. New high efficiency boilers will be installed in the boiler plant to supplement the heat generated by the cogeneration unit. Since most of the digester gas is used for generating electricity, the system will require additional natural gas during the coldest periods in order to meet the combined heating requirements of all the buildings and systems.

It is important to note, however, that because the digester gas utilization is maximized, the need to flare excess digester gas will be eliminated.

6.5 - Annual Maintenance Cost Impact

We have assumed that, for the status quo plant, the annual maintenance for the boilers and pumps is $30,000 per year. This level of maintenance and service is what would be expected for boilers of this age and type.

The new cogeneration plant will require annual maintenance of $43,240 per year, based on the quantity of electricity generated. In addition, the system will require $9,990 per year for the boilers and pumps. The result is an increased annual maintenance cost of approximately $23,230.

7. Implementation Strategies – Keys to Success

The digester gas cogeneration project at BITP will be a great benefit to the facility. Not only will the annual energy costs be reduced, but the plant will have added redundancy and will allow for some system operational flexibility. This is a retrofit project at an existing facility that operates on

a continuous basis. Therefore, it is important to determine and manage certain elements of the project to insure a successful installation.

7.1 - Verification of Digester Gas Flow

We have used the current information available for the digester gas volume. During the final phase of engineering the gas flow should be verified again. The volume and quantity of gas is crucial to the success of this project.

7.2 - Verification of the Hot Water Loads for the Future Facilities

We have made our best estimates regarding the existing and future loads. During final design, we will continue to work with LOTT and their consultants to verify our calculations and equipment sizes.

7.3 - Engineering Design

During the design phase of the project it will be important to have several coordination meetings between the Trane team and the LOTT Alliance team. There will be a number of shutdowns required to implement the plant (at least one electrical, at least one digester gas, and at least one hot water). Engineering review and approval by LOTT Alliance will insure that operations personnel are involved in the decisions regarding the plant design and construction.

7.4 – Adherence to Noise Ordinance:

The cogeneration system will adhere to Section 18.40.080 of the Olympia Municipal Code and/or to the currently proposed amendment of this section.

7.5 - Hazardous Materials:

Trane shall not perform any identification, abatement, cleanup, removal, transport, treatment, storage or disposal of Hazardous Materials on Customer's premises. Customer warrants and represents that, except as expressly provided in the subsequent Authorization, and by reference to this Section, there are no Hazardous Materials on the Premises in areas within which Trane will be performing any part of the Services or Customer has disclosed to Trane the existence and location of any Hazardous Materials in all areas within which Trane will be performing any part of the Services. Trane's responsibility, if any, for any Hazardous Materials, shall be limited to and as expressly set forth in the subsequent Authorization and Customer shall, at all times, be and remain the Owner and generator of any and all Hazardous Materials on the Customer's premises and responsible for compliance with all laws and regulations applicable to such Hazardous Materials. Should Trane become aware of or suspect the presence of Hazardous Materials in the course of performing the Services that are not expressly disclosed, or which present or may present a hazard to or endanger health welfare or safety, Trane shall have the right to immediately stop work in the affected area and shall notify Customer. Customer will be responsible for taking any and all action necessary to remove or render harmless the Hazardous Materials in accordance with all applicable laws and regulations. Trane shall be required to resume performance of the Services in the affected area only in the absence of Hazardous Materials or when the affected area has been rendered harmless; if the area has not been or cannot be rendered harmless within thirty (30) days of discovery of the Hazardous Material, Trane may terminate this Agreement pursuant to Section 15(c), Events of Default, of the Master Energy Services Agreement. Customer shall compensate Trane for any additional costs incurred by Trane as a result of work stoppage, including demobilization and remobilization. In addition to

any other indemnity obligation of Customer to Trane, to the maximum extent permitted by law, Customer shall indemnify, defend, and hold harmless Trane, its officers, directors, beneficiaries, shareholders, partners, agents, representatives, and employees (collectively referred to as "Trane") and Trane's subcontractors from all fines, suits, actions, claims, penalties, and proceedings of every kind, and all costs associated therewith (including attorneys' and consultants' fees) arising out of or in any way connected with or related to: (1) any leak, deposit, spill, discharge, or release or disposal of Hazardous Materials in connection with the performance of this Agreement, except to the extent such Hazardous Materials were brought onto the Premises by Trane; and/or (2) Customer's failure to identify and disclose Hazardous Materials and to fully comply with all federal, state, and local statutes, laws ordinances, codes, rules and regulation now or at any time hereafter in effect regarding Hazardous Materials.

7.6 - Project Process

- Approval of the IGA Proposal
- Contract Award
- Final Design Process
- LOTT Alliance Design and Construction Schedule Approval
- Permitting Process
- Coordination with PSE
- Construction
- Training
- Hand Over Packages

EXHIBIT A: Payment Schedule

Payment Terms: Customer shall pay Trane or cause Trane to be paid for the Services as follows:

(a) Initial Payment: Upon execution hereof, the Investment Grade Audit fee of $48,400 shall be due; and

(b) Payment for Long-Lead-Time Equipment: This proposal assumes that the Customer will not pay for any equipment until it arrives at the job site. Therefore, a combined budget of $35,000 has been added to the equipment cost budgets in Section 6.1 to account for the added costs from the manufacturers of the cogen engine and the gas scrubber for meeting these terms rather than their originally-proposed terms of receiving progress payments. Should Customer chose to make prepayments for the engine and gas scrubber, this $35,000 cost will not be incurred, thereby creating a savings to the project. Customer must confirm with Trane in writing which approach Customer chooses for both the engine and the gas scrubber prior to Trane ordering those respective pieces of equipment.

(c) Progress and Final Payments: Trane will invoice in accordance with the schedule below for all materials and equipment delivered to the Premises (or, as applicable, to an off-site storage facility) and for all installation, labor and services performed during the billing period; Customer shall pay all amounts due upon receipt of the invoice and any invoice not paid within ten (10) calendar days of its date shall be past due.

All amounts outstanding ten (10) calendar days beyond the due date shall bear interest payable to Trane at the maximum allowable legal rate, retroactive to the due date. Customer shall pay all costs (including attorneys' fees) incurred by Trane in attempting to collect amounts due from Customer.

Customer will make payments at the times and in the amounts set forth in the following schedule:

Milestone	***Payment Due***
Contract Acceptance	IGA fee: $48,400
50% Engineering	50% of Design Fee
100% Engineering	Remainder of Design Fee
Monthly Payments	Progress payments based upon percent of completion
Final Payment	Project Retention

Contingency: The proposed Project Contingency is $81,422 and is based on 5% of Total Construction Costs. The Project Contingency is reserved for unforeseen project or site conditions. Any remaining Contingency may, at the direction of the Customer, be applied to the project to fund the costs of Customer-directed changes or additions to the project scope.

Financing: Trane facilitates project financing by introducing our Customers to third-party lenders that are qualified to provide financing appropriate for the project and the Customer. The Customer may provide its own financing or work with one of the third-party lenders to whom we have introduced the Customer. The financing contracts are between the Customer and the lender and are separate from Trane's agreement with the Customer.

Substantial Completion and Final Completion:

(a) Substantial Completion. When Trane considers that the Services, or a portion thereof, are substantially complete, Trane will submit to Customer a proposed "punchlist" listing items of the Services to be completed prior to final completion. Customer and Trane shall inspect the Services (or portion thereof) to determine if the same is substantially complete. (Substantial Completion is defined as the stage in the progress of the Services (or designated portion thereof) when the Services are sufficiently complete so that Customer can occupy or utilize the Services for its intended use.) Customer and Trane shall add to the punchlist any item of work that has not been completed. When the Services (or designated portion thereof) are substantially complete, Customer and Trane shall execute a Certificate of Substantial Completion, setting forth the date of Substantial Completion and shall state the date by which Trane shall complete the items of work included on the punchlist.

EXHIBIT B: Continuous Metering Guarantee

Section 1.0. Savings Guarantee. Trane guarantees that, as a result of the Services, Trane shall furnish a cogeneration system that will generate 313.4 kWh when supplied 127,000 cfd of digester gas with a minimum heat content of 560 btu/cf. This generation guarantee is specifically contingent upon the Owner providing, at a minimum, this quantity and heat content of digester gas to the cogeneration system on a continuous basis. Trane cannot be responsible for the amount and heat content of the gas. In the event that digester gas provided to the cogeneration system drops below 127,000 cfd and/or 560 btu/cf, the savings guarantee will be reduced accordingly.

Based upon the aforementioned digester gas quantity and heat content and the operation of the cogeneration system for a minimum of 7,885 hours per year, the Customer will realize Total Energy Savings of 2,235,922 kWh (the “Guarantee”), in each of the consecutive twelve-month periods following the Commencement Date (each such twelve-month period being hereafter referred to as a "Guarantee Year") for the Guarantee Term.

Section 2.0. Total Energy Savings. The energy savings shall be computed as specified in this Exhibit. Total Energy Savings will be determined by adding the Energy Use Savings for each Billing Period (as hereinafter defined) together with any Installation Period Savings. Utilizing energy related bills furnished by Puget Sound Energy pursuant hereto, Trane shall then determine Total Energy Savings for each Billing Period and for each Guarantee Year when completed. Subject to Sections 2.1 and 2.2 hereof, Trane will begin recording annual savings from and after the Commencement Date.

Section 2.1. Energy Use Savings. Energy Use Savings are those savings achieved through reduction or shift in energy or demand use. Trane will calculate Energy Use Savings achieved at the Premises by subtracting energy consumption and demand for the current Billing Period from Baseline energy consumption and demand for the corresponding month and multiplying those savings by the current utility rate unit cost or the Base Utility Rates as described herein, whichever is higher. The Energy Use Savings will be adjusted for weather, occupancy, utilization, and facility changes as described herein.

Section 2.2. Installation Period Savings. Energy Use Savings will accrue as the Services progress during the installation period until the Commencement Date. As applicable, Trane will calculate and document these savings as they accrue.

Section 3.0. Billing Period. The Billing Period is based on the calendar month of said period. Utility bills will be prorated based on the number of days in the Billing Period month.

Section 4.0. Commencement Date and Guarantee Term. The "Commencement Date” shall be the first calendar day of the month following the month in which the Date of Final Completion occurs, unless the Date of Final Completion falls on the first calendar day of a month, in which event the Commencement Date shall be the Date of Final Completion, but in no event later than ninety (90) days after the date noted in the Certificate of Final Completion and Acceptance. This Guarantee shall begin as of the Commencement Date and, unless this Agreement shall terminate earlier, shall expire on the day immediately preceding the ***CONTRACT TERM*** year anniversary of the Commencement Date (hereinafter the “Guarantee Term”).

Section 5.0. Base Utility Rates. The Base Utility Rates are those utility rates used in the Utility Baseline Analysis that are used to calculate the energy savings and are the rates set forth below. The Base Utility Rates used to calculate energy savings will be used as the floor price for the Guarantee Term and shall be the lowest rate used. In calculating any energy savings, Trane will use the greater of the then current applicable utility rate unit cost or the Base Utility Rates as described herein. The Base Utility Rates used to calculate energy increases will be used as the

ceiling price for the Guarantee Term and shall be the highest rate used. In calculating any reduction in energy savings, Trane will use the lesser of the then current applicable utility rate unit cost or the Base Utility Rates as described herein.

Section 6.0. Guarantee Reconciliation. Subject to Customer's obligations to furnish the data and information required hereunder, within ninety (90) days after the final month of each Guarantee Year, Trane will determine the actual Total Energy Savings (the "Actual Savings") as described in the sub-Exhibits and report the same to Customer in a Reconciliation Report. Customer shall be deemed to have accepted the determinations contained in the Reconciliation Report in the event Customer fails to object to the same within fourteen (14) calendar days after delivery of the Reconciliation Report to Customer. In the event the Actual Savings, together with any Installation Period Savings that have not been previously applied against any shortfall in Total Energy Savings, are less than the Guarantee, at Customer's option: (i) within thirty (30) days after delivery of the Reconciliation Report and notice from Customer that it has selected this payment option, Trane will pay Customer the difference between the Guarantee and the Actual Savings (credited by unapplied Installation Period Savings) for that Guarantee Year; or (ii) Trane will carry such obligation forward to one or more succeeding Guarantee Year(s). If in any Guarantee Year the Actual Savings exceed the Guarantee, the excess savings shall be credited to one or more preceding or succeeding Guarantee Year(s) in which Actual Savings were less than the Guarantee. In the event excess savings are credited to any Guarantee Year in which Actual Savings were less than the Guarantee and, with respect to such Guarantee Year, Trane shall have paid to Customer the difference between the Guarantee and the Actual Savings, Customer shall refund such payment to Trane to the extent of the excess savings being credited.

Section 7.0. Adjustments. Trane may, at its sole discretion, make adjustments to the Baseline using standard and sound engineering principles as follows:

a. Fuel Generation and Quality: The digester gas flow is taken from existing data, and current monitoring data. When the actual flow and heat rate of the gas varies, the electricity generated by the plant will vary accordingly. Trane cannot be responsible for the rate and heat content of the gas. Therefore, in the event that digester gas provided to the cogeneration system drops below 127,000 cfd and/or 560 btu/cf, the Baseline, and resulting savings guarantee, will be reduced accordingly.

b. Cogeneration System Operational Hours: The hours the cogeneration system is utilized is a variable which may be adjusted for if the hours (quantity or time-of-day) differs from the hours identified in Section 1.0. The operation of the cogeneration system will be tracked by the cogeneration unit's own controls. The Customer agrees to have this data logged on a weekly basis by Customer's building staff as specified in Section 8.0, Customer Responsibilities, of this Exhibit;

c. At Trane's discretion, based on data or other information newly discovered or otherwise not readily available at the time the Baseline was prepared; and/or

d. Failure of Customer to perform its obligations under Section 8.0 of this Exhibit.

Section 8.0. Customer Responsibilities: Customer acknowledges that it has an integral role in achieving savings and agrees to perform the following responsibilities:

a. Maintain the operation of the anaerobic digester systems to meet the digester gas levels needed to run the cogeneration system, as defined in Section 1.0.

b. Provide data, on a monthly basis, documenting the quantity of digester gas provided to the cogeneration system and quarterly data documenting the thermal content of the digester gas.

c. Properly maintain, repair, and replace all energy consuming equipment with equipment of equal or better energy and operational efficiencies and promptly notify Trane of the repair and /or replacement, but no later than within fourteen (14) calendar days from the commencement thereof;

d. Make available to Trane upon its request copies of maintenance records and procedures regarding maintenance of the project-related equipment and systems on the Premises;

e. Log any utility meters and the operation of any energy consuming devices or equipment as directed by Trane and furnish copies of such logs to Trane within thirty (30) calendar days after preparation of the logs;

f. Provide to Trane true, accurate and complete copies of all energy related bills within ten (10) days after Customer's receipt of such bills. In lieu of this, Customer may contact Puget Sound Energy (PSE) and provide the necessary authorization to allow PSE to provide this information directly to Trane. The parties stipulate that, in each event that Customer fails to provide an energy related bill or authorization to PSE to provide the bill to Trane within thirty (30) days after the end of the Billing Period to which the bill relates, Customer shall be deemed to have realized that portion of the Total Energy Savings prorated for the utility billing period to which said energy related bill relates and for such subsequent utility billing periods as are affected by an increase in energy and/or demand use that could have been avoided had Trane been provided with the energy related bill in a timely manner. In the event Trane subsequently receives or obtains the untimely energy related bill and such bill discloses that savings were achieved in an amount greater than had been stipulated hereunder, such greater savings will be used in calculating Actual Savings;

g. Furnish to Trane true, accurate and complete copies of any utility rate schedules or tariffs promptly upon Trane's request for the same and, in any event, within thirty (30) calendar days after Customer's receipt of notice of a utility rate change;

h. Maintain in effect and fully perform its obligations under the Maintenance Agreement throughout the duration of the Guarantee; and

i. During the Term of the Agreement, permit only Trane authorized personnel to repair, adjust or program equipment, systems, and/or controls covered by this Agreement or affecting equipment, systems, and/or controls covered by this Agreement, except in the event of an emergency or other than normal operational maintenance. In the event of a significant alteration, Customer shall immediately notify Trane of the existence of the alteration no later than within twenty-four (24) hours of the commencement of the alteration.

Section 9.0. Exclusions from Trane's Responsibilities: Trane shall not be responsible for any of the following:

a. Any shortfalls in Total Energy Savings or Operational Savings, failure to satisfy the Guarantee, or for loss, damage or malfunction to equipment, systems, controls or building(s) structures resulting from non-Trane personnel examining, adjusting or repairing equipment, systems, or controls;

b. Any shortfalls in Total Energy Savings or Operational Savings due to quality or quantity of digester gas levels falling below the levels defined in Section 1.0.

c. Any damage or malfunction resulting from freezing, corrosion or erosion on the water side of the equipment or caused by scale or sludge on equipment;

d. Problems or damages caused by utility service or damage sustained by equipment or systems that are not caused by Trane;

e. Furnishing, after termination of the warranty period, any items of equipment, material, or labor, or performing tests recommended or required by insurance companies or federal, state, or local governments, which are not specifically included in the Scope; and

f. Failure or inadequacy of any structure or foundation, not provided by Trane or through this contract, supporting or surrounding equipment or work or any portion thereof.

Section 10.0. Independent Audit. Within thirty (30) days after each anniversary of the Commencement Date, Customer may provide written notice to Trane that Customer intends to have performed an audit of the savings calculations and billings for the immediately preceding Guarantee Year. Customer and Trane shall thereupon select agreed upon experienced and qualified energy engineering auditors to complete and submit to the parties an audit of the savings calculations and billings for the immediately preceding Guarantee Year. Customer shall pay for the entire cost of the audit. The audit shall be completed within thirty (30) days of selection of the auditor. Exercise of the right to request an audit shall in no way relieve Customer of its continuing obligation to make current payments pursuant to this Agreement. Any payments between the parties necessary to resolve any agreed upon irregularities identified in the audit will be made within sixty (60) days after submission of the audit to the parties.

EXHIBIT B.1: Baseline Energy Consumption

Baseline Energy

The baseline facility electrical usage was taken from previous electrical billings:

Electrical Summary

Start Date	End Date	Days	Demand	Usage	Cost	Rate	kWh/Day
6/20/2007	7/20/2007	30	1,951.2	1,087,200	$80,706.51	$0.0742	36,240
7/20/2007	8/20/2007	31	1,840.8	1,120,800	$82,861.79	$0.0739	36,155
8/20/2007	9/19/2007	30	2,198.4	1,072,800	$83,432.60	$0.0778	35,760
9/19/2007	10/18/2007	29	2,193.6	1,065,600	$87,739.67	$0.0823	36,745
10/18/2007	11/16/2007	29	2,318.4	1,082,400	$92,084.13	$0.0851	37,324
11/16/2007	12/19/2007	33	3,182.4	1,257,600	$110,852.10	$0.0881	38,109
12/19/2007	1/17/2008	29	2,248.0	1,142,400	$95,586.33	$0.0837	39,393
1/17/2008	2/19/2008	33	2,073.6	1,252,800	$101,655.01	$0.0811	37,964
2/19/2008	3/19/2008	29	1,864.8	1,056,000	$86,675.79	$0.0821	36,414
3/19/2008	4/17/2008	29	2,124.0	1,096,800	$88,925.17	$0.0811	37,821
4/17/2008	5/19/2008	32	1,819.2	1,180,800	$91,782.92	$0.0777	36,900
5/19/2008	6/18/2008	30	1,816.8	1,099,200	$86,169.59	$0.0784	36,640
		364	**3,182.4**	**13,514,400**	**$1,088,471.61**	**$0.0805**	**37,127**

The electricity generated by the cogeneration unit is much less than the electrical used at the site and there will be no case of exporting electricity to the utility grid.

The baseline digester gas generated was taken from the calendar year 2007. Daily digester gas generation values, in cubic feet per day (cfd), were taken from actual plant readings.

Digester Gas Production and Heat Value

Date	Tot. Sludge	FROM SECDIG gas prod
	gal	cf
Average	**36,021**	**127,257**
Median	**38,098**	**126,520**
Maximum	**79,213**	**170,482**
Minimum	**-**	**73,766**

EXHIBIT B.2: M&V Plan

Monitoring and Verification Plan

Trane measurement and verification (M&V) approach for this project will include the monitoring and measurement of

- The digester gas flow (cfd)
- The hourly electrical output of the cogeneration unit (kW)
- The daily total electricity generated (kWh)
- The hourly hot water output of the cogeneration unit (MMBtu/hr)
- The daily total hot water provided MMBTU

Spreadsheet calculations will be used to determine the annual digester gas used, the electrical energy generated and the total annual savings realized.

M & V summary reports will be provided quarterly. An annual Energy Savings Report will be provided within 45 days of the end of each year of the performance period.

Cogeneration Unit Savings Calculation

The cogeneration system savings will be calculated using actual kWh generated and utilized by LOTT Alliance. Current electric utility rates will be applied to the kWh usage to calculate dollar savings.

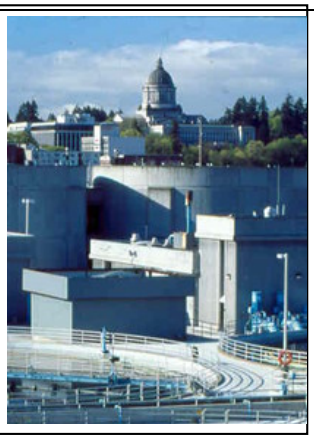
- Annual kWh x Utility Rate = Annual Savings

The First Year Performance Results for the Performance Assurance Contract By Trane

Energy Savings Reconciliation

Lott Alliance - BITP

WTP Cogeneration
Department of General Administration
201 11th Avenue SW
P.O. Box 41012
Olympia, Washington, 98504
Trane Project No: Y301072
Submitted July 2011



July 29, 2011

Jim Hayes, PE, Energy Project Manager
State of Washington, Department of General Administration
Div. of Engineering & Architectural Services
210 SW 11th Avenue SW
Olympia, WA 98504

Howard Weisberg, Engineering Contract & Loan Administrator
LOTT Alliance
111 Market St. NE, Ste. 250
Olympia, WA 98501

Subject: PACT℠ LOTT Alliance - Budd Inlet Wastewater Treatment Cogeneration Plant
Trane Project No.: Y301072; Contract No.: 2009-009 G (1-1)
Guarantee - PACT℠ Reconciliation Year 1

Dear Jim Hayes and Howard Weisberg:

This report covers the Year 1 Performance Period of January 2010 - December 2010. The ECM installed for this project was a Digester Gas Cogeneration System to provide the best utilization of gas to be used for heating the digester facilities. Trane guaranteed that the digester would provide a minimum of 313.4 kW and we are pleased to report positive results. The new system is producing the projected kW and exceeds those projections in some months.

The amount of kW generated is based on the quality of fuel as well as the operating hours of the cogeneration system. The quality of the fuel rate flow and heat varies; therefore, the electricity varies accordingly. We captured the variation via the building automation system and were able to assess that when conditions reached 127,000 cfd the generator was able to provide kW levels much higher than the 313.4 guaranteed. The generator installed is a 335 kW engine and when supplied larger amounts of conditioned gas (128,000 to 129,000 cfd) it generates kW as high as 334.4. The conclusion is the cogenerator is more than capable of supplying the nominal rate, when gas production exceeds. Although the generator is capable of supplying the 334.4 kW, the *average* kW supplied during the year, is 322.4 kW, when supplied 127,000 cfd.

The following table defines proposed vs. actual generated electricity savings for kW and kWh. The kWh consumption was calculated using 7,392 hours of runtime or 84% on time. Please refer to Table 1 below.

Table 1
Proposed Annual Savings Overview

Cogeneration of Electricity (kW)	313.4 kW
Cogeneration of Electricity (kWh)	2,235,922
Cogeneration Unit Savings ($$)	$179,992.00

Table 2
Actual Annual Savings Overview

Cogeneration of Electricity (kW)	322.4
Cogeneration of Electricity (kWh)	2,383,180
Cogeneration Unit Savings ($$)	$191,846.05

The runtime and the average kW was used to calculate annual savings. Rate: 8.05 cents

The information on the following pages provides detailed information regarding the Energy Guarantee for the Budd Inlet Wastewater Treatment Cogeneration Plant.

Please sign below and return this form to Trane, to indicate and demonstrate your acceptance of the Reconciliation.

Sincerely,

Trane Inc.
Natasha Vassallo, CEM, M&V Engineer

_____ _____
Jim Hayes, PE Date

_____ _____
Howard Weisberg Date

Project: Lott Alliance Budd Inlet Cogeneration Reconciliation

Table of Contents

ECM #1: New Cogeneration System Description

Pre- and Post-Retrofit Consumption Data:
Trane proposed to design and install a new digester gas-fired cogeneration system at BITP to use all of the digester gas on a continuous basis to make electricity for the site. The heat rejected by the system was recovered and used to serve the building and process heating loads.

a. Pre-Retrofit Conditions
Solids processed by the plant are stabilized by anaerobic digesters that historically have produced about 100,000 to 160,000 cubic feet per day (cfd) of combustible, methane rich digester gas. The system supplies 1,060,000 Btu/hr continuously to the digesters.

Post-Retrofit Conditions:
The system selected included a reciprocating engine that was generates approximately 334 kW of electricity and 1,408,000 Btu/hr of high temperature hot water. The supply fuel ranges but often exceeds the 127,000 cubic feet per day of digester gas that was projected.

1. The bulk of energy savings due to this conservation measure was related to installing a 335 kW (nominal) gas digester and Water Boilers.

Computation and Presentation of Savings:
Customer and Trane agreed that, as a result of the Services Trane shall furnish a cogeneration system that will generate 313.4 kW when supplied 127,000 cfd of digester gas with a minimum heat content of 560 btu/cf. This generation guarantee was specifically contingent upon the Owner providing, at a minimum, this quantity and heat content of digester gas to the cogeneration system on a continuous basis. It was agreed that Trane would not be responsible for the amount and heat content of the gas. In the event that digester gas provided to the cogeneration system dropped below 127,000 cfd and/or 560 btu/cf, the savings guarantee would be reduced accordingly.

This report contains the results of all M&V testing conducted on site during the first year performance period and verified as part of the Measurement and Verification plan.

Table 3
Details of Energy Savings Guarantee

Electric (kWh)	2,235,955
Electric (kW)	313.4

Based on 127,000 CFD
Based on 7,885 hours
Projected Annually

Electric Generation

Trane supplied a cogeneration system that when supplied the proper amount of gas from the digesters, along with a minimum heat content, an agreed upon amount of kW (313.4) would be produced.

Two scenarios would need to be present for kW output to meet or exceed the projections.

First - 127,000 cfd (cubic feet per day) of gas would need to be supplied to the cogeneration system.

Second - The heat content could not be less than 560 btu/cf.

If any of the two scenarios were not met, the savings guarantee would be reduced accordingly.

Measurement & Verification Results

The following table is a snapshot of data taken from the Building Automated System connected to the Cogeneration System in 15-minute increments. Each month, a snapshot of data is shown that identifies where the projected kW was met or exceeded and where the projected kW was not met. Data was taken from each month, in a 12-month consecutive period from January 2010-December 2010. All dates and times are exactly as retrieved from the system.

The table on the following page identifies when 127,000 cfd is supplied, then the generator produces a minimum of 313.4 kW. The table also identifies when (less than) 127,000 cfd is supplied, then less kW is produced. When conditions are ***less*** than, they are shown in red.

In mid-December, there were maintenance shutdowns, which prevented the cogeneration system from running and producing kW. However, when the system was placed back on track the projected amount of kW did occur. This maintenance stop resulted in kW losses in Mid-December and January. Currently, the system is running the generator and producing the correct amount of kW.

Occasional maintenance is necessary and is an expected occurrence.

See Table 4 (on page 6)

Table 4
ACTUAL COGENERATION GAS AND KW OUTPUT READINGS

Numbers in red = <than *127,000 Cfd
Numbers in Black = 127,000 Cfd or >

Date	CFH Digestor Gas	CFD Digestor Gas	KW output
1/26/10 15:30	4,191.80	100,603.20	248.7
1/26/10 15:45	5,418.70	130,048.80	333.4
1/26/10 16:00	5,416.90	130,005.60	333.3
2/14/10 13:00	5,416.30	129,991.20	333.3
2/14/10 13:15	5,422.10	130,130.40	333.3
2/14/10 13:30	5,031.20	120,748.80	302.6
3/22/10 11:15	5,430.40	130,329.57	333.3
3/22/10 11:30	5,430.34	130,328.27	333.3
3/22/10 11:45	5,068.79	121,650.99	304.8
4/12/10 11:45	5,406.18	129,748.28	333.3
4/12/10 12:00	5,408.30	129,799.31	333.3
4/12/10 12:15	4,799.60	115,190.40	286.4
5/24/10 6:00	5,203.10	124,874.40	318.2
5/24/10 6:15	5,394.50	129,468.00	333.1
5/24/10 6:30	5,398.50	129,564.00	333.3
6/21/10 17:30	4,460.93	107,062.39	264.6
6/21/10 17:45	5,186.00	124,464.09	316.9
6/21/10 18:00	5,407.82	129,787.80	331.6
6/21/10 18:15	5,435.53	130,452.71	333.0
7/5/10 19:30	5,008.36	120,200.75	301.3
7/5/10 19:45	4,798.62	115,166.92	285.6
7/5/10 20:00	4,787.24	114,893.75	285.5
7/5/10 20:15	5,180.82	124,339.61	316.4
7/5/10 20:30	5,401.84	129,644.24	332.4
8/14/10 6:15	5,582.31	133,975.33	333.3
8/14/10 6:30	5,444.06	130,657.50	322.1
8/14/10 6:45	5,194.00	124,655.94	304.5
8/14/10 7:00	5,196.31	124,711.48	304.5
9/12/10 13:15	5,601.69	134,440.68	333.3
9/12/10 13:30	5,523.50	132,563.94	326.6
9/12/10 13:45	4,792.12	115,010.79	273.3
9/12/10 14:00	4,593.59	110,246.17	259.6
10/8/10 0:15	5,560.95	133,462.87	333.3
10/8/10 0:30	5,547.64	133,143.45	333.3
10/8/10 0:45	5,552.10	133,250.31	333.3
10/8/10 1:00	5,555.04	133,321.05	333.3
12/14/10 12:30	6.41	153.82	0.0
12/14/10 12:45	1,019.38	24,465.08	51.4
12/14/10 13:00	5,447.98	130,751.41	331.2
12/14/10 13:15	5,567.40	133,617.62	333.3
12/14/10 13:30	5,567.89	133,629.25	333.3

*Note: unless otherwise noted, 313.3 or greater is assumed to have a heat content associated with the gas produced of 560/btu/cf.

Observations

1. In the Winter months (October – February) the cogeneration system produced an average of 327 kW which is more than projected. Projected kW = 313.4 kW

    - October – 332 kW
    - November – 333 kW
    - December – 332 kW
    - January – 312 kW
    - February – 326 kW

2. Several days in May 2010 resulted in lower amounts of cfd (Conditioned Gas Flow). Since amounts were less than 127,000, the generator produced less than 313.3 kW, which is expected.

Table 5
Impact of Less Gas Flow = less kW

Date	CFH	CFD	kW
5/24/10 10:30	3339.2	80,140.8	178.3
5/24/10 10:45	3182.0	76,368.0	166.9
5/25/10 11:30	3794.3	91,063.2	167.0

CFH = Conditioned Gas Flow

3. In (Table 6) the same month, May 2010 when the necessary amount of conditioned gas flow is generated from the gas digesters we see the projected amount of kW plus a surplus.

Table 6
Electric Generated from Gas Flow – Exceeded Projections

Date	CFH	CFD	kW
5/24/10 9:00	5405.6	129,734.4	333.3
5/24/10 9:15	5402.9	129,669.6	333.4
5/24/10 9:30	5404.3	129,703.2	333.3

4. Less CFD was produced Jun-Aug due to maintenance on equipment. Less CFD resulted in less kW generated. As the table shows both Gas and kW are dependent upon each other. As the production of gas increases, kW increases accordingly.

Calculation Methodology

As projected, when 127,000 cfd is produced a minimum of 314.4 kW is generated. Each month's gas production was calculated per day. Where gas usage was at least 127,000, that months kW was calculated.

First Year Guaranteed KWh Savings =	2,383,180.80

Table 7
Monthly Electric Generation

Electricity Generation				
Month	**CFD**	**kW**	**Hrs**	**kWh**
January	129,438	332	7,392	2,454,144
February	129,787	331	7,392	2,446,752
March	129,920	332	7,392	2,454,144
April	129,546	329	7,392	2,431,968
May	128,614	327	7,392	2,417,184
June	129,449	327	7,392	2,417,184
July	102,195	243	7,392	1,794,778
August	133,183	331	7,392	2,446,752
September	133,034	328	7,392	2,424,576
October	132,768	332	7,392	2,454,144
November	130,600	331	7,392	2,446,752
December	133,561	326	7,392	2,409,792
Average	**128,508.0**	**322.4**	**7,392.0**	**2,383,180.8**

- Daily kWh was tracked using 15-minute increments from the Building Automation System.
- Sampling of data used each month consisted of a minimum of 7-day data.
- Runtime hours used equals all ON hours and excludes kW produced when system used less than 127,000 cfd.
- The kWh calculated is a conservative calculation given usage over 127,000 cfd is not calculated since levels are lower than 313.4 when this occurs**.**

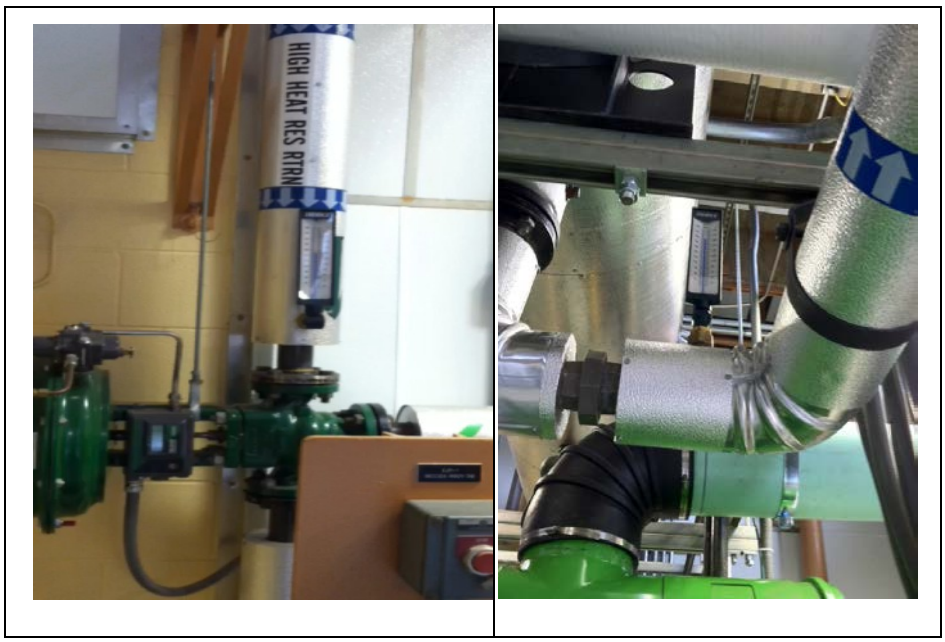
Hot Water Generation

Trane was to supply a cogeneration system that when supplied the proper amount of gas from the digesters, along with a minimum heat content, hot water would then be supplied to the buildings to be used as process and heating fuel. In (Table 8) the temperatures are operating at the height of the heating range, allowing for a high level of btu/hr to be produced and the maximum amount of kW produced.

Table 8
Incremental Energy Produced

Date Time	Digester Gas Flow in CFH	Engine Power Output	Engine Jacket Water Temperature in Deg.F	Heat Exchanger Water	Digester Gas Flow in CFD
6/23/10 12:15	5505.0	333.4	152.0	191.3	132,120.5
6/23/10 12:30	5506.6	333.4	152.0	191.3	132,157.8
6/26/10 5:00	5466.4	333.3	152.0	190.4	131,194.3
6/26/10 5:15	5463.1	333.4	152.0	190.4	131,113.6

High Pressure Hot Water Generation



Thermostats indicating the proper amount of BTU's were being produced. The Supply = 190.4 and the Return = 152 deg.

Continued on the next page....

Hot Water Generation...continued

The Cogenerator produces high temperature hot water and low temperature water. The Supply and Return Temperatures were captured in 15 minutes and 24 hr increments. The Supply and Return were used to calculate the Delta-T of the Hot Water produced and returning to the system for re-entry into the system.

Each month shown, is an AVERAGE btu/hr for that month. (see table 9) The method for establishing the AVERAGE consisted of calculating each day per month and averaging the btu/hr for that given month.

The following points and data were used to calculate the btu's of hot water generated via the cogeneration system.

POINT NAMES are defined on the system as the following:

1. Engine Jacket Water Temperature in Deg.F/ O48_12770TT.Out.Average
2. Heat Exchanger Water Temperature in Deg.F/ 348_12773TC.PV.Average
3. GPM =100 Based on Pump Plate
4. 500 is a constant and represents 8.33 lbs/gal x 1 x 60 = 499.89

Table 9
BTU/HR by Month Generated

Month 2010-2011	BTU/HR
June	1,443,922.33
July	1,451,071.94
August	1,657,855.65
September	1,540,583.00
October	1,553,948.55
November	1,988,190.33
*December	2,451,485.00
January	Maintenance
February	1,037,942.32
March	1,575,394.03
April	1,585,671.00
May	1,581,346.25

***December generated btu's only in the half of the month; the system did not operate the entire month.**

First Year Average Annual BTU/HR =	1,624,310.00 btu/hr

BTU Hot Water Delta-T

This is a snapshot of data, which is monitored for measurement, and verification of the system. Here we can see that temperature of the supply is recorded at the highest temperatures (190+) and returning approximately in the high 150's and 160 degree Fahrenheit. As noted previously, when given the correct amount of supplied digester gas, the system is producing the most Btu's. In this case, the Anaerobic Digesters are supplying CFH in the top range of our projection.

As an example, 5493.11 cfh = 131,834 cfd. This is over the 127,000 cfd projected.
Note: The system at this time stamp is making an average of 1.5 Million Btu/Hr of hot water.

Table 10
Detailed BTU Increments

Date	Time	Engine Jacket Water Temperature in DegF	Heat Exchanger Water	Engine Power Output	Digester Gas Flow in CFH	BTU's
16/05/2011	06:11:00.0	191.30	160.00	333.33	5493.11	1,564,770
16/05/2011	06:11:30.0	191.30	159.95	333.32	5490.03	1,567,700
16/05/2011	06:12:00.0	191.30	160.01	333.30	5495.98	1,564,380
16/05/2011	06:12:30.0	191.30	160.01	333.34	5490.96	1,564,380
16/05/2011	06:13:00.0	191.30	160.01	333.28	5482.18	1,564,380
16/05/2011	06:13:30.0	191.30	160.01	333.25	5475.76	1,564,380
16/05/2011	06:14:00.0	191.24	159.93	333.27	5480.24	1,565,120
16/05/2011	06:14:30.0	190.99	159.95	333.19	5487.51	1,551,855
16/05/2011	06:15:00.0	191.30	160.10	333.32	5483.06	1,559,960
16/05/2011	06:15:30.0	191.30	160.08	333.32	5478.43	1,561,140
16/05/2011	06:16:00.0	191.30	160.03	333.41	5482.94	1,563,465
16/05/2011	06:16:30.0	191.34	160.11	333.24	5485.61	1,561,460
16/05/2011	06:17:00.0	191.44	160.04	333.28	5489.87	1,569,965
16/05/2011	06:17:30.0	191.32	160.04	333.43	5492.31	1,563,840
16/05/2011	06:18:00.0	191.48	160.04	333.25	5487.44	1,572,005
16/05/2011	06:18:30.0	191.48	160.04	333.27	5489.78	1,572,005
16/05/2011	06:19:00.0	191.48	160.04	333.29	5498.80	1,572,005
16/05/2011	06:19:30.0	191.48	160.04	333.19	5498.27	1,572,005
16/05/2011	06:20:00.0	191.48	160.04	333.22	5495.35	1,572,005
16/05/2011	06:20:30.0	191.48	160.04	333.29	5498.26	1,572,005
16/05/2011	06:21:00.0	191.48	160.04	333.30	5494.27	1,572,005
16/05/2011	06:21:30.0	191.48	160.04	333.33	5506.08	1,572,005
16/05/2011	06:22:00.0	191.48	160.04	333.24	5504.04	1,572,005
16/05/2011	06:22:30.0	191.51	160.04	333.24	5501.07	1,573,510
16/05/2011	06:23:00.0	191.58	160.04	333.27	5497.56	1,577,100
16/05/2011	06:23:30.0	191.65	160.04	333.30	5495.19	1,580,645
16/05/2011	06:24:00.0	191.66	160.04	333.36	5493.26	1,581,005
16/05/2011	06:24:30.0	191.66	160.04	333.34	5493.43	1,581,005
16/05/2011	06:25:00.0	191.66	160.04	333.27	5494.79	1,581,005
16/05/2011	06:25:30.0	191.66	160.04	333.29	5498.24	1,581,005
16/05/2011	06:26:00.0	191.66	160.04	333.28	5488.84	1,581,005
16/05/2011	06:26:30.0	191.66	160.04	333.30	5493.12	1,581,005
16/05/2011	06:27:00.0	191.66	160.04	333.27	5495.73	1,581,005
16/05/2011	06:27:30.0	191.66	160.04	333.27	5493.76	1,581,005
16/05/2011	06:28:00.0	191.66	160.04	333.26	5491.62	1,581,005
16/05/2011	06:28:30.0	191.66	160.04	333.29	5488.52	1,581,005
16/05/2011	06:29:00.0	191.66	160.04	333.29	5488.73	1,581,005
16/05/2011	06:29:30.0	191.66	160.04	333.26	5485.80	1,581,005
16/05/2011	06:30:00.0	191.66	160.00	333.32	5489.95	1,582,810
16/05/2011	06:30:30.0	191.66	159.77	333.22	5485.45	1,594,485

2010 M&V Activities Summary

Trane has completed the first year performance period for the PACT project at Budd Inlet. The approved systems were installed and commissioned by Trane and the implementation of these systems has been approved by the Customer. The new Cogeneration system was completed in December of 2009.

- The cogeneration systems key indicators were monitored by the Building Automation System. Data readings consist of date, time, and engine jacket (supply temperatures) and (return temps) indicating that the system maintains 127,000 cfd of Digester Gas, which is supplied from the Anaerobic process. These readings were used to validate that the proper amount of gas was being produced and available to the cogeneration system.

- The hourly electrical output from the generator is sent to the Building Automation System. The gas produced generated the minimum amount of kW projected, which is 313.4 but often generates a higher amount of kW based on the amount of gas the system is receiving. Monitoring shows kW on average to be 322 kW whenever the system is receiving 127,000 CFD of gas.

- The total amount of electricity is a function of (1) kW produced and (2) hours operated. The amount of runtime hours are being tracked in real-time. Based on taking the ON-Time of the system minus operating hours the operating hours were 7392 during the guarantee year.

- The system produces heating energy deriving from the cogeneration process. The heating energy produced ranges from 1,500,000 btu/hr to 2,451,485 btu/hr of hot water. When this occurs, the Supply Temperature is normally near 190 and Returns near 160 degrees. The hot water temperatures are consistently captured in the building automation system. All data reviewed verified the system is capable of supplying up to 1,600,000 btu/hr, as long as the system is operating and receiving the projected amount of gas.

- The Cogenerator's runtime is tracked from the initial start to the current status and shows a total runtime hours since installation. **Runtime from the period from Sept 2009 – to June 1, 2011 was 11,187.9 hours. During this period of time, there were 232 starts**. Part of this runtime was tracked during the Installation Period since the Guarantee Year started January 2010. The system is operating approximately 84% of the time. Maintenance and other forced stops will reduce the hours ran, thereby reducing the amount of electricity and hot water produced.

- As an example, in December 2010 and January 2011 there were a few downtimes due to maintenance, which resulted in shorter runtimes.

This report contains the results of all M&V testing conducted on site during the first year performance period and verified as part of the Measurement and Verification plan.

According to all operating data, the system is generating both electricity and hot water at higher than projected figures. There were no known comfort issues identified in providing the aforementioned energy. The system is operating both effectively and energy efficient and is on the right track for continued success.

Scanned Copy of
Certificate of Final Completion

Certificate of Final and Acceptance

Certificate of Final Completion and Acceptance

Project Name: Budd Inlet WTP Cogeneration
Trane Project No.: Y301072
Date Certificate Submitted to Washington Department of General Administration: 18 December 2009

The Work performed pursuant to the ESCO Construction Subcontract Agreement 2009-009 G (1-1), dated as of 4 February, 2009 by and between Trane US, Inc and Washington Department of General Administration has been inspected by Trane. Based upon the foregoing and Trane's inspection of the Work, and subject to the provisions of the Contract, Trane has determined the Work to be finally complete.

The Date(s) of Final Completion for the Work noted below is/are hereby established as the earlier of (i) the date Customer executes this Certificate, as noted below, or (ii) fourteen (14) calendar days after the date noted above as the date this Certificate is submitted to Customer.

The Warranty Period commences as of the Date of Final Completion, except as noted below with respect to the following equipment or work:

Description of Equipment or Work	Warranty Commencement Date	Warranty End Date
1. Installation of new digester gas filtration system (Scrubber Skid and H2S filtration skid)	19 Nov 2009	18 Nov 2010
2. Installation of new 335kW (nominal) cogeneration engine	5 Nov 2009	4 Nov 2011
3. Installation of new hot water distribution piping form the new HRU to the high heat loop system	19 Nov 2009	18 Nov 2010
4. Installation of two (2) new 1.5 MMBtu/hr natural gas boilers and two (2) hot water pumps	19 Nov 2009	18 Nov 2010
5. Installation of new central controls system	4 Dec 2009	3 Dec 2010

Submitted by:

Scott Eisenhauer, PMP
Project Manager
Trane US, Inc.

Signature: _____
Initials: _____
Date of Project Manager's Signature: 18 December 2009

Accepted by:

Jim Hayes, PE
Energy Project Manager
Department of General Administration

By: _____
Initials: _____
Date of Dept of GA Signature: _____

.....End of Report.....

Thank You for being our Partner

Trane, 2021 152nd Avenue NE, Redmond, WA 98052 Phone: (425) 643-4310 Fax: (425)643-4314