ST. GEORGE CHADUX CORPORATION

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Energy Consulting

Management Services

DUNS 80-1622452

CAGE 1Q3X4

Primary NAICS: 541620 - Secondary NAICS: 541330

St. George Chadux Corporation is a subsidiary of the St. George Tanaq Corporation and a small disadvantaged business founded in 1992, specializing in energy and environmental consulting (NAICS 541620). Chadux's professional certified staff provide innovative and balanced energy and environmental solutions.

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PRIMARY NAICS 541620

SECONDARY NAICS 541330

Technology at work for you

St. George Chaduˆ Corporation is a small, Alaskan-native owned business that offers energy consulting and energy efficiency management services. As a small but competitive business, we offer creative solutions that are designed to save time and money and satisfy regulatory requirements. Chaduˆ is good at building expert teams to respond to our clients' needs. Chaduˆ is your small business partner for energy consulting services.

St. George Chaduˆ Corporation was formed in 1992 and Chaduˆ is a wholly owned subsidiary of St. George Tanaq Corporation, an Alaskan Native Village Corporation founded in 1971 pursuant to the Alaskan Native Claims Settlement Act.

Our corporate office is located in Anchorage Alaska, with a satellite office in San Diego, California.

Services

St. George Chaduˆ Corp provides energy consulting and energy efficiency management services, from initial project screening through design, implementation, and follow-up reporting, as required. Each service is available independently or as a comprehensive and staged process. Because we are small and understand the value of your dollar, we strive to negotiate reasonable scopes of work that add value.

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Chaduχ offers demand-side energy consulting services to federal and commercial clients. Chaduχ is a small but competitive business that offers creative integrated solutions to manage energy use and identify energy supply options.

- Facility energy audits
- Feasibility studies to address demand reduction for power and water use (preliminary assessments, detailed assessments, technology assessments, life-cycle cost analysis)
- Energy awareness training
- Systems analysis
- Energy management programs
- Facility optimization for new and existing buildings (commissioning, retro-commissioning, continuous commissioning, operations and maintenance)
- Leadership in Energy and Environmental Design (LEED) certification
- Data management

ENERGY CONSULTING SERVICES

Chadux provides Resource Efficiency Manager (REM) and environmental services to the federal government. Our time-tested management approach ensures responsiveness and the delivery of quality REM services as exemplified through our current JV contract for REM Services to U.S. Army Engineering and Support Center, Huntsville and through a team prime/sub contract for REM Services to the U.S. Army Installation Management Command (IMCOM).

Chadux is committed to providing our clients with specialized services to meet their exact needs from some of the most knowledgeable resources in the energy management industry. Our goal is to help our clients develop, implement, and maintain sound energy conservation programs that generate an ongoing return on investment. Our collaborative focus has been on REM services.

Chadux REM Expertise

- REM support services to multiple federal agencies
- Current holder of National REM Services contract for the Army, Huntsville and for Army, IMCOM
- Developed projects to save more than $60 million in documented savings
- Comprehensive audit services – completed audits for more than 60 million square feet this year
- Retro- and re-commissioning services

ENERGY EXPERIENCE

Federal Energy Management Focus

Chadux's specialized energy management services provide federal clients with sound energy solutions that enhance the nation's energy security and environmental stewardship. We have provided REM program support services and comprehensive professional energy management services to federal clients for over 15 years. The following projects highlight our experience together to provide REM services through joint ventures or team prime/sub contracts.

CURRENT CONTRACTS

W9124J-14-D-0009
U.S. Army Materiel Command, REM Services

W912DY-09-B-0047
U.S. Army, REM Services (Chadux Tt JV)

Resource Efficiency Management Services, U.S. Army Engineering and Support Center, Huntsville, 2011 – present

Contract Overview

Chadux, was contracted by the U.S. Army Engineering and Support Center Huntsville (USAESCH) to provide energy management, project engineering design, consulting services, and resource efficiency manager (REM) services to various Army, Army Reserve, and Army Guard installations.

Resource Efficiency Management (REM) Services

Under the Multiple Award Task Order Contract, Chadux was awarded 9 Delivery Orders since 2011 to provide REM services to Army Garrisons Fort (Ft.) Bragg, Ft. Knox, Ft. Carson, Ft. Benning, Ft. Hunter Liggett, Camp Parks Reserve Forces Training Area (RFTA), 63rd Regional Support Command (RSC) Army Reserves, and facilities statewide supporting the Oregon Army National Guard (ORARNG). REMs provided support to the Army to include:

- Identifying and developing energy and water efficiency projects
- Renewable energy assessments and renewable energy projects
- Assisting with design-and-bid RFP development
- Supporting commissioning of new systems and identifying and supporting re-commissioning efforts of existing systems
- Feasibility studies for renewable energy and new technologies
- Conducting detailed energy and utility audits and calculating life-cycle costs analyses on conservation measures identified
- Developing utility master plans and energy strategies
- Providing industrial controls system assessments and optimization on advanced metering and building automation systems
- Performing new technology reviews, specifically regarding renewable energy, microgrids, and energy storage

Resource Efficiency Management Services, U.S. Army Engineering and Support Center, Huntsville, 2011 – present

In fiscal year (FY) 2015 alone, the Chadux Army REM team developed 184 energy and water efficiency projects or initiatives with an estimated cost avoidance and annual cost savings exceeding $7 million and a life-cycle cost savings of more than $141 million, if the projects and initiatives currently developed and in development are executed. Our responsibilities under this contract include conducting extensive energy and water audits, performing renewable energy assessments and developing cost effective projects, overseeing commissioning and re-commissioning efforts, utility master planning, project implementation, and post construction award coordination to ensure projects are properly executed.
Project highlights are included below.

Audits The Energy Independence and Security Act of 2007 (EISA '07) requires that buildings consuming 75 percent of the energy on an installation be audited on a 4-year cycle. For all of these locations, Chadux performed energy and utility audits, facility assessments, and developed projects. With more than 20 million square feet (SF) of facilities, the REM at Ft. Benning maintains an aggressive audit program to meet this requirement. October 2015 through March 2016, the REM directly audited or managed an Army-organized audit team to perform energy and water audits on 2.4 million SF of facilities and is on track to perform all of the required audits of roughly 5 million SF by the end of the fiscal year.

Project Development Turning audit findings and other engineering analyses into viable energy projects requires skill, experience, and collaboration. The Chadux REMs are highly proficient in this area, often drawing on the reach back support of Chadux subject matter experts. Weekly conference calls within the team are conducted to share lessons learned and best practices. Communication lines are open and encouraged between Chadux REMs serving on different contracts for other Department of Defense and federal clients so information on the latest technologies being deployed in the field are available to all Chadux REMs. At Ft. Bragg, Chadux developed, submitted, and obtained funding for over $7 million of utilities modernization funds for energy projects in FY 2015. This is in addition to more than $1 million in Energy Conservation Investment Program (ECIP) funding awarded and additional projects developed and financed through an Energy Savings Performance Contract (ESPC) project. In addition to efficiency projects, the Chadux REMs are aggressively working to identify and develop projects that increase generation of renewable energy. Chadux provided REM support to the Oregon Army National Guard (ORARNG) for their work on the Army Net Zero Energy initiative. Chadux delivers services focused on formulating viable strategies for the ORARNG to successfully pilot the Army's Net Zero Energy initiative known as "Fort Oregon." Fort Oregon represents the only state-wide Net Zero initiative in the Army's program, and all 66 ORARNG installations and more than 3.2 million SF of facilities across the state are included. This requires substantial renewable resources, as well as a strong focus on energy efficiency since the total amount of energy used by all the facilities in Oregon must equal the amount produced from onsite renewable sources. Highlights of the ORARNG Chadux support accomplished is a state-of-the-art $6.6 million biomass heating ECIP project development and award of a $2.4 million ESPC project, and over $1 million in rebates and incentives received based on Chadux's efforts.

Resource Efficiency Management Services, U.S. Army Engineering and Support Center, Huntsville, 2011 – present

Energy Storage and Microgrids The Chadux REM team has extensive experience with energy storage and microgrid projects including involvement with DoD pilot programs and with both standard and cutting edge technologies. Ft. Carson, where a Chadux REM supports the energy program, was selected in 2013 to be one of three sites to implement the Smart Power Infrastructure Demonstration for Energy Reliability and Security (SPIDERS) Joint Capability Technology Demonstration (JCTD) project. This groundbreaking program sponsored by DoD, in collaboration with the U.S. Department of Energy's Federal Energy Management Program (FEMP) and U.S. Department of Homeland Security (DHS), was created to bolster the cyber security and energy efficiency of U.S. military installations. The project at Ft. Carson linked multiple buildings into a microgrid and included integration of a large solar photovoltaic (PV) array and microgrid-connected electric vehicles. In addition to the Ft. Carson SPIDERS project, Ft. Hunter Liggett and Camp Parks RFTA are currently implementing large microgrid projects, each incorporating more than 4 megawatts (MW) of solar PV and each including 2 MW of battery storage into a microgrid. Ft. Hunter Liggett is also installing cutting edge technology waste-to-energy gasification plant and pursuing an all direct current (DC) building. At Camp Parks RFTA, the REM is exploring adding small wind power to the microgrid in order to charge the battery storage at night.

Energy and Water Efficiency The Chadux REM that supports the 63rd Regional Support Command has been working closely with the National Renewable Energy Lab (NREL) on detailed water efficiency audits of several California based installations. California is undergoing an extensive drought so water efficiency is of utmost importance. Through collaboration with NREL, the Chadux REM has developed detailed water audit checklists and is currently refining new construction and renovation standards.

Commissioning/Re-commissioning Optimization of building systems through re-commissioning can be one of the most effective energy conservation measures available. The Chadux REMs excel at examining building systems for misalignment and implementing low- and no-cost adjustments to building systems in order to better optimize them. In some cases, where the scope of the building tuning needed is extensive, the Chadux REMs developed multi-building recommissioning projects and oversaw their execution. At Ft. Carson, the Chadux REM actively pursues re-commissioning and building system optimization. Earlier this year, the REM used utility meter data to identify a building with a consistent energy use intensity (EUI) of greater than 200 thousand British thermal units (kBtu) per square foot. From review of Energy Management Control System (EMCS) and Meter Data Management System (MDMS) data as well as site assessment and staff interviews, the Chadux REM identified the problem and worked with the controls contractor to develop an optimized control strategy. Calculated energy savings from this solution are 712,744 kilowatt hours (kWh) and $43,000 per year. The Chadux REM is also developing a project to provide third-party contracted re-commissioning and has examined meter data and performed walk-through audits on multiple buildings in pursuit of that effort. Based on the REM evaluation, 12 buildings have been identified as primary targets that can benefit most from re-commissioning and the REM has secured funding for the project.

Energy Engineering Analysis Program - Energy Assessments, Engineering Studies, Analyses. U. S. Army Reserves – 88th Regional Support Command Sites , 2013 – 2015.

Chadux provided an audit team to support the EEAP. The scope of the project was to evaluate U.S. Army Reserve centers in the 88th Regional Support Command (RSC). The intent of the project was to identify energy conservation measures (ECMs) and water conservation measures (WCMs) that may be implemented to assist the USAESCH and the 88th RSC in reducing its utility intensity and costs and meet the requirements of federal mandates, including: The Energy Policy Act of 2005 (EPAct); Executive Order 13514: Federal Leadership in Environmental, Energy, and Economic Performance; and the EISA '07.

Audits Chadux performed **level I and II energy assessments** at 25 buildings, consisting of over 550,000 SF, at 11 Army Reserve Centers. Each assessment included comprehensive energy audits, retro-commissioning assessments, and renewable energy project feasibility reviews.

Project Development Chadux focused on installation needs, priorities, and conditions to determine which conservation measures would present the best opportunities. The assessment included analysis of energy and water uses at the site to quantify and allocate consumption. The team analyzed existing documents and benchmarked energy and water consumption figures, then identified potential conservation measures based on their site investigations. The energy assessments identified the bottom-line dollar potential of energy conservation measures and process improvements, and compiled information to define potential projects and develop project scopes and costing information for RFP development and project execution.

Life Cycle Cost Analysis Energy savings were calculated through several methods including eQuest energy modelling, Facility Energy Decision System (FEDS) modeling, and excel-based engineering calculations. Cost estimates were developed using RS Means or other industry standard methodologies and life cycle cost analysis was performed in order to prioritize the identified measures. The resulting ECMs evaluated and recommended from these assessments included HVAC and controls upgrades, building envelope, lighting, motors, water and sewage, retro-commissioning projects and renewable energy options such as solar thermal, photovoltaics and wind energy. The assessments have resulted in the identification of 185 financially viable energy conservation opportunities and water conservation opportunities that are projected to save 27,983 million British thermal units (MBtu) and 99,362 gallons of water, resulting in utility cost savings of $202,760 annually, and a projected savings by end of life of $2,360,910.

REM Services to U.S. Army Installation Management Command (IMCOM, 2014 - present

Under this contract, the Chadux team has provided REM services at Detroit Arsenal. The Chadux REM has played a critical role for the Arsenal's Energy Program over this past year. Detroit Arsenal did not have REM support before December 2015 when our REM started. Almost immediately, our REM was able to use his skills in identifying energy conservation measures to begin developing projects. He also used his knowledge of the impact a properly working energy management control system to push for control of the existing system to be given back to Public Works instead of a third-party maintenance contractor. In February of 2016, the Energy Manager for Detroit Arsenal took an assignment at another Army installation, so our REM became the sole provider of energy management support to the Arsenal. Our REM has been the supporting an acting energy manager who has that role as a collateral duty for 6 months now. In this role, our REM has compiled Army Energy and Water Reporting System (AWERS) submissions, answered energy data calls from headquarters, provided energy-related design input on new renovation projects, and worked on an existing ESPC, in addition to the typical REM duties of identifying energy projects and low cost/cost measures, and working with various groups within the Arsenal on reducing energy. Without the REM at Detroit Arsenal, very little progress would have been made in energy and water reduction or in moving forward energy projects .

HEALTH AND SAFETY

Chaduˆx places the health and safety of our employees, our clients, and the environment as a priority. All work is completed in accordance with current Occupational Safety and Health Administration (OSHA) guidelines as well as the U.S. Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1).

We prepare site specific safety and health plans, accident prevention plans, and AHAs for all intrusive site work as well as site inspections. Subcontractors are required to submit AHAs for review and inclusion into our safety plans and are required to abide by the site-specific safety plans.

In addition to the 40-hour OSHA Hazardous Work Operations Training and annual 8-hour refresher training, all Chaduˆx employees performing site work have completed Red Cross First-Aid, Cardio-Pulmonary Resuscitation training and 10-hour construction safety training. All Site Safety and Health Officers have also completed the 30-hour construction safety training course per EM385-1-1.

QUALITY ASSURANCE AND QUALITY CONTROL

Chaduˆx believes it is vital to meet the quality standards of the industry and the expectations of each customer. We work with our clients from the inception of each project to ensure we clearly understand the expectations and establish agreed-upon quality requirements. We also believe that it is essential to re-visit these needs, expectations, and quality requirements as work progresses to adjust our quality processes as needed.

Upon award of a major contract, Chaduˆx will prepare a contract-specific quality plan to address quality requirements unique to that contract. Accordingly, Chaduˆx will implement a proactive quality program that ensures we meet industry standards and customer requirements. Chaduˆx's basic quality program is our Quality Management Plan and is applicable to all contracts. Chaduˆx's quality program consists of quality assurance (QA), quality control (QC), and quality improvement (QI) elements that apply to all work conducted.

Chaduˆx uses the QC check processes to identify improvements that can be implemented as a proactive means of building quality into the work products. The goal of this program is to facilitate customer feedback on a regular basis as a means of evaluating quality system effectiveness and our overall performance.

CLIENTS

St. George Chaduˆ Corp counts on our continued association with the most active, profitable and otherwise most successful names in the engineering and energy industries. These companies know the value that Chaduˆ brings to them and most desire that we keep our client list confidential. We have earned our prestigious client list one project at a time, and we respect their desires. We would like to do the same for you.

CERTIFICATION

Chaduˆ is an Alaskan Native Corporation (ANC) and a Small Disadvantaged Business Enterprise (SDB). Chaduˆ received its certification as an 8(a) small business in 1999 and graduated from the program in June 2009.

EXPERIENCE

Our professional certified energy staff has expertise in the latest energy technologies, building systems, power systems, and innovative strategies to develop total energy solutions. We strive to collect the right amount and type of information that will result in a balanced solution that we advocate on your behalf with regulators to negotiate the best approach.

As a small business, Chaduˆ is good at building expert teams to respond to our client's needs. We especially seek opportunities to utilize our sister ANC's, and other small niche firms to provide a breadth of cost-effective expertise and at the same time foster a diverse work environment.

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ENERGY & ENVIRONMENTAL CONSULTING * MANAGEMENT SERVICES

The primary point of contact is Mr. Phillip S. Rosenberg, PG, CEG, CHg, General Manager. Mr. Rosenberg is located in our San Diego, California office and can be reached at 760-822-7231 or prosenberg@stgcx.com.

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