ENERGY PERFORMANCE CONTRACT

This Energy Performance Contract ("Contract") is made and entered into as of this 20th day of July ~~June~~, 2010, by and between Gunnison County ("Agency"), and Ennovate Corporation ("Contractor").

WITNESSETH:

WHEREAS, Agency is a political subdivision of the State of Colorado, and is authorized and empowered under the laws of the State of Colorado, particularly Colorado Revised Statute 29-12.5 for local governments, to enter into this Contract for the purpose of the sale and installation of certain energy and water saving equipment, and provision of other services designed to save energy and reduce related costs as per the guarantee described herein for certain property and buildings owned by the Agency; and

WHEREAS, Agency has been authorized to enter into a lease-purchase agreement for all professional services, construction/improvements, project contingencies, reimbursable expenses and miscellaneous expenses for the purchase and installation of energy and water conservation measures, collectively referred to as the Work (as herein after defined); and

WHEREAS, required approval, clearance, and coordination has been accomplished from and with appropriate agencies; and

WHEREAS, Contractor has developed or become knowledgeable about certain procedures for controlling energy and water consumption through services provided and equipment installed and maintained at facilities similar in scope and scale of Agency; and

WHEREAS, Contractor was selected after a determination that it was the most advantageous to Agency for the Project pursuant to Agency's selection process and contract for the Technical Energy Audit Contract (as hereinafter defined); and

WHEREAS, Contractor has made an assessment of the utility consumption characteristics of facilities, which was delivered to Agency as a Technical Energy Audit which Agency has approved; and is made part of this Contract in Schedule T; and

WHEREAS, Agency owns and operates the Premises (as hereinafter defined); and

WHEREAS, Agency desires to retain Contractor to sell to it, install and service certain energy efficiency equipment of the type or class described herein and to provide other services for the purpose of achieving utility cost reductions within Premises; and

WHEREAS, Contractor has selected the Equipment (as hereinafter defined) on the basis of competitive quality, compliance with Contractor's specifications, and price;

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, and intending to be legally bound hereby, Agency and Contractor hereto covenant and agree as follows:.

ARTICLE 1: DEFINITIONS, SCHEDULES, EXHIBITS AND APPENDICES

Section 1.1. Definitions.

Certificate of Acceptance: The certificate substantially in the form provided in Exhibit III(i) – Notice of Acceptance.

Contract: This Energy Performance Contract and all Schedules, Exhibits, and Appendices attached hereto.

Contract Sum: The sum of all materials, labor, auditing, design, engineering, project construction management fees, overhead, profit, contingency, outside services, and bidding and construction contingencies related to the project.

Energy Conservation Measure (ECM): The equipment, goods, work, and services as provided in Schedule A.

Energy and Water Cost Savings: The savings as provided in Schedule C and in accordance with the Savings Calculation Formula set forth in Schedule F.

Equipment: The goods enumerated on Schedule A that is now or hereafter from time to time become attached hereto and incorporated herein by reference, together and with any and all additions, modifications, attachments, replacements and parts thereof.

Event of Default: Those events described in Section 17.1 and Section 17.2 hereof.

Guarantee: The Energy and Cost savings achieved as a result of the installation and operation of the Equipment and provision of services provided for in this Contract as specified in Schedule D and in accordance with the Savings Calculation Formula as set forth in Schedule F.

Interim Period: The period from contract execution until the Performance Commencement Date.

Maximum Contract Price: The maximum amount of total allowable costs under this Contract, as set forth in Section 2.1, which shall be the total amount paid by the Agency, or Third-Party Lessor on behalf of the Agency, to Contractor.

Measurement and Verification (M&V): The standards and definitions in the most current Measurement and Verification Guidelines for Energy Saving Performance Contract in State of Colorado Facilities ("COMV"), as may be amended.

M&V Services: Services relating to the measurement and verification by Contractor of the efficiency and effectiveness of the Project, pursuant to this Contract and the most current COMV document.

M&V Fee: The annual fee according to Schedule D for M&V Services.

Performance Commencement Date: The date described in Section 4.2.

Performance Term: The timeframe as defined in Section 4.3.

Premises: The certain properties owned or controlled by the Agency that is included as part of the Scope of Work as described in the TEA.

Professional Services: Architecture, engineering, project/construction management related to the Contract.

Project: Contractor's design, acquisition, construction, and installation of the ECMs, and all Equipment and Services related thereto, as set forth in Schedule A and the Contract Documents, but does not include M&V Services.

Project Acceptance: The stage in the progress of the Project where the Project is sufficiently complete in accordance with this Contract that the Agency can utilize and take beneficial use of the Project for its intended use or purpose. Final Acceptance of the Project does not occur until after a Notice of Final Acceptance, Exhibit III (iii), is fully executed, in accordance with Section 4.2.

Substantial Completion: The stage in the progress of the Project where an ECM is sufficiently complete in accordance with this Contract. Substantial Completion does not occur until after a Notice of Substantial Completion, Exhibit III (ii), is fully executed, in accordance with Section 4.2.

Technical Energy Audit (TEA): A detailed audit of the Premises, conducted by Contractor or another party pursuant to the TEA Contract, which serves as the basis for the ECMs. A copy of the TEA is attached as Schedule T Technical Energy Audit.

Work: Collectively, the Equipment installed and/or upgraded, Professional Services and project construction related to the project.

Section 1.2. Schedules.

Schedule A	Equipment to be Installed by Contractor
Schedule B	Description of Premises; Pre-Existing Equipment Inventory
Schedule C	Energy and Cost Savings Guarantee
Schedule D	Contractor M&V, Maintenance and Service Agreement
Schedule E	Baseline Energy Consumption
Schedule F	Savings Measurement & Calculation Formulae; Methodology to Adjust Baseline; Measurement and Verification Plan
Schedule G	Construction and Installation Schedule
Schedule H	Systems Start-Up and Commissioning; Operating Parameters of Installed Equipment
Schedule I	Standards of Comfort
Schedule J	Contractor's Maintenance Responsibilities
Schedule K	Agency's Maintenance Responsibilities
Schedule L	Facility Maintenance Checklist
Schedule M	Contractor's Training Responsibilities
Schedule N	General Conditions
Schedule O	Payment Schedule and Schedule of Values
Schedule P	Pre-Existing Service Agreements
Schedule Q	Current and Known Capital Projects at Facility
Schedule R	Projected Financial Performance
Schedule S	Certificate of Insurance
Schedule T	Technical Energy Audit

Schedule 1.3 Exhibits

Exhibit I	Form of Performance Bond
Exhibit II	Form of Labor and Material Payment Bond
Exhibit III (i)	Form of Notice of Acceptance—Technical Energy Audit and Measurement and Verification Plan
Exhibit III (ii)	Form of Notice of Substantial Completion
Exhibit III (iii)	Form of Notice of Final Acceptance
Exhibit IV	Form of Equipment Warranties
Exhibit V	Form of Minority and Women-Owned Business Enterprises
Exhibit VI	Form of Certification that Lifetime of Equipment Exceeds Financing Term
Exhibit VII	Record of Reviews

Section 1.4. Appendices

Appendix A	(as necessary)
Appendix B	(as necessary)
Appendix C	(as necessary)

ARTICLE 2: PAYMENTS

Section 2.1: Purchase and Sale

If Agency elects to finance, Agency agrees to lease Equipment through a third party lessor, as provided for in a separate lease document. Contractor agrees to provide the Equipment, together with installation, maintenance and other services as provided herein, in the terms and conditions set forth in this Contract.

The agreed to Contract Sum for the Work is a Maximum Contract Price of One Million One Hundred Sixty Eight Thousand Nine Hundred Nineteen dollars ($1,168,919) as set forth in Schedule R. Payment terms are described in Schedule O.

Contractor shall provide the Work and all related services identified on Schedule A and the services detailed on Schedule D, Schedule H, Schedule J, and Schedule M. Contractor shall supervise and direct the Work and shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under this Contract. Contractor shall be responsible to pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation and other facilities and services necessary for the proper execution and completion of the Work.

Section 2.2. Contractor Compensation – Interim Period.

Agency shall pay Contractor the Contract Sum in accordance with Schedule O. Payments shall be made on a progress basis in accordance with **Schedule O,** for Work completed and authorized by Agency during the Interim Period. Retainage shall be withheld at a rate of ten percent (10%) from each payment until the Project is fifty percent (50%) complete, after which no further retainage shall be withheld. Retainage shall be released upon when the Notice of Final Acceptance for an individual ECM as described in Schedule A has been executed by the Agency. Notice of Final Acceptance shall be executed by Agency upon written request by the Contractor unless Agency disputes in writing within 30 days of request. Professional Services shall not be subject to retainage. Upon Agency approval, Contractor may furnish a retention bond issued to the Agency at no cost to the Agency in lieu of retainage held.

Section 2.3. Energy and Cost Savings Guarantee.

Subsequent to the Performance Commencement Date and throughout the term of this Contract, Contractor hereby guarantees the level of Energy and Cost Savings as detailed in Schedule C. Contractor shall provide the M&V Services as defined in Schedule D, for every year of the contract term as legislated by C.R.S.29-12.5-101(3)(c) for Colorado local governments, or until such time that Agency issues a notice to terminate the M&V Services. Agency may terminate the Guarantee and related M&V Services, and M&V Fee, as set forth in Section 2.9 and defined in Schedule D, after the first three years of the performance period as legislated by C.R.S.29-12.5-101(3)(c) for Colorado local governments and this Contract shall terminate and Contractor shall have no further obligations, including but not limited to the Guarantee and M&V Services.

This Guarantee is achieved as a result of the installation and operation of the Equipment and provision of services provided for in this Contract as specified in Schedule D and in accordance with the Savings Calculation Formula as set forth in Schedule F. The Guarantee per Schedule C shall not be reduced even in the event of a Material Change per **Article** 14, except as the parties may mutually agree to such a reduction and act in good faith in determining such an agreement. In the event this Contract is terminated due to an uncured Event of Default, as defined in Section 17.1, by Agency, the Guarantee and related M&V Services shall be cancelled and Contractor shall have no further obligations hereunder, except to guarantee Agency the prorated portion of the annual Guarantee for the year in which Contract is terminated. The prorated portion shall include all Guaranteed Savings incurred prior to the termination date except that such portion should only go up until the Event of Default if the Event is related to the non-payment or other violations impacting the Energy and Cost Savings including but not limited to providing utility bills and access to the Equipment.

Contractor has structured the Guarantee to be sufficient to exceed any and all annual payments required by the Agency in connection with the acquisition of Equipment to be installed by Contractor under this Contract and the Agency's lease financing obligations. Actual energy and operations savings achieved by Contractor through the operation of Equipment and performance of services by Contractor, including the annual Guarantee, shall be sufficient to cover any and all annual fees to be paid by Agency to Contractor for the provision of services as set forth and in accordance with the provisions of Schedule D and all payments to the third party lessor.

Section 2.4. Allowable Payment Sources.

Agency has pre-determined allowable payment sources to be applied to annual payments, which may include: Energy and water cost savings; material/commodity savings (including avoided cost from replacement lamps, ballasts, and scheduled replacement of parts); and other cost savings including maintenance contracts.

Section 2.5. Capital Contribution from Agency.

In addition to any funds provided by an equipment lease, Agency elects to make an initial capital contribution of Zero dollars ($0.00) to pay for part of the initial cost as described in Schedule O.

Section 2.6. Independent Monitoring

Agency may hire, with consultation of Contractor and paid for by Agency, an independent third party monitor to review the Contractor's measurement and verification reports and to advise Agency of compliance in measurement and verification of savings. The independent monitor's responsibilities could also include verifying the prorated share of the Guarantee in the Event of Contract Termination. Compliance checks shall relate to the established baseline of Schedule E, baseline M&V plan and savings calculations of Schedule F.

Section 2.7. Annual Review and Reimbursement/Reconciliation.

Energy-related cost savings shall be measured and/or calculated as specified in Schedule D, Schedule E, and Schedule F and a report provided within ninety (90) days of receipt of all Data (as specified in Schedule D hereof) for the previous year for each anniversary of the Performance Commencement Date. Contractor has developed the measurement and verification procedures specified in Schedule F which is based on the *Measurement and Verification (M&V) Guidelines for Energy Saving Performance Contracts in State of Colorado Facilities.*

In the event the Energy and Cost Savings achieved during such Contract Year is less than the Guaranteed Energy and Cost Savings (as defined in Schedule C hereof), set forth for such year during the years the guarantee is in effect, Contractor shall pay the Agency an amount equal to the deficiency.

If during the Contract Year the Energy and Cost Savings achieved are greater than the Guaranteed Energy and Cost Savings, such excess Energy and Cost Savings shall be retained by the Agency.

Section 2.8. Measurement Information Procedure.

Energy and Cost Savings shall be calculated in the following manner:

(i) Each month, by the 10th day after receipt, Agency shall provide Contractor with copies of all relevant energy bills received for the preceding month;
(ii) Reporting to Agency is outlined in Schedule D.

Section 2.9. M&V Fee.

Throughout the Term of this Contract, or until the Contractor M&V Agreement is cancelled by Agency, Agency shall pay Contractor an annual M&V fee according to Schedule D for measuring the Energy and Cost Savings. Annual guaranteed energy and cost savings achieved shall be sufficient to cover any and all fees to be paid to Contractor pursuant to the provisions of Schedule D. Notwithstanding the provisions in Section(s) 4.1, 4.2 and 4.3 hereof, Agency shall not be required to begin any M&V Fee payments to Contractor under this Contract unless and until all equipment installation is completed by Contractor in accordance with the provisions of Article 6 and Article 9, Schedule H and Schedule M, and accepted by Agency as evidenced by the signed Notice of Final Acceptance as set forth in Exhibit III (iii), and unless and until said equipment is fully and properly functioning in accordance with Schedule A and related details and specifications.

Section 2.10. Late Payment.

Payment during construction shall be in accordance with Schedule O. Payment due during the Performance Period shall be due and payable within forty-five (45) days of the invoice date. Interest shall accrue on Guaranteed Savings not in dispute and rightfully owned for past due balance, owed to Agency hereunder at the rate of one percent (1%) per month (or the highest rate not prohibited by law, whichever is lower).

ARTICLE 3: UTILITY AWARD PAYMENTS

Section 3.1. Utility Award Payments

Contractor shall assist Agency in securing available Utility Award Payments that might be available as a result of the completion of the Work provided under this Contract.

ARTICLE 4: TIME FOR COMPLETION; COMMENCEMENT DATE; TERM OF CONTRACT

Section 4.1. Construction Commencement Date and Time for Completion of Work.

Work must commence within thirty (30) days of execution of this Contract and shall be completed as set forth in Schedule G. The Time for Completion of Work is of the essence of this Contract. By executing this Contract, the parties hereto confirm the Time of Completion of Work is a reasonable period for performing the Work. Except for obligation to make payments of money, Contractor shall not be responsible for any failure to fulfill, or any delay in fulfilling, its obligations hereunder, if such failure or delay is beyond the reasonable ability of such party to control, avoid or mitigate and is due to storm, flood, or other Act of God, or to fire, war, rebellion, scarcity of water, insurrection, riots, strikes (other than strikes directed at subcontractor), or is the result of some order, rule or regulation of any federal, state, municipal, or other governmental agency that could not have been reasonably anticipated or that was not scheduled to take effect. Time for Completion of the Work and the costs related thereto shall be extended and modified by Change Order, for such reasonable time and amount as the parties hereto may determine. Change Orders in excess of contingency funds and/or completion date shall not be allowed unless mutually re-negotiated by both parties.

Section 4.2. Performance Commencement Date.

The Performance Commencement Date shall be the first day of the month after the month in which all schedules are in final form and accepted by Agency and when Contractor shall have delivered a Notice to Agency that it has installed and commenced operating all of the Equipment specified in Schedule A and in accordance with the provisions of Article 6 and Schedule H, Agency has inspected and accepted said installation and operation as evidenced by the execution of the Notice of Final Acceptance as set forth in Exhibit III (iii) . Notwithstanding anything to the contrary in Article 2 and Article 4 the Performance Commencement Date shall not occur and the Agency shall not be required to accept the work under this Contract unless and until: all

Equipment installation for the subject Premises is completed by Contractor in accordance with the terms and conditions of this Contract. Agency shall have thirty (30) days after notification by the Contractor to inspect and accept the Equipment, file, in writing, any disputed issues, and execute Notice of Final Acceptance. Agency reserves the right to reject the Equipment if installation fails to meet reasonable standards of workmanship, does not comply with applicable building codes, or is otherwise not in compliance with this Contract.

Section 4.3. Performance Term of Contract.

The Performance Term of this Contract shall begin with the Performance Commencement Date and continue for the length of the lease term, or for the term in Schedule D, up to a maximum of 25 years, but may not exceed the cost-weighted average lifetime of the equipment. The Agency has the option to terminate the Performance Term of this Project after a minimum of three years. This Contract shall be effective and binding upon the parties immediately upon its execution. All energy savings achieved during the Interim Period shall not be applicable to the Guaranteed Savings after the Performance Commencement Date.

ARTICLE 5: ENERGY USAGE RECORDS AND DATA

Section 5.1. Energy Usage Records and Data

Agency has furnished and shall continue to furnish (or authorize its energy suppliers to furnish) during the Term of this Contract to Contractor or its designee, upon its request, all of its records and complete data concerning energy and water usage and related maintenance for the Premises.

ARTICLE 6: CONSTRUCTION AND INSTALLATION BY CONTRACTOR

Section 6.1. Permits and Approvals.

Agency shall use its best efforts to assist Contractor in obtaining all necessary permits and approvals for installation of the Equipment. In no event shall Agency, however, be responsible for direct payment of any permit or license fee or the delay of any such permit or license fee.

As directed by Agency, design documentation shall be submitted to Agency for review. Agency agrees that the Agency review process shall not be longer than 14 calendar days. As deemed necessary by Agency, design documentation shall be forwarded by Agency to the appropriate code reviewer for review. The costs of code review shall be borne by Contractor.

Section 6.2. Contractor's Duty of Proper Installation.

All services called for by this Contract which constitute the "practice of architecture" or the "practice of engineering", as those terms are defined in Title 12, Colorado Revised Statutes, as amended (C.R.S.), shall be performed by properly qualified and licensed professionals employed by Contractor and shall be performed in accordance with applicable law. Contractor shall perform all tasks/phases under this Contract, including construction, and shall install the Equipment in such a manner so as not to harm the structural integrity of the buildings or their operating systems and so as to conform to the standards set forth in Schedule H and Schedule I.

Section 6.3. Use of Stated Markups.

In establishing the Contract Sum the Contractor has used the markups and fee percentages negotiated in the Contract for Technical Energy Audit. The Contract Sum shall be adjusted based on the actual costs of labor and materials to the Contractor multiplied by the markups agreed to by the Contractor, but in no event shall the Contract Sum be increased. In the event it is possible to reduce the Contract Sum because the actual labor and material costs are less than budgeted, the Agency can, at its sole option, increase the Work to include additional equipment such that the original Contract Sum is reached. If the Agency declines to increase the Work, at its sole option, the Contract Sum shall be reduced to an amount consistent with the pricing using the stated markups and if applicable the balance shall be applied to the lease financing amount.

Section 6.4. Open Book Pricing.

Open book pricing shall be required, such that the Contractor shall fully disclose all costs. Contractor shall maintain cost accounting records on authorized work performed under actual costs for labor and material, or other basis requiring accounting records. Contractor shall afford Agency access to these records and preserve them for a period of three (3) years after final payment. Costs shall be evaluated through price analysis to compare costs with reasonable criteria such as established catalog and market prices or historical prices. The pricing methodology and individual cost markups disclosed during preliminary contract negotiations shall be expected to be applied, providing the scope and size of the project remain the same as assumed when markups were disclosed.

Section 6.5. Administration.

The Contractor's contact person shall forward all communications in writing and all documents to the Agency's contact person and the GEO Program Manager's contact person simultaneously as listed below:

For the Contractor:
Ty Miller
Construction Department Manager
Ennovate Corporation
10650 East Bethany Drive
Aurora, CO 80014
Tel 303-309-6223
Fax 303-309-6228

For the Agency:
Matthew Birnie
County Manager
Gunnison County
200 E Virginia Ave
Gunnison, CO 81230
Tel 970-641-0248
Fax 970-641-3061

For the GEO Program Manager:
Dan Richardson
Senior Associate
Colorado Governor's Energy Office
Western Region Office
118 West 6th Street, Suite 200
Glenwood Springs, CO 81601
Tel 970-379-3414
Fax 970-945-5948

ARTICLE 7: ENVIRONMENTAL REQUIREMENTS

Section 7.1. Excluded Material and Activities.

Agency recognizes that in connection with the installation and/or service or maintenance of Equipment at Agency's Premises, Contractor may encounter, but is not responsible for, any work relating to (i) asbestos, materials containing asbestos, or the existence, use, detection, removal, containment or treatment thereof, or (ii) pollutants, hazardous wastes, hazardous materials, contaminants other than those described in this Section below (collectively "Hazardous Materials"), or the storage, handling, use, transportation, treatment, or the disposal, discharge, leakage, detection, removal, or containment thereof. The materials and activities listed in the foregoing sentence are referred to as "Excluded Materials and Activities". Agency agrees that if performance of work involves any Excluded Materials and Activities, Agency shall perform or arrange for the performance of such work and shall bear the sole risk and responsibility therefore. In the event Contractor discovers Hazardous or Excluded Materials, Contractor shall immediately cease work, remove all Contractor personnel or subcontractors from the site, and notify the Agency. The Agency shall be responsible to handle such Materials at its expense. Contractor shall undertake no further work on the Premises except as authorized by the Agency in writing. Notwithstanding anything in this Contract to the contrary, any such event of discovery or remediation by the Agency shall not constitute a default by the Agency. In the event of such stoppage of work by Contractor, the Time for Completion of Work shall be automatically extended by the amount of time of the work stoppage and any additional costs incurred by Contractor as a result shall be added by Change Order.

Contractor shall be responsible for any hazardous or other materials, including, without limitation, those listed in this Section 7.1 that it may bring to the Premises.

Section 7.2. Polychlorinated Biphenyl (PCB) Ballasts; Mercury Lamps.

Contractor shall enter into an agreement with an approved PCB ballast disposal Contractor who shall provide an informational packet, packing receptacles and instructions, labels and shipping materials, transportation, and recycling or incineration services for PCB ballasts. All capacitors and asphalt potting compound materials removed from Agency's PCB ballasts shall be incinerated in a federally approved facility. After proper disposal, a Certificate of Destruction shall be provided by the approved facility to Agency. Contractor's responsibility shall be for the proper and legal management of any of Agency's PCB ballasts removed as a result of the installation of the Equipment and shall be limited only until said PCB ballasts are loaded onto an approved PCB ballast disposal Contractor's vehicle for transportation.

Contractor shall enter into an agreement with an approved lamp disposal contractor who shall provide approved containers, materials required to label, transportation, recycling or incineration in accordance with EPA requirements, and a copy of the manifest.

Agency agrees to sign manifests of ownership for all PCB ballasts and mercury lamps removed from the Premises.

ARTICLE 8: ACCEPTANCE TESTING

Section 8.1. Modification of Schedules.

To ensure this Contract properly accounts for as-installed conditions, which conditions may vary from the pre-installation analyses, the Contractor shall re-validate or modify Schedule A and Schedule H prior to System Start-Up.

Section 8.2. Systems Startup and Equipment Commissioning.

The Contractor shall conduct a thorough and systematic performance test of each element and total system of the installed Equipment in accordance with the procedures specified in Schedule H and prior to acceptance of the ECM by Agency as specified in Exhibit III (ii). Testing shall be designed to determine if the Equipment is functioning in accordance with both its published specifications and the Schedules to this Contract, and to determine if modified building systems, subsystems or components are functioning properly within the new integrated environment. The Contractor shall provide notice to the Agency of the scheduled test(s) and the Agency and/or its designees shall have the right to be present at any or all such tests conducted by Contractor and/or manufacturers of the Equipment. The Contractor shall be responsible for correcting and/or adjusting all deficiencies in the Equipment operation that may be observed during system commissioning procedures of Schedule H. Prior to Agency acceptance, Contractor shall also provide Agency with reasonably satisfactory documentary evidence that the Equipment installed is the Equipment specified in Schedule A.

ARTICLE 9: OWNERSHIP

Section 9.1. Ownership of Certain Proprietary Property Rights.

Agency shall not, by virtue of this Contract, acquire any ownership interest in any formulas, patterns, devices, secret inventions or processes, copyrights, patents, other intellectual or proprietary rights, or similar items of property which are or may be used in connection with the Equipment. Agency shall, however, have a nonexclusive license to utilize all such intellectual or proprietary rights obtained by Contractor related to Equipment in connection with its use of the Equipment under this Contract. The Contractor hereby grants to the Agency a perpetual, irrevocable, royalty-free license to any and all software or other intellectual property or proprietary rights it obtains from Equipment manufacturers necessary for the Agency to continue to operate, maintain, and repair the Equipment in a manner that shall yield maximal energy consumption reductions. This license shall continue subsequent to any termination or expiration of this Contract other than termination due to breach by Agency.

Section 9.2. Ownership of Documents.

(a) Instruments of Service Drawings, specifications and other documents, including those in electronic form, prepared by the Contractor and the Contractor's consultants are Instruments of Service for use solely with respect to this Project. The Contractor and the Contractor's consultants shall be deemed the authors and owners of their respective instruments of service and shall retain all common law, statutory and other reserved rights, including copyrights.

Upon execution of this Contract, the Contractor hereby grants to the Agency a perpetual nonexclusive license to reproduce and use, and permit others to reproduce and use for the Agency, the Contractor's Instruments of Service solely for purposes of constructing, using and maintaining the Project or for future alterations, or additions to the Project. The Contractor shall obtain similar nonexclusive licenses from the Contractor's consultants consistent with this Contract. If, and upon the date the Contractor is adjudged in default of this Contract, the foregoing license shall be deemed terminated and replaced by a second, nonexclusive license permitting the Agency to authorize other similarly credentialed design professionals to reproduce and, where permitted by law, to make changes, corrections or additions to the Instruments of Service solely for purposes of completing, using and maintaining the Project, or for future alterations, or additions to the Project.

Any unilateral use by the Agency of the Instruments of Service for completing, using, maintaining, adding to or altering the Project or facilities shall be at the Agency's sole risk and without liability to the Contractor and the Contractor's consultants; provided, however, that if the Agency's unilateral use occurs for completing, using or maintaining the Project as a result of the Contractor's breach of this Contract, nothing in this Article shall be deemed to relieve the Contractor of liability for its own acts or omissions or breach of this Contract.

(b) As-Built Drawings/Record Drawings The Agency and its consultants shall, upon completion of the Construction Phase receive redline As-Built Drawings from the Contractor. These redline changes shall describe the built condition of the Project. This information and all of the

incorporated changes directed by Bidding Addenda, Change Order/Amendment or Contractor's Supplementary Instructions shall be incorporated by the Contractor and its consultants into a Record Drawings document provided to the Agency in the form of an electro-media format and a reproducible format as agreed between the parties. The Contractor shall also provide the Agency with the As-built Drawings.

Section 9.3. Ownership of Existing Equipment.

Ownership of the equipment and materials existing at the Premises at the time of execution of this Contract shall remain the property of Agency even if it is replaced or its operation made unnecessary by work performed by Contractor pursuant to this Contract. If applicable, Contractor shall advise the Agency in writing of all equipment and materials to be replaced at the Premises and the Agency shall within fifteen (15) days designate in writing to the Contractor which equipment and materials should not be disposed of off-site by the Contractor. It is understood and agreed to by both Parties that the Agency shall be responsible for and designate the location and storage for any equipment and materials that should not be disposed of off-site. Except as may be otherwise provided in this Contract, the Contractor shall be responsible for the disposal of all equipment and materials designated by the Agency as disposable off-site in accordance with all applicable laws and regulations regarding such disposal. Except as indicated in Section 7.1 and Section 7.2, under no circumstance shall Contractor be obligated to dispose of or take responsibility for any materials identified in Section 7.1 or Section 7.2 of this Contract.

Section 9.4. Ownership of Measurement and Verification Equipment.

Agency agrees to own the equipment required to provide the ongoing measurement of energy and water savings ("Metering Equipment"). Upon mutual agreement between Contractor and Agency, Agency shall provide and maintain any necessary communication equipment to facilitate remote monitoring of the Equipment.

ARTICLE 10: STANDARDS OF COMFORT

Section 10.1 Standards of Comfort.

Contractor shall design and install the Equipment so that it is able to provide the standards of heating, cooling, ventilation, hot water supply, lighting quality and levels described in Schedule I. During the term of this Contract, Contractor and Agency shall maintain, according to Schedule D, Schedule J and Schedule K, and operate the Equipment in a manner that shall provide the standards of comfort and levels of operation as described in Schedule I.

ARTICLE 11: EQUIPMENT WARRANTIES

Section 11.1 Actions by Contractor.

Contractor warrants that all equipment sold and installed as part of this Contract is new, unless otherwise agreed, shall be materially free from defects in materials or workmanship, shall be installed properly in a good and workmanlike manner, and shall function properly for a period of

one (1) year from the date of the Substantial Completion for the particular energy conservation measure if operated and maintained in accordance with the procedures established per building. Substantial Completion shall be defined as the stage in the progress of the Work where the Work is sufficiently complete in accordance with the Contract Documents so that the Agency can utilize and take beneficial use of the Work for its intended use or purpose. Substantial Completion does not occur until the Equipment or system has been commissioned, accepted, and Exhibit III(ii) - Notice of Substantial Completion" is fully executed.

After the warranty period, Contractor shall have no responsibility for performing maintenance, repairs, or making manufacturer warranty claims relating to the Equipment, except as provided in Schedule D, Schedule J, and Schedule N.

Contractor further agrees to assign to Agency all available manufacturer's warranties relating to the Equipment and to deliver such written warranties and which shall be attached and set forth as Exhibit IV; reasonably assist Agency in its pursuit of its rights and remedies against the manufacturers under the warranties in the event of Equipment malfunction or improper or defective function, and defects in parts, workmanship and performance. Contractor shall, during the warranty period, notify the Agency whenever defects in Equipment parts or performance occur, which give rise to such rights and remedies and those rights and remedies are exercised by Contractor. During this period, the cost of any risk of damage or damage to the Equipment and its performance, including damage to property and equipment of the Agency or the Premises, due to Contractor's failure to exercise its warranty rights shall be borne solely by Contractor. However, these warranties do not extend to any damage as a result of Agency or third party neglect, modification, abuse or alteration.

All warranties, to the extent transferable, shall be transferable and extend to the Agency. The warranties shall specify that only new, not reconditioned, parts may be used and installed when repair is necessitated by malfunction.

Notwithstanding the above, nothing in this Section shall be construed to alleviate/relieve the Contractor from complying with its obligations to perform under all terms and conditions of this Contract and as set forth in all attached Schedules.

Section 11.2. Malfunctions and Emergencies.

Agency shall use its best efforts to notify the Contractor or its designated subcontractor within twenty-four (24) hours after the Agency's actual knowledge and occurrence of: (i) any malfunction in the operation of the Equipment or any preexisting energy related equipment that might materially impact upon the Energy Savings or Energy Savings Guarantee, (ii) any interruption or alteration to the energy supply to the Premises, or (iii) any alteration or modification in any energy-related equipment or its operation.

Where Agency exercises due diligence in attempting to assess the existence of a malfunction, interruption, or alteration it shall be deemed not at fault in failing to correctly identify any such conditions as having a material impact upon the savings. Agency shall notify Contractor within twenty-four (24) hours upon its having actual knowledge of any emergency condition affecting

the Equipment. If such malfunction, interruption, or alteration occurs during the Warranty Period, Contractor shall respond to any such notice within twenty-four (24) hours for non-critical equipment, and eight (8) hours for critical equipment, and shall promptly thereafter proceed with corrective measures. Any telephonic notice of such conditions by Agency shall be followed within three business days by written notice to Contractor from Agency. If Agency unreasonably delays in so notifying Contractor of a malfunction or emergency, and the malfunction or emergency is not otherwise corrected or remedied, Contractor may charge Agency for its loss, due to the delay, associated with the Guarantee under this Contract for the particular time period, provided that Contractor is able to show the direct causal connection between the delay and the loss.

The Contractor shall provide a written record of all service work performed. This record shall indicate the reason for the service, description of the problem and the corrective action performed.

Section 11.3 Actions by Agency.

During the term of this Contract, Agency shall not move, remove, modify, alter, or change in any way the Equipment or any part thereof without the prior written approval of Contractor except as set forth in Schedule K. Notwithstanding the foregoing, Agency may take reasonable steps to protect the Equipment if, due to an emergency, it is not possible or reasonable to notify Contractor before taking any such actions. In the event of such an emergency, Agency shall take reasonable steps to protect the Equipment from damage or injury. Agency agrees to maintain the Premises in good repair and to protect and preserve all portions thereof, which may in any way affect the operation or maintenance of the Equipment, all in accordance with the same standard of care the Agency applies to the Premises generally, that of a reasonably prudent government owner.

ARTICLE 12: MODIFICATION, UPGRADE OR ALTERATION OF EQUIPMENT

Section 12.1. Modification of Equipment.

During the Term of this Contract, Agency shall not, without the prior written consent of Contractor, affix or install any accessory Equipment or device on any of the Equipment if such addition shall change or impair the originally intended functions, value or use of the Equipment without Contractor's prior written approval, which shall not be unreasonably withheld.

Section 12.2. Upgrade or Alteration of Equipment.

Contractor shall at all times have the right, subject to Agency's prior written approval, which approval shall not be unreasonably withheld, to change the Equipment, revise any procedures for the operation of the Equipment or implement other energy saving actions in the Premises, provided that: (i) the Contractor complies with the standards of comfort and services set forth in Schedule I herein; (ii) such modifications or additions to, or replacement of the Equipment, and any operational changes, or new procedures are necessary to enable the Contractor to achieve greater energy and cost savings at the Premises and; (iii) any cost incurred relative to such

modifications, additions or replacement of the Equipment, or operational changes or new procedures shall be the responsibility of the Contractor.

All modifications, additions or replacements of the Equipment or revisions to operating or other procedures shall be described in a supplemental Schedule(s) to be provided to the Agency for approval, which shall not be unreasonably withheld, provided that any replacement of the Equipment shall, unless otherwise agreed, be new and have equal or better potential to reduce energy consumption at the Premises than the Equipment being replaced. The Contractor shall update any and all software necessary for the operation of the Equipment in accordance with the provisions of Section 9.1 **and** Schedule J. All replacements of and alterations or additions to the Equipment shall become part of the Equipment described in Schedule A and shall be covered by the provisions and terms of Article 6 and Article 8.

ARTICLE 13: LOCATION AND ACCESS

Section 13.1. Contractor Access.

Contractor acknowledges that there exists sufficient space on the Premises for the installation and operation of the Equipment. Agency shall take reasonable steps to protect such Equipment from harm, theft and misuse during the term of this Contract. Agency shall provide access to the Premises for Contractor to perform any function related to this Contract during regular business hours, or such other reasonable hours as may be requested by Contractor and acceptable to the Agency. Contractor shall be granted immediate access to make emergency repairs or corrections as it may, in its discretion, determine are needed. Contractor's access to the Premises to make emergency repairs or corrections as it may determine are needed shall not be unreasonably restricted by Agency. Contractor shall immediately notify the Agency when emergency action is taken and follow up with written notice with three (3) business days specifying the action taken, the reasons therefore, and the impact upon the Premises, if any.

Section 13.2. Utility Access.

If a Utility Award Payment is made as described in Section 3 (Utility Award Payments), the following applies. Upon request by the Utility (or its agent) and with prior consent of the Agency which consent shall not be unreasonably withheld, the Agency shall agree to allow Utility to interview the Agency and to enter the Premises at reasonable times throughout the life of the installed equipment to install metering equipment, perform energy audits or inspect the facilities and any equipment installed. The Agency also agrees to cooperate with the Utility or its agent upon request and with prior consent of the Agency, in conducting such activities and/or in analyzing energy savings. At all times a representative of the Agency (or its agent) shall be present during such inspections.

ARTICLE 14: MATERIAL CHANGES

Section 14.1. Material Change Defined.

A Material Change shall include any change or cumulative changes in or to the Premises, whether structural, operational or otherwise in nature which reasonably could be expected, in the judgment of the Agency, to increase or decrease annual energy consumption in accordance with the provisions and procedures set forth in Schedule E and Schedule F after adjustments for climatic variations and provided a correlation exists between usage and Material Change.

Actions by the Agency that may result in a Material Change include but are not limited to the following: (i) manner of use of the Premises by the Agency; or (ii) hours of operation for the Premises or for any equipment or energy using systems operating at the Premises; or (iii) permanent changes in the comfort and service parameters set forth in Schedule I; or (iv) occupancy of the Premises; or (v) structure of the Premises; or (vi) types and quantities of equipment used at the Premises or (vii) modification, renovation or construction at the Premises; or (viii) the Agency's failure to provide maintenance of and repairs to the Equipment in accordance with Schedule K; or (ix) casualty or condemnation of the Premises or Equipment, or (x) changes in utility provider or utility rate classification, or (xi) any other conditions other than climate affecting energy or water use at the Premises.

Section 14.2. Reported Material Changes; Notice by Agency

The Agency shall use its best efforts to deliver to the Contractor a written notice describing all actual or proposed Material Changes in the Premises or in the operations of the Premises at least 14 days before any actual or proposed Material Change is implemented or as soon as is practicable after an emergency or other unplanned event. Notice to the Contractor of Material Changes which result because of a bona fide emergency or other situation which precludes advance notification shall be deemed sufficient if given by the Agency within five (5) business days after having actual knowledge that the event constituting the Material Change occurred or was discovered by the Agency to have occurred.

Section 14.3. Other Adjustments.

As agreed in Section 16.1 Agency shall alert Contractor of materials changes as known. Both parties have a vested interest in meeting the guaranteed savings of the Contract. As such, the Contractor shall work with Agency to investigate, identify and correct any changes that prevent the guaranteed savings from being realized. As a result of such investigation, Contractor and Agency shall determine what, if any, adjustments to the baseline shall be made in accordance with the provisions set forth in Schedule F and Schedule E.

ARTICLE 15: TRAINING AND FOLLOW-UP ACTIVITIES BY CONTRACTOR

Section 15.1. Training.

The Contractor shall conduct the training program described in Schedule M. Appropriate training must be completed prior to acceptance of the Equipment installation. The Contractor shall provide ongoing training as defined in Schedule M.

Section 15.2. Application for Energy Star or LEED.

Upon request by Agency, The Contractor shall conduct investigation into any applicable certification program such as Energy Star Benchmark, US Green Building Council's Leadership in Energy and Environmental Design (LEED), etc. and facilitate requested certification process on behalf of Agency. Costs of such certifications shall be borne by the Agency.

Section 15.3. Emissions Reductions Documentation and Reporting.

The Contractor shall include emissions reductions quantities in each annual report and advise the Agency on opportunities to achieve monetary benefit from such credits.

ARTICLE 16: GENERAL CONTRACTUAL PROVISIONS

Section 16.1 Additional Insurance Requirements- Professional Liability Insurance.

Contractor promises and agrees to maintain in full force and effect an Errors and Omissions Professional Liability Insurance Policy as is required for compliance with the Agency. The policy, including claims made forms, shall remain in effect for the duration of the Interim Period and for at least three years beyond the completion and acceptance of the Equipment. The Contractor shall be responsible for all claims, damages, losses or expenses, including attorney fees, arising out of or resulting from the performance of professional services contemplated in this Contract, provided that any such claim, damage, loss or expense is caused by any negligent act, error or omission of the Contractor, any consultant or associate thereof, or anyone directly or indirectly employed by the Contractor. The Contractor shall submit a Certificate of Insurance verifying said coverage at the signing of this Contract and also any notices of renewals of Renewals of the said policy as they occur. Contractor shall list Agency as additional insured. Nothing in this contract is or shall be construed to be a waiver by the Agency of any provision or protection of the Colorado Governmental Immunity Act.

ARTICLE 17: EVENTS OF DEFAULT

Section 17.1. Events of Default by Agency.

Each of the following events or conditions shall constitute an "Event of Default" by Agency:

any failure by Agency to pay Contractor any sum due that is not in dispute, hereunder for a service and maintenance period of more than thirty (30) days after written notification by Contractor that Agency is delinquent in making payment;

any other mutually determined material failure by Agency to perform or comply with the terms and conditions of this Contract, including breach of any covenant contained herein, provided that such failure continues for thirty (30) days after notice to Agency demanding that such mutually determined failures to perform be cured or if such cure cannot be effected in such forty-five (45) days; Agency shall be deemed to have cured default upon the commencement of a cure within such forty-five (45) days and diligent subsequent completion thereof;

any representation or warranty furnished by Agency in this Contract that was false or misleading in any material respect when made.

Section 17.2. Events of Default by Contractor.

Each of the following events or conditions shall constitute an "Event of Default" by Contractor:

the standards of comfort and service set forth in Schedule I are not provided due to failure of Contractor to properly design, install, maintain, repair or adjust the Equipment except that such failure, if corrected or cured within twenty-one (21) days after written notice by Agency to Contractor demanding that such failure be cured, shall be deemed cured for purposes of this Contract.

any representation or warranty furnished by Contractor in this Contract is false or misleading in any material respect when made;

provided that the operation of the facility is not adversely affected and provided that the Standards of Comfort in Schedule I are maintained, any material failure by Contractor to perform or comply with the terms and conditions of this Contract, including breach of any covenant contained herein except that such failure, if corrected or cured within thirty (30) days after written notice to Contractor demanding that such failure to perform be cured, shall be deemed cured for purposes of this Contract;

any lien or encumbrance upon the equipment by any subcontractor, laborer or materialman of Contractor which is not released in thirty (30) days after notice of said filing;

the filing of a bankruptcy petition whether by Contractor or its creditors against Contractor which proceeding shall not have been dismissed within ninety (90) days of its filing, or an involuntary assignment for the benefit of all creditors or the liquidation of Contractor.

failure by the Contractor to pay any amount due that is not in dispute, or perform any material obligation under the terms of this Contract, unless such amount due or failure to perform is excused pursuant to the provisions of this Contract.

17.3 Dispute Resolution

(A) Notice of Cure Period

In the event of any breach that is not an Event of Default, notice of such shall be given in writing by the aggrieved Party to the other Party. If such breach is not cured, cannot be cured, or if due

diligence to cure the breach has not begun within 30 days of receipt of written notice, unless otherwise stated herein, or if an Event of Default has occurred, the aggrieved Party may exercise any of the remedies set forth in Section 17.3B. Notwithstanding anything to the contrary herein, the Agency, in its sole discretion, need not provide advance notice or a cure period and may immediately terminate this Contract in whole or in part if reasonably necessary to preserve public safety or to prevent immediate public crisis.

(B) Remedies

If Contractor is in breach under any provision of this Contract or commits an Event of Default, the Agency shall have all of the remedies listed in this Section 17(B)(i) and (ii) in addition to all other remedies set forth in other sections of this Contract following the notice and cure period set forth in Section 17.3(A). The Agency may exercise any or all of the remedies available to it, in its sole discretion, concurrently or consecutively.

If Agency is in breach under any provision of this Contract or commits an Event of Default, the Contractor shall have all of the remedies listed in Section 17(B)(iii) in addition to all other remedies set forth in other sections of this Contract following the notice of cure period set forth in Section 17.3(A).

i. Termination for Cause and/or Breach

The Agency may terminate this entire Contract or any part of this Contract as provided herein or pursuant to the General Conditions. Exercise by the Agency of this right shall not be a breach of its obligations hereunder. Contractor shall continue performance of this Contract to the extent not terminated, if any.

a. Obligations and Rights

To the extent specified in any termination notice, Contractor shall not incur further obligations or render further performance hereunder past the effective date of such notice, and shall terminate outstanding orders and subcontracts with third parties. However, Contractor shall complete and deliver to the Agency all Work not cancelled by the termination notice and may incur obligations as are necessary to do so within this Contract's terms. At the sole discretion of the Agency, Contractor shall assign to the Agency all of Contractor's right, title, and interest under such terminated orders or subcontracts. Upon termination, Contractor shall take timely, reasonable and necessary action to protect and preserve property in the possession of Contractor in which the Agency has an interest. All materials owned by the Agency in the possession of Contractor shall be immediately returned to the Agency. All Work Product, at the option of the Agency, shall be delivered by Contractor to the Agency and shall become the Agency's property.

b. Payments

The Agency shall reimburse Contractor only for accepted performance up to the date of termination or as provided in the General Conditions, in the Agency's sole discretion.

Acceptable performance shall include fair compensation for completed work and for equipment order cancellation fees.

c. Damages and Withholding

Notwithstanding any other remedial action by the Agency, Contractor shall remain liable to the Agency for any damages sustained by the Agency by virtue of any breach under this Contract by Contractor and the Agency may withhold any payment to Contractor for the purpose of mitigating the Agency's damages, until such time as the exact amount of damages due to the Agency from Contractor is determined. The Agency may withhold any amount that may be due Contractor as the Agency deems necessary to protect the Agency against loss, including loss as a result of outstanding liens, claims of former lien holders, or for the excess costs incurred in procuring similar goods or services. Contractor shall be liable for excess costs incurred by the Agency in procuring from third parties replacement Work as cover. Liability may alternatively be assessed per the General Conditions, in the Agency's discretion.

d. Termination of M&V Term

Notwithstanding anything to the contrary herein, the Agency may terminate this Contract after the first three years of the M&V Term, and if so terminated, Contractor shall have no further obligations hereunder thereafter.

ii. Remedies Not Involving Termination

The Agency, its sole discretion, may exercise one or more of the following remedies in addition to other remedies available to it:

a. Suspend Performance

Suspend Contractor's performance with respect to all or any portion of this Contract pending necessary corrective action as specified by the Agency without entitling Contractor to an adjustment in price/cost or performance schedule, unless such suspension unduly causes Contractor to incur additional costs or prevents Contractor from being able to meet the original performance schedule. Contractor shall promptly cease performance and incurring costs in accordance with the Agency's directive and the Agency shall not be liable for costs incurred by Contractor after the suspension of performance under this provision.

b. Withhold Payment

Withhold payment to Contractor until corrections in Contractor's performance are satisfactorily made and completed.

c. Deny Payment

Deny payment for those obligations not performed, that due to Contractor's actions or inactions, cannot be performed or, if performed, would be of no value to the Agency;

provided, that any denial of payment shall be reasonably related to the value to the Agency of the obligations not performed.

d. Removal

Notwithstanding any other provision herein, the Agency may demand immediate removal of any of Contractor's employees, agents, or Subcontractors whom the Agency deems incompetent, careless, insubordinate, unsuitable, or otherwise unacceptable, or whose continued relation to this Contract is deemed to be contrary to the public interest or the Agency's best interest.

e. Intellectual Property

If Contractor infringes on a patent, copyright, trademark, trade secret or other intellectual property right while performing its obligations under this Contract, Contractor shall, at the Agency's option (a) obtain for the Agency or Contractor the right to use such products and services; (b) replace any Goods, Services, or other product involved with non-infringing products or modify them so that they become non-infringing; or, (c) if neither of the foregoing alternatives are reasonably available, remove any infringing Goods, Services, or products and refund the price paid therefore to the Agency.

iii. Remedies and Termination by Contractor

The Contractor, upon Agency being held in Default in this Contract, in its sole discretion, may exercise one or more of the following remedies in addition to other remedies available to it, which shall include at a minimum recovery of for all Work, performed prior to suspension or termination, equipment order cancellation fees, and demobilization costs:

a. Agency Payment

Upon failure by Agency to pay Contractor as stated in section 17.1(i), Contractor may suspend further Work on Project until payment is made; if no payment or cure is made after thirty (30) days of Agency being found in default of this Contract, Contractor shall have no further obligation to Agency under the terms of this Contract.

b. Agency Material Failure

Upon material failure by Agency as stated in section 17.1(ii), Contractor may in its sole discretion, suspend further Work on Project until default is resolved or if no cure is made after thirty (30) days of Agency being found in default of this Contract Contractor shall have no further obligation to Agency under the terms of this Contract.

c. Agency Warranty Misrepresentation

Upon warranty misrepresentation by Agency to pay Contractor as stated in section 17.1(iii), Contractor may suspend further work on Project until cure is made or may cancel this Contract and Contractor shall have no further obligation to Agency under the terms of this Contract.

ARTICLE 18: ASSIGNMENT

Section 18.1. Assignment by Contractor.

The Contractor acknowledges that the Agency is induced to enter into this Contract by, among other things, the professional qualifications of the Contractor. The Contractor agrees that neither this Contract nor any right of obligations hereunder may be assigned in whole or in part to another firm, without the prior written approval of the Agency except in the event that any third party acquires substantially all of the assets and obligations of Contractor, except as otherwise provided herein.

Section 18.2. Assignment by Agency.

Agency may transfer or assign this Contract and its rights and obligations herein to a successor or purchaser of the Premises or an interest therein with the consent of Contractor, which shall not be unreasonably withheld. The lack of financial qualification of the new owner shall be grounds for withholding such consent.

ARTICLE 19: REPRESENTATIONS AND WARRANTIES

Section 19.1. General Representations and Warranties.

Each party warrants and represents to the other that:

(i) it has all requisite power, authority, licenses, permits, and franchises, corporate or otherwise, to execute and deliver this Contract and perform its obligations hereunder;

(ii) its execution, delivery, and performance of this Contract shall not result in a breach or violation of, or constitute a default under any Contract, lease or instrument to which it is a party or by which it or its properties may be bound or affected.

ARTICLE 20. ADDITIONAL REPRESENTATIONS OF THE PARTIES.

Section 20.1. By Agency.

Agency hereby warrants, represents and promises that:

(i) Agency is authorized under the Constitution and laws of the State of Colorado to enter into this Contract, each transaction contemplated hereby, and to perform all of its obligations under this Contract.

(ii) Subject to the provisions contained herein, Agency has provided or shall provide timely to Contractor, all records relating to energy and water usage and energy-related maintenance of Premises requested by Contractor and the information set forth therein is,

and all information in other records to be subsequently provided pursuant to this Contract shall be true and accurate in all material respects and Contractor shall be entitled to rely thereon; and

(iii) Agency has not entered into any prior leases, contracts or agreements with other persons or entities regarding the leasing or acquisition of water or energy efficiency equipment or the provision of energy management services for the Premises or with regard to servicing any of the Equipment located in the Premises that would encroach upon the scope of this Contract. Agency shall provide Contractor with copies of any successor or additional leases of energy efficiency equipment and contracts for management or servicing of preexisting equipment at Premises that may be executed from time to time hereafter within seven days after execution thereof.

Section 20.2. By Contractor.

Contractor hereby warrants, represents and promises that:

(i) before commencing performance of this Contract, Contractor shall have become licensed or otherwise permitted to do business in the State of Colorado. Contractor shall have provided proof and documentation of all required insurance and bonds pursuant to this Contract.

(ii) Contractor shall make available, upon reasonable request, documents relating to its performance under this Contract, including contracts and subcontracts it shall enter into;

(iii) Contractor shall use subcontractors who are qualified, licensed and bonded in the State of Colorado to perform the work so subcontracted pursuant to the terms hereof;

(iv) Contractor has all requisite authority to license the use of proprietary property, both tangible and intangible, contemplated by this Contract;

(v) The Equipment shall meet or exceed the Acceptance Testing procedures set forth in Article 8 of this Contract.

(vi) The Equipment is or shall be compatible with all other current Premises mechanical and electrical systems, subsystems, or components with which the Equipment interacts, and that, as installed, neither the Equipment nor such other systems, subsystems, or components shall materially adversely affect each other as a direct or indirect result of Equipment installation or operation;

(vii) That Contractor is financially solvent, able to pay its debts as they mature and possessed of sufficient working capital to complete the Installation and perform its obligations under this Contract.

ARTICLE 21: MISCELLANEOUS DOCUMENTATION PROVISIONS.

Section 21.1. Waiver of Liens, Performance Bonds, Labor and Material Payment Bonds.

Such executed bonds are incorporated herein by reference as Exhibit I (Performance Bond) and Exhibit II (Labor and Material Payment Bond) per Schedule N (General Conditions).

Section 21.2. Further Documents

The parties shall execute and deliver all documents and perform all further acts that may be reasonably necessary to effectuate the provisions of this Contract.

Section 21.3 Agency's Responsibilities.

(A) Methods of Operation by Agency

The parties acknowledge and agree that said Energy and Cost Savings would not likely be obtained unless certain procedures and methods of operation designed for energy and water conservation shall be implemented, and followed by Agency on a regular and continuous basis.

(B) Agency Maintenance Responsibilities

Agency agrees that it shall adhere to, follow and implement the energy conservation procedures and methods of operation to be set forth on Schedule K, to be attached hereto and made a part hereof after Agency's approval, such approval not to be unreasonably withheld, conditioned or delayed.

(C) Inspection of Premises

During the Performance Term of this Contract, Agency agrees that Contractor shall have the right once a month, with prior notice, to inspect Premises to determine if Agency is complying, and shall have complied with its obligations as set forth in Section 21.3(b). For the purpose of determining Agency's said compliance, the checklist to be set forth at Schedule L as completed and recorded by Contractor during its monthly inspections, shall be used to measure and record Agency's said compliance. Agency shall make the Premises available to Contractor for and during each monthly inspection, and shall have the right to witness each inspection and Contractor's recordation on the checklist. Agency may complete its own checklist at the same time. Contractor agrees to not interfere with the Agency operations during any monthly inspection.

ARTICLE 22: CONFLICTS OF INTEREST

Section 22.1 Conflicts of Interest.

Conflicts of interest relating to this Contract are strictly prohibited. Except as otherwise expressly provided herein, neither party hereto nor any director, employee or agent of any party

hereto shall give to or receive from any director, employee or agent of any other party hereto any gift, entertainment or other favor of significant value, or any commission, fee or rebate in connection with this Contract. Likewise, neither party hereto nor any director, employee or agent of either party hereto, shall without prior notification thereof to the other party enter into any business relationship with any director, employee or agent of the other party or of any affiliate of the other party, unless such person is acting for and on behalf of the other party or any such affiliate. A party shall promptly notify the other party of any violation of this section and any consideration received as a result of such violation shall be paid over or credited to the party against whom it was charged. Any representative of any party, authorized by that party, may audit the records of the other party related to this Contract, upon reasonable notice and during regular business hours including the expense records of the party's employees involved in this Contract, upon reasonable notice and during regular business hours, for the sole purpose of determining whether there has been compliance with this section.

ARTICLE 23: CONTRACT DOCUMENTS

Section 23.1. Technical Energy Audit

Contractor prepared a complete Technical Energy Audit which has been approved and accepted by Agency as set forth in Exhibit III (i) - Notice of Acceptance – Technical Energy Audit and Measurement and Verification Plan.

Section 23.2. General Conditions.

The Agency's General Conditions are attached hereto as Schedule N and may be incorporated and made a part hereof as follows.

Section 23.3. Order of Precedence.

Notwithstanding, the provisions of this Contract and the attached Schedules, Exhibits and Appendices shall govern in the event of any inconsistencies between the Technical Energy Audit and the provisions of this Contract.

In the event of conflicts or inconsistencies between this Contract and its Schedules, Exhibits or Appendices, such conflicts or inconsistencies shall be resolved by reference to the documents in the following order of priority: a) Contract body, b) Schedule N, c) the remaining Schedules / Exhibits / Appendices, d) Agency Request for Proposal, e) Contractor Proposal.

In the event of any conflicts between Schedule C and other parts of this Contract regarding calculation or measurement of the guarantee, Schedule C shall govern.

Section 23.4. Facsimile Signatures.

Parties agree that facsimile signatures shall be accepted as originals.

THE PARTIES HERETO HAVE EXECUTED THIS CONTRACT

For CONTRACTOR by:

(Signature)

JEFF L SCHUSTER

(Name)

PRESIDENT

(Title)

For AGENCY by:

(Signature)

Matthew Birnie

(Name)

County Manager

(Title)

FEIN 84-1576811

Attest:

(Signature)

Ruth Dukeman

(Name)

Deputy County Clerk

(Title)

Corporate Seal required.

GUNNISON COUNTY SEAL COLORADO

SCHEDULE A.

EQUIPMENT TO BE INSTALLED BY CONTRACTOR

Courthouse

- Convert one Multi-zone Air Handling Unit serving the jail section to a Variable Air Volume (VAV) system. Add VAV boxes to each of nine zones to control the amount of heating and cooling needed by the space. Variable Speed Drives (VSDs) shall be installed on the supply and return fans of the system. The new VAV zone damper actuators and VSDs shall be controlled by the upgraded Direct Digital Control (DDC) system.
- Convert one Constant Volume Air Handling Unit (AHU-4) to a Variable Air Volume system. Add VAV boxes to create six independent zones to control the amount of heating and ventilation air needed by the spaces. Variable Speed Drives (VSDs) shall be installed on the supply and return fans of the system. The new zone damper actuators and VSDs shall be controlled by the upgraded DDC system.
- Convert one Constant Volume Air Handling Unit with one electric reheat coil to a constant volume system with three individual zone electric reheat coils. Add motorized dampers to return and outside air intakes for economizer control. The damper actuators and zone electric reheats shall be controlled by the upgraded DDC system.
- Add one Variable Air Volume box with hot water reheat to AHU-2. The new VAV box will control the amount of heating and cooling needed by the Jury Room. The new zone damper actuator and valve shall be controlled by the upgraded DDC system.
- Relocate one supply duct for AHU-4 from the District Attorney's office to the meeting room located next door.
- Add an Evaporative Cooler and Economizer to AHU-6.
- Replace all the control valves with new control valves.
- Replace the current DDC building automation system with an upgraded DDC building automation system. The automation system shall be an open-protocol control system with a windows based internet interface that allows easy operation from a traditional web browser. Boilers, pumps, air-handling units, variable air volume boxes, reheat coils, baseboard heaters and exhaust fans shall all be controlled by the new DDC system. The product manufacturer will be approved by the client prior to installation.
- Lighting Retrofit and Redesign to include the following:
    - Lighting delamp and redesign
    - Install 48 occupancy sensors to control lights
    - Refer to Appendix A for detailed lighting audit
- Replace four standard efficiency motors with premium efficiency motors with approved NEMA nominal efficiencies. The new premium efficiency motors will have a minimum nameplate efficiency of 90% for motors greater than five horsepower in size, and 87% for motors smaller than five horsepower.
- Replace broken control valve on the gutter snow melt system with a new control valve with temperature and moisture control. The new control valve and temperature and moisture sensor shall be controlled by the upgraded DDC system.
- Install energy saving VendingMisers sensors on one beverage and one snack vending machines.

Blackstock Government Building

- Replace the current DDC building automation system with an upgraded DDC building automation system. The automation system shall be an open-protocol control system with a windows based internet interface that allows easy operation from a traditional web browser. Boilers, chiller, pumps, fan coil units, and baseboard heaters shall all be controlled by the new DDC system. The product manufacturer will be approved by the client prior to installation.
- Lighting Retrofit and Redesign to include the following:
    - Lighting delamp and redesign
    - Add ambient light sensors for Day-lighting Control to reduce wattage usage and run time
    - Install 25 occupancy sensors to control lights
    - Refer to Appendix A for detailed lighting audit
- Install energy saving VendingMiser sensors on one beverage and one snack vending machines.

Family Services Building

- Replacing the existing boiler with a minimum of two new equally sized boilers. The boilers will be sized such that either boiler, by itself, will be capable of meeting a minimum of 67% of the design heating load of the building. New boilers shall be high efficiency condensing boilers. Minimum thermal efficiency shall be 88% at 160°F return water temperature. Additionally, a set of piping connections complete with manual isolation valves and caps will be installed as future connections for a side-arm domestic hot water heater. The product manufacturer will be approved by the client prior to installation.
- Convert one Constant Volume Air Handling Unit with hot water reheat coils to a Variable Air Volume (VAV) system. Add VAV boxes to six existing zones to control the amount of heating and cooling needed by the space. Add two additional VAV boxes with hot water reheat coils and additional ductwork to create and control the amount of heating and cooling to two new zones. The new zone damper actuators and reheat coils shall be controlled by the upgraded DDC system.
- Replace the current DDC building automation system with an upgraded DDC building automation system. The automation system shall be an open-protocol control system with a windows based internet interface that allows easy operation from a traditional web browser. Boilers, air handling unit, pumps, VAV boxes, reheat coils and exhaust fans shall all be controlled by the new DDC system. The product manufacturer will be approved by the client prior to installation.
- Lighting Retrofit and Redesign to include the following:
    - Lighting delamp and redesign
    - Add ambient light sensors for Day-lighting Control to reduce wattage usage and run time
    - Install 22 occupancy sensors to control lights
    - Refer to Appendix A for detailed lighting audit

Tenderfoot Child Care Center

- Retro-commission existing HVAC systems and controls to optimize energy savings..
- Remove and Replace "brush" type weather stripping with Q-lon type weather stripping in a metal carrier, screwed into the metal door jambs, on 15 doors, four of which are 42" wide, and eleven of which are 36" wide doors. Also replace door bottom sweeps. Adjust doors as needed for proper operation. Caulk around metal door jambs as needed to seal air leaks. Install weather stripping on double entry doors. Caulk air leaks around window trim as needed, all windows.

Multipurpose Building

- Replace the existing boiler in the newer section of the building with a new high efficiency condensing boiler. Minimum thermal efficiency shall be 88% at 160°F return water temperature. Additionally, a set of piping connections complete with manual isolation valves and caps will be installed as future connections for a side-arm domestic hot water heater. The product manufacturer will be approved by the client prior to installation.
- Remount fallen insulation on accessible exterior walls. Caulk visible cracks around doors, windows, and on walls. As a specific scope is difficult define, this work is limited to a $2,500 subcontractor allowance. Contractor will coordinate with Agency on location of insulation remount and caulking.
- Lighting Retrofit and Redesign to include the following:
    - Retrofitting metal halide fixtures in the high bay areas with new, T-8 fixtures with high-power ballasts.
    - Lighting delamp and redesign
    - Install seven occupancy sensors to control lights
    - Replace incandescent exit signs with LED exit signs
    - Refer to Appendix A for detailed lighting audit
- Install energy saving VendingMiser sensors on two beverage vending machines.

Housing Authority

- Replace single pane storm windows with double pane operable vinyl windows. New windows shall conform to International Energy Conservation Code guidelines.
- Lighting Retrofit and Redesign to include the following:
    - Replace inefficient incandescent bulbs with compact florescent lamps
    - Lighting delamp and redesign
    - Install two occupancy sensors to control lights
    - Refer to Appendix A for detailed lighting audit

Airport Terminal

- Replacing two existing boilers with two new high efficiency condensing boilers. Minimum thermal efficiency shall be 88% at 160°F return water temperature. The product manufacturer will be approved by the client prior to installation.

- Convert two Air Handling Units to include economizer capabilities. Add motorized dampers to close off the tempered air from the Trombe wall and extend the current duct work to bring in outside air. Damper actuators shall be controlled by new DDC building automation system.
- Replace the current DDC building automation system with an upgraded DDC building automation system. The automation system shall be a windows based open-protocol control system with an internet interface that allows easy operation from a traditional web browser. Boilers, pumps, air-handling units, terminal area cabinet heaters, under-floor radiant heat system, and old AARF furnace split system shall all be controlled by the new DDC system. The product manufacturer will be approved by the client prior to installation.
- Install energy saving VendingMiser sensors on one beverage and three snack vending machines.

Marble Bank

- Replace existing non-programmable thermostat with an electronic programmable thermostat.

Dos Rios Water Treatment Plant

- Lighting Retrofit and Redesign to include the following:
  - Replace inefficient T-12 fixtures with new T-8 fixtures including electronic ballast.
  - Install one occupancy sensor to control lighting
  - Refer to Appendix A for detailed lighting audit

Landfill

- Replace existing non-programmable thermostat with an electronic programmable thermostats.
- Lighting Retrofit and Redesign to include the following:
  - Retrofit metal halide fixtures in the high bay areas with new T-8 fixtures with high-power ballasts
  - Refer to Appendix A for detailed lighting audit
- Install door switches for the high bay overhead doors that shall temporarily disable the Radiant Gas Heating Units while the overhead doors are open.

Facilities Maintenance

- Replace existing non-programmable thermostats with electronic programmable thermostats.
- Lighting Retrofit and Redesign to include the following:
  - Replace inefficient T-12 fixtures with T-8 fixtures including electronic ballasts.
  - Install three occupancy sensors to control lighting
  - Refer to Appendix A for detailed lighting audit

Doyleville Shop

- Replace existing non-programmable thermostat with electronic programmable thermostat.

- Lighting Retrofit and Redesign to include the following:
  - Replace inefficient T-12 fixtures with T-8 fixtures including electronic ballasts.
  - Refer to Appendix A for detailed lighting audit
- Install door switches for the high bay overhead doors that shall temporarily disable the Radiant Gas Heating Units while the overhead doors are open.

Crested Butte Shop

- Lighting Retrofit and Redesign to include the following:
  - Retrofitting metal halide fixtures in the high bay areas with new, T-8 fixtures with high-power ballasts
  - Replace inefficient T-12 fixtures with T-8 fixtures including electronic ballasts.
  - Refer to Appendix A for detailed lighting audit
- Caulk six fixed windows above garage doors. Caulk window trim around six operable windows. Remove and replace existing garage door weather stripping with vinyl type weather stripping in a vinyl carrier, screwed into the metal door jambs, on six doors. Replace door bottoms. Remove and replace entry door weather stripping with Q-lon type weather stripping in a metal carrier, screwed into the door jamb. Also replace door bottom sweep. Adjust door as needed for proper operation. Caulk around door jamb as needed to seal air leaks.

Somerset Shop

- Replace existing furnace with new radiant heaters. The product manufacturer will be approved by the client prior to installation.
- Lighting Retrofit and Redesign to include the following:
  - Replace inefficient T-12 fixtures with T-8 fixtures including electronic ballast.
  - Refer to Appendix A for detailed lighting audit

Marble Shop

- Replace existing non-programmable thermostat with an electronic programmable thermostat.
- Lighting Retrofit and Redesign to include the following:
  - Replace inefficient T-12 fixtures with T-8 fixtures including electronic ballasts.
  - Refer to Appendix A for detailed lighting audit
- Install door switches for the high bay overhead doors that shall temporarily disable the Radiant Gas Heating Units while the overhead doors are open.
- Caulk three fixed windows on south side of building. Caulk window trim around one operable window in office. Remove and replace existing garage door weather stripping with vinyl type weather stripping in a vinyl carrier, screwed into the metal door jambs, on two doors. Also replace door bottoms. Remove and replace two entry door weather stripping with Q-lon type weather stripping in a metal carrier, screwed into the door jamb. Also replace door bottom sweep. Adjust door as needed for proper operation. Caulk around door jamb as needed to seal air leaks.
- Install vehicle exhaust system.

SCHEDULE B.

DESCRIPTION OF PREMISES; PRE-EXISTING EQUIPMENT INVENTORY

Courthouse

The Gunnison County Courthouse was originally constructed in 1879 with additions in 1950 and 1978. The facility consists of 44,850 square feet. The HVAC system is comprised of two boilers, evaporative cooling, six air handling units, baseboard heaters and direct digital controls. The boilers heat water for three of the six air handling units, as well as, the gutter snow melt system, and the baseboard heat located throughout the facility. Cooling for the facility is supplied by three evaporative cooling units mounted in the outside air duct of three of the air handling units. All other air handling units use ventilation air only for cooling. The HVAC systems in this facility are controlled by a Barber-Colman Direct Digital Control (DDC) system that was installed in 1999. Lighting throughout the building consists primarily of efficient T-8 fluorescent light fixtures with electronic ballasts. Major issues identified at the Courthouse include excessive ventilation, inefficient multi-zone air handling unit, lack of zoning and an outdated and non-user friendly control system.

Additional baseline parameters and existing equipment for the Courthouse are inventoried in the table below.

Table 1: Courthouse Baseline Parameters

Square Footage	44,850
Occupancy	90 people
Heating Equipment	2 – non-condensing boilers – 2,000 MBH each
Cooling Equipment	Evaporative cooling and window air conditioners
Air handling Equipment	1 multi-zone air handler, 5 constant volume air
Pumps	2-5hp heating
Computer Quantities	45 computers
Other Equipment Load	1 server room
Domestic Hot Water Heater	Non-condensing tank style
Lighting	0.78 watts/sq ft
Hours of Operation	24 hours a day, 7 days a week for Sheriff and jail and Monday through Friday 8 am – 5 pm for offices and

Blackstock Government Center

The Blackstock Government Center was originally built in 1927 as a training school for the Western State College. The two wings of the facility were added during the 1950's and it was later renovated into a government facility. The facility consists of 26,200 square feet. The HVAC system is comprised of two boilers, a chiller, hot water baseboard heat, fan coil units with ventilation air capabilities, and direct digital controls. The lighting currently in place at the Blackstock Government Center consists of T-8 fluorescent light fixtures with electronic ballasts.

Major issues identified at the Blackstock Government Center include excessive ventilation, excessive lighting and inefficient controls.

Additional baseline parameters and existing equipment for the Blackstock Government Center are inventoried in the table below.

Table 2: Blackstock Government Center Baseline Parameters

Square Footage	26,200
Occupancy	35 people
Heating Equipment	2 – non-condensing boilers – 1,200 MBH each
Cooling Equipment	1 – air-cooled chiller – 58 ton
Air handling Equipment	13 fan coil units
Pumps	2 - 2 hp heating & 1 - 2 hp cooling
Computer Quantities	20 computers
Other Equipment Load	1 server room
Domestic Hot Water Heater	2-electric tank style
Lighting	1.45 watts/sq ft
Hours of Operation	Monday through Friday 8 am – 5pm

Family Services Building

The Family Services Building was originally built in 1954 as an elementary school, it was later renovated into a services facility, and in 1999 had a complete mechanical and controls renovation. The facility consists of 11,600 square feet. The HVAC system is comprised of one boiler; one air handling unit with evaporative cooling, zone reheat coils and direct digital controls. The lighting currently in place at the Family Services Building consists of T-8 fluorescent light fixtures with electronic ballasts and compact fluorescents. Major issues identified at the Family Services Building include excessive ventilation, inadequate zoning and control of the current systems, and an aging and inefficient hot water boiler that requires frequent repairs. The lack of a back-up boiler further compounds the unreliability associated with the existing boiler.

Additional baseline parameters and existing equipment for the Family Services Building are inventoried in the table below.

Table 3: Family Services Baseline Parameters

Square Footage	11,600
Occupancy	40 People
Heating Equipment	1 – forced draft boiler – 1,880 MBH
Cooling Equipment	1 – evaporative cooler
Air handling Equipment	1 – constant volume air handling Unit
Pumps	2 – 2 hp heating
Computer Quantities	10 computers
Other Equipment Load	1 server room
Domestic Hot Water Heater	Non-condensing tank style
Lighting	1.38 watts/sq ft
Hours of Operation	Monday through Friday 8 am – 5 pm

Tenderfoot Child Care Center

The Tenderfoot Child Care Center was constructed in 2006 and consists of 10,723 square feet. The HVAC system is comprised of two boilers, five blower coil units with air-cooled condensing units, in-floor radiant heat and programmable thermostats. The lighting currently in place at the Tenderfoot Child Care Center consists of T-8 fluorescent light fixtures with electronic ballasts and dimmable incandescent lighting for the infant and toddler rooms. Major issues identified at the Tenderfoot Child Care Center include inadequate and deteriorating door and window seals, excessive ventilation during unoccupied periods, and inefficient programming of the current control systems.

Additional baseline parameters and existing equipment for the Tenderfoot Child Care Center are inventoried in the table below.

Table 4: Tenderfoot Child Care Center Baseline Parameters

Square Footage	10,723
Occupancy	25 people
Heating Equipment	2 – condensing boilers – 750 MBH each
Cooling Equipment	5 – condensing units
Air handling Equipment	5 – DX/HW blower coil units
Pumps	2-2 hp heating
Computer Quantities	5 computers
Other Equipment Load	1 server room
Domestic Hot Water Heater	Condensing tank style
Lighting	1.56 watts/sq ft
Hours of Operation	Monday through Friday 7 am – 6 pm

Multipurpose Building

The Multipurpose Building was originally constructed in 1991 as an indoor arena and was later upgraded as a multifunctional facility. The facility consists of 24,224 square feet. The HVAC system is comprised of two boilers, in-floor radiant heat, a fresh air ventilation fan with a manual switch, and non-programmable thermostats. Lighting throughout the building's office areas consist primarily of T-8 fluorescent light fixtures with electronic ballasts and 400 Watt Metal Halides in the arena areas. Major issues identified at the Multipurpose Building include inefficient lighting, inefficient boilers, and a failing radiant heat system on the original side.

Additional baseline parameters and existing equipment for the Judicial Building are inventoried in the table below.

Table 5: Multipurpose Building Baseline Parameters

Square Footage	24,224
Occupancy	60 People
Heating Equipment	2 – non-condensing boilers – 399 & 594 MBH
Pumps	2 - 3/4 hp heating
Computer Quantities	5 computers
Other Equipment Load	1 server room
Domestic Hot Water Heater	Non-condensing tank style
Lighting	1.16 watts/sq ft
Hours of Operation	Monday through Friday 8 am – 5 pm and event space sporadic times

Housing Authority Building

The Housing Authority Building was originally constructed in 1920 and was used as a fraternity for many years before the County bought the facility. The building consists of 4,328 square feet. The HVAC system is comprised of one boiler and cast iron radiators with operable windows for cooling. Lighting throughout the building's office areas consist primarily of incandescent fixtures. Major issues identified at the Housing Authority include lack of cooling, inefficient windows and lighting, no zoning control, and an aging, inefficient, boiler.

Additional baseline parameters and existing equipment for the Housing Authority Building are inventoried in the table below.

Table 6: Housing Authority Building Baseline Parameters

Square Footage	4,238
Occupancy	5 people
Heating Equipment	1 – non-condensing Boilers – 100 MBH
Computer Quantities	2 computers
Domestic Hot Water Heater	Non-condensing tank style
Lighting	1.16 watts/sq ft
Hours of Operation	Monday through Friday from 8 am - 4:30 pm

Airport Terminal

The Airport Terminal was originally built in 1981 with additions in 1987, 1991, and in 1996. The facility consists of 38,400 square feet. The HVAC system is comprised of three boilers, in-floor hot water radiant heat, two air handling units; one natural gas furnace split system, a solar Trombe wall, hot water cabinet unit heaters, and baseboard heaters; as well as direct digital controls that are tied into the pneumatic controllers. Lighting throughout the building consists primarily of efficient T-8 fluorescent light fixtures with electronic ballasts as well as 175 Watt Metal Halide lights. Major issues identified at the Airport Terminal include aging and inefficient hot water boilers, lack of cooling, aging, outdated and non-user friendly controls, and a non-functioning solar Trombe wall that tends to overheat the space.

Additional baseline parameters and existing equipment for the Airport Terminal are inventoried in the table below.

Table 7: Airport Terminal Baseline Parameters

Square Footage	38,400
Occupancy	80 people
Heating Equipment	1 – condensing boiler, 2 – non-condensing boilers – 526 & 780 MBH, 1- non-condensing furnace,
Cooling Equipment	1 – condensing unit
Air handling Equipment	2 – constant volume air handling units
Pumps	3 - 0.5 – 1.5 hp heating
Computer Quantities	15 computers
Other Equipment Load	1 server room
Domestic Hot Water Heater	2-non-condensing tank style
Lighting	0.71 watts/sq ft
Hours of Operation	Open 7 days a week for incoming and departing flights, flights change seasonally

Marble Bank

The Marble Bank was originally constructed in 1909. It was later used as the Road and Bridge Shop for the area and later went through an extensive restoration project between 1989 and 2002. The facility consists of 1,080 square feet. The HVAC system is comprised of one Trane, condensing, propane gas furnace; operable windows for cooling; and a non-programmable thermostat. Lighting throughout the building's office areas consist primarily of incandescent light fixtures. Major issues identified at the Marble Bank include inefficient controls and lighting.

Additional baseline parameters and existing equipment for the Marble Bank are inventoried in the table below.

Table 8: Marble Bank Baseline Parameters

Square Footage	1,080
Occupancy	2 people
Heating Equipment	1 – condensing furnace
Computer Quantities	2 computers
Domestic Hot Water Heater	Electric point of use
Lighting	1.4 watts/sq ft
Hours of Operation	Sporadic operation

Water Treatment Plant

The Water Treatment Plant was originally built in 1993 and consists of 3,388 square feet. The HVAC systems consist of two natural gas unit heaters. Lighting throughout the building's office areas consist primarily of inefficient T-12 fluorescent light fixtures with magnetic ballasts. Major issues identified at the Water Treatment Plant include inefficient heating systems and lighting.

Additional baseline parameters and existing equipment for the Water Treatment Plant are inventoried in the table below.

Table 9: Dos Rios Water Treatment Plant Baseline Parameters

Square Footage	3,388
Occupancy	1 person
Heating Equipment	Natural gas unit heats
Computer Quantities	2 computers
Domestic Hot Water Heater	Non-condensing tank style
Lighting	0.75 watts/sq ft
Process Equipment	2 – 10 hp raw water pumps, 1 – 20 hp backwash pump, 1 – 15 hp reclaim pump, 2 – 25 hp potable
Hours of Operation	Staffed 7 days a week for 8 hours

Landfill
The Landfill Shop was built in 1985 and consists of 1,896 square feet. The HVAC systems at the Landfill Shop consist of radiant heaters, and operable windows and doors for cooling. Lighting throughout the Shop consists primarily of inefficient T-12 fluorescent light fixtures with magnetic ballasts and 400 Watt Metal Halide lights. Major issues identified at the Landfill Shop include inefficient lighting and controls.

Additional baseline parameters and existing equipment for the Landfill are inventoried in the table below.

Table 10: Landfill Baseline Parameters

Square Footage	1,896
Occupancy	1person
Heating Equipment	Radiant heaters
Lighting	0.72 watts/sq ft
Hours of Operation	Monday through Saturday 8 am - 4 pm

Crested Butte Shop
The Crested Butte Shop was built in 1985 and consists of 8,000 square feet. The HVAC systems at the Crested Butte Shop consist of a waste oil boiler and a propane gas boiler for the in-floor radiant heat and operable windows and doors for cooling. Lighting throughout the Shop consists primarily of inefficient T-12 fluorescent light fixtures with magnetic ballasts and 400 Watt Metal Halide lights. Major issues identified at the Crested Butte Shop include leaky doors and windows as well as leaks through the walls due to tears in the insulation, inefficient lighting, and controls.

Additional baseline parameters and existing equipment for the Crested Butte Shop are inventoried in the table below.

Table 11: Crested Butte Shop Baseline Parameters

Square Footage	8,000
Occupancy	5 people
Heating Equipment	Waste oil and propane non-condensing boilers
Domestic Hot Water Heater	Non-condensing tank style
Lighting	0.84 watts/sq ft
Hours of Operation	Monday through Friday 7 am - 3:30 pm during the summer and Monday through Thursday 7 am - 5:30

Doyleville Shop
The Doyleville Shop was built in 1930 and consists of 3,136 square feet. The HVAC systems at the Doyleville consist of radiant heaters, a solar Trombe wall and operable windows and doors for cooling. Lighting throughout the Shops consists primarily of inefficient T-12 fluorescent light fixtures

with magnetic ballasts and 400 Watt Metal Halide lights. Major issues identified at the Doyleville Shop include inefficient lighting and controls.

Additional baseline parameters and existing equipment for the Doyleville Shop are inventoried in the table below.

Table 12: Doyleville Shop Baseline Parameters

Square Footage	3,136
Occupancy	1 person
Heating Equipment	Radiant heaters and Trombe wall
Domestic Hot Water Heater	Electric point of use
Lighting	0.64 watts/sq ft
Hours of Operation	Monday through Friday 7 am - 3:30 pm during the summer and Monday through Thursday 7 am - 5:30

Facilities Maintenance Shop

The Facilities Maintenance Shop was built in 1990 and consists of 1,990 square feet. The HVAC systems at the Facilities Maintenance Shop consist of radiant heaters, one unit heater for the office and operable windows and doors for cooling. Lighting throughout the Shops consists primarily of inefficient T-12 fluorescent light fixtures with magnetic ballasts and 400 Watt Metal Halide lights. Major issues identified at the Facilities Maintenance Shop include inefficient lighting and controls.

Additional baseline parameters and existing equipment for the Facilities Maintenance Shop are inventoried in the table below.

Table 13: Facilities Maintenance Shop Baseline Parameters

Square Footage	1,990
Occupancy	3 people
Heating Equipment	Radiant heaters and 1 – unit heater
Computer Quantities	2 computers
Domestic Hot Water Heater	Electric point of use
Lighting	2.1 watts/sq ft
Hours of Operation	Monday through Friday 7 am – 4 pm

Marble Shop

The Marble Shop was built in 1993 and consists of 3,000 square feet. The HVAC systems at the Marble Shop consist of radiant heaters, electric baseboard heat and operable windows and doors for cooling. Lighting throughout the Shops consists primarily of inefficient T-12 fluorescent light fixtures with magnetic ballasts and 400 Watt Metal Halide lights. Major issues identified at the Marble Shop include leaking windows and doors, metal roof damage from heavy snow and possible roof leaks as well as inefficient lighting and controls.

Additional baseline parameters and existing equipment for the Marble Shop are inventoried in the table below.

Table 14: Marble Shop Baseline Parameters

Square Footage	3,000
Occupancy	1 person
Heating Equipment	Radiant heat, electric baseboard heaters
Computer Quantities	1 computers,
Domestic Hot Water Heater	Non-condensing tank style
Lighting	1.72 watts/sq ft
Hours of Operation	Monday through Friday 7 am - 3:30 pm during the summer and Monday through Thursday 7 am - 5:30

Somerset Shop

The Somerset Shop was built in 1950 and consists of 2,331 square feet. The HVAC systems at the Somerset Shop consist of a propane gas non-condensing furnace and operable windows and doors for cooling. Lighting throughout the Shops consists primarily of inefficient T-12 fluorescent light fixtures with magnetic ballasts and 400 Watt Metal Halide lights. Major issues identified at the Somerset Shop include inefficient heating, leaking doors and windows as well as inefficient lighting and controls.

Additional baseline parameters and existing equipment for the Somerset Shop are inventoried in the table below.

Table 15: Somerset Shop Baseline Parameters

Square Footage	2,331
Occupancy	2 people
Heating Equipment	1 – non-condensing propane furnace
Lighting	0.71 watts/sq ft
Hours of Operation	Monday through Friday 7 am - 3:30 pm during the summer and Monday through Thursday 7 am - 5:30

SCHEDULE C:

ENERGY AND COST SAVINGS GUARANTEE

The guaranteed Cost Savings is comprised of four components:

Auditable Energy Cost Savings – Cost savings that are Measured and Verified (M&V) by Contractor to reconcile guaranteed energy savings using the M&V Protocols described in Schedule F. Savings validated through M&V Protocol Option A shall be measured at the end of the installation period and stipulated over the term of the agreement.

Non-auditable Operational and Maintenance Savings – Defined as costs for replacement parts or equipment, maintenance contracts, and other consumable items used to maintain or replace existing equipment that shall be reduced upon installation of new equipment.

Non-auditable Annual Capital Avoidance Savings – The third category of savings evaluated by Contractor is called Capital Avoidance Savings or Annualized Capital Savings. This category of savings is an avoided cost resulting from equipment replacement performed by Contractor that will eliminate Agency's need to replace this equipment with their own capital funds at some future date.

Cost savings relating to each of the three components are listed in the following table.

Table 16: Total Cost Savings Summary

Cost Savings Category	Annual
Auditable Guaranteed Energy Cost Savings (Year 1)	$ 27,435
Non-Auditable Operational Savings (Year 1)	$ 10,664
Non-Auditable Annual Capital Cost Savings (Year 1)	$ 103,390
TOTAL	**$ 141,489**

Contractor guarantees to Agency that Cost Savings shall be *equal to or greater than* $141,489 per year. The *total* guarantee amount shall be reconciled annually. Buildings and energy conservation measure shall not be guaranteed on an *individual* basis.

The total energy and cost savings for each facility are summarized in the following tables. The 2009 calendar year was used for the baseline period.

Table 17: Total Utility Savings

Utility Description	Units	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	1,385,311	$ 96,145.95	$ 7,519.40
Natural Gas Usage	CCF	93,355	$ 86,126.26	$ 16,612.10
Propane Usage	Gal	11,299	$ 28,217.62	$ 3,303.59
TOTALS			**$ 210,490**	**$ 27,435**

Contractor shall measure and report to Agency on an annual basis the realization of the total Energy Cost Savings based on current utility rates for each building. Energy Cost Savings shall be defined as a reduction in costs from the Baseline. Both parties agree that utility rates for gas and electricity shall be escalated at a rate of 4.2%[1] over the term of the agreement. The tables below show the energy rates, units of energy, and associated costs for the Baseline Year; and the guaranteed units of energy savings for all county facilities included in the Energy Performance Contract.

Table 18: Courthouse Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.06	400,000	$ 26,562	$ 2,768
Natural Gas Usage	CCF	$ 0.892	30,702	$ 28,377	$ 6,228
TOTALS				**$ 54,939**	**$ 8,996**

Table 19: Blackstock Government Center Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.06	313,760	$ 20,683	$ 792
Natural Gas Usage	CCF	$ 0.894	13,274	$ 11,770	$ 1,498
TOTALS				**$ 32,453**	**$ 2,291**

Table 20: Family Services Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.06	86,640	$ 5,808	$ 435
Natural Gas Usage	CCF	$ 0.892	10,668	$ 9,463	$ 3,575
TOTALS				**$ 15,271**	**$ 4,010**

[1] Department of Commerce NIST Price Indices – April 2010

Table 21: Tenderfoot Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.06	62,920	$ 4,319	$ 3
Natural Gas Usage	CCF	$ 0.951	4,789	$ 4,791	$ 792
TOTALS				**$ 9,110**	**$ 795**

Table 22: Multipurpose Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.06	50,680	$ 3,427	$ 987
Natural Gas Usage	CCF	$ 0.938	8,774	$ 8,477	$ 331
TOTALS				**$ 11,903**	**$ 1,318**

Table 23: Housing Authority Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.08	5,006	$ 422	$ 423
Natural Gas Usage	CCF	$ 0.969	2,809	$ 2,762	$ 208
TOTALS				**$ 3,184**	**$ 631**

Table 24: Airport Terminal Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.06	323,234	$ 21,548	$ 273
Natural Gas Usage	CCF	$ 0.899	15,996	$ 14,564	$ 3,808
TOTALS				**$ 36,112**	**$ 4,081**

Table 25: Marble Bank Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	N/A	-	$ -	$ -
Propane Usage	Gal	$ 2.356	805	$ 1,696	$ 128
TOTALS				**$ 1,696**	**$ 128**

Table 26: Dos Rios Water Treatment Plant Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.06	65,406	$ 4,472	$ 104
Natural Gas Usage	CCF	$ 0.900	4,491	$ 4,033	$ (32)
TOTALS				**$ 8,505**	**$ 72**

Table 27: Landfill Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.10	11,964	$ 1,385	$ 130
Propane Usage	Gal	$ 2.63	2,756	$ 6,912	$ 1,487
TOTALS				**$ 8,297**	**$ 1,617**

Table 28: Facilities Maintenance Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.07	6,899	$ 527	$ 180
Natural Gas Usage	CCF	$ 1.02	1,852	$ 1,891	$ 203
TOTALS				**$ 2,418**	**$ 383**

Table 29: Doyleville Shop Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.10	14,462	$ 1,747	$ 154
Propane Usage	Gal	$ 2.65	2,161	$ 5,457	$ 1,496
TOTALS				**$ 7,204**	**$ 1,649**

Table 30: Crested Butte Shop Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.10	23,401	$ 2,689	$ 639
Propane Usage	Gal	$ 2.66	2,023	$ 5,257	$ (136)
TOTALS				**$ 7,947**	**$ 502**

Table 31: Somerset Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.17	10,611	$ 1,504	$ 246
Propane Usage	Gal	$ 2.68	2,329	$ 6,229	$ (121)
TOTALS				**$ 7,733**	**$ 124**

Table 32: Marble Shop Energy Cost and Savings

Utility Description	Units	$/Unit	Baseline Usage	Baseline Cost	Guaranteed Savings
Electric Usage	kWh	$ 0.09	10,328	$ 1,051	$ 386
Propane Usage	Gal	$ 2.42	1,225	$ 2,667	$ 451
TOTALS				**$ 3,718**	**$ 837**

Each year, following the commencement date of the project, Contractor shall report to Agency on the performance of the Energy Cost Savings. This report shall identify how much Energy Cost Savings have resulted from the installation of equipment listed in this contract.

Each year the Baseline Year energy consumption shall be adjusted to reflect changes in: 1) Weather; 2) Building Hours of Use; 3) Installation of new equipment; or 4) Any other factor effecting energy use beyond Contractor's direct control. After such adjustments to the Baseline Year are complete, the Actual Energy Cost is subtracted from the Adjusted Baseline Year Energy Cost resulting in the Actual Energy Cost Savings.

The hours of occupancy and occupant load for the calculated Actual Energy Cost Savings were based on staff interviews at each facility as well as the use of occupancy sensor data loggers to verify the interview results.

(Baseline Year Energy Cost) – (Actual Energy Cost) = (Actual Energy Cost Savings)

If the cumulative Actual Energy Cost Savings up to the Audit Date are less than the Guaranteed Energy Cost Savings, then Contractor shall remit payment to Fremont for this difference subject to the following provisions:

1) If either party terminates this contract, this Energy Guarantee is no longer legally binding.
2) If Agency cancels Monitoring Services, this Energy Guarantee is no longer legally binding.
3) If equipment or FACILITIES are substantively damaged by an Act of God, this Energy Guarantee is no longer legally binding.

SCHEDULE D:

MONITORING, MAINTENANCE AND SERVICE AGREEMENT

Contractor shall provide the following monitoring and support services to Gunnison County for the first three years of the contract.

Contractor shall collect utility data on an annual basis for the Airport Terminal, Blackstock, Fam Services, and the Courthouse to monitor consumptions. The utility data shall be provided in the form of monthly utility bills, which shall be mailed to Contractor by Agency monthly or annually for each year of the monitoring agreement.

Contractor shall submit a formal report to Agency each year to report actual energy use on a BTU per square foot basis and a dollar per square foot basis. The report shall also include the weather intensity impact

Contractor will receive an annual monitoring and operational support fee of $2,700 in monthly installments. The monitoring fee shall be escalated at a rate of 3.6% on an annual basis to account for normal service cost inflation.

Contractor is not providing a maintenance or service contract for equipment installed under this Agreement. However, Contractor will provide suggestions and guidance to designated Agency personnel committed to maintaining existing and new equipment provided under this Agreement. Contractor will also make an annual trip to Agency at the beginning of each heating season to insure that the newly installed equipment is operating as intended. Additionally, Contractor will provide 10 hours of annual remote technical support by means of email, facsimile or phone.

SCHEDULE E:

BASELINE ENERGY CONSUMPTION

The baseline energy consumption was established using utility bills from January, 2009 to December, 2009. The table below summarizes the baseline utility usage for each facility.

Table 33: Baseline Energy Consumption

Building	Electrical Usage (kWh)	Natural Gas Usage (CCF)	Propane (Gals)	Total Cost ($)
Courthouse	400,000	30,702		$ 54,938.67
Blackstock Government Center	313,760	13,274		$ 32,453.30
Family Services	86,640	10,668		$ 15,271.32
Tenderfoot	62,920	4,789		$ 9,109.69
Multipurpose	50,680	8,774		$ 11,903.14
Housing Authority	5,006	2,809		$ 3,184.31
Airport Terminal	323,234	15,996		$ 36,111.60
Marble Bank	-		805	$ 1,696.47
Dos Rios Water Treatment Plant	65,406	4,491		$ 8,505.21
Landfill	11,964		2,756	$ 8,297.04
Facilities Maintenance	6,899	1,852		$ 2,417.58
Doyleville Shop	14,462		2,161	$ 7,204.00
Crested Butte Shop	23,401		2,023	$ 7,946.50
Somerset Shop	10,611		2,329	$ 7,733.21
Marble Shop	10,328		1,225	$ 3,717.79

SCHEDULE F:

SAVINGS MEASUREMENT AND CALCULATION FORMULAE; METHODOLOGY TO ADJUST BASELINE; MEASUREMENT AND VERIFICATION PLAN

Savings Calculation Formulae

Courthouse Variable Air Volume and Direct Digital Control System

The calculation for the variable air volume conversion and Direct Digital Control (DDC) system were performed sequentially to account for interactive effects. The energy savings for this item was determined using individual calculations. The DDC system savings calculations were performed using a bin weather analysis based on heating degree hours. The variable air volume (VAV) savings calculations were based on a reduction in system airflow during the heating season as well as reduced fan horsepower. The individual calculations take into account the annual conduction, infiltration and ventilation heat losses based on envelope U-values, wall areas, and heating degree hours based on current and proposed temperature setpoints.

The airflow and fan horsepower were reduced by 70% during the heating season to calculate the gas and electric savings. The natural gas savings for the proposed VAV systems is calculated by subtracting the post-retrofit VAV gas consumption from the pre-retrofit VAV gas consumption. The electrical usage (kWh) savings was calculated by subtracting the post-retrofit fan motor electrical consumption from the pre-retrofit fan motor electrical consumption.

The DDC system savings are based on the reduction in heating degree hours and a reduction in the occupied and unoccupied ventilation rate. The reduction in occupied and unoccupied heating degree hours is attributed to reducing the occupied and unoccupied setpoints of the building. Natural gas savings is calculated by subtracting the total post-retrofit gas consumption from the pre-retrofit gas consumption. Since there is no mechanical cooling there is no electrical usage (kWh) savings associated with the DDC system. Calculations are shown below:

Building Volume (BV)	1,166,100	ft^3
Window U Value (WinU)	0.55	BTU / hr x ft^2 x °F
Wall U Value (WU)	0.04	BTU / hr x ft^2 x °F
Roof U Value (RU)	0.04	BTU / hr x ft^2 x °F
Window Area (WinA)	840	ft^2
Wall Area (WA)	10,392	ft^2
Roof Area (RA)	22,425	ft^2
Infiltration Air Changes Per Hour (ACH)	0.3	ACH
Ventilation Rate (CFM/Person)	20	CFM/Person
Occupied Occupants (OPeople)	90	People
Unoccupied Occupants (UPeople)	30	People
Annual Occupied Hours Jail (JOH)	8760	Hours
Annual Occupied Hours (OH)	4380	Hours
Ratio of Jail Heating Hours to Total Hours (JHR)	0.88	
Ratio of Occupied Heating Hours to Total Hours (OHR)	0.81	
Ratio of Jail Cooling Hours to Total Hours (JCR)	0.12	
Ratio of Occupied Cooling Hours to Total Hours (OCR)	0.19	
Pre Jail Fan CFM (PreJCFM)	16,845	CFM
Post Jail Fan CFM (PostJCFM)	5,615	CFM
Minutes /hour	60	min/hr
Building UA (BUA) = (WinU x WinA + WU x WA + RU x RA)	1,774.68	BTU/hr/°F
Infiltration Rate (IR) = (ACH x BV / Minutes)	6,414	CFM
Pre-Retrofit Average Occupied Ventilation (PreAOVCFM)	3,970	CFM
Pre-Retrofit Average Unoccupied Ventilation (PreAUVCFM)	1,214	CFM
Post-Retrofit Occupied Ventilation (PostOVCFM) = (OPeople x CFM/Person)	1,800	CFM
Post-Retrofit Unoccupied Ventilation (PostUVCFM) = (UPeople x CFM/Person)	600	CFM
Pre-Retrofit Occupied Heating Degree Hours at Current set point of 72 °F (PreOHDH)	128,403	Degree Hours
Pre-Retrofit Unoccupied Heating DegreeHours at Current set point of 65 °F (PreUHDH)	131,790	Degree Hours
Post-Retrofit Occupied Heating Degree Hours at Current set point of 72 °F (PostOHDH)	128,403	Degree Hours
Post-Retrofit Unoccupied Heating Degree Hours at Proposed set point of 60 °F (PreUHDH)	111,557	Degree Hours
Convert BTUH to Therms (1 Therm = 100,000 BTUH)	100,000	BTUH/Therm
Convert HP to kWh (1 HP = 0.7456 kWh)	0.746	kWh/HP
Specific Heat (Cp)	1.085	BTU x min/ H x ft^3 x °F
Altitude Correction (Alt)	0.739	
Pre Occupied Building Heat Load (PreOBHL) = (BUA x PreOHDD x Hours + IR x PreOHDD x Hours x Cp x Alt + PreAOVCFM x PreOHDD x Hours x Cp x Alt) / (BTU/Therm)	12,969	Therm
Pre Unoccupied Building Heat Load (PreUBHL) = (BUA x PreUHDD x Hours + IR x PreUHDD x Hours x Cp x Alt + PreAUVCFM x PreUHDD x Hours x Cp x Alt) / (BTU/Therm)	10,399	Therm
Post Occupied Building Heat Load (PostOBHL) = (BUA x PostOHDD x Hours + IR x PostOHDD x Hours x Cp x Alt + PostOVCFM x PostOHDD x Hours x Cp x Alt)/ (BTU/Therm)	10,735	Therm
Post Unoccupied Building Heat Load (PostUBHL) = (BUA x PostUHDD x Hours + IR x PostUHDD x Hours x Cp x Alt + PostUVCFM x PostUHDD x Hours x Cp x Alt) / (BTU/Therm)	8,253	Therm
Pre VAV Heat Load (PreVAVHL) = ((PreJCFM x JOH x Cp x Alt) / (BTU/Therm) / HSEff/Alt)	1,392	Therm
Post VAV Heat Load (PostVAVHL) = (((PostJCFM x JOH x Cp x Alt) / (BTU/Therm) / HSEff /Alt) x JHR)	406	Therm
Pre Jail Supply + Return Fan HP (PreJHP)	7	HP
Pre AHU4 Supply + Return Fan HP (PreHP)	5	HP
Post Jail Supply + Return Fan HP (PostJHP) **Reduce Fan HP to 30%	3	HP
Post AHU4 Supply + Return Fan HP (PostHP) **(Reduce Fan HP to 30%	2	HP
Pre VAV Motor Operation (PreVAV) = (PreJHP x (kW/HP) x JOH) + (PreHP x (kW/HP) x OH)	62,049	kWh
Post VAV Motor Operation (PostVAV) = (PostJHP x (kW/HP) x JOH) x JHR + (PostHP x (kW/HP) x OH) x OHR + (PreJHP x (kW/HP) x JOH) x JCR + (PreHP x (kW/HP) x OH) x OCR	28,349	kWh
Heating System Efficiency (HSEff)	85.0%	
Natural Gas Energy Content (Therms/CCF)	1.00	Therm/CCF
Variable Air Volume Box Gas Savings (NVAVS) = ((PreVAVHL - PostVAVHL)/(Therm/CCF)	986	CCF
Variable Air Volume Box Electrical Savings (EVAVS) = (PreVAV - PostVAV)	33,700	kWh
DDC Savings (DDCS) = ((PreOBHL+PreUBHL - PostOBHL+PostUBHL) / PostHSEFF / Alt / (Therm/CCF))	6,973	CCF

Table 34: Courthouse Variable Air Volume Zoning Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	33,700	$ 0.06	/kWh	$ 2,061.63
Natural Gas (Therm)	986	$ 0.89	/Therm	$ 878.92
			Total:	$ 2,940.55

Table 35: Courthouse DDC System Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.06	/kWh	$ -
Natural Gas (Therm)	6,973	$ 0.89	/Therm	$ 6,216.43
			Total:	$ 6,216.43

Blackstock Government Center Direct Digital Control System

The energy savings for this item was determined using individual calculations. The DDC system savings calculations were performed using a BIN weather analysis based on heating degree hours. The individual calculations take into account the annual conduction, infiltration and ventilation heat losses based on envelope U-values, wall areas, and heating degree hours based on occupied and unoccupied setpoints. The DDC system savings are based on the reduction in heating and cooling degree hours. The reduction in occupied and unoccupied degree hours is attributed to changing the occupied and unoccupied setpoints of the building. Natural gas savings is calculated by subtracting the total post-retrofit gas consumption from the pre-retrofit gas consumption. The electrical usage savings is calculated by subtracting the total post-retrofit electrical consumption from the pre-retrofit electrical consumption. Fan motor electrical savings are negligible and are excluded from the calculations. Calculations are shown below:

Building Volume (BV)	733,600	ft^3
Window U Value (WinU)	0.50	BTU / hr x ft^2 x °F
Wall U Value (WU)	0.04	BTU / hr x ft^2 x °F
Roof U Value (RU)	0.03	BTU / hr x ft^2 x °F
Window Area (WinA)	1,920	ft^2
Wall Area (WA)	16,280	ft^2
Roof Area (RA)	13,100	ft^2
Infiltration Air Changes Per Hour (ACH)	0.3	ACH
Ventilation Rate (CFM/Person)	17	CFM/Person
Occupied Occupants (OPeople)	35	People
Unoccupied Occupants (UPeople)	0	People
Minutes /hours	60	min/hr
Building UA (BUA) = (WinU x WinA + WU x WA + RU x RA)	1,922.80	BTU/hr/°F
Infiltration Rate (IR) = (ACH x BV / Minutes)	3056.67	CFM
Pre-Retrofit Average Occupied Ventilation (PreOVCFM)	600	CFM
Pre-Retrofit Average Unoccupied Ventilation (PreUVCFM)	600	CFM
Post-Retrofit Occupied Ventilation (PostOVCFM) = (OPeople x CFM/Person)	595	CFM
Post-Retrofit Unoccupied Ventilation (PostUVCFM) = (UPeople x CFM/Person)	-	CFM
Pre-Retrofit Occupied Heating Degree Hours at Current set point of 70 °F (PreOHDH)	137,982	Degree Hours
Pre-Retrofit Unoccupied Heating Degree Hours at Current set point of 65 °F (PreUHDH)	116,181	Degree Hours
Post-Retrofit Occupied Heating Degree Hours at Current set point of 70 °F (PostOHDH)	137,982	Degree Hours
Post-Retrofit Unoccupied Heating Degree Hours at Proposed set point of 60 °F (PreUHDH)	97,698	Degree Hours
Pre-Retrofit Occupied Cooling Degree Hours at Current set point of 72 °F (PreOCDH)	2,429	Degree Hours
Pre-Retrofit Unoccupied Cooling Degree Hours at Current set point of 80 °F (PreUCDH)	11	Degree Hours
Post-Retrofit Occupied Cooling Degree Hours at Current set point of 72 °F (PostOCDH)	2,429	Degree Hours
Post-Retrofit Unoccupied Cooling Degree Hours at Proposed set point of 90 °F (PreUCDH)	-	Degree Hours
Convert BTUH to Therms (1 Therm = 100,000 BTUH)	100,000	BTUH/Therm
Specific Heat (Cp)	1.085	BTU x min/ H x ft^3 x °F
Altitude Correction (Alt)	0.739	
Chiller Altitude Correction (CAlt)	0.950	
Chiller Efficiency (CEff)	0.00010	kW/BTUH
Pre Occupied Building Heat Load (PreOBHL) = (BUA x PreOHDH + IR x PreOHDH x Cp x Alt + VCFM x PreOHDH x Cp x Alt) / (BTU/Therm)	6,699	Therm
Pre Unoccupied Building Heat Load (PreUBHL) = (BUA x PreUHDH + IR x PreUHDH x Cp x Alt + VCFM x PreUHDH x Cp x Alt) / (BTU/Therm)	5,640	Therm
Post Occupied Building Heat Load (PostOBHL) = (BUA x PostOHDH + IR x PostOHDH x Cp x Alt + VCFM x PostOHDH x Cp x Alt)/ (BTU/Therm)	6,693	Therm
Post Unoccupied Building Heat Load (PostUBHL) = (BUA x PostUHDH + IR x PostUHDH x Cp x Alt + VCFM x PostUHDH x Cp x Alt) / (BTU/Therm)	4,273	Therm
Pre Occupied Building Cooling Load (PreOBCL) = ((BUA x PreOCDH + IR x PreOCDH x Cp x Alt + VCFM x PreOCDH x Cp x Alt) x CEff / CAlt)	1,299	kWh
Pre Unoccupied Building Cooling Load (PreUBCL) = ((BUA x PreUCDH + IR x PreUCDH x Cp x Alt + VCFM x PreUCDH x Cp x Alt) x CEff / CAlt)	6	kWh
Post Occupied Building Cooling Load (PostOBCL) = ((BUA x PostOCDH + IR x PostOCDH x Cp x Alt + VCFM x PostOCDH x Cp x Alt) x Ceff / CAlt)	1,298	kWh
Post Unoccupied Building Cooling Load (PostUBCL) = ((BUA x PostUCDH + IR x PostUCDH x Cp x Alt + VCFM x PostUCDH x Cp x Alt) x CEFF / CAlt)	-	kWh
Heating System Efficiency (HSEff)	85%	
Natural Gas Energy Content (Therms/CCF)	1.00	Therm/CCF
Gas Savings (GS) = ((PreOBHL + PreUBH)L - (PostOBHL + PostUBHL)) /HSEff/Alt/(Therm/CCF)	2,186	CCF
Electric Savings (ES) = (PreOBCL + PreUBCL) - (PostOBCL + PostUBCL)	10	kWh

Table 36: Blackstock Government Center DDC System Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	10	$ 0.06	/kWh	$ 0.58
Natural Gas (Therm)	2,186	$ 0.89	/Therm	$ 1,953.06
			Total:	$ 1,953.63

Multipurpose Building High Efficiency Boiler

The energy savings for this item was determined using individual calculations. The high efficiency boiler savings calculation is performed using a bin weather analysis based on heating degree hours. The individual calculations take into account the annual conduction, infiltration and ventilation heat losses based on envelope U-values, wall areas, and heating degree hours based on occupied and unoccupied setpoints. Boiler savings are based on an overall thermal efficiency increase of the proposed boiler combustion efficiency (90%) compared to the existing boiler combustion efficiency (81%). Natural gas savings are calculated by subtracting the total post-retrofit gas consumption from the pre-retrofit gas consumption. The electrical consumption affects are negligible and are excluded from the calculations. Calculations are shown below:

Building Volume (BV)	290,688	ft^3
Window U Value (WinU)	0.06	BTU / hr x ft^2 x °F
Wall U Value (WU)	0.04	BTU / hr x ft^2 x °F
Roof U Value (RU)	0.04	BTU / hr x ft^2 x °F
Window Area (WinA)	96	ft^2
Wall Area (WA)	5,256	ft^2
Roof Area (RA)	12,112	ft^2
Infiltration Air Changes Per Hour (ACH)	0.15	ACH
Ventilation Rate (CFM/Person)	0	CFM/Person
Occupants (People)	30	People
Minutes/hours	60	min/hr
Building UA (BUA) = (WinU x WinA + WU x WA + RU x RA)	700.48	BTU/hr/°F
Infiltration Rate (IR) = (ACH x BV / Minutes)	726.72	CFM
Ventilation (VCFM) = (People x CFM/Person)	-	CFM
Heating Degree Hours (HDH)	202,263	Hours
Convert BTUH to Therms (1 Therm = 100,000 BTUH)	100,000	BTUH/Therm
Specific Heat (Cp)	1.085	BTU x min/ H x ft^3 x °F
Altitude Correction (Alt)	0.739	
Pre-Retrofit Combusion Efficiency *Measured (PreCEff)	81%	
Pre-Retrofit Thermal Efficiency *Estimated (PreTEff)	90%	
Pre-Retrofit Heating System Efficiency (PreHSEff) = (PreCEff x PreTEff)	73.2%	
Post-Retrofit Combusion Efficiency *Measured (PostCEff)	90%	
Post-Retrofit Thermal Efficiency *Estimated (PostTEff)	98%	
Post-Retrofit Heating System Efficiency (PostHSEff) = (PostCEff x PostTEff)	88.2%	
Natural Gas Energy Content (Therms/CCF)	1.00	Therm/CCF
Pre-Retrofit Boiler (PreB) = (BUA x HDH + IR x HDH x Cp x Alt + VCFM x HDHx Cp x Alt)/ (BTU/Therm) / PreHSEff / Alt / (Therm/CCF))	4,799.81	Therm
Post-Retrofit Boiler (PostB) = (BUA x HDH+ IR x HDH x Cp x Alt + VCFM x HDH x Cp x Alt) / (BTU/Therm) / PostHSEff / Alt / (Therm/CCF))	3,981.88	Therm
Gas Savings (GS) = (PreB - PostB)	818	CCF

Table 37: Multipurpose Building High Efficiency Boiler Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.06	/kWh	$ -
Natural Gas (Therm)	818	$ 0.94	/Therm	$ 766.91
			Total:	$ 766.91

Family Services High Efficiency Boiler, Variable Air Volume, and Direct Digital Control System

The calculation for the high efficiency boiler, variable air volume conversion and Direct Digital Control (DDC) system were performed sequentially to account for interactive effects. The energy savings for this item was determined using individual calculations. Boiler savings are based on an overall thermal efficiency increase of the proposed boiler combustion efficiency (90%) compared to the existing boiler combustion efficiency (84%). The DDC system savings calculations were performed using a BIN weather analysis based on heating degree hours. The variable air volume (VAV) savings calculations were based on a reduction in system airflow during the heating season as well as reduced fan horsepower. The individual calculations take into account the annual conduction, infiltration and ventilation heat losses based on envelope U-values, wall areas, and heating degree hours based on current and proposed temperature setpoints.

Natural gas savings for the boiler was calculated by subtracting the total post-retrofit boiler gas consumption from the pre-retrofit boiler gas consumption. The electrical consumption affects are negligible and are excluded from the calculations.

The airflow and fan horsepower were reduced by 70% during the heating season to calculate the gas and electric savings. The natural gas savings for the proposed VAV systems is calculated by subtracting the post-retrofit VAV gas consumption from the pre-retrofit VAV gas consumption. The electrical usage (kWh) savings was calculated by subtracting the post-retrofit fan motor electrical consumption from the pre-retrofit fan motor electrical consumption.

The DDC system savings are based on the reduction in heating degree hours and a reduction in the occupied and unoccupied ventilation rate. The reduction in occupied and unoccupied heating degree hours is attributed to reducing the occupied and unoccupied setpoints of the building. Natural gas savings is calculated by subtracting the total post-retrofit gas consumption from the pre-retrofit gas consumption. Since there is no mechanical cooling there is no electrical usage (kWh) savings associated with the DDC system. Calculations are shown below:

Building Volume (BV)	174,000	ft^3
Window U Value (WinU)	0.60	BTU / hr x ft^2 x °F
Wall U Value (WU)	0.04	BTU / hr x ft^2 x °F
Roof U Value (RU)	0.05	BTU / hr x ft^2 x °F
Window Area (WinA)	2000	ft^2
Wall Area (WA)	4,480	ft^2
Roof Area (RA)	11,600	ft^2
Infiltration Air Changes Per Hour (ACH)	0.5	ACH
Ventilation Rate (CFM/Person)	20	CFM/Person
Occupied Occupants (OPeople)	40	People
Unoccupied Occupants (UPeople)	0	People
Annual Occupied Hours (PreOH)	3,132	Hours
Ratio of Occupied Heating Hours to Total Hours (OHR)	0.80	
Ratio of Occupied Cooling Hours to Total Hours (OCR)	0.20	
Pre System CFM (PreCFM)	9,910	CFM
Post System CFM (PostCFM)	7,531	CFM
Minutes /hour	60	min/hr
Building UA (BUA) = (WinU x WinA + WU x WA + RU x RA)	1,959.20	BTU/hr/°F
Infiltration Rate (IR) = (ACH x BV / Minutes)	1450	CFM
Pre-Retrofit Occupied Ventilation (PreOVCFM)	1,500	CFM
Pre-Retrofit Unoccupied Ventilation (PreUVCFM)	-	CFM
Post-Retrofit Ventilation (PostOVCFM) = (OPeople x CFM/Person)	800	CFM
Post-Retrofit Unoccupied Ventilation (PostUVCFM) = (UPeople x CFM/Person)	-	CFM
Pre-Retrofit Supply & Return Fan HP *current VSD operation (PreHP)	5	HP
Post-Retrofit Supply & Return Fan HP *Reduced Fan HP to 12% of current operation (PostHP)	4.1	HP
Pre-Retrofit Occupied Heating Degree Hours at Current set point of 74 °F (PreOHDH)	98,035	Degree Hours
Pre-Retrofit Unoccupied Heating Degree Hours at Current set point of 65°F (PreUHDH)	160,319	Degree Hours
Post-Retrofit Occupied Heating Degree Hours at Current set point of 74 °F (PostOHDH)	98,035	Degree Hours
Post-Retrofit Unoccupied Heating Degree Hours at Proposed set point of 60 °F (PreUHDH)	135,236	Degree Hours
Convert BTUH to Therms (1 Therm = 100,000 BTUH)	100,000	BTUH/Therm
Convert HP to kW (1 HP = 0.7456 kW)	0.7456	kW/HP
Specific Heat (Cp)	1.085	BTU x min/ H x ft^3 x °F
Altitude Correction (Alt)	0.739	
Pre Occupied Building Heat Load (PreOBHL) = (BUA x PreOHDD x Hours + IR x PreOHDD x Hours x Cp x Alt + PreVCFM x PreOHDD x Hours x Cp x Alt) / (BTU/Therm)	4,240	Therm
Pre Unoccupied Building Heat Load (PreUBHL) = (BUA x PreUHDD x Hours + IR x PreUHDD x Hours x Cp x Alt + PreVCFM x PreUHDD x Hours x Cp x Alt) / (BTU/Therm)	5,005	Therm
Post Occupied Building Heat Load (PostOBHL) = (BUA x PostOHDD x Hours + IR x PostOHDD x Hours x Cp x Alt + PostOVCFM x PostOHDD x Hours x Cp x Alt) / (BTU/Therm)	3,689	Therm
Post Unoccupied Building Heat Load (PostUBHL) = (BUA x PostUHDD x Hours + IR x PostUHDD x Hours x Cp x Alt + PostUVCFM x PostUHDD x Hours x Cp x Alt) / (BTU/Therm)	4,222	Therm
Pre VAV Heat Load (PreVAVHL) = ((PreCFM x PreOH x Cp x Alt) / (BTU/Therm) / HSEff/Alt) x OHR	382	Therm
Post VAV Heat Load (PostVAVHL) = (PostCFM x PreOH x Cp x Alt) / (BTU/Therm) / PostHSEff / Alt) x OHR	234	Therm
Pre VAV Motor Operation (PreVAV) = (PreHP x (kW/HP) x OH)	12,296	kWh
Post VAV Motor Operation (PostVAV) = (PostHP x (kW/HP) x OH) x OHR + (PreHP x (kW/HP) x OH) x OCR	10,152	kWh
Pre-Retrofit Combustion Efficiency *Measured (PreCEff)	84%	
Pre-Retrofit Thermal Efficiency *Estimated (PreTEff)	90%	
Pre-Retrofit Heating System Efficiency (PreHSEff) = (PreCEff x PreTEff)	75.6%	
Post-Retrofit Combustion Efficiency *Measured (PostCEff)	90%	
Post-Retrofit Thermal Efficiency *Estimated (PostTEff)	98%	
Post-Retrofit Heating System Efficiency (PostHSEff) = (PostCEff x PostTEff)	88.2%	
Natural Gas Energy Content (Therms/CCF)	1.00	Therm/CCF
Convert HP to kW	0.746	kW
High Efficiency Boiler Savings (HEBS) = (((PreOBHL+PreUBHL) / PreHSEff / Alt) - ((PreOBHL + PreUBHL) / PostHSEff / Alt)) / (Therm / CCF)	2,364	CCF
Variable Air Volume Box Gas Savings (NVAVS) = (PreVAVHL - PostVAVHL) /(Therm/CCF)	227	CCF
Variable Air Volume Box Electrical Savings (EVAVS) = (PreVAV - PostVAV)	2,873	kWh
DDC Savings (DDCS) = (PreOBHL+PreUBHL - PostOBHL+PostUBHL/PostHSEFF/Alt / (Therm / CCF))	2,046	CCF

Table 38: Family Services High Efficiency Boiler Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.06	/kWh	$ -
Natural Gas (Therm)	2,364	$ 0.89	/Therm	$ 2,108.36
			Total:	$ 2,108.36

Table 39: Family Services Variable Air Volume Zoning Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	2,873	$ 0.06	/kWh	$ 176.82
Natural Gas (Therm)	227	$ 0.89	/Therm	$ 202.90
			Total:	$ 379.72

Table 40: Family Services DDC System Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.06	/kWh	$ -
Natural Gas (Therm)	2,046	$ 0.89	/Therm	$ 1,824.47
			Total:	$ 1,824.47

Airport Terminal High Efficiency Boiler and Direct Digital Control System

The calculation for the high efficiency boiler and Direct Digital Control (DDC) system were performed sequentially to account for interactive effects. The energy savings for this item was determined using individual calculations. Boiler savings are based on an overall thermal efficiency increase of the proposed boiler combustion efficiency (90%) compared to the existing boiler combustion efficiency (85%). The DDC system savings calculations were performed using a BIN weather analysis based on heating degree hours. The individual calculations take into account the annual conduction, infiltration and ventilation heat losses based on envelope U-values, wall areas, and heating degree hours based on current and proposed temperature setpoints.

During the Data Log analysis of the Airport Terminal it was found that the facility is currently not being supplied ventilation air. A baseline adjustment was made to account for current ventilation rates during high traffic times at 1,600 CFM. An option for demand based ventilation was added to scope to reduce the amount of the adjusted ventilation air to 800 CFM to calculate ventilation savings for the DDC system.

Natural gas savings for the boiler are calculated by subtracting the total post-retrofit boiler gas consumption from the pre-retrofit boiler gas consumption. The electrical consumption affects are negligible and are excluded from the calculations.

The DDC system savings are based on the reduction in heating degree hours and a reduction in the occupied and unoccupied ventilation rate. The reduction in occupied and unoccupied heating degree hours is attributed to reducing the occupied and unoccupied setpoints of the building.

Natural gas savings is calculated by subtracting the total post-retrofit gas consumption from the pre-retrofit gas consumption. Since there is no mechanical cooling there is no electrical usage (kWh) savings associated with the DDC system. Calculations are shown below:

Airport Terminal - High Eff Boiler & DDC Upgrade

Building Volume (BV)	418,530	ft^3
Window U Value (WinU)	0.60	BTU / hr x ft^2 x °F
Wall U Value (WU)	0.04	BTU / hr x ft^2 x °F
Roof U Value (RU)	0.04	BTU / hr x ft^2 x °F
Window Area (WinA)	2,400	ft^2
Wall Area (WA)	9,390	ft^2
Roof Area (RA)	27,902	ft^2
Infiltration Air Changes Per Hour (ACH)	0.3	ACH
Ventilation Rate (CFM/Person)	20	CFM/Person
Occupied Occupants (OPeople)	80	People
Unoccupied Occupants (UPeople)	0	People
Minutes /hour	60	min/hr
Building UA (BUA) = (WinU x WinA + WU x WA + RU x RA)	2,931.68	BTU/hr/°F
Infiltration Rate (IR) = (ACH x BV / Minutes)	2092.65	CFM
Pre-Retrofit Occupied Ventilation (PreOVCFM)	1,600	CFM *Baseline Adj
Pre-Retrofit Unoccupied Ventilation (PreUVCFM)	-	CFM
Post-Retrofit Occupied Ventilation (PostOVCFM) = (Peopld x CFM/Person)	800	CFM *Demand Based Vent Op
Post-Retrofit Unoccupied Ventilation (PostUVCFM) = (UPeople x CFM/Person)	-	CFM
Pre-Retrofit Occupied Heating Degree Hours at Current set point of 75 °F (PreOHDH)	184,322	Degree Hours
Pre-Retrofit Unoccupied Heating Degree Hours at Current set point of 65 °F (PreUHDH)	101,031	Degree Hours
Post-Retrofit Occupied Heating Degree Hours at Current set point of 75 °F (PostOHDH)	184,322	Degree Hours
Post-Retrofit Unoccupied Heating Degree Hourss at Proposed set point of 60°F (PreUHDH)	86,494	Degree Hours
Convert BTUH to Therms (1 Therm = 100,000 BTUH)	100,000	BTUH/Therm
Specific Heat (Cp)	1.085	BTU x min/ H x ft^3 x °F
Altitude Correction (Alt)	0.739	
Pre Occupied Building Heat Load (PreOBHL) = (BUA x PreOHDH + IR x PreOHDH x Cp x Alt + PreOVCFM x PreOHDH x Cp x Alt) / (BTU/Therm)	10,861	Therm
Pre Unoccupied Building Heat Load (PreUBHL) = (BUA x PreUHDH + IR x PreUHDH x Cp x Alt + PreUVCFM x PreUHDH x Cp x Alt)/ (BTU/Therm)	4,657	Therm
Post Occupied Building Heat Load (PostOBHL) = (BUA x PostOHDH + IR x PostOHDH x Cp x Alt + PostOVCFM x PostOHDH x Hours x Cp x Alt) / (BTU/Therm)	9,679	Therm
Post Unoccupied Building Heat Load (PostUBHL) = (BUA x PostUHDH + IR x PostUHDH x Cp x Alt + PostUVCFM x PostUHDH x Cp x Alt)/ (BTU/Therm)	3,987	Therm
Pre-Retrofit Combusion Efficiency *Measured (PreCEff)	85%	
Pre-Retrofit Thermal Efficiency *Estimated (PreTEff)	90%	
Pre-Retrofit Heating System Efficiency (PreHSEff)	76%	
Post-Retrofit Combusion Efficiency *Measured (PostCEff)	90%	
Post-Retrofit Thermal Efficiency *Estimated (PostTEff)	98%	
Post-Retrofit Heating System Efficiency (PostHSEff)	88%	
Natural Gas Energy Content (Therms/CCF)	1.00	Therm/CCF
High Efficiency Boiler Savings (HEBS) = (((PreOBHL+PreUBHL) / PreHSEff / Alt) - ((PreOBHL + PreUBHL) / PostHSEff / Alt)) / (Therm / CCF) x (1/2) *only 2 of the 4 heating systems is being replaced	1,863.84	CCF
DDC Savings (DDCS) = ((PreOBHL+PreUBHL) - (PostOBHL+PostUBHL))/PostHSEFF/Alt / (Therm / CCF)	2,842.05	CCF

Table 41: Airport Terminal High Efficiency Boiler Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.06	/kWh	$ -
Natural Gas (Therm)	1,864	$ 0.90	/Therm	$ 1,675.67
			Total:	$ 1,675.67

Table 42: Airport Terminal DDC System Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.06	/kWh	$ -
Natural Gas (Therm)	2,842	$ 0.90	/Therm	$ 2,555.13
			Total:	$ 2,555.13

Tenderfoot Child Care Center DDC Recommission

The energy savings for this item was determined using individual calculations. The Recommissioning savings calculations were performed using a bin weather analysis based on heating degree hours. The individual calculations take into account the annual conduction and ventilation heat losses based on envelope U-values, wall areas, and heating degree hours based on occupied and unoccupied setpoints. The Recommissioning savings are based on reducing the heating and cooling degree hours as a result of changing the occupied and unoccupied setpoints and the operating schedule in the existing programmable thermostats. Natural gas savings are calculated by subtracting the total post-retrofit gas consumption from the pre-retrofit gas consumption. The electrical usage savings are calculated by subtracting the total post-retrofit electrical consumption from the pre-retrofit electrical consumption. Fan horsepower savings are considered negligible and excluded from the calculations. Calculations are shown below:

Building Volume (BV)	139,399	ft^3
Window U Value (WinU)	0.50	BTU / hr x ft^2 x °F
Wall U Value (WU)	0.04	BTU / hr x ft^2 x °F
Roof U Value (RU)	0.04	BTU / hr x ft^2 x °F
Window Area (WinA)	288	ft^2
Wall Area (WA)	5,094	ft^2
Roof Area (RA)	10,723	ft^2
Infiltration Air Changes Per Hour (ACH)	0.3	ACH
Ventilation Rate (CFM/Person)	17	CFM/Person
Occupied Occupants (OPeople)	25	People
Unoccupied Occupants (UPeople)	0	People
Minutes /hour	60	min/hr
Building UA (BUA) = (WinU x WinA + WU x WA + RU x RA)	776.68	BTU/hr/°F
Infiltration Rate (IR) = (ACH x BV / Minutes)	697.00	CFM
Pre-Retrofit Occupied Ventilation (PreOVCFM)	425	CFM
Pre-Retrofit Unoccupied Ventilation (PreUVCFM)	425	CFM
Post-Retrofit Occupied Ventilation (PostOVCFM) = (OPeople x CFM/Person)	425	
Post-Retrofit Unoccupied Ventilation (PostUVCFM) = (UPeople x CFM/Person)	-	CFM
Pre-Retrofit Occupied Heating Degree Hours at Current set point of 72 °F (PreOHDH)	87,379	Hours
Pre-Retrofit Unoccupied Heating Degree Hours at Current set point of 60 °F (PreUHDH)	139,452	Hours
Post-Retrofit Occupied Heating Degree Hours at Current set point of 72 °F (PostOHDH)	87,379	Hours
Post-Retrofit Unoccupied Heating Degree Hours at Proposed set point of 60 °F (PreUHDH)	139,452	Hours
Pre-Retrofit Occupied Cooling Degree Hourys at Current set point of 74 °F (PreOCDH)	1,383	Hours
Pre-Retrofit Unoccupied Cooling Degree Hours at Current set point of 74 °F (PreUCDH)	375	Hours
Post-Retrofit Occupied Cooling Degree Hours at Current set point of 74 °F (PostOCDH)	1,383	Hours
Post-Retrofit Unoccupied Cooling Degree Hours at Proposed set point of 90 °F (PreUCDH)	-	Hours
Hours/Day	24	Hours/Day
Convert BTUH to Therms (1 Therm = 100,000 BTUH)	100,000	BTUH/Therm
Specific Heat (Cp)	1.085	BTU x min/ H x ft^3 x °F
Altitude Correction (Alt)	0.739	
Condenser Alititude Correction (CAlt)	0.950	
Condenser Efficiency (CEff)	0.00008	kW/BTUH
Pre Occupied Building Heat Load (PreOBHL) = (BUA x PreOHDH + IR x PreOHDH x Cp x Alt + VCFM x PreOHDH x Cp x Alt) / (BTU/Therm)	1,465	Therm
Pre Unoccupied Building Heat Load (PreUBHL) = (BUA x PreUHDH + IR x PreUHDH x Cp x Alt + VCFM x PreUHDH x Cp x Alt) / (BTU/Therm)	2,338	Therm
Post Occupied Building Heat Load (PostOBHL) = (BUA x PostOHDH + IR x PostOHDH x Cp x Alt + VCFM x PostOHDH x Cp x Alt) / (BTU/Therm)	1,465	Therm
Post Unoccupied Building Heat Load (PostUBHL) = (BUA x PostUHDH + IR x PostUHDH x Cp x Alt + VCFM x PostUHDH x Cp x Alt) / (BTU/Therm)	1,862	Therm
Pre Occupied Building Cooling Load (PreOBCL) = (BUA x PreOCDH + IR x PreOCDH x Cp x Alt + VCFM x PreOCDH x Cp x Alt) x CEff / CAlt	203	kWh
Pre Unoccupied Building Cooling Load (PreUBCL) = (BUA x PreUCDH + IR x PreUCDH x Cp x Alt + VCFM x PreUCDH x Cp x Alt) x CEff / CAlt	55	kWh
Post Occupied Building Cooling Load (PostOBCL) = (BUA x PostOCDH + IR x PostOCDHx Cp x Alt + VCFM x PostOCDH x Cp x Alt) x CEff / CAlt	203	kWh
Post Unoccupied Building Cooling Load (PostUBCL) = (BUA x PostUCDH + IR x PostUCDH x Cp x Alt + VCFM x PostUCDH x Cp x Alt) x CEff / CAlt	-	kWh
Heating System Efficiency (HSEff)	88%	
Natural Gas Energy Content (Therms/CCF)	1.00	Therm/CCF
Gas Savings (GS) = (PreOBHL + PreUBHL - PostOBHL + PostUBHL /HSEff/Alt/Therm/CCF)	731	CCF
Electric Savings (ES) = (PreOBCL + PreUBCL) - (PostOBCL + PostUBCL)	55	kWh

Table 43: Tenderfoot Child Care Center Existing System Optimization Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	55.08	$ 0.06	/kWh	$ 3.43
Natural Gas (Therm)	731	$ 0.95	/Therm	$ 695.03
			Total:	$ 698.45

Radiant Gas Heat

The energy savings for this item was determined using individual calculations. The radiant heat savings calculation is performed using a bin weather analysis based on heating degree hours. The individual calculations take into account the annual conduction, infiltration and ventilation heat losses based on envelope U-values, wall areas, and heating degree hours based on occupied and unoccupied setpoints. The radiant heat savings are based on the reduction in heating degree hours based on reducing the current heating setpoint from 75°F to 70°F. Natural gas savings are calculated by subtracting the gas consumption of the new radiant heat system from the gas consumption of the existing system (old furnace). Electrical savings from the fans are considered negligible and are excluded from the calculation. Calculations are shown below:

Building Volume (BV)	34,965	ft^3
Window U Value (WinU)	0.60	BTU / hr x ft^2 x °F
Wall U Value (WU)	0.05	BTU / hr x ft^2 x °F
Roof U Value (RU)	0.06	BTU / hr x ft^2 x °F
Window Area (WinA)	96	ft^2
Wall Area (WA)	2,874	ft^2
Roof Area (RA)	2,331	ft^2
Infiltration Air Changes Per Hour (PreACH)	0.6	ACH
Ventilation Rate (CFM/Person)	0	CFM/Person
Occupants (People)	1	People
Minutes/hour	60	min/hr
Building UA (BUA) = (WinU x WinA + WU x WA + RU x RA)	361.98	BTU/hr/°F
Pre Infiltration Rate (PreIR) = (PreACH x BV / Minutes)	355.4775	CFM
Ventilation (VCFM) = (People x CFM/Person)	-	CFM
Pre-Retrofit Heating Degree Hours (PreHDH)	314,539	Degree Hours
Post-Retrofit Heating Degree Hours (PostHDH)	273,421	Degree Hours
Convert BTUH to Therms (1 Therm = 100,000 BTUH)	100,000	BTUH/Therm
Specific Heat (Cp)	1.085	BTU x min/ H x ft^3 x °F
Altitude Correction (Alt)	0.739	
Pre Heating System Efficiency (PreHSEff)	80%	
Post Heating System Efficiency (PostHSEff)	80%	
Pre-Retrofit Building Load (PreBL) = (BUA x PreHDH + PreIR x PreHDH x Cp x Alt + VCFM x PreHDH x Cp x Alt) / (BTU/Therm)	2,035	Therm
Post-Retrofit Building Load (PostBL) = (BUA x PostHDH + PreIR x PostHDH x Cp x Alt + VCFM x PostHDH x Cp x Alt) / (BTU/Therm)	1,769	Therm
Propane Energy Content (Therms/Gal)	0.92	Therm/Gal
Pre Radiant Heaters (PreRH) = (PreBL / PreHSEff / Alt / (Therm/Gal))	3,749.78	
Post Radiant Heaters (PostRH) = (PostBL / PostHSEff / Alt / (Therm/Gal))	3,259.59	
Gas Savings (GS) = (PreRH - PostRH)	490	Gal

Table 44: Somerset Shop Radiant Gas Heat Retrofit Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.17	/kWh	$ -
Propane (Gal)	490	$ 2.68	/Gal	$ 1,313.78
			Total:	$ 1,313.78

Lighting Retrofits

The equations shown below were used in a spreadsheet to calculate the energy savings for the lighting retrofits in the Courthouse, Blackstock Government Center, Family Services, Housing Authority, Multipurpose Building, Water Treatment Plant, Crested Butte, Marble, Landfill, Doyleville, Somerset, and Facilities Maintenance Shop. Please refer to Appendix A for the existing and future lighting wattages, annual operating hours, and fixture quantities that were used in the calculations. The runtimes for the lighting systems in each building are based on interviews, posted building schedules, and observations. Fixture quantities were determined by a detailed lighting survey and pre- and post retrofit lighting wattages were determined by independent lighting wattage tables (utility, ANSI, EPRI).

$$ELD = EQ \times LW \times 0.001\ kW/Watt \times DF$$

$$ELU = LW \times HRS$$

$$NLD = NQ \times NLW \times 0.001\ kW/Watt \times DF$$

$$NLU = NLW \times HRS$$

$$ECS = \$/kW \times (ELD - NLD) + \$/kWh \times (ELU - NLU)$$

Where:

ELD ≡ *Existing lighting electrical demand (kW)*
ECS ≡ *Energy Cost Savings*
ELU ≡ *Existing lighting electrical usage (kWh)*
LW ≡ *Light bulb Wattage*
EQ ≡ *Existing quantity of light fixtures*
EW/Fxtr ≡ *Existing watts / fixture*
HRS ≡ *Annual lighting operating hours runtime;*
NLD ≡ *New lighting electrical demand (kW)*
NLW ≡ *New light bulb wattage*
NLU ≡ *New lighting electrical usage (kWh)*
NQ ≡ *New quantity of light fixtures*
DF ≡ *Diversity Factor; Lights used infrequently are assigned a low diversity factor while lights that are on during peak hours are assigned a high diversity factor*

In addition to the electricity energy savings calculated above, the increase in heating energy and reduction in cooling energy associated with the retrofit was calculated. The increase in heating energy occurs because the more efficient lighting system will produce less heat within the building. The mechanical system compensates by producing the lost heat during the winter months, resulting in slightly more gas usage. The cost of the increased gas usage due to the lighting system upgrade is easily offset by the electricity savings. The reduction in cooling energy occurs because with less heat output from the lighting, there is less cooling needed during the summer months. The reduction in cooling energy was only calculated for buildings with existing cooling systems. For each building, the increase in heating energy and decrease in cooling energy was calculated using the following assumptions and equations below in an hourly spreadsheet calculation:

- 80% of the heat produced by the lighting is transferred to the space
- The heating systems run six months out of the year.
- The cooling systems run six months out of the year.

HeatIncrease = %HeatToSpace x HrlyWattageReduction x 3412Btu/kW ÷ HeatEff%

CoolDecrease = %HeatToSpace x HrlyWattageReduction ÷ 3.52 W/ton x kW/ton

Where:

HeatIncrease ≡ Increased Heating energy (Btu)
CoolDecrease ≡ Reduced Cooling energy (kWh)
%HeatToSpace ≡ % of lighting heat transferred to space, assumed to be 50%
HrlyWattageReduction
≡ The reduction in lighting wattage calculated on an hourly basis according to the operational schedule of the lights
HeatEff% ≡ Efficiency of heating system
kW/ton ≡ kW/ton rating of cooling system

The equations shown below were used in a spreadsheet to calculate the energy savings for the Occupancy and Daylighting Sensors. The % reduction in lighting runtime is based on occupancy sensor data logs where available, and based on conservative estimates elsewhere.

ELU = LW x Pre-HRS

NLU = LW x Post-HRS

ECS = $/kWh x (ELU – NLU)

Where:

ECS ≡ *Energy Cost Savings*

ELU ≡ *Existing lighting electrical usage (kWh)*

LW ≡ *Light bulb Wattage*

EQ ≡ *Existing quantity of light fixtures*

EW/Fxtr ≡ *Existing watts / fixture*

Pre-HRS ≡ *Annual lighting operating hours before occupancy sensors;*

Post-HRS ≡ *Annual lighting operating hours after occupancy sensors are installed;*

NLU ≡ *New lighting electrical usage (kWh)*

The increase in heating energy and reduction in cooling energy associated with the occupancy sensors was also calculated as described above. The tables below detail the calculated energy savings associated with the lighting retrofit with occupancy and daylighting sensors ECM for each affected building.

Table 45: Courthouse Lighting Savings

kW/Yr Saved =		8.39	kWh/Yr Saved =		14,103
$/kW =	$	-	**$/kWh =**		$0.0612
kW $$ Savings		$0	kWh $$ Savings		$863
Heating Penalty=	$	(325.30)	Cooling Savings=	$	-

Table 46: Blackstock Government Center Lighting Savings

kW/Yr Saved =		34.34	kWh/Yr Saved =		12,043
$/kW =	$	-	**$/kWh =**		$0.0607
kW $$ Savings		$0	kWh $$ Savings		$730
Heating Penalty=	$	(288.07)	Cooling Savings=	$	69.81

Table 47: Family Services Lighting Savings

kW/Yr Saved =		21.54	kWh/Yr Saved =		7,628
$/kW =	$	-	**$/kWh =**		$0.0615
kW $$ Savings		$0	kWh $$ Savings		$469
Heating Penalty=	$	(163.40)	Cooling Savings=	$	-

Table 48: Multipurpose Building Lighting Savings

kW/Yr Saved =		70.22	kWh/Yr Saved =		15,775
$/kW =	$	-	**$/kWh =**		$0.0620
kW $$ Savings		$0	kWh $$ Savings		$979
Heating Penalty=	$	(399.04)	Cooling Savings=	$	-

Table 49: Housing Authority Lighting Savings

kW/Yr Saved =		43.72	kWh/Yr Saved =		6,014
$/kW =	$	-	**$/kWh =**		$0.0781
kW $$ Savings		$0	kWh $$ Savings		$470
Heating Penalty=	$	(136.04)	Cooling Savings=	$	-

Table 50: Dos Rios Water Treatment Plant Lighting Savings

kW/Yr Saved =		8.28	kWh/Yr Saved =		1,827
$/kW =	$	-	**$/kWh =**		$0.0631
kW $$ Savings		$0	kWh $$ Savings		$115
Heating Penalty=	$	(35.30)	Cooling Savings=	$	-

Table 51: Landfill Lighting Savings

kW/Yr Saved =		8.50	kWh/Yr Saved =		1,388
$/kW =	$	-	**$/kWh =**		$0.1041
kW $$ Savings		$0	kWh $$ Savings		$144
Heating Penalty=	$	(108.19)	Cooling Savings=	$	-

Table 52: Facilities Maintenance Lighting Savings

kW/Yr Saved =		13.74	kWh/Yr Saved =		2,874
$/kW =	$	-	**$/kWh =**		$0.0697
kW $$ Savings		$0	kWh $$ Savings		$200
Heating Penalty=	$	(72.55)	Cooling Savings=	$	-

Table 53: Doyleville Shop Lighting Savings

kW/Yr Saved =		10.04	kWh/Yr Saved =		1,641
$/kW =	$	-	**$/kWh =**		$0.1040
kW $$ Savings		$0	kWh $$ Savings		$171
Heating Penalty=	$	(128.32)	Cooling Savings=	$	-

Table 54: Crested Butte Shop Lighting Savings

kW/Yr Saved =		41.76	kWh/Yr Saved =		6,821
$/kW =	$	-	**$/kWh =**		$0.1040
kW $$ Savings		$0	kWh $$ Savings		$709
Heating Penalty=	$	(538.99)	Cooling Savings=	$	-

Table 55: Somerset Shop Lighting Savings

kW/Yr Saved =		10.08	kWh/Yr Saved =		1,646
$/kW =	$	-	**$/kWh =**		$0.1657
kW $$ Savings		$0	kWh $$ Savings		$273
Heating Penalty=	$	(134.48)	Cooling Savings=	$	-

Table 56: Marble Shop Lighting Savings

kW/Yr Saved =		29.38	kWh/Yr Saved =		4,798
$/kW =	$	-	**$/kWh =**		$0.0895
kW $$ Savings		$0	kWh $$ Savings		$429
Heating Penalty=	$	(358.53)	Cooling Savings=	$	-

Door Switches

The energy savings for this item was determined using individual calculations. The Door Switches savings calculation is performed using heating degree-days. The individual calculations calculate the annual heat loss based on heating degree-days and the infiltration rate associated with the overhead doors opening and closing. The propane savings are determined by calculating the infiltration rate with doors opening and closing under normal operation and then subtracting the post retrofit propane savings when the heating system is locked out during normal operation. Savings are reduced by 25% to account for the additional propane required to heat the space back up to the heating setpoint once the doors are closed and the heating systems allowed to operate. A sample calculation can be seen in the following table.

Average Door Area (DSF)	156	ft^2
Quantity of Doors (DQ)	2	Doors
Inflitration Velocity (IV)	0.75	MPH
Cycles per Door per Day (CpD)	2	Cycles
Door Cycle Duration (CD)	4	min
Convert Miles to Feet (1 Mile = 5280 ft)	5280	ft/Mile
Infiltration Rate (IR) = (DQ x DSF x IV x 5280 / 60)	20,592	CFM
Average Daily Door Inflitration (DDI) = (CpD x CD x IR)	164,736	Cubic Feet
Average Infiltration Rate (Iavg)	114	CFM
Heating Degree Days (HDD)	10,410	Days
Hours per day	24	hrs/day
Minutes /hour	60	min/hr
Specific Heat of Air (Cp)	1.085	
Altitude Correction (Alt)	0.739	
Convert BTUH to Therms (1 Therm = 100,000 BTUH)	100,000	BTUH/Therm
Door Infiltration Heat Load (DHL) = (Iavg x Hours x Cp x Alt x DDI) / (BTUH/Therm)	229	Therms
Heating System Efficiency (HSEff)	80%	
Heating System Energy Consumption = (DHL/Alt/HSEff)	388	Therms
Door Switch Savings Less 25% of energy savings required to offset heating room back up to temperature.	291	Therms
Propane Energy Content (Therms/Gal)	0.918	Therm/Gal
Door Switch Savings (Gals)	317	Gal

Table 57: Landfill Door Switch Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.10	/kWh	$ -
Propane (Gal)	265	$ 2.63	/Gal	$ 698.93
			Total:	$ 698.93

Table 58: Doyleville Shop Door Switch Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.10	/kWh	$ -
Propane (Gal)	317	$ 2.65	/Gal	$ 838.65
			Total:	$ 838.65

Table 59: Marble Shop Door Switch Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.09	/kWh	$ -
Propane (Gal)	303	$ 2.42	/Gal	$ 733.92
			Total:	$ 733.92

Vending Machine Power Savings Devices

The energy savings for this measure was determined using an individual spreadsheet calculation for the Courthouse, Blackstock Government Center, Airport Terminal, and Multipurpose Building. The spreadsheet takes into account the building occupancy schedule and placement of the machine; whether it is located in a high traffic area or a low-traffic area, and it models the number of times per hour the machines will cycle on depending on the occupancy and traffic inputs. A sample calculation is shown below as well as the annual energy savings calculated for each building.

Area Served	Operating Hours			Snack Machines	Beverage Machines	Annual Consumption (kWh)
	Hrs/Day	Days/Week	Weeks/Yr			
Area A	9	7	52	1	3	12,571
						0
						0
						0
						0

Area Served	Operating Hours			Snack Machines	Beverage Machines	Machine Placement (1-4)	Annual Consumption (kWh)
	Hrs/Day	Days/Week	Weeks/Yr				
Area A	9	7	52	1	3	2	7,626
							0
							0
							0

Table 60: Courthouse Vending Machine Power Device Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	2,463.39	$ 0.06	/kWh	$ 150.70
Natural Gas (Therm)	-	$ 0.89	/Therm	$ -
			Total:	$ 150.70

Table 61: Blackstock Government Center Vending Machine Power Device Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	2,463.39	$ 0.06	/kWh	$ 149.42
Natural Gas (Therm)	-	$ 0.89	/Therm	$ -
			Total:	$ 149.42

Table 62: Airport Terminal Vending Machine Power Device Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	4,944.78	$ 0.06	/kWh	$ 303.52
Natural Gas (Therm)	-	$ 0.90	/Therm	$ -
			Total:	$ 303.52

Table 63: Multipurpose Building Vending Machine Power Device Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	1,906.64	$ 0.06	/kWh	$ 118.30
Natural Gas (Therm)	-	$ 0.94	/Therm	$ -
			Total:	$ 118.30

Setback Thermostats

The energy savings for this item was determined using individual calculations. The programmable thermostat savings calculations were performed using a bin weather analysis based on heating degree hours. The individual calculations take into account the annual conduction, infiltration and ventilation heat losses based on envelope U-values, wall areas, and heating degree hours based on current and proposed temperature setpoints. The programmable thermostat system savings are based on the reduction in heating degree hours associated with the

change in occupied and unoccupied setpoints. It should be noted that in some facilities, the occupants are manually setting back the thermostats during unoccupied periods. Savings are calculated by subtracting the total post-retrofit gas (or propane) consumption from the pre-retrofit gas (or propane) consumption. Since there is no mechanical cooling associated with these facilities, there are negligible electrical usage (kWh) savings associated with the programmable thermostats. A sample calculation is shown below:

Building Volume (BV)	47,040	ft^3
Window U Value (WinU)	0.60	BTU / hr x ft^2 x °F
Wall U Value (WU)	0.08	BTU / hr x ft^2 x °F
Roof U Value (RU)	0.05	BTU / hr x ft^2 x °F
Window Area (WinA)	60	ft^2
Wall Area (WA)	3,322	ft^2
Roof Area (RA)	3,136	ft^2
Infiltration Air Changes Per Hour (ACH)	0.6	ACH
Ventilation Rate (CFM/Person)	20	CFM/Person
Occupants (People)	0	People
Minutes /hour	60	min/hr
Building UA (BUA) = (WinU x WinA + WU x WA + RU x RA)	458.53	BTU/hr/°F
Infiltration Rate (IR) = (ACH x BV / Minutes)	470.4	CFM
Ventilation (VCFM) = (People x CFM/Person)	-	CFM
Pre-Retrofit Occupied Heating Degree Hours at Current set point of 70 °F (PreOHDH)	81,967	Hours
Pre-Retrofit Unoccupied Heating DegreeHours at Current set point of 65 °F (PreUHDH)	164,938	Hours
Post-Retrofit Occupied Heating Degree Hourss at Current set point of 70 °F (PostOHDH)	81,967	Hours
Post-Retrofit Unoccupied Heating Degree Hours at Proposed set point of 60 °F (PreOHDH)	139,452	Hours
Hours/Day	24	Hours/Day
Convert BTUH to Therms (1 Therm = 100,000 BTUH)	100,000	BTUH/Therm
Specific Heat (Cp)	1.085	BTU x min/ H x ft^3 x °F
Altitude Correction (Alt)	0.739	
Pre Occupied Building Load (PreOBL) = (BUA x PreOHDD x Hours + IR x PreOHDD x Hours x Cp x Alt + VCFM x PreOHDD x Hours x Cp x Alt) / (BTU/Therm)	685	Therm
Pre Unoccupied Building Load (PreUBL) = (BUA x PreUHDD x Hours + IR x PreUHDD x Hours x Cp x Alt + VCFM x PreUHDD x Hours x Cp x Alt) / (BTU/Therm)	1,378	Therm
Post Occupied Building Load (PostOBL) = (BUA x PostOHDD x Hours + IR x PostOHDD x Hours x Cp x Alt + VCFM x PostOHDD x Hours x Cp x Alt) / (BTU/Therm)	685	Therm
Post Unoccupied Building Load (PostUBL) = (BUA x PostUHDD x Hours + IR x PostUHDD x Hours x Cp x Alt + VCFM x PostUHDD x Hours x Cp x Alt) / (BTU/Therm)	1,165	Therm
Heating System Efficiency (HSEff)	80%	
Propane Energy Content (Therms/Gal)	0.98	Therm/Gal
Gas Savings (GS) = (PreOBL + PreUBL - PostOBL + PostUBL) /HSEff/Alt/(Therm/Gal)	368	Gal

Table 64: Marble Bank Programmable Thermostat Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ -	/kWh	$ -
Propane (Gal)	61	$ 2.36	/Gal	$ 143.75
			Total:	$ 143.75

Table 65: Landfill Programmable Thermostat Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.10	/kWh	$ -
Propane (Gal)	434	$ 2.63	/Gal	$ 1,143.79
			Total:	$ 1,143.79

Table 66: Facilities Maintenance Programmable Thermostat Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.07	/kWh	$ -
Natural Gas (Therm)	292	$ 1.02	/Therm	$ 297.68
			Total:	$ 297.68

Table 67: Doyleville Shop Programmable Thermostat Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.10	/kWh	$ -
Propane (Gals)	368	$ 2.65	/Gal	$ 973.47
			Total:	$ 973.47

Table 68: Marble Shop Programmable Thermostat Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.09	/kWh	$ -
Propane (Gal)	322	$ 2.42	/Gal	$ 779.25
			Total:	$ 779.25

Window Replacement

The energy savings for this measure is based on individual calculations that take into account heating energy savings from window U-value improvements, reduced infiltration, and improved solar heat gain coefficient. For all windows, the baseline U-values were determined based on a detailed audit of all windows and ASHRAE tables. The post-retrofit U-values are based on ASHRAE tables and manufacturer's data. The post-retrofit U-values are based on replacing all existing double-pane, metal and vinyl frame windows with dual pane, vinyl framed windows with low-e glass in the Housing Authority Building. The energy savings from infiltration reduction is based on a reducing the infiltration rate. The ASHRAE equation used to determine these rates is shown below. In the post retrofit case, all new windows will have improved seals and weather stripping. The average wind speed in Gunnison County is 4.8 mph, as determined from hourly weather data. The reduction in solar heat gain associated with the new windows was calculated using ASHRAE data on solar heat gain coefficients (SHGC). The overall average SHGC was reduced from 0.52 in the Baseline Case to 0.4 in the post-retrofit case and U-values were reduced from 0.55 in the Baseline Case to 0.35 in the post-retrofit case.

The overall heating and cooling energy savings achieved through the U-value reduction, infiltration reduction, and solar heat gain reduction is based on the heating degree-day and cooling degree-day calculation shown below.

Window U Value (PreW)	0.55	BTU / hr x ft^2 x °F
Window U Value (PostW)	0.35	BTU / hr x ft^2 x °F
Window Area	360	ft^2
Area of South Facing Windows (ASFW)	60	ft^2
Pre-Retrofit Solar Heat Gain Coefficiant (PreSHGC)	0.52	
Post-Retrofit Solar Heat Gain Coefficiant (PostSHGC)	0.4	
Average Solar Irradiance (ASI)	1200	BTU/ft^2/day
Pre-Retrofit Solar Heat Gain (PreSHG) = (PreSHGC x ASFW x ASI)	37,440	BTU/day
Post-Retrofit Solar Heat Gain (PostSHG) = (PostSHGC x ASFW x ASI)	28,800	BTU/day
Solar Heat Gain Reduction (SHGR) = (PreSHG - PostSHG)	8,640	BTU/day
Heating Days (HD)	180	days
Total Sash Length (TSL)	420	ft
Pre-Retrofit Air Leakage Factor (PreALF)	0.12	in2/lftc
Post-Retrofit Air Leakage Factor (PostALF)	0.023	in2/lftc
C_v-Opening Effectiveness (OE)	0.25	
Average Wind Speed (AWS)	4.8	mph
Converstion Factor (CF)	88	
Pre-Retrofit Infiltration Rate (PreIR) = (TSL x PreALF/144 x OE x AWS x CF)	37	CFM
Post-Retrofit Infiltration Rate (PostIR) = (TSL x PostALF/144 x OE x AWS x CF)	7	CFM
Infiltration Reduction (IR) = (PreIR - PostIR)	30	CFM
Heating Degree Days (HDD)	10,410	Days
Hours/Day (Hours)	24	Hours/Day
PreUA = (PreW x Window Area)	198	BTU/hr/°F
PostUA = (PostW x Window Area)	126	BTU/hr/°F
UA Reduction (UAR) = (PreUA - PostUA)	72	BTU/hr/°F
Convert BTU to Therms (1 Therm = 100,000 BTU)	100,000	BTU/Therm
Specific Heat (Cp)	1.085	BTU x min/ H x ft^3 x °F
Altitude Correction (Alt)	0.739	
Heating System Efficiency (HSEff)	80%	
Gas Savings (GS) = (UAR x HDD x Hours + IR x HDD x Hours x Cp x Alt/HSEff/100,000) - (SHGR x HD/HSEff/100,000)	280	Therm
Natural Gas Energy Content (Therms/CCF)	1	Therm/CCF
Gas Savings (GS) = (PreU - PostU/HSEff/Alt)	379	CCF

Table 69: Housing Authority Window Replacement Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.08	/kWh	$ -
Natural Gas (Therm)	379	$ 0.97	/Therm	$ 367.36
			Total:	$ 367.36

Weatherize Doors and Windows

The energy savings for this item was determined using individual calculations. The weatherize doors, windows and repair door seal savings calculations were performed using a bin weather analysis based on heating degree hours. The individual calculations take into account the annual conduction, infiltration and ventilation (if applicable) heat losses based on envelope U-values, wall areas, and heating degree hours based on current temperature setpoints. Refer to Table 7 for current temperature setpoints. The weatherize doors, windows and repair door seal savings are based on a reduction in infiltration rate. Natural gas savings is calculated by subtracting the total post-retrofit gas (or propane) consumption from the pre-retrofit gas (or propane) consumption. A sample calculation is shown below:

Table 70: Tenderfoot Child Care Center Weatherize Doors and Windows Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.06	/kWh	$ -
Natural Gas (Therm)	195	$ 0.95	/Therm	$ 185.40
			Total:	$ 185.40

Table 71: Crested Butte Shop Weatherize Doors and Windows Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.10	/kWh	$ -
Propane (Gal)	152	$ 2.66	/Gal	$ 404.23
			Total:	$ 404.23

Table 72: Marble Shop Weatherize Doors and Windows Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.09	/kWh	$ -
Propane (Gal)	34	$ 2.42	/Gal	$ 83.36
			Total:	$ 83.36

Repair Snow Gutter Melt System

Due to the low amount of savings associated with this measure, detailed calculations were not conducted and savings shall be considered to be as calculated during the preliminary phase.

Table 73: Courthouse Snow Gutter Melt System Repair Savings

Utility	Savings	Utility Rates		$ Savings
Electric Usage (kWh)	-	$ 0.06	/kWh	$ -
Natural Gas (Therm)	169	$ 0.89	/Therm	$ 150
			Total:	$ 150

Measurement and Verification

Savings for all buildings were calculated using individual calculations employing measurements, data logs, and engineering estimations. The verification method for all measures in all buildings will fall under Measurement & Verification Option A: Retrofit Isolation.

Table 74: Selected Scope

ECM / FIM Description	AirAdmin	AirTerminal	Blackstock	CB Shop	DR WTP	DoyleShop	FMShop	FamServices	GunCourthouse	HouseAuth	Landfill	MarbleBank	MarbleShop	MPBldg	Somerset	Tenderfoot
New High Efficiency Condensing Boiler(s)		A						A						A		
Destratification Fans																
VAV Conversion								A	A							
Zoning Improvements		A							A							
Install Evaporative Cooling									A							
Install Radiant Gas Heaters															A	
DDC System Install		A	A					A	A							
DDC Recommission																B
Setback Thermostats						A	A				A	A	A			
Lighting Retrofit, Daylight & Occ Sensors			A	A	A	A	A	A	A	A	A		A	A	A	
Door Switches						A					A		A			
Window Replacement										A						
Weatherize Doors / Windows				A										A		B
Repair Gutter Heat System									A							
Vehicle Exhaust System													A			
Engine Block Heaters																
Vending Misers		A	A						A					A		
Repair & Seal Bay Doors													A			
Install Entrance Vestibule																
Air Curtain																

High Efficiency Boilers

The method of Measurement & Verification that will be used for the condensing boiler measure will be Option A: Retrofit Isolation with Key Parameter Measurement. The combustion efficiency for the existing atmospheric boilers in the Air Terminal, Family Services, and Multipurpose Building were measured during the TEA and used in the energy savings calculations described in the Energy Savings Results section. Upon installation of this measure, combustion efficiency tests of the new boiler will be taken to confirm the new boiler is operating according to manufactures data.

Variable Air Volume Conversion

The guaranteed energy savings for this measure shall be verified using M&V Option A: Retrofit Isolation with Key Parameter Measurement. The reduced fan consumption and heating energy savings is based on engineering calculations that quantify the reduced heating energy necessary

to maintain the existing discharge temperature at the reduced airflows. To verify the energy savings associated with reduced fan energy consumption, Ennovate will verify that the fan speed varies to maintain a constant duct static pressure set point.

Radiant Gas Heaters
The method of Measurement & Verification that will be used for the existing system optimization measure will be Option A: Retrofit Isolation with Key Parameter Measurement. The pre-retrofit efficiency of the current heating system at Somerset was measured and engineering calculations were used to estimate ventilation rates. Upon installation of this measure, Ennovate will perform combustion efficiency measurements on the new heating units and will replace the estimated values in the calculation with average actual values to determine the actual savings for this measure.

Direct Digital Control System
The method of Measurement & Verification that will be used for the existing system optimization measure will be Option A: Retrofit Isolation with Key Parameter Measurement. Energy savings for this measure is based on reduced outside intake and reduced unoccupied heating temperatures. The pre-retrofit energy consumption was calculated using thermostat settings confirmed during the TEA. Outside air percentages were also calculated using outside, return, and mixed air temperatures measured during the TEA. CO2 levels were also measured to estimate outside air reduction potential.

Upon installation of this measure at the Air Terminal, Blackstock Building, Family Services, Gunnison Courthouse and Tenderfoot, Ennovate will confirm that unoccupied setback temperatures have been adjusted per contract agreement and confirm that when the thermostat enters a scheduled unoccupied period that the associated HVAC system is being controlled to maintain the unoccupied setpoints. Ennovate will also measure outside, return and mixed air temperatures and recalculate outside air percentages to confirm outside air percentages have been reduced to expected levels.

DDC Recommission
The method of Measurement & Verification that will be used for the existing system optimization measure will be Option A: Retrofit Isolation with Key Parameter Measurement. The pre-retrofit conditions used in the energy savings calculation have been verified during the detailed analysis portion of the TEA. Pre-retrofit space temperatures were based on checking the thermostat settings throughout the buildings, CO2 readings were measured and a percentage of outside air percentage was calculated. Upon installation of this measure, a post-retrofit spot check be performed and verify that the unoccupied setback temperatures are set per contract agreement and a recalculation of the outside air percentage will be done to confirm its less than the pre-retrofit case.

Setback Thermostats
The method of Measurement & Verification that will be used for programmable thermostats will be Option A: Retrofit Isolation with Key Parameter Measurement. Ennovate will verify that all

programmable thermostats installed in the Doyle shop, the Facilities Maintenance Shop, the Landfill Building, Marble Bank and Marble Shop are properly programmed with setback schedules and setpoints used in the energy savings calculations.

Lighting

The method of Measurement & Verification that will be used for lighting retrofits will be Option A: Retrofit Isolation with Key Parameter Measurement. In order to verify the energy savings achieved by this measure, Ennovate will take the following actions listed below for the Courthouse, Blackstock Government Center, Airport Terminal, Family Services, Multipurpose, Water Treatment Plant, Housing Authority, Landfill, Facilities Maintenance, Creste Butte Shop, Doyleville Shop, Somerset Shop, and Marble Shop.

Pre and post-retrofit hours of use were determined through data logging and interviews during TEA. Building where data logging was performed were the Courthouse, Blackstock Government Center, and Family Serivces. Post Retrofit hours of use are assumed to be the same as Pre Retrofit.

Ennovate will verify pre and post-retrofit fixture wattages in the energy calculations using independent tables (utility, ANSI, EPRI). When table values are unavailable, measurement of fixture wattage will be taken.

Ennovate will verify that the fixture types and counts installed match those which were used in the energy savings estimates and recalculate energy savings using actual fixture types and counts if different from the original estimate.

Occupancy Sensors

The method of Measurement & Verification that will be used for occupancy sensors will be Option A: Retrofit Isolation with Key Parameter Measurement. Occupancy sensor data loggers installed in the Courthouse, Blackstock Government Center, and Family Services during the TEA were used to determine the reduction in lighting hours of use for this measure. Upon installation of occupancy sensors, Ennovate will spot check to verify that a selection of installed occupancy sensors in each building are working correctly.

Daylighting Sensors

The method of Measurement & Verification that will be used for daylighting sensors will be Option A: Retrofit Isolation with Key Parameter Measurement. The reduction in lighting hours of use for this measure is based on an engineering estimate that lighting operation will decrease by 30% when daylighting sensors control lighting. Upon installation of daylighting sensors, Ennovate will spot check to verify that a selection of installed daylighting sensors in each building are working correctly.

Door Switches

The guaranteed energy savings for this measure shall be verified using M&V Option A: Retrofit Isolation with Key Parameter Measurement. During the TEA, Ennovate verified through

interviews the number of hours per day that the overhead doors are open. The total capacity of the existing system and heat loss when overhead doors are open was calculated based on engineering estimates. Savings are based on reduced runtime of heating systems in the space. Upon installation of this measure, Ennovate will verify that each door switch locks out its associated heating system when each door is opened. Ennovate will also verify the heat is reengaged after the door is closed.

Window Replacement
The guaranteed energy savings for this measure shall be verified using M&V Option A: Retrofit Isolation with Key Parameter Measurement. The energy savings from the window retrofits at the Gunnison Housing Authority are based on conservative estimates of the U-values, solar heat gain coefficients, and infiltration rates and heating and cooling degree-days. These values were determined for both the pre-retrofit and post-retrofit case using ASHRAE tables. Upon installation of this measure, Ennovate will verify that the window retrofit has been completed as specified.

Weatherize Doors, Windows and Repair Door Seals
The guaranteed energy savings for this measure shall be verified using M&V Option A: Retrofit Isolation with Key Parameter Measurement. The energy savings from weatherizing the doors and windows are based on conservative estimates of the infiltration rates and heating and cooling degree-days. These values were determined for both the pre-retrofit and post-retrofit case using ASHRAE tables. Upon installation of this measure, Ennovate will verify that the retrofit has been completed as specified.

Gutter Snow Melt System
The guaranteed energy savings for this measure shall be verified using M&V Option A: Retrofit Isolation with Key Parameter Measurement. The energy savings from repairing the gutter heating system is based on engineering calculations. Upon installation of this measure, Ennovate will verify that the gutter heating system has been installed and is operating correctly.

Engine Block Heaters
The guaranteed energy savings for this measure shall be verified using M&V Option A: Retrofit Isolation with Key Parameter Measurement. Upon installation of this measure, engine block heaters shall be verified to operate correctly. Due to the low level of savings for this measure, the associated energy savings are based on an engineering estimate of the reduction in propane use. There will be no post-retrofit measurements for this measure.

Vehicle Exhaust System
The vehicle exhaust system is not expected to have any energy savings. Upon installation of this measure, Ennovate will verify that the vehicle exhaust system has been installed and is operating correctly.

Vending-Mizers®
The method of Measurement & Verification that will be used for the vending machine power save measure will be Option A: Retrofit Isolation with Key Parameter Measurement. The number of vending machines has been verified during the TEA. The energy savings from

installing vending machine occupancy sensors in the Air Terminal, Blackstock, Gunnison Courthouse, and Multipurpose Building are based on conservative estimates of the reduction in operating hours due to the low level of energy savings calculated. Upon installation of this measure, Ennovate will verify that the occupancy sensors have been installed and are operating correctly.

SCHEDULE G:

CONSTRUCTION AND INSTALLATION SCHEDULE

The anticipated timetables and milestones for project construction and installation are shown below.

Table 75: Anticipated Construction and Installation Schedule

	1	2	3	4	5	6	7
	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11
Contract Award							
Final Design							
Subcontracts							
Procurement							
Installation							
Commissioning							
Training							

SCHEDULE H:

SYSTEMS START-UP AND COMMISSIONING; OPERATING PARAMETERS OF INSTALLED EQUIPMENT

Contractor plans to commission all newly installed equipment and systems to ensure the proper and efficient operation of these systems. Agency shall be notified of, and have the right to be present during, these commissioning procedures. Contractor shall further document the attendance of Agency Representatives; acceptance of Contractor tests and certification that tests have met or exceeded expected results. A commissioning specification shall be developed prior to the implementation of the project.

A commissioning report shall be developed by the Contractor and submitted to the Agency upon completion of the project. Included in the Commissioning Report shall be Pre-functional and Functional Test Forms as well as plans for retesting items that have failed. A master list of deficiencies shall be maintained throughout the testing process until all items are closed out.

Documentation that the Training Plan has been completed and documentation that the Operation Manuals have been provided will be referenced by the Commissioning Report. Any design or submittal review comments from the commissioning agent shall also be included in the commissioning report.

Contractor intends on commissioning all equipment installed under this agreement. The minimum listed commissioning points for each piece of equipment to be installed are shown below. A formal report listing all commissioned points shall be given to Agency upon completion of the project.

High Efficiency Boilers

- Installation inspection
- Pre-functional testing of equipment operations (point to point checks)
- Functional testing
    - Combustion Efficiency Test
    - Hot water supply setpoint control & capacity modulation
    - Outside air reset control validation
    - Internal safety device testing

Conversion to Variable Air Volume Systems

- Installation inspection
- Pre-functional testing of equipment operations (point to point checks)
- Functional testing
    - Occupied & unoccupied cooling operation
    - Occupied & unoccupied heating operation
    - Outside & return air damper operation – economizer control
    - Morning warm-up procedure
    - Fan operation and variable speed drive capacity modulation
    - Condensate pump operation (if applicable)
    - Temperature readings

Radiant Heaters

- Installation inspection
- Pre-functional testing of equipment operations (point to point checks)
- Functional testing
    - Occupied & unoccupied heating operation
    - Morning warm-up procedure
    - Internal safety device testing
    - Temperature readings

DDC Controls

- Installation inspection
- Graphics, scheduling, trending & alarming check-out
- Functional Testing
    - Operation & observation of equipment from local workstation
    - Operation & observation of equipment from remote workstation
    - Confirm setpoints and schedules
    - Safety device and interlock testing

Programmable Thermostats

- Installation inspection
- Functional Testing
    - Occupied & unoccupied cooling operation
    - Occupied & unoccupied heating operation
    - Schedule and setpoint check-out

Lighting Retrofit and Redesign, Lighting and HVAC Occupancy Sensors, and Daylight Harvesting

- Installation inspection
- Functional testing
    - On/off control
    - Occupancy sensor operation
    - Daylight sensor operation

Door Switches

- Installation inspection
- Pre-functional testing of equipment operations (point to point checks)
- Functional Testing
- Heating system lock out

Premium Efficiency Motors

- Installation inspection
- Functional Testing
    - Volt and Amp readings

Variable Speed Drives

- Installation inspection
- Pre-functional testing of equipment operations (point to point checks)
- Functional Testing
    - Capacity modulation
    - Pressure, Volt and Amp readings

Window Retrofit

- Installation inspection

Weatherize Doors, Windows and Repair Door Seals

- Installation inspection

Repair Gutter Snow Melt System

- Installation inspection
- Functional testing
    - Confirm that the valve is opening and closing

Vehicle Exhaust System

- Installation inspection
- Functional testing
    - Confirm that the exhaust hoses operate properly

Vending-misers®

- Installation inspection
- Functional testing
    - Confirm that lights and cooling systems in vending machines are shutting off when the area is unoccupied

SCHEDULE I:

STANDARDS OF COMFORT

The standards of comfort to be maintained for heating, cooling, lighting levels, hot water temperatures, and humidity levels are specified below.

Proposed System Setpoints				
Building	Heating	Heating Night Setback	Cooling	Cooling Night Setback*
Courthouse	72	60	-	-
Blackstock	70	60	72	90
Family Services	74	60	-	-
Tenderfoot Child Care	72	60	74	90
Multipurpose	60	60	-	-
Housing Authority	-	-	-	-
Airport Terminal	72	60	-	-
Marble Bank	62	60	-	-
Water Treatment Plant	-	-	-	-
Landfill	75	60	-	-
Facilities Maintenance	75	60	-	-
Doyleville Shop	70	60	-	-
Crested Butte Shop	60	55	-	-
Somerset Shop	75	75	-	-
Marble Shop	75	65	-	-
Humidity Level:	No Humidification or Dehumidification			

* Server rooms, switch gear rooms or any other room with a 24 hour per day cooling requirement are not subject to the Unoccupied cooling space temperature shown above.

SCHEDULE J:

CONTRACTOR'S MAINTENANCE RESPONSIBILITIES

Maintenance of all installed equipment will be the responsibility of the Agency. Contractor is not offering maintenance services as part of this agreement.

SCHEDULE K:

AGENCY'S MAINTENANCE RESPONSIBILITIES

The Agency will be responsible to provide preventative and remedial maintenance to all installed equipment. The Contractor shall develop a complete maintenance plan from the manufacturer's operations and maintenance manuals and submit it to the Agency along with the Operation & Maintenance Manuals at the conclusion of the construction portion of this agreement.

SCHEDULE L:

FACILITY MAINTENANCE CHECKLIST

The checklist for preventative and remedial maintenance shall be submitted by the Contractor to the Agency along with the submission of the Operation and Maintenance Manuals.

SCHEDULE M:

CONTRACTOR'S TRAINING RESPONSIBILITIES

Contractor shall provide training on all installed equipment to whomever Agency designates. This training shall consist of familiarization with newly installed technologies, optimum operating practices, and equipment operation. As part of Contractor's on-going support services, Contractor will provide continued training during the semi-annual site visits provided under this Agreement.

SCHEDULE N:

GENERAL CONDITIONS

OMITTED

SCHEDULE O:

PAYMENT SCHEDULE AND SCHEDULE OF VALUES

Following an initial invoice at Award of Contract, Contractor will invoice Agency every month during the implementation period for progress payments for design engineering, ordered equipment, installed equipment, and other professional services rendered according to the following schedule of values. Agency will pay Contractor for the implementation progress in accordance with Section 2.2 of the Contract. Schedule of Values and Anticipated Payment Schedule are detailed in the tables below:

Schedule of Valves

Description	Price
Technical Energy Audit (TEA)	$ 31,423
Project Development (PD)	$ 58,294
Design Engineering (DE)	$ 93,349
Performance Bond (PB)	$ 18,558
Implementation (Imp)	$ 849,099
Project Management (PM)	$ 84,425
Commissioning (Cx)	$ 25,328
Training (Trng)	$ 8,443
TOTAL	$ 1,168,919

Anticipated Payment Schedule

Invoice	Description	Payment	Cumulative	% Draw
EPC Award	TEA, PD, PB	$ 108,275	$ 108,275	9.3%
1	DE, PM	$ 58,446	$ 166,721	14.3%
2	DE, PM, Imp	$ 204,561	$ 371,282	31.8%
3	PM, Imp	$ 292,230	$ 663,512	56.8%
4	PM, Imp	$ 233,784	$ 897,295	76.8%
5	PM, Imp	$ 175,338	$ 1,072,633	91.8%
6	PM, Cx	$ 58,446	$ 1,131,079	96.8%
7	PM, Cx, Trng	$ 37,840	$ 1,168,919	100.0%

SCHEDULE P:

PRE-EXISTING SERVICE AGREEMENTS

There are no pre-existing services agreements affecting this Agreement or of concern with this Agreement.

SCHEDULE Q:

CURRENT AND KNOWN CAPITAL PROJECTS AT FACILITY

There are no current or known capital projects that are affected by the work or services provided under this Agreement.

SCHEDULE R:

PROJECTED FINANCIAL PERFORMANCE

The total cost of the measures included in the selected scope is $1,168,919. In order to fund all of the upgrades proposed in this report, Agency has opted to implement an Energy Performance Contract (EPC) with Contractor. The project cost, including any lease initiation fees and capitalized interest, shall be funded by means of a 10-year lease-purchase at a rate of 3.8% paid in quarterly installments of $36,048. This is represented in the cash flow on the following page.

Performance Year	0	1	2	3	4	5	6	7	8	9	10	TOTAL
Savings Summary												
Phase A - Utility Savings	$13,320	$26,640	$27,758	$28,924	$30,139	$31,405	$32,724	$34,098	$35,531	$37,023	$38,578	$336,140
Phase B - Utility Savings	$398	$795	$829	$864	$900	$938	$977	$1,018	$1,061	$1,106	$1,152	$10,037
Phase A - Operational Savings	$5,332	$10,664	$11,112	$11,578	$12,065	$12,571	$13,099	$13,650	$14,223	$14,820	$15,443	$134,556
Phase B - Operational Savings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase A - Avoided Capital Savings	($0)	$103,390	$101,693	$99,925	$101,085	$99,275	$97,389	$95,423	$93,375	$91,241	$89,017	$971,810
Phase B - Avoided Capital Savings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Savings:	**$19,049**	**$141,489**	**$141,392**	**$141,291**	**$144,189**	**$144,189**	**$144,189**	**$144,189**	**$144,189**	**$144,189**	**$144,189**	**$1,452,544**
Payment Summary												
Phase A - Retrofit Payment	$0	($142,591)	($142,591)	($142,591)	($142,591)	($142,591)	($142,591)	($142,591)	($142,591)	($142,591)	($142,591)	($1,425,906)
Phase B - Retrofit Payment	$0	($1,597)	($1,597)	($1,597)	($1,597)	($1,597)	($1,597)	($1,597)	($1,597)	($1,597)	($1,597)	($15,972)
Ongoing Support Services	$0	$2,700	$2,797	$2,898	$0	$0	$0	$0	$0	$0	$0	$8,395
Total Payments:	**$0**	**($141,488)**	**($141,391)**	**($141,290)**	**($144,188)**	**($144,188)**	**($144,188)**	**($144,188)**	**($144,188)**	**($144,188)**	**($144,188)**	**($1,433,483)**
Grants & Rebates												
Phase A - Grants & Rebates	($1,705)											
Phase B - Grants & Rebates	$0											
Total Grants & Rebates:	**($1,705)**											
Phase A - Net Cash Flow	$16,947	$803	$769	$735	$698	$660	$621	$580	$537	$493	$447	$23,290
Phase B - Net Cash Flow	$398	($802)	($768)	($734)	($697)	($659)	($620)	($579)	($536)	($492)	($445)	($5,935)
Annual Cash Flow:	**$17,344**	**$1**	**$1**	**$1**	**$1**	**$1**	**$1**	**$1**	**$1**	**$1**	**$1**	**$17,356**
Accumulative Cash Flow:	**$17,344**	**$17,345**	**$17,346**	**$17,347**	**$17,348**	**$17,349**	**$17,351**	**$17,352**	**$17,353**	**$17,354**	**$17,356**	

SCHEDULE S:

CERTIFICATE OF INSURANCE

Certificate of Insurance will be provided after Contract execution.

SCHEDULE T:

TECHNICAL ENERGY AUDIT

Technical Energy Audit shall be submitted under separate cover.

EXHIBITS

EXHIBIT I
PERFORMANCE BOND

(To be provided after execution of this Contract.)

EXHIBIT II
LABOR AND MATERIAL PAYMENT BOND

(To be provided after execution of this Contract.)

EXHIBIT III (i)
NOTICE OF ACCEPTANCE—TECHNICAL ENERGY AUDIT AND MEASUREMENT AND VERIFICATION PLAN

(To be provided by the Agency.)

EXHIBIT III (ii)

Notice of Substantial Completion

(as to form)

Notice of Substantial Completion (per ECM)

Date of Notice _____

Notice is hereby given that Agency accepts the installed equipment for ECM _____ and establishes a warranty period start date for this ECM of _____.

For Agency –

By _____

Date _____

EXHIBIT III (iii)

Notice of Final Acceptance

(as to form)

Notice of Final Acceptance

Date of Notice _____

Notice is hereby given that Agency accepts the Project and establishes a Performance Commencement Date of _____.

For Agency –

By _____

Date _____

EXHIBIT IV
EQUIPMENT WARRANTIES

(To be provided after execution of this Contract.)

EXHIBIT V
MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISES

(To be provided after execution of this Contract.)

EXHIBIT VI
CERTIFICATION THAT LIFETIME OF EQUIPMENT EXCEEDS FINANCING TERM

(To be provided after execution of this Contract.)

EXHIBIT VII
RECORD OF REVIEWS

(To be provided after execution of this Contract.)

APPENDICES

Appendix A: Lighting Tables
Lighting Findings are below, followed by a lighting codes description.

Blackstock Building Lighting Savings

			Existing Lighting						New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU		Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Vault / Storage	2L4T12	2L4T8-T4-LP	4	72	0.29	2000	564		4	48.0	0.19	2000	376
Vault / Storage	2L4T12	2L4T8-LP	2	72	0.14	2000	282		2	48.0	0.10	2000	188
Corridor	2L8T8-IS	4L4T8-LP-8CONV-RU	1	116	0.12	2800	318		1	96.0	0.10	2800	263
Corridor	3L4T8-SP	NO RETRO	7	87	0.61	2800	1,671		7	87.0	0.61	2800	1,671
Corridor	LED EXIT	NO RETRO	2	3	0.01	8766	52		2	3.0	0.01	8766	52
Stairs	2L4T12	2L4T8-LP	1	72	0.07	2800	198		1	48.0	0.05	2800	132
Storage	2L4T12	2L4T8-LP	3	72	0.22	500	106		3	48.0	0.14	500	71
Storage	2L4T12	2L4T8-LP	1	72	0.07	500	35		1	48.0	0.05	500	24
Office	3L4T8-SP	NO RETRO	3	87	0.26	2000	512		3	87.0	0.26	1400	358
Office	NOTHING	WIR	1	0	-	2000	-		1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341		2	87.0	0.17	1400	239
Office	NOTHING	WIR	1	0	-	2000	-		1	0.0	-	1400	-
Treasurers	3L4T8-SP	NO RETRO	16	87	1.39	2400	3,274		16	87.0	1.39	1680	2,292
Treasurers	NOTHING	WCDT1500-WM	1	0	-	2400	-		1	0.0	-	1680	-
Corridor	3L26CF	NO RETRO	10	78	0.78	2800	2,140		10	78.0	0.78	2800	2,140
Corridor	1L8T8-IS	2L4T8-T4-LP-8CONV-RU	24	65	1.56	2800	4,281		24	48.0	1.15	2800	3,161
Corridor	1L8T8-IS	2L4T8-LP-8CONV-RU	4	65	0.26	2800	713		4	48.0	0.19	2800	527
Corridor	1L4T8-SP	NO RETRO	4	31	0.12	2800	340		4	31.0	0.12	2800	340
Corridor	LED EXIT	NO RETRO	2	3	0.01	8766	52		2	3.0	0.01	8766	52
Office E	2L26CF	NO RETRO	6	58	0.35	2000	682		6	58.0	0.35	1400	477
Office E	3L4T8-SP	NO RETRO	1	87	0.09	2000	171		1	87.0	0.09	1400	119
Office E	NOTHING	WDT	1	0	-	2000	-		1	0.0	-	1400	-
Assessors	2L26CF	NO RETRO	9	58	0.52	2400	1,228		9	58.0	0.52	2400	1,228
Womens RR	1L26CF	NO RETRO	7	26	0.18	2000	357		7	26.0	0.18	1400	250
Womens RR	2L4T8-SP	NO RETRO	1	58	0.06	2000	114		1	58.0	0.06	1400	80
Womens RR	NOTHING	WUS-RR	1	0	-	2000	-		1	0.0	-	1400	-
Assessors	3L4T8-SP	NO RETRO	44	87	3.83	2400	9,003		44	87.0	3.83	2400	9,003
Assessors	LED EXIT	NO RETRO	3	3	0.01	8766	77		3	3.0	0.01	8766	77
Assessors	2L26CF	NO RETRO	7	58	0.41	2400	955		7	58.0	0.41	2400	955
Office	3L4T8-SP	NO RETRO	3	87	0.26	2000	512		3	87.0	0.26	1400	358
Office	NOTHING	WIR	1	0	-	2000	-		1	0.0	-	1400	-
Break Room	2LU13/8T8-SP	3L2T8-LP-22RFL	4	58	0.23	2400	546		4	43.0	0.17	1680	283
Break Room	NOTHING	WIR	1	0	-	2400	-		1	0.0	-	1680	-
Office	2LU13/8T8-SP	3L2T8-LP-22RFL	2	58	0.12	2000	227		2	43.0	0.09	1400	118
Office	NOTHING	WIR	1	0	-	2000	-		1	0.0	-	1400	-
Offices	3L4T8-SP	NO RETRO	4	87	0.35	2000	682		4	87.0	0.35	1400	477
Offices	NOTHING	WIR	2	0	-	2000	-		2	0.0	-	1400	-
IT Conference	3L4T8-SP	NO RETRO	12	87	1.04	2000	2,046		12	87.0	1.04	1400	1,432
IT Conference	NOTHING	WCDT1500-WM	1	0	-	2000	-		1	0.0	-	1400	-
IT Conference	LED EXIT	NO RETRO	1	3	0.00	8766	26		1	3.0	0.00	8766	26
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341		2	87.0	0.17	1400	239
Office	NOTHING	WIR	1	0	-	2000	-		1	0.0	-	1400	-
Stairs	2L26CF	NO RETRO	5	58	0.29	2800	796		5	58.0	0.29	2800	796
Stairs	3L4T8-SP	NO RETRO	1	87	0.09	2800	239		1	87.0	0.09	2800	239
Stairs	LED EXIT	NO RETRO	1	3	0.00	8766	26		1	3.0	0.00	8766	26
Storage	2L4T12	2L4T8-LP	1	72	0.07	500	35		1	48.0	0.05	500	24
IT - Open Office Lower	3L4T8-SP	NO RETRO	10	87	0.87	2400	2,046		10	87.0	0.87	2400	2,046
Servers	2L4T12	2L4T8-LP	3	72	0.22	500	106		3	48.0	0.14	500	71
Elevator Mech	2L4T12	2L4T8-LP	1	72	0.07	500	35		1	48.0	0.05	500	24
Elevator	2L4T12	2L4T8-LP	1	72	0.07	8766	619		1	48.0	0.05	8766	412
Elevator	1L4T8-SP	1L4T8-LP	1	31	0.03	8766	266		1	25.0	0.03	8766	215
Clerks	3L4T8-SP	NO RETRO	1	87	0.09	2400	205		1	87.0	0.09	1680	143
Clerks	2L26CF	NO RETRO	6	58	0.35	2400	818		6	58.0	0.35	1680	573
Clerks	NOTHING	WDT	1	0	-	2400	-		1	0.0	-	1680	-
DMV / Clerks	3L4T8-SP	NO RETRO	49	87	4.26	2400	10,027		49	87.0	4.26	2400	10,027
DMV / Clerks	2LU13/8T8-SP	3L2T8-LP-22RFL	2	58	0.12	2400	273		2	43.0	0.09	2400	202
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341		2	87.0	0.17	1400	239
Office	NOTHING	WIR	1	0	-	2000	-		1	0.0	-	1400	-
Clerk and Recorder	3L4T8-SP	NO RETRO	9	87	0.78	2400	1,842		9	87.0	0.78	2400	1,842
Corridor / Stairs	2L26CF	NO RETRO	9	58	0.52	2800	1,432		9	58.0	0.52	2800	1,432
Corridor / Stairs	3L4T8-SP	NO RETRO	18	87	1.57	2800	4,297		18	87.0	1.57	2800	4,297
Break Room	2LU13/8T8-SP	3L2T8-LP-22RFL	6	58	0.35	2400	818		6	43.0	0.26	1680	425
Break Room	NOTHING	CIR	1	0	-	2400	-		1	0.0	-	1680	-
Break Room	1COLD	IMT-1C	1	450	0.45	8766	3,866		1	450.0	0.45	7451.1	3,286
Mail Room	3L4T8-SP	NO RETRO	10	87	0.87	2400	2,046		10	87.0	0.87	2400	2,046
Elections Area	3L4T8-SP	NO RETRO	12	87	1.04	2400	2,455		12	87.0	1.04	1680	1,719
Elections Area	NOTHING	WCDT1500-WM	1	0	-	2400	-		1	0.0	-	1680	-
Corridor	2L4T8-SP	NO RETRO	3	58	0.17	2800	477		3	58.0	0.17	2800	477
File Room	2L8T8-IS	4L4T8-LP-8CONV-RU	6	116	0.70	2000	1,364		6	96.0	0.58	2000	1,129
Storage	2L4T8-SP	NO RETRO	2	58	0.12	500	57		2	58.0	0.12	500	57
Storage / Mech Room	2L4T12	2L4T8-LP	12	72	0.86	500	423		12	48.0	0.58	500	282
Crawl Space	1L60IN	1L25CF	10	60	0.60	500	294		10	25.0	0.25	500	123
Storage / Mech Room	2L8T12	4L4T8-LP-8CONV-RU	2	126	0.25	500	123		2	96.0	0.19	500	94
Mens RR	1L26CF	NO RETRO	7	26	0.18	2000	357		7	26.0	0.18	1400	250
Mens RR	1L26CF	NO RETRO	2	26	0.05	2000	102		2	26.0	0.05	1400	71
Mens RR	2L4T8-SP	NO RETRO	1	58	0.06	2000	114		1	58.0	0.06	1400	80
Mens RR	NOTHING	WIR-MASK	1	0	-	2000	-		1	0.0	-	1400	-
Custodian	1L20CF	NO RETRO	1	20	0.02	500	10		1	20.0	0.02	500	10
Custodian	2L4T12	2L4T8-LP	1	72	0.07	500	35		1	48.0	0.05	500	24
Mens RR	1L26CF	NO RETRO	7	26	0.18	2000	357		7	26.0	0.18	1400	250
Mens RR	1L26CF	NO RETRO	2	26	0.05	2000	102		2	26.0	0.05	1400	71
Mens RR	2L4T8-SP	NO RETRO	1	58	0.06	2000	114		1	58.0	0.06	1400	80
Mens RR	NOTHING	WIR-MASK	1	0	-	2000	-		1	0.0	-	1400	-
Custodian	1L20CF	NO RETRO	1	20	0.02	500	10		1	20.0	0.02	500	10
Attic	1L60IN	1L25CF	8	60	0.48	500	235		8	25.0	0.20	500	98
Halls	5L39BIAX	5L25BIAX-RL	7	195	1.37	2800	3,746		7	125.0	0.88	2800	2,401
Meeting Room	3L4T8-SP	NO RETRO	12	87	1.04	2000	2,046		12	87.0	1.04	1400	1,432

Blackstock Building Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Meeting Room	2L26CF	NO RETRO	2	58	0.12	2000	227	2	58.0	0.12	1400	159
Meeting Room	NOTHING	WCDT1500-WM	1	0	-	2000	-	1	0.0	-	1400	-
Break Room	3L4T8-SP	NO RETRO	1	87	0.09	2400	205	1	87.0	0.09	1680	143
Break Room	RR FAN	NO RETRO	1	100	0.10	2400	235	1	100.0	0.10	1680	165
Break Room	NOTHING	WIR	1	0	-	2400	-	1	0.0	-	1680	-
Storage	2L8T8-IS	4L4T8-LP-8CONV-RU	1	116	0.12	500	57	1	96.0	0.10	500	47
Community Development	3L4T8-SP	NO RETRO	20	87	1.74	2400	4,092	20	87.0	1.74	2400	4,092
Office	2L26CF	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
Office	3L4T8-SP	NO RETRO	1	87	0.09	2000	171	1	87.0	0.09	1400	119
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	2L26CF	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
Office	3L4T8-SP	NO RETRO	1	87	0.09	2000	171	1	87.0	0.09	1400	119
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341	2	87.0	0.17	1400	239
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	1	87	0.09	2000	171	1	87.0	0.09	1400	119
Office	2L26CF	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	1	87	0.09	2000	171	1	87.0	0.09	1400	119
Office	2L26CF	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Womens RR	1L26CF	NO RETRO	5	26	0.13	2000	255	5	26.0	0.13	1400	178
Womens RR	2L26CF	NO RETRO	1	58	0.06	2000	114	1	58.0	0.06	1400	80
Womens RR	1L26CF	NO RETRO	2	26	0.05	2000	102	2	26.0	0.05	1400	71
Womens RR	2L4T8-SP	NO RETRO	1	58	0.06	2000	114	1	58.0	0.06	1400	80
Womens RR	NOTHING	WIR-MASK	1	0	-	2000	-	1	0.0	-	1400	-
Custodian	1L20CF	NO RETRO	1	20	0.02	500	10	1	20.0	0.02	500	10
Exterior	1L75IN	1L20CF	2	75	0.15	4017.75	591	2	20.0	0.04	4017.75	157
Exterior	1L100HPS	NO RETRO	13	120	1.56	4017.75	6,142	13	120.0	1.56	4017.75	6,142
Exterior	2L50IN-R20	NO RETRO	1	100	0.10	4017.75	394	1	100.0	0.10	4017.75	394

Court House Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Exterior	1L20CF	NO RETRO	4	20	0.08	4017.75	315	4	20.0	0.08	4017.75	315
Exterior	1L25CF	NO RETRO	1	25	0.03	4017.75	98	1	25.0	0.03	4017.75	98
Exterior	1L70HPS	NO RETRO	3	85	0.26	4017.75	1,004	3	85.0	0.26	4017.75	1,004
Exterior	1L70HPS	NO RETRO	2	85	0.17	4017.75	669	2	85.0	0.17	4017.75	669
Exterior	1L100MH	NO RETRO	3	120	0.36	4017.75	1,417	3	120.0	0.36	4017.75	1,417
Exterior	1L150QTZ	N2L13CF-FL	1	150	0.15	4017.75	591	1	30.0	0.03	4017.75	118
Basement Stairs	1L4T8-SP	NO RETRO	1	31	0.03	8766	266	1	31.0	0.03	8766	266
Basement Hall	2L4T8-SP	NO RETRO	5	58	0.29	8766	2,491	5	58.0	0.29	8766	2,491
Basement Hall	2L4T8-SP	NO RETRO	3	58	0.17	8766	1,495	3	58.0	0.17	8766	1,495
Basement Hall	LED EXIT	NO RETRO	2	3	0.01	8766	52	2	3.0	0.01	8766	52
Basement Storage	2L4T8-SP	NO RETRO	6	58	0.35	500	171	6	58.0	0.35	500	171
Server Closet	2L4T8-SP	NO RETRO	4	58	0.23	500	114	4	58.0	0.23	500	114
Basement Conference	2L4T8-SP	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
Basement Conference	NOTHING	CIR	1	0	-	2000	-	1	0.0	-	1400	-
Training / Conference	2L4T8-SP	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
Training / Conference	NOTHING	CIR	1	0	-	2000	-	1	0.0	-	1400	-
Meeting Room	2L4T8-SP	NO RETRO	3	58	0.17	2000	341	3	58.0	0.17	1400	239
Meeting Room	NOTHING	WDT	1	0	-	2000	-	1	0.0	-	1400	-
Dispatch Area	2L4T8-SP	NO RETRO	4	58	0.23	8766	1,993	4	58.0	0.23	8766	1,993
Dispatch Area	2LU13/8T8-SP	3L2T8-LP-22RFL	4	58	0.23	8766	1,993	4	43.0	0.17	8766	1,478
Dispatch Area	1L50IN-R20	1L9LED-PAR20	12	50	0.60	8766	5,154	12	9.0	0.11	8766	928
Dispatch Break	2L4T8-SP	NO RETRO	1	58	0.06	2400	136	1	58.0	0.06	1680	95
Dispatch Break	NOTHING	WIR	1	0	-	2400	-	1	0.0	-	1680	-
Mech Rm	2L4T8-SP	NO RETRO	4	58	0.23	500	114	4	58.0	0.23	500	114
RR	2L4T8-SP	NO RETRO	1	58	0.06	2000	114	1	58.0	0.06	1400	80
RR	RR FAN	NO RETRO	1	100	0.10	2000	196	1	100.0	0.10	1400	137
RR	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Storage	2L4T8-SP	NO RETRO	3	58	0.17	500	85	3	58.0	0.17	500	85
Storage	1L4T8-T2-SP	NO RETRO	4	29	0.12	500	57	4	29.0	0.12	500	57
Storage	1L4T8-SP	NO RETRO	1	31	0.03	500	15	1	31.0	0.03	500	15
South Stairs	1L4T8-SP	NO RETRO	2	31	0.06	8766	533	2	31.0	0.06	8766	533
South Stairs	1L4T8-SP	NO RETRO	1	31	0.03	8766	266	1	31.0	0.03	8766	266
S. Entry	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
S. Hall	2L4T8-SP	NO RETRO	5	58	0.29	8766	2,491	5	58.0	0.29	8766	2,491
Mid. Hall	2L4T8-SP	NO RETRO	11	58	0.64	8766	5,481	11	58.0	0.64	8766	5,481
N. Hall	2L4T8-SP	NO RETRO	4	58	0.23	8766	1,993	4	58.0	0.23	8766	1,993
N. Hall, By 153	4L4T8-SP	NO RETRO	1	112	0.11	8766	962	1	112.0	0.11	8766	962
N. Hall, By 156-Finance	4L4T8-SP	NO RETRO	4	112	0.45	8766	3,849	4	112.0	0.45	8766	3,849
W. Entry	1L15CF	NO RETRO	1	15	0.02	8766	129	1	15.0	0.02	8766	129
E. Entry	2L4T8-LP	NO RETRO	1	52	0.05	8766	447	1	52.0	0.05	8766	447
NW Entry	100W HPS	NO RETRO	1	120	0.12	8766	1,031	1	120.0	0.12	8766	1,031
N Hall, By 156-Finance	LED EXIT	NO RETRO	2	3	0.01	8766	52	2	3.0	0.01	8766	52
N. Hall	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26
N. Hall	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26
Mid. Hall	LED EXIT	NO RETRO	3	3	0.01	8766	77	3	3.0	0.01	8766	77
Mid. Hall	LED EXIT	NO RETRO	2	3	0.01	8766	52	2	3.0	0.01	8766	52
Mid. Hall	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26
S. Hall	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26
117 Dist. Attorney	2L4T8-SP	NO RETRO	5	58	0.29	2400	682	5	58.0	0.29	1680	477
117 Dist. Attorney	NOTHING	CIR	1	0	-	2400	-	1	0.0	-	1680	-
117 Secretary	2L4T8-SP	NO RETRO	3	58	0.17	2000	341	3	58.0	0.17	1400	239
117 Secretary	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
117 Office	4L4T8-LP	NO RETRO	1	102	0.10	2400	240	1	102.0	0.10	2400	240
117 Office	2L4T8-SP	NO RETRO	3	58	0.17	2400	409	3	58.0	0.17	2400	409
116 Sheriffs	2L4T8-SP	NO RETRO	3	58	0.17	8766	1,495	3	58.0	0.17	8766	1,495
116 Sheriffs	2L4T8-SP	NO RETRO	4	58	0.23	8766	1,993	4	58.0	0.23	8766	1,993
114 Conference	2L4T8-SP	NO RETRO	16	58	0.93	2000	1,819	16	58.0	0.93	1400	1,273
114 Conference	NOTHING	WCDT1500-WM	1	0	-	2000	-	1	0.0	-	1400	-
Sheriffs	2L4T8-SP	NO RETRO	9	58	0.52	8766	4,484	9	58.0	0.52	8766	4,484
Sheriffs	2L4T8-SP	NO RETRO	4	58	0.23	8766	1,993	4	58.0	0.23	8766	1,993
Sheriffs	2L4T8-LP	NO RETRO	1	52	0.05	8766	447	1	52.0	0.05	8766	447
Sheriffs	1L25CF	NO RETRO	2	25	0.05	8766	430	2	25.0	0.05	8766	430
109 Office	2L4T8-SP	NO RETRO	6	58	0.35	2400	818	6	58.0	0.35	2400	818
109 Office	2L4T8-T4-SP	NO RETRO	8	56	0.45	2400	1,054	8	56.0	0.45	2400	1,054
104 Grouse Office	2L4T8-SP	NO RETRO	6	58	0.35	2400	818	6	58.0	0.35	1680	573
104 Grouse Office	NOTHING	WDT	1	0	-	2400	-	1	0.0	-	1680	-
104 Office	2L4T8-SP	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
104 Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
104 General Office	2L4T8-SP	NO RETRO	6	58	0.35	2400	818	6	58.0	0.35	1680	573
104 General Office	NOTHING	CIR	1	0	-	2400	-	1	0.0	-	1680	-
104 Back Area	2L4T8-SP	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
104 Back Area	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
104 Corner Office	2L4T8-SP	NO RETRO	7	58	0.41	2000	796	7	58.0	0.41	1400	557
104 Corner Office	NOTHING	CIR	1	0	-	2000	-	1	0.0	-	1400	-
105 Post Office	2L4T8-SP	NO RETRO	4	58	0.23	2400	546	4	58.0	0.23	1680	382
105 Post Office	NOTHING	WIR	1	0	-	2400	-	1	0.0	-	1680	-
Sherrif's (Office)	2L4T8-SP	NO RETRO	3	58	0.17	8766	1,495	3	58.0	0.17	8766	1,495
Sherrif's (Office)	2L4T8-SP	NO RETRO	4	58	0.23	8766	1,993	4	58.0	0.23	8766	1,993
Sherrif's (Office)	2L4T8-SP	NO RETRO	4	58	0.23	8766	1,993	4	58.0	0.23	8766	1,993
Sherrif's (Office)	2L4T8-SP	NO RETRO	5	58	0.29	8766	2,491	5	58.0	0.29	8766	2,491
Sherrif's (Office)	2L4T8-SP	NO RETRO	6	58	0.35	8766	2,990	6	58.0	0.35	8766	2,990
123 MIS (Front)	2L4T8-SP	NO RETRO	4	58	0.23	8766	1,993	4	58.0	0.23	8766	1,993
123 MIS (Back)	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
123 MIS (Back)	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
Mens RR	4L4T8-LP	NO RETRO	1	102	0.10	2000	200	1	102.0	0.10	1400	140
Mens RR	RR FAN	NO RETRO	1	100	0.10	2000	196	1	100.0	0.10	1400	137
Mens RR	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-

Court House Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Womens RR	4L4T8-LP	NO RETRO	1	102	0.10	2000	200	1	102.0	0.10	1400	140
Womens RR	RR FAN	NO RETRO	1	100	0.10	2000	196	1	100.0	0.10	1400	137
Womens RR	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Sheriff's (Office)	2L4T8-SP	NO RETRO	4	58	0.23	8766	1,993	4	58.0	0.23	8766	1,993
Sheriff's (Entry)	2LU6T8-LP	3L2T8-LP-22RFL	1	52	0.05	8766	447	1	43.0	0.04	8766	369
Sheriff's (Hall)	2L4T8-LP	NO RETRO	4	52	0.21	8766	1,787	4	52.0	0.21	8766	1,787
Sheriff's (Hall)	2LU6T8-LP	3L2T8-LP-22RFL	2	52	0.10	8766	893	2	43.0	0.09	8766	739
Sheriff (Squad Rm)	2L4T8-SP	NO RETRO	2	58	0.12	8766	997	2	58.0	0.12	8766	997
Sheriff (Squad Rm)	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
Sheriff's (Off. Closet)	1L15CF	NO RETRO	1	15	0.02	8766	129	1	15.0	0.02	8766	129
Sheriff's (Mid Office)	2L4T8-SP	NO RETRO	3	58	0.17	8766	1,495	3	58.0	0.17	8766	1,495
Sheriff Stairs	1L4T8-SP	NO RETRO	2	31	0.06	8766	533	2	31.0	0.06	8766	533
Sheriff Stairs	1L4T8-SP	NO RETRO	3	31	0.09	8766	799	3	31.0	0.09	8766	799
Sheriff Storage (BSMT)	1L15CF	NO RETRO	1	15	0.02	8766	129	1	15.0	0.02	8766	129
Sherrif's (Office)	2L4T8-SP	NO RETRO	3	58	0.17	8766	1,495	3	58.0	0.17	8766	1,495
UnderSheriff	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
UnderSheriff	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
Sheriff	2L4T8-SP	NO RETRO	2	58	0.12	8766	997	2	58.0	0.12	8766	997
Sheriff Booking Area	2L4T8-SP	NO RETRO	2	58	0.12	8766	997	2	58.0	0.12	8766	997
Sheriff Back Hall	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
Sheriff Back Area	2L4T8-LP	NO RETRO	2	52	0.10	8766	893	2	52.0	0.10	8766	893
Sheriff Back (Holding Area)	2L4T8-LP	NO RETRO	2	52	0.10	8766	893	2	52.0	0.10	8766	893
Sheriff Back Area (Toilet)	1L60IN	NO RETRO	1	60	0.06	8766	515	1	60.0	0.06	8766	515
Sheriff Back Area (Hall)	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26
Sheriff Back Area (Laundry)	2L4T8-T4-LP	NO RETRO	12	49	0.59	8766	5,051	12	49.0	0.59	8766	5,051
Sheriff Back Area (Laundry)	NOTHING	NO RETRO	4	0	-	8766	-	4	0.0	-	8766	-
Sheriff Back Area (Laundry)	2L4T8-SP	NO RETRO	2	58	0.12	8766	997	2	58.0	0.12	8766	997
Sheriff's Kitchen Storage	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
Sheriff's Kitchen	4L4T8-LP	NO RETRO	4	102	0.41	8766	3,505	4	102.0	0.41	8766	3,505
Sheriff's Kitchen Utility	1L20CF	NO RETRO	1	20	0.02	8766	172	1	20.0	0.02	8766	172
Sheriff's Office (By Kitchen)	2L4T8-SP	NO RETRO	3	58	0.17	8766	1,495	3	58.0	0.17	8766	1,495
Sheriff's- State Patrol	2L4T8-SP	NO RETRO	3	58	0.17	8766	1,495	3	58.0	0.17	8766	1,495
Sheriff's Utility	2L4T8-LP	NO RETRO	4	52	0.21	8766	1,787	4	52.0	0.21	8766	1,787
Central Stairs	1L4T8-SP	NO RETRO	2	31	0.06	8766	533	2	31.0	0.06	8766	533
Central Stairs	1L4T8-SP	NO RETRO	3	31	0.09	8766	799	3	31.0	0.09	8766	799
Mech. (Bottom of Cent. Strs)	2L4T8-LP	NO RETRO	17	52	0.88	500	433	17	52.0	0.88	500	433
Janitor Closet	1L20CF	NO RETRO	1	20	0.02	500	10	1	20.0	0.02	500	10
Elevator	1L4T8-SP	NO RETRO	2	31	0.06	8766	533	2	31.0	0.06	8766	533
Mechanical (Bir. Room)	2L4T8-LP	NO RETRO	6	52	0.31	500	153	6	52.0	0.31	500	153
156 Front	2L4T8-SP	NO RETRO	6	58	0.35	2400	818	6	58.0	0.35	1680	573
156 Front	NOTHING	CIR	1	0	-	2400	-	1	0.0	-	1680	-
156 Mid	2L4T8-SP	NO RETRO	6	58	0.35	2400	818	6	58.0	0.35	1680	573
156 Mid	NOTHING	CIR	1	0	-	2400	-	1	0.0	-	1680	-
156 Back Office	2L4T8-SP	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
156 Back Office	NOTHING	CIR	1	0	-	2000	-	1	0.0	-	1400	-
156 Copy	2L4T8-SP	NO RETRO	7	58	0.41	2400	955	7	58.0	0.41	1680	668
156 Copy	NOTHING	CIR	1	0	-	2400	-	1	0.0	-	1680	-
Room B	2L4T8-SP	NO RETRO	3	58	0.17	2000	341	3	58.0	0.17	1400	239
Room B	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Room A	2L4T8-SP	NO RETRO	3	58	0.17	2000	341	3	58.0	0.17	1400	239
Room A	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Finance	2L4T8-LP	NO RETRO	6	52	0.31	2400	734	6	52.0	0.31	1680	514
Finance	NOTHING	WIR	1	0	-	2400	-	1	0.0	-	1680	-
Office 162	2L4T8-SP	NO RETRO	3	58	0.17	2000	341	3	58.0	0.17	1400	239
Office 162	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Storage By 164	2L4T8-LP	NO RETRO	1	52	0.05	500	25	1	52.0	0.05	500	25
164 front	2L4T8-SP	NO RETRO	4	58	0.23	2400	546	4	58.0	0.23	1680	382
164 front	NOTHING	CIR	1	0	-	2400	-	1	0.0	-	1680	-
164 mid Office	2L4T8-SP	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
164 mid Office	NOTHING	CIR	1	0	-	2000	-	1	0.0	-	1400	-
North Stair	2L4T8-LP	NO RETRO	1	52	0.05	8766	447	1	52.0	0.05	8766	447
Jail - Lunch Rm	2L4T8-SP	NO RETRO	4	58	0.23	8766	1,993	4	58.0	0.23	8766	1,993
Jail - Cells	2L4T8-SP	NO RETRO	26	58	1.51	8766	12,955	26	58.0	1.51	8766	12,955
Jail - Stor.	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
Jail - Halls	2L4T8-SP	NO RETRO	9	58	0.52	8766	4,484	9	58.0	0.52	8766	4,484
Jail - Office	4L4T8-SP	NO RETRO	2	112	0.22	8766	1,924	2	112.0	0.22	8766	1,924
Jail - Shower	2L4T8-SP	NO RETRO	2	58	0.12	8766	997	2	58.0	0.12	8766	997
Jail - Chem. Storage	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
Jail - Library	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
Jail - Phones	2L4T8-SP	NO RETRO	2	58	0.12	8766	997	2	58.0	0.12	8766	997
Jail - Waiting	4L4T8-SP	NO RETRO	2	112	0.22	8766	1,924	2	112.0	0.22	8766	1,924
Jail - In Btwn	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
Jail	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26
Jail	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26
264 Conference	2L4T8-SP	NO RETRO	16	58	0.93	2000	1,819	16	58.0	0.93	1400	1,273
264 Conference	2L4T8-SP	NO RETRO	2	58	0.12	2000	227	2	58.0	0.12	1400	159
264 Conference	NOTHING	WCDT1500-WM	1	0	-	2000	-	1	0.0	-	1400	-
263 Admin	2L4T8-T4-SP	NO RETRO	4	56	0.22	2400	527	4	56.0	0.22	1680	369
263 Admin	2L4T8-SP	NO RETRO	2	58	0.12	2400	273	2	58.0	0.12	1680	191
263 Admin	NOTHING	WIR	1	0	-	2400	-	1	0.0	-	1680	-
Admin Office	2L4T8-T4-SP	NO RETRO	4	56	0.22	2400	527	4	56.0	0.22	1680	369
Admin Office	NOTHING	WIR	1	0	-	2400	-	1	0.0	-	1680	-
Admin Office	2L4T8-T4-SP	NO RETRO	2	56	0.11	2400	263	2	56.0	0.11	1680	184
Admin Office	2L4T8-SP	NO RETRO	1	58	0.06	2400	136	1	58.0	0.06	1680	95
Admin Office	NOTHING	WIR	1	0	-	2400	-	1	0.0	-	1680	-
262 Office	2L4T8-T4-SP	NO RETRO	4	56	0.22	2000	439	4	56.0	0.22	1400	307
262 Office	2L4T8-T4-SP	NO RETRO	2	56	0.11	2000	220	2	56.0	0.11	1400	154

Court House Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
262 Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
259 Office	2L4T8-T4-SP	NO RETRO	4	56	0.22	2000	439	4	56.0	0.22	1400	307
259 Office	2L4T8-SP	NO RETRO	2	58	0.12	2000	227	2	58.0	0.12	1400	159
259 Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
260 Finance Front	2L4T8-T4-SP	NO RETRO	4	56	0.22	2400	527	4	56.0	0.22	1680	369
260 Finance Front	NOTHING	WIR	1	0	-	2400	-	1	0.0	-	1680	-
260 Finance Back	2L4T8-T4-SP	NO RETRO	4	56	0.22	2000	439	4	56.0	0.22	1400	307
260 Finance Back	NOTHING	WDT	1	0	-	2000	-	1	0.0	-	1400	-
Elevator Storage	1L15CF	NO RETRO	1	15	0.02	500	7	1	15.0	0.02	500	7
Chambers	2L4T8-SP	NO RETRO	8	58	0.46	2000	909	8	58.0	0.46	1400	637
Chambers	NOTHING	WDT	1	0	-	2000	-	1	0.0	-	1400	-
Judge's Rest Room	2L4T8-LP	NO RETRO	1	52	0.05	2000	102	1	52.0	0.05	2000	102
Judge's Hall	2L4T8-LP	NO RETRO	2	52	0.10	8766	893	2	52.0	0.10	8766	893
205 Court	4L4T8-LP	NO RETRO	4	102	0.41	1500	600	4	102.0	0.41	1500	600
205 Court	2L4T8-LP	NO RETRO	16	52	0.83	1500	1,223	16	52.0	0.83	1500	1,223
Jury Room	2L4T8-SP	NO RETRO	8	58	0.46	2000	909	8	58.0	0.46	1400	637
Jury Room	NOTHING	CIR	1	0	-	2000	-	1	0.0	-	1400	-
Jury Room RR	2L4T8-LP	NO RETRO	2	52	0.10	2000	204	2	52.0	0.10	2000	204
Spare Jury Room	2L4T8-SP	NO RETRO	4	58	0.23	2000	455	4	58.0	0.23	1400	318
Spare Jury Room	NOTHING	CIR	1	0	-	2000	-	1	0.0	-	1400	-
mens rr	2L4T8-LP	NO RETRO	1	52	0.05	2000	102	1	52.0	0.05	1400	71
mens rr	NOTHING	WIR-MASK	1	0	-	2000	-	1	0.0	-	1400	-
womens rr	2L4T8-LP	NO RETRO	1	52	0.05	2000	102	1	52.0	0.05	1400	71
womens rr	NOTHING	WIR-MASK	1	0	-	2000	-	1	0.0	-	1400	-
214 Clerks	2L4T8-SP	NO RETRO	11	58	0.64	2400	1,501	11	58.0	0.64	1680	1,050
214 Clerks	2L4T8-SP	NO RETRO	1	58	0.06	2400	136	1	58.0	0.06	1680	95
214 Clerks	NOTHING	CDT2000	1	0	-	2400	-	1	0.0	-	1680	-
214 mid office	2L4T8-SP	NO RETRO	3	58	0.17	2000	341	3	58.0	0.17	1400	239
214 mid office	NOTHING	CIR	1	0	-	2000	-	1	0.0	-	1400	-
214 2nd office	2L4T8-SP	NO RETRO	3	58	0.17	2000	341	3	58.0	0.17	1400	239
214 2nd office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Probation Office	2L4T8-SP	NO RETRO	3	58	0.17	2000	341	3	58.0	0.17	1400	239
Probation Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Judge Chambers	2L4T8-LP	NO RETRO	4	52	0.21	2000	408	4	52.0	0.21	1400	285
Judge Chambers	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Sm Office	2L4T8-SP	NO RETRO	1	58	0.06	2000	114	1	58.0	0.06	1400	80
Sm Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Sm Office	2L4T8-SP	NO RETRO	1	58	0.06	2000	114	1	58.0	0.06	1400	80
Sm Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
S. Court Room 215A	2L4T8-LP	NO RETRO	25	52	1.30	1500	1,911	25	52.0	1.30	1050	1,338
S. Court Room 215A	2L4T8-SP	NO RETRO	1	58	0.06	1500	85	1	58.0	0.06	1050	60
S. Court Room 215A	NOTHING	CDT2000	1	0	-	1500	-	1	0.0	-	1050	-
S. Court Room 215A	LED EXIT	NO RETRO	2	3	0.01	8766	52	2	3.0	0.01	8766	52
S. Stairwell	1L4T8-SP	NO RETRO	2	31	0.06	8766	533	2	31.0	0.06	8766	533
S. Stairwell	1L4T8-SP	NO RETRO	1	31	0.03	8766	266	1	31.0	0.03	8766	266
S. Hall	2L4T8-LP	NO RETRO	4	52	0.21	8766	1,787	4	52.0	0.21	8766	1,787
Mid Hall	LED EXIT	NO RETRO	2	3	0.01	8766	52	2	3.0	0.01	8766	52
Mid Hall	2L4TR-T8	NO RETRO	12	58	0.70	8766	5,979	12	58.0	0.70	8766	5,979
N. Hall	LED EXIT	NO RETRO	2	3	0.01	8766	52	2	3.0	0.01	8766	52
N. Hall	2L4T8-SP	NO RETRO	1	58	0.06	8766	498	1	58.0	0.06	8766	498
N. Hall	2L4T8-LP	NO RETRO	3	52	0.16	8766	1,340	3	52.0	0.16	8766	1,340
N. Hall	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26

Crested Butte Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Vehicle Shop	1L400MH	N6L4T8-HP-8VP	12	458	5.50	2000	10,772	12	222.0	2.66	2000	5,221
Vehicle Shop	2L8T12-HO	4L4T8-SP-8CONV-RU	4	207	0.83	2000	1,623	4	108.0	0.43	2000	847
Vehicle Shop	2L4T12	2L4T8-LP	1	72	0.07	2000	141	1	48.0	0.05	2000	94
Vehicle Shop	1L75IN	1L18CF	4	75	0.30	2000	588	4	18.0	0.07	2000	141

Doyleville Shop Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Doyleville Shop	2L8T12	2L4T8-HP-8CONV-IND	14	126	1.76	2000	3,457	14	74.0	1.04	2000	2,031
Doyleville Shop	2L4T12	2L4T8-LP	2	72	0.14	2000	282	2	48.0	0.10	2000	188
Doyleville Shop	3L4T12	2L4T8-SP-24RFL	1	115	0.12	2000	225	1	54.0	0.05	2000	106

Facility Maintenance Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Main Shop	2L8T12-TG	4L4T8-LP-8CONV-RU-TG	19	126	2.39	2400	5,631	19	96.0	1.82	2400	4,290
Main Shop	2L4T12	2L4T8-T4-LP	2	72	0.14	2400	339	2	48.0	0.10	2400	226
Wood Shop	2L4T12	2L4T8-T4-LP	12	72	0.86	2400	2,032	12	48.0	0.58	2400	1,355
RR	2L4T12	2L4T8-LP	1	72	0.07	2000	141	1	48.0	0.05	1400	66
RR	RR FAN	NO RETRO	1	100	0.10	2000	196	1	100.0	0.10	1400	137
RR	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	2L4T12	2L4T8-T4-LP	4	72	0.29	2000	564	4	48.0	0.19	2000	376
Office	2L4T12	2L4T8-LP	1	72	0.07	2000	141	1	48.0	0.05	2000	94
Exterior	2L90IN-PAR38	N1L70MH-WP-DS	1	180	0.18	4017.75	709	1	85.0	0.09	4017.75	335

Family Services Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Halls	2L26CF	NO RETRO	22	58	1.28	2800	3,501	22	58.0	1.28	2800	3,501
Halls	LED EXIT	NO RETRO	3	3	0.01	8766	77	3	3.0	0.01	8766	77
Halls	1L13CF	NO RETRO	8	15	0.12	2800	329	8	15.0	0.12	2800	329
Halls	1L50MR16	1L5LED-MR16	16	50	0.80	2800	2,195	16	5.0	0.08	2800	220
Custodian	2L4T8-LP	NO RETRO	1	52	0.05	500	25	1	52.0	0.05	500	25
Womens RR	2L4T8-LP	NO RETRO	3	52	0.16	2000	306	3	52.0	0.16	1400	214
Womens RR	2L18CF	NO RETRO	4	36	0.14	2000	282	4	36.0	0.14	1400	198
Womens RR	NOTHING	WUS	1	0	-	2000	-	1	0.0	-	1400	-
Mens RR	2L4T8-LP	NO RETRO	3	52	0.16	2000	306	3	52.0	0.16	1400	214
Mens RR	2L18CF	NO RETRO	4	36	0.14	2000	282	4	36.0	0.14	1400	198
Mens RR	NOTHING	WUS	1	0	-	2000	-	1	0.0	-	1400	-
Break Room	2LU13/8T8-SP	3L2T8-LP-22RFL	5	58	0.29	2400	682	5	43.0	0.22	1680	354
Break Room	NOTHING	CIR	1	0	-	2400	-	1	0.0	-	1680	-
Boiler Room	1L75IN	1L25CF	2	75	0.15	500	74	2	25.0	0.05	500	25
Boiler Room	1L20CF	NO RETRO	3	20	0.06	500	29	3	20.0	0.06	500	29
Boiler Room	2L4T8-SP	NO RETRO	8	58	0.46	500	227	8	58.0	0.46	500	227
Conference	2LU6T8-SP	3L2T8-LP-22RFL	11	58	0.64	2000	1,250	11	43.0	0.47	1400	649
Conference	NOTHING	CIR	1	0	-	2000	-	1	0.0	-	1400	-
Conference	2LU6T8-SP	3L2T8-LP-22RFL	12	58	0.70	2000	1,364	12	43.0	0.52	1400	708
Conference	NOTHING	CIR	1	0	-	2000	-	1	0.0	-	1400	-
Conference	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341	2	87.0	0.17	2000	341
Office	3L4T8-SP	NO RETRO	1	87	0.09	2000	171	1	87.0	0.09	2000	171
Open Office	3L4T8-SP	NO RETRO	6	87	0.52	2400	1,228	6	87.0	0.52	2400	1,228
Open Office	3L4T8-SP	NO RETRO	14	87	1.22	2400	2,865	14	87.0	1.22	2400	2,865
Open Office	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341	2	87.0	0.17	1400	239
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341	2	87.0	0.17	1400	239
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341	2	87.0	0.17	1400	239
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Senior Resource	2LU13/8T8-SP	3L2T8-LP-22RFL	3	58	0.17	2400	409	3	43.0	0.13	1680	212
Senior Resource	NOTHING	WIR	1	0	-	2400	-	1	0.0	-	1680	-
Office	3L4T8-SP	NO RETRO	1	87	0.09	2000	171	1	87.0	0.09	1400	119
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	1	87	0.09	2000	171	1	87.0	0.09	1400	119
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Vital Records	3L4T8-SP	NO RETRO	18	87	1.57	2400	3,683	18	87.0	1.57	2400	3,683
Exam Room	2LU13/8T8-SP	3L2T8-LP-22RFL	4	58	0.23	2000	455	4	43.0	0.17	1400	236
Exam Room	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	2LU13/8T8-SP	3L2T8-LP-22RFL	4	58	0.23	2000	455	4	43.0	0.17	1400	236
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341	2	87.0	0.17	1400	239
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341	2	87.0	0.17	1400	239
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
RR	3L4T8-SP	NO RETRO	1	87	0.09	2000	171	1	87.0	0.09	1400	119
RR	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341	2	87.0	0.17	1400	239
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	3L4T8-SP	NO RETRO	2	87	0.17	2000	341	2	87.0	0.17	2000	341
Human Services	3L4T8-SP	NO RETRO	32	87	2.78	2400	6,548	32	87.0	2.78	2400	6,548
Human Services	LED EXIT	NO RETRO	2	3	0.01	8766	52	2	3.0	0.01	8766	52
Play Room	2LU13/8T8-SP	3L2T8-LP-22RFL	4	58	0.23	2500	568	4	43.0	0.17	1750	295
Play Room	NOTHING	WIR	1	0	-	2500	-	1	0.0	-	1750	-
Offices	3L4T8-SP	NO RETRO	14	87	1.22	2000	2,387	14	87.0	1.22	1400	1,671
Offices	NOTHING	WIR	7	0	-	2000	-	7	0.0	-	1400	-
Office	2LU13/8T8-SP	3L2T8-LP-22RFL	2	58	0.12	2000	227	2	43.0	0.09	1400	118
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
File Room	2LU13/8T8-SP	3L2T8-LP-22RFL	2	58	0.12	2000	227	2	43.0	0.09	1400	118
File Room	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	2LU13/8T8-SP	3L2T8-LP-22RFL	2	58	0.12	2000	227	2	43.0	0.09	1400	118
Office	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Exterior	1L175MH	1L100CMH-CAN	3	200	0.60	4017.75	2,362	3	120.0	0.36	4017.75	1,417

Housing Authority Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Entry	1L40IN	1L13CF-A	1	40	0.04	2400	94	1	13.0	0.01	2400	31
Office	4L60IN	4L13CF-A	1	240	0.24	2000	470	1	60.0	0.06	2000	118
Dining / Conference	4L60IN	4L13CF-A	1	240	0.24	2000	470	1	60.0	0.06	2000	118
Conference	4L60IN	4L13CF-A	1	240	0.24	2000	470	1	60.0	0.06	2000	118
Kitchen	4L4T12	2L4T8-HP-24RFL	1	144	0.14	2400	339	1	74.0	0.07	2400	174
Kitchen Entry	1L60IN	1L13CF	1	60	0.06	2400	141	1	13.0	0.01	2400	31
Kitchen Files	1L60IN-DIM	1L13CF-RMDIM	1	60	0.06	500	29	1	13.0	0.01	500	6
Pantry	1L60IN	1L13CF	1	60	0.06	500	29	1	13.0	0.01	500	6
Corridor	1L60IN	1L13CF	1	60	0.06	2800	165	1	13.0	0.01	2800	36
Corridor	LED EXIT	NO RETRO	1	3	0.00	8766	26	1	3.0	0.00	8766	26
RR	1L75IN	1L18CF	1	75	0.08	2000	147	1	18.0	0.02	1400	25
RR	NOTHING	WIR-NN	1	0	-	2000	-	1	0.0	-	1400	-
RR	2L60IN	2L13CF	2	120	0.24	2000	470	2	26.0	0.05	2000	102
Copy Room	2L40IN-CDL	2L4LED-CDL	2	80	0.16	2400	376	2	8.0	0.02	2400	38
Data Room	1L60IN	1L13CF	1	60	0.06	500	29	1	13.0	0.01	500	6
Office	4L60IN	4L13CF-A	1	240	0.24	2000	470	1	60.0	0.06	2000	118
Storage	1L60IN	1L13CF	1	60	0.06	500	29	1	13.0	0.01	500	6
Stairs	1L75IN	1L18CF	1	75	0.08	2800	206	1	18.0	0.02	2800	49
Basement	2L4T12	2L4T8-LP	2	72	0.14	500	71	2	48.0	0.10	500	47
Basement	1L75IN	1L18CF	12	75	0.90	500	441	12	18.0	0.22	500	106
Halls	1L60IN	1L13CF-A	2	60	0.12	2800	329	2	13.0	0.03	2800	71
Office	2L60IN	2L13CF	1	120	0.12	2000	235	1	26.0	0.03	2000	51
File Room	1L60IN	1L13CF	1	60	0.06	2000	118	1	13.0	0.01	2000	25
Storage	1L60IN	1L13CF	1	60	0.06	500	29	1	13.0	0.01	500	6
Office	2L60IN	2L13CF	1	120	0.12	2000	235	1	26.0	0.03	2000	51
Office	2L60IN	2L13CF	1	120	0.12	2000	235	1	26.0	0.03	2000	51
Storage	1L60IN	1L13CF	1	60	0.06	500	29	1	13.0	0.01	500	6
RR	2L60IN	2L13CF	1	120	0.12	2000	235	1	26.0	0.03	1400	36
RR	RR FAN	NO RETRO	1	100	0.10	2000	196	1	100.0	0.10	1400	137
RR	NOTHING	WIR-NN	1	0	-	2000	-	1	0.0	-	1400	-
Closet	1L60IN	1L13CF	1	60	0.06	500	29	1	13.0	0.01	500	6
Office	2L60IN	2L13CF	1	120	0.12	2000	235	1	26.0	0.03	2000	51
Storage	1L60IN	1L13CF	1	60	0.06	500	29	1	13.0	0.01	500	6
Office	2L60IN	2L13CF	1	120	0.12	2000	235	1	26.0	0.03	2000	51
Attic	1L75IN	1L18CF	4	75	0.30	500	147	4	18.0	0.07	500	35
Exterior	2L60IN	2L13CF	2	120	0.24	4017.75	945	2	26.0	0.05	4017.75	205
Exterior	1L75IN	1L18CF	1	75	0.08	4017.75	295	1	18.0	0.02	4017.75	71

Landfill Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Landfill	1L400MH	N6L4T8-HP-8VP	3	458	1.37	2000	2,693	3	222.0	0.67	2000	1,305

Marble Shop Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Marble Shop	2L8T12-HO	4L4T8-SP-8CONV-RU	24	207	4.97	2000	9,737	24	108.0	2.59	2000	5,080
Marble Shop	2L4T12	2L4T8-LP	3	72	0.22	2000	423	3	48.0	0.14	2000	282

Somerset Shop Lighting Savings

			Existing Lighting					New Lighting				
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Somerset Shop	4L4T12	N2L4T8-T4-SP-IND	8	144	1.15	2000	2,258	8	54.0	0.43	2000	847
Somerset Shop	2L8T12	N4L4T8-LP-8IND	4	126	0.50	2000	988	4	96.0	0.38	2000	753

Water Treatment Lighting Savings													
			Existing Lighting					New Lighting					
Rm/ Location Identification	Existing Fixture	Future Fixture	Fxtr Qty EQ	Fixture Wattage EW/Fxtr	kW ELD	Hours EHRS	kWh ELU	Fxtr Qty NQ	Fixture Wattage NW/Fxtr	kW NLD	Hours NHRS	kWh NLU
Main Tank Area	2L8T12	4L4T8-LP-8CONV-RU-VDIFF	16	126	2.02	2400	4,742	16	96.0	1.54	2400	3,613
Main Tank Area	2L4T12	2L4T8-LP-HIGH	1	72	0.07	2400	169	1	48.0	0.05	2400	113
Main Tank Area	LED EXIT	NO RETRO	2	3	0.01	8766	52	2	3.0	0.01	8766	52
RR	2L4T12	2L4T8-LP	1	72	0.07	2000	141	1	48.0	0.05	1400	66
RR	RR FAN	NO RETRO	1	100	0.10	2000	196	1	100.0	0.10	1400	137
RR	NOTHING	WIR	1	0	-	2000	-	1	0.0	-	1400	-
Office	2L4T12	2L4T8-LP	1	72	0.07	2000	141	1	48.0	0.05	2000	94
Chlorine	2L4T12	2L4T8-LP	1	72	0.07	500	35	1	48.0	0.05	500	24
Exterior	1L75IN	1L18CF	2	75	0.15	4017.75	591	2	18.0	0.04	4017.75	142

Lighting codes

The descriptive code is made up of four basic parts. Here is a break down:

- The first part of the code indicates the number of lamps (2L for a two-lamp fixture).
- The second part indicates the length of the fluorescent lamp(s) or the wattage of the incandescent lamp(s).
- The third part indicates the type of lamp. Lamp dimensions are given in $1/8^{ths}$ of an inch (ie. a T-12 lamps is 12/8 inch (or 1.5 inches) in diameter.
- The fourth part gives additional information following a dash (-HO indicates a high output ballast & lamp).

EXAMPLE: 2 L 4 T-12 – H O

2 LAMPS 4 FOOT T-12 LAMP HIGH OUTPUT

Here is a partial list of general fixture description abbreviations (the third part of the descriptive code):

850 or C50	color corrected, high CRI, 5000 Kelvin Correlated Color Temperature lamps
BATT	fixture has a 90-minute emergency battery pack
BIAX	twin tube compact fluorescent biax lamp
CF	compact fluorescent
CMH	ceramic metal halide
COLD	cold vending machine
DIM	fixture on dimming circuit
DLMP2	fixture has been de-lamped to 2-lamps by the occupant
DUAL	fixture is dual-ballasted for inboard/outboard lighting control
EM	on emergency circuit
HO	high output lamps with a recessed double contact base

HP	high power ballast
HPS	high pressure sodium
IN	incandescent lamp
IS	instant start electronic ballast – standard ballast factor (standard power)
LP	low ballast factor ballast (low power)
MH	metal-halide
MR16	low voltage (12V) MR-16 halogen lamp
MV	mercury-vapor
PAR20	PAR 20 Reflector Flood 2 ½"
PAR30	PAR 30 Reflector Flood 3 ¾"
PAR38	PAR 38 Reflector Flood 4 ¾"
PRS	programmed rapid start ballast
QTZ	quartz halogen lamp
R30	R-30 Reflector Flood 3 ¾"
R40	R-40 Reflector Flood 5"
SNACK	snack vending machine
SP	standard power ballast
TG	fixture has protective acrylic tube guards on lamps
U13/8	1 5/8" u-bend fluorescent lamps
U3	3" u-bend fluorescent lamps
U6	6" u-bend fluorescent lamps

If you encounter fixtures that do not fit these descriptions it is because we have created a special code for an atypical fixture.

Here is a partial list of additional informative abbreviations:

GR RED SIGNAL	incandescent traffic signal for wash building
LED EXIT	light emitting diode exit sign
NEON	custom neon gas lighting
NOTHING	no existing fixture or sensor
RR FAN	rest room exhaust fan
TENANT FINISH	area has been tenant finished and is not to be retrofit

As above, if we encounter fixtures that need other additional information, we've created additional abbreviations.

For retrofit descriptions the same codes as above apply except that additional information may be applied as needed. Some common retrofit specific information follows:

2P	two pole contactor on motion sensor
AMB	ambient lighting controls
BATT	install new 90-minute fluorescent emergency battery pack
CENTER	remove old sockets and install new sockets and centering bracket
CDT	dual technology ceiling motion sensor
CF	compact fluorescent lamp
CIR	infrared ceiling motion sensor
CONV	use conversion kit (8' to 4' or 6' to 3')
CUS	ultrasonic ceiling motion sensor
CUST	custom conversion kit
DEC	decorative fixture
DLMP	delamp from 3 or 4 lamps to 2 lamps (remove excess sockets)
DRKIT	custom can retrofit kit by Delray
EDIM	electronic dimming ballast
EXT	exterior fixture
FL	flood light
GR	green LEDs
HB	high bay fixture with enhanced aluminum reflectors
HB SENSOR	high bay motion sensor
HIGH	high working height
HP	use high power ballast*
IHB	industrial high bay fixture
IMT	7-day programmable vending machine timer
IND	industrial fixture with enhanced aluminum reflectors
JJ	vapor tight fixture with cage
KL	keyless fixture
LED	light emitting diode
LENS	install new lens
LONG	space between fixtures for tandem
LP	use low power ballast *
LR	linear reactor
N	install a new fixture**
NO RETRO	no retrofit recommended for this fixture
OR	oversized trim ring
OS	Occupancy Sensor
PC	pull chain
PS	pulse start metal halide
RED	red LEDs
RFL	use reflector kit (numbers in front denote dimensions)
RMDIM	remove dimmer

RL	relamp
RU	reuse existing ballast covers
SIGNAL	traffic signal LED
ST	strip fixture
T2	tandem w/2 lamp ballast (two fixtures in tandem)
T3	tandem w/3 lamp ballast (two or three fixtures in tandem)
T4	tandem w/4 lamp ballast (two, three or four fixtures in tandem)
TG	install new acrylic tube guards
TP	tamper proof fixture
UP/DN	direct / indirect fixture
VDIFF	very difficult retrofit
VHIGH	very high working height
VLENS	new vapor tight lens
VP	vapor tight fixture
WDT	dual technology wall motion sensor
WIR	infrared wall motion sensor
WL	wall mounted fixture
WLENS	new wraparound lens
WT	whip tandem
WW	wall wash

* For field convenience list ballast selection last

** For field convenience indicate new fixture first

Appendix B:
(as necessary)

Appendix C:
(as necessary)

Ennovate Corporation
10650 East Bethany Drive
Aurora, CO 80014
Tel (303) 309-6223 • Fax (303) 309-6228

July 16, 2010

Matthew Birnie
County Manager
Gunnison County
200 E Virginia Ave
Gunnison, CO 81230

Re: Energy Performance Contract Modification

Dear Ben,

I would like to correct a couple of items in our Energy Performance Contract with Gunnison County. The first is the signed contract does not have a date. The other is Section 21.1 is missing language required by our Surety. I am requesting that by mutual agreement that this letter shall serve as modification of the Energy Performance Contract to incorporate these changes:

Current
This Energy Performance Contract ("Contract") is made and entered into as of this 20th day of ~~June~~ July, 2010, by and between Gunnison County ("Agency"), and Ennovate Corporation ("Contractor").

Amended
This Energy Performance Contract ("Contract") is made and entered into as of this 15th day of July, 2010, by and between Gunnison County ("Agency"), and Ennovate Corporation ("Contractor").

Current
Section 21.1. Waiver of Liens, Performance Bonds, Labor and Material Payment Bonds.
Such executed bonds are incorporated herein by reference as Exhibit I (Performance Bond) and Exhibit II (Labor and Material Payment Bond) per Schedule N (General Conditions).

Amended
Section 21.1. Waiver of Liens, Performance Bonds, Labor and Material Payment Bonds.
Such executed bonds are incorporated herein by reference as Exhibit I (Performance Bond) and Exhibit II (Labor and Material Payment Bond) per Schedule N (General Conditions). Performance and Payment Bonds for this agreement apply to construction of project improvements and payment of subcontractors. The surety will have no liability for the performance period or guaranteed cost savings. The term of the bond is for the construction period only and a 1-year warranty period for the construction improvements.

Thank you for your consideration and assistant with these corrections. A faxed or scan copy would be appreciated.

Cordially,

Harold Peter
Business Manager

Accepted by: