CITY COMMISSION MINUTES

March 15, 2011 7:00p.m.

The regular meeting of the Junction City City Commission was held on Tuesday, March 15, 2011 with Mayor Mike Rhodes presiding.

The following members of the Commission were present: Terry Heldstab, Scott Johnson, Mike Rhodes, Ken Talley, and Jack Taylor. Staff present was: City Manager Gerry Vernon, City Attorney Catherine Logan, and City Clerk Tyler Ficken.

PUBLIC COMMENT

Pat Landes of 203 S. Adams stated that he is aware that the developments on the west side of town are a source of City debt; developers and City staff need to work toward getting the specials paid. Mr. Landes stated that a timeline from the past to the future needs to be developed and an impact of the debt on the future needs to be discussed. Mr. Landes stated that he would like to receive periodic updates from the City Manager or Finance Director regarding the progress of housing development in town. Mr. Landes stated that the City Manager and the Finance Director have done a great job. Commissioner Johnson stated that the people who are running for Commission need to read the development agreements the City has entered into. Commissioner Johnson stated that the Commission approves payments at each meeting that goes to pay for debt as a result of bad ideas. Mr. Landes asked if the City has approached developers to move forward. Commissioner Johnson stated that if people cannot pay their taxes on the lots then the banks will not lend to these people.

Bruce McMillan stated that his intention is to update the City Commission on the activities of the Flint Hills Regional Council. Mr. Mcmillian stated that the group has increased from twelve members to eighteen. He stated that the City of Junction City is a major player in the region and the council. He stated that the Flint Hills Regional Council is currently working on a housing database that will be available in approximately 60 days.

Audrey Boller stated that she has made plans to be married in August on a farm, and plans to hold their reception at the municipal building. She stated that on February 11th she learned that the City no longer allows alcohol to be served at the Municipal Building. She stated that she would like to be grandfathered in, and be allowed to serve alcohol at her wedding reception. Commissioner Johnson stated that he would be in favor of allowing the event with alcohol. Mayor Rhodes and Commissioner Heldstab stated that they were also both in favor. City Attorney Logan stated that the item can be approved on a future agenda.

Andrew Riubedau spoke in opposition to the anti-Obama billboard and stated that the billboard negatively impacts morale on Ft. Riley. He stated that the billboards are not in City limits. Commissioner Johnson stated that Mr. Riubedau could contact the owner of the billboard and ask for the offensive material to be removed. Mayor Rhodes suggested that Mr. Riubedau speak with Grandview Plaza about the sign.

Larry Ruiz of 1926 McFarland stated that he will update the Commission on his malfeasance contract with the City of Junction City. He has made attempts to work with City staff and elected officials. Mr. Ruiz stated that he loves this City and his son is buried in the City. He stated that he needs to peruse this issue before the current Commission steps down. Mr. Ruiz stated that he is aware of the debt of the City; he pays his taxes and it is not cheap. Commissioner Johnson asked what the lawsuit is. Mr. Ruiz stated that 120 days have passed and an olive branch has been extended; he has asked for a meeting. Mr. Ruiz stated that this will end up in a jury trial in Topeka because he believes there is currently not fair jurisprudence in Junction City. Mr. Ruiz stated that this will be a long and drawn out process where former Mayor Wunder, Mayor Rhodes, Commissioner Heldstab, former City Manager Barnes, and former Codes Administrator Dave Hurley will be brought to trial. Mr. Ruiz stated that is would be in the best interest of the City to settle the issue out of court. Mr Ruiz stated that he will be going after the personal assets of individuals; they will have to defend themselves in court. Commissioner Johnson asked what the actual complaint is. Mr. Ruiz stated that it was in the newspaper. Commissioner Johnson stated that he remembers something in the paper but needs more information. City Attorney Logan stated that the lawsuit she believes Mr. Ruiz is referring to named numerous defendants including the City's law firm and individuals on the Commission. City Attorney Logan stated that frankly Mr. Ruiz's pleading made no sense because of a failure to provide the City with a claim prior to the lawsuit. Commissioner Johnson asked again what the claim was. City Attorney Logan stated that it is impossible to tell. Mr. Ruiz stated that his property was wrongfully condemned under imminent domain. City Attorney Logan stated the claim of Mr. Ruiz has been denied and he is free to file another lawsuit. City Attorney Logan stated that the City will be appointed the counsel of Fisher & Patterson in that instance. Mr. Ruiz stated that there are several counts against the City. Mayor Rhodes stated that this issue appears to be in the hands of the attorneys now. Commissioner Johnson stated that the City has been bending over backward to let people fix their properties. Mr. Ruiz stated that he was out of the country when his properties were condemned. Mr. Ruiz stated that this is nothing but a personal vendetta on the part of some individuals.

Robert Hacking of 702 W. 11th Street stated that he is able to familiarize the Commission with the property at 340 W. 5th Street that Mr. Ruiz has referred to. The structure was demolished and he was set aback by the unprofessional protocol that took place at the May 15, 2007 Commission Meeting. He stated that Mayor Wunder was not accepting of the improvements that had been made; at that meeting Mayor Wunder stated that Mr. Ruiz should have been at the meeting. He stated that Mayor Wunder moved, and was seconded by Commissioner Heldstab for condemnation. Commissioner Johnson stated that he would take the word of the people here tonight over the word of Mick Wunder. Commissioner Johnson stated that the dates need to be looked into. Commissioner Johnson stated that the City needs to work on this and not squirm out of it legally.

Vernon Thorn of 948 Grant Ave #239 stated that he has encountered discrimination and has been sold trailers with no title transfer taking place, and taxes have been shifted to him; the City and County are just trying to get taxes. Mr. Thorn stated that the 948 Grant Ave Park is in the worst condition in the City, and does not have a business license. Mr.

Thorn stated that a trailer is titled like a car, and titles have not been received from Regency. Mr. Thorn stated that he feels there is a double standard here; if you have a million dollar bank account then you get what you want. Commissioner Johnson stated that the park looks like a third world country and Regency needs to work to get a business license. Mr. Thorn stated that he would like the residents to be able to pay into an escrow account until improvements are made to the court, and a business license is granted. Mr. Thorn stated that he expects fair treatment. Mr. Thorn stated that due to taxes he was unaware of, he cannot get his car licensed, and management has taken his belongings. Mayor Rhodes stated that Mr. Thorn should contact the Geary County Treasurers office to resolve the tax issue. Mr. Thorn stated that items have been taken from his home and it is being treated as a civil matter and not a criminal matter. Chief Brown stated that he cannot comment on this case that is under investigation. Mr. Thorn stated that he was fired from Regency for revealing crimes. Commissioner Johnson stated that the people who own the property are not doing what they are supposed to do because it would not look that way if they did. Mayor Rhodes stated that multiple blights have been issued to the park. Mr. Thorn stated that he would like the park to not receive a business license until the park is cleaned up; they need to be hit in the pocket. Mr. Thorn requested that the City Commission join the side of the residents on this. Commissioner Johnson stated that it is difficult to comment without knowing more specifics but he knows that the place is a mess and something needs to be done. Mr. Thorn stated that it is the Commission that allows the conditions to exist. City Manager Vernon stated that the City Clean Team is working to address this issue with targeted enforcement.

CONSENT AGENDA

The consideration and approval of **Appropriation Ordinance A-6-2011** dated February 24, 2011 through March 9, 2011 in the amount of $707,331.70. Commissioner Heldstab moved, seconded by Commissioner Johnson to approve the consent agenda as presented. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

Approval of the **March 1, 2011** City Commission Meeting Minutes. Commissioner Heldstab moved, seconded by Commissioner Johnson to approve the consent agenda as presented. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

The consideration and approval of street closings on April 2, 2011 at the request of the Junction City Arts Council. Commissioner Heldstab moved, seconded by Commissioner Johnson to approve the consent agenda as presented. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

The consideration and approval of street closings on May 22, 2011 at the request of the Run for the Wall Committee. Commissioner Heldstab moved, seconded by Commissioner Johnson to approve the consent agenda as presented. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

The consideration and approval for the Mayor & City Manager to sign and submit application forms to the Kansas Housing Resources Corporation on behalf of the Open Door for general operations in the amount of $48,000.00. Commissioner Heldstab moved, seconded by Commissioner Johnson to approve the consent agenda as presented. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

The consideration and approval of budget cash transfer of $10,490.18 from the General Fund to Fund #54 Police Department Training Fund. Commissioner Heldstab moved, seconded by Commissioner Johnson to approve the consent agenda as presented. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

The consideration and approval of ambulance contractual obligation adjustments and bad debt adjustments. Commissioner Heldstab moved, seconded by Commissioner Johnson to approve the consent agenda as presented. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

SPECIAL PRESENTATIONS

A presentation by Schneider Electric. (Exhibit A)

A presentation and request to borrow Pennell photographs currently displayed at the Municipal Building by the Geary County Historical Society. Commissioner Talley moved, seconded by Commissioner Heldstab to allow the Geary County Historical Society to borrow the Pennell photographs currently displayed at the Municipal Building. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

A presentation by John York to discuss improvements to the bandstand in Heritage Park. Commissioner Talley moved, seconded by Commissioner Johnson to approve a concept design to be presented to the Commission for future consideration and permission to examine the structure. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

NEW BUSINESS

The consideration and approval to award bid for vehicle maintenance service. **Jim Germann Presenting.** IS Director Germann stated that the two bids will meet all the needs of City departments. Commissioner Johnson stated that he thought it was a good idea to use two shops to get vehicles back quickly. Commissioner Talley moved, seconded by Commissioner Johnson to accept bids from J&R Automotive and Your Automotive and to allow staff to enter into service contract with both vendors. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

The consideration and approval for renewal of the jail services contract. **Chief Brown Presenting.** Commissioner Johnson stated that City residents pay more for this service

because City residents pay City and County taxes. Commissioner Talley moved, Seconded by Commissioner Taylor to approve renewal of the jail services contract. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

The consideration of offers for the sale of properties: 617 N. Washington & 12.65 acres listed by the City as the Elmdale property. **Cheryl Beatty Presenting.** Finance Director Beatty stated that the City is able to sell the 617 N. Washington building as is given the mold issue. Commissioner Johnson stated that he would like to see a plan in place to complete and finance the project. Commissioner Heldstab asked if the shelving is still in the building. Finance Director Beatty stated that the shelving would be too expensive to remove to sell. Commissioner Johnson asked in the mold and all responsibilities of mold migration goes to the next owner. City Attorney Logan stated that the mold is the responsibility of the owner; a future claim from an adjoining property owner would fall under the City liability insurance policy. Commissioner Talley moved, seconded by Commissioner Heldstab to negotiate for the sale of City owned property at 617 N. Washington. Ayes: Heldstab, Johnson, Rhodes, Talley. Nays: Taylor. Motion carried. Finance Director Beatty stated that a Mr. Smith has offered $50,000.00 for the Elmdale property to build storage units. Commissioner Johnson suggested that the City hold the land because the value will come back to 10,000.00 per acre. Commissioner Talley moved, seconded by Commissioner Taylor to deny the sale of the Elmdale property. Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: none. Motion carried.

COMMISSIONER COMMENTS

Commissioner Johnson stated that he was pleased that so many people came to speak to the Commission. Commissioner Johnson stated that he is opposed to holding executive sessions and he provided attorney general opinions that the land sale issues should have been addressed during the regular session.

Commissioner Talley stated that he appreciates the attendance of the City Commission candidates at the meetings.

ADJOURNMENT

Commissioner Talley moved, seconded by Commissioner Taylor to adjourn at 9:22 PM Ayes: Heldstab, Johnson, Rhodes, Talley, Taylor. Nays: None. Motion Carried.

APPROVED AND ACCEPTED THIS 5th DAY OF APRIL 2011 AS THE OFFICIAL COPY OF THE JUNCTION CITY CITY COMMISSION MINUTES FOR MARCH 15, 2011.

Tyler Ficken, City Clerk

Mike Rhodes, Mayor

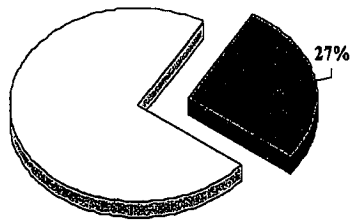
0.0 TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Schneider Electric is honored to present this preliminary report based on the City of Junction City, KS' facility's utility history, drawings, site visits and meetings. This preliminary audit is broken up into three concentrations. The first concentration focuses on the City Buildings, and includes the information presented on the audit performed at the City Hall, Law Enforcement, Park Offices, Recreation and Community Center, Spin City, Street Department/Public Works, and Golf Course facilities. The second concentration focuses on the City's Traffic Signals. The final concentration focuses on the City's water and waster-water processes and plants. Schneider Electric would like to thank Cheryl Beatty and Gerry Vernon for their help and support through the audit.

Schneider Electric's Certified Energy Managers have conducted a preliminary audit on the buildings, lights and processes above and have analyzed the facilities for ways to save energy by upgrading the HVAC systems, equipment controls and lighting systems to current technologies, improve the overall comfort of the facilities, and improve the efficiencies of the processes. We have identified a list of Energy Conservation Measures (ECMs), which include lighting, HVAC, water and energy management upgrades to your current systems.

The purpose of this process is to identify energy savings and comfort improvement measures that would improve building, lighting and process sustainability. After analyzing the utility systems and buildings' opportunities, Schneider Electric has determined that most of the audited buildings and processes are viable candidates for a Performance Contracting Project. Schneider Electric estimates annual potential energy savings for the buildings to be **$17,049**, which results in savings of approximately **11%** of their associated electric and gas utility costs. The annual energy savings for the City traffic signal LED lighting s is estimated to be **$9,797**, saving **90%** of electric usage. The annual energy savings for the City water and wastewater treatment plants is estimated to be **$85,359**, saving **34%** of total utility costs. The pie chart on right shows the combined total of all three concentrations together. Additionally, Schneider Electric has determined there is a potential water revenue generation of **$160,000.**



Baseline Annual Utility Cost:	$413,769
Potential Annual Energy Savings:	$112,205
Savings Percentage:	27%

The next step in this process is to select Schneider Electric to perform an Investment Grade Audit (IGA). During the Investment Grade Audit, we will further define the potential energy conservation measures and their interactions and effects, along with any additional facility improvements requested by the City. By performing an IGA, Schneider Electric will be able to produce a report, which will finalize the energy conservation measures and possible ECMs identified in the Preliminary Energy Analysis, provide the cost and term, projected annual savings, guaranteed annual savings, and the scope of work.

We bring to Junction City the same ideas and philosophies that have ensured successful projects with all of our customers. It is our goal to:

- Be the industry leader in customer satisfaction through creative problem solving, performance assurance consulting, systems reliability, clear communications, and business integrity.
- Practice and promote conservation of the earth's natural resources and improve the environment through effective energy conservation and responsible management of waste materials.
- We are committed to being **"THE BEST THERE IS"** in our industry.

Sincerely,

Megan Berry
Schneider Electric Energy Solutions

2.0 PROJECT OVERVIEW

2.1 BACKGROUND

This preliminary report represents an analysis of energy savings measures and process and lighting improvements available to the City of Junction City's facilities. In it, Schneider Electric has identified measures that bring value to the city either through increasing energy efficiency or upgrading the facilities. For each measure, an energy cost savings rationale is included as well as a description of the analysis methodology, supporting utility data and assumptions used to derive savings, if applicable.

2.2 SCOPE OF AUDIT

The purpose of this preliminary audit is to determine, through field surveys and computer simulation, facility upgrades and energy-related efficiency improvements that could and should be made at the City of Junction City. Consideration was taken for solutions that would have a positive life cycle cost as well as solutions that, while not self-funding, could improve occupant comfort and building efficiency. During the Investment Grade Audit (IGA), the ultimate deliverable is a turnkey project proposal for the design, implementation, commissioning and monitoring of the proposed improvements.

The table below summarizes the buildings that were surveyed.

Building Summary — City of Junction City, KS

Building Name	Primary Facility Use	Area	Year Built	# Floors
Name	*Use*	*ft2*	*Year*	*#*
City Hall	Office Bldg - 1 or 2 Story	76,000	1950 or Before	3
Law Enforcement	Office Bldg - 1 or 2 Story	14,000	1981 to 1990	1
Park Offices	Storage, Unconditioned	21,200	1971 to 1980	1
Recreation and Community Center	Community Center	23,700	1991 to 2000	1
Spin City	Community Center	23,500	1971 to 1980	1
Street Department	Storage, Unconditioned	12,700	1971 to 1980	1
Total		**171,100**		

Note that the square footage includes unconditioned and heat-only spaces, such as the garage on the Streets Department/Public Works building.

Also note that Schneider Electric did NOT include any data from the Golf Course. After surveying, it was determined that this facility is better served by investing in building repair instead of energy conservation measures. (A description of the facility is included in Section 3.0 for your reference)

Schneider Electric evaluates each building and each system within a building in terms of age, condition and performance. Some or all of the following were studied for each building:

- Original Engineer of Record's Design Intent, Blueprints, Mechanical Schedules
- Occupant Comfort Complaints
- Existing Heating Ventilating and Air conditioning Systems
- Existing Lighting Systems
- Miscellaneous Electrical Loads
- Future Needs
- Master Plans for Future Expansion

2.3 BASELINE BUILDING ENERGY PERFORMANCE

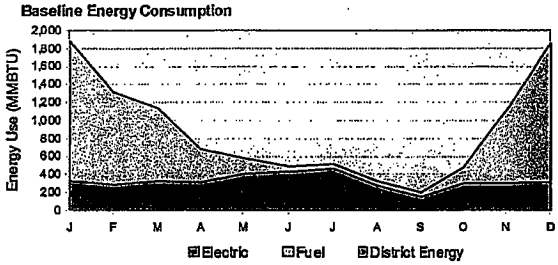
Energy Performance

The graph labeled "Baseline Energy Consumption" is a stacked area graph which shows the total annual energy consumption, both electric and fuel, of the City of Junction City's Buildings. The graph labeled "Baseline Energy Demand" is also a stacked area graph which shows the month-to-month peak electrical demand. The graph labeled "Building Impact" is a pie chart that shows the percentage of the total energy that is consumed by each of the facilities audited. The center table lists the quantities of energy consumed, as well as cost indices for each of the facilities analyzed in this project scope.

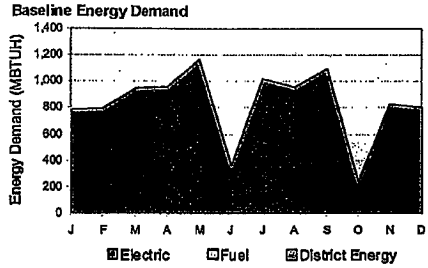
Facility Energy Consumption and Expenditures Summary — City of Junction City, KS

Energy Use

Baseline Energy Consumption

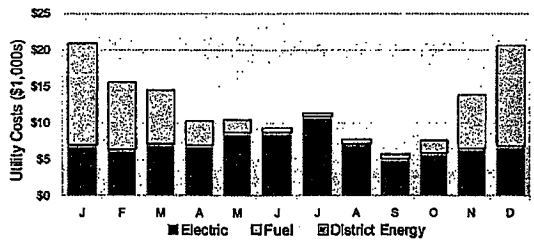


Baseline Energy Demand

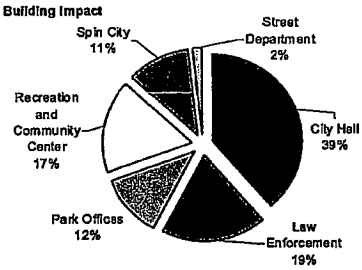


	Energy Use			Energy Demand	Cost	Baseline Annual Energy Indicies		
	Electric	Fuel	Total	Electric	Total	Energy Use Intensity	Cost per ft2	Load Factor
Building	*kWh*	*MMBTU*	*MMBTU*	*kW*	*$/year*	*kBTU/sf-yr*	*$/sf-yr*	*%*
City Hall	445,864	2,525	4,047	1,176	$57,002	53.2	$0.75	51.9%
Law Enforcement	360,277	797	2,027	636	$33,465	144.8	$2.39	77.6%
Park Offices	31,094	1,164	1,270	108	$13,267	59.9	$0.63	39.4%
Recreation and Community Center	182,500	1,214	1,837	615	$25,694	77.5	$1.08	40.7%
Spin City	116,868	818	1,216	390	$17,054	51.8	$0.73	41.1%
Street Department	3,710	170	182	0	$2,293	14.4	$0.18	-
All Total	**1,140,315**	**6,688**	**10,580**	**2,925**	**$148,775**	**61.8**	**$0.87**	

Baseline Energy Costs



Building Impact



2.4 PROJECT ENERGY CONSERVATION SUMMARY

Upon surveying the building and discussion with the staff, several opportunities were identified and chosen as energy conservation measures (ECMs) to be implemented at Junction City. The following ECMs will be the source for the majority of the savings at the Junction City facilities.

Energy Conservation Measures

ECM 1: SCHEDULING OF HVAC SYSTEMS CITY-WIDE

Currently, most HVAC Systems in most city facilities are operating 24/7. Significant energy savings can be found in disabling these systems when the buildings are unoccupied.

Schneider Electric recommends installing a system capable of scheduling the HVAC systems in the city's facilities.

The City already has a Building Automation System (BAS) installed in the Law Enforcement building. This system controls the operations of the HVAC system and is expandable to other facilities. Schneider Electric recommends expanding this system into other City buildings to enable/disable or control HVAC equipment by scheduling the equipment off after-hours, regulating temperature from a central location, and monitoring equipment to ensure proper operation.

Some City facilities employ programmable thermostats to accomplish scheduling and energy savings. While effective, the City may elect to expand the BAS to these buildings as well in order to remotely monitor and control the HVAC systems there, an added benefit above programmable thermostats. Expanding the system to these facilities would yield few energy-savings dollars, assuming that the programmable thermostats in fact are running a program and are not running in 24/7 "Hold" mode.

- This ECM should be applied to the City Hall, Park Offices, Recreation and Community Center and Street Department.
- This ECM could be optionally applied at Spin City for remote monitoring and control purposes. This facility is already scheduled with programmable thermostats.
- Savings result when HVAC systems are disabled during unoccupied hours, resulting in no energy use by the HVAC equipment.

ECM 2: RETROFIT T-12 LIGHTING TO T-8

The latest lighting technology offers many improvements over the T-12 systems that are currently in place at most city facilities. The new lamps are known as "T8" lamps due to their shape and diameter but this only tells part of the story. The phosphors used in these lamps produce more light than previous lamps. These phosphors also generate a diverse spectrum of color that causes objects to be viewed in a more true-to-life appearance. This is known as a lamp's "color rendering" index. A broad range of colors and CRI's are available.

The electronic ballasts used also have many advantages over previous ballast technology. They are lighter, cooler, more efficient, have better power factors, and their high-frequency operation all but eliminates annoying lamp "flicker" and humming.

- This ECM should be applied to the City Hall, Law Enforcement Center, Park Offices, Recreation and Community Center and Street Department.
- Savings come from reduced energy consumption for the same light output from the new lamps.

ECM 3: RETROFIT HID LIGHTING TO T-8

The family of high intensity discharge lamps includes metal halide, high-pressure sodium and low-pressure sodium technologies. High-Bay fluorescent fixtures are designed to provide lighting quality at or above the current quality of the best HID systems. Fluorescent lamps have superior "color rendering" index (CRI)

compared to metal halide lamps. A broad range of colors and CRI's are available. Also the electronic ballast used give instant "on – off" capabilities—a huge advantage when it is desirable to use the facility at any given moment while still wanting to turn lights off when the space is not in use.

- This ECM should be applied to the Recreation and Community Center's Gymnasium and City Hall's Gymnasium.
- Savings come from reduced energy consumption for the same light output from the new lamps.

ECM 4: REPLACE MECHANICAL EQUIPMENT

Existing unitary equipment, which would consist of packaged rooftop units and split systems, can have Seasonal Energy Efficiency Ratings (SEER) ratings of 6 SEER or lower. The low efficiency is mostly due to the age and condition of the equipment. Newer systems can be installed with efficiency of a 13 SEER or higher. This efficiency increase results in significant energy savings.

Due to local and national codes, building ventilation air must be upgraded at the time of a mechanical equipment replacement. Currently, it appears as though the majority of city buildings lack adequate ventilation air by today's standards. Therefore, it is highly likely that additional ventilation air will be required to be introduced into the spaces that the new mechanical equipment will serve. By introducing new air, the district can expect a healthier indoor environment, reducing absenteeism, employee sick days, and potentially increasing employee performance. Unfortunately, there is also a downside. What energy savings might result from mechanical replacement is usually reduced if not altogether eliminated by the need to treat this larger amount of outdoor air for delivery into the space.

For the purposes of this preliminary report, Schneider Electric has NOT calculated the potential energy savings associated with this ECM due to the fact Spin City was determined to be the only facility as a viable candidate for HVAC replacement, and due to the fact that Spin City will require significant code-mandated ventilation air because it is a high-occupancy facility. During a detailed analysis, Schneider Electric will quantify how much ventilation air will be necessary. It will then quantify the energy savings by accounting for this ventilation air and the newer, higher efficiency equipment.

- This ECM should be applied to Spin City's Rooftop Units.
- Savings come from reduced energy consumption due to higher efficiency equipment.
- Savings may be reduced or eliminated if significant amounts of additional ventilation air are required by code.

ECM 5: TRAFFIC SIGNAL LIGHT EMITTING DIODE (LED) RETROFIT

Traffic signal lights have, since their inception, used incandescent bulbs for operation. Recent advances in solid state semiconductor technology have made light emitting diodes (LED's) the light source of choice in almost all new traffic signals manufactured, as well as for retrofitting existing fixtures. LED's consume about 80% less energy than the incandescents they replace, and last almost indefinitely. While the energy savings realized are very significant, another great benefit is in eliminated maintenance visits. The risk to motorists and pedestrians of burned-out signals is drastically reduced, as are risks to service personnel, typically working in bucket trucks in active intersections.

ECM 6: WASTE WATER TREATMENT PLANT (WWTP) IMPROVEMENTS

Schneider Electric personnel visited the East WWTP and the Southwest WWTP. Both of these plants are operated by Veolia Water for Junction City. Based on a preliminary analysis of these plants, there appears to be significant savings potential. Water and Wastewater treatment plants are typically the largest consumers of energy in most cities. The Junction City WWTP facilities together use over $250,000 of electricity per year. A common unit of measure for plant efficiency is to compare the electricity used at the plant (kWh or kilowatt Hours) with the treated water volume (MG or Million Gallons). Typical WWTPs with the capacity of the Southwest and East plants will use 1,911 kWh per MG of water treated. The

Southwest WWTP is currently using 8,898 kWh per MG, indicating a very good opportunity for savings. Violia staff members at the plant were extremely helpful during the site visit and described a number of changes that had been made to plant operations over the years to help operation costs. However, approximately 60% of the plant influent is meat and poultry products (MPP) wastewater flow from a nearby meat packing plant. This creates special concerns for the WWTP with increased suspended solids and oxygen demand relative to typical domestic waste flows. In particular, the Southwest plant appears to experience a heavy grease load from the MPP flow. This causes problems at the plant inlet screens and dissolved air floatation units where significant amounts of hot water have to be applied to avoid clogging issues. Operations at the plant have been optimized to the extent possible given the current plant design. Equipment upgrades that may be accomplished with an energy savings project could include, fine bubble diffusers, precise dissolved oxygen control and upgrading to high efficiency motors. Furthermore, the removal of grease from the MPP influent at this plant is a major priority. Most MPP facilities that discharge directly to publicly-owned treatment plants employ equipment to accomplish primary treatment of their waste flow (removal of floatable and settleable solids). Grease traps and other specialized equipment are available for this function.

The East WWTP is currently operating at 2,140 kWh per MG of water treated. This is much closer to expected operation efficiency, but there are savings opportunities at this plant also. The plant has existing fine bubble diffusers for aeration which are an efficient means of aeration, but control of dissolved oxygen (DO) levels is accomplished manually. Precise dissolved oxygen control is recommended at this plant.

2.5 FACILITY ENERGY SAVINGS BY MONTH

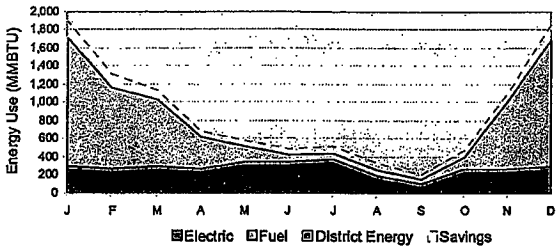
Energy Savings

The table and graphs below list the monthly utility and monetary savings that the City of Junction City can accrue if the above ECMs are implemented. On the graphs, the dotted lines show the baseline energy savings, the solid areas indicate the usage after a project, and the difference is the energy savings.

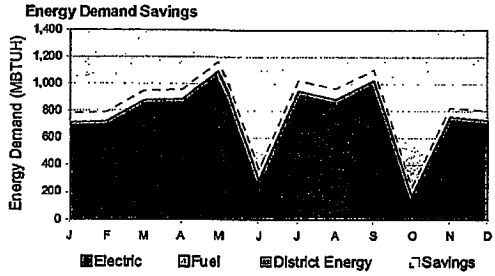
Facility Energy Consumption and Demand Savings Summary — City of Junction City, KS

Energy Use

Energy Consumption Savings

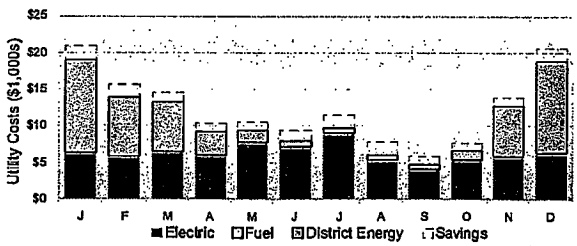


Energy Demand Savings

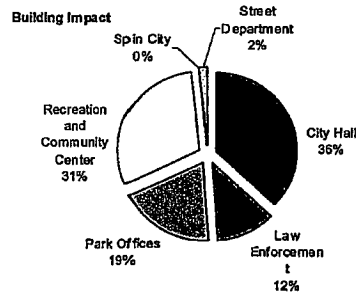


	Energy Savings			Demand Savings	Cost Savings	Post Annual Energy Indicies		
	Electric	Fuel	Savings Total	Electric	Savings Total	Energy Use Intensity	Cost per ft2	Load Factor
Building	*kWh*	*MMBTU*	*MMBTU*	*kW*	*$/year*	*kBTU/ft²*	*$/sf-yr*	*%*
City Hall	62,421	227	440	47	$8,196	47.5	$0.67	48.5%
Law Enforcement	54,488	(46)	140	67	$3,374	134.8	$2.15	73.7%
Park Offices	3,689	215	228	12	$2,073	49.2	$0.53	39.1%
Recreation and Community Center	41,713	222	364	128	$5,226	62.1	$0.86	39.6%
Spin City	0	0	0	0	$0	51.8	$0.73	-
Street Department	0	20	20	0	$180	12.8	$0.17	-
All Total	**162,311**	**639**	**1,192**	**254**	**$17,049**	**54.9**	**$0.77**	

Energy Costs Savings



Building Impact

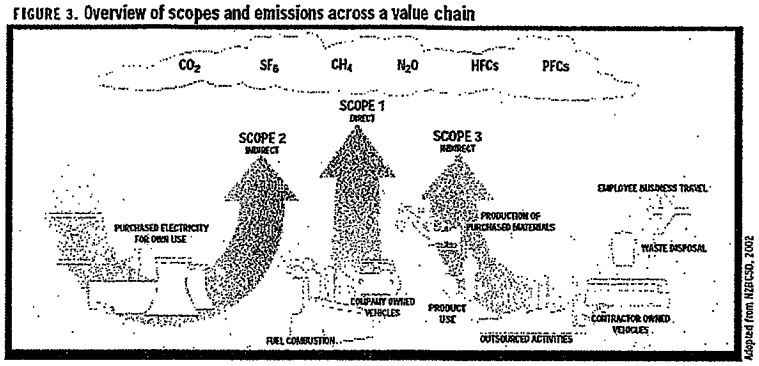


2.6 ENVIRONMENTAL IMPACT REDUCTION

CARBON FOOTPRINT

In an effort to determine the environmental impact of a specific building or entity, there has been a growing trend to quantify the facility's Carbon Footprint. The carbon footprint is a measure of the amount of Greenhouse Gas (GHG) emissions of a facility in terms of carbon dioxide (CO_2).

FIGURE 3. Overview of scopes and emissions across a value chain



Adapted from WBCSD, 2002

In order to accurately determine the carbon footprint for any facility there are many variables required, including methods of transportation to and from the facility, activities that occur at the facility and the materials purchased for use at the facility to name a few. The Green House Gas (GHG) Protocol categorizes these into Scope items where each individual scope is reported separately.

SCOPE 1 – DIRECT EMISSIONS
On-Site Combustion
Company Owned Vehicles

SCOPE 2 – INDIRECT EMISSIONS
Procured Energy

SCOPE 3 – OTHER INDIRECT
Commuter Transportation
Business Travel
Product Use
Construction Energy

* The above lists are not meant to be exhaustive, rather representative of the expected energies that are associated with each scope item.

THE RESULTS

According to the 2006 Environmental Protection Agencies report Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2004, roughly 86% of all carbon equivalent emissions come from energy-related activities. With this average, it is obvious that any energy conservation strategies employed as part of a project with Schneider Electric would impact the largest contributor of greenhouse gas emissions in the United States.

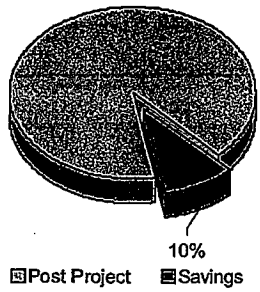
2.0 PROJECT OVERVIEW

Environmental Impact Report — City of Junction City, KS

Energy Usage Summary

	Scope 1	Scope 2	Scope 3
Total Energy (MMBTU)	6,688	3,892	-
Total Emission (Tons CO_2e)	390	762	-
Total Savings (Tons CO_2e)	37	108	-

146 eTons GHG | 31 Cars Removed | 19 Equivalent Houses | 5,828 Trees Planted



*Emissions factors are derived from EPA eGrids database and represent the National average.

The information provided is a representation of all Scope 1 and Scope 2 emissions of the facility at their current rates, and how much of an impact conducting the project as detailed would curb current GHG emissions. Included are three of the 6 major anthropogenic Greenhouse Gases as identified by the Kyoto Protocol and their respective carbon equivalencies to determine the overall carbon impact the facility has through its energy usage.

NEXT STEPS

There are several initiatives occurring across the world that are setting benchmarks to curb GHG emissions over the next several decades. Because of this, Schneider Electric is making strides in providing tools necessary to determine a carbon footprint for organizations like the American College and University Presidents Climate Commitment. If it is desired, Schneider Electric would be willing to provide guidance in understanding the Scope 3 emissions of your organization to determine your total carbon footprint. As a result, the findings would provide added benefit and direction as to where efforts should be concentrated to make significant strides in reducing your environmental impact.

3.0 FACILITY ASSESSMENTS

3.1 FACILITY DESCRIPTIONS AND OBSERVATIONS

Building Description

City of Junction City

City Hall/Fire Station

Size (ft²): 76,000
Built: 1936
Renovations: 1994
Primary Use: Offices/Fire Station
Floors: 3/2
Electric Tariffs: Westar SGS
Fuel Tariffs: Kansas Gas Service - General Service

Building Operating Schedule

Day Type	Occupancy	HVAC
Weekday	8am-5pm/24/7	24/7
Weekend	None/24/7	24/7
Holiday	None/24/7	24/7

HVAC System

Plant Equipment

Plant	Age	Type	Model	Size	Fuel	Eff
N/A						

Air-side Equipment

ID	Type	Control	Total Fan HP	OA	Pres Cond.	Areas Served
Furnace	90%+ 2-Stage Variable Gas Furnace with DX Cooling	Thermostat	10 HP	10%	Good	All City Hall but Gym, Conf. Room
Gym	DX AHU with 80% Gas Duct Furnace	Thermostat	10 HP	10%	Good	Gym
Conference	DX AHU with Electric Heat	Thermostat	1/4 HP	10%	Good	City Hall Conference Room
RTU	80% Gas/DX Cooling Rooftop Unit	Thermostat	5 HP	10%	Fair	Fire Station
RAD	Gas-Fired Radiant Heat	Thermostat	0 HP	0%	Good	Fire Station Garage
MUA	Direct-Fired Gas Make-Up Air Unit	Proprietary	1/2 HP	100%	Good	Fire Station Garage

Lighting Systems

Primary: T-12
Secondary: T-8, Metal Halide
Exterior: HID
Exit Signs: Converting to LED

Energy Management System

Brand: N/A
Type: N/A
Age: N/A
Condition: N/A

Setpoints
Heating: Var F
Cooling: Var F

Domestic Water Systems

DHW Fuel: Gas
DHW Size: 75,000 BTUH
Toilets: Standard
Faucets: Standard

Building Envelope

Type	Description	Condition
Exterior	Block	Good
Windows	Double-Pane, Mostly Operable	Good
Roof	DuroLast	Good

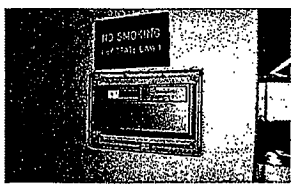
Utility Meters

Type	Account Number	Area Served	Mult.
Elec.	4603517151	Whole Building	N/A
Gas	51 0303391 1547434 27	Whole Building	N/A

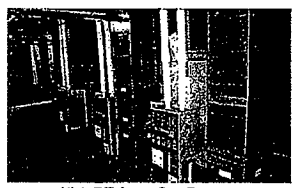
Comments and Observations

> Comfort Complaints a result of how the current HVAC system is zoned
> None of the thermostats that can be programmed have a program running in them
> Most HVAC equipment is premium efficiency

Facility Photos



Programmable Thermostat in hold


High-Efficiency Gas Furnaces

Radiant Heat

ECM Opportunities and Facility Upgrades

> Expand TAC/CSI Control System to include City Hall/Fire Station and schedule HVAC equipment
> Install Motion Sensors on lighting systems
> Convert remain T-12 fixtures to T-8
> Convert metal halide fixtures in gym to high-bay T-8

3.0 FACILITY ASSESSMENTS

Building Description

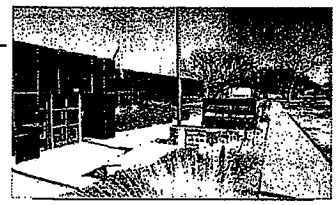
City of Junction City

Law Enforcement

Size (ft²): 14,000
Built: 1980
Renovations: None
Primary Use: Police Station
Floors: 1
Electric Tariffs: Westar SGS
Fuel Tariffs: Kansas Gas Service General Service

Building Operating Schedule

Day Type	Occupancy	HVAC
Weekday	24/7	24/7
Weekend	24/7	24/7
Holiday	24/7	24/7



HVAC System

Plant Equipment

Plant	Age	Type	Model	Size	Fuel	Eff
N/A						

Air-side Equipment

ID	Type	Control	Total Fan HP	OA	Pres Cond.	Areas Served
VAV	Gas/DX Packaged Rooftop Variable-Air Volume Unit	DDC	?20 HP	?10%	Good	Whole Building

Lighting Systems

Primary: T-12
Secondary: Incandescent
Exterior: HID
Exit Signs: Incandescent

Energy Management System

Brand: CSI
Type: INet
Age: 20
Condition: Good

Setpoints
Heating: *Var* F
Cooling: *Var* F

Domestic Water Systems

DHW Fuel: Gas
DHW Size: 65,000 BTUH
Toilets: Standard
Faucets: Standard

Building Envelope

Type	Description	Condition
Exterior	Masonry Panel	Good
Windows	Double-Pane	Good
Roof	Built-Up	Good

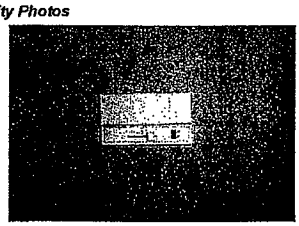
Utility Meters

Type	Account Number	Area Served	Mult.
Elec.	9417111097	Whole Building	N/A
Gas	51 0475508 154631 0 18	Whole Building	N/A

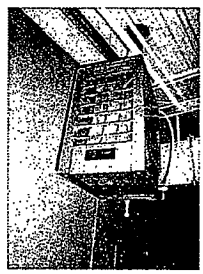
Comments and Observations

> Building houses the 911 Call Center but there is no jail in the building
> By virtue of layout, practically all of the space in the building is occupied 24/7
> South office may have some scheduling potential
> Staff aggressively turn off lights. Several areas that were unoccupied were unlit.

Facility Photos



DDC Thermostat



Gas Unit Heater

T-12 Lighting

ECM Opportunities and Facility Upgrades

> Convert T-12 to T-8
> Schedule south offices

3.0 FACILITY ASSESSMENTS

Building Description

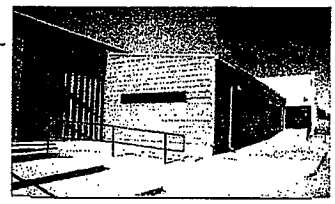
City of Junction City

Spin City

Size (ft²): 23,500
Built: 1970s
Renovations: 2008
Primary Use: Youth Recreation
Floors: 1
Electric Tariffs: Westar SGS
Fuel Tariffs: Kansas Gas Service General Service

Building Operating Schedule

Day Type	Occupancy	HVAC
Friday	6pm-11pm	5pm-12am
Saturday	1pm-11pm	12pm-12am
Sunday	2pm-6pm	1pm-7pm



HVAC System

Plant Equipment

Plant	Age	Type	Model	Size	Fuel	Eff
N/A						

Air-side Equipment

ID	Type	Control	Total Fan HP	OA	Pres Cond.	Areas Served
RTU	Gas/DX Packaged Rooftop Units	Thermostat	<5 HP	?10%	Fair	Skating Rink
SS	90% Gas/DX Split Units	Thermostat	<5 HP	0%	Good	Perimeter Areas

Lighting Systems

Primary: High-Bay T-5HO
Secondary: T-8
Exterior: HID
Exit Signs: Fluorescent

Energy Management System

Brand: N/A
Type: N/A
Age: N/A
Condition: N/A

Setpoints
Heating: *Var* F
Cooling: *Var* F

Domestic Water Systems

DHW Fuel: Unable to Survey
DHW Size: Unable to Survey
Toilets: Standard
Faucets: Standard

Building Envelope

Type	Description	Condition
Exterior	Metal	Good
Windows	Double-Pane	Good
Roof	Metal	Good

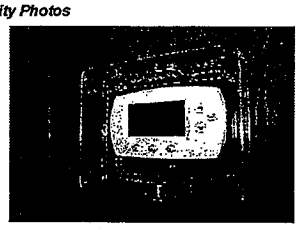
Utility Meters

Type	Account Number	Area Served	Mult.
Elec.	3253253087	Whole Building	N/A
Gas	51 8303391 1478917 64	Whole Building	N/A

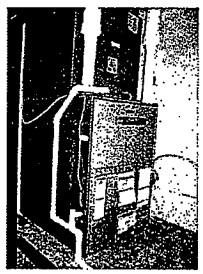
Comments and Observations

> Building underwent major renovation two years ago
> Thermostats have been boxes to prevent vandalism and tampering, but contribute to temperature swings
> Building has various and sophisticated lighting systems for skating rink
> Majority of HVAC equipment is new, but two RTUs are existing that are original to the building

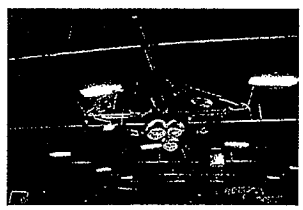
Facility Photos



Boxed Thermostat



Typical High-Efficiency Furnace



Sophisticated Lighting Systems

ECM Opportunities and Facility Upgrades

> Extend DDC System into Building to remove thermostat boxes and control building centrally
> Replace old RTUs with high-efficiency RTUs

3.0 FACILITY ASSESSMENTS

Building Description

City of Junction City

Recreation and Community Building

Size (ft²): 23,700
Built: 1998
Renovations: None
Primary Use: Community Center
Floors: 1
Electric Tariffs: Westar SGS
Fuel Tariffs: Kansas Gas Service General Service

Building Operating Schedule

Day Type	Occupancy	HVAC
Weekday	Varies	24/7
Weekend	Varies	24/7
Holiday	Varies	24/7

HVAC System

Plant Equipment

Plant	Age	Type	Model	Size	Fuel	Eff
N/A						

Air-side Equipment

ID	Type	Control	Total Fan HP	OA	Pres Cond.	Areas Served
SS	90% Gas/DX Split Systems	Thermostat	<5 HP	0%	Good	All except Gym
RTU	Gas/DX Packaged Rooftop Unit	Thermostat	<5 HP	?10%	Good	Gym

Lighting Systems

Primary: T-12
Secondary: T-8
Exterior: HID
Exit Signs: Fluorescent

Energy Management System

Brand: N/A
Type: N/A
Age: N/A
Condition: N/A

Setpoints
Heating: *Var* F
Cooling: *Var* F

Domestic Water Systems

DHW Fuel: Gas
DHW Size: 150000 BTUH
Toilets: Standard
Faucets: Standard

Building Envelope

Type	Description	Condition
Exterior	Block/Brick/Metal	Fair
Windows	Double-Pane	Good
Roof	Metal	Fair

Utility Meters

Type	Account Number	Area Served	Mult.
Elec.	8131600583	Whole Building	N/A
Gas	51 07691 33 161 0378 73	Whole Building	N/A

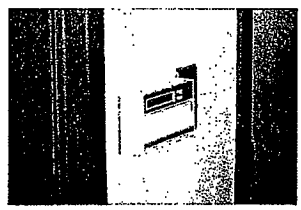
Comments and Observations

> Gym floor has buckled due to humidity
> The building is not zoned well, causing comfort complaints
> Programmable Thermostats were found with bad programs in them
> Building Hours are very flexible and inconsistent

Facility Photos

Metal Halide Lighting

Typical High-Efficiency Furnace



Programmable Thermostat

ECM Opportunities and Facility Upgrades

> Convert T-12 Lighting to T-8, and Convert Metal Halide Lighting to High-Bay T-8
> Extend DDC System and schedule HVAC equipment
> Incorporate humidity control scheme on gym

3.0 FACILITY ASSESSMENTS

Building Description

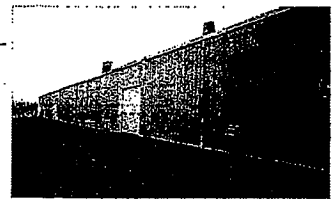
City of Junction City

Water Utility and Parks Offices

Size (ft^2): 21,200
Built: Unknown
Renovations: Unknown
Primary Use: Shops
Floors: 1
Electric Tariffs: Westar SGS
Fuel Tariffs: Kansas Gas Service General Service

Building Operating Schedule

Day Type	Occupancy	HVAC
Weekday	7am-4pm	24/7
Weekend	None	24/7
Holiday	None	24/7



HVAC System

Plant Equipment

Plant	Age	Type	Model	Size	Fuel	Eff
N/A						

Air-side Equipment

ID	Type	Control	Total Fan HP	OA	Pres Cond.	Areas Served
SS	90% high-Efficiency Gas/DX Split System	Thermostat	<1 HP	0%	Good	Offices
UH	Gas Unit Heater	Thermostat	?2 HP	0%	Good	Shop

Lighting Systems

Primary: T-12
Secondary: T-8
Exterior: HID
Exit Signs: Fluorescent

Energy Management System

Brand: N/A
Type: N/A
Age: N/A
Condition: N/A

Setpoints
Heating: Var F
Cooling: Var F

Domestic Water Systems

DHW Fuel: Electric
DHW Size: 20 gallon
Toilets: Standard
Faucets: Standard

Building Envelope

Type	Description	Condition
Exterior	Metal	Good
Windows	Double-Pane	Fair
Roof	Metal	Poor

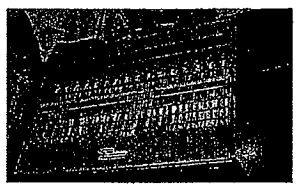
Utility Meters

Type	Account Number	Area Served	Mult.
Elec.	3482282049	Whole Building	N/A
Gas	510303391 154802445	Whole Building	N/A

Comments and Observations

> Roof vents have been abandoned and leak during inclement weather
> Shop is well day-lit with enough natural light to not need overhead lighting during the day
> Lamps in shop are F96-type with single-pin
> Minimal Employees in building most of the time

Facility Photos



Metal Halide Lighting

High-Efficiency Furnace

Naturally-Lit Shop

ECM Opportunities and Facility Upgrades

> Extend DDC System to schedule HVAC Equipment

3.0 FACILITY ASSESSMENTS

Building Description

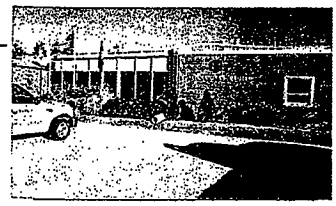
City of Junction City

Public Works/Street Department

Size (ft²): 12,700
Built: 1978
Renovations: None
Primary Use: Shop
Floors: 1
Electric Tariffs: Westar SGS
Fuel Tariffs: Kansas Gas Service General Service

Building Operating Schedule

Day Type	Occupancy	HVAC
Weekday	7a-4pm	24/7
Weekend	None	24/7
Holiday	None	24/7



HVAC System

Plant Equipment

Plant	Age	Type	Model	Size	Fuel	Eff
N/A						

Air-side Equipment

ID	Type	Control	Total Fan HP	OA	Pres Cond.	Areas Served
RTU	Gas/DX Packaged Rooftop Unit	Thermostat	<1 HP	?0%	Poor	Offices
RAD	Gas Radiant Heater	Thermostat	0 HP	0%	Fair	Shop
UH	Gas Unit Heater	Thermostat	<1 HP	0%	Fair	Shops

Lighting Systems

Primary: T-12
Secondary: T-8
Exterior: HID
Exit Signs: LED

Energy Management System

Brand: N/A
Type: N/A
Age: N/A
Condition: N/A

Setpoints
Heating: *Var* F
Cooling: *Var* F

Domestic Water Systems

DHW Fuel: Gas
DHW Size: 32,000 BTUH
Toilets: Standard
Faucets: Standard

Building Envelope

Type	Description	Condition
Exterior	Brick	Fair
Windows	Single-Pane	Fair
Roof	Built-Up	Good

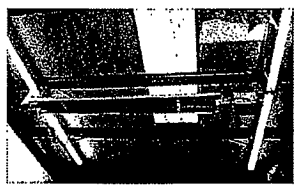
Utility Meters

Type	Account Number	Area Served	Mult.
Elec.	7635853410	Whole Building	N/A
Gas	51 0394466 156271 7 64	Whole Building	N/A

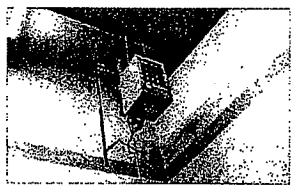
Comments and Observations

> Shop exterior is metal, not brick as stated above
> Shop is heated with highly-efficient radiant-heat, excepting one small shop
> Waste oil is on site for potential fuel source
> Exterior overhead doors are uninsulated and unsealed, leading to high draft and infiltration

Facility Photos



Gas Radiant Heat



Gas Unit Heater

Single-Pane Windows

ECM Opportunities and Facility Upgrades

> Extend DDC System to schedule HVAC
> Convert T-12 lighting to T-8

3.0 FACILITY ASSESSMENTS

Building Description

City of Junction City

Golf Course Buildings

Size (ft²): 10,500
Built: Varies
Renovations: None
Primary Use: Club House
Floors: 2
Electric Tariffs: Westar SGS
Fuel Tariffs: None

Building Operating Schedule

Day Type	Occupancy	HVAC
Weekday	8am-8pm	24/7
Weekend	8am-8pm	24/7
Holiday	None	24/7

HVAC System

Plant Equipment

Plant	Age	Type	Model	Size	Fuel	Eff
N/A						

Air-side Equipment

ID	Type	Control	Total Fan HP	OA	Pres Cond.	Areas Served
SS	Electric/DX Split System	Thermostat	<1 HP	0%	Poor	Whole Club House

Lighting Systems

Primary: T-12
Secondary: T-8
Exterior: HID
Exit Signs: Fluorescent

Energy Management System

Brand: N/A
Type: N/A
Age: N/A
Condition: N/A

Setpoints
Heating: 80 F
Cooling: Var F

Domestic Water Systems

DHW Fuel: Electric
DHW Size: 4.5 kW
Toilets: Standard
Faucets: Standard

Building Envelope

Type	Description	Condition
Exterior	Wood Siding	Very Poor
Windows	Single Pane	Compromised
Roof	Shingle	Fair

Utility Meters

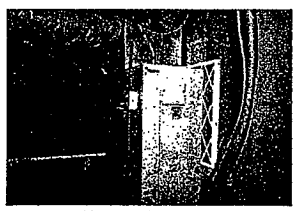
Type	Account Number	Area Served	Mult.
Elec.	N/A	N/A	N/A
Gas	N/A	N/A	N/A

Comments and Observations

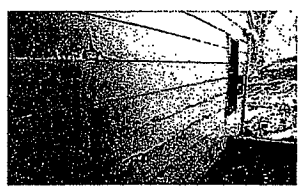
> Building is in very bad condition, with wood-rot evident in many locations, including windows and siding
> Building was very warm, and thermostats were set very high, indicating comfort issues
> Mechanical equipment was very old, well beyond the end of its useful life
> Metal sheds for golf carts contained no HVAC equipment
> This building was not included in utility analysis and savings calculations

Facility Photos

Window with Wood Rot



Very old Electric Furnace



Siding with Wood-Rot

ECM Opportunities and Facility Upgrades

> None Recommended for clubhouse - Facility is in need of more urgent repair
> T-12 to T-8 conversion for lighting in golf-cart sheds

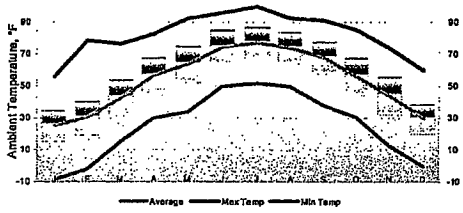
4.0 UTILITY AND ENERGY ANALYSIS

4.1 WEATHER CITY ANALYSIS

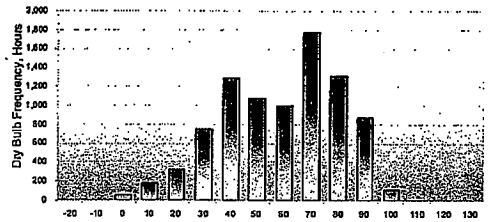
Facility Typical Meteorological Year Weather Dashboard — City of Junction City, KS

Weather Analysis - Temperature Based

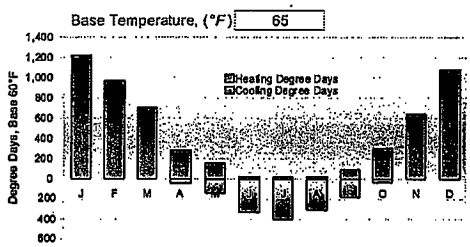
Monthly Average Weather Data



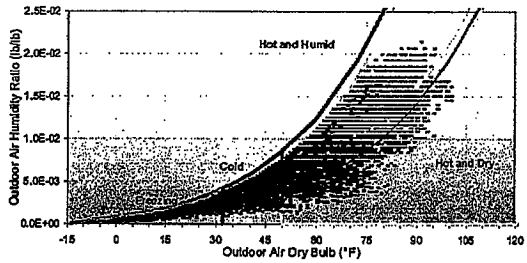
Dry Bulb Temperature Frequency



Monthly Degree Days

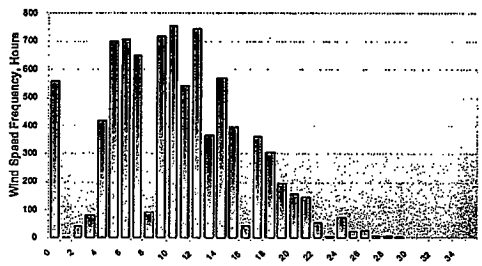


Climatic Frequency

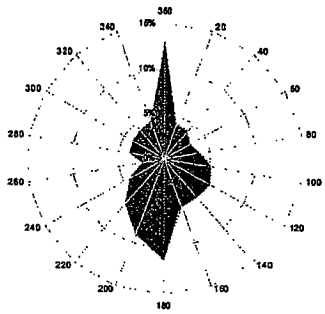


Weather Analysis - Wind Based

Wind Speed Frequency

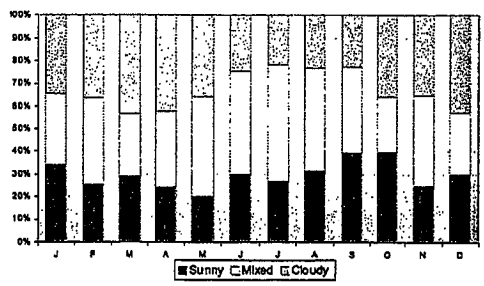


Wind Rose (Direction Frequency)



Weather Analysis - Phenomenon

Sky Clearness



Weather Analysis - Weather City Data

Weather City	KS, Topeka
WABN	13996
Longitude, (°)	95.63
Latitude, (°)	39.07
Elevation, (ft)	886
Climate Region:	4A
Summer Design, (°F DB):	
Summer Design, (°F WB):	
Summer Design (w, lb/lb)	8.10E-04
Winter Design, (°F DB):	

4.2 BASELINE ENERGY USAGE

Electrical Baseline Usage Summary

Facility Electricity Baseline Usage by Month and Building — City of Junction City, KS

Electrical Usage - Monthly Consumption by Building

	January	February	March	April	May	June	July	August	September	October	November	December	Total Annual
	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh
City Hall	39,382	35,517	37,554	33,391	44,351	47,600	57,715	44,743	10,491	24,679	32,989	37,452	445,864
Law Enforcement	29,198	27,055	33,005	36,288	40,033	38,994	38,195	10,265	10,557	35,322	31,894	29,471	360,277
Park Offices	2,964	2,303	2,311	1,973	2,299	2,921	3,599	2,605	1,708	2,446	2,989	2,976	31,094
Recreation and Community Center	13,654	12,592	12,608	10,955	17,559	24,835	20,584	9,617	18,545	16,869	11,005	13,676	182,500
Spin City	9,099	8,957	9,777	8,878	12,413	9,877	16,402	12,663	3,161	8,313	8,592	8,735	116,868
Street Department	435	202	224	366	383	169	95	95	350	389	353	650	3,710
Total	94,732	86,627	95,479	91,852	117,038	124,396	136,589	79,988	44,812	88,019	87,823	92,960	1,140,315

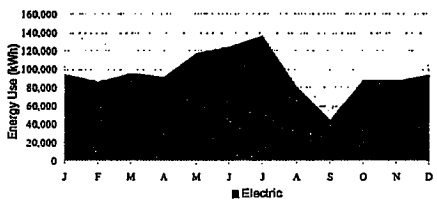
Electrical Demand - Monthly Demand by Building

	January	February	March	April	May	June	July	August	September	October	November	December	Total Annual
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
City Hall	94	90	101	106	133	86	92	157	113	48	58	97	1,176
Law Enforcement	54	63	66	63	64	4	70	68	68	4	61	52	636
Park Offices	11	10	11	10	12	4	8	10	10	2	8	11	108
Recreation and Community Center	38	36	69	70	88	2	94	8	78	8	81	42	615
Spin City	32	33	32	32	44	11	35	39	53	9	35	34	390
Street Department	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	230	233	278	281	342	107	300	282	323	71	243	236	2,925

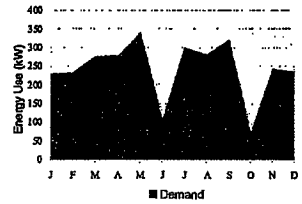
Electrical Usage - Monthly Costs by Building

	January	February	March	April	May	June	July	August	September	October	November	December	Total Annual
	$	$	$	$	$	$	$	$	$	$	$	$	$
City Hall	$2,865	$2,603	$2,771	$2,527	$3,321	$3,648	$4,338	$3,986	$1,496	$1,763	$2,327	$2,751	$34,395
Law Enforcement	$2,070	$1,968	$2,356	$2,555	$2,795	$2,509	$2,935	$1,151	$1,170	$2,278	$2,268	$2,080	$26,134
Park Offices	$252	$207	$209	$184	$214	$221	$293	$240	$190	$188	$242	$252	$2,693
Recreation and Community Center	$1,029	$954	$1,076	$972	$1,458	$1,598	$1,994	$871	$1,748	$1,123	$1,016	$1,045	$14,682
Spin City	$718	$713	$759	$705	$972	$710	$1,303	$1,095	$593	$582	$684	$701	$9,545
Street Department	$53	$34	$36	$48	$49	$31	$25	$25	$46	$49	$46	$71	$513
Total	$6,986	$6,479	$7,206	$6,990	$8,808	$8,717	$10,887	$7,169	$5,240	$5,983	$6,594	$6,901	$87,961

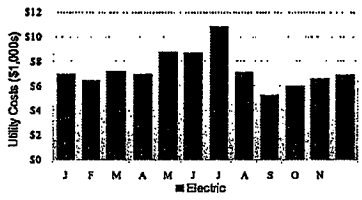
Electric Consumption Baseline Usage



Electric Demand Baseline



Electric Baseline Costs



4.0 UTILITY AND ENERGY ANALYSIS

Fuel Baseline Usage Summary

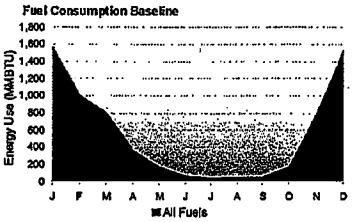
Facility Fuel Baseline Usage by Month and Building — City of Junction City, KS

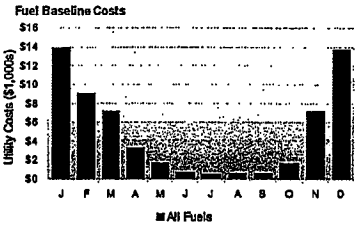
Fuel Usage - Monthly Consumption by Building

	January	February	March	April	May	June	July	August	September	October	November	December	Total Annual
	MMBTU	MMBTU	MMBTU	MMBTU	MMBTU	MMBTU	MMBTU	MMBTU	MMBTU	MMBTU	MMBTU	MMBTU	MMBTU
City Hall	599	407	309	135	60	28	20	20	26	45	382	513	2,525
Law Enforcement	94	64	107	102	86	26	22	24	22	64	81	106	797
Park Offices	374	161	128	34	1	0	0	0	0	0	78	388	1,164
Recreation and Community Center	280	219	142	47	16	4	4	13	4	27	144	314	1,214
Spin City	183	134	97	40	11	8	2	1	0	31	123	187	818
Street Department	35	32	26	10	4	1	1	1	1	9	22	28	170
Total	1,566	1,016	808	369	178	68	48	58	53	176	811	1,537	6,688

Fuel Usage - Monthly Cost by Building

	January	February	March	April	May	June	July	August	September	October	November	December	Total Annual
	$	$	$	$	$	$	$	$	$	$	$	$	$
City Hall	$5,321	$3,622	$2,753	$1,221	$554	$272	$200	$200	$251	$422	$3,228	$4,562	$22,606
Law Enforcement	$852	$590	$968	$927	$785	$257	$214	$234	$216	$589	$742	$959	$7,332
Park Offices	$3,328	$1,444	$1,157	$328	$31	$26	$23	$23	$23	$23	$710	$3,457	$10,574
Recreation and Community Center	$2,504	$1,959	$1,275	$435	$166	$60	$55	$138	$63	$264	$1,296	$2,799	$11,012
Spin City	$1,644	$1,204	$879	$381	$116	$97	$44	$31	$23	$294	$1,113	$1,681	$7,510
Street Department	$337	$302	$254	$110	$57	$31	$30	$28	$35	$106	$221	$269	$1,781
Total	$13,985	$9,121	$7,286	$3,403	$1,710	$743	$566	$655	$612	$1,698	$7,310	$13,728	$60,815





4.3 ENERGY SAVINGS

Electricity Savings Summary

Facility Electricity Savings by Month and Building — City of Junction City, KS

Electrical Savings - Monthly Consumption Savings by Building

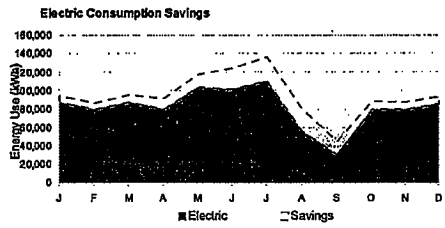
	January	February	March	April	May	June	July	August	September	October	November	December	Total Annual
	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh
City Hall	1,486	1,486	1,926	4,258	5,193	10,628	12,861	13,510	5,435	2,058	2,091	1,486	62,421
Law Enforcement	3,649	3,641	3,946	4,550	4,796	5,740	6,035	5,485	4,845	4,089	4,058	3,653	54,488
Park Offices	230	230	238	285	304	413	458	471	348	241	242	230	3,689
Recreation and Community Center	1,955	1,955	2,156	3,219	3,646	6,124	7,142	5,356	3,756	2,216	2,231	1,955	41,713
Spin City	0	0	0	0	0	0	0	0	0	0	0	0	0
Street Department	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	7,320	7,312	8,267	12,313	13,940	22,905	26,496	24,822	14,385	8,605	8,622	7,325	162,311

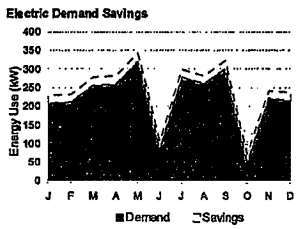
Electrical Savings - Monthly Demand Savings by Building

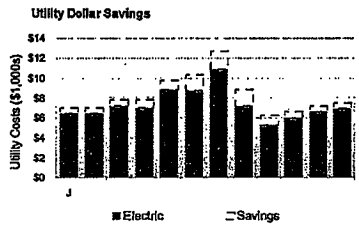
	January	February	March	April	May	June	July	August	September	October	November	December	Total Annual
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
City Hall	4	4	4	4	4	4	4	4	4	4	4	4	47
Law Enforcement	6	6	6	6	6	6	6	6	6	6	6	6	67
Park Offices	1	1	1	1	1	1	1	1	1	1	1	1	12
Recreation and Community Center	11	11	11	11	11	11	11	11	11	11	11	11	128
Spin City	0	0	0	0	0	0	0	0	0	0	0	0	0
Street Department	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	21	21	21	21	21	21	21	21	21	21	21	21	254

Electrical Savings - Monthly Cost Savings by Building

	January	February	March	April	May	June	July	August	September	October	November	December	Total Annual
	$	$	$	$	$	$	$	$	$	$	$	$	$
City Hall	$109	$109	$136	$284	$344	$702	$844	$885	$373	$145	$147	$109	$4,186
Law Enforcement	$252	$251	$271	$309	$325	$405	$423	$389	$348	$280	$278	$252	$3,781
Park Offices	$18	$18	$19	$22	$23	$33	$36	$37	$29	$19	$19	$18	$292
Recreation and Community Center	$163	$163	$175	$243	$270	$466	$530	$417	$316	$179	$180	$163	$3,265
Spin City	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Street Department	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	$541	$541	$601	$858	$961	$1,607	$1,834	$1,728	$1,066	$623	$624	$542	$11,525







Fuel Savings Summary

Facility Fuel Savings by Month and Building

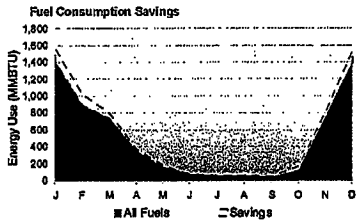
City of Junction City, KS

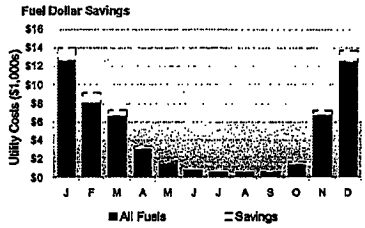
Fuel Savings - Monthly Consumption Savings by Building

	January	February	March	April	May	June	July	August	September	October	November	December	Total Annual
	MMBTU	*MMBTU*	*MMBTU*	*MMBTU*	*MMBTU*	*MMBTU*	*MMBTU*	*MMBTU*	*MMBTU*	*MMBTU*	*MMBTU*	*MMBTU*	*MMBTU*
City Hall	81	48	27	8	3	-6	-6	-5	2	19	21	55	227
Law Enforcement	-10	-8	-5	-2	-1	0	0	0	-1	-4	-4	-9	-46
Park Offices	52	42	25	10	6	-3	-4	-4	2	19	21	48	215
Recreation and Community Center	49	40	24	11	7	0	0	2	5	18	20	45	222
Spin City	0	0	0	0	0	0	0	0	0	0	0	0	0
Street Department	4	3	2	1	1	0	0	0	1	1	2	4	20
Total	156	124	73	28	15	-9	-10	-7	10	54	61	142	639

Fuel Savings - Monthly Cost Savings by Building

	January	February	March	April	May	June	July	August	September	October	November	December	Total Annual
	$	$	$	$	$	$	$	$	$	$	$	$	$
City Hall	$539	$424	$235	$73	$29	-$53	-$55	-$45	$18	$168	$188	$487	$2,910
Law Enforcement	-$90	-$73	-$44	-$20	-$13	$0	$0	-$4	-$11	-$34	-$37	-$82	-$408
Park Offices	$461	$372	$224	$91	$53	-$29	$0	$0	$0	$0	$187	$421	$1,780
Recreation and Community Center	$434	$349	$212	$94	$62	$2	$1	$17	$54	$163	$178	$396	$1,961
Spin City	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Street Department	$37	$25	$21	$13	$6	$1	$1	$2	$4	$12	$22	$38	$180
Total	$1,381	$1,097	$648	$251	$137	-$79	-$53	-$29	$66	$310	$539	$1,258	$5,524





4.4 UTILITY METER SUMMARY

The following table shows a summary of the meters used to calculate energy savings for the City of Junction City Facilities. Each meter provides electricity and gas to the various facilities. Knowing which building is served by each individual meter is important when calculating savings. Detailed descriptions of each of the rates used at the facilities can be found in 4.5 Utility Rate Schedules.

Utility Meter Summary — City of Junction City, KS

Resource	Utility	Rate/Tariff	Units	Account Number	Buildings Served
Electricity [1]	Westar	SGS	kWh, kW	4603517151	City Hall & Fire
				94737746	Law Enforcement
				3253253087	Spin City
				6131600583	Recreation & Comm.
				3482262049	Parks Offices
				7635853410	Streets/Public Works
Natural Gas [2]	Kansas Gas Service	General	CCF	51 0303391 1547434 27	City Hall & Fire
				51 0475508 154631 0 18	Law Enforcement
				51 8303391 1478917 64	Spin City
				51 07691 33 161 0378 73	Recreation & Comm.
				510303391 154802445	Parks Offices
				51 0394466 156271 7 64	Streets/Public Works

Notes: (1) Some of the facilities are on accounts that are being charged demand (kW) and others are being charged on an electric utility rate that takes into account only consumption charges.

(2) The rate used for natural gas is taken from a marginal rate calculated over the past 12 months.

4.5 UTILITY RATE SCHEDULES

Detailed descriptions of the electric rates used throughout the city can be found below.

Utility Rate Schedule — City of Junction City, KS

Resource	Utility Name	Rate Tariff Name	Description		Charge	Unit
Electricity [1]	Westar	Commercial (kW, kWh)	Customer Charge	$	16.00	Per Meter
			1st 1,200 kWh	$	0.0551	Per kWh
			All Remaining kWh	$	0.0350	Per kWh
			Winter Demand	$	4.5000	Per kW
			Summer Demand	$	7.0000	Per kW
			Transmission Service	$	0.0045	Per kWh
			Environmental Cost Rcv	$	0.0016	Per kWh
			Tax Adjustment	%	4.0000	Per Bill
			Fuel Adjustment [2]	$	Varies	Per kWh
Natural Gas [3]	Kansas Gas Service	General Service	Marginal Rate	$	0.9019	Per CCF

Notes: (1) Some of the facilities are on accounts that are being charged demand (kW) and others are being charged on an electric utility rate that takes into account only consumption charges.

(2) The fuel adjustment charge varies from month to month. For savings calculations, the marginal rate for the past 12 months was used - $0.0198 per kWh.

(3) The rate used for natural gas is taken from a marginal rate calculated over the past 12 months.

5.0 WATER METER SUMMARY

Current Situation

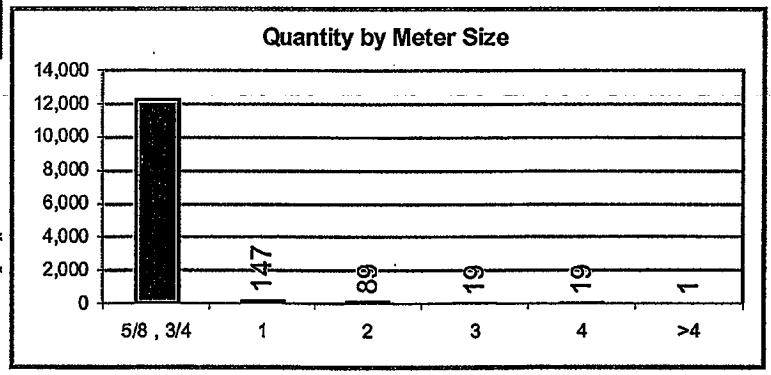
The revenue estimates provided in this analysis are based on a combination of utility inputs and industry standards developed from Schneider Electric's research and analysis used to help municipalities find ways to maximize water revenue. Unaccounted-For-Water (UFW) is the difference between the amount of water a utility purchases or produces and the amount of water that it can account for in sales and other known uses for a given period. The American Water Works Association (AWWA) and the Environmental Protection Agency (EPA) have established that the goal for unaccounted-for-water in a municipality should be less than 10% of total water production. In addition, the AWWA states that unaccounted-for-water rates above 15% for municipal systems indicate the need for immediate actions. Schneider Electric's Preliminary Audit shows that an average of 18% of the water that the City of Junction City produces is unaccounted for; therefore, there is significant potential for the city to capture additional revenue by making improvements to its water system.

2009 Water Production Month to Month

Month	Water Available (gal)	Water Sold (gal)	Unaccounted For Water (gal)	Unaccounted For For Water (%)
January	97,648,000	74,207,000	23,441,000	24%
February	81,609,000	66,579,000	15,030,000	18%
March	93,579,000	78,383,000	15,196,000	16%
April	97,710,000	91,968,000	5,742,000	6%
May	124,097,000	91,027,000	33,070,000	27%
June	131,640,000	108,386,000	23,254,000	18%
July	119,380,000	115,575,000	3,805,000	3%
August	134,000,000	101,181,000	32,819,000	24%
September	117,861,000	89,109,000	28,752,000	24%
October	116,009,000	92,980,000	23,029,000	20%
November	98,669,000	81,909,000	16,760,000	17%
December	102,739,000	81,695,000	21,044,000	20%
Totals	**1,314,941,000**	**1,072,999,000**	**241,942,000**	**18%**

Meter Population

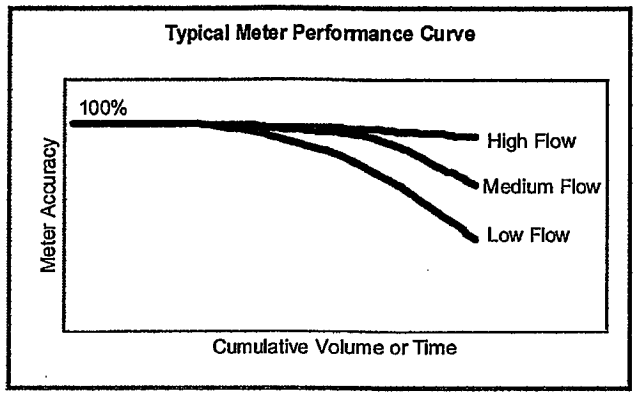
Size	Quantity
5/8 , 3/4	12,206
1	147
2	89
3	19
4	19
>4	1
Total	**12,481**



5.0 WATER METER SUMMARY

Solution

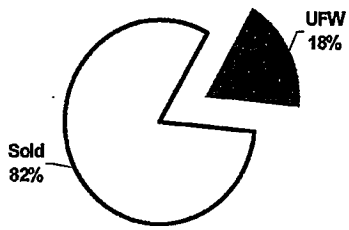
There are a number of steps that can be taken to reduce unaccounted-for-water in the City of Junction City. Water meter replacement is the single most cost-effective action that can be taken to reduce the volume of unaccounted-for-water and therefore increase revenue.



Water meters lose their ability to accurately report water used primarily because of the physical wear and tear experienced by the meter over time. As the meter loses its accuracy, the amount of "free" water that is delivered to residences and businesses increases. This water is considered unaccounted for, since it passes through the meter without registering usage, and is a contributing factor to the total loss percentage for the City of Junction City. However, by properly testing and replacing inaccurate water meters as part of a comprehensive Performance Contract with Schneider Electric, the City of Junction City can minimize these problems and maximize revenue. During an Investment Grade Audit (IGA) a representative sample of meters will be selected and tested for accuracy. The average accuracy of the tested population will be used as representation of the entire population. In this Preliminary Audit, Schneider Electric attributed a loss **110 million gallons annually to inaccurate meters** at the City of Junction City. By capturing these losses, the City of Junction City could reduce their UFW by 46%.

This translates into a loss of revenue for the City of Junction City of **$160,000 annually.** To regain this lost revenue

Unaccounted For Water



Water Treated:	1,314,941
Unaccounted For Water	241,942
Loss Percentage:	18%

a water meter change-out program must be implemented.

This figure does not consider the additional maintenance and operational savings as well as many intangible benefits.

Intangible Benefits

Accounting & Customer Service Benefits

With the automation of meter reading comes significant improvements in accuracy and availability of data. By removing the human error factor, reading and data entry errors are practically eliminated. In addition, indoor and inaccessible meters, which are often estimated under a manual system, are read every cycle. Together, these factors serve to reduce complaints to utility billing. Consequently, the number off re-bills and estimated bills are significantly reduced, which are costly because they are non-cyclical and require manual intervention.

5.0 WATER METER SUMMARY

Revenue Protection Savings

The International Utility Revenue Protection Agency estimates that most utilities lose 1% to 2% of their revenue to theft each year. The technologies used for drive-by meter reading give the utility a powerful tool for revenue protection by incorporating a tamper alarm in the meter interface unit. This will allow the City of Junction City to collect the full amount due.

Employee Time Allocation

By implementing a Automatic Meter Reading (AMR) system, the time spent to perform the task of reading and recording the cities water meters could potentially be reduced by 90%. In addition, for the meters that are currently recorded by pen into the meter books, this information would no longer have to be entered manually into the computer, thus saving additional time. This would allow the city employees to allocate their time between other tasks.

Business Benefits

- Reduced operating costs keep rates low and profits at a maximum.
- Eliminating traditional meter reading reduces your exposure to risk and liability.
- Eliminates intrusion on customers' property and improves customer service.

6.0 REFERENCES

6.1 KANSAS PERFORMANCE CONTRACTING REFERENCES

Basehor-Linwood USD 458

Contact: David Howard — Superintendent
Telephone: (913) 724-1396
Address: 2008 N. 155th Street
Basehor, KS 66007
Annual Savings: $39,288
Project Value: $1,066,477

Project Components:
- Electrical system upgrades
- Unit ventilator replacements
- Energy management system
- Split-system unit replacements
- District-wide lighting retrofit

City of Burlingame

Contact: Patti Gilbert — City Clerk
Telephone: (785) 654-2414
Address: 101 E. Santa Fe Avenue
Burlingame, KS 66413
Annual Savings: $13,687
Project Value: $553,506

Project Components:
- City-wide lighting retrofit
- Automatic meter reading for water, electric and gas meters
- Water meter change-out

Chanute USD 413

Contact: Steve Parsons — Superintendent
Tony Sehorn — Director of Maintenance
Telephone: (620) 432-2500
Address: 410 S. Evergreen
Chanute, KS 66720
Annual Savings: $92,388
Project Value: $1,550,247

Project Components:
- Hydronic piping upgrades
- Replaced two boilers
- Added heat to gymnasium
- Split-system replacement
- District-wide lighting retrofit
- Energy management system

Circle USD 375

Contact: Eliese Holt — Superintendent
Telephone: (316) 541-2577
Address: 901 Main, PO Box 9
Towanda, KS 67114
Annual Savings: $67,748
Project Value: $551,176

Project Components:
- Rooftop equipment to replace steam boilers and window units
- Energy management system
- District-wide lighting retrofit

Clearwater USD 264

Contact: Mike Roth — Superintendent
Telephone: (620) 584-2091
Address: 801 E. Ross
Clearwater, KS 67026
Annual Savings: $41,479
Project Value: $755,987

Project Components:
- Replaced hot-water boiler
- Energy management system
- Replaced over 150 windows
- Installed back-up boiler pump
- District-wide lighting retrofit

Ellis USD 388

Contact: Steve Taylor — Superintendent
Telephone: (785) 726-4281
Address: 1011 Washington Street
Ellis, KS 67637
Annual Savings: $56,871
Project Value: $1,756,645

Project Components:
- Boiler and chiller replacements
- Rooftop equipment replacements
- HVAC upgrades
- Custom multi-zone units
- Energy management control system
- Comprehensive lighting retrofit
- Lighting fixture replacement

6.0 REFERENCES

Ellsworth USD 327

Contact: Ken Arnhold — Superintendent
Telephone: (785) 472-5561
Address: 145 W. 15th Street
Ellsworth, KS 67439
Annual Savings: $37,321
Project Value: $387,587

Project Components:
- Repaired defective fan-coil units
- Energy management system
- Installed new rooftop equipment
- District-wide lighting retrofit

Eudora USD 491

Contact: Don Grosdidier — Superintendent
Peg Buchanan — Business Manager
Telephone: (785) 542-4910
Address: 1002 Elm Street
Eudora, KS 66025
Annual Savings: $124,951
Project Value: $1,293,361

Project Components:
- Installed centralized a/c at annex
- Replaced multi-zone rooftops
- Energy management system
- Retrocommissioned controls
- Installed new drop ceilings
- District-wide lighting retrofit

Eudora USD 491 – New Construction

Contact: Don Swartz — Construction Supervisor
Don Grosdidier — Superintendent
Telephone: (785) 542-4910
Address: 1002 Elm Street
Eudora, KS 66025
Annual Savings: $103,844
Project Value: $4,322,931

Project Components:
- Designed building HVAC
- Installed heat-pump HVAC system
- Energy management system
- Commissioned controls & HVAC
- Guarantee ongoing performance

Fredonia USD 484

Contact: Jim Porter — Superintendent
Telephone: (620) 378-4177
Address: 300 N. 6th Box 539
Fredonia, KS 66736
Annual Savings: $28,967
Project Value: $295,112

Project Components:
- District-wide lighting retrofit
- Energy management system

Garvey Center, Wichita

Contact: Larry Weber — Vice President of Operations
Telephone: (316) 261-5325
Address: 250 W Douglas Suite 100
Wichita, KS 67202
Annual Savings: $165,488
Project Value: $1,097,875

Project Components:
- Cooling tower replacement
- Energy management system
- Replaced centrifugal chiller
- Comprehensive lighting retrofit

Highland USD 425

Contact: Rex Bollinger — Superintendent
Telephone: (785) 442-3286
Address: 402 E Main Street
Highland, KS 66035
Annual Savings: $34,014
Project Value: $368,947

Project Components:
- Comprehensive lighting retrofit
- Energy management system

6.0 REFERENCES

Hoisington USD 431

Contact: Bill Lowry — Superintendent
Telephone: (620) 653-4134
Address: 165 W. 3rd Street
Hoisington, KS 67544
Annual Savings: $67,884
Project Value: $1,390,193

Project Components:
- Electrical upgrades
- Recommissioned and expanded existing control system
- HVAC redesign at elementary
- New RTU for middle school kitchen
- District-wide lighting retrofit

Holton USD 336

Contact: Russ McKinney — Board President
Telephone: (785) 364-3650
Address: 515 Pennsylvania Avenue
Holton, KS 66436
Annual Savings: $26,282
Project Value: $1,197,023

Project Components:
- Complete mechanical retrofit
- Energy management system
- Built-up roof replacement
- Exterior waterproofing

Iola USD 257

Contact: Dr. Craig Neuenswander — Superintendent
Telephone: (620) 496-4703
Address: 408 N. Cottonwood
Iola, KS 66749
Annual Savings: $74,218
Project Value: $774,914

Project Components:
- Complete lighting retrofit
- Energy management system

Jefferson County North USD 339

Contact: Dr. Tim Marshall — Superintendent
Telephone: (913) 774-2000
Address: 310 5th St. Box Q
Winchester, KS 66097
Annual Savings: $30,565
Project Value: $409,902

Project Components:
- Replaced two hot-water boilers
- Energy management system
- Replaced air-cooled chiller
- District-wide lighting retrofit

Kansas State School for the Blind

Contact: Madeline Burkindine — Superintendent
Jay Ray — Facilities Manager
Telephone: (913) 281-3104
Address: 1100 State Avenue
Kansas City, Kansas 66102
Annual Savings: $44,519
Project Value: $445,071

Project Components:
- Installed new hot-water boiler
- Installed new hot-water heaters
- Energy management system
- Provided pool cover measures
- District-wide lighting retrofit

Lansing USD 469

Contact: Dr. Randal Bagby — Superintendent
Telephone: (913) 727-1100
Address: 613 Holiday Plaza
Lansing, KS 66043
Annual Savings: $70,184
Project Value: $758,065

Project Components:
- Addition of unit heaters
- Energy management system
- Corrected HVAC design flaws
- District-wide lighting retrofit

6.0 REFERENCES

Manhattan Area Technical College

Contact: Rob Edleston — President
Jane Bloodgood — Business Manager
Telephone: (785) 587-2800
Address: 3136 Dickens Avenue
Manhattan, Kansas 66503
Annual Savings: $29,940
Project Value: $443,959

Project Components:
- Replaced rooftop equipment
- New ductwork for HVAC
- Energy management system
- Installed drop ceilings
- District-wide lighting retrofit

Midway USD 433

Contact: Rex Bollinger — Superintendent
Telephone: (785) 359-6525
Address: 642 Hwy 20 East
Denton, KS 66017
Annual Savings: $32,306
Project Value: $527,369

Project Components:
- Boiler system replacement
- Air-handler replacement
- Heat pump replacement
- Gymnasium lighting retrofit
- Energy management system

Nemeha Valley Community Hospital

Contact: Mike Stallbaumer — Director of Maintenance
Stan Regehr — Hospital Administrator
Telephone: (785) 336-6181
Address: 1600 Community Drive
Seneca, KS 66538
Annual Savings: $26,215
Project Value: $198,000

Project Components:
- Added alarms to clean rooms
- Conditioned operating suites
- Energy management system
- Comprehensive lighting retrofit

City of Newton

Contact: Jim Heinicke — City Manager
Dennis Quiring — Risk Manager
Telephone: (316) 284-6002
Address: City Hall-201 East Sixth, PO Box 426
Newton, KS 67114
Annual Savings: $39,077
Project Value: $915,775

Project Components:
- Replaced multizone rooftops
- Installed new rooftop HVAC
- Installed new boilers and chiller
- Energy management system
- Comprehensvive lighting retrofit

Northeast USD 246

Contact: Mike Philpot — Superintendent
Telephone: (620) 347-4116
Address: 1001 E. South Street
Arma, KS 66712
Annual Savings: $38,755
Project Value: $594,640

Project Components:
- Replaced old rooftop equipment
- Energy management system
- Upgraded football field lighting
- District-wide lighting retrofit

North Central Kansas Technical College

Contact: Bob Schmidt — Dean of Adm. Services
Telephone: (785) 738-9056
Address: 3033 US Highway 24
Beloit, KS 67420
Annual Savings: $65,902
Project Value: $778,282

Project Components:
- HVAC system redesign
- Shop heating installation
- Boiler relocation & replacement
- Rooftop unit replacements
- Split-system replacements

6.0 REFERENCES

Parsons USD 503

Contact: Dr. Deb Perbeck — Superintendent
Telephone: (316) 421-5950
Address: 2900 Southern, Box 1056
Parsons, KS 67357
Annual Savings: $41,951
Project Value: $825,000

Project Components:
- Installed new rooftop equipment
- Energy management system
- Elimated failing boiler, heat pumps and window units
- District-wide lighting retrofit

Perry USD 343

Contact: Dr. Dennis Yoder — Superintendent
Telephone: (785) 597-5138
Address: 205 W. Bridge Street
Perry, KS 66073
Annual Savings: $45,964
Project Value: $1,098,455

Project Components:
- Replaced multi-zone rooftops
- Energy management system
- Upgraded single-zone HVAC
- District-wide lighting retrofit

Rawlins County Health Center

Contact: Todd Howard — Maintenance Director
Telephone: (785) 626-3211
Address: 707 Grant Street
Atwood, KS 67730
Annual Savings: $10,761
Project Value: $222,609

Project Components:
- Removed chiller and air-handler
- Installed new rooftop equipment
- Facility-wide lighting retrofit
- Web-enabled control system

Rawlins County USD 105

Contact: Mark Wolters — Superintendent
Telephone: (785) 626-3236
Address: 205 North 4th, Ste. 1
Atwood, KS 67730
Annual Savings: $7,941
Project Value: $428,944

Project Components:
- Re-piped boiler room
- Replaced deteriorated boilers
- Improved condensate return system
- Refurbished gym air-handlers
- Split-system replacement

Renwick USD 267

Contact: Dr. Dan Peters — Superintendent
Telephone: (316) 444-2165
Address: 600 West Rush
Andale, KS 67001
Annual Savings: $85,265
Project Value: $876,793

Project Components:
- Replaced rooftop equipment
- Energy management system
- HVAC retrocomissioning
- District-wide lighting retrofit

Rose Hill USD 394

Contact: Randal Chickadonz — Superintendent
Roger Miller- Business Manager
Telephone: (316) 776-3300
Address: 104 North Rose Hill Rd.
Rose Hill, KS 67133
Annual Savings: $117,753
Project Value: $2,084,752

Project Components:
- Replaced chiller, cooling tower, and RTUs
- Install heat recovery chiller and economizer
- Energy management system recomissioning
- Gym lighting retrofit
- Irrigation system modification

6.0 REFERENCES

Sabetha USD 441

Contact: Dennis Stones — Superintendent
Telephone: (785) 284-2175
Address: 1619 S Old Hwy 75
Sabetha, KS 66534
Annual Savings: $71,953
Project Value: $857,759

Project Components:
- District-wide lighting retrofit
- Comprehensive energy management system

Santa Fe Trail USD 434

Contact: Dr. Steve Pegram — Superintendent
Telephone: (785) 665-7168
Address: 4401 US Highway 56
Carbondale, KS 66414
Annual Savings: $35,545
Project Value: $881,137

Project Components:
- Replaced rooftop equipment
- Energy management system
- Freezer and HVAC alarms
- District-wide lighting retrofit

Seaman USD 345

Contact: Dr. Robert Balsters — Deputy Superintendent
Telephone: (785) 575-8600
Address: 901 NW Lyman Rd
Topeka, KS 66608
Annual Savings: $100,081
Project Value: $925,276

Project Components:
- Addressed humidity concerns
- Energy management system
- Solved pressurization problem
- District-wide lighting retrofit

Shawnee Heights USD 450

Contact: Martin Stessman — Superintendent
Telephone: (785) 379-5800
Address: 4401 SE Shawnee Heights Road
Tecumseh, KS 66542
Annual Savings: $137,624
Project Value: $1,417,501

Project Components:
- Replaced heat pump units
- Modified ductwork
- HVAC addition with bond
- District-wide lighting retrofit
- Energy management system

Smith County Memorial Hospital

Contact: Carolyn Hess — Administrator
Randy Archer — Maintenance Director
Telephone: (785) 282-6845
Address: 614 S. Main Street
Smith Center, KS 66067
Annual Savings: $86,966
Project Value: $2,567,261

Project Components:
- New mechanical system including:
  Boilers, fan-coil units, air-handlers, & piping
- Completed 4-pipe system building-wide
- Energy management control system
- Humidity control in Surgery Suite
- Building-wide lighting retrofit & replacement

Wathena USD 406

Contact: Mike Newman — Superintendent
Telephone: (785) 989-4427
Address: 705 Jesse Street
Wathena, KS 66090
Annual Savings: $29,178
Project Value: $537,913

Project Components:
- Hot-water boiler replacement
- Energy management system
- District-wide lighting retrofit

6.0 REFERENCES

Wellsville USD 289

Contact: Denise O'Dea — Superintendent
Telephone: (785) 883-2388
Address: 602 Walnut
Wellville, KS 66092
Annual Savings: $28,900
Project Value: $441,043

Project Components:
- Additon of gymnasium a/c
- Linked new control system to high school
- New air-conditioning in lobby
- Updated control system in elementary

City of Wichita

Contact: James Mayer
Telephone: (316) 268-4408
Address: City Hall-8th Floor, 455 N. Main Street
Wichita, KS 67202
Annual Savings: $375,000
Project Value: $2,453,540

Project Components:
- Free-cooling retrofit
- Dual-duct to VAV conversions
- Cooling tower replacement
- Complete lighting retrofit
- Energy management system

Wichita County

Contact: Vick Case — County Commissioner
Telephone: (620) 375-2731
Address: 206 South 4th Street
Leoti, KS 67861
Annual Savings: $8,156
Project Value: $231,112

Project Components:
- Replace windows at Courthouse, Economic Development, and Sheriff Dept.
- Lighting retrofit and replacement
- Programmable thermostats

Wilson County

Contact: Kris Marple — County Coordinator
Telephone: (620) 378-3472
Address: 615 E Madison Street
Fredonia, KS 66736
Annual Savings: $41,355
Project Value: $715,281

Project Components:
- Mechanical system redesign
- Dual-duct to VAV conversions
- Energy management system
- Complete lighting retrofit

7.0 GLOSSARY OF TERMS

AKW - Actual Kilowatts, this is the unit of measurement for electrical demand. Normally, this is measured as the highest average 15 minutes of electrical consumption during the billing period.

BKW - Billed Kilowatts, most utility companies charge all-year long for the highest demand that occurred during their peak demand session. The billed kW is often different from the actual kW. Not all customers are charged for demand.

Blended Rate – The blended rate is the average cost per unit billed on the utility bills. For electricity, this is a cost per kWh billed. Utility rates may have tiered charges where different levels of consumption are charged at different rates. They may also have seasonal charges where consumption is charged at a different rate depending on the time of year. In order to simply express an average rate over the course of a year, a blended rate is used.

Btu - British Thermal Units - a measurement of energy consumption. More specifically, the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at 39 or 60 degrees. Note: MBtu = 1,000 Btu; MMBtu = 1,000,000 Btu

CCF - a measurement of gas – hundreds of cubic feet

CF – Cubic feet of water. This is a common unit of measurement for water consumption. Other common measurements are gallons (gal) and kilo gallons (kgal).

Cost - The total electric, gas, propane, fuel oil, water, or other fuel charge for the billing period.

DDC – Direct Digital Control.

ECM - Energy Conservation Measure – any measure that will save energy. For example, lighting retrofit, air conditioning/heating repair or replacement, adding or upgrading controls.

EMS - Energy Management System – the controls that are used to operate the facilities.

Footcandle – A measurement of the degree of illumination (or light level) on a surface. Originally, the amount of light one foot away from a standard candle. Currently defined as one lumen per square foot.

Hazardous Material - any material that, because of its quantity, concentration, or physical and chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or environment. Asbestos, PCB's and mercury are examples of hazardous material or "hazmat," and must be disposed of according to EPA regulations.

Horsepower – Work done over time. The exact definition of one horsepower is 33,000 lb.ft. per minute. It also equals 746 Watts.

HVAC – Heating/Ventilation/Air Conditioning – also referred to as mechanical equipment.

kBTU - a measurement of energy consumption = 1,000 British Thermal Units

kWH - Kilowatt-Hours. This is the unit of measurement for electrical consumption. One kWh is equivalent to the energy consumed by ten 100-watt light bulbs burning for one hour.

kWH/Ft2, W/Ft2, CF/Ft2, Gal/Ft2, Lb/Ft2, HCF/Ft2 & kBTU/Ft2 per Month - Each month's prorated consumption is divided by the area of the building to obtain an index of your facility's relative energy consumption intensity. This is done for electrical consumption (kWh), demand (kW), gas (MCF and CCF), oil and propane (gallons), steam (pounds), water (HCF), and any other fuels (kBTU). No matter the size of your facility or the amount of energy consumed, this number allows for a meaningful comparison to other facilities of similar function. kW are converted to watts and MCF and CCF to cubic feet to eliminate the problem of dealing with very small numbers.

7.0 GLOSSARY OF TERMS

Load Factor - This is a ratio showing the relationship between actual kW (AkW) and kWh for the billing period. It is calculated from the data on your monthly bill. The calculation is: Load Factor = (kWh Used) / (AkW x Number of Hours in the Month). A high load factor indicates long hours of use at demand levels close to the peak demand for the billing period. A low load factor indicates short hours of use or excessively high peak demand levels.

MBH – 1,000 Btu/hr; Heating equipment sizes are typically rated in MBH.

MCF - Thousands of cubic feet of natural gas. This is a common unit of measurement for gas consumption. Other common units of measurement are hundreds of cubic feet (CCF) or millions of BTU's (mmBTU). If your bills normally use one of these other units we have converted the consumption to MCF.

Multiplier – The number by which the difference of the current reading and previous reading of a meter is multiplied to produce the actual reading. For example, if the current consumption reading of an electric meter with a multiplier of 120 is 10505, and the previous reading was 10005, then the difference, 500, times the multiplier, 120, produces the actual consumption of 60,000 kWh.

PASS – Performance Assurance Support Services, a support division of the Energy Solutions Department of TAC Americas. PASS monitors the performance of the project and reports to the customer savings through annual reconciliation of the utility data provided to TAC Americas by the customer. PASS also supports the customer throughout the term of the performance contract.

Power Factor – The ratio of the resistance power to the apparent power. Power Factor = kW / kVA. Utility companies often charge a penalty for lagging power factors.

Prorated - Utility meters are usually not read on the end of the month. This makes comparing bills from one year to the next inaccurate since the bills may not cover the same number of days or even the same part of the month. For this reason we have prorated the consumption and costs for electricity, gas, fuel oil, propane, water, or other fuels to allow for year-to-year and facility-to-facility comparisons. As an example, any given month will normally have two utility bills involved to account for the consumption for all days in that month. The prorating process assigns consumption from each bill to the calendar month in question. This assignment is done in proportion to the number of days in each bill that occurred in the subject month.

Read Date - The date your electric, gas, propane, fuel oil, water, or other fuel utility company read your meter or filled your tank. In most cases the read date will not be the last day of the month. For comparison purposes it is useful to have consumption data on a calendar month basis.

Therm – A unit of heat equal to 100,000 British thermal units.

SF – Square foot.

Ton (T) – One ton is equivalent to 12,000 Btu/hr. A ton of refrigeration produces the same amount of cooling energy as one ton of ice melting in a 24-hour period

Total Cost - The sum of electric, gas, fuel oil, propane, water, or other fuel charges.

Total Use – The sum of electric and gas usage, in MMBtu.

Weather Normalization – When comparing consumption from year to year it is helpful to weather normalize the data to provide a more consistent comparison. Weather normalizing the data takes into account abnormal weather conditions that may incorrectly influence the comparison. Two sets of weather data are used in the weather normalization process: TMY2 (typical mean year) & actual data. These two data sets are compared to find any discrepancies that need to be accounted for. The data is "tuned" to the actual weather and then this relationship is applied to the TMY2 data to provide a weather normalized baseline.

7.0 GLOSSARY OF TERMS

Weighted Average – the average value of a data set accounting for the importance of a data point. For example, if a data set has an average of 10, but the more important points have an average of 7, the weighted average would lie somewhere between 7 and 10.

$/kWH, $/kW, $/MCF, $/Gal, $/HCF & $/kBTU - The marginal cost per unit for the billing period. The marginal cost per unit is the dollar amount saved if one unit was saved. This value will typically vary with seasonal rate changes, load factor, consumption amount, demand amount, or any other factor relevant to the utility.