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Texas Comptroller of Public Accounts

Facility Preliminary Energy Assessments and Recommendations

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Dawson Independent School District

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SECO
State Energy Conservation Office

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1.0 EXECUTIVE SUMMARY

This **Energy Efficient Partnership Service** is provided to public school districts and hospitals as a portion of the state's ***Schools/ Local Government Energy Management Program***; a program sponsored by the **State Energy Conservation Office (SECO)**, a division of the **State of Texas Comptroller of Public Accounts**.

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The service assists these public, non-profit institutions to take basic steps towards energy efficient facility operation. Active involvement in the partnership from the entire administration and staff within the agencies and institutions is critical in developing a customized blueprint for energy efficiency for their facilities.

In April 2010, **SECO** received a request for technical assistance from *Ms. Kelly Miller*, Budget Director for Dawson I.S.D. **SECO** responded by sending **ESA Energy Systems Associates, Inc.**, a registered professional engineering firm, to prepare this preliminary report for the school district. This report is intended to provide support for the district as it determines the most appropriate path for facility renovation, especially as it pertains to the energy consuming systems around the facility. It is our opinion that significant decreases in annual energy costs, as well as major maintenance cost reductions, can be achieved through the efficiency recommendations provided herein.

This study has focused on energy efficiency and systems operations. To that end, an analysis of the utility usage and costs for **Dawson ISD,** (hereafter known as DISD) was completed by **ESA Energy Systems Associates, Inc**., (hereafter known as *Engineer*) to determine the annual energy cost index (ECI) and energy use index (EUI) for each campus or facility. A complete listing of the Base Year Utility Costs and Consumption is provided in Section 3.0 of this report.

Following the utility analysis and a preliminary consultation with *Ms. Miller,* a walk-through energy analysis was conducted throughout the campus with *Mr. Lynn Hill*, Director of Maintenance for DISD. Specific findings of this survey and the resulting recommendations for both operation and maintenance procedures and cost-effective energy retrofit installations are identified in Section 6.0 of this report.

We estimate that as much as **$33,793** may be saved annually if all recommended projects are implemented. The estimated installed cost of these projects should total approximately **$232,607**, yielding an average simple payback of **6-3/4** years.

SUMMARY:	IMPLEMENTATION COST	ESTIMATED SAVINGS	SIMPLE PAYBACK (Yrs)
Lighting M&O 1	n/a	$ 430	n/a
Lighting M&O 2	n/a	$172	n/a
Lighting M&O 3	n/a	$332	n/a
HVAC ECRM 1-4	$145,907	$16,211	9
HVAC ECRM 5.1	$6,000	$857	7
HVAC ECRM 5.2	$11,200	$1,600	7
Lighting ECRM 1	$45,000	$9,000	5
Lighting ECRM 2	$24,500	$6,125	4
TOTAL PROJECTS	$232,607	$33,793	7

The total utility cost for DISD from March 2009 to February 2010 was $157,090. The projected savings of $33,793 would represent a decrease in utility expenditures for the district of 20.3%. Although additional savings from reduced maintenance expenses are anticipated, these savings projections are not included in the estimates provided above. As a result, the actual Return of Investment (ROI), for this retrofit program has been calculated and shown in Section 7.0 of this report.

Our final "summary" comment is that **SECO** views the completion and presentation of this report as a beginning, rather than an end, of our relationship with **DISD**. We hope to be ongoing partners in assisting you to implement the recommendations listed in this report. Please call us if you have further questions or comments regarding your Energy Management Issues.

*ESA Energy Systems Associates, Inc. James W. Brown (512) 258-0547

2.0 ENERGY ASSESSMENT PROCEDURE

Involvement in this on-site analysis program was initiated through completion of a Preliminary Energy Assessment Service Agreement. This PEASA serves as the agreement to form a "partnership" between the client and the State Energy Conservation Office (SECO) for the purposes of energy costs and consumption reduction within owned and operated facilities. After receipt of the PEASA, an initial visit was conducted by the professional engineering firm contracted by SECO to provide service within that area of the state to review the program elements that SECO provides to school districts and determine which elements could best benefit the district. A summary of the *Partner's* most recent twelve months of utility bills was provided to the engineer for the preliminary assessment of the Energy Performance Indicators. After reviewing the utility bill data analysis and consultation with SECO to determine the program elements to be provided to DISD, ESA returned to the facilities to perform the following tasks:

1. Design and monitor customized procedures to control run times of energy consuming systems.
2. Analyzing systems for code and standard compliance in areas such as cooling system refrigerants used, outside air quantity, and lighting illumination levels.
3. Develop an accurate definition of system and equipment replacement projects along with installation cost estimates, estimated energy and cost savings and analyses for each recommended project.
4. Develop a prioritized schedule for replacement projects.
5. Assist in development of guidelines for efficiency levels of future equipment purchases.

3.0 ENERGY PERFORMANCE INDICATORS

In order to easily assess the *Partner's* energy utilization and current level of efficiency, there are two key "Energy Performance Indicators" calculated within this report.

1. Energy Utilization Index

The Energy Utilization Index (EUI) depicts the total annual energy consumption per square foot of building space, and is expressed in "British Thermal Units" (BTUs).

To calculate the EUI, the consumption of electricity and gas are first converted to equivalent BTU consumption via the following formulas:

ELECTRICITY Usage

[Total KWH /yr] x [3413 BTUs/KWH] = _____ BTUs / yr

NATURAL GAS Usage

[Total MCF/yr] x [1,030,000 BTUs/MCF] = _____ BTUs / yr

After adding the BTU consumption of each fuel, the total BTUs are then divided

by the building area.

EUI = [Electricity BTUs + Gas BTUs] divided by [Total square feet]

2. Energy Cost Index

The Energy Cost Index (ECI) depicts the total annual energy cost per square foot of building space.

To calculate the ECI, the annual costs of electricity and gas are totaled and divided by the total square footage of the facility:

ECI = [Electricity Cost + Gas Cost] divided by [Total square feet]

These indicators may be used to compare the facility's current cost and usage to past years, or to other similar facilities in the area. Although the comparisons will not provide specific reasons for unusual operation, they serve as indicators that problems may exist within the energy consuming systems.

THE CURRENT ENERGY PERFORMANCE INDICATORS FOR:

Dawson ISD

Facility	Energy Utilization Index (EUI) BTUs/sf-yr	Energy Cost Index (ECI) $/sf-yr
Dawson K-12 3/2009 – 2/2010	**65,708**	**$1.53**

A company hired by Centerpoint to oversee the SCORE Program has recently indicated the average EUI and ECI for South Texas Schools is 52,800 BTU/sf-yr and $1.51, respectively. Dawson ISD is above the regional average for EUI and slightly above the average for ECI.

The electricity and gas consumption charts for the Dawson K-12 campus are as follows:

OWNER:	Dawson ISD			BUILDING:		K-12		
MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMP-TION	METERED	CHARGED	COST OF	TOTAL ALL ELEC-TRICAL	CONSUMP-TION	COSTS
MONTH	YEAR	KWH	KW/KVA	KW/KVA	DEMAND	COSTS $	MCF	$
JANUARY	2010	73,276	299	299	$ 2,891	$ 9,756	591	$ 3,592
FEBRUARY	2010	69,776	297	297	$ 2,892	$ 9,408	624	$ 3,823
MARCH	2009	61,159	315	315	$ 2,623	$ 8,351	127	$ 596
APRIL	2009	101,731	435	435	$ 2,986	$ 12,516	37	$ 194
MAY	2009	99,001	421	421	$ 2,902	$ 12,175	21	$ 114
JUNE	2009	97,451	357	357	$ 2,828	$ 11,957	9	$ 75
JULY	2009	97,910	393	393	$ 2,863	$ 12,033	8	$ 65
AUGUST	2009	154,755	548	548	$ 3,613	$ 17,908	16	$ 129
SEPTEMBER	2009	109,756	460	460	$ 3,150	$ 13,430	34	$ 257
OCTOBER	2009	78,704	419	419	$ 3,006	$ 10,378	64	$ 549
NOVEMBER	2009	76,526	324	324	$ 2,817	$ 9,984	509	$ 3,723
DECEMBER	2009	72,316	312	312	$ 2,998	$ 9,771	905	$ 6,306
TOTAL		1,092,361	4,580	4,580		$137,667	2,945	$19,423

			Energy Use Index:		
Annual Total Energy Cost	$157,090	Per Year	Total Site BTU's/yr	65,708	BTU/s.f.yr
			Total Area (sq.ft.)		
Total KWH x 0.003413 =	3,728.23	x 106			
Total MCF x 1.03 =	3,033.35	x 106	Energy Cost Index:		
Total Other x ____		x 106	Total Energy Cost/yr	$1.53	$/s.f. yr
Total Site BTU's/yr	6,761.58	x 106	Total Area (sq.ft.)		
Floor area:	102,904	s.f.			

Charting the annual electricity consumption reveals that the campus does not experience a significant decrease in consumption for June and July as would be expected for periods of vacationing students (see Figure 1 to the right). While it is acknowledged that summer months do represent summer school, custodial and administrative occupancy periods, the lack of a decrease in consumption for these months may indicate an opportunity for improved coordination and zoning of June and July Administrative and Custodial activities in order to reduce consumption during these time periods. Lack of a decrease in consumption during summer months implies that more units than necessary are being operated for floor maintenance activities or possibly that control programs are not being adjusted to the summer occupancy schedules.

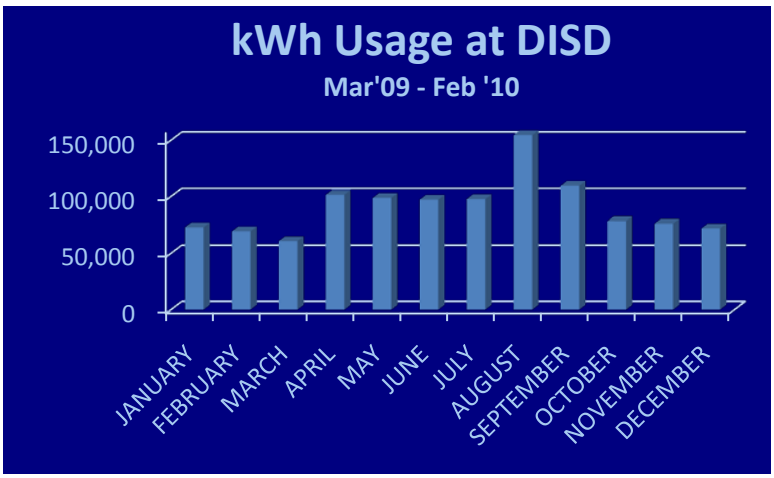


Figure 1: Electricity (in kWh) Consumption Chart

The district's natural gas consumption (Figure 2), on the other hand, shows an ideal inverted bell curve that demonstrates excellent control of natural gas use for space heating in a public school facility in Texas. The baseline readings in summer months likely represent the consumption for natural gas water heaters that are not disconnected during the summer.

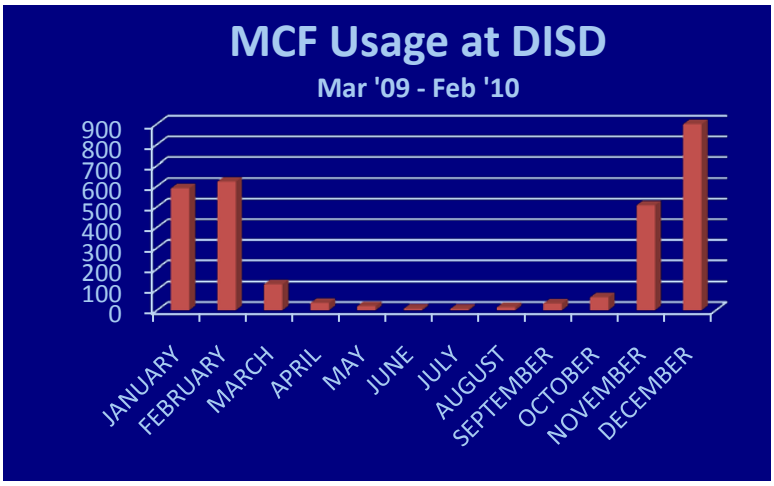


Figure 2: Natural Gas (in MCF) Consumption Chart

As the district is located in the deregulated area of the State, the district has contracted for the purchase of electricity through Reliant Energy for Schools. The Transmission and Distribution company for DISD is Oncor. Copies of the electric rate schedules are included in Appendix II.

4.0 RATE SCHEDULE ANALYSIS

A. ELECTRICITY PROVIDER

Dawson K-12

RETAIL ELECTRIC PROVIDER (REP): Reliant Energy for Schools [$0.093665 per kWh]

TRANSMISSION AND DISTRIBUTION (T&D): Oncor

Electric Rate: Secondary Service > 10 kW

I.	TRANSMISSION AND DISTRIBUTION CHARGES:		
	Customer Charge	=	$3.50 per meter
	Metering Charge	=	$18.41 per meter
	Transmission System Charge (Non-IDR Meter)	=	$1.99 per NCP kW
	Distribution System Charge	=	$3.97 per DS Billing kW
II.	SYSTEM BENEFIT FUND	=	$0.000655 per kWh
III.	TRANSITION CHARGES		
	Transition Charge 1	=	$0.161/kW
	Transition Charge 2	=	$0.397/kW
IV.	NUCLEAR DECOMMISSIONING CHARGE	=	$0.044 per DS Billing kW
V.	TRANSMISSION COST RECOVERY FACTOR	=	$0.125668/NCP kW
VI.	ENERGY EFFICIENCY COST RECOVERY	=	$9.66/billing period
VII.	COMPETITIVE METERING CREDIT	=	$5.47 per month

Average Savings for consumption = $0.093665/kWh + $0.000655/kWh = <u>$0.09432/kWh</u>

Average Savings for demand = $1.99 + $3.97 + $0.161 + $0.397 + $0.044 + $0.125668 = <u>$6.69/kW</u>**

** This number is a generalization of average cost per kW because the rate schedule from Oncor utilizes three (3) different types of demand for the calculation of the utility bill:

1. NCP kW: Peak demand during 15 minute interval of current billing cycle
2. 4CP kW: Average demands of June, July, August and September of previous calendar year; usually only applied to IDR metered accounts
3. DS (Distribution System) Billing kW: Ratchet demand representing higher of two calculations: 80% of peak demand in last 11 months or current NCP kW

B. NATURAL GAS PROVIDER

Atmos

Rate Schedule Unavailable: Average cost per MCF determined from utility billings.

Total Cost of Natural Gas purchased for Dawson ISD: $19,423

Total Quantity of Natural Gas purchased for Dawson ISD: 2,945 mcf

Cost / Quantity **= Average Unit Cost** = $19,423 / 2,945 mcf = **$6.60/mcf**

5.0 CAMPUS DESCRIPTIONS

Dawson ISD consists of a single K-12 campus located in Dawson, Texas. The facility is operated from mid- August through late May on a weekday schedule of 7:00 A.M. to 5:00 P.M. The Administrative area is open all year, and portions of the facility are occupied by summer school students and the maintenance staff throughout the summer. The facility comprises 102,904 square feet of facilities and serves 498 students.

The campus consists of one interconnected facility with branching wings housing different grade levels and school functions. Some of the wings are brick faced with low-slope built-up gravel roofs and other wings are of concrete block construction with moderately-sloped standing-seam metal roofs. The gyms are metal buildings with sloped metal roofing. The main building was constructed in 1983 with various renovations and additions through 2007.

HVAC System Description:

The Dawson ISD campus is heated and cooled by a combination of rooftop package units (RTUs) and split systems. Most of the high school wing of the campus is serviced by RTUs with gas-fired heating and electric DX cooling. These units are located on the original flat roof that is under cover of the newer sloped metal roofing; this attic-like condition causes the units to be subjected to higher than normal outside air temperatures. District staff reports that they recorded a maximum space temperature in the attic of 136°F last year. These HVAC units were likely designed using ASHRAE criteria assuming that ambient temperatures exceed 105°F only 5% of the year. This means that the units were designed to keep the occupied spaces comfortable while operating in temperatures of less than 105°F 95% of the time. Their location in the attic space now requires that the units attempt to condition the spaces while the attic temperatures are above 105°F most of the time. The units were simply not designed to operate in these extreme conditions and the staff has reported that the spaces are not as comfortable as they used to be before the metal roofs were installed. *We recommend replacing the older RTUs with split systems utilizing exterior pad-mounted condensing units and interior closet or above ceiling suspended air handling units.* Some areas of the High School wing utilize concentric ductwork below the RTUs. This configuration will not work with the proposed split system installation and new distribution ductwork should be considered for these units.

Figure 3: View of RTUs under roof

The gyms are conditioned by ground-mounted package units with gas-fired heating and electric DX cooling. The old gym has exhaust fans that were installed prior to the installation of the air conditioning system. Two exhaust outlet louvers are located on the north wall and four intake louvers are located on the south wall of the gym. It is likely that even if the exhaust fans are still utilized in the cooler months instead of using

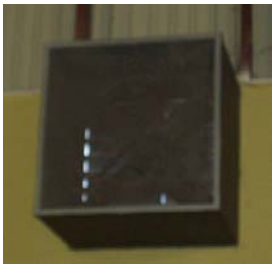


Figure 4: Exhaust dampers not sealed

air conditioners, the energy loss from the airflow through gaps in the louvers during the hotter months while the air conditioners are running is greater than any energy savings during the cooler months. *We recommend that the louvers be properly sealed and insulated.*

Other than in the high school, the classrooms are predominantly heated and cooled by split-systems with DX cooling and gas heating. The condensing units are exterior pad-mounted units and the air handlers are located in interior closets with outside air coming to the closet via through-ceiling vents. Most of the units have conventional ducted supply air distribution above drop ceilings with through-wall return grilles. Some units were observed to be freestanding in a corner of the classroom, without closets or ducted supply air distribution. A small number of classrooms (two or three) were observed to have window air conditioning units serving closet-type spaces in the classrooms. *We recommend that as the split-systems age and require replacement, they are replaced with energy-efficient model; and units without ductwork should be equipped with a conventional ductwork system.*

The refrigerant line insulation was notably damaged or missing from several split systems. The damage to the insulation allows the refrigerant to absorb heat from the ambient air and limits its ability to absorb heat from the interior space as intended. *We recommend that any refrigerant line insulation that is in poor condition or missing be replaced.*

Figure 5: Missing Refrigerant Insulation

It was noted during the survey that most of the units do not have adequate coil guards installed over the fins. Depending on the unit age and location, some of these units have sustained coil fin damage as a result of this lack of protection (see Figure 6 to the right). Damage appears to be a combination of weather related and non-weather related (weed trimmer and students) occurrences. Units with this type of damage to just 10% of the coil fins can lose as much as 30% of their operating efficiency due to the unit's inability to dissipate heat to the atmosphere. *We recommend the district comb the damaged fins straight (fin combs are available for about $10) and install coil guards to protect the units from damage in the future.*

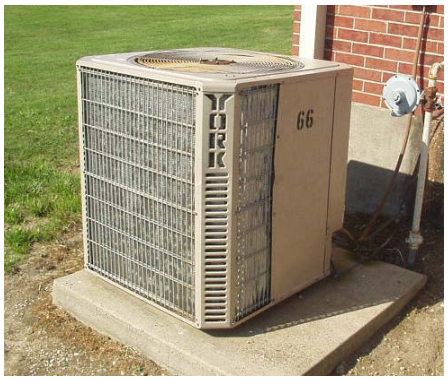


Figure 6: Damaged coil fins at CU

The older RTUs date to 1996 and some of the split systems date to 1994. The life expectancy of packaged and split system HVAC units is 15-20 years. We recommend the district begin to plan to replace any HVAC unit that has reached 15 years old or older to avoid potential emergency replacement costs that are higher than budgeted replacement costs.

Control System Description:

The Dawson campus predominantly utilizes conventional, non-programmable thermostats to control HVAC equipment. A 5-day programmable thermostat was observed in the new Gym, and it was set to the "off" position, a good conservation measure for unoccupied summer periods. This type of thermostat cannot be programmed to run at different operating hours on Saturday and Sunday when the school is typically not in use. We recommend two options for the district: replace all existing thermostats with 7-day programmable units or with IP-addressable programmable devices. The IP-addressable thermostats are located on wall like other thermostats but are connected to a Local Area Network (LAN) connection which allows them to be monitored and programmed over the district's local network. Software is available to allow global changes to all thermostats on the network which would greatly simplify making changes to the occupancy schedules.

Lighting System Description:

The K-12 campus consists of predominantly ceiling-mounted fluorescent strip fixtures with some recessed can fixtures with both incandescent and compact fluorescent (CFL) bulbs. The type of fluorescent fixtures varies from older T12 fixtures to newer T8 fixtures. Apparently, as the older T12 fixtures fail, they are replaced with T8 lamps and ballasts. Based on our random sampling throughout the facility, we estimate 70% of the T12 fixtures remain (T12 fixtures were intermingled with T8 fixtures throughout all areas of the building). The T12 lamps and magnetic ballasts will no longer be manufactured after 2010 and in combination with the energy saving opportunities available and the fact that Senate Bill 300 mandates that all public schools install the most efficient lamps and ballasts possible in their existing lighting system, *we recommend retrofitting the remaining T12 fixtures with T8 lamps and electronic ballasts.*

The older Gymnasium is illuminated by 20 each 400-watt metal halide fixtures, and the newer Gymnasium is illuminated by 35 each 400-watt metal halide fixtures. Metal halide fixtures are relatively efficient by themselves, but their long re-strike issue discourages personnel from turning them off during periods of inactivity because they do not want to wait the 5-10 minutes required to re-start the fixtures when gym activities resume. Therefore, the fixtures typically operate 11-12 hours per day. *We recommend the district consider renovating the fixtures with new T5HO or T8 fluorescent high bay fixtures.* These fixtures do offer energy reductions from comparable metal halide fixtures, but more importantly, they do not have the re-strike issue inherent to metal halides and therefore may be turned off during inactive times of the day. *We recommend utilizing 4-lamp fixtures over the bleachers and general walkway areas and 6-lamp fixtures over the gymnasium court.*

The corridor outside the Library has several fluorescent tube fixtures and 9 recessed can fixtures along the exterior wall and over the Library door; these fixtures produced 102 footcandles on the corridor during site visit on a sunny day. The corridor is overlit with these fixtures. *We recommend switching the corridor fixtures off during daylight hours or placing the fixtures on a*

photocell The fixtures appear to be in the middle of an existing corridor lighting circuit, therefore there will have to be some minor electrical modifications to this circuit to allow for the photocell control of the fixtures located immediately adjacent to the corridor fenestration.

Inside the Library, there are 41 each 3-lamp T8 fluorescent fixtures; these fixtures produced 105 footcandles on a reading desk. The Illumination Engineering Society of North America (IESNA), the organization that determines the level of light required to perform activities safely, recommends 50 footcandles in Library spaces. It is presumed that the original T12 fixtures were replaced "one-for-one" with the newer T8 fixtures. T8 fixtures are inherently brighter than T12 fixtures and so *we recommend removing 1 lamp from each fixture to maintain appropriate light levels in the space, but reduce the unnecessary energy consumed in over-lighting the area.*

Exterior lighting consists of building-mounted metal halide wallpack fixtures and soffit-mounted CFL walkway fixtures. There are some exterior metal halide fixtures which were operating during the daytime hours outside the gym (including one 150-watt metal halide) and outside some classrooms (see Figure 7 to the right). *We recommend these fixtures be controlled by a (new) photocell or time clock to limit their operation to required nighttime hours.*

Figure 7: Exterior lighting on during day

Exit signs are a mixture of LED and incandescent type fixtures. *We recommend that non illuminated or damaged exit fixtures be replaced with new LED or LEC units*.

Plumbing and Water Heating System Description:

The kitchen is provided with a gas-fired *A.O. Smith* water heater with 199,000 Btu input. Restrooms throughout the campus are also provided with gas-fired water heaters.

The kitchen utilizes a chemical dishwasher that does not require hot water loop temperatures higher than 140°F.

The Boy's restrooms at the front Lobby area have three old urinals that utilize much more water per flush than newer urinals (as much as 2 gallons more). Other old-style urinals may be located throughout the campus in other restrooms. New urinals can use from no water (waterless urinals) to 0.6 gallons per flush. Waterless urinals may require more maintenance, but recent advances in the technology have decreased maintenance and odors. *We recommend that a phased replacement of the urinals be implemented, starting with the most frequently-used restrooms.*

Building Envelope Description:

It was noted during the survey that the birdscreen material covering the outside air intakes under the new sloping metal roof have been removed and discarded within the attic space. While not an energy conservation measure, birds, bats and other creatures could choose to become residents in the attic space with free passage through the outside air grills. This could potentially be a source of poor indoor air quality. We recommend the screen material be re-installed over the outside air grills after the existing HVAC equipment has been removed through the OA grill openings.

Figure 8: Birdscreen removed from grills

It was also noted during the survey that many of the exterior doors have damaged or missing weatherstripping. We recommend that the weatherstripping be inspected and replaced as needed to prevent air and dirt infiltration into the building.

Figure 9: Weatherstripping missing at Gym door

6.0 RECOMMENDATIONS

A. MAINTENANCE AND OPERATIONS PROCEDURES

Lighting

- Remove one lamp from all Library 3-lamp fixtures.
- Control exterior lights with timeclock or photocell, replace old photocells as required.
- Switch off recessed can lights in the corridor outside the library and replace with CF L bulbs.

HVAC

- Comb and wash condensing unit fins; install hail guards as necessary to prevent future coil fin damage.
- Replace damaged and missing refrigerant line insulation at the split systems .
- Replace filters on a more frequent basis and clean dust from return air grilles (see grille in Library corridor and filters in classrooms).
- Continue to switch "off" air conditioners or use higher setback temperatures when not in use during the cooling months.

Building Envelope

- Check weatherstrip at all exterior doors, replace as needed (see 2 doors at old Gym).
- Seal and insulate louvers at old Gym.

Maintenance and Operation procedures (M&O) are strategies that can offer significant energy savings potential, yet require little or no capital investment by the district to implement. Exact paybacks are at times difficult to calculate, but are typically less than one year. The difficulties with payback calculations are often related to the fact that the investigation required to make the payback calculation, (for example measuring the air gap between exterior doors and missing or damaged weather-stripping so that exact air losses may be determined), is prohibitive when the benefits of renovating door and weather-stripping are well documented and universally accepted.

Lighting System M&O #1

Currently, the Library has 41 each 3-lamp T8 fluorescent fixtures. We recommend removing the center lamp from each of these fixtures for substantial energy savings of approximately $430 per year assuming the lamps are used 10 hours a day and 5 days a week.

Lighting System M&O #2

Two each 150-watt metal halide lights and another 13-watt CFL light were observed to be lit during daylight hours. Equipping these fixtures to photocells so they operate only 12-hours

each day and 7 days a week could potentially save $172 annually if they are now operating 24-hours a day.

Lighting System M&O #3

Nine each 100-watt incandescent recessed can lights were observed to be lit during daylight hours. Switching these fixtures to operate from 06:00 to 09:00 instead of 12 hours each day (5 days a week, off on Saturday and Sunday) could potentially save $265 annually. Replacing them with CFL bulbs could save an additional $66 (for $331 total savings annually).

HVAC M&O #1 & 2

Condensing or rooftop units with damage to just 10% of the coil fins can lose as much as 30% of their operational efficiency as the units lose their ability to dissipate heat to the atmosphere. Combs to straighten damaged fins cost less than $10 and can usually restore most or all of the lost efficiency. Dirty filters also reduce efficiency and replacement with a new filter will increase airflow and provide quicker cooling.

Envelope M&O #1

It was noted there were several exterior doors around the district that suffered from missing or absent weather-stripping. We recommend that the weatherstripping be replaced as necessary.

Envelope M&O #2

The louvers allow warm outside air to migrate into the conditioned space. Sealing and insulating the louvers will allow the air conditioners to cool the space quicker, saving on energy costs and equipment run-time.

B. CAPITAL EXPENSE PROJECTS

HVAC

- Replace older RTUs with pad-mounted condensing units and ceiling or closet-mounted air handling units.
- Replace concentric ductwork with conventional branching ductwork.
- Replace older classroom split-systems with more energy efficient models.
- Replace free-standing units without ductwork with new units utilizing conventional ductwork.
- Replace non-programmable thermostats with IP-addressable versions.

Lighting

- Retrofit older T12 fixtures with T8 fixtures.
- Renovate both Gyms with T5 or T8 fluorescent fixtures instead of metal halide fixtures.
- Replace damaged or non functional incandescent Exit signs with LED signs.

HVAC ECRMs #1-4

There are 10 RTUs and 5 split systems (58.5 total tons of nominal cooling capacity) that are approximately 14 years old or of an unknown age. These systems typically have a life expectancy of 15-20 years. Therefore, the district has no immediate need for capital investment for unit replacements but should plan for replacement of the 14-year old units prior to the 2015-2016 school years. If replaced this year, the project budget would likely be the following:

Estimated Installed Cost	=	$ 119,925
Estimated Energy Cost Savings	=	$ 7,995
Simple Payback Period	=	15 years

The 15-year payback is due to the fact that the units still have functional life and are not operating as inefficiently as they will be when the mandatory time to replace the units arrives. Allowing for 4% inflation per year for the next 5 years, the budget may become the following:

Estimated Installed Cost	=	$ 145,907
Estimated Energy Cost Savings	=	$ 16,211
Simple Payback Period	=	9 years

HVAC ECRM #5.1

Install IP-Addressable Programmable Thermostats in Classrooms and spaces throughout the campus. This calculation includes the 15 air conditioners planned for replacement above,

assuming that the new thermostats are installed at the same time the new air conditioners are installed.

Estimated Installed Cost	=	$ 6,000
Estimated Energy Cost Savings	=	$ 857
Simple Payback Period	=	7 years

HVAC ECRM #5.2

If the programmable thermostats are installed all at once, the additional 28 units would be approximately:

Estimated Installed Cost	=	$ 11,200
Estimated Energy Cost Savings	=	$ 1,600
Simple Payback Period	=	7 years

LIGHTING ECRM #1

There are approximately 900 T12 fixtures that we recommend be retrofitted with T8 lamps and electronic ballasts. The new components produce approximately 18% more light while consuming about 20% less energy.

Estimated Installed Cost	=	$ 45,000
Estimated Energy Cost Savings	=	$ 9,000
Simple Payback Period	=	5 years

LIGHTING ECRM #2

DISD has approximately 55 each 400-watt metal halide fixtures in the two Gymnasiums. We recommend replacing these lights with new 4 or 6-lamp T5HO high bay linear fluorescent fixtures over the bleachers and egress areas and new 6-lamp fixtures over the court area. These fixtures will allow the lights to be turned off during inactive periods of the day, saving as much as 4-6 hours of operation per day.

Estimated Installed Cost	=	$ 24,500
Estimated Energy Cost Savings	=	$ 6,125
Simple Payback Period	=	4 years

C. SUMMARY TABLE

If DISD was to implement all recommended M&O and ECRM projects (where M&O costs do not have an installation cost), the summary payback would be:

Estimated Installed Cost	=	$ 232,607
Estimated Energy Cost Savings	=	$ 33,793
Simple Payback Period	=	7 years

Should the district desire to implement the capital expense projects in stages and not all at once, we recommend the following implementation schedule:

1. Lighting ECRM #2	Taking advantage of the ability to turn off the gymnasium fixtures during inactive periods of the day will generate energy savings and eliminate unnecessary heat generated in the gym which has to be overcome by the HVAC system.
2. Lighting ECRM #1	Lighting is often one of the most economical projects a district may undertake. It is also a project mandated by Senate Bill 300. The cost savings generated by this project can be collected to fund additional projects.
3. HVAC ECRM #5	IP-Addressable Programmable Thermostats will provide a central control point and will allow the building manager to quickly set equipment to match occupancy schedules. The high install cost is why this item is placed low on the priority list.
4. HVAC ECRM #1-4	Replacing air conditioners will be the first priority if the current systems fail. However, as long as the existing units remain operational, the high initial cost of replacing units makes them a low priority item.

7.0 FINANCIAL EVALUATION

Financing of these projects may be provided using a variety of methods as Bond Programs, municipal leases, or state financing programs like the SECO LoanSTAR Program.

If the project was financed with in-house funds, the internal rate of return for the investment would be as follows:

Proposal:	Perform recommended ECRMs			
Assumptions:				
1. Equipment will last at least 15 years prior to next renovation				
2. No maintenance expenses for first five years (warranty period)				
3. $1000 maintenance expense next 5 years				
4. $2500 maintenance expense last 5 years				
5. Savings decreases 2% per year after year 5				
Cash Flow	**Project Cost**	**Project Savings**	**Maintenance Expense**	**Net Cash Flow**
Time 0	($232,607)		0	($232,607)
Year 1		$ 33,793	0	$33,793
Year 2		$ 33,793	0	$33,793
Year 3		$ 33,793	0	$33,793
Year 4		$ 33,793	0	$33,793
Year 5		$ 33,793	0	$33,793
Year 6		$ 33,117	($1,000)	$32,117
Year 7		$ 32,441	($1,000)	$31,441
Year 8		$ 31,765	($1,000)	$30,765
Year 9		$ 31,090	($1,000)	$30,090
Year 10		$ 30,414	($1,000)	$29,414
Year 11		$ 29,738	($2,500)	$27,238
Year 12		$ 29,062	($2,500)	$26,562
Year 13		$ 28,386	($2,500)	$25,886
Year 14		$ 27,710	($2,500)	$25,210
Year 15		$ 27,034	($2,500)	$24,534
			Internal Rate of Return	**10.50%**

More information regarding financial programs available to DISD can be found in:

APPENDIX I: SUMMARY OF FUNDING AND PROCUREMENT OPTIONS

APPENDICES

APPENDIX I - SUMMARY OF FUNDING AND PROCUREMENT OPTIONS

SUMMARY OF FUNDING OPTIONS FOR CAPITAL EXPENDITURE PROJECTS

Several options are available for funding retrofit measures which require capital expenditures.

LoanSTAR Program:

The Texas LoanSTAR program is administered by the State Energy Conservation Office (SECO). It is a revolving loan program available to all public school districts in the state as well as other institutional facilities. SECO loans money at 3% interest for the implementation of energy conservation measures which have a combined payback of eight years or less. The amount of money available varies, depending upon repayment schedules of other facilities with outstanding loans, and legislative actions. Check with Eddy Trevino of SECO (512-463-1876) for an up-to-date evaluation of prospects for obtaining a loan in the amounts desired.

TASB (Texas Association Of School Boards) Capital Acquisition Program:

TASB makes loans to school districts for acquiring personal property for "maintenance purposes". Energy conservation measures are eligible for these loans. The smallest loan TASB will make is $100,000. Financing is at 4.4% to 5.3%, depending upon length of the loan and the school district's bond rating. Loans are made over a three year, four year, seven year, or ten year period. The application process involves filling out a one page application form, and submitting the school district's most recent budget and audit. Contact Cheryl Kepp at TASB (512-467-0222) for further information.

Loans On Commercial Market:

Local lending institutions are another source for the funding of desired energy conservation measures. Interest rates obtainable may not be as attractive as that offered by the LoanSTAR or TASB programs, but advantages include "unlimited" funds available for loan, and local administration of the loan.

Leasing Corporations:

Leasing corporations have become increasingly interested in the energy efficiency market. The financing vehicle frequently used is the municipal lease. Structured like a simple loan, a municipal leasing agreement is usually a lease-purchase agreement. Ownership of the financed equipment passes to the district at the beginning of the lease, and the lessor retains a security interest in the purchase until the loan is paid off. A typical lease covers the total cost of the equipment and may include installation costs. At the end of the contract period a nominal amount, usually a dollar, is paid by the lessee for title to the equipment.

Bond Issue:

The may choose to have a bond election to provide funds for capital improvements. Because of its political nature, this funding method is entirely dependent upon the mood of the voters, and may require more time and effort to acquire the funds than the other alternatives.

SUMMARY OF PROCUREMENT OPTIONS FOR CAPITAL EXPENDITURE PROJECTS

State Purchasing:

The General Services Commission has competitively bid contracts for numerous items which are available for direct purchase by school districts. Contracts for this GSC service may be obtained from Sue Jager at (512) 475-2351.

Design/Bid/Build (Competitive Bidding):

Plans and specifications are prepared for specific projects and competitive bids are received from installation contractors. This traditional approach provides the district with more control over each aspect of the project, and task items required by the contractors are presented in detail.

Design/Build:

These contracts are usually structured with the engineer and contractor combined under the same contract to the owner. This type team approach was developed for fast-track projects, and to allow the contractor a position in the decision making process. The disadvantage to the district is that the engineer is not totally independent and cannot be completely focused upon the interest of the district. The district has less control over selection of equipment and quality control.

Purchasing Standardization Method:

This method will result in significant dollar savings if integrated into planned facility improvements. For larger purchases which extend over a period of time, standardized purchasing can produce lower cost per item expense, and can reduce immediate up-front expenditures. This approach includes traditional competitive bidding with pricing structured for present and future phased purchases.

Performance Contracting:

Through this arrangement, an energy service company (ESCO) using in-house or third party financing to implement comprehensive packages of energy saving retrofit projects. Usually a turnkey service, this method includes an initial assessment of energy savings potential, design of the identified projects, purchase and installation of the equipment, and overall project management. The ESCO guarantees that the cost savings generated will, at a minimum, cover the annual payment due over the term of the contract. The laws governing Performance Contracting for school districts are detailed in the Texas Education Code, Subchapter Z, Section 44.901. Senate Bill SB 3035, passed by the seventy-fifth Texas Legislature, amends some of these conditions. Performance Contracting is a highly competitive field, and interested districts may wish to contact Felix Lopez of State Energy Conservation Office, (SECO), at 512-463-1080 for assistance in preparing requests for proposals or requests for qualifications.

Solution Center

How to Finance Your Energy Program

Cost and financing issues are pivotal factors in determining which energy-efficiency measures will be included in your final energy management plan. Before examining financing options, you need to have a reasonably good idea of the measures that may be implemented. For this purpose, you will want to perform cost/benefit analyses on each candidate measure to identify those with the best investment potential. This document presents a brief introduction to cost/benefit methods and then suggests a variety of options for financing your program.

Selecting a Cost/Benefit Analysis Method

Cost/benefit analysis can determine if and when an improvement will pay for itself through energy savings and to help you set priorities among alternative improvement projects. Cost/benefit analysis may be either a simple payback analysis or the more sophisticated life cycle cost analysis. Since most electric utility rate schedules are based on both consumption and peak demand, your analyst should be skilled at assessing the effects of changes in both electricity use and demand on total cost savings, regardless of which type of analysis is used. Before beginning any cost/benefit analyses, you must first determine acceptable design alternatives that meet the heating, cooling, lighting, and control requirements of the building being evaluated. The criteria for determining whether a design alternative is "acceptable" includes reliability, safety, conformance with building codes, occupant comfort, noise levels, and space limitations. Since there will usually be a number of acceptable alternatives for any project, cost/benefit analysis allows you to select those that have the best savings potential.

Simple Payback Analysis

A highly simplified form of cost/benefit analysis is called simple payback. In this method, the total first cost of the improvement is divided by the first-year energy cost savings produced by the improvement. This method yields the number of years required for the improvement to pay for itself.

This kind of analysis assumes that the service life of the energy-efficiency measure will equal or exceed the simple payback time. Simple payback analysis provides a relatively easy way to examine the overall costs and savings potentials for a variety of project alternatives. However, it does not consider a number of factors that are difficult to predict, yet can have a significant impact on cost savings. These factors may be considered by performing a life-cycle cost (LCC) analysis.

Simple Payback

As an example of simple payback, consider the lighting retrofit of a 10,000-square-foot commercial office building. Relamping with T-8 lamps and electronic, high-efficiency ballasts may cost around $13,300 ($50 each for 266 fixtures) and produce annual savings of around $4,800 per year (80,000 kWh at $0.06/kWh). This simple payback for this improvement would be

$$\frac{\$13{,}300}{\$4{,}800/\text{year}} = 2.8 \text{ years}$$

That is, the improvement would pay for itself in 2.8 years, a 36% simple return on the investment (1/2.8 = 0.36).

Life-Cycle Cost Analysis

Life-cycle cost analysis (LCC) considers the total cost of a system, device, building, or other capital equipment or facility over its anticipated useful life. LCC analysis allows a comprehensive assessment of all anticipated costs associated with a design alternative. Factors commonly considered in LCC analyses include initial capital cost, operating costs, maintenance costs, financing costs, the expected useful life of equipment, and its future salvage values. The result of the LCC analysis is generally expressed as the value of initial and future costs in today's dollars, as reflected by an appropriate discount rate.

The first step in this type of analysis is to establish the general study parameters for the

continued

Financing Mechanisms

Capital for energy-efficiency improvements is available from a variety of public and private sources, and can be accessed through a wide and flexible range of financing instruments. While variations may occur, there are five general financing mechanisms available today for investing in energy-efficiency:

- **Internal Funds.** Energy-efficiency improvements are financed by direct allocations from an organization's own internal capital or operating budget.
- **Debt Financing.** Energy-efficiency improvements are financed with capital borrowed directly by an organization from private lenders.
- **Lease or Lease-Purchase Agreements.** Energy-efficient equipment is acquired through an operating or financing lease with no up-front costs, and payments are made over five to ten years.
- **Energy Performance Contracts.** Energy-efficiency measures are financed, installed, and maintained by a third party, which guarantees savings and payments based on those savings.
- **Utility Incentives.** Rebates, grants, or other financial assistance are offered by an energy utility for the design and purchase of certain energy-efficient systems and equipment.

These financing mechanisms are not mutually exclusive (i.e., an organization may use several of them in various combinations). The most appropriate set of options will depend on the size and complexity of a project, internal capital constraints, in-house expertise, and other factors. Each of these mechanisms is discussed briefly below, followed by some additional funding sources and considerations.

Internal Funds

The most direct way for the owner of a building or facility to pay for energy-efficiency improvements is to allocate funds from the internal capital or operating budget. Financing internally has two clear advantages over the other options discussed below – it retains internally all savings from increased energy-efficiency, and it is usually the simplest option administratively. The resulting savings may be used to decrease overall operating expenses in future years or retained within a revolving fund used to support additional efficiency investments. Many public and private organizations regularly finance some or all of their energy-efficiency improvements from internal funds.

In some instances, competition from alternative capital investment projects and the requirement for relatively high rates of return may limit the use of internal funds for major, standalone investments in energy-efficiency. In most organizations, for example, the highest priorities for internal funds are business or service expansion, critical health and safety needs, or productivity enhancements. In both the public and private sectors, capital that remains available after these priorities have been met will usually be invested in those areas that offer the highest rates of return. The criteria for such investments commonly include an annual return of 20 percent to 30 percent or a simple payback of three years or less.

Since comprehensive energy-efficiency improvements commonly have simple paybacks of five to six years, or about a 12 percent annual rate of return, internal funds often cannot serve as the sole source of financing for such improvements. Alternatively, however, internal funding can be used well and profitably to achieve more competitive rates of return when combined with one or more of the other options discussed below.

Debt Financing

Direct borrowing of capital from private lenders can be an attractive alternative to using internal funds for energy-efficiency investments. Financing costs can be repaid by the savings that accrue from increased energy-efficiency. Additionally, municipal governments can often issue bonds or other long-term debt instruments at substantially lower interest rates than can private corporate entities. As in the case of internal funding, all savings from efficiency improvements (less only the cost of financing) are retained internally.

Debt financing is administratively more complex than internal funding, and financing costs will vary according to the credit rating of the borrower. This approach may also be restricted by formal debt ceilings imposed by municipal

policy, accounting standards, and/or Federal or state legislation.

In general, debt financing should be considered for larger retrofit projects that involve multiple buildings or facilities. When considering debt financing, organizations should weigh the cost and complexity of this type of financing against the size and risk of the proposed projects.

Lease and Lease-Purchase Agreements

Leasing and lease-purchase agreements provide a means to reduce or avoid the high, up-front capital costs of new, energy-efficient equipment. These agreements may be offered by commercial leasing corporations, management and financing companies, banks, investment brokers, or equipment manufacturers. As with direct borrowing, the lease should be designed so that the energy savings are sufficient to pay for the financing charges. While the time period of a lease can vary significantly, leases in which the lessee assumes ownership of the equipment generally range from five to ten years. There are several different types of leasing agreements, as shown in the sidebar. Specific lease agreements will vary according to lessor policies, the complexity of the project, whether or not engineering and design services are included, and other factors.

Energy Performance Contracts

Energy performance contracts are generally financing or operating leases provided by an Energy Service Company (ESCo) or equipment manufacturer. The distinguishing features of these contracts are that they provide a guarantee on energy savings from the installed retrofit measures, and they provide payments to the ESCo from the savings, freeing the customer from any need of up-front payments to the ESCo. The contract period can range from five to 15 years, and the customer is required to have a certain minimum level of capital investment (generally $200,000 or more) before a contract will be considered.

Under an energy performance contract, the ESCo provides a service package that typically includes the design and engineering, financing, installation, and maintenance of retrofit measures to improve energy-efficiency. The scope of these improvements can range from measures that affect a single part of a building's energy-using

Types of Leasing Agreements

Operating Leases are usually for a short term, occasionally for periods of less than one year. At the end of the lease period, the lessee may either renegotiate the lease, buy the equipment for its fair market value, or acquire other equipment. The lessor is considered the owner of the leased equipment and can claim tax benefits for its depreciation.

Financing Leases are agreements in which the lessee essentially pays for the equipment in monthly installments. Although payments are generally higher than for an operating lease, the lessee may purchase the equipment at the end of the lease for a nominal amount (commonly $1). The lessee is considered the owner of the equipment and may claim certain tax benefits for its depreciation.

Municipal Leases are available only to tax-exempt entities such as school districts or municipalities. Under this type of lease, the lessor does not have to pay taxes on the interest portion of the lessee's payments, and can therefore offer an interest rate that is lower than the rate for usual financing leases. Because of restrictions against multi-year liabilities, the municipality specifies in the contract that the lease will be renewed year by year. This places a higher risk on the lessor, who must be prepared for the possibility that funding for the lease may not be appropriated. The lessor may therefore charge an interest rate that is as much as 2 percent above the tax-exempt bond rate, but still lower than rates for regular financing leases. Municipal leases nonetheless are generally faster and more flexible financing tools than tax-exempt bonds.

Guaranteed Savings Leases are the same as financing or operating leases but with the addition of a guaranteed savings clause. Under this type of lease, the lessee is guaranteed that the annual payments for leasing the energy-efficiency improvements will not exceed the energy savings generated by them. The owner pays the contractor a fixed payment per month. If actual energy savings are less than the fixed payment, however, the owner pays only the small amount saved and receives a credit for the difference.

How to Finance Your Energy Program *continued*

Bulk Purchasing. Large organizations generally have purchasing or materials procurement departments that often buy standard materials in bulk or receive purchasing discounts because of the volume of their purchases. Such organizations can help reduce the costs of energy-efficiency renovations if their bulk purchasing capabilities can be used to obtain discounts on the price of materials (e.g., lamps and ballasts). While some locales may have restrictions that limit the use of this option, some type of bulk purchasing can usually be negotiated to satisfy all parties involved.

Project Transaction Costs. Certain fixed costs are associated with analyzing and installing energy measures in each building included in a retrofit program. Each additional building, for example, could represent additional negotiations and transactions with building owners, building analysts, energy auditors, equipment installers, commissioning agents, and other contractors. Similarly, each additional building will add to the effort involved in initial data analysis as well as in tracking energy performance after the retrofit. For these reasons, it is often possible to achieve target energy savings at lower cost by focusing only on those buildings that are the largest energy users. One disadvantage with larger buildings is that the energy systems in the building can be more difficult to understand, but overall, focusing on the largest energy users is often the most efficient use of your financial resources.

Direct Value-Added Benefits. The primary value of retrofits to buildings and facilities lies in the reduction of operating costs through improved energy-efficiency and maintenance savings. Nevertheless, the retrofit may also directly help address a variety of related concerns, and these benefits (and avoided costs) should be considered in assessing the true value of an investment. A few examples of these benefits include the improvement of indoor air quality in office buildings and schools; easier disposal of toxic or hazardous materials found in energy-using equipment; and assistance in meeting increasingly stringent state or Federal mandates for water conservation. Effective energy management controls for buildings can also provide a strong electronic infrastructure for improving security systems and telecommunications.

Economic Development Benefits. In addition to direct savings on operating costs and the added-value benefits mentioned above, investments in energy-efficiency can also support a community's economic development and employment opportunities. Labor will typically constitute about 60 percent of a total energy investment, and about 50 percent of equipment can be expected to be purchased from local equipment suppliers; as a result, about 85 percent of the investment is retained within the local economy. Additionally, funds retained in urban areas will generally be re-spent in the local economy. The Department of Commerce estimates that each dollar retained in an urban area will be re-spent three times. This multiplier effect results in a three-fold increase in the economic benefits of funds invested in energy-efficiency, without even considering the savings from lower overall fuel costs.

For more information contact the Rebuild America Clearinghouse at 252-459-4664 or visit www.rebuild.gov

Rebuild America
U.S. Dept. of Energy

APPENDIX II - ELECTRIC UTILITY RATE SCHEDULES

Transmission and Distribution – Oncor

6.1.1.1.3 Secondary Service Greater Than 10 kW

AVAILABILITY

This schedule is applicable to Delivery Service at secondary voltage with demand greater than 10 kW when such Delivery Service is to one Point of Delivery and measured through one Meter.

TYPE OF SERVICE

Delivery Service will be single or three-phase, 60 hertz, at a standard secondary voltage. Delivery Service will be metered using Company's standard meter provided for this type of Delivery Service, unless Retail Customer is eligible for and chooses a competitive meter provider. Any meter other than the standard meter provided by Company will be provided at an additional charge. Where Delivery Service of the type desired is not available at the Point of Delivery, additional charges and special contract arrangements may be required prior to Delivery Service being furnished, pursuant to Section 6.1.2.2 of this Tariff.

MONTHLY RATE

I. Transmission and Distribution Charges:		
Customer Charge	$3.50	per Retail Customer
Metering Charge	$18.41	per Retail Customer
Transmission System Charge		
Non-IDR Metered	$1.48	per NCP kW
IDR Metered	$1.99	per 4CP kW
Distribution System Charge	$3.97	per Distribution System billing kW
II. System Benefit Fund:	$0.000655	per kWh, See Rider SBF
III. Transition Charge:	See Riders TC1 and TC2	per Distribution System billing kW
IV. Nuclear Decommissioning Charge:	$0.044	per Distribution System billing kW, See Rider NDC
V. Transmission Cost Recovery Factor:	See Rider TCRF	
VI. Energy Efficiency Cost Recovery Factor:	See Rider EECRF	
VII. Competitive Meter Credit:	See Rider CMC	
VIII. Advanced Metering Cost Recovery Factor:	See Rider AMCRF	
Other Charges or Credits		
IX. Rate Case Expense Surcharge:	See Rider RCE	per Distribution System billing kW

COMPANY SPECIFIC APPLICATIONS

At Company's option, locations where the electrical installation has multiple connections to Company's conductors, due to Company facilities limitations or design criteria, may be considered one Point of Delivery for billing purposes.

DETERMINATION OF BILLING DEMAND FOR TRANSMISSION SYSTEM CHARGES

DETERMINATION OF NCP kW

The NCP kW applicable under the Monthly Rate section shall be the kW supplied during the 15 minute period of maximum use during the billing month.

DETERMINATION OF 4 CP kW

The 4 CP kW applicable under the Monthly Rate section shall be the average of the Retail Customer's integrated 15 minute demands at the time of the monthly ERCOT system 15 minute peak demand for the months of June, July, August and September of the previous calendar year. The Retail Customer's average 4CP demand will be updated effective on January 1 of each calendar year and remain fixed throughout the calendar year. Retail Customers without previous history on which to determine their 4 CP kW will be billed at the applicable NCP rate under the "Transmission System Charge" using the Retail Customer's NCP kW.

DETERMINATION OF BILLING DEMAND FOR DISTRIBUTION SYSTEM CHARGES

DETERMINATION OF BILLING kW

For loads whose maximum NCP kW established in the 11 months preceding the current billing month is less than or equal to 20 kW, the Billing kW applicable to the Distribution System Charge shall be the NCP kW for the current billing month.

For all other loads, the Billing kW applicable to the Distribution System Charge shall be the higher of the NCP kW for the current billing month or 80% of the highest monthly NCP kW established in the 11 months preceding the current billing month (80% ratchet).

The 80% ratchet shall not apply to Retail Seasonal Agricultural Customers.

NOTICE

This rate schedule is subject to the Company's Tariff and Applicable Legal Authorities.

APPENDIX III - PRELIMINARY ENERGY ASSESSMENT SERVICE AGREEMENT

State Energy Conservation Office

Local Governments and Municipalities

Preliminary Energy Assessment Service Agreement

Investing in our communities through improved energy efficiency in public buildings is a win-win opportunity for our communities and the state. Energy-efficient buildings reduce energy costs, increase available capital, spur economic growth, and improve working and living environments. The Preliminary Energy Assessment Service provides a viable strategy to achieve these goals.

Description of the Service

The State Energy Conservation Office (SECO) will analyze electric, gas and other utility data and work with DAWSON ISD, hereinafter referred to as Partner, to identify energy cost-savings potential. To achieve this potential, SECO and Partner have agreed to work together to complete an energy assessment of mutually selected facilities.

SECO agrees to provide this service at no cost to the Partner with the understanding that the Partner is ready and willing to consider implementing the energy savings recommendations.

Principles of the Agreement

Specific responsibilities of the Partner and SECO in this agreement are listed below.

- ✓ Partner will select a contact person to work with SECO and its designated contractor to establish an Energy Policy and set realistic energy efficiency goals.
- ✓ SECO's contractor will go on site to provide walk through assessments of selected facilities. SECO will provide a report which identifies no cost/low cost recommendations, Capital Retrofit Projects, and potential sources of funding. Portions of this report may be posted on the SECO website.
- ✓ Partner will schedule a time for SECO's contractor to make a presentation of the assessment findings key decision makers.

Acceptance of Agreement

This agreement should be signed by your organization's chief executive officer or other upper management staff.

no previous PEA on record

Signature: Arvel Rotan

Date: 4/21/10

Name (Mr./Ms./Dr.) Arvel Rotan

Title: Superintendent

Organization: DAWSON ISD

Phone: 254-578-1031

Street Address: 189 N. School Ave

Fax: 254-578-1721

Mailing Address: DAWSON, TX 76639

E-Mail: arvel.rotan@dawsonisd.net

County: Navarro / ESA

Contact Information:

Name (Mr./Ms./Dr.): ~~Tim House~~ Leaving District

Title: ~~Project Manager~~

Phone: 254-578-1031

Fax: 254-578-1721

E-Mail: ~~tim.house@dawsonisd.net~~

County: Navarro

Please sign and mail or fax to: Stephen Ross, Local Governments and Municipalities Program Administrator, State Energy Conservation Office, 111 E. 17th Street, Austin, Texas 78774. Phone: 512-463-1770. Fax 512-475-2669.

New Contact: Kelly Miller, Budget Director phone: same
email: kelly.miller@dawsonisd.net

Maintenance Dir: Lynn Hill

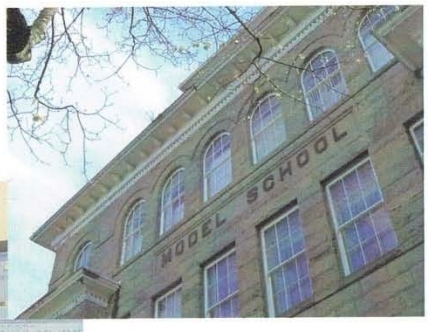
APPENDIX IV - TEXAS ENERGY MANAGERS ASSOCIATION (TEMA)

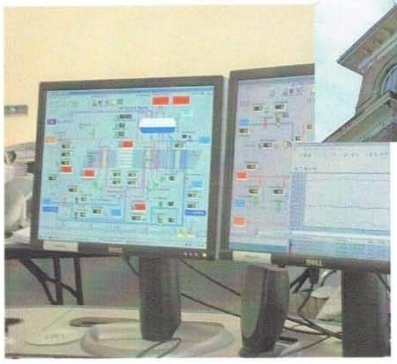
ANNOUNCING!

TEMA

TEXAS ENERGY MANAGERS ASSOCIATION

A PROFESSIONAL ASSOCIATION FOR THOSE RESPONSIBLE FOR ENERGY MANAGEMENT IN TEXAS PUBLIC FACILITIES





- Networking
- Sharing Knowledge and Resources
- Training Workshops
- Regional Meetings
- Annual Conference
- Certification
- Legislative Updates
- Money-Saving Opportunities

WWW.TEXASEMA.ORG

Check the website for Membership and Association information.

SECO
State Energy Conservation Office

APPENDIX V - UTILITY CHARTS ON CD