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Texas Comptroller of Public Accounts

Facility Preliminary Energy Assessments and Recommendations

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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 August 2011, **SECO** received a request for technical assistance from Mr. Casarez, Administrator for Operations at **Mathis 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 **Mathis ISD ISD,** (hereafter known as MISD) 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 *Mr. Casarez*, a walk-through energy analysis was conducted throughout the campus. 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 7.0 of this report.

We estimate that as much as **$31,820** may be saved annually if all recommended projects are implemented. The estimated installed cost of these projects should total approximately **$110,940**, yielding an average simple payback of **3 ½** years.

Table 1: Summary of Recommended Energy Cost Reduction Measures (ECRMs)

SUMMARY:	DESCRIPTION OF RECOMMENDATION	LOCATION OF ECRM	IMPLEMENTATION COST	ESTIMATED SAVINGS	SIMPLE PAYBACK
Controls ECRM #1	Install IP-addressable Thermostats	ES, INT, HS	$110,400	$31,550	3 ½ years
Controls ECRM #2	Install Vending Machine Controls	District Wide	$540	$270	2 years
TOTAL PROJECTS			**$ 110,940**	**$31,820**	**3 ½ years**

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 Internal Rate of Return (IRR), for this retrofit program has been calculated and shown in Section 8.0 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 MISD. 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.

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A Terracon Company

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 MISD, ESA returned to the facilities to perform the following tasks:

1. Designing and monitoring customized procedures to control the run times of energy consuming systems.
2. Analyze 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. Developing and drafting an overall Energy Management Policy.
6. Assist in the 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 MISD ENERGY PERFORMANCE INDICATORS:

CAMPUS	ENERGY UTILIZATION INDEX (EUI) BTUs/sf-year	COMPARISON TO DISTRICT AVERAGE	ENERGY COST INDEX (ECI) $/sf-year	COMPARISON TO DISTRICT AVERAGE
High School	57,803	18%	$1.99	26%
Junior High	59,523	22%	$1.74	10%
Intermediate School	47,680	-2%	$1.42	-10%
Elementary School	30,441	-38%	$1.16	-26%
Average Value:	48,862		$1.58	

Mathis ISD purchases electricity from Reliant Energy. The transmission and distribution utility is AEP Energy. The energy history spreadsheets are shown on the next few pages.

The rate schedule analysis for the district is shown in Section 4.0.

A copy of the rate schedule is included in Appendix I

OWNER: Mathis ISD **BUILDING:** High School

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMPTION	METERED	CHARGED	COST OF	TOTAL ALL ELECTRICAL	CONSUMPTION	COSTS
MONTH	YEAR	KWH	KW/KVA	KW/KVA	DEMAND	COSTS $	MCF	$
JANUARY	2011	131,610	752	752	7,673	17,107	76	529
FEBRUARY	2011	115,616	661	661	7,211	15,453	90	605
MARCH	2011	126,041	795	795	8,540	17,524	32	225
APRIL	2011	136,465	929	929	9,865	19,595	39	274
MAY	2011	107,938	714	714	7,626	15,322	32	232
JUNE	2011	156,356	4,814	4,814	7,333	18,545	19	143
JULY	2011	176,885	801	801	8,647	21,299	13	109
AUGUST	2010	165,203	635	635	8,128	19,957	22	174
SEPTEMBER	2010	143,499	641	641	7,723	17,954	49	365
OCTOBER	2010	207,191	792	792	9,403	24,174	37	280
NOVEMBER	2010	206,059	874	874	9,367	24,062	48	362
DECEMBER	2010	167,359	850	850	8,514	20,447	66	451
TOTAL		1,840,222	13,258	13,258	$100,030	$231,439	523	$3,749

Annual Total Energy Cost = $235,188 Per Year

Total KWH x 0.003413 = 6,280.68 x 106
Total MCF x 1.03 = 538.69 x 106
Total Other x ____ x 106
Total Site BTU's/yr 6,819.37 x 106

Floor area: 117,976 s.f.

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) 57,803 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) $1.99 $/s.f. yr

Account Number

1210	5048
8020	1041
3302	1430
7310	5470
4180	5651
9530	1322
9961	

Gas Utility	Meter #
Centerpoint	272-8

OWNER: Mathis ISD **BUILDING:** Junior High

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMPTION	METERED	CHARGED	COST OF	TOTAL ALL ELECTRICAL	CONSUMPTION	COSTS
MONTH	YEAR	KWH	KW/KVA	KW/KVA	DEMAND	COSTS $	MCF	$
JANUARY	2011	100,992	250	250	2,198	9,399	11	91
FEBRUARY	2011	101,376	304	304	2,629	9,858	8	87
MARCH	2011	95,520	374	374	3,625	10,436	7	77
APRIL	2011	89,664	443	443	4,620	11,014	8	87
MAY	2011	70,848	200	200	2,986	8,038	8	81
JUNE	2011	101,568	239	239	2,916	10,159	7	75
JULY	2011	93,888	228	228	2,877	9,591	7	72
AUGUST	2010	50,112	180	180	2,185	5,758	7	75
SEPTEMBER	2010	50,112	180	180	2,185	5,758	8	84
OCTOBER	2010	142,464	270	270	2,395	12,554	8	83
NOVEMBER	2010	105,216	271	271	2,382	9,885	8	87
DECEMBER	2010	88,512	268	268	2,334	8,646	15	135
TOTAL		1,090,272	3,207	3,207	$33,332	$111,096	102	$1,034

Annual Total Energy Cost = $112,130 Per Year

Total KWH x 0.003413 = 3,721.10 x 106
Total MCF x 1.03 = 105.45 x 106
Total Other x ____ x 106
Total Site BTU's/yr 3,826.54 x 106

Floor area: 64,287 s.f.

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) 59,523 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) $1.74 $/s.f. yr

Account Number
3665

Gas Utility	Meter #
Centerpoint	229-9

OWNER: Mathis ISD **BUILDING:** Intermediate School

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMPTION	METERED	CHARGED	COST OF	TOTAL ALL ELECTRICAL	CONSUMPTION	COSTS
MONTH	YEAR	KWH	KW/KVA	KW/KVA	DEMAND	COSTS $	MCF	$
JANUARY	2011	29,376	101	101	1,222	3,317	49	338
FEBRUARY	2011	15,168	88	88	1,182	2,264	55	379
MARCH	2011	20,544	95.5	96	1,356	2,821	7	59
APRIL	2011	25,920	103	103	1,530	3,378	2	25
MAY	2011	25,344	106	106	1,309	3,117	2	28
JUNE	2011	34,560	168	168	1,472	3,937	2	29
JULY	2011	37,056	138	138	1,304	3,955	2	28
AUGUST	2010	50,688	188	188	1,663	5,278	1	16
SEPTEMBER	2010	46,272	116	116	1,479	4,778	1	15
OCTOBER	2010	48,768	137	137	1,294	4,771	1	16
NOVEMBER	2010	54,336	132	132	1,297	5,171	1	17
DECEMBER	2010	33,792	116	116	1,251	3,660	30	212
TOTAL		421,824	1,489	1,489	$16,359	$46,447	153	$1,162

Annual Total Energy Cost = $47,609 Per Year

Total KWH x 0.003413 = 1,439.69 x 106
Total MCF x 1.03 = 157.59 x 106
Total Other x ____ x 106
Total Site BTU's/yr 1,597.28 x 106

Floor area: 33,500 s.f.

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) = 47,680 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) = $1.42 $/s.f. yr

Account Number
6520

Gas Utility Centerpoint
Meter # 228-1

OWNER: Mathis ISD **BUILDING:** Elementary School

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMPTION	METERED	CHARGED	COST OF	TOTAL ALL ELECTRICAL	CONSUMPTION	COSTS
MONTH	YEAR	KWH	KW/KVA	KW/KVA	DEMAND	COSTS $	MCF	$
JANUARY	2011	30,807	207	207	2,073	4,270	3	32
FEBRUARY	2011	33,335	181	181	2,096	4,474	1	33
MARCH	2011	34,749	229	229	2,483	4,961	2	23
APRIL	2011	36,162	276	276	2,869	5,448	2	26
MAY	2011	32,717	207	207	2,209	4,541	2	25
JUNE	2011	46,436	257	257	2,628	5,939	1	19
JULY	2011	50,195	250	250	2,662	6,252	1	17
AUGUST	2010	42,964	230	230	2,426	5,489	1	16
SEPTEMBER	2010	25,882	166	166	1,629	3,473	2	24
OCTOBER	2010	50,310	250	250	2,670	6,258	2	25
NOVEMBER	2010	55,645	238	238	2,796	6,766	2	27
DECEMBER	2010	42,787	218	218	2,416	5,468	2	26
TOTAL		481,989	2,709	2,709	$28,957	$63,339	21	$293

Annual Total Energy Cost = $63,632 Per Year

Total KWH x 0.003413 = 1,645.03 x 106
Total MCF x 1.03 = 21.63 x 106
Total Other x ____ x 106
Total Site BTU's/yr 1,666.66 x 106

Floor area: 54,751 s.f.

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) = 30,441 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) = $1.16 $/s.f. yr

Account Number
6002
9961
5260
9890

Gas Utility Centerpoint
Meter # 262-9

*Red

4.0 RATE SCHEDULE ANALYSIS:

ELECTRICITY PROVIDER:

RETAIL ELECTRIC PROVIDER: Reliant Energy Contract price: $0.0713 per kWh

TRANSMISSION AND DISTRIBUTION UTILITY: AEP

Electric Rate: Secondary Service > 10 kVA

I.	TRANSMISSION AND DISTRIBUTION CHARGES:		
	Customer Charge	=	$3.26 per Non-IDR meter
	Customer Charge	=	$26.52 per IDR meter
	Metering Charge	=	$15.81 per Customer/Month
	Transmission System Charge (Non-IDR)	=	$1.286 per NCP kW
	Transmission System Charge (IDR)	=	$1.793 per 4CP kW
	Distribution System Charge	=	$3.314 per NCP kW
II.	SYSTEM BENEFIT FUND	=	$0.000662 per kWh
III.	TRANSITION CHARGES		
	Transition Charge 1 -Consumption	=	$0.00848/kWh
	Transition Charge 1 –Demand	=	$1.040549/kW
	Transition Charge 2 -Consumption	=	$0.015861/kWh
	Transition Charge 2 –Demand	=	$2.284916/kW
IV.	NUCLEAR DECOMMISSIONING CHARGE	=	$0.037224 per Billing kW
V.	TRANSMISSION COST RECOVERY FACTOR (IDR)	=	$0.503963/4CP kW
VI.	TRANSMISSION COST RECOVERY FACTOR (Non-IDR)	=	$0.507556/kW
VII.	RIDER RATE CASE SURCHARGE #1	=	$.000047/kWh
VIII.	RIDER RATE CASE SURCHARGE #2	=	$.000065/kWh
IX.	COMPETITIVE METER CREDIT	=	$-2.17 per Month

Average Savings for consumption = $0.0713/kWh + $0.000662/kWh + $0.00848/kWh + $0.015861/kWh + $0.000047/kWh + $0.000065/kWh = <u>$0.096415/kWh</u>

Average Savings for demand **Non-IDR meter** = $1.286 + $3.314 +$1.0405 + $2.284916 + $0.037224 + $0.507556 = <u>$ 8.47/kW</u>

Average Savings for demand **IDR meter** = $1.793 + $3.314 +$1.0405 + $2.284916 + $0.037224 + $0.503963 = <u>$ 8.97/kW</u>

NATURAL GAS PROVIDER:

The rate schedule for Natural gas is unavailable, but we have calculated the average cost per MCF of purchased natural gas in the district by analyzing the utility histories for the schools surveyed in this report.

Total cost for natural gas at the eight facilities in the analyzed billing cycle: $6,238

Total quantity purchased during the analyzed billing cycle: 799 MCF

Average cost per MCF = Cost of natural gas / quantity purchased = $6,238 / 799 MCF

Average cost per MCF = $7.80

5.0 CAMPUS DESCRIPTIONS:

Mathis ISD ISD consists of 4 educational campuses (1 High School, 1 Middle Schools, 1 Intermediate School, 1 Elementary School) and one Administration building. This energy survey included a walkthrough at each MISD campus.

Table 2: School Facilities Analyzed For This Report

Facility	Approximate Year of Construction and Additions	Approximate Square Footage	Basic HVAC Cool/Heat	Basic HVAC Air Distribution	Basic Lighting System Description	Basic Control System Description
Mathis HS	1955,1964,1974,2001	117,976	Split Systems and Window Units	SZAHU	T8 with few T12	Programmable Thermostats
Mathis MS	1928,1968,1983	64,287	Package RTU's	RTU's	T8	Alerton Controls
Mathis Intermediate	1954,1976,1994	33,500	Split Systems and Window Units	SZAHU	T8	Conventional Thermostats
Mathis ES	1952,1984,1994	44,751	Split Systems and Window Units	SZAHU	T8	Conventional Thermostats
Administration Building	1995	6161	Split Systems	SZAHU	T8	Conventional Thermostats

Note: SZAHU = Single-Zone Air Handling Unit RTU = Rooftop Unit

6.0 ENERGY RECOMMENDATIONS:

Controls ECRM 1: INSTALL IP-ADDRESSABLE THERMOSTATS

It was noted during the survey that the HVAC systems at the Elementary, Intermediate, and High School are currently controlled by either conventional or programmable thermostats. *We recommend installing IP-addressable programmable thermostats at each existing thermostat location*. These devices will allow the district personnel with appropriate password credentials to monitor and program these units at any district network computer and will limit operation of the HVAC equipment to scheduled occupancy hours.

The below cost estimate is for a single IP-addressable programmable thermostat unit only. The district stated that for IP-addressable thermostats to be installed at the Elementary and Intermediate campuses, the network would need to be extended to each thermostat location. Please include an additional $200 into the cost estimate to account for the price of extending the network to each IP-addressable thermostat unit at these two campuses.

Estimated Cost: $500 Estimated Savings: $250 Estimated Payback: 2 1/2 Years

Below is the approximate cost estimate to install IP-addressable thermostats at the Elementary School, High School, and Intermediate campus. This cost estimate was created based on the possible number of thermostats we calculated after examining the fire escape plans for each campus, given to us by the district. This number is based on the assumption that one thermostat unit will control both window units at a typical classroom conditioned by two window units, and one thermostat unit for each room conditioned by a split system. The cost estimate listed below is for approximately 180 IP-addressable thermostat units. This cost estimate also includes the additional $200 per unit needed to extend the network to each thermostat location at the Elementary and Intermediate campuses.

Estimated Cost: $110,400 Estimated Savings: $31,550 Estimated Payback: 3 1/2 Years

It was also noted that the new Middle School is equipped with DDC controls. *We recommend the district continue to install new DDC control systems on all future MISD building construction projects.*

Controls ECRM 2: INSTALL VENDING MACHINE CONTROLS

Vending machine controls can be installed to control existing advertising lighting and compressors that refrigerate food or drink. Using a motion sensor mounted on top of the machine, the vending machines will allow lights to operate whenever it determines occupants are in the area and cycles the compressor on and off to maintain food or beverages at a maximum programmed temperature when it determines there is no activity in the area. *We recommend MISD install vending machine controls on all vending machines.* For the 3 vending machines we identified during the survey, our calculated cost and energy savings for this project is displayed below.

Estimated Cost: $540 Estimated Savings: $270 Estimated Payback: 2 Years

7.0 MAINTENANCE AND OPERATION RECOMMENDATIONS

HVAC

- Relocate return air grill away from exterior doors at Admin Building lobby area

Lighting

- Ensure exterior lights are off during the day
- Keep unnecessary lights off during the day
- De-lamp all 3-lamp corridor fixtures at Admin Building
- Retrofit T12 lighting at trophy case

Building Envelope

- Replace weatherstripping
- Ensure doors close completely and securely

Maintenance and Operation procedures 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 always less than one year. The difficulties with payback calculation 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 weatherstripping so that exact air losses may be determined, is time and cost prohibitive when the benefits of renovating door and weather weatherstripping are well documented and universally accepted.

HVAC M&O #1

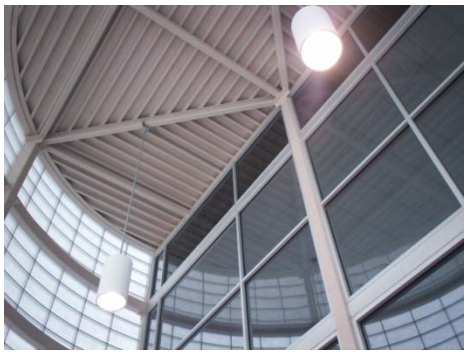
During our survey we noticed the return air grill at the Admin Building entrance lobby area is directly above the exterior doors. This creates a suction of unconditioned outside air, dust, and other outdoor contaminants directly into the return air duct that leads to the unit. *We recommend relocating this grille to the corner of the lobby area next to the Finance Office.*

Lighting M&O #1

Throughout the district we noticed multiple exterior lights remaining on during the day. Depending on how the lights are controlled, this condition can be attributed to an error in the time-clock system settings or a photocell that is dirty or damaged. *We recommend MISD make the necessary provisions to ensure all exterior lights are turning off during the day.*

Lighting M&O #2

It was noted that there were lights on at several corridor locations, unoccupied spaces, and decorative architectural fixtures that are not needed in order to adequately light the given space during the daytime. Training district personnel to be conscientious about which lights they are turning on, turning lights off when they leave, and recognizing lights that are not needed, is a cost effective solution that will yield immediate energy savings. *We recommend MISD be persistent in training all district personnel to be conscientious about lighting use and look for any opportunities to save energy by keeping unnecessary lights turned off.*



Lighting M&O #3

At the Admin Building, we noticed corridor lighting fixtures utilizing 3-lamps per fixture. *We recommend MISD de-lamp each 3-lamp fixture down to 2-lamps per fixture at this corridor*. The 2-lamps per fixture will produce adequate lighting for this space and provide instant energy savings.

Lighting M&O #4

It was noted that the High School is still utilizing T12 lamps and magnetic ballasts in the trophy display case. Due to the inefficiencies of T12 lighting, along with the unavailability of replacement parts once production has ended, w*e recommend the district retrofit these fixtures with T8 lamps and electronic ballasts*. The payback period for contracting out a standard T12 to T8 retrofit is around 6 years. Because MISD can do these few fixtures in house, we expect a full payback would be achieved much sooner.

Building Envelope M&O #1

It was noted that the weatherstripping at many of the exterior doors throughout the district was damaged or missing (see picture to the right). This allows the conditioned air to escape the building and contaminants to enter. *We recommend the district inspect all exterior door weatherstripping and repair or replace as needed.*

Building Envelope M&O #2

At the Event Center we noted some exterior doors that were not closing completely. This allows unconditioned air and outdoor contaminants to enter the building through the gap. *We recommend the district repair any exterior doors that are not closing securely.*

8.0 FINANCIAL EVALUATION

Financing of these projects may be provided using a variety of methods such 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. $2,000 maintenance expense next 5 years				
4. $4,000 maintenance expense next 5 years				
5. Savings decreases 5% per year after year 5				
Cash Flow	**Project Cost**	**Project Savings**	**Maintenance Expense**	**Net Cash Flow**
Time 0	($110,940)		0	($110,940)
Year 1		$ 31,820.00	0	$31,820
Year 2		$ 31,820.00	0	$31,820
Year 3		$ 31,820.00	0	$31,820
Year 4		$ 31,820.00	0	$31,820
Year 5		$ 31,820.00	0	$31,820
Year 6		$ 30,229.00	($2,000)	$28,229
Year 7		$ 28,638.00	($2,000)	$26,638
Year 8		$ 27,047.00	($2,000)	$25,047
Year 9		$ 25,456.00	($2,000)	$23,456
Year 10		$ 23,865.00	($2,000)	$21,865
Year 11		$ 22,274.00	($4,000)	$18,274
Year 12		$ 20,683.00	($4,000)	$16,683
Year 13		$ 19,092.00	($4,000)	$15,092
Year 14		$ 17,501.00	($4,000)	$13,501
Year 15		$ 15,910.00	($4,000)	$11,910
			Internal Rate of Return	**25.54%**

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

APPENDIX I: SUMMARY OF FUNDING AND PROCUREMENT OPTIONS

9.0 GENERAL COMMENTS

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted engineering practices. All estimations provided in this report were based upon information provided to ESA by the District and their respective utility providers. While cost saving estimates have been provided, they are not intended to be considered a guarantee of cost savings. No guarantees or warranties, expressed or implied, are intended or made. Changes in energy usage or utility pricing from those provided will impact the overall calculations of estimated savings and could result in different or longer payback periods.

APPENDICES

APPENDIX I - SUMMARY OF FUNDING AND PROCUREMENT OPTIONS FOR CAPITAL EXPENDITURE PROJECTS

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 Board 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 Eddy Trevino of State Energy Conservation Office, (SECO), at 512-463-1896 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 SCHEDULE

PUBLIC UTILITY COMMISSION OF TEXAS
APPROVED
DEC 23 '09 DOCKET 36928
CONTROL #

6.1.1.1.3 SECONDARY VOLTAGE SERVICE GREATER THAN 10 KW

AVAILABILITY

This schedule is applicable to Delivery Service for non-residential purposes 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-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. Any meter other than the standard meter 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 arrangements may be required prior to Delivery Service being furnished, pursuant to Section 5.7 and 6.1.2 of this Tariff.

MONTHLY RATE

I. Transmission and Distribution Charges:

Customer Charge		
Non-IDR Metered	$3.26	per Retail Customer per Month
IDR Metered	$26.52	per Retail Customer per Month
Metering Charge	$15.81	per Retail Customer per Month
Transmission System Charge		
Non-IDR Metered	$1.286	per NCP kW Billing Demand
IDR Metered	$1.793	per 4CP kW Billing Demand
Distribution System Charge	$3.314	per NCP kW Billing Demand
II. System Benefit Fund:	$0.000662	per kWh See SBF 6.1.1.4
III. Transition Charge:	See Riders TC 6.1.1.2.1.1 and TC-2 6.1.1.2.2.1	
IV. Nuclear Decommissioning Charge:	See Rider NDC 6.1.1.5.1	
V. Transmission Cost Recovery Factor:	See Rider TCRF 6.1.1.6.2.1	

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CONTROL #

VI. Excess Mitigation Credit: Not Applicable

VII. State Colleges and Universities Discount: See Rider SCUD 6.1.1.6.1

VIII. Competitive Metering Credit: See Rider CMC 6.1.1.6.6

IX. Other Charges or Credits:

A. Rate Case Surcharge Rider See Rider RCS-2 6.1.1.6.8

B. True-up Case Surcharge Rider See Rider TCE 6.1.1.6.7

C. Energy Efficiency Rider See Rider EECRF 6.1.1.6.4.1

D. Advanced Metering System Rider See Rider AMSCRF 6.1.1.6.9

COMPANY-SPECIFIC APPLICATIONS

Refer to Section 6.2.2 of the Tariff for additional voltage information.

Three-phase service may be provided if Retail Customer has permanently installed, and in regular use, motor(s) which qualify according to Section 6.2.3.4, or, at the Company's sole discretion, the load is sufficient to warrant three-phase service.

Service will normally be metered at the service voltage. For more information, refer to the Meter Installation and Meter Testing Policy, Section 6.2.3.3 of the Tariff.

Refer to Section 5.5.2 of the Tariff for additional information regarding highly fluctuating loads.

Refer to Section 5.5.4 of the Tariff for additional information regarding operational changes significantly affecting Demand.

Refer to Section 5.5.5 of the Tariff for additional information regarding Power Factor.

Transmission service will be furnished by the Transmission Service Providers (TSPs), and not the Company. The Company performs only the billing function for TSPs.

Determination of Billing Demand for Transmission System Charges

Determination of NCP kW

The NCP kW applicable under the Monthly Rate section for transmission system charges for non-IDR metered customers and IDR metered customers without sufficient 4CP kW

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demand data shall be the kW supplied during the 15-minute period of maximum use during the billing month.

Determination of 4 CP kW For IDR Metered Customers

If the Billing Meter is an IDR Meter that was installed at the Retail Customer's request, or by Commission rule, the transmission system charges will be calculated using the 4CP billing kW demand as determined in this section. The 4 CP kW demand applicable under the Monthly Rate section shall be the average of the sum 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 4 CP kW 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 demand will be billed at the applicable NCP kW demand rate under the "Transmission System Charge" using the Retail Customer's NCP kW demand.

All Retail Customers with IDR metering, except IDR meters installed by Company for load survey purposes, will be billed Transmission charges on their 4 CP kW demand pursuant to this schedule.

Determination of Billing Demand for Distribution System Charges

Determination of NCP kW Billing Demand

The NCP kW Billing Demand shall be the kW supplied during the 15-minute period of maximum use. The NCP kW Billing Demand applicable to the Distribution System Charge shall be the higher of the NCP kW demand for the current billing month or 80% of the highest monthly NCP kW demand established in the 11 months preceding the current billing month (80% ratchet). The 80% ratchet shall not apply to Retail Seasonal Agricultural Customers.

Determination Of Billing Demand When Meter Readings Cannot be Obtained

When meter readings cannot be obtained due to denial of access, weather, meter failure, tampering, or other event, the Retail Customer's demand will be estimated pursuant to Section 6.2.3.2.

NOTICE

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

APPENDIX IV - PRELIMINARY ENERGY ASSESSMENT SERVICE AGREEMENT

SECO
State Energy Conservation Office

Public Schools, Colleges and Non-Profit Hospitals

Preliminary Energy Assessment
Service Agreement

Investing in our public schools, colleges and non-profit hospitals 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 Mathis 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.

Signature: [signature] Date: 8/22/11

Name (Mr./Ms./Dr.): Chris Casarez Title: Administrator for Operations

Organization: Mathis ISD Phone: (361) 547-4101 x-1052

Street Address: 602 E. San Patricio Fax: (361) 547-9424

Mailing Address: Mathis, TX 78368 E-Mail: CCASAREZ@MATHISISD.ORG

County: USA

Contact Information: SAME AS ABOVE

Name (Mr./Ms./Dr.): Title:

Phone: Fax:

E-Mail: County:

Please sign and mail or fax to: Stephen Ross, Schools and Education Program Administrator, State Energy Conservation Office, 111 E. 17th Street, Austin, Texas 78774. Phone: 512-463-1770 Fax 512-475-2569.

AND fax to the SECO Contractor for this service, Eric Ryan, ESA Energy Systems Associates, Inc. Phone: 512-028-8023. Fax: 512-258-5838.

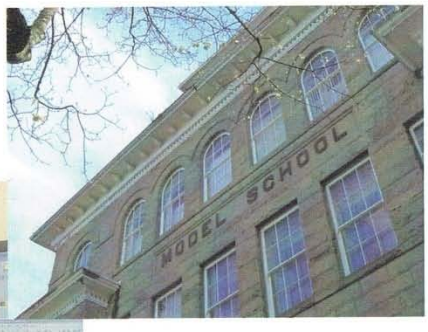
APPENDIX V - TEXAS ENERGY MANAGERS ASSOCIATION (TEMA)

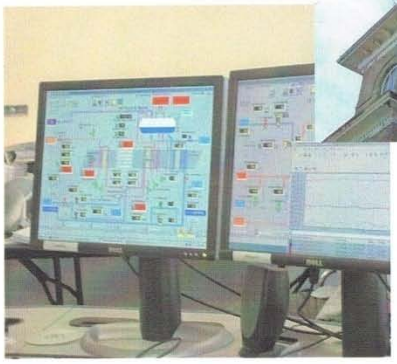
ANNOUNCING!

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 VI - UTILITY CHARTS ON CD