LOCAL GOVERNMENTS
ENERGY MANAGEMENT PROGRAM REPORT

For

Brazoria County

111 East Locust Street
Angleton, Texas 77515

Administered By:

COMPTROLLER OF PUBLIC ACCOUNTS
STATE ENERGY CONSERVATION OFFICE (SECO)
LBJ State Office Building
111 E. 17th Street, Room 1114
Austin, Texas 78774
www.seco.cpa.state.tx.us

Prepared By:

Texas Energy Engineering Services, Inc. (TEESI)
1301 Capital of Texas Hwy, B-325
Austin, Texas 78746
www.teesi.com

December 2008

T8.05.17

TABLE OF CONTENTS

APPENDICES

Local Governments Energy Management Program

Brazoria County
111 East Locust Street
Angleton, Texas 77515
Contact Person: Dennis Cleveland, Maintenance Superintendent
Phone: (979) 864-1567

1.0 EXECUTIVE SUMMARY

A preliminary on-site analysis of Brazoria County was conducted for the purpose of identifying cost effective energy system retrofit projects. This report documents that analysis.

This service was provided at no cost to Brazoria County through the Local Government Energy Management Program as administered by the Texas Comptroller of Public Accounts, State Energy Conservation Office (SECO). This program promotes and encourages an active partnership between SECO and Local Governments for the purpose of planning, funding and implementing energy saving measures, which will ultimately reduce facility energy bills.

The annual cost savings, implementation cost estimate and simple payback for all building energy retrofit projects identified in this preliminary analysis are summarized below. Individual building projects are summarized in Section 7.0 of this report.

Implementation Cost Estimate:	$1,888,000
Annual Energy Cost Savings:	$209,800
Simple Payback:	9.0 years

Recommendations and information of interest to Brazoria County is provided in this report regarding Energy Consumption and Performance (Section 3.0), Energy Accounting (Section 4.0), Senate Bill 12 and House Bill 3693 Overview (Section 5.0), Recommended Maintenance and Operations Procedures (Section 6.0), Retrofit Opportunities (Section 7.0), Capital Improvement Projects, Funding Options (Section 9.0), and Energy Management Policy (Section 10.0). A follow-up visit to Brazoria County will be scheduled to address any questions pertaining to this report, or any other aspect of this program.

SECO is committed to providing whatever assistance Brazoria County may require in planning, funding and implementing the recommendations of this report. The Brazoria County is encouraged to direct any questions or concerns to of the following contact persons:

SECO / Ms. Theresa Sifuentes	TEESI / Saleem Khan
(512) 463-1896	(512) 328-2533

2.0 FACILITY DESCRIPTIONS

This section provides a brief description of the facilities surveyed. The purpose of the onsite survey was to evaluate the major energy consuming equipment in each facility (i.e. Lighting, HVAC, and Controls Equipment).

Courthouse Annex West

Image Source: Microsoft® Virtual Earth™

Stories:	Two story building
Area:	45,944 SF
Bldg. Components:	Concrete and steel frame construction, brick exterior, flat modified bitumen roof, slab on grade
Typical Lighting Fixtures:	T8 fluorescent fixtures with electronic ballasts
HVAC:	Split DX systems, central Air Handling Units (AHUs) with terminal boxes
Controls:	Energy management system (EMS), manufacturer, Trane Summit

Courthouse Annex East

Image Source: Microsoft® Virtual Earth™

Stories:	Single story building
Area:	58,344 SF
Bldg. Components:	Pre fabricated concrete exterior, flat built-up roof, slab on grade
Typical Lighting Fixtures:	T8 fluorescent fixtures with electronic ballasts
HVAC:	Package roof top units (RTUs)
Controls:	Programmable thermostats

Courthouse Building

Image Source: Microsoft® Virtual Earth™

Stories:	Five story building
Area:	140,674 SF
Bldg. Components:	Concrete and steel frame construction, brick and masonry exterior, flat modified bitumen roof, concrete pier and beam foundation
Typical Lighting Fixtures:	T8 fluorescent fixtures with electronic ballasts through the majority of building, T12 fluorescent fixtures with magnetic ballasts in stairways and mechanical rooms
HVAC:	Chilled water system – water cooled chillers, gas boiler, cooling tower, and single & multi-zone air handling units
Controls:	Energy Management System (EMS), manufacturer, Trane Summit (existing EMS has limited control features and capabilities), major control devices are pneumatic

Detention Center Building

Image Source: Microsoft® Virtual Earth™

Stories:	Single story building
Area:	332,996 SF
Bldg. Components:	1985 Original Section – masonry & brick exterior, pitched metal roof, slab on grade 1993 Addition – prefabricated concrete exterior, pitched modified bitumen roof, slab on grade
Typical Lighting Fixtures:	T12 fluorescent fixtures with magnetic ballasts
HVAC:	1985 Original Section – Split-DX systems with hot water gas boiler heating system 1993 Addition - Water source heat pumps, cooling tower, gas boilers
Controls:	Combination of Standard thermostats with DOS-Based Trane EMS

Juvenile Center

Image Source: Microsoft® Virtual Earth™

Stories:	Single story building
Area:	18,270 SF
Bldg. Components:	Masonry and brick exterior, pitched metal roof, slab on grade
Typical Lighting Fixtures:	T12 fluorescent fixtures with magnetic ballasts
HVAC:	Split DX systems
Controls:	Programmable thermostats

Boot Camp Center

Image Source: Microsoft® Virtual Earth™

Stories:	Single story building
Area:	26,052 SF
Bldg. Components:	Metal and brick exterior, metal and composite shingle pitched roof, slab on grade
Typical Lighting Fixtures:	T8 fluorescent fixtures with electronic ballasts
HVAC:	Split DX systems
Controls:	Programmable thermostats

3.0 ENERGY CONSUMPTION AND PERFORMANCE

During this assessment, 12 months of utility data was compiled to assess the energy consumption and performance of several of Brazoria County's facilities. The data analyzed comprised of over 100 electric utility accounts. Each utility account was grouped according to building or county department type. For example, several of the park facilities were grouped as a single account. Please see Appendix C for a complete summary of each account groups and their calculated energy performance.

The prime purpose of this utility data analysis was to focus the efforts of the preliminary onsite surveys to a select set of six facilities. The six facilities surveyed in this study were selected in consultation with County staff. Though the scope of this study was limited to a select set of facilities, it is important to note that the facilities not surveyed in this study may also contain energy efficiency opportunities and could benefit from further study.

The six facilities in which an onsite survey was performed comprised a total gross area of approximately 622,000 SF square feet. Annual electric and natural gas invoices for the building surveyed were $1,306,137 for the 12-month period ending January 2008. A summary of annual utility costs is provided in Appendix C, Base Year Consumption History.

ENERGY PERFORMANCE INDICES

To help Brazoria County evaluate the overall energy performance of its building(s) TEESI has calculated their Energy Utilization Index (EUI) and Energy Cost Index (ECI). The EUI represents a facility's annual energy usage per square foot; it is measured as thousand BTU's per square foot per year (kBTU/SF/Year). Similarly, ECI is measured as cost per square foot per year ($/SF/Year). The EUI and ECI performance for the selected facilities is listed below.

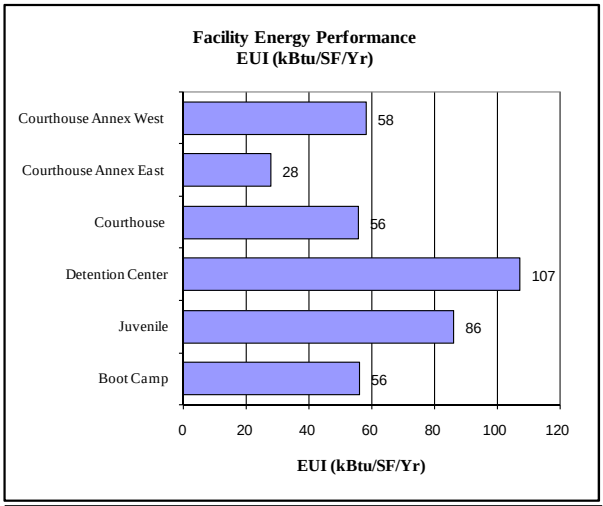
Energy Cost and Cosumption Benchmarks

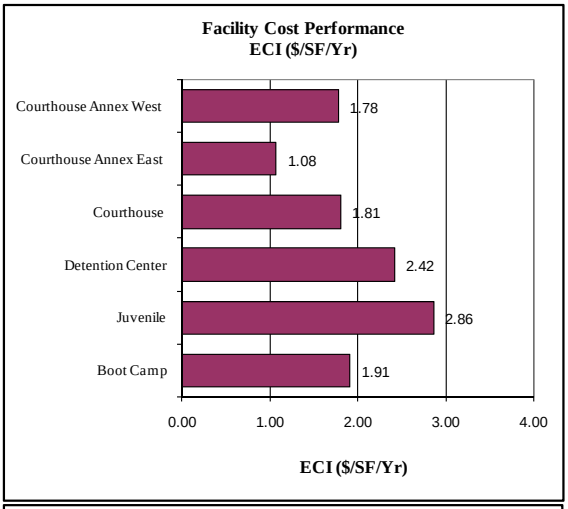
		Electric		Natural Gas*		Total	Total	EUI	ECI	
	Building	KWH/Yr	$Cost/Yr	MCF/Yr	$Cost/Yr	$Cost/Yr	MMBTU/Yr	kBTU/SF/Yr	$/SF/Yr.	SF
1	Courthouse Annex West	632,640	77,227	494	4,507	81,734	2,668	58	1.78	45,944
2	Courthhouse Annex East	473,680	62,790	0	0	62,790	1,617	28	1.08	58,344
3	Courthouse	2,176,800	250,438	380	3,521	253,959	7,821	56	1.81	140,674
4	Detention Center	7,243,736	710,378	10,687	95,106	805,484	35,730	107	2.42	332,996
5	Juvenile	460,787	52,286	0	0	52,286	1,573	86	2.86	18,270
6	Boot Camp	427,600	49,885	0	0	49,885	1,459	56	1.91	26,052
	Total	11,415,243	1,203,003	11,561	103,134	1,306,137	50,868	82	1.93	622,280

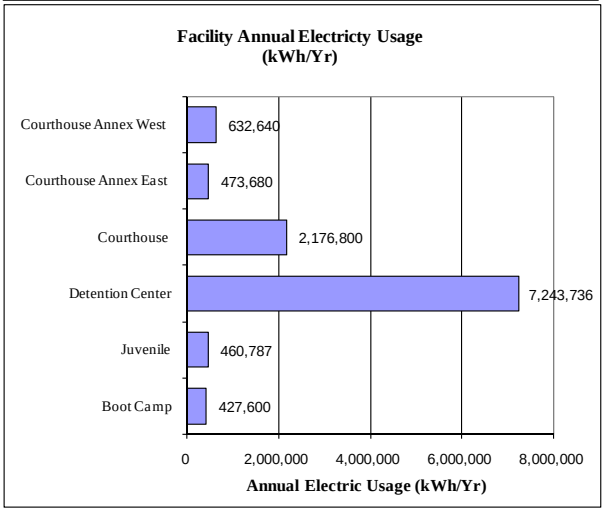
* Natural gas data incomplete.

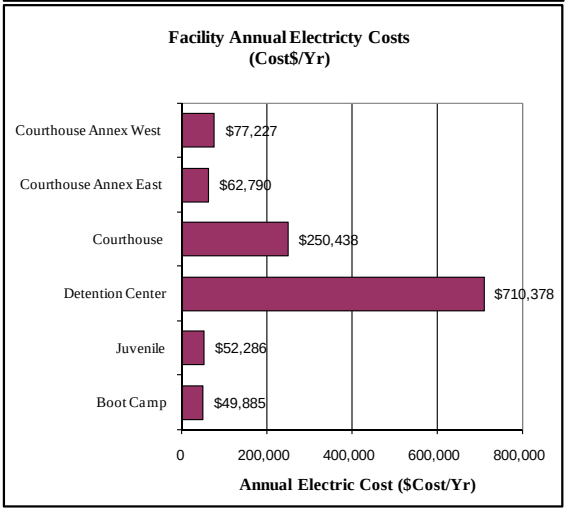
Knowing the EUI and ECI is useful to help determine the overall energy performance of the facilities surveyed. The County's EUI of 82 indicates the building's overall performance can be improved. Considering the no cost energy conservation measures and retrofits discussed in this report will help meet the County's annual energy reduction goals.

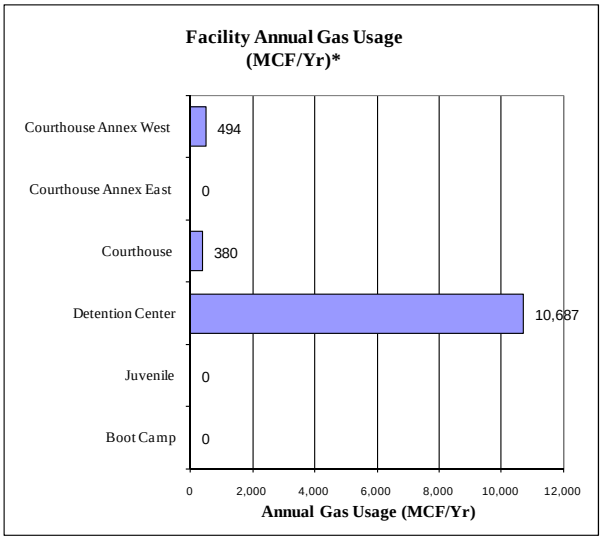
The following charts summarize the data presented in Table 1 above. See appendix C for further detail.

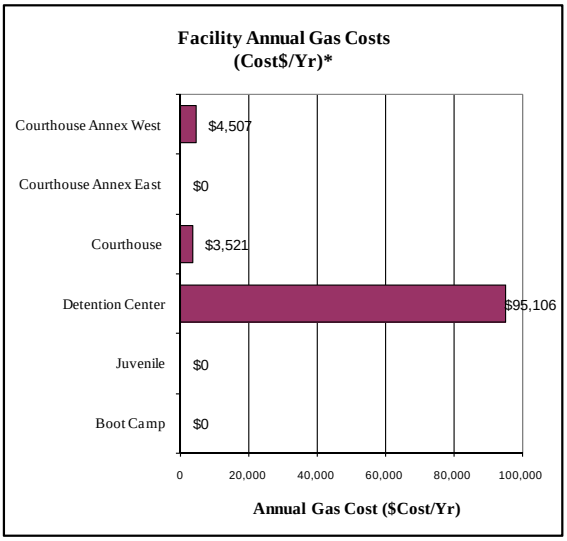












* Natural gas data incomplete.

4.0 ENERGY ACCOUNTING

UTILITY PROVIDERS

The County's facilities receive their electric and natural gas service from Reliant Energy and CenterPoint Energy, respectively.

MONITORING AND TRACKING

An effective tracking system is an essential tool by which an energy management program's activities are monitored. The system should be centralized and available for all engaged staff members to use in verifying progress toward established targets, milestones, and deadlines.

Presently, the County does not have a centralized procedure to track and monitor energy consumption and performance. For example, several facilities are responsible for payment and recording of their individual accounts. The County should consider consolidating the tracking and recording of all utility accounts (i.e. Electricity, Natural Gas, Water, etc.) to a centralized location.

In addition, the data should be recorded in an electronic format that is easily accessible (i.e. Numeric Spreadsheets, Software Applications, etc.). To clarify, the County should discourage the practice of scanning hard copies of utility bills (ex. Image Files, JPEG, TIFF) as alternative electronic format.

There are several commercially available utility tracking software that can be tailored to meet the County's specific needs. The County can use this data to track utility consumption patterns and budget utility expenses. Having this historical data improves the County's awareness of their energy performance and will help in tracking their energy reduction goals.

The steps below are essential for an effective energy management tracking system:

1. Perform regular updates – An effective system requires current and comprehensive data. Monthly updates should be strongly encouraged.

2. Conduct periodic reviews - Such reviews should focus on progress made, problems encountered, and potential rewards.

3. Identify necessary corrective actions - It will help identify when a specific activity is not meeting its expected performance and is in need of review.

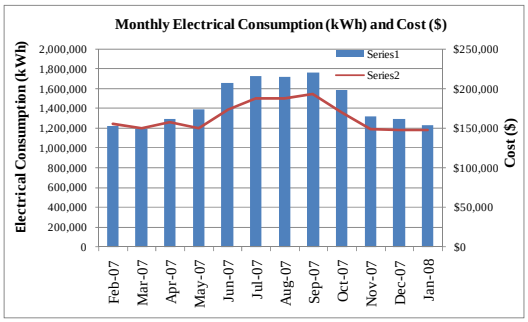
In addition, having this historical utility data would facilitate **House Bill 3693** and **Senate Bill 12** reporting requirements. Please see Section 5.0 for additional information regarding these requirements.

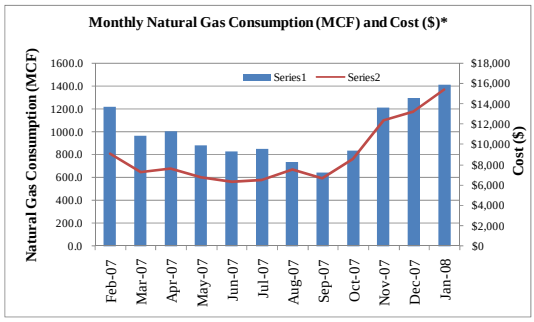
Furthermore, below is a sample format which the County can customize to help summarize their overall utility usage and costs.

The data presented below is a summation of the hard-copy data provided by Brazoria County. This data below includes over 100 utility accounts and is for reference purposes therefore may not represent the County's total utility data. See Appendix C for further detail regarding each utility account represented in the table below.

MONTH	ELECTRICITY			NATURAL GAS*			WATER		
	KWH	COST $	$/KWH	MCF	COST $	$/MCF	GAL	COST $	$/GAL
Feb-07	1,230,700	$156,452	$0.1271	1215.7	$9,083	$7.5			
Mar-07	1,198,114	$151,012	$0.1260	963.0	$7,274	$7.6			
Apr-07	1,300,714	$158,272	$0.1217	999.6	$7,573	$7.6			
May-07	1,399,338	$150,674	$0.1077	883.1	$6,729	$7.6			
Jun-07	1,665,998	$173,323	$0.1040	829.6	$6,294	$7.6			
Jul-07	1,732,834	$187,574	$0.1082	852.1	$6,479	$7.6			
Aug-07	1,727,577	$188,529	$0.1091	735.3	$7,498	$10.2			
Sep-07	1,765,645	$193,536	$0.1096	645.9	$6,640	$10.3			
Oct-07	1,587,029	$170,606	$0.1075	835.9	$8,535	$10.2			
Nov-07	1,327,160	$148,964	$0.1122	1212.1	$12,313	$10.2			
Dec-07	1,294,299	$148,293	$0.1146	1293.9	$13,168	$10.2			
Jan-08	1,232,092	$148,715	$0.1207	1411.1	$15,370	$10.9			
Total	17,461,500	$1,975,950	$0.1132	11,877	$106,958	$9.0			

Gross Building Area:	924,958	SF





* Natural gas data incomplete.

5.0 SENATE BILL 12 AND HOUSE BILL 3693 OVERVIEW

In 2001, the 77th Texas Legislature passed Senate Bill 5 (SB5), also known as the Texas Emissions Reduction Plan, to amend the Texas Health and Safety Code. The legislation required ambitious, fundamental changes in energy use to help the state comply with federal Clean Air Act standards. It applied to all political subdivisions within 38 designated counties, later expanded to 41 counties.

In 2007, the 80th Texas Legislature passed Senate Bill 12 (SB 12) which among other things extended the timeline set in SB 5 for emission reductions. In the same period, the 80th Texas Legislature passed House Bill 3693 (HB 3693) which amended provisions of several codes relating primarily to energy efficiency.

The Bill requirements that are most relevant to this program are as follows:

Establish a goal of reducing electric consumption by five percent (5%) each state fiscal year for six (6) years, beginning on September 1, 2007.

Record electric, water, and natural gas utility services (consumption and cost) in an electronic repository. The recorded information shall be on a publicly accessible Internet Web site with an interface designed for ease of navigation if available, or at another publicly accessible location.

Energy-efficient light bulbs for buildings, requires an institution to purchase commercially available light bulbs using the lowest wattages for the required illumination levels.

Installation of energy saving devices in Vending Machines with non-perishable food products.

A summary description of SB 12 and HB 3693 is available in Appendix A. Further detail regarding each bill can be found in the Texas Legislature website (http://www.capitol.state.tx.us/Home.aspx).

6.0 RECOMMENDED MAINTENANCE & OPERATION PROCEDURES

Sound Maintenance and Operation procedures significantly improve annual utility costs, equipment life, and occupant comfort. Generally, maintenance and operation procedural improvements can be made with existing staff and budgetary levels. With this in mind, the following maintenance and operation procedures are recommended.

PUBLICIZE ENERGY CONSERVATION

Promote energy awareness at regular staff meetings, on bulletin boards, and through organizational publications. Publicize energy cost reports showing uptrends and downtrends.

OPTIMIZE SCHEDULING AND SETTING OF HVAC SYSTEMS

It is strongly recommended that persistent monitoring of occupancy patterns and scheduling thermostats accordingly will help reduce the equipment runtime. In addition, establishing a uniform temperature set-point throughout buildings will help reduce the HVAC energy usage. An established uniform building set-point will help remind staff members of their role to help reduce the overall annual energy consumption.

REPLACE INCANDESCENT LAMPS WITH COMPACT FLUORESCENTS

Replace existing incandescent lamps with compact fluorescent lamps (CFLs) as they burn out. Compact fluorescents use 50 to 75 percent less wattage for the same light output, with ten times the operating life of incandescents.

The following is a statement from EnergySTAR's website:

> "The Energy Independence and Security Act of 2007 (the "Energy Bill"), signed by the President on December 18, 2007 requires all light bulbs use 30% less energy than today's incandescent bulbs by 2012 to 2014. The phase-out will start with 100-watt bulbs in January 2012 and end with 40-watt bulbs in January 2014. By 2020, a Tier 2 would become effective which requires all bulbs to be at least 70% more efficient (effectively equal to today's CFLs)."

EnergySTAR is not specifically requiring all incandescent lights be converted to CFLs since the "Energy Bill" is technology neutral. However, CFLs current market penetration and the large number of EnergySTAR qualified CFL products offer the most feasible and cost effective solution to achieve the energy reductions intended by the bill. Indeed other lighting technologies such as Light Emitting Diodes (LEDs) lights are able to meet such performance requirements. However, as of November 2008 there are relatively few LED lighting products meeting EnergySTAR minimum requirements. Therefore, at present, CFLs are considered an effective solution. As LEDs become more cost competitive and their performance are fully verified, LED may also become very effective replacement of incandescent bulbs.

On another note, CFLs do contain a very small amount of mercury; therefore, just as most fluorescent lighting products CFL need to be disposed of properly as well. Please see Appendix J for further discussion on recycling CFLs.

INSTALL ENERGY SAVING DEVICES ON VENDING MACHINE

Install energy saving devices on vending machines with non-perishable food items to reduce the equipment power usage. These devices shut the vending machines down during unoccupied periods. Several commercially available devices can be easily installed on existing vending machines. These devices typical have a motion sensor that power down the equipment after periods of inactivity. For example if the motion sensor does not sense activity within 15 minutes the device will shutdown the vending machine and turn on once motion is sensed. These devices range in price from $100 to $250 and have a typical annual savings of $20 to $150 per vending machine.

ENERGY STAR POWER MANAGEMENT

ENERGY STAR Power Management Program promotes placing monitors and computers (CPU, hard drive, etc.) into a low-power "sleep mode" after a period of inactivity. The estimated annual savings can range from $25 to $75 per computer. ENERGY STAR recommends setting computers to enter system standby or hibernation after 30 to 60 minutes of inactivity. Simply touching the mouse or keyboard "wakes" the computer and monitor in seconds. Activating sleep features saves energy, money, and helps protect the environment.

ESTABLISH HVAC UNIT SERVICE SCHEDULES

Document schedules and review requirements for replacing filters, cleaning condensers, and cleaning evaporators. Include particulars such as filter sizes, crew scheduling, contract availability if needed, etc. Replace filters with standard efficiency pleated units. Generally, appropriate service frequencies are as follows -- filters: monthly; condensers: annually; evaporators: 5 years.

IMPROVE CONTROL OF INTERIOR & EXTERIOR LIGHTING

Establish procedures to monitor use of lighting at times and places of possible/probable unnecessary use: Offices at lunchtime, closets, parking lots during daylight hours, etc. One or two friendly reminders for minor infractions will usually result in lower electric bills.

CONTROL OUTSIDE AIR INFILTRATION

Conduct periodic inspections of door and window weather-stripping, and schedule repairs when needed. Additionally, make sure doors and windows are closed during operation of HVAC systems (heating or cooling). Unintended outside air contributes to higher energy consumption, shorter equipment life, and occupant discomfort.

HAIL GUARDS ON CONDENSING UNITS

When an HVAC unit is replaced the County should ensure the new unit be specified with hail guards. The hail guards protect the condensing unit's heat exchanger coils from hail damage. Damage to the condensing unit heat exchangers reduces the efficiency of the units. During the preliminary walk-through, it was noted that several of units showed signs of hail damage. It is recommended that unit(s) with damaged condensing fins be straightened using a fin comb.

7.0 RETROFIT OPPORTUNITIES

Energy retrofit projects identified during the preliminary analysis are detailed below. Project cost estimates include complete design and construction management services.

T12 TO T8 LIGHTING RETROFIT

Replace T-12 fluorescent lamps and magnetic ballasts with high efficiency T-8 fluorescent lamps and electronic ballasts at the Brazoria County's facilities listed below. Typical four-foot, two-lamp magnetic ballast fixtures require 80 watts, while electronic ballasts and T-8 lamps in the same fixture configuration require only 50 watts. The table below indicates the facility where T-12 fluorescent lamps were observed during the preliminary walkthrough. The cost and savings noted below are based on preliminary observations of the facilities. Exact cost and quantities can be identified through a detailed energy audit.

T12 TO T8 LIGHTING RETROFIT*

Building	Estimated Implementation Cost	Estimated Annual Savings	Payback (years)
Detention Center	$215,900	$47,000	4.6
Juvenile Center	$11,000	$2,200	5.0
Court House*	$13,700	$2,200	6.2
TOTAL	**$240,600**	**$51,400**	**4.7**

* Building primarily has T8 fixt., T12 replacment limited to ares such as stairways and mech. rooms.

REPLACE EXISTING T8 FLUORESCENT LAMPS WITH LOWER WATTAGE LAMPS

Low-wattage T8 fluorescent lamps are available in 30, 28 and 25-watt versions. It is recommended replacing existing 32-watt T8 Fluorescent lamps with lower wattage lamps (where applicable). Changing to a lower wattage T8 Lamp is a relatively straightforward process however, lower wattage T8 lamps do have limitations and are only suitable for certain applications. Lower wattage T8 lamps have reduced lighting levels therefore, it is important to ensure recommended lighting levels are maintained. Lighting levels should be verified prior to and after lamp replacement. In addition, compatibility with existing ballasts, local codes and other requirements must be verified prior to retrofitting. Nevertheless, if suitable for the application, switching to lower wattage T8 lamps will have sustainable energy savings with minimal impact. For example, replacing a 32-watt T8 lamp with a 28-watt T8 lamp will approximately have a 12% lighting energy reduction with only a lighting level drop near 4%.

The estimated costs and savings noted below are based on a preliminary observation of each facility. Lamp replacements was estimated for general areas such as corridors, rest rooms, storage rooms, and other areas that may accommodate lower wattage lamps. Exact cost and quantities can be identified through a detailed energy audit.

LOW-WATTAGE T8 LAMP REPLACEMENT*

Building	Estimated Implementation Cost	Estimated Annual Savings	Payback (years)
Boot Camp	$2,100	$1,400	1.5
Court House	$11,300	$7,500	1.5
Court House Annex West	$3,700	$2,400	1.5
Court House Annex East	$4,700	$2,000	2.4
TOTAL	**$21,800**	**$13,300**	**1.6**

* Lighting levels must be verified prior to replacement.

REPLACE HVAC SYSTEMS

This section describes the replacement of existing HVAC equipment at the facilities listed below. During the preliminary walkthrough, these systems were identified to be inefficient, beyond their economical life and required extensive maintenance. The following descriptions and table below summarize the estimated cost and savings for replacing the units at each facility.

Detention Center – Replace nine (9) outdoor condensing units (CUs) serving the original building with new high efficiency units. Indoor air handling units (AHUs) being served by these CUs to remain. The units are over 20 years old and are beyond their useful life. Cooling capacity totaling approximately 40 tons.

Juvenile Center – Replace nine (9) complete Split-DX systems (CU & AHU) with new high efficiency units. The existing units are approximately 18 years old and are nearing their useful life. Cooling capacity totaling approximately 39 tons.

Court House Annex East – Replace ten (10) packaged rooftop units (RTUs) totaling approximately 100 tons in cooling capacity with new high efficiency units. The existing units are operational but are inefficient and are prone to maintenance problems. The New High Efficient units will improve energy performance and enhance occupant comfort.

HVAC SYSTEM REPLACEMENTS

Building	Estimated Implementation Cost	Estimated Annual Savings	Payback (years)
Detention Center	$54,000	$3,000	18.0
Juvenile Center	$77,000	$4,000	19.3
Court House	$115,000	$6,700	17.2
Court House Annex East	$222,500	$13,000	17.1
TOTAL	**$468,500**	**$26,700**	**17.5**

INSTALL ENERGY MANAGEMENT SYSTEM (EMS)

Upgrade existing Energy Management System (EMS) to provide optimum scheduling and precise temperature supervision for the HVAC systems throughout each facility. The EMS will minimize the run time of the units while maintaining comfort throughout the facility. Additionally, EMS can remotely diagnose and document HVAC maintenance.

Presently the Courthouse is controlled via a Trane Tracer Summit EMS. However, the existing control functions have limited capabilities and a majority of the control devices are pneumatic. Upgrading the Courthouse controls to a fully Direct Digital Controls (DDC) system will enhance the existing EMS control and improve overall system efficiency. The Courthouse EMS upgrade estimated below is limited to replacing existing pneumatic controls and thermostats required to functions as a comprehensive DDC system.

The Detention Center would greatly benefit with replacement of the existing DOS-Based EMS to an updated system. During the walkthrough, it was pointed out that many of the HVAC systems sensors were not functioning properly and existing controls were inoperable. As a result, several HVAC units are not under EMS control and require manual adjustment. Installing a new up to date system will ensure all HVAC units are under control and improve overall HVAC system efficiency. The Detention Center EMS upgrade consists of the replacement of inoperable control equipment and integration of existing controls.

Exact implementation cost and savings can be identified during a Detailed Energy Assessment. The potential savings identified in this report does not include maintenance savings associated with the project implementation, which will reduce the overall payback. The EMS system proposed in the estimation below will have basic functions such as remote access capabilities, multiple scheduling, and optimum start/stop features. The table below summarizes the estimated cost and saving for these projects.

ENERGY MANAGEMENT SYSTEM (EMS) UPGRADES

Building	Estimated Implementation Cost	Estimated Annual Savings	Payback (years)
Detention Center	$535,000	$39,000	13.7
Court House	$250,000	$16,000	15.6
TOTAL	**$785,000**	**$55,000**	**14.3**

VARIABLE FREQUENCY DRIVE (VFD) INSTALLATION- COURTHOUSE

Install VFDs on Courthouse AHUs – Remove inlet guide vanes and install VFDs on the Courthouse's seven AHUs. This will allow for more precise supply fan modulation according to system demand, therefore reduce energy consumption. To ensure optimum performance, this VFD project can be considered as an option if the existing AHUs are replaced, see Section 8.0 Capital Improvement projects. However, the existing AHUs can be retrofitted with VFDs along with some controls modifications and integration. The estimated cost and energy savings in this section are based on retrofitting existing AHUs in conjunction with the EMS upgrades previously recommended.

Install VFDs on Chilled Water Distribution Pumps - Presently the chilled water pumps operate at a constant speed. Typical chilled water systems have three-way control valves at the cooling coils, which maintain a constant flow through the chiller. The Courthouse has three-way valves at each air-handling unit (AHU). With the installation of VFDs on each chilled water pump, the flow through the system can be controlled to match the actual system requirements. The VFD will slow the pump down to meet the flow requirements as a result reduces the pumping power.

This project will involve some valve modifications or replacements, chiller controller upgrade and controls integrations will need to be accomplished. Besides potential energy savings, the VFD installations will also improve the control of the HVAC system and enhance occupant comfort. The energy savings from the installation of VFDs is dependent on the existing pump runtime and the actual flow requirements of the system. The implementation cost estimation includes VFD installation, possible valve modification/replacement, and controls integration. The estimated energy savings and implementation costs outlined below are based on preliminary observations.

VFD INSTALLATION*			
Building	**Estimated Implementation Cost**	**Estimated Annual Savings**	**Payback (years)**
Court House	$154,000	$11,000	14.0
TOTAL	**$154,000**	**$11,000**	**14.0**

*This project should be inconjunction with EMS upgrade.

.

BUILDING HVAC SYSTEMS COMMISSIONING (Cx)

Detailed HVAC commissioning in an existing building involves analysis of existing systems to ensure compliance with original set-up/design conditions and where feasible to adjust operating parameters to enhance comfort and reduce energy consumption. Based on the preliminary examination (utility data review, discussion with staff, and walkthrough) of the County's facilities, revealed the potential for energy cost savings, primarily in HVAC systems operations and fine-tuning. The Detention Center and Courthouse facilities were noted to be good candidates for Retro Commissioning (RCx) or Continuous Commissioning (CC®) process. These facilities have a heavy population of system devices, sensors and equipment. The commissioning project is contingent upon the implementation of EMS projects identified previously.

Commissioning measures are typically characterized as fast payback, usually 36-60 months. Examples include chiller, boiler, air handler and cooling tower service and/or adjustment, calibration of control systems and temperature settings, balancing conditioned air and/or chilled water flows etc. There are various degrees and types of commissioning programs. The cost and savings estimates presented here are for a detailed commissioning program. The project implementation duration may vary from a 10 to 12 months period.

The goal of commissioning is to deliver a facility that operates as it was intended, meets the needs of the building owner and occupants, and provides training of facility operators. To reach this goal it is necessary for the commissioning process to provide documentation and verification of the performance of all building equipment and systems. For the process to work successfully it is equally important to have good communications between all participants (building designers, owners, operators and the commissioning agent) and to keep all parties involved and informed of all pertinent decisions.

At the building level, typical commissioning measures will look into opportunities to optimize the operations of HVAC equipment. Detailed commissioning measures at the building level may include the following:

1. Optimize the AHU operation
    - Develop optimal schedule for the AHUs.
    - Develop optimal reset schedules for single duct VAV unit discharge air temperature set points.
    - Develop optimal cold deck and hot deck temperature reset schedules.
    - Develop optimal duct static pressure reset schedules for VAV units.
    - Improve economizer cycle operation (if applicable).
    - Determine damper positions for minimum outside air intake.
    - Optimize air distribution where necessary.
2. Verify and calibrate the temperature and pressure sensors
    - Verify the accuracy of space temperature sensors, discharge air, cold deck and hot deck temperature sensors, as well as duct static pressure sensor and water differential pressure sensors. Calibrate the sensors if necessary.

3. Set up trends for major control parameters
    - Trending for major control parameters such as cold and hot deck temperatures, discharge air temperatures and static pressures.

4. Identify malfunctioning devices
    - Identify malfunctioning devices such as leaky valves. Reconnect damper linkages that are disconnected.
5. Reprogram control sequences where required
6. Pumps and fan optimization
7. Optimize Central Plant Performance
    - Develop optimal start/stop schedules for chillers and boilers.
    - Develop optimal reset schedule for water supply temperature for chillers and boilers.

The following Commissioning estimates are based on a preliminary walkthrough and available utility data analysis. Please note, not included in the estimate below are the anticipated costs for items such as software & hardware upgrades and deferred maintenance items. Also, the Cx project is contingent upon implementation of the EMS retrofits previously mentioned.

BUILDING COMMISSIONING (Cx)

Building	Estimated Implementation Cost	Estimated Annual Savings	Payback (years)
Detention Center	$149,800	$37,400	4.0
Court House	$68,300	$15,000	4.6
TOTAL	**$218,100**	**$52,400**	**4.2**

The following table summarizes the implementation costs, annual savings and payback for the above projects:

SUMMARY OF ENERGY COST REDUCTION MEASURES			
Project Description	**Estimated Implementation Cost**	**Estimated Annual Savings**	**Payback (years)**
T12 to T8 Lighting Retrofit	$240,600	$51,400	4.7
Low-Wattage T8 Lamps	$21,800	$13,300	1.6
HVAC System Replacements	$468,500	$26,700	17.5
EMS Upgrades	$785,000	$55,000	14.3
VFD Installation	$154,000	$11,000	14.0
Commissioning (Cx)	$218,100	$52,400	4.2
TOTAL:	**$1,888,000**	**$209,800**	**9.0**

The above project implementation costs and annual savings are estimated based on a preliminary examination of the facilities. Final costs will be determined from detailed building assessments, engineering calculations, and contractor estimates.

Project design (drawings and specifications), if authorized, would normally be accomplished by professional engineers. Project acquisition (competitive bidding) would be in accordance with County requirements, and construction management would be provided by the engineering group who prepared the drawings and specifications.

8.0 CAPITAL IMPROVEMENT PROJECTS

This section is intended to describe capital improvement projects that have energy savings opportunities but cannot be fully justified solely based on the potential energy savings. However, these projects are considered essential to ensure optimum system performance, enhance occupant comfort and to improve overall building efficiency. Capital Improvement Projects identified during the preliminary analysis are detailed below. Project cost estimates include complete design and construction management services.

AIR HANDLING UNITS REPLACEMENT – COURTHOUSE

It is recommended the County consider replacing the existing Air-Handling Units (AHUs) serving both the newer (1970s) and older (1940s) Courthouse sections. The existing AHUs are original equipment and are beyond their useful life. Replacing the existing AHUs with new units will improve HVAC system control, indoor air quality, occupant comfort and reduce maintenance issues. Combining this AHU replacement project with the EMS upgrade, VFD installation and Building Commission (Cx) energy retrofits previously mentioned will help ensure sustainable energy savings. The estimated cost below is for the complete upgrade of seven AHUs. The estimated cost below includes complete design and construction management services, limited testing & balance work, and temporary cooling option.

Estimated Implementation Cost: $750,000(*)

AIR HANDLING UNITS REPLACEMENT – DETENTION CENTER

It is recommended the County consider replacing the existing Split-DX Air-Handling Units (AHUs) serving the old section (year built approx. 1985) of the Detention Center. The existing AHUs were original units installed in the 1980s and are beyond their useful life. The replacement of these AHUs should be accomplished with the Condensing Unit replacement previously mentioned in Section 7.0. The estimated cost below is for the complete replacement of 24 indoor AHUs. The estimated cost below includes complete design and construction management services, limited testing & balance and temporary units installation.

Estimated Implementation Cost: $350,000(*)

(*) Note estimated costs are based on preliminary observations; detailed costs can be identified during a Detailed Assessment. The preliminary cost above assumes interface with existing code compliant fire alarm (FA), Electrical and Security systems. Additional funds may be required if the FA, Electrical and Security systems are found to be in need of upgrades.

9.0 FUNDING OPTIONS FOR CAPITAL ENERGY PROJECTS

Institutional organizations have traditionally tapped bond money, maintenance dollars, or federal grants to fund energy-efficient equipment change outs or additions such as energy-efficient lighting systems, high efficiency air conditioning units, and computerized energy management control systems. Today, a broader range of funding options are available. A number of these are listed below.

TEXAS LOANSTAR PROGRAM

The LoanSTAR (Saving Taxes and Resources) Program, which is administered by the State Energy Conservation Office, finances energy-efficient building retrofits with a typical interest rate of 3 percent. The program's revolving loan mechanism allows borrowers to repay loans through the stream of cost savings realized from the projects. Projects financed by LoanSTAR must have an average simple payback of ten years or less and must be analyzed in an Energy Assessment Report by a Professional Engineer. Upon final loan execution, the County of Brazoria proceeds to implement funded projects through the traditional bid/specification process. Contact: Theresa Sifuentes (512/463-1896).

INTERNAL FINANCING

Improvements can be paid for by direct allocations of revenues from an organization's currently available operating or capital funds. The use of internal financing normally requires the inclusion and approval of energy-efficiency projects within an organization's annual operating and capital budget-setting process. Often, small projects with high rate of return can be scheduled for implementation during the budget year for which they are approved. Large projects can be scheduled for implementation over the full time period during which the capital budgets is in place. Budget constraints, competition among alternative investments, and the need for higher rates of return can significantly limit the number of internally financed energy-efficiency improvements.

PRIVATE LENDING INSTITUTIONS OR LEASING CORPORATIONS

Banks, leasing corporations, and other private lenders have become increasingly interested in the energy efficiency market. The financing vehicle frequently used by these entities is a municipal lease. Structured like a simple loan, a municipal leasing agreement is usually a lease-purchase arrangement. Ownership of the financed equipment passes to the County of Brazoria 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, the lessee pays a nominal amount, usually a dollar, for title to the equipment.

PERFORMANCE CONTRACTING WITH AN ENERGY SERVICE COMPANY

Through this arrangement, an energy service company (ESCO) uses third party financing to implement a comprehensive package of energy management retrofits for a facility. This turnkey service includes an initial assessment by the contractor to determine the energy-saving potential for a facility, design work for identified projects, purchase and installation of equipment, and overall project management. The ESCO guarantees that the cost savings generated by the projects will, at a minimum, cover the annual payment due to the ESCO over the term of the contract.

UTILITY SPONSORED ENERGY EFFICIENCY INCENTIVE PROGRAMS

Many of the State's utilities offer energy efficiency incentive programs to offset a portion of the upfront cost associated with energy efficiency measures. The program requirements and incentives range from utility to utility. For example, CenterPoint Energy provides incentives for efficiency measures such as installation of high efficiency equipment, lighting upgrades, and building commissioning. These energy efficiency programs' incentives typically cover $0.06/kWh and $175/kW of verifiable energy and demand reductions, respectively. For further information, contact your utility provider to determine what programs are available in your area.

10.0 ENERGY MANAGEMENT POLICY

At present, the County has not adopted a comprehensive County-wide energy management policy. The County is committed to improving their energy performance and this is evident by the request to perform a Preliminary Energy Assessment. However, in order to ensure and sustain long-term energy efficient practices a comprehensive Energy Management Policy should be adopted by the County.

A County-wide energy management plan adopted by the governing board sends a strong signal that energy management is an institutional priority. At a minimum, the energy management plan should address the following:

- Establish an energy steering committee to review energy cost and consumption on a regular basis.
- Outline energy cost reduction measures and implementation strategies.
- Assign energy manager duties to existing staff positions, with defined roles and responsibilities.
- Establish acceptable equipment operating parameters and schedules, such as HVAC space heating and cooling set points, availability and duration of overrides, etc.
- Promote awareness of energy conservation by publishing goals and progress of energy conservation measures.
- Establishment of a tracking method for utility cost and consumption.

To help the County develop such a document a sample Energy Management Policy has been included in Appendix H. This document is intended to be used as a template, which can be tailored to meet the County's specific needs. In addition, as supplement to the policy, a Water Efficiency Guideline developed by SECO has been included in Appendix I

11.0 ANALYST IDENTIFICATION

Texas Energy Engineering Services, Inc.
Capital View Center, Suite B-325
1301 Capital of Texas Highway
Austin, Texas 78746
(512) 328-2533

M. Saleem Khan, P.E.
David Rocha, LEED-AP

APPENDICES

APPENDIX A

SENATE BILL 12 AND HOUSE BILL 3693 SUMMARY

How to comply with SB12 & HB 3693

What you need to know about Texas Senate Bill 12

The passage of Senate Bill 12 (SB12) by the 80th Texas Legislature signified the continuance of Senate Bill 5 (SB5), the 77th Texas Legislature's sweeping approach in 2001 to clean air and encourage energy efficiency in Texas. SB12 was enacted on September 1, 2007 and was crafted to continue to assist the state and its political jurisdictions to conform to the standards set forth in the Federal Clean Air Act. The bill contains energy-efficiency strategies intended to decrease energy consumption while improving air quality.

All political subdivisions in the 41 non-attainment or near non-attainment counties in Texas are required to:

*1) Adopt a goal to reduce electric consumption by 5 percent each year for six years, beginning September 1, 2007**

2) Implement all cost-effective energy-efficiency measures to reduce electric consumption by existing facilities. (Cost effectiveness is interpreted by this legislation to provide a 20 year return on investment.)

3) Report annually to the State Energy Conservation Office (SECO) on the entity's progress, efforts and consumption data.

*Note: The recommended baseline data for those reporting entities will consist of the jurisdiction's 2006 energy consumption for its facilities and based on the State Fiscal Year (September 1, 2006 to August 31, 2007).

What you need to know about Texas House Bill 3693

The passage of House Bill 3693 (HB3693) by the 80th Texas Legislature is intended to provide additional provisions for energy-efficiency in Texas. Adopted with an effective date of September 1, 2007, HB 3693 is an additional mechanism by which the state can encourage energy-efficiency through various means for School Districts, State Facilities and Political Jurisdictions in Texas.

HB 3693 includes the following state-wide mandates that apply differently according to the nature and origin of the entity:

Record, Report and Display Consumption Data

All Political Subdivisions, School Districts and State-Funded Institutes of Higher Education, are mandated to record and report the entity's metered resource consumption usage data for electricity, natural gas and water on a publically accessible internet page.
Note: The format, content and display of this information are determined by the entity or subdivision providing this information.

Energy Efficient Light Bulbs

All School Districts and State-Funded Institutes of Higher Education shall purchase and use energy-efficient light bulbs in education and housing facilities.

Who must comply?

The provisions in this bill will apply to entities including: Cities and Counties; School Districts; Institutes of Higher Education; State Facilities and Buildings.

How do you define energy-efficiency measures?

Energy-efficiency measures are defined as any facility modifications or changes in operations that reduce energy consumption. Energy-efficiency is a strategy that has the potential to conserve resources, save money** and better the quality of our air. They provide immediate savings and add minimal costs to your project budget.

Examples of energy-efficiency measures include:

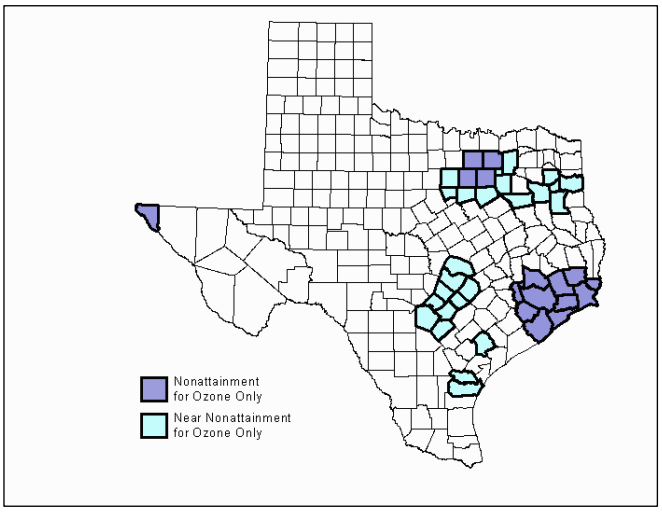
• installation of insulation and high-efficiency windows and doors • modifications or replacement of HVAC systems, lighting fixtures and electrical systems • installation of automatic energy control systems • installation of energy recovery systems or renewable energy generation equipment • building commissioning • development of energy efficient procurement specifications • employee awareness campaigns

***SECO's Preliminary Energy Assessment (PEA) program is an excellent resource for uncovering those energy-efficiency measures that can benefit your organization.*

What counties are affected?

All political jurisdictions located in the following
Non-attainment and affected counties:

Bastrop Bexar Brazoria Caldwell Chambers Collin Comal Dallas Denton El Paso Ellis Fort Bend Galveston Gregg Guadalupe Hardin Harris Harrison Hays Henderson Hood Hunt Jefferson Johnson Kaufman Liberty Montgomery Nueces Orange Parker Rockwall Rusk San Patricio Smith Tarrant Travis Upshur Victoria Waller Williamson Wilson



What assistance is available for affected areas?

The Texas Energy Partnership is a partner with Energy Star©, who partners across the nation with the goal of improving building performance, reducing air emissions through reduced energy demand, and enhancing the quality of life through energy-efficiency and renewable energy technologies.

To assist jurisdictions, the Texas Energy Partnership will:

- Present workshops and training seminars in partnership with private industry on a range of topics that include energy services, financing, building technologies and energy performance rating and benchmarking

- Prepare information packages – containing flyers, documents and national lab reports about energy services, management tools and national, state and industry resources that will help communities throughout the region

- Launch an electronic newsletter to provide continuous updates and develop additional information packages as needed

Please contact Stephen Ross at 512-463-1770 for more information.

SECO Program Contact Information

LoanSTAR;
Preliminary Energy Assessments:
Theresa Sifuentes - 512-463-1896
Theresa.Sifuentes@cpa.state.tx.us

Schools Partnership Program:
Glenda Baldwin - 512-463-1731
Glenda.Baldwin@cpa.state.tx.us

Engineering (Codes / Standards):
Felix Lopez - 512-463-1080
Felix.Lopez@cpa.state.tx.us

Innovative / Renewable Energy:
Pamela Groce - 512-463-1889
pam.groce@cpa.state.tx.us

Energy / Housing
Partnership Programs:
Stephen Ross - 512-463-1770
Stephen.Ross@cpa.state.tx.us

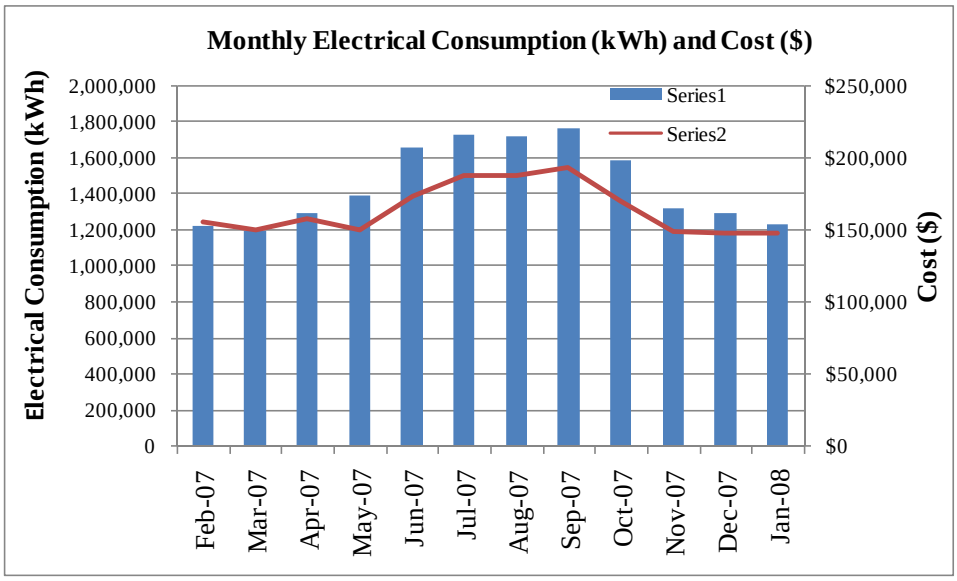
Alternate Fuels / Transportation:
Mary-Jo Rowan - 512-463-2637
Mary-Jo.Rowan@cpa.state.tx.us

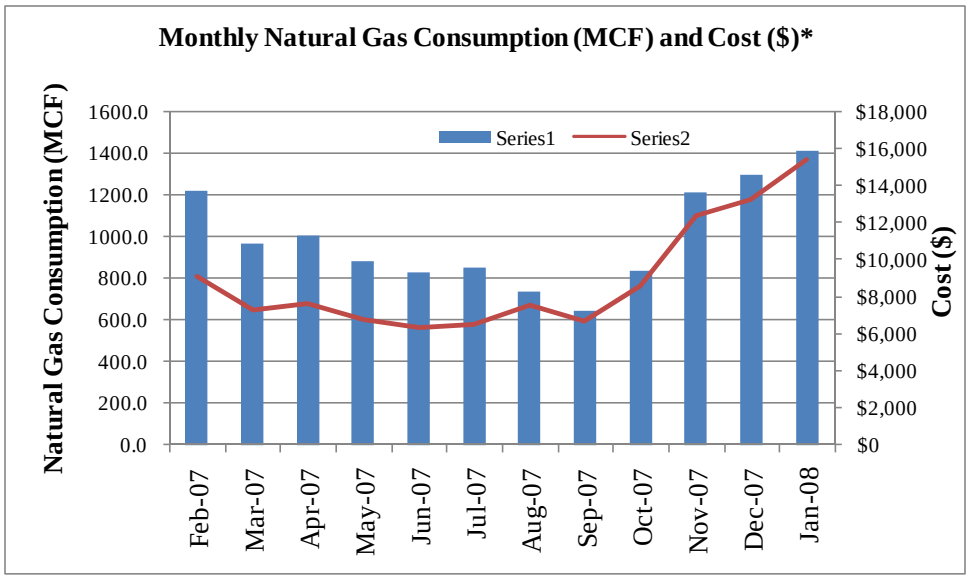
APPENDIX B

SAMPLE UTILITY INPUT FORM

MONTH	ELECTRICITY			NATURAL GAS*			WATER		
	KWH	COST $	$/KWH	MCF	COST $	$/MCF	GAL	COST $	$/GAL
Feb-07	1,230,700	$156,452	$0.1271	1215.7	$9,083	$7.5			
Mar-07	1,198,114	$151,012	$0.1260	963.0	$7,274	$7.6			
Apr-07	1,300,714	$158,272	$0.1217	999.6	$7,573	$7.6			
May-07	1,399,338	$150,674	$0.1077	883.1	$6,729	$7.6			
Jun-07	1,665,998	$173,323	$0.1040	829.6	$6,294	$7.6			
Jul-07	1,732,834	$187,574	$0.1082	852.1	$6,479	$7.6			
Aug-07	1,727,577	$188,529	$0.1091	735.3	$7,498	$10.2			
Sep-07	1,765,645	$193,536	$0.1096	645.9	$6,640	$10.3			
Oct-07	1,587,029	$170,606	$0.1075	835.9	$8,535	$10.2			
Nov-07	1,327,160	$148,964	$0.1122	1212.1	$12,313	$10.2			
Dec-07	1,294,299	$148,293	$0.1146	1293.9	$13,168	$10.2			
Jan-08	1,232,092	$148,715	$0.1207	1411.1	$15,370	$10.9			
Total	17,461,500	$1,975,950	$0.1132	11,877	$106,958	$9.0			

Gross Building Area:	924,958	SF





*Natural Gas Data Incomplete

APPENDIX C

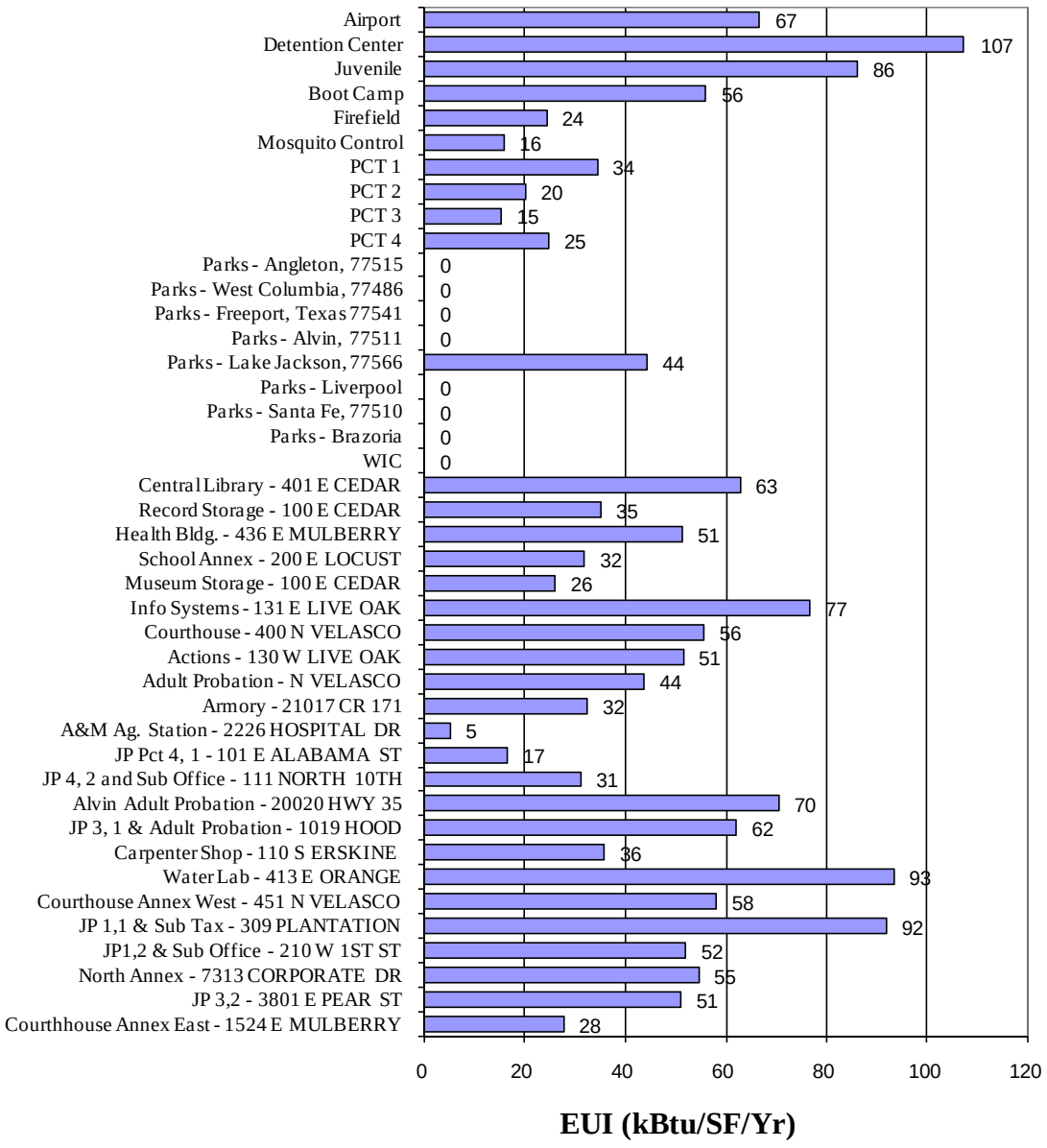
BASE YEAR CONSUMPTION HISTORY

Energy Cost and Cosumption Benchmarks

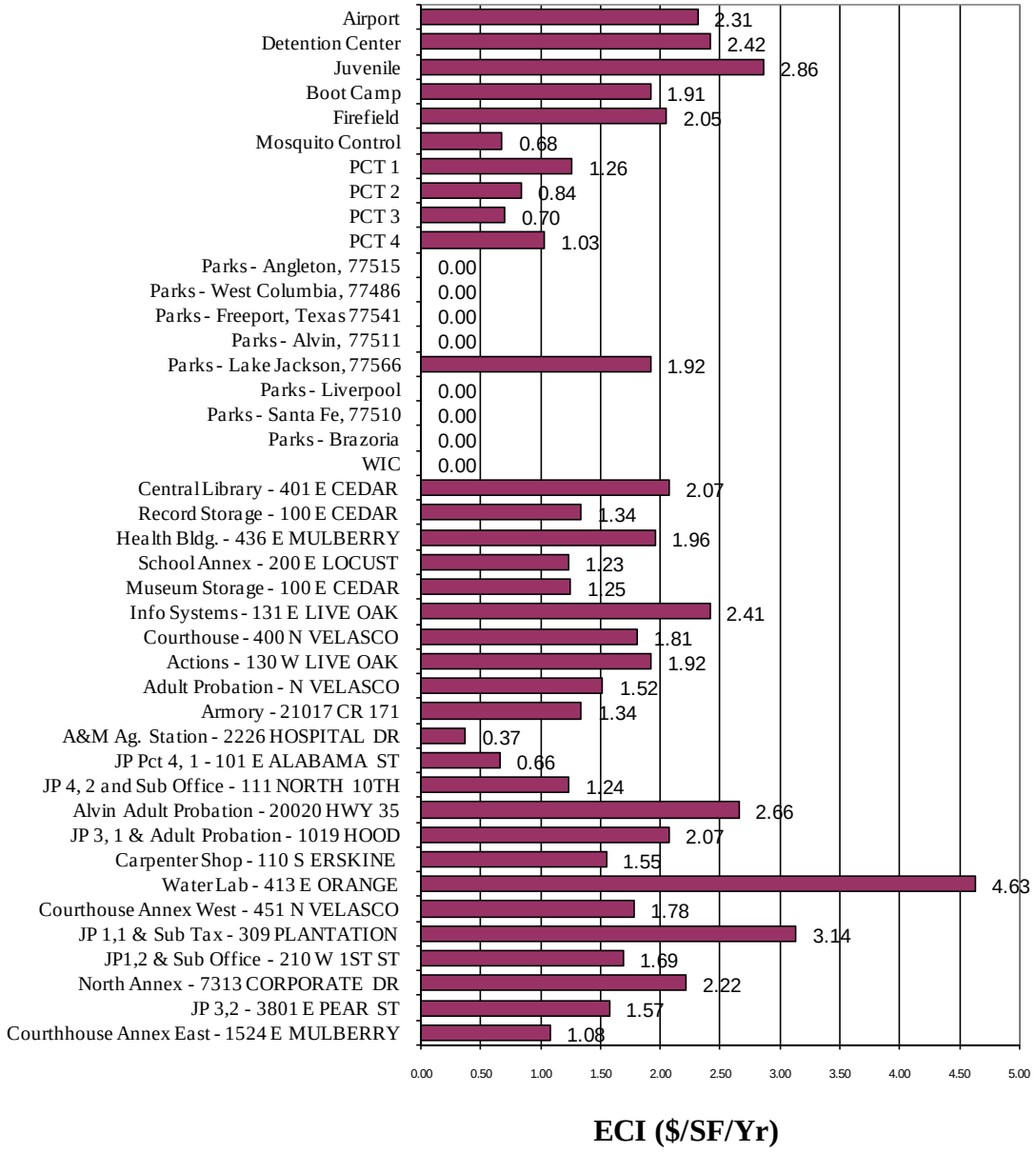
		Electric		Natural Gas*		Total	Total	EUI	ECI	
	Building	KWH/Yr	$Cost/Yr	MCF/Yr	$Cost/Yr	$Cost/Yr	MMBTU/Yr	kBTU/SF/Yr	$/SF/Yr	SF
1	Airport	914,066	108,098	0	0	108,098	3,120	67	2.31	46,776
2	Detention Center	7,243,736	710,378	10,687	95,106	805,484	35,730	107	2.42	332,996
3	Juvenile	460,787	52,286	0	0	52,286	1,573	86	2.86	18,270
4	Boot Camp	427,600	49,885	0	0	49,885	1,459	56	1.91	26,052
5	Firefield	27,040	7,796	0	0	7,796	92	24	2.05	3,800
6	Mosquito Control	101,129	14,774	0	0	14,774	345	16	0.68	21,770
7	PCT 1	210,466	26,428	0	0	26,428	718	34	1.26	20,900
8	PCT 2	130,585	18,488	0	0	18,488	446	20	0.84	22,137
9	PCT 3	93,419	14,522	0	0	14,522	319	15	0.70	20,753
10	PCT 4	216,953	30,817	0	0	30,817	740	25	1.03	29,924
11	Parks - Angleton, 77515	141,882	20,091	0	0	20,091	484	N/A	N/A	N/A
12	Parks - West Columbia, 77486	27,299	4,161	0	0	4,161	93	N/A	N/A	N/A
13	Parks - Freeport, Texas 77541	1,171,049	138,195	0	0	138,195	3,997	N/A	N/A	N/A
14	Parks - Alvin, 77511	218,941	29,215	0	0	29,215	747	N/A	N/A	N/A
15	Parks - Lake Jackson, 77566	5,190	766	0	0	766	18	44	1.92	400
16	Parks - Liverpool	0	168	0	0	168	0	N/A	N/A	N/A
17	Parks - Santa Fe, 77510	864	261	0	0	261	3	N/A	N/A	N/A
18	Parks - Brazoria	10,189	1,680	0	0	1,680	35	N/A	N/A	N/A
19	WIC	133,858	20,403	0	0	20,403	457	N/A	N/A	N/A
20	Central Library - 401 E CEDAR	402,720	45,343	0	0	45,343	1,374	63	2.07	21,885
21	Record Storage - 100 E CEDAR	33,302	4,327	0	0	4,327	114	35	1.34	3,241
22	Health Bldg. - 436 E MULBERRY	113,141	14,836	7	164	14,999	393	51	1.96	7,666
23	School Annex - 200 E LOCUST	117,704	15,528	0	0	15,528	402	32	1.23	12,600
24	Museum Storage - 100 E CEDAR	149,684	24,507	0	0	24,507	511	26	1.25	19,595
25	Info Systems - 131 E LIVE OAK	205,600	24,227	97	1,006	25,233	802	77	2.41	10,463
26	Courthouse - 400 N VELASCO	2,176,800	250,438	380	3,521	253,959	7,821	56	1.81	140,674
27	Actions - 130 W LIVE OAK	26,126	3,691	18	328	4,019	108	51	1.92	2,093
28	Adult Probation - N VELASCO	165,388	21,221	66	760	21,981	632	44	1.52	14,459
29	Armory - 21017 CR 171	138,078	19,506	0	0	19,506	471	32	1.34	14,546
30	A&M Ag. Station - 2226 HOSPITAL DR	9,188	2,286	0	0	2,286	31	5	0.37	6,178
31	JP Pct 4, 1 - 101 E ALABAMA ST	46,640	6,333	0	0	6,333	159	17	0.66	9,612
32	JP 4, 2 and Sub Office - 111 NORTH 10TH	87,663	11,882	0	0	11,882	299	31	1.24	9,612
33	Alvin Adult Probation - 20020 HWY 35	106,160	13,654	0	0	13,654	362	70	2.66	5,142
34	JP 3, 1 & Adult Probation - 1019 HOOD	175,528	21,217	53	603	21,820	654	62	2.07	10,536
35	Carpenter Shop - 110 S ERSKINE	52,241	7,705	0	0	7,705	178	36	1.55	4,983
36	Water Lab - 413 E ORANGE	41,000	6,950	0	0	6,950	140	93	4.63	1,500
37	Courthouse Annex West - 451 N VELASCO	632,640	77,227	494	4,507	81,734	2,668	58	1.78	45,944
38	JP 1,1 & Sub Tax - 309 PLANTATION	113,120	13,912	34	474	14,386	421	92	3.14	4,588
39	JP1,2 & Sub Office - 210 W 1ST ST	320,944	35,570	0	0	35,570	1,095	52	1.69	21,084
40	North Annex - 7313 CORPORATE DR	236,160	32,745	0	0	32,745	806	55	2.22	14,779
41	JP 3,2 - 3801 E PEAR ST	102,940	11,644	41	490	12,133	394	51	1.57	7,721
42	Courthhouse Annex East - 1524 E MULBERRY	473,680	62,790	0	0	62,790	1,617	28	1.08	58,344
		KWH/Yr	$Cost/Yr	MCF/Yr	$Cost/Yr	$Cost/Yr	MMBTU/Yr	kBTU/SF/Yr	$/SF/Yr	SF
		17,461,500	1,975,950	11,877	$106,958	$2,082,908	71,830	67	1.88	991,023

* Natural gas data incomplete.

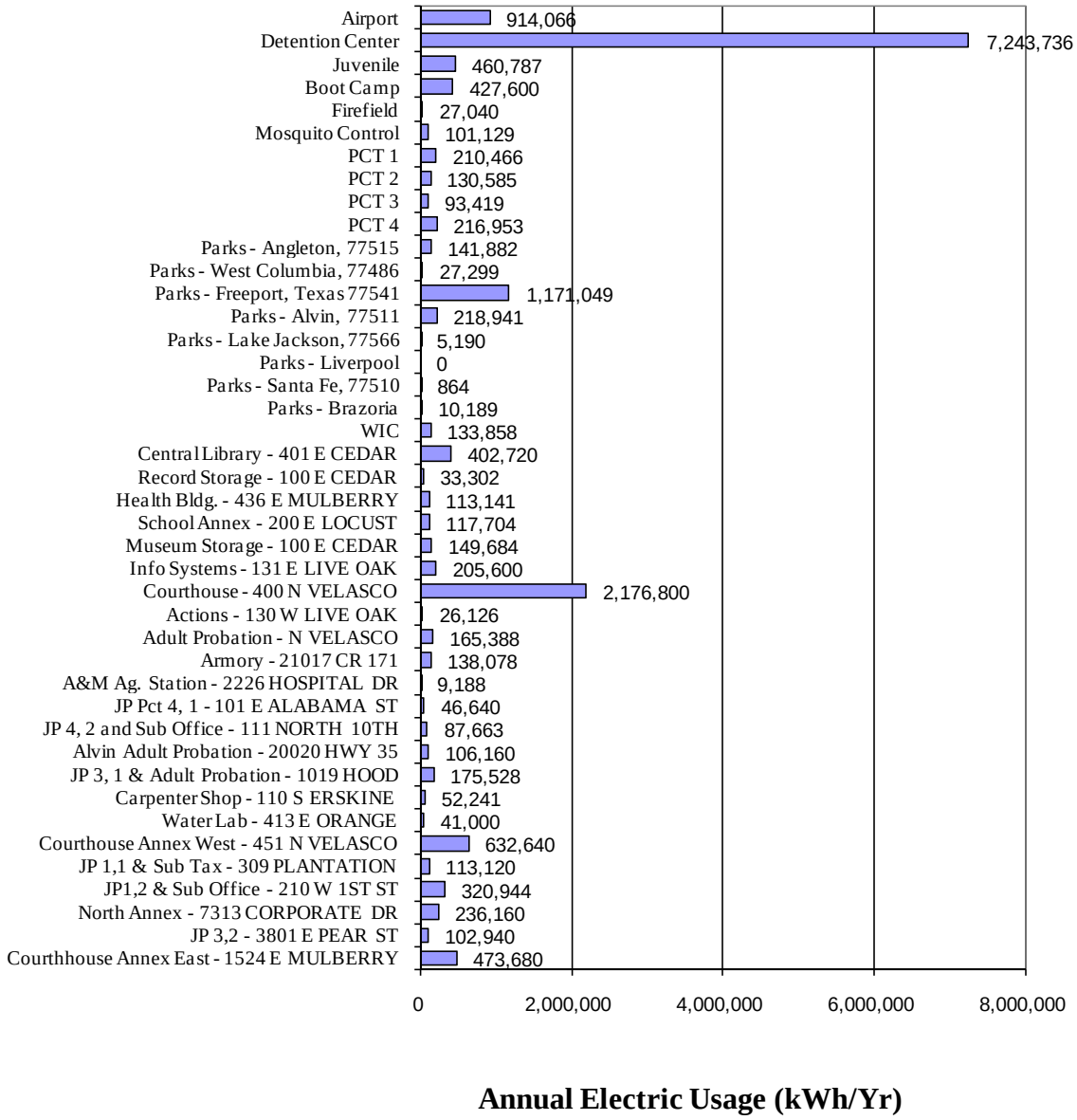
Facility Energy Performance
EUI (kBtu/SF/Yr)



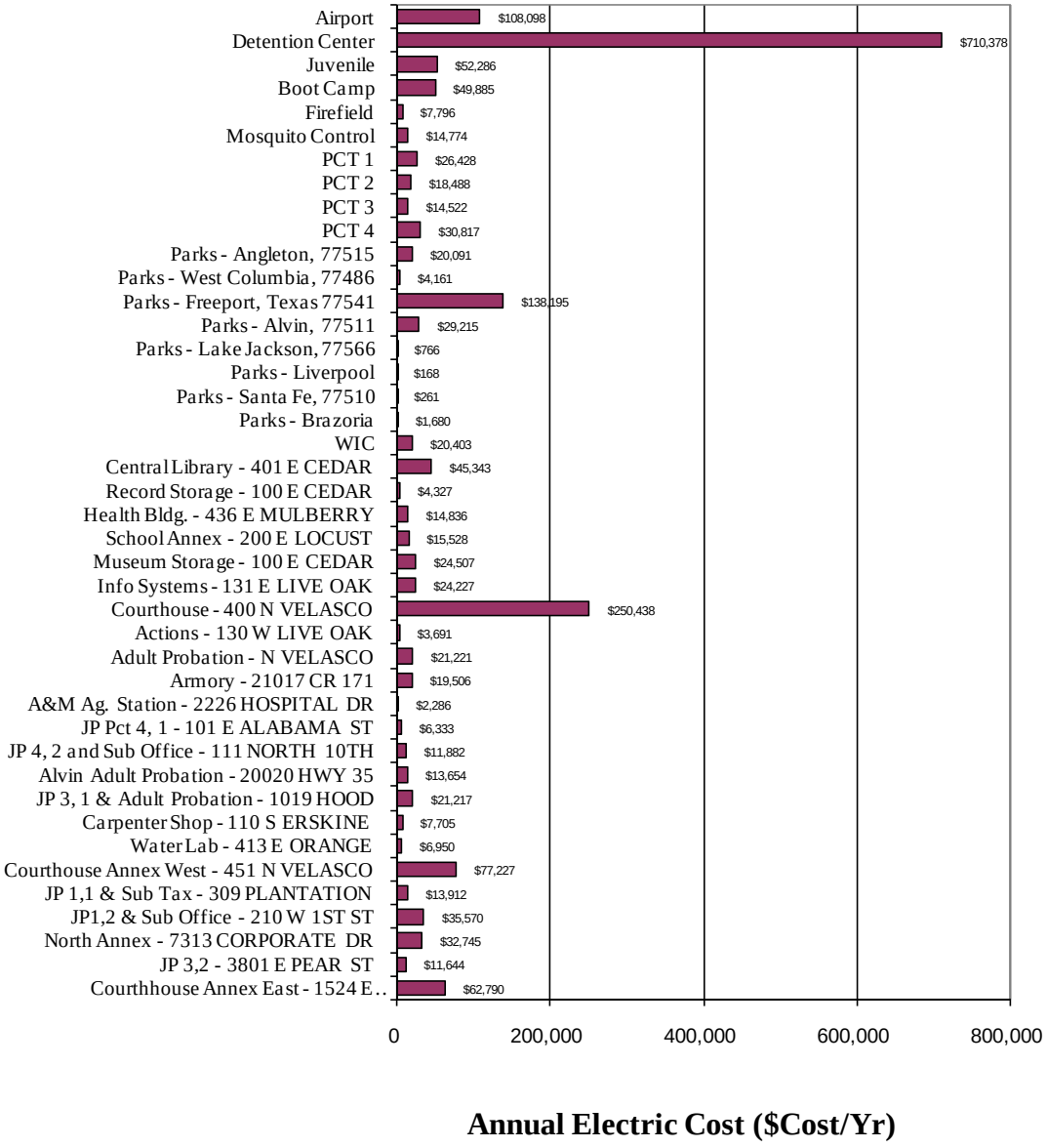
Facility Cost Performance
ECI ($/SF/Yr)

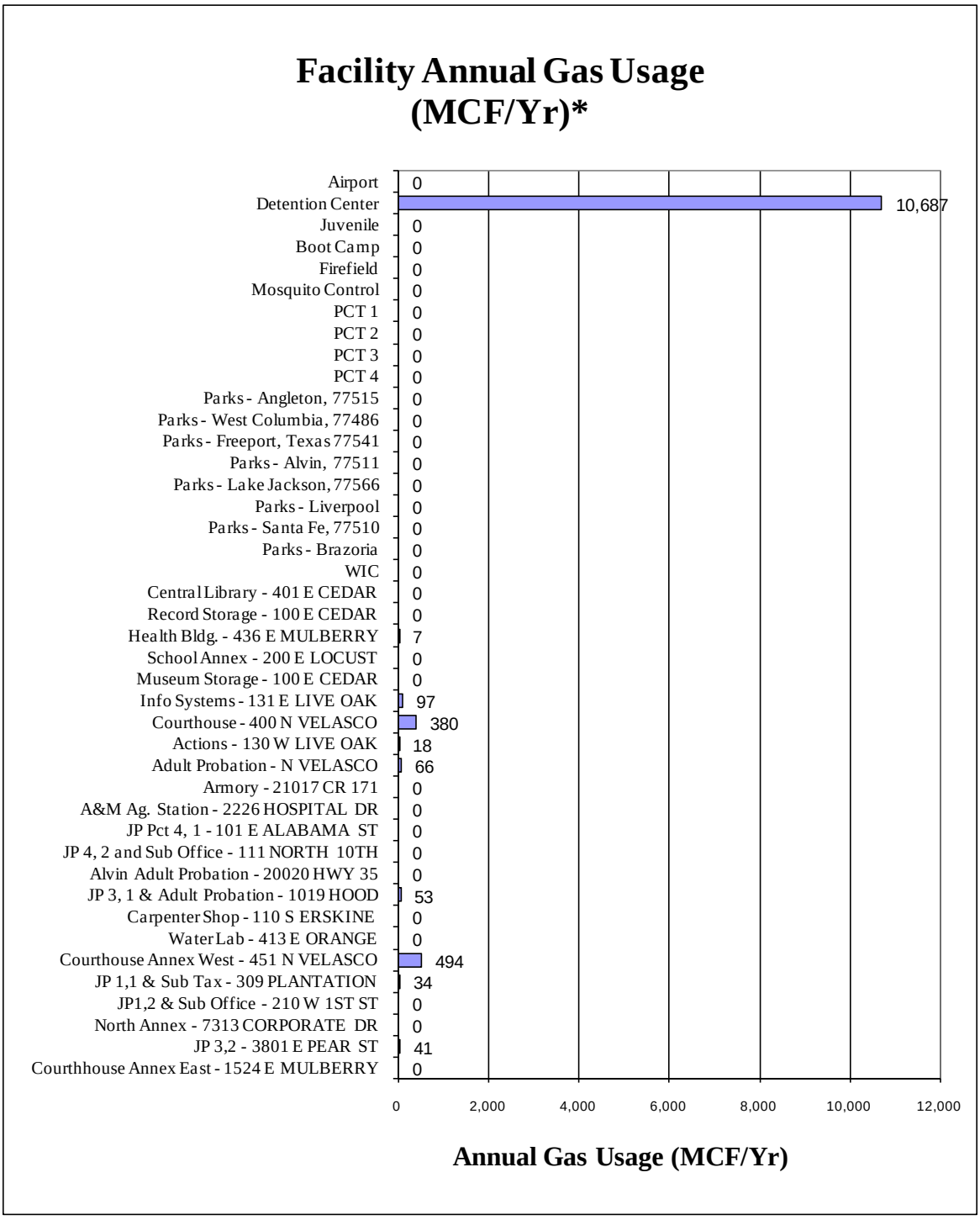


Facility Annual Electricty Usage (kWh/Yr)

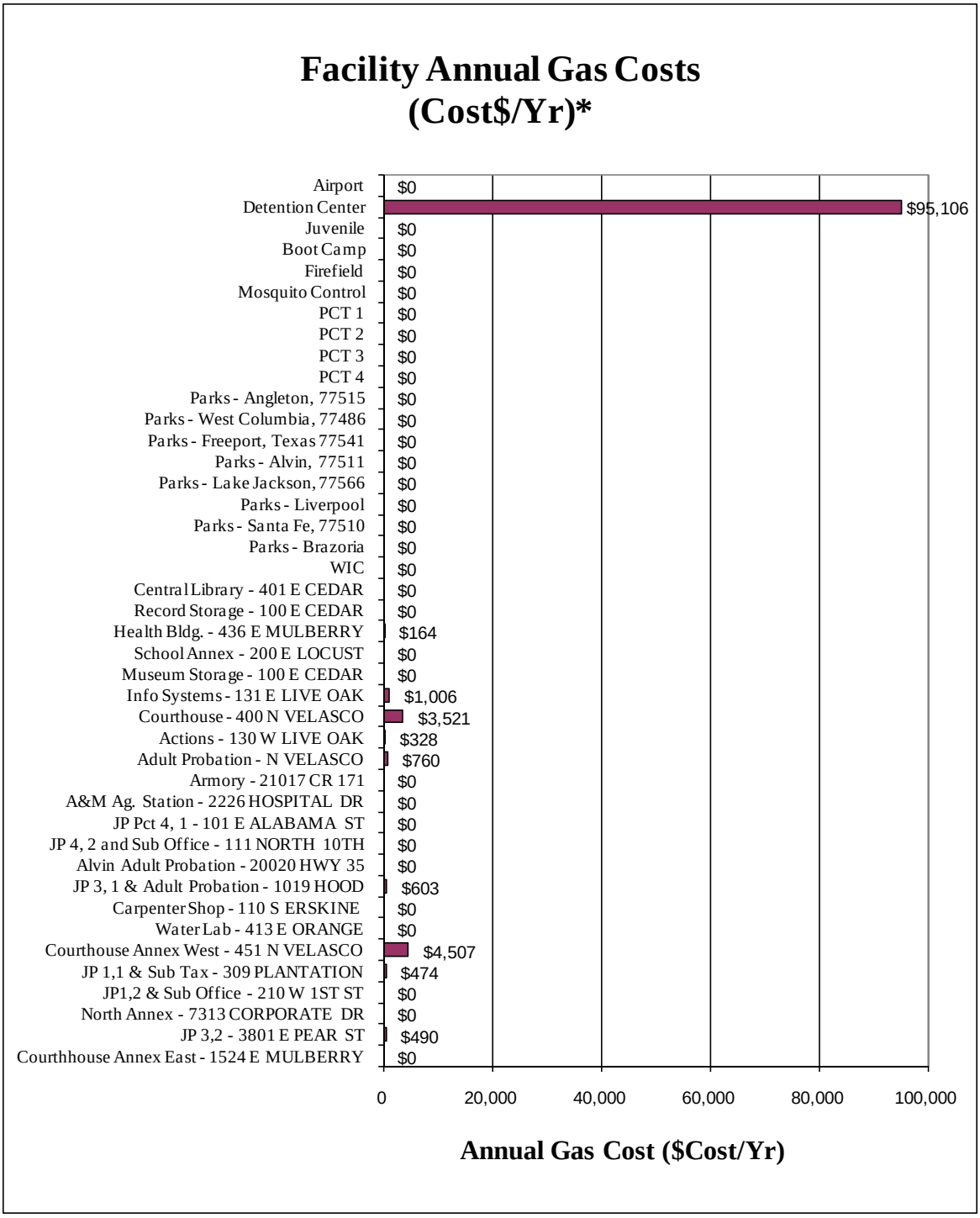


Facility Annual Electricty Costs (Cost$/Yr)



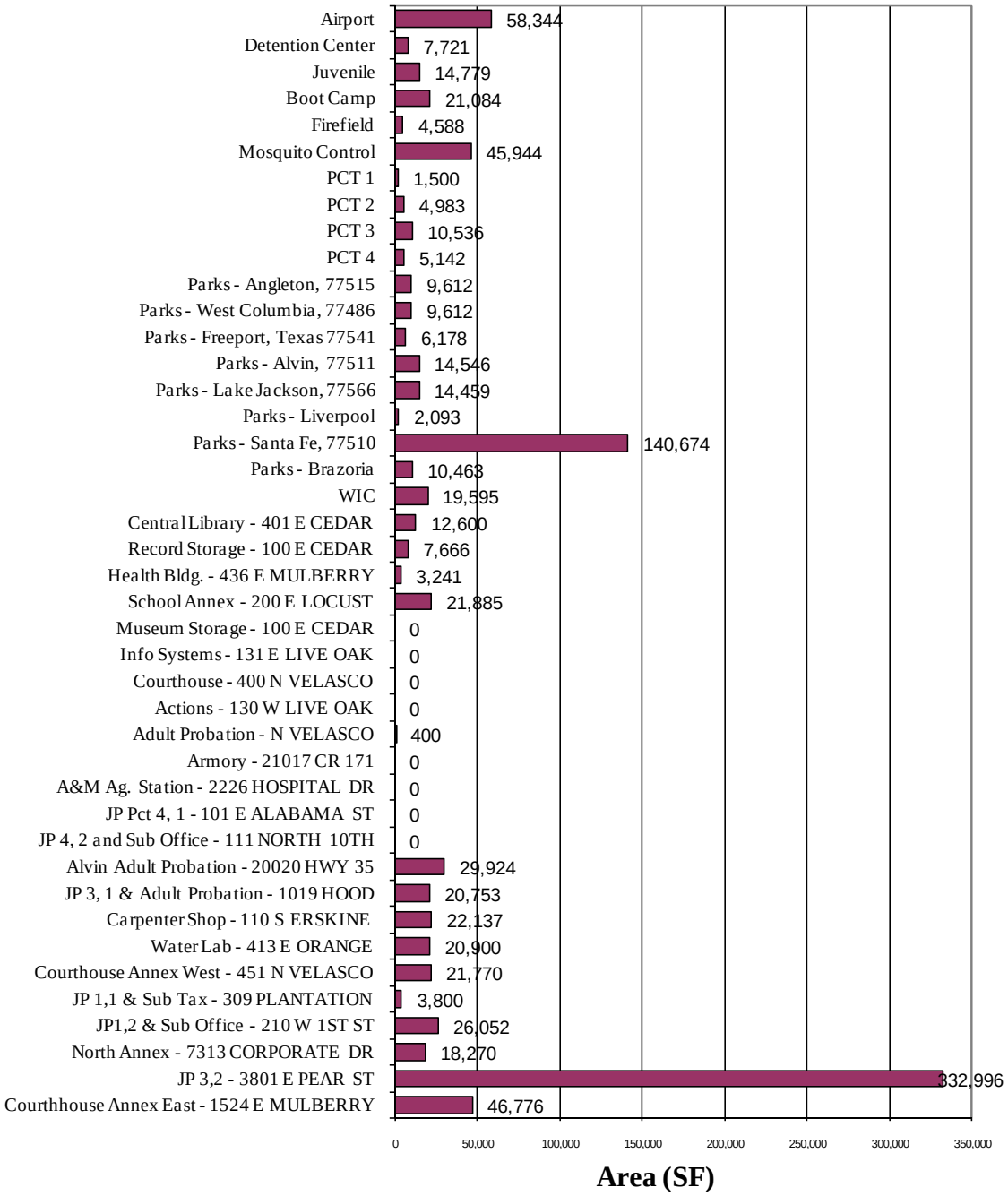


*Natural Gas Data incomplete



*Natural Gas Data incomplete

Facility Square Feet



10089010169000680901 07 10089010238007938701 00
10089010093165491501 00 10089010093165491021 00
10089010093165491561 00 10089010093165491581 00

ACCOUNT# 10089010806211OLHA9201 Electric

Gas

County: Brazoria

BUILDING: Airport

FLOOR AREA: 46,776

		Electrical					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	77,237				9,819		
March	2007	66,452				8,720		
April	2007	71,881				9,291		
May	2007	75,934				8,579		
June	2007	85,263				9,558		
July	2007	83,598				9,266		
August	2007	87,650				9,719		
September	2007	79,954				9,020		
October	2007	72,012				8,316		
November	2007	65,656				7,669		
December	2007	70,850				8,554		
January	2008	77,579				9,586		
TOTAL		914,066				108,098		

Annual Total Energy Cost = 108,098 $/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 67 kBTU/SF/year

Total KWH/yr x 0.003413 = 3,119.71 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 3,120 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 2.31 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

ACCOUNT# 10089010001420600111100 10089010238041510201000 Electric
10400514194370001 10089010238171010501060 Gas

County: Brazoria

BUILDING: Detention Center

FLOOR AREA: 332,996

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	495,551				54,517	848	6,322
March	2007	514,370				56,388	840	6,276
April	2007	540,532				58,742	944	7,059
May	2007	589,121				55,191	869	6,495
June	2007	681,094				62,098	815	6,088
July	2007	702,863				64,487	834	6,231
August	2007	656,294				60,878	720	7,258
September	2007	744,874				69,481	625	6,308
October	2007	662,300				62,491	823	8,288
November	2007	585,784				57,150	1,132	11,367
December	2007	571,857				56,844	1,147	11,515
January	2008	499,096				52,110	1,090	11,899
TOTAL		7,243,736				710,378	10,687	95,106

Annual Total Energy Cost = 805,484 $/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 107 kBTU/SF/year

Total KWH/yr x 0.003413 = 24,722.87 MMBTU/year

Total MCF/yr x 1.03 = 11,007.61 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 35,730 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 2.42 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: Center Point Energy

ACCOUNT# 10400511295160001 10400511295160002
10400513383140001 10400513623530001 Electric
Gas

County: Brazoria

BUILDING: Juvenile

FLOOR AREA: 18,270

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	26,922				3,546		
March	2007	29,721				3,854		
April	2007	38,186				4,728		
May	2007	40,215				4,361		
June	2007	46,026				4,824		
July	2007	48,152				5,063		
August	2007	49,106				5,209		
September	2007	46,699				5,025		
October	2007	47,083				5,091		
November	2007	31,506				3,704		
December	2007	28,649				3,386		
January	2008	28,522				3,494		
TOTAL		460,787				52,286		

Annual Total Energy Cost = 52,286 $/year

Total KWH/yr x 0.003413 = 1,572.67 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 1,573 MMBTU/year

Energy Use Index:
Total site BTU's/Yr ÷ Total Area (SF) = 86 kBTU/SF/year

Energy Cost Index:
Total Energy Cost/Yr ÷ Total Area (SF) = 2.86 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

ACCOUNT# 10400511295160001 10400511295160002
10400513383140001 10400513623530001 Electric
Gas

County: Brazoria

BUILDING: Juvenile

FLOOR AREA: 18,270

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	26,922				3,546		
March	2007	29,721				3,854		
April	2007	38,186				4,728		
May	2007	40,215				4,361		
June	2007	46,026				4,824		
July	2007	48,152				5,063		
August	2007	49,106				5,209		
September	2007	46,699				5,025		
October	2007	47,083				5,091		
November	2007	31,506				3,704		
December	2007	28,649				3,386		
January	2008	28,522				3,494		
TOTAL		460,787				52,286		

Annual Total Energy Cost = 52,286 $/year

Total KWH/yr x 0.003413 = 1,572.67 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 1,573 MMBTU/year

Energy Use Index:
Total site BTU's/Yr ÷ Total Area (SF) = 86 kBTU/SF/year

Energy Cost Index:
Total Energy Cost/Yr ÷ Total Area (SF) = 2.86 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400511295170001 Electric
Gas

BUILDING: Boot Camp FLOOR AREA: 26,052

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	30,960		82		3,948		
March	2007	28,720		94		3,757		
April	2007	36,400		103		4,589		
May	2007	37,360		110		4,170		
June	2007	39,760		110		4,335		
July	2007	39,920		101		4,333		
August	2007	38,480		114		4,315		
September	2007	40,000		114		4,486		
October	2007	33,920		100		3,854		
November	2007	40,000		122		4,603		
December	2007	30,400		94		3,623		
January	2008	31,680		85		3,873		
TOTAL		427,600				49,885		

Energy Use Index:

Annual Total Energy Cost = 49,885 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 56 kBTU/SF/year

Total KWH/yr x 0.003413 = 1,459.40 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 1,459 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.91 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 110400513271300001 10400513271300002 Electric
Gas

BUILDING: Firefield FLOOR AREA: 3,800

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	1,920				667		
March	2007	2,360				690		
April	2007	2,440				691		
May	2007	1,800				599		
June	2007	2,160				638		
July	2007	1,480				563		
August	2007	2,200				649		
September	2007	2,920				721		
October	2007	3,320				762		
November	2007	2,200				667		
December	2007	2,320				658		
January	2008	1,920				490		
TOTAL		27,040				7,796		

Annual Total Energy Cost = 7,796 $/year

Total KWH/yr x 0.003413 = 92.29 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 92 MMBTU/year

Energy Use Index:
Total site BTU's/Yr ÷ Total Area (SF) = 24 kBTU/SF/year

Energy Cost Index:
Total Energy Cost/Yr ÷ Total Area (SF) = 2.05 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400511293990001 100890102381841539010 6 Electric

Gas

BUILDING: Mosquito Control FLOOR AREA: 21,770

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	8,920				1,305		
March	2007	6,520				1,043		
April	2007	5,000				880		
May	2007	5,360				831		
June	2007	6,171				1,012		
July	2007	7,120				1,002		
August	2007	8,071				1,083		
September	2007	10,751				1,561		
October	2007	10,760				1,455		
November	2007	8,938				1,287		
December	2007	10,274				1,437		
January	2008	13,244				1,877		
TOTAL		101,129				14,774		

Energy Use Index:

Annual Total Energy Cost = 14,774 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 16 kBTU/SF/year

Total KWH/yr x 0.003413 = 345.15 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 345 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 0.68 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

ACCOUNT# 10400511292690001 10089010073149099001 00100891007314909900200 10089010023802150760100 10089010073149100021 00100891007314910002200 Electric

Gas

County: Brazoria

BUILDING: PCT 1

FLOOR AREA: 20,900

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	17,826				2,513		
March	2007	13,817				2,028		
April	2007	13,273				1,943		
May	2007	16,410				2,012		
June	2007	20,763				2,324		
July	2007	20,115				2,284		
August	2007	19,128				2,209		
September	2007	22,077				2,498		
October	2007	17,121				2,088		
November	2007	14,088				1,831		
December	2007	18,001				2,309		
January	2008	17,847				2,388		
TOTAL		210,466				26,428		

Annual Total Energy Cost = 26,428 $/year

Total KWH/yr x 0.003413 = 718.32 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 718 MMBTU/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 34 kBTU/SF/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.26 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

10400511294820001 10400511295100001
10400511295110001 10400511295120001
10400511310880001 10400513372680001

ACCOUNT# 10400513391170001 100890104439256789710 Electric

Gas

County: Brazoria

BUILDING: PCT 2

FLOOR AREA: 22,137

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	13,065				1,900		
March	2007	11,231				1,676		
April	2007	11,279				1,630		
May	2007	9,306				1,283		
June	2007	10,430				1,380		
July	2007	11,116				1,479		
August	2007	9,963				1,365		
September	2007	9,129				1,463		
October	2007	10,525				1,468		
November	2007	10,004				1,409		
December	2007	10,982				1,537		
January	2008	13,555				1,899		
TOTAL		130,585				18,488		

Annual Total Energy Cost = 18,488 $/year

Total KWH/yr x 0.003413 = 445.69 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 446 MMBTU/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 20 kBTU/SF/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 0.84 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

ACCOUNT# 10400511486930001 10400511486930002 10400511486930003 10400511486940001 10400511486950001 10400511486950002 10400513273040001 10400511495210001 Electric Gas

County: Brazoria

BUILDING: PCT 3

FLOOR AREA: 20,753

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	6,084				1,073		
March	2007	5,939				1,084		
April	2007	6,629				1,155		
May	2007	7,802				1,131		
June	2007	9,832				1,291		
July	2007	10,333				1,437		
August	2007	10,906				1,482		
September	2007	10,287				1,435		
October	2007	9,578				1,383		
November	2007	6,636				1,217		
December	2007	4,760				917		
January	2008	4,633				917		
TOTAL		93,419				14,522		

Annual Total Energy Cost = 14,522 $/year

Total KWH/yr x 0.003413 = 318.84 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 319 MMBTU/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 15 kBTU/SF/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 0.70 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

10400511343250001 10400511361320001
10400511364130001 10400511365060001
10400511365060002 10400511365060003
10400511365070001 10400511365070002
10400511395190001 10400511397110001

ACCOUNT# 10400511429270001 10400511429280001 Electric
Gas

County: Brazoria

BUILDING: PCT 4

FLOOR AREA: 29,924

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	16,206				2,518		
March	2007	13,607				2,300		
April	2007	17,145				2,602		
May	2007	17,693				2,426		
June	2007	20,143				2,630		
July	2007	19,924				2,668		
August	2007	21,993				2,898		
September	2007	22,897				2,976		
October	2007	20,656				2,764		
November	2007	16,589				2,412		
December	2007	16,621				2,434		
January	2008	13,479				2,190		
TOTAL		216,953				30,817		

Annual Total Energy Cost = 30,817 $/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 25 kBTU/SF/year

Total KWH/yr x 0.003413 = 740.46 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 740 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.03 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

ACCOUNT# 10400511264570001 10400511264570002 10400511264580001 10400513246070001 Electric Gas

County: Brazoria

BUILDING: Parks - Angleton, 77515

FLOOR AREA: N/A

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	10,598				1,702		
March	2007	9,670				1,591		
April	2007	11,307				1,548		
May	2007	12,108				1,595		
June	2007	15,056				1,900		
July	2007	17,351				2,105		
August	2007	14,413				2,000		
September	2007	13,125				1,742		
October	2007	9,941				1,444		
November	2007	8,295				1,322		
December	2007	8,251				1,413		
January	2008	11,767				1,729		
TOTAL		141,882				20,091		

Annual Total Energy Cost = 20,091 $/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = N/A kBTU/SF/year

Total KWH/yr x 0.003413 = 484.24 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 484 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = N/A $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400513232210001 Electric
Gas

BUILDING: Parks - West Columbia, 77486 FLOOR AREA: N/A

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	2,551				398		
March	2007	1,831				319		
April	2007	2,290				366		
May	2007	2,389				342		
June	2007	2,294				330		
July	2007	2,624				368		
August	2007	2,894				395		
September	2007	1,842				300		
October	2007	2,246				337		
November	2007	1,625				280		
December	2007	2,291				352		
January	2008	2,422				375		
TOTAL		27,299				4,161		

Energy Use Index:

Annual Total Energy Cost = 4,161 $/year

Total site BTU's/Yr ÷ Total Area (SF) = N/A kBTU/SF/year

Total KWH/yr x 0.003413 = 93.17 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 93 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = N/A $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

10089010013888801962 00 10089010013888801972 00
10089010013888801982 00 10089010053135294901 00
10089010053135294902 00 10089010238004461001 00
10089010238012715601 00 10089010238012715602 00
10089010238033514101 00 10089010238033515201 00

ACCOUNT# 10089010238151032901 04 10089010238110071101 00 Electric

Gas

County: Brazoria

BUILDING: Parks - Freeport, Texas 77541

FLOOR AREA: N/A

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	94,619				12,239		
March	2007	75,062				10,045		
April	2007	78,830				10,335		
May	2007	79,068				9,163		
June	2007	145,661				15,492		
July	2007	146,381				16,515		
August	2007	116,198				12,973		
September	2007	112,445				12,698		
October	2007	113,326				12,560		
November	2007	66,550				8,167		
December	2007	64,882				8,207		
January	2008	78,027				9,800		
TOTAL		1,171,049				138,195		

Energy Use Index:

Annual Total Energy Cost = 138,195 $/year

Total site BTU's/Yr ÷ Total Area (SF) = N/A kBTU/SF/year

Total KWH/yr x 0.003413 = 3,996.79 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 3,997 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = N/A $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

ACCOUNT# 10400513638350001 10089010238160614501 05 10089010238160614701 05 10089010238160614801 05 10089010238160614901 05 10089010238160615101 05 10089010238160615301 05 Electric
Gas

County: Brazoria

BUILDING: Parks - Alvin, 77511

FLOOR AREA: N/A

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	18,895		59		2,629		
March	2007	14,440		58		2,128		
April	2007	13,516		67		2,069		
May	2007	14,466		14		1,959		
June	2007	18,283		43		2,603		
July	2007	21,323		69		2,668		
August	2007	24,031		74		2,977		
September	2007	23,725		68		2,927		
October	2007	19,011		65		2,464		
November	2007	15,359		62		2,055		
December	2007	16,089		44		2,121		
January	2008	19,803		48		2,616		
TOTAL		218,941				29,215		

Energy Use Index:

Annual Total Energy Cost = 29,215 $/year

Total site BTU's/Yr ÷ Total Area (SF) = N/A kBTU/SF/year

Total KWH/yr x 0.003413 = 747.25 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 747 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = N/A $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 1008901023814849350104 Electric
Gas

BUILDING: Parks - Lake Jackson, 77566 FLOOR AREA: 400

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	1,117				142		
March	2007	1,035				133		
April	2007	874				115		
May	2007	876				115		
June	2007	853				112		
July	2007	53				20		
August	2007	88				24		
September	2007	60				21		
October	2007	55				21		
November	2007	59				21		
December	2007	61				21		
January	2008	59				21		
TOTAL		5,190				766		

Energy Use Index:

Annual Total Energy Cost = 766 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 44 kBTU/SF/year

Total KWH/yr x 0.003413 = 17.71 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 18 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.92 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 1008901031310088011100 Electric
Gas

BUILDING: Parks - Liverpool FLOOR AREA: N/A

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	0				14		
March	2007	0				14		
April	2007	0				14		
May	2007	0				14		
June	2007	0				14		
July	2007	0				14		
August	2007	0				14		
September	2007	0				14		
October	2007	0				14		
November	2007	0				14		
December	2007	0				14		
January	2008	0				14		
TOTAL		0				168		

Annual Total Energy Cost = 168 $/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = N/A kBTU/SF/year

Total KWH/yr x 0.003413 = 0.00 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 0 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = N/A $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 1008901031388885580200 Electric
Gas

BUILDING: Parks - Santa Fe, 77510 FLOOR AREA: N/A

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	72				22		
March	2007	72				22		
April	2007	72				22		
May*	2007	72				22		
June	2007	72				22		
July	2007	72				22		
August	2007	72				22		
September	2007	72				22		
October	2007	72				22		
November	2007	72				22		
December	2007	72				22		
January	2008	72				22		
TOTAL		864				261		

Energy Use Index:

Annual Total Energy Cost = 261 $/year

Total site BTU's/Yr ÷ Total Area (SF) = N/A kBTU/SF/year

Total KWH/yr x 0.003413 = 2.95 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 3 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = N/A $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10089010169000216201071040051464438000 1 Electric
Gas

BUILDING: Parks - Brazoria FLOOR AREA: N/A

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February*	2007	0				63		
March	2007	0				63		
April	2007	313				52		
May	2007	870				235		
June	2007	1,316				179		
July	2007	914				134		
August	2007	901				133		
September	2007	908				133		
October	2007	1,064				152		
November	2007	1,250				172		
December	2007	1,230				171		
January	2008	1,423				192		
TOTAL		10,189				1,680		

Energy Use Index:

Annual Total Energy Cost = 1,680 $/year

Total site BTU's/Yr ÷ Total Area (SF) = N/A kBTU/SF/year

Total KWH/yr x 0.003413 = 34.78 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Energy Cost Index:

Total Other x _____ = 0.0 MMBTU/year

Total Energy Cost/Yr ÷ Total Area (SF) = N/A $/SF/year

Total Site MMBTU's/yr = 35 MMBTU/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10089010169000216201071040051464438000 1 Electric
Gas

BUILDING: Parks - Brazoria FLOOR AREA: N/A

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February*	2007	0				63		
March	2007	0				63		
April	2007	313				52		
May	2007	870				235		
June	2007	1,316				179		
July	2007	914				134		
August	2007	901				133		
September	2007	908				133		
October	2007	1,064				152		
November	2007	1,250				172		
December	2007	1,230				171		
January	2008	1,423				192		
TOTAL		10,189				1,680		

Energy Use Index:

Annual Total Energy Cost = 1,680 $/year

Total site BTU's/Yr ÷ Total Area (SF) = N/A kBTU/SF/year

Total KWH/yr x 0.003413 = 34.78 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 35 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = N/A $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

ACCOUNT# 10400514380300001 10400511474270001
10089010103168147201 00 10400514641960001 Electric
Gas

County: Brazoria

BUILDING: WIC

FLOOR AREA: N/A

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	9,765				2,523		
March	2007	8,344				1,452		
April	2007	8,862				1,458		
May	2007	10,080				1,417		
June	2007	12,686				1,640		
July	2007	14,500				1,829		
August	2007	14,639				1,873		
September	2007	13,571				1,791		
October	2007	13,838				1,828		
November*	2007	9,057				1,450		
December	2007	7,891				1,421		
January	2008	10,625				1,722		
TOTAL		133,858				20,403		

Energy Use Index:

Annual Total Energy Cost = 20,403 $/year

Total site BTU's/Yr ÷ Total Area (SF) = N/A kBTU/SF/year

Total KWH/yr x 0.003413 = 456.86 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 457 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = N/A $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400511234650001 Electric
Gas

BUILDING: Central Library - 401 E CEDAR FLOOR AREA: 21,885

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	21,120				2,821		
March	2007	29,600				3,684		
April	2007	32,640				3,511		
May	2007	35,760				3,822		
June	2007	46,480				4,843		
July	2007	42,800				4,555		
August	2007	44,720				4,789		
September	2007	43,040				4,590		
October	2007	34,160				3,815		
November	2007	26,800				3,151		
December	2007	23,920				2,960		
January	2008	21,680				2,802		
TOTAL		402,720				45,343		

Annual Total Energy Cost = 45,343 $/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 63 kBTU/SF/year

Total KWH/yr x 0.003413 = 1,374.48 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 1,374 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 2.07 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400511234930001 Electric
Gas

BUILDING: Record Storage - 100 E CEDAR FLOOR AREA: 3,241

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	2,180				339		
March	2007	1,881				290		
April*	2007	2,500				350		
May*	2007	3,000				420		
June	2007	4,432				492		
July	2007	4,112				464		
August	2007	4,444				500		
September	2007	3,972				459		
October	2007	3,379				408		
November	2007	1,873				270		
December	2007	1,146				205		
January	2008	383				130		
TOTAL		33,302				4,327		

Energy Use Index:

Annual Total Energy Cost = 4,327 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 35 kBTU/SF/year

Total KWH/yr x 0.003413 = 113.66 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 114 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.34 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400511239450001 10400511239450002 Electric
7044078-9 Gas
BUILDING: Health Bldg. - 436 E MULBERRY FLOOR AREA: 7,666

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February*	2007	8,325				1,093	0	0
March*	2007	5,456				765	0	0
April*	2007	11,108				1,384	0	0
May*	2007	5,371				696	0	0
June*	2007	5,472				731	0	0
July	2007	13,195				1,512	3	36
August	2007	8,435				1,684	3	48
September	2007	14,622				1,699	0	14
October	2007	12,383				1,464	0	18
November	2007	9,640				1,225	0	15
December	2007	9,021				1,234	0	17
January	2008	10,113				1,349	0	17
TOTAL		113,141				14,836	6.9	164

Energy Use Index:

Annual Total Energy Cost = 14,999 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 51 kBTU/SF/year

Total KWH/yr x 0.003413 = 386.15 MMBTU/year
Total MCF/yr x 1.03 = 7.11 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 393 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.96 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: CenterPoint

ACCOUNT# 10400511241300001 10400511241300002 10400511241300003 Electric Gas

County: Brazoria

BUILDING: School Annex - 200 E LOCUST

FLOOR AREA: 12,600

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	12,212				1,668		
March	2007	7,732				1,243		
April	2007	6,532				1,024		
May	2007	8,132				1,073		
June	2007	12,692				1,474		
July	2007	13,172				1,536		
August	2007	13,052				1,622		
September	2007	12,692				1,521		
October	2007	11,092				1,363		
November	2007	6,532				946		
December	2007	6,292				950		
January	2008	7,572				1,109		
TOTAL		117,704				15,528		

Annual Total Energy Cost = 15,528 $/year

Total KWH/yr x 0.003413 = 401.72 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 402 MMBTU/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 32 kBTU/SF/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.23 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

ACCOUNT# 10400511241500001 10400511241520001 10400511241520002 Electric Gas

County: Brazoria

BUILDING: Museum Storage - 100 E CEDAR

FLOOR AREA: 19,595

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	9,815				1,404		
March	2007	7,334				1,098		
April	2007	7,849				1,147		
May	2007	10,362				1,264		
June	2007	14,256				1,631		
July	2007	16,418				7,410		
August	2007	18,974				2,115		
September	2007	18,214				2,086		
October	2007	16,215				1,906		
November	2007	11,735				1,521		
December	2007	9,418				1,565		
January	2008	9,094				1,359		
TOTAL		149,684				24,507		

Annual Total Energy Cost = 24,507 $/year

Total KWH/yr x 0.003413 = 510.87 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 511 MMBTU/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 26 kBTU/SF/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.25 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400511241530001 Electric

4744251-2 Gas

BUILDING: Info Systems - 131 E LIVE OAK FLOOR AREA: 10,463

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	8,400				1,288	40	304
March	2007	9,120				1,367	4	43
April	2007	13,720				1,846	3	34
May	2007	16,040				1,847	2	24
June	2007	23,280				2,504	1	23
July	2007	25,640				2,753	2	24
August	2007	29,840				3,153	1	21
September	2007	29,200				3,137	1	26
October	2007	21,600				2,425	1	25
November	2007	12,920				1,633	1	27
December	2007	8,960				1,234	9	103
January	2008	6,880				1,039	33	354
TOTAL		205,600				24,227	97.4	1,006

Energy Use Index:

Annual Total Energy Cost = 25,233 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 77 kBTU/SF/year

Total KWH/yr x 0.003413 = 701.71 MMBTU/year

Total MCF/yr x 1.03 = 100.32 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 802 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 2.41 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: CenterPoint

County: Brazoria

ACCOUNT# 10400511241540001 Electric

4747210-5 Gas

BUILDING: Courthouse - 400 N VELASCO FLOOR AREA: 140,674

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	153,200				19,552	110	802
March	2007	149,200				19,178	23	183
April	2007	157,200				20,135	22	176
May	2007	181,200				19,929	7	66
June	2007	203,200				21,690	8	73
July	2007	197,200				21,790	8	73
August	2007	231,200				24,552	7	65
September	2007	229,600				25,482	7	87
October	2007	197,600				21,891	7	87
November	2007	173,200				19,594	8	98
December	2007	156,800				18,458	37	399
January	2008	147,200				18,186	136	1,413
TOTAL		2,176,800				250,438	380.0	3,521

Energy Use Index:

Annual Total Energy Cost = 253,959 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 56 kBTU/SF/year

Total KWH/yr x 0.003413 = 7,429.42 MMBTU/year

Total MCF/yr x 1.03 = 391.40 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 7,821 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.81 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: CenterPoint

County: Brazoria

ACCOUNT# 10400511258580001 Electric

4841892-5 Gas

BUILDING: Actions - 130 W LIVE OAK FLOOR AREA: 2,093

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	943				185	4	41
March	2007	1,550				262	1	17
April	2007	1,958				275	0	15
May	2007	2,217				316	0	15
June	2007	3,002				375	0	15
July	2007	3,333				407	0	14
August	2007	3,532				433	0	15
September	2007	3,142				395	0	16
October	2007	2,415				330	0	16
November	2007	1,502				249	2	36
December	2007	1,313				234	6	83
January	2008	1,219				229	3	44
TOTAL		26,126				3,691	18.0	328

Energy Use Index:

Annual Total Energy Cost = 4,019 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 51 kBTU/SF/year

Total KWH/yr x 0.003413 = 89.17 MMBTU/year

Total MCF/yr x 1.03 = 18.54 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 108 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.92 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: CenterPoint

ACCOUNT# 10400511259010001 10400511259020001
10400511266290001 10400511266290002 Electric
4814851-4 Gas

County: Brazoria

BUILDING: Adult Probation - N VELASCO

FLOOR AREA: 14,459

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February*	2007	8,794				1,355	27	210
March*	2007	7,934				1,203	1	23
April*	2007	8,054				1,220	1	18
May*	2007	10,374				1,285	1	19
June*	2007	12,264				1,445	1	17
July*	2007	12,564				1,496	1	17
August*	2007	15,364				1,764	1	17
September*	2007	15,024				1,763	1	20
October*	2007	12,514				1,521	1	20
November	2007	24,784				3,038	1	24
December	2007	20,354				2,692	12	141
January	2008	17,364				2,441	19	235
TOTAL		165,388				21,221	65.5	760

Energy Use Index:

Annual Total Energy Cost = 21,981 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 44 kBTU/SF/year

Total KWH/yr x 0.003413 = 564.47 MMBTU/year

Total MCF/yr x 1.03 = 67.47 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 632 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.52 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: CenterPoint

ACCOUNT# 10400511295130001 10400511295130002 10400511295130004 Electric Gas

County: Brazoria

BUILDING: Armory - 21017 CR 171

FLOOR AREA: 14,546

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	11,387				1,672		
March	2007	10,187				1,535		
April	2007	12,387				1,755		
May	2007	14,947				1,833		
June	2007	2,024				359		
July	2007	18,347				2,186		
August	2007	21,347				2,511		
September	2007	6,787				2,170		
October	2007	17,467				2,106		
November	2007	2,024				362		
December	2007	9,747				1,407		
January	2008	11,427				1,608		
TOTAL		138,078				19,506		

Annual Total Energy Cost = 19,506 $/year

Total KWH/yr x 0.003413 = 471.26 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 471 MMBTU/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 32 kBTU/SF/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.34 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

ACCOUNT# 10400511295190002 10400511295200001 10400511295210001 Electric Gas

County: Brazoria

BUILDING: A&M Ag. Station - 2226 HOSPITAL DR

FLOOR AREA: 6,178

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	833				209		
March	2007	1,023				212		
April	2007	1,046				243		
May	2007	574				167		
June	2007	485				152		
July	2007	552				161		
August	2007	518				167		
September	2007	535				172		
October	2007	703				182		
November	2007	956				206		
December	2007	1,071				220		
January	2008	892				195		
TOTAL		9,188				2,286		

Annual Total Energy Cost = 2,286 $/year

Total KWH/yr x 0.003413 = 31.36 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 31 MMBTU/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 5 kBTU/SF/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 0.37 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400511360560001 Electric
Gas

BUILDING: JP Pct 4, 1 - 101 E ALABAMA ST FLOOR AREA: 9,612

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	3,680				390		
March	2007	2,480				469		
April	2007	4,600				435		
May	2007	3,880				513		
June	2007	4,280				560		
July	2007	4,320				566		
August	2007	5,400				676		
September	2007	4,280				569		
October	2007	3,400				492		
November	2007	3,200				514		
December	2007	3,080				517		
January	2008	4,040				631		
TOTAL		46,640				6,333		

Annual Total Energy Cost = 6,333 $/year

Total KWH/yr x 0.003413 = 159.18 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 159 MMBTU/year

Energy Use Index:
Total site BTU's/Yr ÷ Total Area (SF) = 17 kBTU/SF/year

Energy Cost Index:
Total Energy Cost/Yr ÷ Total Area (SF) = 0.66 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400511429260001 Electric

Gas

BUILDING: JP 4, 2 and Sub Office - 111 NORTH 10TH FLOOR AREA: 9,612

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	4,672				805		
March	2007	5,685				907		
April	2007	5,998				938		
May	2007	6,996				928		
June	2007	9,347				1,049		
July	2007	10,371				1,235		
August	2007	9,457				1,181		
September	2007	8,802				1,111		
October	2007	8,562				1,096		
November	2007	6,148				876		
December	2007	6,213				929		
January	2008	5,412				825		
TOTAL		87,663				11,882		

Energy Use Index:

Annual Total Energy Cost = 11,882 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 31 kBTU/SF/year

Total KWH/yr x 0.003413 = 299.19 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 299 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.24 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400511493670001 Electric
Gas

BUILDING: Alvin Adult Probation - 20020 HWY 35 FLOOR AREA: 5,142

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	8,280				1,188		
March	2007	7,240				1,046		
April	2007	7,560				1,069		
May	2007	8,840				1,044		
June	2007	10,160				1,180		
July	2007	10,520				1,225		
August	2007	10,400				1,240		
September	2007	9,560				1,157		
October	2007	10,360				1,232		
November	2007	7,320				963		
December	2007	7,520				1,088		
January	2008	8,400				1,224		
TOTAL		106,160				13,654		

Energy Use Index:

Annual Total Energy Cost = 13,654 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 70 kBTU/SF/year

Total KWH/yr x 0.003413 = 362.32 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 362 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 2.66 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400511474260001 10400511474260002 Electric
4789774-9 Gas

BUILDING: JP 3, 1 & Adult Probation - 1019 HOOD FLOOR AREA: 10,536

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	8,854				1,288	13	110
March	2007	13,334				1,786	14	114
April	2007	15,494				2,008	12	105
May	2007	14,774				1,712	1	53
June	2007	15,414				1,757	1	22
July	2007	20,854				2,264	1	23
August	2007	12,694				1,532	1	21
September	2007	17,094				1,947	1	27
October	2007	18,854				2,128	1	25
November	2007	14,614				1,742	1	27
December	2007	12,214				1,544	1	26
January	2008	11,334				1,508	3	49
TOTAL		175,528				21,217	53.0	603

Energy Use Index:

Annual Total Energy Cost = 21,820 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 62 kBTU/SF/year

Total KWH/yr x 0.003413 = 599.08 MMBTU/year
Total MCF/yr x 1.03 = 54.59 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 654 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 2.07 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: CenterPoint

County: Brazoria

ACCOUNT# 10400512466180001 Electric
Gas

BUILDING: Carpenter Shop - 110 S ERSKINE FLOOR AREA: 4,983

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	3,429				563		
March	2007	2,551				465		
April	2007	5,019				652		
May	2007	5,421				681		
June	2007	6,527				795		
July	2007	7,237				869		
August	2007	1,729				853		
September	2007	5,349				694		
October	2007	4,333				604		
November	2007	3,348				521		
December	2007	3,245				458		
January	2008	4,053				552		
TOTAL		52,241				7,705		

Annual Total Energy Cost = 7,705 $/year

Total KWH/yr x 0.003413 = 178.30 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 178 MMBTU/year

Energy Use Index:
Total site BTU's/Yr ÷ Total Area (SF) = 36 kBTU/SF/year

Energy Cost Index:
Total Energy Cost/Yr ÷ Total Area (SF) = 1.55 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400512942180001 Electric
Gas

BUILDING: Water Lab - 413 E ORANGE FLOOR AREA: 1,500

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	2,960				557		
March	2007	2,560				511		
April	2007	3,160				525		
May	2007	3,880				586		
June	2007	4,160				649		
July	2007	4,680				671		
August	2007	4,520				665		
September	2007	3,800				594		
October	2007	2,800				509		
November	2007	2,360				515		
December	2007	2,680				509		
January	2008	3,440				658		
TOTAL		41,000				6,950		

Energy Use Index:

Annual Total Energy Cost = 6,950 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 93 kBTU/SF/year

Total KWH/yr x 0.003413 = 139.93 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 140 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 4.63 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 10400514220000001 Electric

4747215-4 Gas

BUILDING: Courthouse Annex West - 451 N VELASCO FLOOR AREA: 45,944

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	49,680		197		6,824	147	1,067
March	2007	53,040		194		7,064	74	543
April	2007	57,360		190		6,599	15	127
May	2007	52,560		194		6,144	1	22
June	2007	54,960		194		6,409	1	19
July	2007	58,080		194		6,716	2	24
August	2007	62,640		199		7,282	0	15
September	2007	55,920		185		6,538	8	100
October	2007	54,000		187		6,433	0	15
November	2007	49,440		187		6,170	62	659
December	2007	51,120		175		6,448	72	760
January	2008	33,840		143		4,601	111	1,156
TOTAL		632,640				77,227	494.2	4,507

Energy Use Index:

Annual Total Energy Cost = 81,734 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 58 kBTU/SF/year

Total KWH/yr x 0.003413 = 2,159.20 MMBTU/year

Total MCF/yr x 1.03 = 509.03 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 2,668 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.78 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: CenterPoint

County: Brazoria

ACCOUNT# 1008901016319245942100 Electric

4733302-6 Gas

BUILDING: JP 1,1 & Sub Tax - 309 PLANTATION FLOOR AREA: 4,588

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	6,560		24		1,729	9	78
March	2007	9,080		28		1,153	2	24
April	2007	8,800		28		986	0	14
May	2007	8,880		32		988	0	14
June	2007	12,160		28		1,291	1	15
July	2007	11,120		20		1,190	0	14
August	2007	12,520		28		1,450	0	15
September	2007	10,720		16		1,142	1	16
October	2007	10,000		32		1,130	0	15
November	2007	8,400		32		1,005	2	35
December	2007	7,160		28		895	7	91
January	2008	7,720		20		953	11	144
TOTAL		113,120				13,912	34.2	474

Energy Use Index:

Annual Total Energy Cost = 14,386 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 92 kBTU/SF/year

Total KWH/yr x 0.003413 = 386.08 MMBTU/year

Total MCF/yr x 1.03 = 35.23 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 421 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 3.14 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: CenterPoint

County: Brazoria

ACCOUNT# 100890108321545680100 Electric
Gas

BUILDING: JP1,2 & Sub Office - 210 W 1ST ST FLOOR AREA: 21,084

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	23,232		86		2,935		
March	2007	19,104		106		2,595		
April	2007	21,216		86		2,693		
May	2007	21,312		86		2,379		
June	2007	26,112		96		2,825		
July	2007	33,696		106		3,580		
August	2007	30,624		96		3,276		
September	2007	34,176		96		3,663		
October	2007	29,856		96		3,250		
November	2007	22,752		86		2,572		
December	2007	34,384		96		2,844		
January	2008	24,480		96		2,957		
TOTAL		320,944				35,570		

Energy Use Index:

Annual Total Energy Cost = 35,570 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 52 kBTU/SF/year

Total KWH/yr x 0.003413 = 1,095.38 MMBTU/year
Total MCF/yr x 1.03 = 0.00 MMBTU/year
Total Other x _____ = 0.0 MMBTU/year
Total Site MMBTU's/yr = 1,095 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.69 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 1008901023816863080105 Electric

Gas

BUILDING: North Annex - 7313 CORPORATE DR FLOOR AREA: 14,779

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	14,976		75		2,037		
March	2007	12,192		75		1,739		
April	2007	12,864		66		1,771		
May	2007	16,608		66		1,919		
June	2007	19,008		78		2,150		
July	2007	19,104		78		2,178		
August	2007	50,880		78		5,133		
September	2007	23,520		87		7,772		
October	2007	20,928		77		2,386		
November	2007	16,224		71		1,932		
December	2007	14,880		61		1,829		
January	2008	14,976		56		1,898		
TOTAL		236,160				32,745		

Annual Total Energy Cost = 32,745 $/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 55 kBTU/SF/year

Total KWH/yr x 0.003413 = 806.01 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 806 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 2.22 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

County: Brazoria

ACCOUNT# 1008901051393273437100 Electric

4793389-0 Gas

BUILDING: JP 3,2 - 3801 E PEAR ST FLOOR AREA: 7,721

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	5,340		24		711	18	148
March	2007	5,680		24		749	5	51
April	2007	8,100		26		1,005	2	26
May	2007	6,560		3		896	1	22
June	2007	10,500		25		1,080	1	23
July	2007	11,200		25		1,153	1	23
August	2007	10,420		25		1,089	1	22
September	2007	12,340		26		1,291	1	27
October	2007	11,100		26		1,172	1	26
November	2007	7,240		26		824	1	26
December	2007	7,880		22		887	2	34
January	2008	6,580		21		786	5	61
TOTAL		102,940				11,644	41.1	490

Energy Use Index:

Annual Total Energy Cost = 12,133 $/year

Total site BTU's/Yr ÷ Total Area (SF) = 51 kBTU/SF/year

Total KWH/yr x 0.003413 = 351.33 MMBTU/year

Total MCF/yr x 1.03 = 42.33 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 394 MMBTU/year

Energy Cost Index:

Total Energy Cost/Yr ÷ Total Area (SF) = 1.57 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: CenterPoint

County: Brazoria

ACCOUNT# 10400511228170001 Electric

Gas

BUILDING: Courthhouse Annex East - 1524 E MULBERRY FLOOR AREA: 58,344

		ELECTRICAL					NATURAL GAS / FUEL	
			DEMAND			TOTAL ALL		
		CONSUMPTION	METERED	CHARGED	COST OF	ELECTRIC	CONSUMPTION	TOTAL
MONTH	YEAR	KWH	KW	KW	DEMAND ($)	COSTS ($)	MCF	COSTS ($)
February	2007	29,520		89		4,300		
March	2007	30,960		1		4,387		
April	2007	36,720		96		4,472		
May	2007	40,720		94		4,785		
June	2007	47,920		95		5,499		
July	2007	46,480		98		5,400		
August	2007	47,840		96		10,643		
September	2007	47,920		102		5,268		
October	2007	36,480		106		4,249		
November	2007	30,480		94		3,684		
December	2007	30,400		84		3,747		
January	2008	48,240		182		6,357		
TOTAL		473,680				62,790		

Annual Total Energy Cost = 62,790 $/year

Total KWH/yr x 0.003413 = 1,616.67 MMBTU/year

Total MCF/yr x 1.03 = 0.00 MMBTU/year

Total Other x _____ = 0.0 MMBTU/year

Total Site MMBTU's/yr = 1,617 MMBTU/year

Energy Use Index:

Total site BTU's/Yr ÷ Total Area (SF) = 28 kBTU/SF/year

Energy Cost Index:

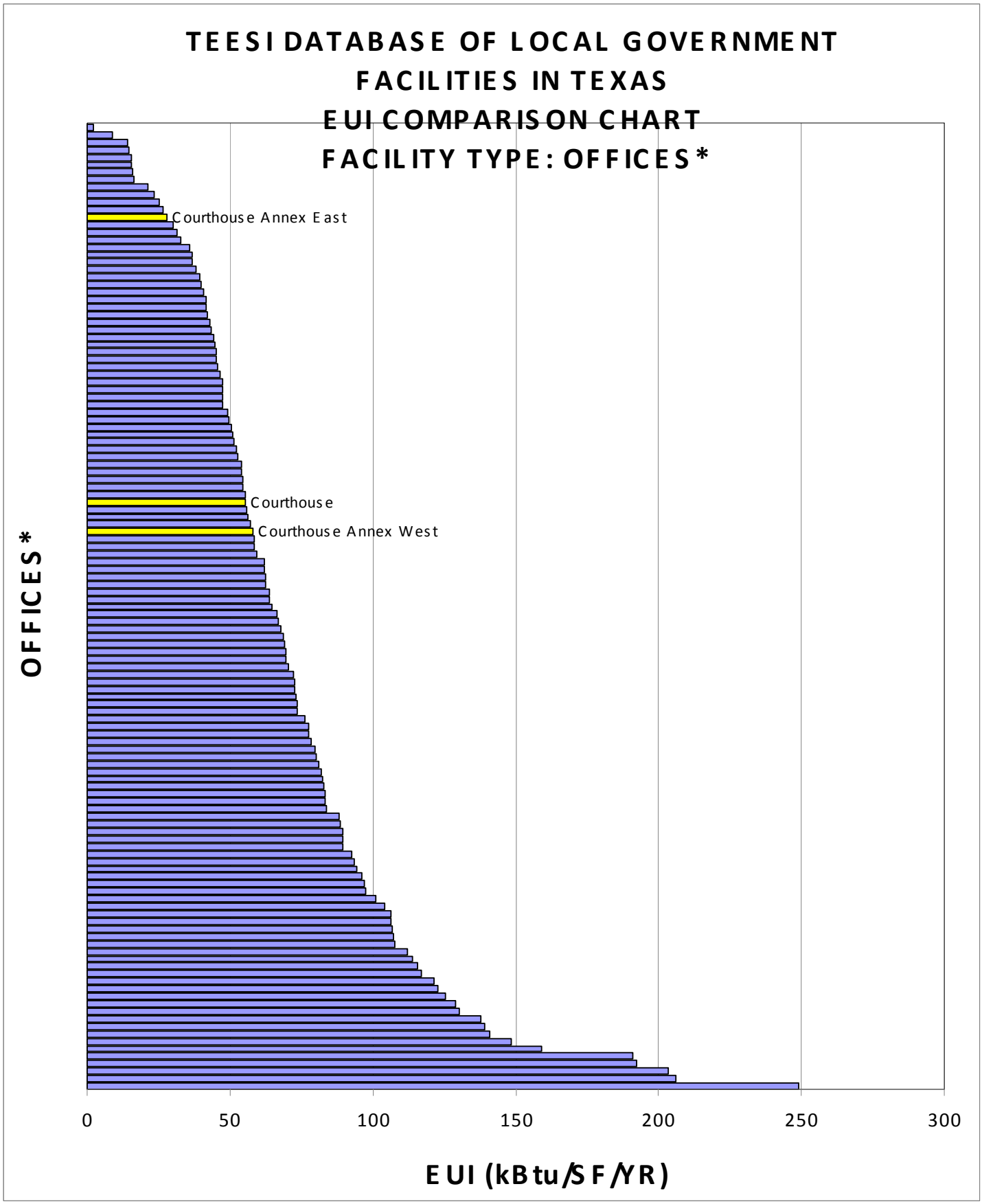
Total Energy Cost/Yr ÷ Total Area (SF) = 1.08 $/SF/year

Electric Utility: Reliant Energy

Gas Utility: N/A

APPENDIX D

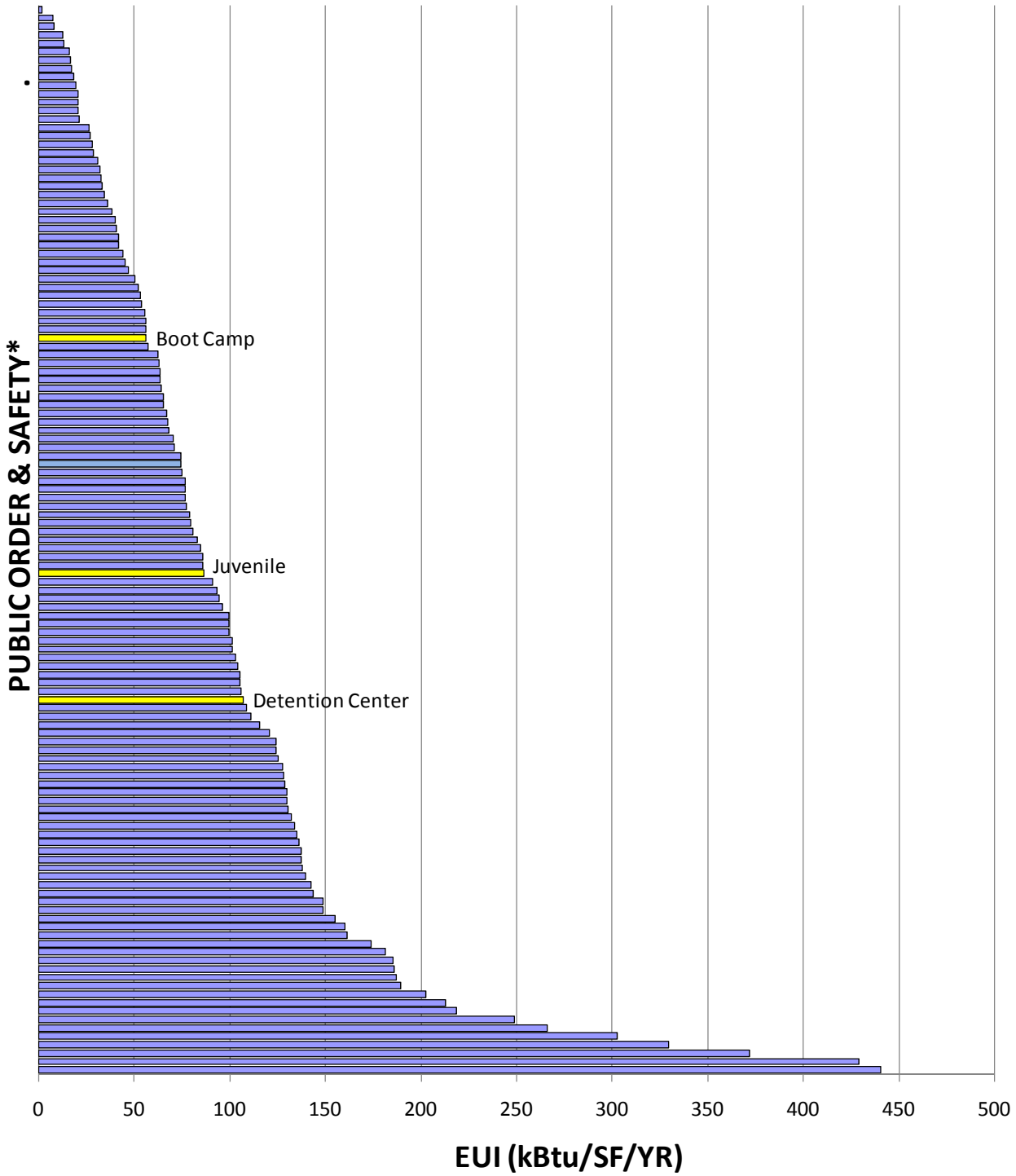
ENERGY PERFORMANCE COMPARISON



*Offices (INCL: City Hall, Courthouse, Administrative Offices, Public Works Buildings)

TEESI DATABASE OF LOCAL GOVERNMENT FACILITIES IN TEXAS
EUI COMPARISON CHART

FACILITY TYPE: PUBLIC ORDER & SAFETY



*Facility Type: Public Order and Safety (Police Dept, Fire Dept, EMS, Correctional Facilities, etc.)

APPENDIX E

ENERGY STAR INFORMATION

The ENERGY STAR® Challenge:
Build a Better World 10% at a Time

Many of us are taking steps to improve the energy efficiency of our homes with ENERGY STAR qualified lighting, appliances, electronics, and heating and cooling systems. But what we may not realize is that the buildings in which we work, shop, play, and educate our children use about $200 billion worth of electricity and natural gas each year.

The U.S. Environmental Protection Agency (EPA) estimates that if the energy efficiency of commercial and industrial buildings in the U.S. improved 10 percent, Americans would save about $20 billion and reduce greenhouse gases equal to the emissions from about 30 million vehicles. You can join us and help reach this goal!

When lights are left on and the heating and cooling system runs in an unoccupied commercial building, energy is wasted. When this happens, a power plant down the road burns fossil fuels to generate that energy and sends emissions into our environment.

In fact, the energy used by commercial and industrial buildings in the United States is responsible for nearly 50 percent of our national emissions of greenhouse gases that contribute to global climate change.

Thanks to the thousands of businesses and organizations that work with EPA's ENERGY STAR Program, we're already saving billions of dollars a year with strategic energy efficiency practices that reduce operating costs and greenhouse gas emissions without tradeoffs in performance or quality. But we're on a journey of continuous improvement — we can do more.

Take the ENERGY STAR Challenge!

Whether you're associated with a small school or a large corporation, a local government or a national association, a community hospital or a hotel group, a manufacturing plant or a retailer — you can be part of the ENERGY STAR Challenge and help improve the energy efficiency of America's commercial and industrial buildings by 10 percent or more.

Challenge participants and their members are encouraged to:

- Measure and track energy use.
- Develop a plan for energy improvements.
- Make energy efficiency upgrades.
- Help spread the energy efficiency word to others.

Now is the time to help build a better world and take many of the same steps at work that you are taking at home to protect our environment. The ENERGY STAR Challenge Toolkit can show you how.

Use the ENERGY STAR Challenge Toolkit to:

- Help you get started on the path toward energy efficiency at work and at home.
- Learn more about energy efficiency for specific building types and how to bring the ENERGY STAR Challenge to your community.
- Access ENERGY STAR brochures, public service announcements, press releases, posters, event ideas, and templates to help spread the word about energy efficiency.

ENERGY STAR® is a government-backed program helping businesses and individuals protect the environment through superior energy efficiency.

LEARN MORE AT energystar.gov

Toolkit Materials:

Get Started!

- **Quick Lists of ENERGY STAR Resources** explain how to help improve energy efficiency in commercial and industrial buildings as well as at home.
- **Create a Challenge Team** offers ideas on who can help create an organized effort in your building, town, school, or company to improve energy efficiency.
- **Bring the Challenge to Your Community** provides a model for establishing a program or campaign to accelerate energy efficiency activities in your community.

Learn More!

- **Did You Know?** provides a summary of key energy efficiency points and information about the ENERGY STAR Challenge.
- **Fast Facts** provide useful statistics to help understand the important role commercial and industrial buildings play in global climate change.
- **Work with Different Groups in the Community** offers a series of fact sheets that provide information on energy use, energy efficiency opportunities, partnership possibilities, and key leverage points for major groups including: new and existing homes, commercial real estate, healthcare, education, hospitality, supermarkets, industry, small business, congregations, and local governments.
- **Grow with ENERGY STAR** describes the different levels and benefits of participation with ENERGY STAR, beginning with taking the ENERGY STAR Challenge and moving beyond to Partner, earning the ENERGY STAR label, Leader, and then the pinnacle — Partner of the Year.

Spread the Word!

- **ENERGY STAR InfoCards** help consumers and businesses learn about energy efficiency and ENERGY STAR.
- **Sample News Releases** for the media.
- **Sample Text** provides copy for Web sites, e-mails, newsletters, and more to help you communicate with clients, constituents, employees, and business-to-business networks.
- **Energy Efficiency Presentation** you can use to talk about energy efficiency and your involvement in the ENERGY STAR Challenge.
- **Celebrate with ENERGY STAR** suggests events and ideas to promote the ENERGY STAR Challenge and celebrate energy efficiency.
- **Certificate of Participation** announces your involvement in the ENERGY STAR Challenge and can be displayed to share the good news of your efforts with others.
- **Web Banners** can be easily downloaded to use on Web sites.
- **Posters and other materials** communicate energy efficiency messages and provide information on how to get involved.

Contact Information

To take the ENERGY STAR Challenge or to access the ENERGY STAR Challenge Toolkit materials online, visit **www.energystar.gov/challenge**.

ENERGY STAR Program
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code 6202J
Washington, DC 20460

For more information
www.energystar.gov
or call **1.888.STAR.YES**
(1.888.782.7937).

United States
Environmental
Protection Agency
EPA

Office of Air and Radiation
(6202J) EPA 430-F-07-016
August 2007

Recycled/Recyclable – Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 50% Post-consumer Content)

APPENDIX F

LOANSTAR INFORMATION

Texas LoanSTAR Program

FACTS ABOUT LoanSTAR

The State of Texas LoanSTAR (Saving Taxes and Resources) Program finances energy efficient facility up-grades for state agencies, public schools, institutions of higher education, local governments, municipalities, and hospitals. The program's revolving loan mechanism allows participants to borrow money and repay all project costs through the stream of **cost savings** produced.

ELIGIBLE PROJECTS

Up-grades financed through the program include, but are not limited to, (1) energy efficient lighting systems; (2) high efficiency heating, ventilation and air conditioning systems; (3) energy management systems; (4) boiler efficiency improvements; (5) energy recovery systems; (6) building shell improvements; and (7) load management projects. The prospective borrower hires a Professional Engineer to analyze the potential energy efficient projects that will be submitted for funding through the Loan STAR Program. All engineering costs are covered under the program.

PROGRAM REQUIREMENTS

Once the projects are analyzed and the prospective borrower agrees with the recommended projects, the engineer prepares an Energy Assessment Report (EAR) with the project descriptions and calculations. The EAR must be prepared according to the LoanSTAR Technical Guidelines. The EAR is reviewed and approved by the State Energy Conservation Office (SECO) technical staff before project financing is authorized. Projects financed by LoanSTAR must have an average simple payback of ten years or less. Borrowers do, however, have the option of buying down paybacks to meet the composite ten-year limit.

To ensure up-grade projects are designed and constructed according to the EAR, SECO performs a review of the design documents at the 50% and 100% completion phases. On-site construction monitoring is also performed at the 50% and 100% completion phases.

SAVINGS VERIFICATION

To ensure that the Borrower is achieving the estimated energy savings, monitoring and verification is required for all LoanSTAR funded projects. The level of monitoring and verifications may range from utility bill analysis to individual system or whole building metering depending on the size and type of retrofit projects. If whole building metering is required, metering and monitoring cost can be rolled into the loan.

For additional information regarding the LoanSTAR program, please contact:

Theresa Sifuentes
SECO, LoanSTAR Program Manager
(512) 463-1896

APPENDIX G

DESCRIPTION OF SECO PROGRAMS

Texas State Energy Conservation Office (SECO)

The Texas State Energy Conservation Office (SECO) helps Texas make the most of domestic energy, reduce state and local government energy costs and promote cost-effective, clean-energy technologies. SECO's mission is to maximize energy efficiency while protecting the environment.

LoanSTAR Revolving Loan Program: has saved taxpayers more than $224.6 million through energy-efficiency projects for state agencies, institutions of higher education, school districts, county hospitals and local governments. Borrowers repay loans through cost savings generated by the projects. LoanSTAR-funded projects have also prevented the release of 7,781 tons of nitrogen oxides (NOx), 2.3 million tons of carbon dioxide (CO2) and 5,339 tons of sulfur dioxide (SO2).

Schools/Local Government Energy Program: has helped more than 3,500 schools and other units of local government set up and maintain effective energy-efficiency programs. SECO provides facility preliminary energy assessments, energy management training workshops, technical support in designing new facilities and on-site training for student energy awareness projects. Clean energy technologies are demonstrated at public facilities and school districts to increase awareness and address air quality at the community level. Texas schools also employ the computer power management software that puts monitors to "sleep" when not in use. Over 136,000 school computers now use this software, saving 42 million kWh and reducing energy costs by $3 million annually.

Energy Education Program: promotes energy conservation and efficiency through education. The program strives to lay the foundation for environmental stewardship in teachers and students through critical-thinking and problem-solving investigations in Texas Education Agency approved workshops. Over 2,500 teachers have attended these workshops and utilized the materials in their classrooms reaching over 375,000 students. The program also supports fuel cell technical training curriculum development at the college level.

State Agencies/Higher Education Program: ensures that new facilities are designed and built with energy efficiency and water conservation in mind. Projects include administration and maintenance of the Energy and Water Conservation Design Standard for new state buildings and major renovation projects. Other initiatives include development of statewide employee energy awareness through workshops on how energy efficiency and employee behavior can reduce energy use. The program provides educational materials on how to use energy more efficiently through product procurement, innovative technologies and sustainable design practices. This program also provides education and outreach on residential and commercial energy codes statewide. The goal is to demonstrate the clear benefits of energy codes and standards in improving the quality of life, the environment and the safety and health of communities.

Alternative Fuels Program: demonstrates the positive environmental impact, technical feasibility and energy efficiency of domestically-produced alternative fuels. The Alternative Fuels Program is designed to assist state agencies, school districts, local government and private fleets to operate more of their fleets on alternative fuels. Initiatives include support for the Clean Cities Program, Clean School Bus USA Program, Mechanics Education Outreach and Air Quality Demonstration Projects.

Energy Management Services: a comprehensive energy management program designed to significantly reduce energy and utility expenditures in state-owned facilities. The State of Texas spent over $216 million in energy and utility expenditures in 2006. Program components include construction of a state-of-the-art energy and utility information management system, a comprehensive analysis of historic and future utility bills, energy procurement at the lowest possible rates and best available terms, and owner's representative services on ongoing and future energy-conservation projects. Institutions of higher education, state university systems and local governments are eligible to participate in the program.

Innovative Energy Program: promotes the use of renewable energy and sustainable building practices through technology demonstration, hands-on instruction and renewable energy education. Renewable energy has significant economic, security and reliability benefits and opportunities for Texas communities and individuals as they develop and use these resources. SECO increases public awareness of Texas' vast renewable energy resources and provides the public better access to vendors, financing options, and renewable energy incentives through its educational web site, The Infinite Power of Texas, at www.infinitepower.org.

Housing Partnership Program: promotes the efficient use of energy in low-to-moderate-income housing through partnerships among nonprofit organizations, community action agencies, local governments, utility companies, public housing authorities and social service organizations. The program encourages community and residential involvement in energy-efficiency projects such as housing retrofits, model demonstration projects, technical training assistance and energy education workshops and seminars.

Pollution Mitigation Program: assists political subdivisions in the 41 non-attainment counties to reduce electric consumption in their facilities by implementing cost-effective energy efficiency projects. SECO provides technical support and guidance through the Texas Energy Partnership, a joint initiative involving SECO, the U. S. Department of Energy and ENERGY STAR®. Information, planning tools and electronic reporting are offered at www.texasenergypartnership.org.

Pantex Program: The Pantex Nuclear Weapons plant, located in Carson County, is responsible for assembling and disassembling nuclear weapons. The U.S. Department of Energy funds the Texas Agreement in Principle, which SECO has administered since 1990. SECO contracts with a variety of state and local governments to ensure that human health and safety, and the environment, are protected around the plant. The Pantex Program also administers a DOE grant to train local emergency responders along routes that have shipments of radioactive waste going to the Waste Isolation Pilot Plant near Carlsbad, New Mexico, and eventually shipments of spent fuel tentatively scheduled to go to Yucca Mountain in Nevada.

State Energy Conservation Office
111 East 17th Street
Austin, TX 78774-1440
Phone: (512) 463-1931
Fax: (512) 475-2569
www.seco.cpa.state.tx.us

APPENDIX H

SAMPLE ENERGY MANAGEMENT POLICY

The following document is Energy Management Policy Template. This document should be customized based on the specific needs and requirements of the County.

SAMPLE ENERGY MANAGEMENT POLICY

INTRODUCTION

An essential element of a successful energy management program is support and commitment from top management. A resolution passed by the governing body alerts employees and the community to the fact that energy conservation is official policy, and paves the way for future programs.

To reduce and control operating costs through energy management, an organization should establish a plan, which defines specific goals and an organizational framework to accomplish them; hence, The County Energy Management Policy.

The County Energy Management Policy is intended to be a dynamic, working document. It will be referred to as the PLAN throughout this document. It should be amended as time, conditions, and experience dictates. To facilitate amendments, each page is to be numbered and dated.

Following is an outline of the main sections of this document:

- **INTRODUCTION**
- **ENERGY MANAGEMENT POLICY**
- **PURPOSE AND GOALS**
- **ORGANIZATION STRUCTURE/MANPOWER**
- **ACTION PLAN**
- **INITIAL SCOPE**

ENERGY MANAGEMENT POLICY

The County is committed to operating in the most cost effective, efficient manner while maintaining municipal services at the highest quality possible. A commitment to efficient operation will benefit the community and taxpayers without compromising the safety or efficiency of municipal staff. We recognize the importance of a County energy management function and do hereby delegate the authority and responsibility to develop, operate, and maintain a cost effective Energy Management Program to an Energy Manager and/or Energy Management Staff.

Rapidly rising costs of utilities is a great concern. Unless these costs can be brought under control, funds earmarked for municipal services and programs will need to be diverted to fund increasing operating costs. Many Texas cities have made considerable progress toward controlling these spiraling costs by instituting cost effective Energy Management Programs.

It is our goal to reduce the County's energy consumption by following adoption of this policy. The fulfillment of this plan shall be the joint responsibility of the County's governing board, employees, building officials, and its citizens.

The County will maintain accurate records of energy consumption and costs on a monthly basis. Energy audits will be conducted annually at each facility and recommendations will be made for updating the Energy Management Program. Guidelines and procedures will be reviewed and approved by the County Manager. Information will be furnished to the media on goals and progress of the Energy Management Program.

A method of monitoring and tracking energy costs and consumption shall be implemented. Quarterly energy progress reports will be submitted to the County Manager and distributed accordingly.

All planned construction and retrofit work shall be designed with energy as a primary consideration. The energy performance of all new construction and planned retrofits shall be evaluated during the architectural and engineering design phase to ensure energy efficient design and operation.

Approved this _____ day of _____, 2008

_____

County Manager

PURPOSE AND GOALS

Purpose

The County is faced with tight budget constrains and increased demands for municipal services. The purpose of this plan is to reduce the County's energy cost while maintaining a comfortable and safe working environment for County staff.

Goals

The goals of the Energy Management Plan (hereafter referred to as the PLAN) are to:

- Centralize and coordinate energy management activities;
- Continue to integrate energy management into facilities planning, new construction, operations, maintenance and renovation activities;
- Implement activities in the categories identified in the PLAN;
- Reduce electrical, natural gas, and water consumption County-wide;
- Evaluate the condition of facility equipment and analyze the effectiveness of upgrading such equipment in order to achieve the highest efficiency possible;
- Implement and enforce energy conservation policies and procedures.

ORGANIZATION STRUCTURE/MANPOWER

Organizational Structure

A successful Energy Management Program requires the commitment and involvement of all County employees. The specific responsibilities of key individuals/ groups are outlined below:

- *County Manager*

  The County Manager is responsible for approving the PLAN, designating an energy manager and/or engineer, reviewing recommendations of the Energy Management Steering Committee, adopting policy directives regarding construction, maintenance and operation of buildings and other service delivery systems, allocating funding, and providing support staff as needed. The County Manager is also responsible for final review and approvals of all proposed policy directives, funding requests, and requests for line and support staff associated with PLAN.

- *Executive Directors of Facilities and Maintenance & Operations*

  The ***Title of Person in Charge of the Energy Program*** is responsible for promotion and implementation of the County's Energy Management Program objectives in the operation and maintenance of existing facilities, and in all construction of new facilities. He/She will assist in the identification and allocation of resources needed for the successful implementation of the PLAN.

- *Building Managers/Designated Building Officials*

  Each building official will be responsible for the energy consumption within their facility and will designate (or function as) the building energy coordinator. The energy coordinator will be expected to:

  Develop and implement an energy conservation plan for each respective building or facility. The plan should elicit full staff involvement.

  Organize and direct a building action group willing to support implementation of the Energy Management Program plan and search for additional energy cost reduction measures.

- *County Energy Manager*

  The Energy Manager is responsible for day-to-day administration, implementation, and monitoring of the PLAN. He/she will initiate actions and allocation of resources as necessary to achieve the goal as presented in the PLAN. Initiation of activities in the nine main categories under Initial Scope will be the Energy Manager's responsibility, along with annually reviewing and updating the PLAN. He/she will report activities and results **quarterly**, to all members of the energy steering committee. The Energy Manager will receive formal training in the operation of all types of Energy Management Systems installed throughout the County. While coordinating activities with the Facilities Department, the Energy Manager will report directly to the ***Title of Person.*** The Energy Manager will also serve as a liaison between the Construction and O&M departments, as applicable.

- *Employees and Staff*

  All employees and staff are responsible to assist in the PLAN by providing input to the Energy Management Steering Committee and helping with implementation of operational measures in their areas. There are many free programs offered by the state and federal governments.

❖ *Energy Management Steering Committee*

The Energy Management Steering Committee will include representatives from a cross section of the County. The steering committee will serve as a review board to evaluate all energy management recommendations before adoption and implementation. The steering committee will meet **quarterly or semiannually** to review the County's energy cost and consumption. Regular meetings will ensure the County's goals are being met prior to the end of the year.

ACTION PLAN

An effective energy management effort must be organized and integrated. The following are essential elements of the County Energy Management Plan:

- Data Gathering;
- System Analysis / Definition of Corrective Measures;
- Energy Cost Reduction Measure (ECRM) Evaluation;
- Identification of Funding Mechanisms;
- Implementation;
- PubliCounty / Communication and Incentive Systems;
- Training; and
- Monitoring Program Effectiveness

Each element is discussed briefly below:

Data Gathering

❖ To hit the target in the County energy management efforts, it is imperative to know where to aim. The purpose of this step is to inventory energy using systems and gather, organize, and analyze information on energy use, cost, and availability in order to focus on corrective projects with the most potential.

Major energy using systems to be inventoried include:

Buildings, and
Athletic field and other outdoor lighting

Energy consumption and cost will be tabulated monthly using billed / metered data for each major component of each system for a base year prior to PLAN initiation. Since this is a massive task with massive amounts of data to gather, it needs to be phased in concurrently with other PLAN activities starting with the building database.

Data will be organized as follows:

Buildings:

1) Square footage
2) Monthly consumption (kWh, KW, MCF, Gallons, etc.) and costs.

Municipal Utilities & Lighting (i.e., Water treatment, Wastewater treatment, Street Lighting, Sports Lighting, etc., as applicable;

1) Pump ratings & quantities, by location,
2) Lamp types & quantities, by location
3) Operating hours and costs by location.

The Energy Manager will gather this data with input from department heads, accounting personnel, and gas and electrical utilities.

The purpose of the data-gathering phase is to provide a baseline for later comparison, to monitor program effectiveness; identify major energy and water users; and identify any billing problems. The existing computer-based energy accounting system should prove invaluable in this effort.

Applicable utility rate schedules should be collected and reviewed as part of this step. Rate analyses should be conducted to ensure that County facilities are on the applicable rate schedules resulting in the lowest total facility energy costs. Assistance from the ***Energy Provider*** and consultants can be utilized in conducting billing rate analyses.

System Analysis/Definition of Corrective Measures

- Concurrent with inventorying and studying the energy use characteristics of major energy using systems, conduct preliminary filed surveys of large energy users within each system. The purpose of the preliminary field surveys is to identify M&Os and capital intensive Energy Cost Reduction Measures (ECRMs) that could be implemented to reduce energy consumption and to collect initial data required for further analysis. The product of the preliminary field surveys will be a report describing physical and operational characteristics of the systems surveyed, along with lists of recommended M&Os and ECRMs for each component. The preliminary field surveys will be conducted under the direction of the County's Energy Manager with outside assistance as necessary.

ECRM Evaluation

- This step will be conducted by County personnel with outside assistance as needed. It will include a detailed analysis of materials required, labor and material costs, and potential energy cost saving for ECRM. Interactions between ECRMs will be analyzed and simple paybacks calculated.

- The Energy Manager will present the findings of the engineering studies to the ***Title of Person*** for review. Projects with payback periods of six years or less will receive special consideration for implementation.

Identification of Funding Mechanisms

- An energy management line item should be included in the County budget to take care of low cost, maintenance, and operational items that require immediate attention. Any utility rebates and a percentage of the recouped over-billings should go into this budget.

- All potential funding mechanisms should be identified and evaluated including:

  - Low interest state loans (LoanSTAR);
  - Federal and state grants and loans;
  - Low interest loans from private lenders;
  - Performance Contracting;
  - Shared savings programs;
  - Internal funding mechanisms; and
  - Bond issue funds.

Implementation

- Implementation involves selecting a funding mechanism, submitting paperwork to secure ECRM funding, monitoring the ECRMs through funding, design, and construction, monitoring the progress of M&O implementation.

PubliCounty / Communication and Incentive System

- Good communication is one of the key elements in overall program effectiveness. The Energy Manager must strive to keep the lines of communication open from building operators up to the County Manager and back down again. Contractors involved in ECRM implementation must also have a conduit into the communication channel.

- A good energy accounting system / mechanism should be used to monitor cost savings and to compare base year consumption with current year consumption. An energy incentive plan should be developed consisting of personnel awards, organizational awards, preferred parking, and/or other forms of recognition as appropriate.

- The successes of the program should also be communicated to the public through suitable media to show what the County is doing to reduce costs to taxpayers.

Training

- Energy management methods and technology are constantly improving. Training will be conducted periodically to keep abreast of the latest developments in the field. The following sessions are conducted as deemed necessary:

  - In house training to be conducted for relevant maintenance and custodial staff;
  - On site training for controls systems;
  - Off site training as set by need in a particular technology; and training of County personnel shall be provided by qualified County staff with an outside assistance as necessary. Energy awareness programs will be implemented by County staff to improve efficiency of usage.

Monitoring Program Effectiveness

- The program monitoring process should be used to keep the Energy Management program on track by:

  - Making improvements where data suggest deficiencies;
  - Revising goals where revisions seem warranted;
  - Pursuing new alternative as indicated

- The monitoring process involves distinct types of efforts:

  - Monitoring individual activities in terms of quality of implementation
  - Monitoring overall program effectiveness in terms of savings.

- The following tools will be used for monitoring:

  - Energy tracking savings data;
  - Individual project metering when appropriate
  - Interviews with key personnel.

INITIAL SCOPE

The Energy Manager shall concentrate on the following items during the initial implementation phase of this Energy Management Policy. Following is a checklist and a description of work for each item.

- Maintenance and Operation Measures (M&Os) for Building and Equipment;
- Computer Energy Accounting System;
- Energy Cost Reduction Measures (ECRMs);
- New Building Design and Construction;
- Purchasing;
- Recreation Area, Parking Lots, and Security Lighting;
- Alternative Energy Sources;
- Energy Management Systems (EMS); and
- Water Management

Maintenance and Operation Measures (M&Os) for Buildings and Equipment

- Inventory all major Heating, Ventilation, and Air Conditioning equipment by facility and record location, capaCounty/size, manufacturer, model number, and electrical data. Assign an I.D. number to each piece of equipment and note location on fire evacuation route floor plan.

- Establish a system for preventive maintenance of equipment within the Building Maintenance Department.

- Inventory building equipment (lighting, HVAC, etc.) operating hours, and implement a program to turn off equipment during unoccupied periods and to reduce light levels as appropriate.

- Inventory high energy usage equipment (electric boilers, ovens, etc.) by facility record location, capaCounty / size, manufacturer, model number, electrical data.

- Survey Building Envelope by facility and record existing condition for all items that can leak air into or out of any building. The surveyor should use 8 1/2 x 11 fire evacuation floor plan to note problem areas such as loose fitting windows, cracks around doors and envelope penetrations by pipe and conduits. The maintenance department shall follow the surveyor and make corrections.

- Provide for training of M&O staff both in-house and through outside seminars to maintain skills and develop new skills as required.

- Establish a County-wide uniform temperature set point for all HVAC units. For example **74°F Cool / 68°F Heat**, during occupied hours and **80°F Cool / 55°F Heat**, during unoccupied hours. Having a standard setpoint will help staff members keep HVAC runtimes to a minimum.

Computer Energy Accounting System

- Energy Cost Reduction Measures (Collect-required base year input data for all energy using systems.

- Monitor monthly and annual energy consumption and cost by energy using system component and fuel type.

- Utilize energy tracking data to monitor energy program effectiveness and to establish an incentive program.

Energy Cost Reduction Measures (ECRMs)

- Identify potential ECRMs for each major County facility (in-house, engineering firm and utility company).

- Analyze ECRM cost effectiveness.

- Pursue funding as appropriate.

New Building Design and Construction

- Conduct training for architects, engineers, contractors, and building inspectors.

- Ensure compliance by holding pre-design meetings with Architectural / Engineering Firms and pre-construction meetings with Contracting Firms.

- Monitor compliance by reviewing plans and specifications; reviewing shop drawings and catalog cuts; inspection construction in progress.

- Review HVAC test and balance data, and conduct final inspection with punch list.

- Utilize the services of an energy engineering design firm to provide energy related design assistance to the lead A / E firm on new construction projects.

- ❖ Ensure proper maintenance and operation of energy using equipment in new buildings by required adequate documentation of all systems and control strategies, specifying minimum content of M&O manuals; specifying contractor requirements for cleaning and adjusting equipment prior to occupancy; specifying on-site vendor training for M&O staff; and requiring as-built drawings.

Purchasing

- ❖ Evaluate the long-term energy costs, in addition to initial cost, in purchasing energy using equipment. Apply life cycle costing techniques whenever possible.

- ❖ Establish energy efficiency standards for the purchase of common items; i.e. fluorescent lamps, ballast, electrical motors, direct expansion (DX) air-conditioners, water heaters, and small gas furnaces.

- ❖ Take advantage of the State Purchasing contract to get the best prices on energy efficient equipment.

Recreation Areas, Parking Lots, and Security Lighting

- ❖ Convert existing incandescent and mercury vapor lighting to metal halide or high-pressure sodium as appropriate. Specify these high efficiency light sources on new projects.

Alternative Energy Sources

- ❖ Pursue cost effective applications of alternative energy sources including active and passive solar design, daylight, and alternative fuels.

Energy Management Systems (EMS)

- ❖ Optimize operation of any existing energy management systems.

- ❖ Conduct continuous monitoring of building HVAC system operations, using EMS.

- ❖ Utilize EMS diagnostic features for equipment maintenance.

- ❖ Evaluate & implement EMS controls at all facilities, as appropriate.

Water Management

- Investigate the use of water conserving faucets, showerheads, and toilets in all new and existing facilities.

- Utilize water-previous materials such as gravel, crushed stone, open paving blocks or previous paving blocks for walkways and patios to minimize runoff and increase infiltration.

- Employ Xeriscaping, quality landscaping that conserves water and reduces the need for supplemental irrigation.

- Utilize drip irrigation systems for watering plants in beds and gardens.

- Install controls to prevent irrigation when the soil is wet from rainfall.

- Implement leak detection and repair programs.

- Provide separate metering for the irrigation and HVAC systems usage monitoring, if applicable.

END

APPENDIX I

SECO WATER EFFICIENCY GUIDELINES

STATE ENERGY CONSERVATION OFFICE
SUGGESTED WATER EFFICIENCY GUIDELINES
FOR BUILDINGS AND EQUIPMENT
AT TEXAS STATE FACILITIES

The 77th Legislature directed the State Energy Conservation Office to develop a set of water efficiency standards for state agencies. This document represents SECO's response to that request.

We wish to thank the Texas Water Development Board and the City of Austin Water Conservation Office for their assistance in preparing these guidelines.

The following is a guideline that should be followed for new buildings and facilities and purchase of any new or used equipment by the State. These guidelines would also apply when purchasing new or used equipment to replace existing equipment, or for making major modifications to existing systems or equipment that equals more that half the original purchase price of the equipment. These should also be used as guides for upgrading existing equipment. A system approach should be used when examining water use in this sector. The goal shall be to balance water, wastewater, energy, and related costs to achieve the lowest lifecycle cost when purchasing new equipment or making modifications to existing equipment.

Irrigation Requirements

Automatic irrigation systems should comply with the following guidelines. These guidelines should be noted on a plan drawn by the agency, licensed irrigator or licensed landscape architect.

1. Adjustable flow controls valves on circuit remote control valves. Pressure regulation component(s) shall be required where static pressure exceeds manufacturer's recommended operating range (30-60 psi). This component(s) may be installed at the valve or at the head.

2. Valves and circuits shall be separated based on water use, (hydro-zoned) so that turf and shrub areas, sun and shade areas, as well as high and low runoff areas may be watered separately.

3. The minimum precipitation rate that can be applied by any zone of conventional irrigation should be in accordance with State regulations established by the Texas Natural Resource Conservation Commission. Sprinkler heads shall have matched precipitation rates within each control valve circuit.

4. Serviceable check valves shall be required where elevation differential may cause low head drainage adjacent to paving areas.

5. Sprinkler head spacing shall be designed for head-to-head coverage or heads shall be spaced as per manufacturer's recommendations and adjusted for prevailing winds. The system shall be designed for minimum run-off. There shall be no direct over spray onto impervious areas (i.e. paving and structures).

6. All automatic irrigation systems shall be equipped with a controller capable of dual or multiple programming. Controllers should have multiple cycle start capacity and flexible calendar program, including the capability of day of week or day interval watering. All automatic irrigation systems shall be equipped with a rain sensor shut-off device.

7. Irrigation construction plans shall include a water budget. A water budget should include:

a) Estimated monthly water use (in gallons per application) and the area (in square feet) irrigated.
b) Precipitation rates for each valve circuit.
c) Monthly irrigation schedule for the plant establishment period (first three months) and recommended yearly watering schedule, including seasonal adjustments.
d) Location of emergency irrigation system shut-off valve.

8. All in-ground irrigation systems shall have backflow prevention device installed that meet local code.

9. In addition to local requirements, all irrigation systems must comply with the Texas Natural Resource Conservation Commission rules and regulations.

10. Where available, reclaimed water will be used for all purposes allowed by rules established by the Texas Natural Resource Conservation Commission, if the reclaimed water is less costly than potable water or other water currently being used by the purposes that reclaimed water can be use.

11. Sources of water such as water from foundation and basement sump pump discharges, air conditioner condensate, captured stormwater or rainwater, and other sources should be explored and used as long as local plumbing codes are followed.

Landscape Design Standards (Based on the Landscaping Guidelines adopted by the General Services Commission pursuant to SB 814, 73rd Legislature)

1. Irrigated turf areas and planting beds should be limited to as small an area as possible.

2. Areas that are irrigated shall have at least six inches of a good quality soil in the areas to be watered.

3. Plants having similar water needs shall be grouped together and shall be selected based on use, soil and sun/shade conditions, adaptability to geographic and climatic conditions, and upon ability to survive, once established, on normal rainfall or minimal irrigation.

4. Irrigated turf shall be used sparingly and only in circumstances where other landscaping media will not satisfy the site's needs.

5. Turf and overhead sprinklers should not be placed along curbs and in parkways and planning islands less than 6 feet wide.

6. All new construction projects shall include specifications for soil analysis and amendments, such as compost, in type and quantity necessary to enhance plant growth and maximize water retention. All landscape planting selections must, be appropriate for the soil as analyzed and amended.

7. In planted areas, mulches of two inches or more shall cover most soil surfaces to minimize soil moisture evaporation.

8. Turf shall be limited to 90% of landscaped areas.

9. Turf grass selection shall be determined by facility need and geographic location. Use of different types of turf for distinctive purposes is encouraged. Turf types that can be maintained on natural rainfall is encouraged.

Plumbing Fixtures and Practices

1. All water closets shall comply with state plumbing standards as administered by the Texas Natural Resource Conservation Commission.

2. Faucet aerators in public lavatories and hand washing facilities shall have a flow rate of no more than 1.0 gallons per minute. All other faucet aerators shall comply with state plumbing standards as administered by the Texas Natural Resource Conservation Commission.

3. Faucets in high use restrooms shall be self-closing or shall be equipped with on-off sensors.

4. Showerheads for lockers, dorms, and other non-medical purposes shall use no more than 2.0 gallons per minute. All other showerheads shall comply with state plumbing standards as administered by the Texas Natural Resource Conservation Commission.

5. All water fountains shall be self-closing.

6. All hot water lines shall be insulated.
7. All water pipes subject to freezing shall be insulated.

8. Special plumbing fixtures other that the ones mentioned above should be chosen based on their water and energy efficiency and functionality.

9. All major new buildings, cooling towers, and irrigation systems shall be separately metered and records kept to determine use.

10. Signage requesting that leaks and other plumbing problems be promptly reported shall be placed in each restroom, shower facilities, kitchen, laundry, pool, and other high water use areas. The signage shall also have the phone number where to report such problems.

Heating, Ventilation, & Air Conditioning Equipment

1. Cooling towers and boiler chemical contracts shall specify the cycles of concentration to be achieved. The cycles of concentration should be set to match local water chemistry but shall exceed at least four cycles unless the blowdown from the tower is being beneficially reused for landscape irrigation or other uses.

2. Steam condensate shall be returned to the boiler unless volumes are too low to justify condensate return loops. In the latter case, the condensate shall be reused beneficially wherever possible.

3. Condensate from the air conditioner cooling coils should be captured and used for cooling tower makeup or other purposes where feasible. Building design should be considered that would help facilitate the easy capture of condensate by convent location of air handling units.

4. Cooling tower side stream filtration shall be investigated when new systems are purchased.

Water Treatment Equipment

1. If water softening is used, regeneration shall be controlled by actual hardness or by a flow volume control that is based on the hardness of the water to be softened. Softeners that use timers for recharging are prohibited.

2. If reverse osmosis or nano-filtration is used, reject waste volumes shall be reused for landscape irrigation or other beneficial purposes.

Refrigeration Equipment

1. Once through cooling of any refrigeration equipment is prohibited. Refrigeration equipment (i.e. refrigerators, walking coolers, ice cream and yogurt machines, and similar equipment) of 10 tons per hour or less shall be air-cooled or be fed with water from a closed cooling water loop.

2. Ice flake machines should be used instead of ice cubes makers whenever possible. Ice flakes require less water to produce. If ice cube makers are used, they shall be air-cooled and use no more than 20 gallons per 100 pounds of ice produced based on the Air-conditioning & Refrigeration Institute's annual Directory of Certified Automatic Commercial Ice-Cube Machines and Ice Storage Bins.

Warewashing

1. New warewashing equipment shall use less than 1.2 gallons of fresh water per rack based on National Sanitation Foundation information.

2. Conveyor-type dishwashers shall have electronic eye sensor system so that the machine only operates when there are dishes present on the conveyor belt, not continuously. If the conveyor is continuously running, expecting another load of dishes, water and chemicals are also spraying, to clean the ware that is not even there. This is a waste of energy, water, and chemicals.

Garbage Disposals

1. Manually scrap dishes into a garbage can or scrap basket to reduce the need for pre-rinse and/or pre-rinse time.

2. Manual pre-wash units shall have shut-off's that turn the water off when the operator lets go of the nozzle.

3. Garbage grinders and disposals should not be use where manually scrapping and the use of a scrapping basket with the pre-wash spray can be efficiently done.

4. All garbage disposals shall be equipped with solenoids that shut water flow to the disposal off when not in use.

5. All garbage disposals shall be air-cooled.

6. A scrapping system, a complete pre-rinsing and disposing system, that can increase efficiency in some kitchens. A recirculated water plume in the salvage basin allows the ware to be simultaneously soaked and rinsed, increasing scrapping efficiency and because the water is recirculated, new water does not need to be added. Waste falls from the salvage basin into a collection basket.

7. Where volume of use makes it feasible, install a recirculating "pot scrubbing" or Jacuzzi-style sink to loosen up foodstuff rather than under a stream of running water.

8. A fresh-water trough system, used for scrapping and pre-rinse, can use up to 14 gallons a minute and is not recommended. The amount of pressure and water needed to keep the waste

moving down the trough to the disposal or scrap basket is not efficient. A recirculating trough system, with water flow controls can cut water use in half. However, recirculating pre-rinse and scrapping basins are more water efficient than trough systems in general. If possible do not even use a trough.

Steamers

1. Steamers shall be of the self-contained, boilerless type that does not have a direct connection to a water supply.
2. Steamers that are connected directly to a water line, at the best, have a continuous blowdown of a quarter of a gallon per minute, but most continuously dump much more. They are significantly less energy efficient and require soft water with no more that 60 parts per million of total dissolved solids or require that very large volumes of water be continuously passed through to the sewer for water quality control.

Clothes Washing Equipment

1. Commercial clothes washing equipment such as those found in central laundry facilities shall use no more that 1.6 gallons per pound washed.

2. Clothes washers shall have double dump valves and equipment of 150 pounds capacity or greater shall be equipped so that the final rinse water can be returned for use in the first flush wash.

3. Smaller residential type clothes washers intended for personal use by clients or inmates shall have a water use factor of 9.5 gallons per cubic foot of washer volume or less. This is a different standard from the one cited for commercial laundries above. Information for this can be obtained Oregon Residential Tax Rebate Program at the following web site http://www.energy.state.or.us.

Pumps

Water pumps shall have mechanical seals unless prohibited by code.

Metering

1. All buildings intended for daily occupation or for water using equipment operation shall be metered separately and records of its water use maintained by that agency.

2. If any one, single activity or piece of equipment at a facility accounts for more that 20% of the total water use at that facility, it shall be metered separately and records of its water use maintained by that agency.

3. Any water use that does not create waste water should be metered separately to better align waste water costs with actual usage.

Vehicle Washing

1. New softeners installed at carwash facilities shall not use timers to determine when to recharge. Recharge cycles shall be controlled by instruments that measure volume of water treated or the actual quality of the water being softened

2. Reverse osmosis or nano-filtration reject water shall be reused beneficially for vehicle washing.

3. Chamois wringer shall have self-closing valves on their faucets

In-bay: Hand held spray wash equipment including spray wands and foaming brushes shall use no more that 3.0 gallons of water per minute and shall be equipped with trigger shutoffs. The shutoffs shall have weep holes or other devices to allow for drainage and pressure surges. All pressure wash equipment shall be equipped with unloader valves.

Conveyor, drive-through, and rollover type car washes: Equipment for automobiles and small truck and vans shall use no more than 15 gallons per vehicle. Washes designed specifically for buses and tractor-trailer rigs shall use no more than 40 gallons per vehicle washed. All such equipment shall be equipped with re-circulation or reuse equipment.

Bench Mark Indices[1]

For Texas, the amount of outdoor water will vary with location ranging from 20 inches per year in Far East Texas to 48 inches a year in Far West Texas. For the San Antonio to Dallas line, the demand is about 36 inches per year or about 22 gallons per square foot of use. Many state facilities do not water the whole campus and when they do, they use under that amount. Most schools do not irrigate in Texas. For your use, the conversion from inches to gallons per square foot is 0.623 gallons of water per inch per square foot. In other words, if a campus irrigates 10,000 square feet at a rate of 40 inches a year, they will use {10,000 X 40 X 0.623 = } 249,200 gallons a year.

As for the numbers above, they represent the low end from an American Water Works Association study completed in 2000. The range of use we see in public facilities can be significantly higher. For example, in a study of over 300 schools in Texas, the water use ranged from two gallons per student per day to over 130 gallons per student per day. The high number was from a school that has now made **MAJOR** repairs to a basket case of a plumbing system. High schools should be at the high end of the table above, while most elementary schools can use under 10 gallons per student per day.

Office Buildings

End Use/Benchmark Measure	N***	Efficiency Benchmark Range*
INDOOR USE		
Gal./sf/year	62	9 - 15
Gal./employee/day	72	9 - 16
COOLING USE**		
Gal./sf/year	49	8.5 - 22
IRRIGATION USE**		
Inches per year	47	26 - 50
TOTAL WATER USE**		
Gal./sf/year	62	26 - 35

* Developed from combined methods (field studies, audit data, and modeling results).
** Appropriate benchmarks will depend upon local climate.
***Sample size.

[1] Information provided by Bill Hoffman, City of Austin, Water Conservation Department (2001).

Schools

End Use/Benchmark Measure	N***	Efficiency Benchmark Range*
INDOOR USE		
Gal./ sf /year	142	8 - 16
Gal./school day/student	141	3 - 15
COOLING USE**		
Gal./ sf /year	35	8 - 20
IRRIGATION USE**		
Inches per year	132	22 - 50
TOTAL WATER USE**		
Gal./ sf /year	142	40 - 93

* Developed from combined methods (field studies, audit data, and modeling results).
** Appropriate benchmarks will depend upon local climate.
*** Sample size.

Bench mark indices continued

Food Service

End Use/Benchmark Measure	N***	Efficiency Benchmark Range*
INDOOR USE		
Gal./sf/year	142	8 - 16
Gal./school day/student	141	3 - 15
COOLING USE**		
Gal./sf/year	35	8 - 20
IRRIGATION USE**		
Inches per year	132	22 - 50
TOTAL WATER USE**		
Gal./sf/year	142	40 - 93

* Developed from combined methods (field studies, audit data, and modeling results).
** Appropriate benchmarks will depend upon local climate.
***Sample size.

APPENDIX J

DISPOSAL OF MATERIAL CONTAINING MERCURY

LEARN MORE AT energystar.gov

ENERGY STAR®, a U.S. Environmental Protection Agency and U.S. Department of Energy program, helps us all save money and protect our environment through energy efficient products and practices. For more information, visit www.energystar.gov.

Frequently Asked Questions
Information on Compact Fluorescent Light Bulbs (CFLs) and Mercury
June 2008

Why should people use CFLs?

Switching from traditional light bulbs (called incandescent) to CFLs is an effective, simple change everyone in America can make right now. Making this change will help to use less electricity at home and prevent greenhouse gas emissions that lead to global climate change. Lighting accounts for close to 20 percent of the average home's electric bill. ENERGY STAR qualified CFLs use up to 75 percent less energy (electricity) than incandescent light bulbs, last up to 10 times longer, cost little up front, and provide a quick return on investment.

If every home in America replaced just one incandescent light bulb with an ENERGY STAR qualified CFL, in one year it would save enough energy to light more than 3 million homes. That would prevent the release of greenhouse gas emissions equal to that of about 800,000 cars.

Do CFLs contain mercury?

CFLs contain a very small amount of mercury sealed within the glass tubing – an average of 4 milligrams – about the amount that would cover the tip of a ballpoint pen. By comparison, older thermometers contain about 500 milligrams of mercury – an amount equal to the mercury in 125 CFLs. Mercury is an essential part of CFLs; it allows the bulb to be an efficient light source. No mercury is released when the bulbs are intact (not broken) or in use.

Most makers of light bulbs have reduced mercury in their fluorescent lighting products. Thanks to technology advances and a commitment from members of the National Electrical Manufacturers Association, the average mercury content in CFLs has dropped at least 20 percent in the past year. Some manufacturers have even made further reductions, dropping mercury content to 1.4 – 2.5 milligrams per light bulb.

What are mercury emissions caused by humans?

EPA estimates the U.S. is responsible for the release of 104 metric tons of mercury emissions each year. Most of these emissions come from coal-fired electrical power. Mercury released into the air is the main way that mercury gets into water and bio-accumulates in fish. (Eating fish contaminated with mercury is the main way for humans to be exposed.)

Most mercury vapor inside fluorescent light bulbs becomes bound to the inside of the light bulb as it is used. EPA estimates that the rest of the mercury within a CFL – about 11 percent – is released into air or water when it is sent to a landfill, assuming the light bulb is broken. Therefore, if all 290 million CFLs sold in 2007 were sent to a landfill (versus recycled, as a worst case) – they would add 0.13 metric tons, or 0.1 percent, to U.S. mercury emissions caused by humans.

How do CFLs result in less mercury in the environment compared to traditional light bulbs?

Electricity use is the main source of mercury emissions in the U.S. CFLs use less electricity than incandescent lights, meaning CFLs reduce the amount of mercury into the environment. As shown in the table below, a 13-watt, 8,000-rated-hour-life CFL (60-watt equivalent; a common light bulb type) will save 376 kWh over its lifetime, thus avoiding 4.5 mg of mercury. If the bulb goes to a landfill, overall emissions savings would drop a little, to 4.2 mg. EPA recommends that CFLs are recycled where possible, to maximize mercury savings.

Table 1

Light Bulb Type	Watts	Hours of Use	kWh Use	National Average Mercury Emissions (mg/kWh)	Mercury from Electricity Use (mg)	Mercury From Landfilling (mg)	Total Mercury (mg)
CFL	13	8,000	104	0.012	1.2	0.4	1.6
Incandescent	60	8,000	480	0.012	5.8	0	5.8

TCEQ REGULATORY GUIDANCE

Waste Permits Division
RG-377 • Revised January 2007

Universal Waste Regulations for Hazardous Lamps and Mercury-Containing Equipment in Texas

Many lamps and mercury-containing equipment (MCE) contain toxic substances, such as lead and mercury, that pose a threat to public health when improperly managed. These hazardous lamps and MCE are regulated under the universal waste (UW) rule. If lamps and MCE are not hazardous, they are not regulated as universal waste. If you handle hazardous lamps or MCE, you have the option of being a UW handler. This publication will help you understand the rules and how to comply with them.

Lamps and MCE That May Qualify for Handling as UW

Fluorescent lamps—tube-style lamps, used as overhead lighting in offices and also available in compact globe shapes for a variety of home and office uses.

Mercury vapor lamps—high-intensity discharge (HID) lamps with blue-white light, used as exterior yard lights.

High-pressure sodium vapor lamps—white-yellow HID lights used for street lamps and outdoor home security lighting.

Low-pressure sodium vapor lamps—orange HID lights used primarily in commercial settings

Metal halide lamps—newer, more efficient HID lights found in homes and businesses.

Incandescent lamps—the standard light bulbs used in homes and businesses.

Mercury-containing equipment—including thermostats, barometers, manometers, temperature and pressure gauges, mercury switches, and various medical devices that contain varying amounts of elemental mercury used in homes, businesses, electric utilities, and other industries.

Regulations on UW Lamps and MCE

The Texas Commission on Environmental Quality (TCEQ) has approved new rules on "UW Mercury-Containing Equipment." They became effective on August 3, 2006. There are also federal rules on UW lamps and MCE.

The UW lamps and MCE rules can be found in two places:

- Texas rules are in Title 30 of the Texas Administrative Code, Section 335.261 (30 TAC Section 335.261). To find these rules on the TCEQ web site, go to <www.tceq.state.tx.us/goto/rules>.
- Federal rules are in Title 40 of the Code of Federal Regulations, Part 273 (40 CFR Part 273). To find these rules on the Environmental Protection Agency's (EPA) web site, go to <www.epa.gov>.

Disposing of UW Lamps and MCE

There are two options for disposing of UW lamps and MCE: *in a permitted hazardous waste landfill* or *recycling.*

State regulations prohibit disposal of hazardous waste lamps and MCE in municipal solid waste landfills. This prohibition does not apply to waste generators who qualify as *Conditionally Exempt Small-Quantity Generators* (CESQG, see "Definitions" at the end of this publication).

Permitted Hazardous Waste Landfill

Permitted hazardous waste landfills accept properly packaged UW for disposal. For a list of permitted hazardous waste landfills in your region, see TCEQ publication GI-225, *Commercial Hazardous and Industrial Solid Waste Management Facilities,* which is available online at <www.tceq.state.tx.us/goto/publications/gi/225>.

Disposal Cost by Hazardous Waste Landfill

Disposal costs for lamps and MCE at a hazardous waste landfill can vary according to:

- quantity of waste generated;

- location of disposal site;
- proximity to a permitted hazardous waste landfill; and
- state and local taxes.

Estimated costs do not include packaging, transportation, or profile fees.

Recycling

Recycling separates the toxic substances, such as mercury, from the glass, aluminum, mercury-containing devices, and other lamp components that can be used to manufacture other products. A list of recycling services is available from the TCEQ at <www.recycletexasonline.org>.

Handling UW Lamps and MCE

Accumulation Time Limits

If you are a UW handler, you may accumulate UW lamps and MCE for no longer than one year from the date the UW lamps and MCE are generated or received from another handler, unless you can prove that an extension is necessary to facilitate proper recovery, treatment, or disposal.

Lamps and MCE being accumulated must be clearly marked with the date you began accumulating the waste in the container. These containers must be labeled or marked to identify the type of universal waste as specified below:

1. Universal waste lamps must be labeled or marked clearly with any of the following phrases:
   "Universal Waste—Lamps," "Waste Lamp(s)," or "Used Lamps."
2. Universal waste mercury-containing equipment (i.e., each device), or a container in which the equipment is contained must be labeled or marked clearly with any of the following phrases:
   "Universal Waste–Mercury Containing Equipment," "Waste Mercury–Containing Equipment," or "Used Mercury–Containing Equipment."
3. A universal waste mercury-containing thermostat or container containing only universal waste mercury-containing thermostats may be labeled or marked clearly with any of the following phrases:
   "Universal Waste—Mercury Thermostat(s)," "Waste Mercury Thermostat(s), or "Used Mercury Thermostat(s)."

Categories of UW Handlers

Handlers of UW are categorized as *small-quantity handlers of universal waste (SQHUWs)* and *large-quantity handlers of universal waste (LQHUWs)*.

- SQHUW means a universal waste handler who accumulates less than a total of 5,000 kg of universal waste at one time.
- LQHUW means a universal waste handler who accumulates a total of 5,000 kg or more (calculated collectively) of universal waste at one time.

Notification and Reporting Requirements

If you are a small-quantity handler of UW lamps or MCE, you are *not required* to notify the EPA or the TCEQ of your UW lamps and MCE handling activities.

If you are a large-quantity handler of UW lamps or MCE, you must send written notification of UW management to the TCEQ and get an EPA identification number before accumulating or exceeding the 5,000 kg storage limit.

If you already have notified the TCEQ about your other solid waste management activities, you are not required to renotify the Agency.

First-time notifiers must complete the EPA 8700-12 notification form and submit it to the TCEQ for review. For a shortcut to this form on the EPA's Website, use this url: <www.tceq.state.tx.us/goto/pdf/epa8700-12>.

Once you have completed your EPA form, submit it to:

IHW and MSW Registration Team
Registration and Reporting Section, MC-129
Permitting and Remediation Support Division
TCEQ
PO Box 13087
Austin TX 78711-3087

Phone: 512/239-6413
Fax: 512/239-6410

Once you have decided to handle hazardous lamps and MCE as universal waste, the eight-digit Texas waste code for industrial solid waste is no longer required. The lamps and MCE you handle as universal waste should not be counted toward your monthly quantity determination for purposes of determining your *hazardous waste generator* status (see "Definitions" at the end of this publication). In addition, you do not have to report the UW lamps and MCE on the Annual Waste Summary, required under 30 TAC Section 335.9.

Record Keeping

Any time UW lamps and MCE are stored or shipped off site, records need to be kept on site. Handlers should keep track of the following:

- the number of lamps and MCE removed from service during each calendar year;
- the storage location of the lamps and MCE; and
- shipping documents (bill of lading).

Storing UW Lamps and MCE

A UW handler of lamps and MCE has a number of options for storage.

On-Site Storage Requirements for UW Lamps and MCE

If you are a UW handler of lamps and MCE, you may store lamps and MCE at your facility, as long as each lamp and MCE remains intact. Remember the following guidelines:

- Store in a manner that will prevent breakage or damage to the lamps and MCE.
- Use signs and notices that show employees where and how to store lamps and MCE.
- Label the lamp and MCE storage area or each container with one of the following phrases:
  "Universal Waste—Lamps," "Waste Lamp(s)," or "Used Lamps."
  "Universal Waste—Mercury-Containing Equipment," "Waste Mercury-Containing Equipment," or Used Mercury-Containing Equipment."
  "Universal Waste—Mercury Thermostat(s)," "Waste Mercury Thermostat(s), or "Used Mercury Thermostat(s)."
- Clearly mark each container with the date you began accumulating the waste.
- If on-site storage is not possible, transport the UW lamps and MCE to a handler or a destination facility. A manifest is not needed.

Off-Site Storage and Recycling of UW Lamps and MCE

Recycling facilities that receive UW lamps and MCE are excluded from the definition of "UW handlers" (see 40 CFR Part 273.9). Under those requirements, storage before recycling is regulated [see 30 TAC Section 261.6(c)(1)].

Out-of-State Storage, Recycling, or Disposal of UW Lamps and MCE

Lamps and MCE managed as UW can only be sent to another waste handler who meets the standards in 40 CFR Part 273; a destination facility meeting the standards in 40 CFR Part 273.60-273.62; or a foreign destination.

A destination facility must comply with all current applicable requirements for hazardous waste management facilities.

Packaging UW Lamps and MCE for Disposal

Regardless of the disposal method, UW lamps and MCE must be properly packaged to prevent breakage. You need to identify a safe storage area to ensure that your UW lamps and MCE are not accidentally broken or crushed before they are sent to a disposal facility.

When lamps and MCE are removed and replaced with new lamps and mercury-containing devices, the used lamps and MCE should be packaged in the cardboard boxes that contained the replacement lamps and MCE. The boxes containing the hazardous lamps and MCE must be clearly marked with the date you began accumulating the waste in the box. The containers should also be properly labeled with any of the following phrases:

- "Universal Waste—Lamps," "Waste Lamp(s)," or "Used Lamps."
- "Universal Waste—Mercury-Containing Equipment," "Waste Mercury-Containing Equipment," or "Used Mercury-Containing Equipment."
- "Universal Waste—Mercury Thermostat(s)," "Waste Mercury Thermostat(s), or "Used Mercury Thermostat(s)."

Preprinted labels or rubber stamps that meet the U.S. Department of Transportation (DOT) regulations are recommended for high-volume disposal. **You can call the DOT toll free, 1-800-832-5660.**

Transporting UW Lamps and Mercury-Containing Equipment for Disposal

For shipment of UW lamps and MCE in Texas and in other states where the waste is UW, you *do not need a registered transporter* with an EPA identification, and you *do not need a manifest.*

If you choose not to manage your hazardous waste as a UW, then a hazardous waste manifest to ship your lamps and MCE to a recycler or hazardous waste disposal site is required and your waste may be subject to full hazardous waste regulation, including requirements to use a certified hazardous

waste hauler, to report, to keep records, and to pay fees.

NOTE: All off-site shipments of UW lamps and MCE must be packed, labeled, marked, and placarded according to U.S. Department of Transportation requirements, even if they are to be transported by the generator.

Transporter's Storage Limit

A UW transporter may only store the UW lamps and MCE at a UW transfer facility for 10 days or less. If a UW transporter stores UW for more than 10 days, the transporter becomes a UW handler.

Crushing UW Lamps

Crushing lamps is permissible only under the controlled conditions described in 30 TAC Section 335.261(e). The crushing system must have the approval of the executive director of the TCEQ, and the selected crushing method must be carefully evaluated. To get executive director approval for crushing UW lamps, contact:

IHW Permits Section, MC-130
Waste Permits Division
TCEQ
PO Box 13087
Austin TX 78711-3087

Phone: 512-239-6412
Fax: 512-239-6383

The lamps must be crushed entirely inside a drum or storage unit so that the mercury is captured and recycled. Adequate ventilation must be provided in the space where the crushing occurs.

Intentional crushing of characteristically hazardous lamps—whether it is to physically separate, reduce in volume, or facilitate for transportation, storage, or recovery—is considered "treatment" unless the crushing device is capable of completing the recycling process and recovering the mercury as a product.

Definitions

These definitions are used to determine the status of *hazardous waste generators*. To better understand the many terms, definitions, and classes of waste, see TCEQ publication RG-022, *Guidelines for the Classification and Coding of Industrial and Hazardous Wastes*, which is available online at <www.tceq.state.tx.us/goto/publications/rg/022>.

Generator. Any facility whose process produces: a hazardous waste or industrial Class 1 waste in excess of 100 kg (about 220 lb) per month; or acutely hazardous waste in excess of 1 kg (about 2.2 lb) per month; or whose actions first cause a solid waste to become subject to regulation.

Small-Quantity Generator (SQG). You are a small-quantity generator if you generate less than 1 kg per month of acutely hazardous waste, or less than 1000 kg per month of hazardous waste on your property.

Conditionally Exempt Small-Quantity Generator (CESQG). You are a conditionally exempt small-quantity generator if you generate less than 1 kg per month of acutely hazardous waste, or less than 100 kg per month of hazardous waste on your property.

APPENDIX K

REQUEST FOR ASSISTANCE

REQUEST FOR ENERGY ASSISTANCE

Energy efficiency is increasingly important for our local communities and the state of Texas. It reduces costs, increases available capital, spurs economic growth, improves working, learning and living environments and preserves precious resources. The State Energy Conservation Office (SECO) offers a number of free programs and services to help public agencies establish and achieve their energy efficiency goals.

SECO through its engineering consultants offers public agencies the following free or cost shared energy management services:

• On-Site Energy Assessments Of Facilities	Free
• On-Site Training For Maintenance And Operations Personnel	Free
• Workshops For Energy Managers, Maintenance Personnel And Administrators	Free
• Energy Management Policy Development And Implementation	Free
• Assistance In Identifying Energy Retrofit Funding Sources	Free

Specific responsibilities of the partner and SECO in this agreement:

- Partner will select a contact person to work with SECO and its engineering consultant to establish an energy policy and set realistic energy efficiency goals.
- SECO's contractor will contact partners to assess their energy management needs.
- SECO will provide a report, which identifies no cost/low cost recommendations, capital retrofit projects, potential sources of funding and other needs and opportunities.
- Partner will schedule a time for SECO's contractor to present its findings and recommendations to key decision makers.
- Partner pledges that it is ready and willing to consider implementing the energy saving recommendations.

Acceptance Of Agreement And Request For Energy Management Assistance

Signature: Dennis Cleveland

Date: 5/6/08

Name (Mr./Ms./Dr.) Dennis Cleveland

Title: Maintenance Superintendent

Organization: Brazoria County

Phone: (979) 864-1567

Address: 111 E. Locust

Fax: (979) 864-1718

Angleton Texas

E-mail: dennisc@Brazoria-county.com

Assigned Program Person:

Name: Dennis Cleveland

Title: Maintenance Superintendent

Phone: (979) 864-1567

County: Brazoria

Fax: (979) 864-1718

E-Mail: dennisc@brazoria-county.com

Please complete and mail or fax to the following SECO Consultant : Texas Energy Engineering Services, Inc. (TEESI), ATTENTION: Saleem Khan, P.E., 1301 Capital Of Texas Highway #B-325, Austin, TX. 78746, Phone 512-328-2533, Fax 512-328-2544. If you need to contact the State Energy Conservation Office, please call **Theresa Sifuentes at 512-463-1896** or you may write to her at: Comptroller Of Public Accounts, State Energy Conservation Office, 111 E. 17th Street, Austin, Texas 78774.