

802 - TEXAS PARKS AND WILDLIFE DEPARTMENT – ENERGY CONSERVATION PLAN QUARTERLY REPORT
Period: June 1, 2007 – August 31, 2007

ELECTRICITY MEASURES (GOAL: .5% ANNUALLY)

Headquarters - Austin

Measure	Electricity Measure									
Period	9/1/06-11/30/06	12/1/06-2/28/07	3/1/07-5/31/07	6/1/07-8/31/07		FY '06 9/05-8/06	FY '07 9/06-8/07	Delta	% Change	Goal Met (Y/N)
KwH	905,188	725,340	749,262	891,795		4,656,973	3,271,585	-1,385,388	29.74	Y
Cost	72,766.99	55,395.74	58,608.39	66,613.66		257,682.10	253,385	-4,297.32	1.66	Y

NATURAL GAS MEASURES (GOAL: .5% ANNUALLY)

Headquarters – Austin

Measure	Natural Gas Measure									
Period	9/1/06-11/30/06	12/1/06-2/28/07	3/1/07-5/31/07	6/1/07-8/31/07		FY '06 9/05-8/06	FY '07 9/06-8/07	Delta	% Change	Goal Met (Y/N)
CCF	759	1,320	7,781	408		16,768	10,268	-6,500	38.76	Y
Cost	2,647.96	12,820.05	3,595.33	571.21		19,653.81	19,635	-19.26	.1	Y

WATER MEASURES (GOAL: .5% ANNUALLY)

Headquarters – Austin

Measure	Water Measure									
Period	9/1/06-11/30/06	12/1/06-2/28/07	3/1/07-5/31/07	6/1/07-8/31/07		FY '06 9/05-8/06	FY '07 9/06-8/07	Delta	% Change	Goal Met (Y/N)
Gallons	1,046,440	971,000	840,800	834,950		2,928,260	3,693,190	764,930	20.71	N
Cost	7,057.52	5,890.03	6,319.90	6,488.94		21,075.09	25,756	4,681.30	18.17	N

FUEL MEASURES (GOAL: .5% ANNUALLY)

Statewide

Measure	Fuel Measure									
Period	9/1/06-11/30/06	12/1/06-2/28/07	3/1/07-5/31/07	6/1/07-8/31/07		FY '06 9/05-8/06	FY '07 9/06-8/07	Delta	% Change	Goal Met (Y/N)
# Gallons	403,882.00	367,486.00	583,442.97	454,323.84		1,704,526.84	1,809,134.81	104,607.97	5.78	N
Cost	1,129,652.96	972,449.18	1,746,420.60	1,568,528.10		4,471,806.84	5,417,050.84	945,244.00	17.44	N

UTILITY EXPENDITURE MEASURES (GOAL: .5% ANNUALLY)

Statewide

Period	9/1/06-11/30/06	12/1/06-2/28/07	3/1/07-5/31/07	6/1/07-8/31/07		FY '06 9/05-8/06	FY '07 9/06-8/07	Delta	% Change	Goal Met (Y/N)
Electric Cost	1,474,249.79	1,251,479.73	1,361,296.61	1,705,447.80		5,486,612.50	5,792,473.93	305,861.43	5.25	N
Natural Gas Cost	35,360.59	127,680.85	89,073.41	52,256.53		287,908.67	304,371.38	16,462.71	5.4	N
Water Cost	147,853.91	96,522.44	114,953.24	134,462.08		505,027.10	493,791.67	-11,235.43	2.22	Y

**OTHER MEASURES (FACILITIES AUDITED GOAL: .5% ANNUALLY)(NO OTHER GOALS SET AT THIS TIME)
Statewide**

Measure	Design Measure									
	9/1/06-11/30/06	12/1/06-2/28/07	3/1/07-5/31/07	6/1/07-8/31/07		FY '06 9/05-8/06	FY '07 9/06-8/07	Delta	% Change	Goal Met (Y/N)
# Facilities Audited	0	0	0	0		11	0	11.00	100	N
# Alt. Fuel Vehicles Procured	0	0	0	0		3	0	3.00	100	N
# LEM Vehicles Procured	NA	NA	NA	NA		NA	NA	#VALUE!	NA	NA

NARRATIVE

As of 8/31/07, TPWD continues to implement its Resource Efficiency Plan.

Statewide

TPWD's Resource Efficiency Plan serves as the agency's strategic plan for achieving energy conservation. This program provides a framework and governance to ensure energy and resource conservation throughout TPWD. The TPWD Infrastructure division's role in designing and enhancing the agency's structures is a crucial piece of the plan, but the plan includes initiatives for reducing utility consumption through facility audits, goals for use of alternative fuels and reducing fuel consumption, improving recycling, providing employee awareness, public education, resource and financial benefits to involve all personnel in the agency.

In June 2002, The [State Council on Competitive Government \(CCG\)](#) declared energy management a state service subject to council oversight. In March 2006, CCG entered into a contract with LPB Energy Consulting to develop a comprehensive statewide energy management program. [The State Energy Conservation Office \(SECO\)](#) is the contract administrator for the project. The goal of this project is to reduce energy expenditures, to efficiently manage energy usage and to accurately forecast usage in state-owned facilities.

Since April, 2006, TPWD has been working with LPB to implement the first phase of these services, to bundle TPWD's electrical load in deregulated areas into a single contract that will provide a fixed rate and significant electrical savings through the consolidation of electrical accounts that we may then competitively bid.

TPWD worked with LPB to create a contract for all TPWD electrical accounts, currently in deregulated areas, in a default, regulated rate called "Price to Beat." Price to Beat rates expired in January 2007 and we have seen rates and cost for electrical service go up significantly in these areas since. It was in the best interest of TPWD and the State, in order to guarantee the lowest rate possible, to establish contracts with these accounts before January.

This contract went into place in December 2007 and included approximately 75% of the overall TPWD electrical load statewide. Approximately 625 TPWD electrical accounts were consolidated into a single account and electrical provider. The contract achieves savings by locking in an electrical rate for 5 years, initial rate savings, savings from rate hikes after January '08 and through creation of a bulk rate from consolidating accounts. Fixed rates are beneficial to TPWD with predicting and anticipating electrical budgets. Initial estimates indicate that TPWD will net over \$200,000 in savings in the first year of the contract.

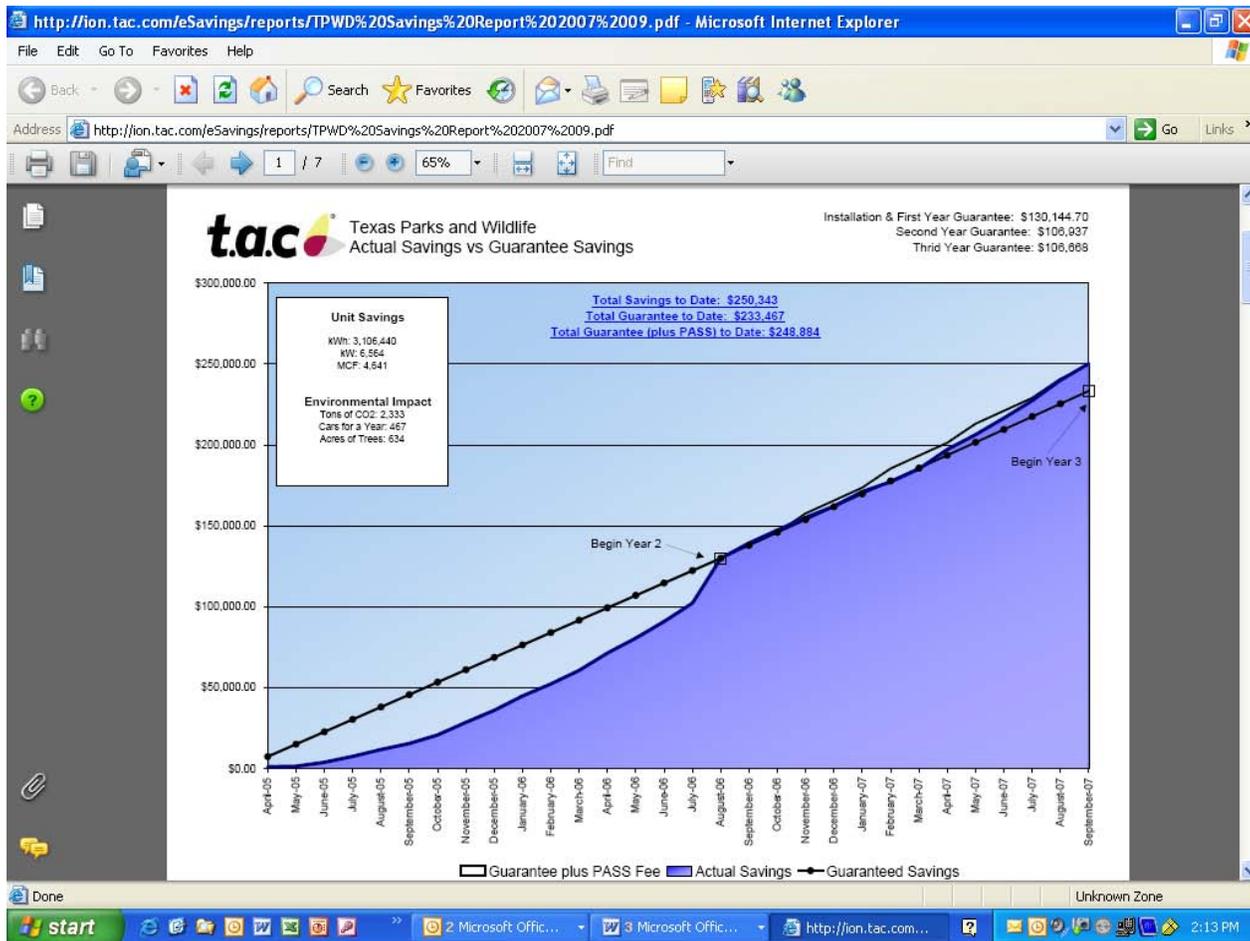
TPWD is currently working with LPB to build the statewide Utility Management (UM) System, including regulated electrical, natural gas and water billing and accounting information into the system and shifting procurement to LPB. Planning is underway to begin training TPWD staff who will benefit from it to use the UM and build custom reports that will provide meaningful budget forecasting, auditing and energy management information to all users.

TPWD Headquarters - Austin

In February, 2006 the Austin Headquarters Energy Conservation performance contract project was completed and so far the results of the energy efficiency measures achieve and surpass the projected savings of approximately \$120,000 annually in HQ utility cost.

The HQ project included retrofitting of all lighting, installation of window tint and solar screens, replacement of old HVAC package units, boilers, cooling towers, hot water heaters, installation of flash hot water heater, installation of a step-down chiller, retrofitting cooling tower, air handler fans, chill and hot water pumps to variable speed drives, installation of Variable Air Volume dampers, hot and cold loop coil cleaning, above-ceiling plenum hepa vacuuming, significant upgrade to our computerized building operating system, reduction in operating hours, replacement of toilets, urinals and installation of water saving measures, and more.

While this project is fulfilling its promise in utility savings, it also provides much needed replacement of 30-year-old equipment and systems, a very appreciated reduction in maintenance and repair requirements. With the success of this project, planning for future performance contracts at our field locations will begin soon. The following is a graph showing the current savings report for HQ.



One of the FY '06 TPWD Natural Leaders' Team Program projects related to the fulfillment of TPWD's Resource Efficiency Plan. The Team's project deliverables included defining sites suitable for Detailed

Energy Audits (DEAs), performance contracts and producing an implementation schedule for DEAs. It also defined sites suitable for Preliminary Energy Audits (PEAs) and produced an implementation schedule for them.

The Team developed a “cookbook,” a tool a site manager may use to perform a self audit and then enter the information online and compute ideas to implement energy savings measures. This tool also captures data required for state and energy savings measures reporting. This project and high profile program designed to promote leaders in the agency culminated in a presentation to senior management this summer.

In early FY '08, the product of the Team will be enacted and TPWD's Resource Efficiency Plan will be updated to reflect the new initiatives. The final Team Presentation may be viewed here: file:///O:\Natural%20Leader%20Class%20VI\TPWD%20Water%20Conservation%20Program\Presentation%20Final%20and%20Packet\Final_NL%20VI%20%20Utility%20Audit%20Presentation_7_10_06.ppt

In addition to the accomplishments and REP enhancements described above, TPWD's Infrastructure division continues to implement resource efficiency measures in planning and design of capital improvement, repair and construction projects statewide. The details of this are reflected in the agency's REP, but it includes a grant for alternative energy source at Sheldon Lake State Park, first LEED project and anticipated receipt of Silver Star rating at Somerville State Park, installation of many waterless, vault toilets and much more. Attention to, emphasis on and awareness of resource efficiency have increased through TPWD's REP employee awareness program known as the “Green Team” which continues to conduct awareness events and distribute information. The Green Team was nominated for a TPWD employee recognition award in the “Team” category.

The agency works hard to ensure its replacement vehicles are low emission rated. TPWD HQ has replaced three of its HQ Motor Pool Vehicles with hybrid vehicles in FY 06.

The following is a summary of current TPWD energy efficiency measures and projects. In addition to its formal Resource Efficiency Plan, for most of its existence TPWD has maintained as part of its mission an ideal to conserve natural resources, which includes a strong commitment of practicing resource efficiency. As an example, in 1991, TPWD utilized the Texas LoanSTAR program to conduct a comprehensive energy cost reduction analysis of all of its facilities statewide. The report was extremely in-depth and the agency adopted and implemented many of the study's recommendations.

Since its inception, TPWD has been fortunate to staff and perform construction, repair and improvement project planning, design and management for its facilities statewide. A long standing goal of this function has always been energy, resource efficiency, sustainable design and operating with a strong green building philosophy, sometimes by pure necessity, given a site's remoteness and unavailability of commercial construction materials and site utilities.

Consequently, TPWD has a considerable history of implementing resource efficiency measures. The following list was compiled from capital construction project lists, polling our divisions, sites, project managers. Unfortunately, this information is somewhat outdated and may not include some of the most current initiatives.

Current Projects

- **Austin Headquarters Energy Conservation Performance Contract Project – This project is TPWD's first official energy efficiency project to begin achieving compliance with HB 2278 and implementing its Resource Efficiency Plan. This is also the first project ever in which TPWD is pursuing a performance contract to fund an improvement project. The project is complete as February, 2006 and has fulfilled its goal of saving Austin HQ \$120,000/yr. in utility cost.**

- **Buescher State Park Screened Shelters** – Several screen shelters were constructed to incorporate salvaged oil field pipe framing and reused lumber. This project completed November 2003.
- **Engling Learning Center** – This project incorporated restored prairies, constructed wetlands, rainwater collection, photovoltaic and wind power electrical generation in its construction. Phase 1 was complete spring of 2005.
- **Government Canyon State Natural Area** - Government Canyon State Natural Area opened in October 2005 and was developed to forestall encroaching development and educate about the importance of aquifers and water conservation in central Texas. The site was designed to showcase techniques for resource conservation including the screened-in Exhibit Gallery, Visitor Center, which is an award-winning, innovative and sustainable architectural design. The center's open-air pavilion, exhibit gallery and adjacent building housing the park store, administrative offices and a classroom were designed to blend in with the rugged Hill Country landscape and utilize local materials. The structures, built of all recycled steel pipe, limestone and eastern red cedar siding, feature corrugated metal roofs that collect rainwater. Solar power is used to pump collected water into two metal cisterns for irrigating the butterfly-friendly landscape and for flushing toilets. Raised boardwalks made from sustainably harvested timber lead from the parking lot to the Visitor Center to allow water to flow through the site unimpeded. Inside the screened-in Exhibit Gallery, maps, exhibits and photographs illustrate the importance of water conservation to San Antonio and the surrounding, often rain-starved Hill Country. The "Water, Water Everywhere and So Little To Drink" kiosk confronts visitors with the startling truth that less than 1 percent of the Earth's water is drinkable, fresh water. Another asks: "Are You Taking Too Much for Granted?" and explains water conservation tips. Perhaps the most insightful exhibit describes the Edwards Aquifer that occurs in a "vast, impermeable limestone formation that holds water deep underground in an area up to 40 miles wide and 450 feet thick." Nearby, a basketball-sized chunk of limestone karst rock, riddled with holes, provides a visual clue as to how the surrounding landscape filters rainwater, streams and rivers through the ground into the aquifer below.
- **Lake Somerville State Park** - Park HQ building expansion reduced energy consumption by approximately 40% from building orientation and placement, efficient building envelope, energy efficient windows (5% of total budget), efficient roofing material (low heat gain due to corrugations), day-lighting (required minimal mechanical light for operation.) This was TPWD's first LEED project which we anticipate receiving a Silver rating.
- **Sheldon Lake State Park – Environmental Learning Center** – The site was removed from MUD utilities and replaced with constructed wetlands wastewater treatment, rainwater collection for irrigation, water well for potable water, and Photovoltaic augmented power generation. Phase 1 of construction was designed using sustainable, salvaged and recycled materials (e.g. FSC wood, busted concrete for landscape edging, salvaged brick, & recycled oil field pipe) The entire site (2,700 acres) is being restored to its natural state through an on going removal of invasive foreign species (primarily Chinese tallow & privet), and re-institution of natural coastal prairie grasses, woodlands, and geology (mima mounds). Phase 2 Visitor Center; Observation Tower, & camping area are designed to meet a Platinum LEED rating. We have received a \$100,000 grant from the State Energy Conservation Office (SECO) and over \$100,000 in grants for wetland habitat restoration, in addition to the \$2.56 million in Prop. 8 funds already in the project. Construction on phase 1 was completed in summer of '04. Phase 2 is privately funded and is tentatively scheduled to be completed in summer of '06, pending fund raising.
- **Richland Creek Wildlife Management Area** - The Richland Creek Wildlife Management Area and the Tarrant Regional Water District dedicated a new wetland project in May 2003. This new project pumps treated wastewater from the Trinity River and circulates it through wetland cells, where it is treated and cleaned or "finished" by natural vegetation in wetland cells. The water is

then returned to the Richland Chambers Reservoir for public use. The field scale phase of the wetlands water reuse project was constructed between 2000-2002 and covers about 250 acres. This wetland project is considered a national model to help further develop strategies for providing public water supplies without the construction of additional flat-water reservoirs. Slowing the construction of new reservoirs will help stop the destruction of bottomland hardwoods and the subsequent loss of important wildlife habitat. Although wetlands in Texas comprise less than 5 percent of the state's total land area, Texas is one of 19 states that have exhibited the most significant losses of wetland ecosystems. Wetlands are important from an economic standpoint. It is estimated that the bottomland hardwood and cypress swamps of the Southeastern part of the United States are worth over \$8 billion and climbing. Waterfowl hunters spend over \$600 million annually in pursuit of wetland-dependent birds, with a large percentage of this money going directly to wetland habitat protection. Fifty million people spend an estimated \$10 billion each year observing and photographing wetland-dependent wildlife.

- **Other – Each year, additional Vault toilets are installed at various TPWD Wildlife Management areas and State Parks. Vault toilets use no water and are commonly known as “composting toilets.” Water collection systems, known as "guzzlers" have been installed on Wildlife Management Areas in the Trans Pecos Ecological Region. These systems use creative designs and terrain to collect, store and distribute rainwater for wildlife.**