# COST CONTAINMENT THROUGH ENERGY EFFICIENCY IN TEXAS STATE-OWNED BUILDINGS

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## ABSTRACT

"The Energy Cost Containment Through Energy Efficiency" in Texas State-owned buildings project was begun in the spring of 1984 as a part of a multipronged effort to reduce rising energy costs in State operations. Energy audits of 21 million square feet (22% of total conditioned space) were conducted by three energy engineering firms and Texas Engineering Extension Service personnel under contract to the Public Utility Commission of Texas. Retrofits totalling $15.6 million with annual savings of $9.2 million were identified (59% ROI). This paper will detail the objectives of the project, summarize audit results, and outline financing options for individual projects.

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## BACKGROUND

Electricity and natural gas utility expenditures in state-owned buildings in Texas escalated from $42 million in 1974 to over $207 million in 1984 for an average annual increase of nineteen percent. The price of natural gas rose by 1500 percent from $0.31 per MCF in 1974 to $5.00 per MCF in 1984. During the same ten year period, electricity prices rose from $0.02 KWH to $0.08 KWH. During this period, utility expenditures more than doubled as a result of escalating fuel prices and the addition of less than efficient state-owned building space.

Texas state agencies occupy buildings with a gross area in excess of 138.5 million square feet. The usage of these buildings varies from very energy intensive operations in state hospitals to very low energy usage in storage facilities. Consumption varies from a high of 512,000 BTUs per sq. ft. to a low of 96,000 BTUs per sq. ft. according to a 1984 survey of state-owned buildings.(1) Few, if any, incentives exist for building operators to conserve energy and reduce utility expenditures, according to a 1984 Texas A&M study.(2) Capital requests by agencies for efficiency improvements compared to classroom space have had a very low priority with past legislatures.

## INTRODUCTION

Faced with ever increasing utility expenditures and a potential budget deficit of one billion dollars, Governor Mark White initiated a comprehensive Energy Cost Containment Program in November, 1983, designed to reduce significantly energy consumption in state buildings. Three major components of the program were:

- Policy Study -- The Governor's Office and the Public Utility Commission of Texas ordered a study by Texas A&M University of various policy options available to the state for reducing utility expenditures.
- Staffing Training -- State agency energy managers, legislative budget personnel and physical plant operators attended energy management training sessions.

- Engineering Audits -- The Public Utility Commission provided engineering audits to state agencies on a request basis.

This comprehensive energy management program was the first major attempt since 1974 to reduce agency energy consumption statewide. It was a very bold undertaking because of the number of buildings to be audited and the limited six month time frame available to complete the audits prior to the legislative session in January, 1985. The audit program was also unique in that a successful financing plan was found for 75 percent of the recommended retrofits.

## PROJECT DESCRIPTION

In late 1983, Governor Mark White initiated an aggressive program to curb spiraling utility bills using budget personnel and building facilities management. The Governor's first action was to direct all agencies to appoint an energy contact and establish energy consumption reduction goals for the remainder of the state's fiscal year. Agencies were required to submit consumption data to the PUCT for the past four years and to report progress semi-annually on their energy goals to his budget analysts.

### Policy Options and Agency Training

The PUCT and the Governor's budget office directed Texas A&M to complete a detailed investigation into the state's options for efficiency in existing, state-owned buildings; in new construction design; by the use of state in-kind natural gas; and by the cogeneration of electricity. State agency energy contacts, budget managers, and facilities managers representing over 70 state agencies attended two-day energy management training sessions conducted by the Texas Engineering Extension Service in fourteen different locations. Over 400 state employees participated in the training.

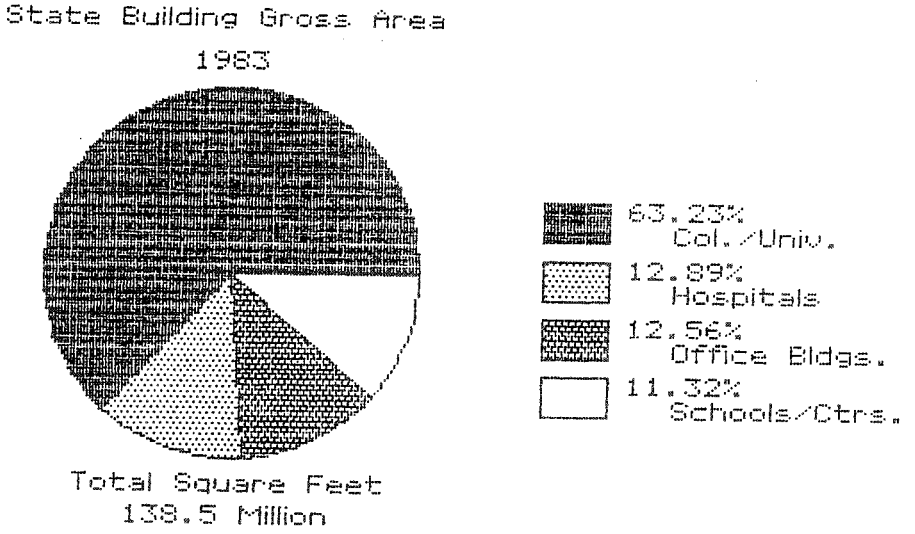
## ENGINEERING AUDITS

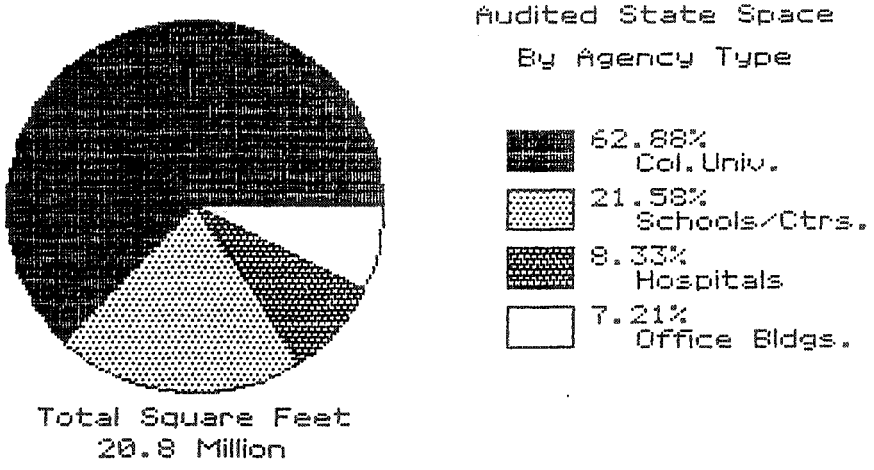
The PUCT, using oil overcharge funds returned to the state, provided energy audits to over 70 state agencies on a request basis. Streamlined audits similar to those used in the Federal Institutional Conservation Program were conducted by three engineering firms and Texas Engineering Extension Service personnel. The lead engineering firm developed audit guidelines designed to identify the best cost reduction opportunities with paybacks of four years or less.

Maintenance and operations and capital retrofits were included in audit reports on each agency surveyed. All energy cost improvement projects with paybacks less than one year were forwarded to the Governor's office for immediate implementation consideration by individual agencies and their budget examiners.

Seventy-three state facilities representing 22 precent of the state's 138.5 million square feet of building space requested engineering audits. Audits in almost 21 million square feet of state hospitals, schools, health centers, and office buildings resulted in 550 specific recommendations for reducing energy costs.

To provide more meaningful comparisons among buildings audited, they were divided into four categories: (1) office buildings, (2) state schools and health centers, (3) state hospitals, and (4) universities. The following pie chart illustrates the audited state space by agency type:



## Audit Results

The engineering audits uncovered a wide range of consumption within the four building categories. The Energy Cost Index (ECI) and the Energy Use Index (EUI) were used to compare cost and consumption. The following table describes the wide usage and energy costs found in the statewide audit program:

| Building Type | EUI RANGE (Btu's/SF/Yr) | ECI RANGE ($/SF/Yr) |
|---|---|---|
| Hospitals | 173,365 - 512,860 | 1.40 - 5.75 |
| Universities | 64,636 - 473,210 | .84 - 4.37 |
| State Schools/ Centers | 60,906 - 337,589 | 1.14 - 2.75 |
| State Office Buildings | 91,003 - 250,218 | 1.05 - 2.57 |

Few state office buildings were found to be well constructed or operated efficiently. A summary report by the engineering project manager found that "most buildings offered ample opportunity for significant savings." Some of the newer state buildings were found to be even less efficient than those built prior to 1978.

Annual cost savings totaling $9.2 million were identified. Total implementation costs for all 550 recommendations were estimated to be $15.6 million with a simple payback of 1.7 years and a ROI of 59 percent. A complete list of recommended projects is contained in Appendix A.

The Cost Containment Audit Program revealed several major findings having significant potential on state utility expenditures. Findings from the technical audit and from interviews with agency energy managers and staff were grouped into three categories: (1) technical, (2) policy, and (3) funding.

## Technical Recommendations

The technical recommendations were:

- Projects with less than a one year payback should be implemented immediately by the agency out of existing funds.

- Metering equipment should be installed in all major buildings prior to project installation to assist in determining project impact.

Policy Recommendations

Policy recommendations were as follows:

- The State should develop a cohesive, continuing, and comprehensive energy policy regarding energy use in its own buildings.
- The State should authorize a single agency to monitor agency utility consumption along with uniform reporting guidelines.
- Stringent, cost-effective standards for new and retrofit construction should be developed and enforced.
- New purchasing requirements for energy efficient equipment should be developed.
- Agencies should provide on-going training for energy managers and facilities personnel.
- Agency utility budget practices should be changed to provide incentives for saving.
- State agencies should continue to audit state owned space.

Most of these recommendations were also made in the earlier policy report by Texas A&M on state agency energy consumption and were again affirmed by the engineers conducting the audits.(2)

Retrofit Funding

Significant dollar savings are available to the state as a result of the audits conducted in this program. A 50 percent return-on-investment is available on the combined projects identified. Major funding recommendations were:

- The legislature should fund the capital investment projects with less than 4-year paybacks.
- In the absence of state funding, alternative financing such as revenue bonds, equipment leases, or third party financing should be secured by the individual agencies.

## PROGRAM CONCLUSION

### Revenue Bonds

Recent state legislation provided full funding through the issuance of state revenue bonds for the majority of the projects. Senate S.B. 1435, in May 1985, was amended by Representative R. Williamson authorizing the Texas Public Building Authority to provide $11.8 million in revenue bond financing for 33 of the facilities audited. The estimated energy savings to the state is $6 million per year, yielding a simple payback of approximately two years. Most of the projects include efficient lighting retrofits, HVAC modifications, and automated energy management systems. Since this is the first time Texas has used this innovative funding mechanism for energy efficiency improvements, success with these projects should serve as an added incentive for continued funding of similar retrofits in the future. Project implementation was scheduled to begin in September 1985, with bond repayment from saved utility costs. Market conditions for tax-exempt revenue bonds has delayed the issuance of bonds.

### Agency Incentives

The 69th Texas Legislature provided two significant incentives for agencies to conserve. First, a stick in the form of freezing utility expenditures at the FY 84-85 levels for the coming biennium was necessary in order to balance the state's recent Appropriations Act. Second, state institutions of higher education were for the first time allowed to retain documented utility savings for reinvestment in additional energy efficiency investments. The ultimate success of these efforts during the coming state fiscal period will be of extreme interest to legislators, budget examiners, agency energy managers, and the state's taxpayers.

## BIBLIOGRAPHY

1. "Cost Containment Through Energy Efficiency: A Summary Report" by ACR Energy Engineering, Inc.; Austin, Texas; May, 1985.

2. W. Turner, D. O'Neil, W. Murphy and S. Subramaniam, "Reducing Energy Costs in the Texas State Agencies: Conservation and Policy Options", Energy Systems Laboratory, Texas A&M Unversity; August, 1984.

# Appendix A

TABLE 3

COST CONTAINMENT THROUGH ENERGY EFFICIENCY
FINANCIAL SUMMARY
LISTING BY AGENCY NUMBER

| AGENCY NO. | AGENCY NAME | M&O $ SAVINGS | M&O COST | CAPITAL INVESTMENT $ SAVINGS | CAPITAL INVESTMENT COST | CAPITAL INVESTMENT PAYBACK | CAPITAL INVESTMENT ROI | TOTAL $ SAVINGS | TOTAL $ COST | COMBINED PAYBACK (YEARS) | TWO ** YEAR SAVINGS | FIVE ** YEAR SAVINGS | TEN ** YEAR SAVINGS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 304 | COMPT OF PUBLIC ACCTS | 2,277 | | 3,754 | 11,296 | 3.0 | 33% | 6,031 | 11,296 | 1.9 | 12,303 | 32,664 | 72,408 |
| 322 | TEXAS EMPLOYMENT COMMISSION | 7,178 | | 299,674 | 270,663 | 0.9 | 111% | 306,852 | 270,663 | 0.9 | 625,978 | 1,661,910 | 3,684,065 |
| 323 | TEACHER RETIREMENT SYSTEM | 1,638 | | 69,406 | 255,477 | 3.7 | 27% | 71,044 | 255,477 | 3.6 | 144,930 | 384,774 | 852,954 |
| 327 | EMPLOYEES RETIREMENT SYSTEM | 33,580 | | 25,215 | 42,765 | 1.7 | 59% | 58,795 | 42,765 | 0.7 | 119,942 | 318,434 | 705,893 |
| * 405 | DEPT OF PUBLIC SAFETY-AUSTIN | | | | | | | | | | | | |
| 405 | DPS, HOUSTON | 4,321 | | 18,797 | 47,424 | 2.5 | 40% | 23,118 | 47,424 | 2.1 | 47,161 | 125,207 | 277,555 |
| 405 | DPS, CORPUS CHRISTI | | | 3,853 | 4,400 | 1.1 | 88% | 3,853 | 4,400 | 1.1 | 7,860 | 20,868 | 46,259 |
| 405 | DPS, WACO | | | 2,272 | 3,050 | 1.3 | 74% | 2,272 | 3,050 | 1.3 | 4,635 | 12,305 | 27,278 |
| 405 | DPS, LUBBOCK | | | 2,738 | 3,130 | 1.1 | 87% | 2,738 | 3,130 | 1.1 | 5,586 | 14,829 | 32,872 |
| 501 | TEXAS DEPT OF HEALTH | | | 203,262 | 530,100 | 2.6 | 38% | 203,262 | 530,100 | 2.6 | 414,654 | 1,100,867 | 2,440,364 |
| * 654 | BROWNWOOD STATE SCHOOL | | | | | | | | | | | | |
| 655 | DEPT OF MENTAL HEALTH AND MR | 515 | | 106,662 | 281,523 | 2.7 | 38% | 107,177 | 281,523 | 2.6 | 218,641 | 580,471 | 1,286,767 |
| 656 | VERNON STATE HOSPITAL | | | 2,847 | 1,255 | 0.4 | 227% | 2,847 | 1,255 | 0.4 | 5,808 | 15,419 | 34,181 |
| * 657 | AMARILLO STATE CENTER | | | | | | | | | | | | |
| 658 | BEAUMONT STATE CENTER | 2,921 | 3,257 | 17,007 | 22,615 | 1.3 | 75% | 19,928 | 25,872 | 1.3 | 40,653 | 107,930 | 239,256 |
| 659 | RIO GRANDE STATE CENTER | | | 37,100 | 114,820 | 3.1 | 32% | 37,100 | 114,820 | 3.1 | 75,684 | 200,934 | 445,423 |
| 660 | DENTON STATE SCHOOL | 3,415 | | 148,912 | 360,140 | 2.4 | 41% | 152,327 | 360,140 | 2.4 | 310,747 | 825,003 | 1,828,838 |
| 661 | EL PASO STATE CENTER | 2,914 | | 18,237 | 50,516 | 2.8 | 36% | 21,151 | 53,449 | 2.5 | 43,148 | 114,554 | 253,939 |
| 670 | CORPUS CHRISTI STATE SCHOOL | | | 115,272 | 420,000 | 3.6 | 27% | 115,272 | 420,000 | 3.6 | 235,155 | 624,313 | 1,383,956 |
| 671 | SAN ANGELO STATE SCHOOL | 3,091 | | 210,465 | 547,702 | 2.6 | 38% | 213,556 | 547,702 | 2.6 | 435,654 | 1,156,619 | 2,563,953 |
| 673 | SAN ANTONIO STATE CHEST HOSP | 1,290 | | 82,828 | 96,265 | 1.2 | 86% | 84,118 | 96,265 | 1.1 | 171,601 | 455,583 | 1,009,921 |
| 674 | KERRVILLE STATE HOSPITAL | 72 | | 14,206 | 37,600 | 2.6 | 38% | 14,278 | 37,600 | 2.6 | 29,127 | 77,330 | 171,422 |

| AGENCY NO. | AGENCY NAME | M&O $ SAVINGS | M&O COST | CAPITAL INVESTMENT $ SAVINGS | CAPITAL INVESTMENT COST | CAPITAL INVESTMENT PAYBACK | CAPITAL INVESTMENT ROI | TOTAL $ SAVINGS | TOTAL $ COST | COMBINED PAYBACK (YEARS) | TWO ** YEAR SAVINGS | FIVE ** YEAR SAVINGS | TEN ** YEAR SAVINGS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 675 | TRAVIS STATE SCHOOL | 2,502 | | 54,696 | 166,106 | 3.0 | 33% | 57,198 | 166,106 | 2.9 | 116,684 | 309,784 | 686,719 |
| 677 | AUSTIN STATE HOSPITAL | 3,169 | 2,694 | 545,864 | 438,272 | 0.8 | 125% | 549,033 | 440,966 | 0.8 | 1,120,027 | 2,973,563 | 6,591,690 |
| 678 | AUSTIN STATE SCHOOL | 36,339 | | 143,866 | 236,883 | 1.6 | 61% | 180,205 | 236,883 | 1.3 | 367,618 | 975,990 | 2,163,541 |
| * 680 | WACO CENTER FOR YOUTH | | | | | | | | | | | | |
| 681 | SAN ANTONIO STATE HOSPITAL | 10,470 | | 21,899 | 67,644 | 3.1 | 32% | 32,369 | 67,644 | 2.1 | 66,033 | 175,311 | 388,622 |
| 682 | TERRELL STATE HOSPITAL | | | 305,177 | 530,199 | 1.7 | 58% | 305,177 | 530,199 | 1.7 | 622,561 | 1,652,839 | 3,663,955 |
| 683 | WICHITA FALLS STATE HOSPITAL | | | 30,938 | 97,541 | 3.2 | 32% | 30,938 | 97,541 | 3.2 | 63,114 | 167,560 | 371,442 |
| 685 | TX RESEARCH INST MENTAL SCI | | | 74,283 | 312,861 | 4.2 | 24% | 74,283 | 312,861 | 4.2 | 151,537 | 402,317 | 891,842 |
| 687 | LUBBOCK STATE SCHOOL | 2,559 | | 14,039 | 11,218 | 0.8 | 125% | 16,598 | 11,218 | 0.7 | 33,860 | 89,895 | 199,276 |
| 688 | BRENHAM STATE SCHOOL | | | 39,714 | 82,545 | 2.1 | 48% | 39,714 | 82,545 | 2.1 | 81,017 | 215,091 | 476,806 |
| 689 | GIDDINGS STATE SCHOOL | | | 14,745 | 20,145 | 1.4 | 73% | 14,745 | 20,145 | 1.4 | 30,080 | 79,859 | 177,028 |
| 690 | WEST TEXAS CHILDRENS HOME | 258 | 48 | 15,907 | 39,998 | 2.5 | 40% | 16,165 | 40,046 | 2.5 | 32,977 | 87,550 | 194,077 |
| 692 | GAINESVILLE STATE SCHOOL | 1,384 | 1,741 | 16,309 | 44,522 | 2.7 | 37% | 17,693 | 46,263 | 2.6 | 36,094 | 95,825 | 212,422 |
| 693 | CROCKETT STATE SCHOOL | 1,803 | | 6,716 | 1,882 | 0.3 | 357% | 8,519 | 1,882 | 0.2 | 17,379 | 46,139 | 102,279 |
| 696 | DEPT CORRECTIONS-HUNTSVILLE | 12,150 | | 123,473 | 112,800 | 0.9 | 109% | 135,623 | 112,800 | 0.8 | 276,671 | 734,534 | 1,628,290 |
| 696 | TDC, BETO II, PALESTINE | 931 | | 4,538 | 350 | 0.1 | 1297% | 5,469 | 350 | 0.1 | 11,157 | 29,620 | 65,661 |
| 696 | TDC COFFIELD(MEAT PLANT)PALES | 42,255 | | 1,008 | 890 | 0.9 | 113% | 43,263 | 890 | .0 | 88,257 | 234,312 | 519,416 |
| 696 | TDC, GATESVILLE | | | 2,334 | 7,350 | 3.1 | 32% | 2,334 | 7,350 | 3.1 | 4,761 | 12,641 | 28,022 |
| 697 | BOARD OF PARDONS AND PAROLES | 462 | | 2,290 | 3,900 | 1.7 | 59% | 2,752 | 3,900 | 1.4 | 5,614 | 14,905 | 33,041 |
| 713 | TARLETON STATE UNIVERSITY | 12,136 | 8,000 | 78,051 | 123,988 | 1.6 | 63% | 90,187 | 131,988 | 1.5 | 183,981 | 488,453 | 1,082,785 |
| 715 | PRAIRIE VIEW A&M UNIVERSITY | 8,832 | | 389,831 | 901,860 | 2.3 | 43% | 398,663 | 901,860 | 2.3 | 813,273 | 2,159,159 | 4,786,348 |
| 717 | TEXAS SOUTHERN UNIVERSITY | 86,432 | | 506,668 | 1,223,129 | 2.4 | 41% | 593,100 | 1,223,129 | 2.1 | 1,209,924 | 3,212,230 | 7,120,759 |
| 718 | TX A&M UNIV AT GALVESTON | 6,531 | | 92,093 | 113,685 | 1.2 | 81% | 98,624 | 113,685 | 1.2 | 201,193 | 534,148 | 1,184,080 |
| 719-1 | TEXAS STATE TECH INST-WACO | 17,017 | 6,892 | 58,931 | 119,724 | 2.0 | 49% | 75,948 | 126,616 | 1.7 | 154,934 | 411,334 | 911,832 |
| 719-2 | TEX ST TECH INST-HARLINGEN | 1,300 | | 46,039 | 151,211 | 3.3 | 30% | 47,339 | 151,211 | 3.2 | 96,572 | 256,388 | 568,352 |
| 719-3 | TEX ST TECH INST-AMAR | 3,595 | | 60,058 | 91,730 | 1.5 | 65% | 63,653 | 91,730 | 1.4 | 129,852 | 344,745 | 764,218 |
| 721 | UNIV OF TEXAS AT AUSTIN | 58,298 | 9,469 | 421,200 | 206,180 | 0.5 | 204% | 479,498 | 215,649 | 0.4 | 978,176 | 2,596,961 | 5,756,853 |
| 730 | UNIV OF HOUSTON-UNIV PARK | 445,360 | 852 | 730,449 | 1,775,057 | 2.4 | 41% | 1,175,809 | 1,775,909 | 1.5 | 2,398,650 | 6,368,182 | 14,116,763 |
| 731 | TEXAS WOMAN'S UNIVERSITY | 9,754 | | 339,370 | 395,045 | 1.2 | 86% | 349,124 | 395,045 | 1.1 | 712,213 | 1,890,856 | 4,191,583 |
| 732 | TEXAS A&I UNIVERSITY | 10,500 | | 316,741 | 577,700 | 1.8 | 55% | 327,241 | 577,700 | 1.8 | 667,572 | 1,772,337 | 3,928,855 |
| 733 | TEXAS TECH UNIVERSITY | | | 328,482 | 479,014 | 1.5 | 69% | 328,482 | 479,014 | 1.5 | 670,103 | 1,779,059 | 3,943,755 |
| 734 | LAMAR UNIVERSITY | 51,300 | 53,597 | 124,345 | 231,172 | 1.9 | 54% | 175,645 | 284,769 | 1.6 | 358,316 | 951,293 | 2,108,794 |
| 735 | MIDWESTERN UNIVERSITY | 11,682 | 37,208 | 179,841 | 479,000 | 2.7 | 38% | 191,523 | 516,208 | 2.7 | 390,707 | 1,037,289 | 2,299,425 |
| 737 | SAN ANGELO STATE UNIV | | | 19,950 | 65,590 | 3.3 | 30% | 19,950 | 65,590 | 3.3 | 40,698 | 108,049 | 239,520 |

| GENCY NO. | AGENCY NAME | M&O $ SAVINGS | M&O COST | CAPITAL INVESTMENT $ SAVINGS | CAPITAL INVESTMENT COST | CAPITAL INVESTMENT PAYBACK | CAPITAL INVESTMENT ROI | TOTAL $ SAVINGS | TOTAL $ COST | COMBINED PAYBACK (YEARS) | TWO ** YEAR SAVINGS | FIVE ** YEAR SAVINGS | TEN ** YEAR SAVINGS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 739 | TX TECH HEALTH SCI CNTR-AMAR | 632 | | 13,916 | 19,529 | 1.3 | 71% | 14,548 | 19,529 | 1.3 | 29,678 | 78,792 | 174,663 |
| 739 | TTHSC, LUBBOCK | | | 348,478 | 666,374 | 1.9 | 52% | 348,478 | 666,374 | 1.9 | 710,895 | 1,887,357 | 4,183,827 |
| 739 | TTHSC, EL PASO | | | 52,123 | 73,315 | 1.4 | 71% | 52,123 | 73,315 | 1.4 | 106,331 | 282,298 | 625,789 |
| 751 | EAST TEXAS STATE UNIV | 4,597 | | 330,226 | 419,871 | 1.3 | 79% | 334,823 | 419,871 | 1.3 | 683,039 | 1,813,401 | 4,019,885 |
| 752 | NORTH TEXAS STATE UNIV | 5,117 | | 155,192 | 398,943 | 2.6 | 39% | 160,309 | 398,943 | 2.5 | 327,030 | 868,234 | 1,924,670 |
| 753 | SAM HOUSTON STATE UNIV | 2,631 | | 16,187 | 36,973 | 2.3 | 44% | 18,818 | 36,973 | 2.0 | 38,389 | 101,918 | 225,929 |
| 754 | SOUTHWEST TEXAS STATE UNIV | 459 | | 65,603 | 179,616 | 2.7 | 37% | 66,062 | 179,616 | 2.7 | 134,766 | 357,792 | 793,140 |
| 755 | STEPHEN F AUSTIN STATE UNIV | 2,738 | | 159,573 | 295,852 | 1.9 | 54% | 162,311 | 295,852 | 1.8 | 331,114 | 879,076 | 1,948,706 |
| 759 | UNIV HOUSTON-CLEAR LAKE CITY | | | 363,456 | 566,465 | 1.6 | 64% | 363,456 | 566,465 | 1.6 | 741,450 | 1,968,478 | 4,363,653 |
| 760 | CORPUS CHRISTI STATE UNIV | 11,309 | 3,200 | 85,374 | 180,150 | 2.1 | 47% | 96,683 | 183,350 | 1.9 | 197,233 | 523,635 | 1,160,776 |
| 761 | LAREDO STATE UNIVERSITY | 252 | | 1,020 | 1,018 | 1.0 | 100% | 1,272 | 1,018 | 0.8 | 2,595 | 6,889 | 15,272 |
| 764 | EAST TX STATE UNIV-TEXARKANA | 2,614 | | | | | | 2,614 | | | 5,333 | 14,157 | 31,384 |
| * 771 | SCHOOL FOR THE BLIND | | | | | | | | | | | | |
| 772 | SCHOOL FOR THE DEAF | 2,600 | | 8,945 | 5,564 | 0.6 | 161% | 11,545 | 5,564 | 0.5 | 23,552 | 62,528 | 138,609 |
| 784 | UNIV OF HOUSTON-DOWNTOWN | 18,152 | 150 | 170,967 | 312,959 | 1.8 | 55% | 189,119 | 313,109 | 1.7 | 385,803 | 1,024,269 | 2,270,563 |
| 802 | PARKS & WILDLIFE DEPARTMENT | 2,050 | | 29,696 | 90,130 | 3.0 | 33% | 31,746 | 90,130 | 2.8 | 64,762 | 171,936 | 381,142 |
| 808 | TEXAS HISTORICAL COMMISSION | | | 7,161 | 10,640 | 1.3 | 67% | 7,161 | 10,640 | 1.5 | 14,608 | 38,784 | 85,975 |
| | TOTALS | 953,382 | 127,108 | 8,300,269 | 15,467,331 | 1.9 | 54% | 9,253,651 | 15,594,439 | 1.7 | 18,877,448 | 50,117,774 | 111,099,334 |
| | EXTRAPOLATION TO REMAINING 78% OF STATE SQUARE FOOTAGE | 4,333,555 | 577,764 | 37,728,495 | 70,306,050 | 1.9 | 54% | 42,062,050 | 70,883,814 | 1.7 | 85,806,582 | 227,808,063 | 504,996,972 |
| | PROJECTED TOTAL SAVINGS FOR ALL STATE AGENCIES | 5,286,937 | 704,872 | 46,028,764 | 85,773,381 | 1.9 | 54% | 51,315,701 | 86,478,253 | 1.7 | 104,684,030 | 277,925,837 | 616,096,306 |

* On-site surveys at these agencies did not identify any conservation opportunities having a payback of less than four years.

**All projected savings after the first year assume a 4% per year escalation factor for utilities.