University of North Texas Health Science Center
Energy Conservation Plan

University of North Texas Health Science Center
Resource Efficiency Plan

(1) Summary

The University of North Texas Health Science Center completed a Detailed Energy Audit for the Education and Administration Building (Medical Education #1) 227,458sf, Research and Education Building (Medical Education #2) 150,520sf, and Gibson Lewis Library (Medical Education #3) 131,010sf on November 12, 1999. In November 2001, UNTHSC contracted with Conservation Services Group to complete a feasibility study concerning the implementation of Solar Power on the campus. The feasibility study indicated Solar Power was not a cost effective energy source for UNTHSC.

Control Systems International (CSI), know Tour Andover Controls (TAC), completed a $3.2 million Energy Management and Conservation Project for the UNTHSC in January 2001. This project included lighting efficiency improvements, replacing two chillers, installing direct digital controls, and domestic water conservation efforts. The lighting efficiency improvements goals were to reduce electrical consumption and demand charges with the installation of more efficient lamps and ballasts. This included retrofitting existing lights with high efficiency electronic ballast and F32T8 bulbs to reduce electrical consumption by an estimated 1,319,799 kWh/Year. The goals for replacing two existing chillers were to eliminate CFC refrigerant R11 by replacing it with non CFC refrigerant R123, reduce electrical consumption with improved chiller efficiency, and modernize primary equipment. The chiller replacement has reduced electrical consumption by an estimated 296,166 kWh/Year. Retrofitting the plant and VAV boxes with Direct Digital Controls reduces the electrical consumption by an estimated 6,551,565 kWh/Year. The goals for the domestic water conservation were to meter all irrigation water separately from domestic water, modify flush valves on water closets and urinals to reduce the number of gallons per flush, and replace existing sink aerators with 1.5 gallon per minute aerators.

The $3.2 million Energy Management and Conservation Project was financed through the Texas Public Finance Authority's Master Lease Purchase Program.

Dr. Ronald R. Blanck, UNTHSC President, has taken an active role in making university faculty and staff aware of utility conservation efforts. Campus wide notices have been sent out reminding personnel to turn off lights when leaving conference rooms, offices, labs, classrooms, etc. and turning off computers when they are not in use. Occupancy sensors have been placed in many offices, all applicable conference rooms, and public restrooms of existing buildings. All new construction since 2001 has included lighting occupancy sensors and automatic lavatory faucets and flush valves.

A Measurement and Verification Plan is created and maintained by Tour Andover Controls for the Energy Management and Conservation Project. This includes performance tracking using baseline and supporting information and evaluating other potential savings opportunities. TAC's Performance Assurance Support Service (PASS) representatives are assigned to UNTHSC to continually educate and train our personal to

operate facilities at maximum efficiency. The PASS goal is to continuously increase the performance of the project and identify areas of greater savings.

All work associated with the Energy Management and Conservation Project was 100% completed in January 2001. Actual reduction of electrical and water consumption has exceeded expectations and the performance contract guarantee, based on contract utility rates, has resulted in total cost avoidance to date of $1,349,078. According to EPA figures, these utility savings have reduced CO_2 emissions by approximately 21,203 tons. This is approximately equivalent to removing 4,241 cars from the road for one year, or planting 5,767 acres of trees. Utility conservation efforts are ongoing and will be evaluated and implemented in existing and future campus facilities. The newest UNTHSC Center for BioHealth building was constructed with utility conservation as a major priority. High efficient boilers and chillers, high efficient lighting, occupancy sensors, automatic flush valves and lavatory faucets, Direct Digital Controls, and off-hour equipment shut downs were incorporated into the design and construction the new building.

Current energy conservation projects include infrared inspections, power quality monitoring and power factor studies of the campus electrical distribution system; installation of a hot water blend valve for building heating; and upgrading supply and exhaust controls in the Research and Education building.

(2) Utility Assessment Report (UAR) or Preliminary Energy Audit (PEA)

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University of North Texas Health Science Center
Utility Assessment Report - Summary
Completed by Tour Andover Controls
November 12, 1999

Facility Description

Buildings

The Health Science Center provides all three disciplines of medical science-education, research and patient care. The campus is located on a 15-acre site in Fort Worth's Cultural Arts District. The center consists of three institutions-Texas College of Osteopathic Medicine, the Graduate School of Biomedical Sciences and the School of Public Health. This project involves only three of the many buildings on the main campus-Medical Education Building One (Med Ed 1), Medical Education Building Two, (Med Ed 2), and Medical Education Building Three or Lewis Library (Med Ed 3). These buildings are constructed of limestone aggregate concrete walls and gypsum board interior surfaces. The roofs utilize built-up roofing with a dark red ballast rock over a concrete deck.

Utilities

TXU Electric & Gas provides electrical service to the campus. The service enters the campus at 480 volts through two primary metering stations-Med Ed 1 Electrical Room on the first floor and Med Ed 2 Electrical Room on the ground floor. Electrical consumption and demand are metered at these two locations. Power is distributed throughout Med Ed 1 from its service point and to both Med Ed 2 and 3 from the Med Ed 2 service point.

Natural Gas is provided by the Texas General Land Office and is transported to the University by TXU Electric & Gas. Three meters (consolidated billing) measure volume of gas supplied to these three buildings. The Health Science Center receives a consolidated gas bill from the Land Office. This bill includes transportation charges assessed by TXU Electric & Gas.

HVAC

Forced-air, four pipe heating and air conditioning systems are used for comfort conditioning in all three buildings. Most of the air systems are double-duct constant volume, but there are multi-zone systems. The nature of these mixing systems contributes a great deal to the excessive energy use that CSI identified during this energy audit. Cooling for most of the air-handlers is provided by chilled water generated by electrically-driven, vapor-compression refrigeration machines, most of which are water cooled. Heating is typically provided by hot water, derived from natural-gas fired water boilers. Preheat as well as space humidification and autoclave heating is provided by steam boilers located in Med Ed 2. There are two central plants on campus, which supply all three buildings. The two plants are connected with chilled water and heating water loops.

Med Ed 1 Plant: This plant consists of three nominal 500-ton centrifugal chillers that have been converted from R11 to R123 refrigerant. The heating side consists of three hot water boilers with a firing rate of 3,135 MBtuh minimum to 10,460 MBtuh maximum.

Med Ed 2 Plant: This plant consists of one 800-ton chiller and one 500-ton chiller, both using R11 refrigerant. The heating plant consists of one 250 hp steam boiler for preheat and one decommissioned hot water boiler for space heating. Heating water is supplied by the Med Ed 1 plant.

Med Ed 1 System: There are two double-duct air handlers per floor, a total of sixteen units serving occupied spaces. The units for floors 1 and 2 are located on floor 1 in the Air Handler Room. Also located in that room are four relief air units. On floors 3 through 8 the air handlers are located in mechanical rooms on each end of the east of the building. The units are double-duct constant-volume equipment with no pre-heat or pre-cool capability. The relief fans use variable inlet guide vanes for capacity control. There is also one constant-volume cooling-only unit serving the chiller room.

Med Ed 2 Systems: With the exception of the unit for the Vivarium, all air handlers are located in the mechanical room on the ground floor. There are four double-duct constant-volume, two Texas multi-zone, one double-duct variable-volume and one single-duct variable –volume units. The Vivarium is served with a double-duct constant-volume unit similar to the other double-duct units except all the heating coils are served with steam.

Med Ed 3 Systems: All air units are variable-volume except smaller systems serving specialty areas such as the auditorium and computer rooms. Two units are double-duct variable volume and four are single-duct variable-volume. Supply air from the variable-volume units is modulated into inlet guide vanes. Each of the six units has a separate return air fan that also is modulated with inlet vanes.

Temperature Controls

A pneumatic temperature control system was the original system for each of these buildings. A digital temperature control system has been overlaid over the pneumatic system. The age of the pneumatic system and its complexity has been a burden for the University's maintenance staff. The need for constant maintenance and repair of these systems leaves the maintenance staff in constant "catch-up" mode.

Energy Management

A Landis Gyr energy management system was used to provide scheduling and monitoring features for the main campus buildings. Recently this system was replaced and expanded with a CSI I/Net 200 control system. This new system replaced the original system on a point-for-point basis and affected a Y2K upgrade. Reliability and ease of use increased, but system capabilities were only marginally improved. The system covers most of the buildings on the main campus. The University does not have a dedicated technician to maintain and operate these systems. This system is still limited by the extensive use of zone-level pneumatic controls and pneumatically operated actuators for air distribution systems and central plant systems.

Lighting

Fluorescent lighting is dominate in all buildings. Most fixtures utilize 4-foot T12 Cool White lamps. This particular lamp is poor in both efficiency and color rendering. Almost all of the fluorescent fixtures are using magnetic ballasts. These ballasts, original to the building, appear to be reaching the end of their service life, as indicated by the relatively high number of failed lamps in the facilities. Many office occupants have fine tuned light levels in their areas by removing lamps from fixtures, or requesting installation of low-transmission, low-glare egg-crate shielding media. Incandescent lighting is used in several applications such as exit lights, wall accents, and dimming recessed cans. All lighting uses manual switching control.

(3) Implementation Schedule and Monitoring Strategy

Tour Andover Controls (TAC) completed a $3.2 million Energy Management and Conservation Project for the UNTHSC in January 2001. This project included lighting efficiency improvements, replacing two chillers, installing direct digital controls, and domestic water conservation efforts. The lighting efficiency improvements goals were to reduce electrical consumption and demand charges with the installation of more efficient lamps and ballasts. This included retrofitting existing lights with high efficiency electronic ballast and F32T8 bulbs to reduce electrical consumption by an estimated 1,319,799 kWh/Year. The goals for replacing two existing chillers were to eliminate CFC refrigerant R11 by replacing it with non CFC refrigerant R123, reduce electrical consumption with improved chiller efficiency, and modernize primary equipment. The chiller replacement has reduced electrical consumption by an estimated 296,166 kWh/Year. Retrofitting the plant and VAV boxes with Direct Digital Controls reduces the electrical consumption by an estimated 6,551,565 kWh/Year. The goals for the domestic water conservation were to meter all irrigation water separately from domestic water, modify flush valves on water closets and urinals to reduce the number of gallons per flush, and replace existing sink aerators with 1.5 gallon per minute aerators.

Construction of the newest UNTHSC Center for BioHealth building was completed in 2004 with utility conservation as a major priority. High efficient boilers and chillers, high efficient lighting, occupancy sensors, automatic flush valves and lavatory faucets, Direct Digital Controls, and off-hour equipment shut downs were incorporated into the design and construction the new building.

In addition to extensive energy savings projects we have already completed, we are currently in the process of further improving our ability to identify and enhance energy savings by performing the following work:

Infrared Inspections of the Campus Electrical Distribution System

Infrared Thermographic Imaging Service: Measure (utilizing state-of-the-art instrumentation) to identify and document temperatures that exceed NFPA Standard 70B recommendations, i.e. , high resistance electrical connections, current overload, defective circuit breakers and/or defective insulator conditions. This service is used to reduce the risk of brownouts and blackouts, as well as safety and fire hazards.

Visual and Mechanical lnspections: Interior and exterior of all components will be inspected to ascertain, and if necessary, make certain adjustments to ensure that its performance remains within specified limits. Also identify corrosion, rust and discoloration, leaks, safety hazards, applicable electric code violations, grounding, physical damage and the general condition of components.

Phase-Balance Service: Test to assure that the phases in electrical system are balanced. This service is used to address unbalanced components that increase

power-quality problems, total harmonic distortion as well as increased temperature rise of devices and current-carrying conductors.

Analysis: Compare test results and trends in order to determine appropriate actions to minimize the likelihood of an unscheduled business interruption or safety hazard.

True RMS Voltage and Current Service: Capture and record the square root of the average square of the instantaneous magnitude of the voltage and current. This service is used to determine if the correct voltage and current is present to properly operate our equipment and optimize its life cycle.

Voltage Drop Service: Measure and record the difference of voltages at the two terminals of passive impedance. This service is used to determine if our electrical components, i.e., circuit breakers, contact surfaces, etc., are operating properly to reduce hazards and equipment destruction.

Ultrasonic Service: Measure and record sound waves and/or vibrations that are above audible sound (16-18 kHz). This service is used to complement the infrared service and determine if corona discharge, tracking, arcing and vibration are present and to assure the quality and integrity of our electrical system.

Voltage and Current Harmonics Service: Capture and record Total Harmonic Distortion-Voltage (THDV) and Total Harmonic Distortion-Current (THDC) that exceed IEEE recommendations. This service is used to determine if our harmonic contaminations are within tolerance levels. In addition, this service is designed to assure accurate power (kW) charges and to minimize the risk of damage to microelectronic equipment, transformers, circuit breakers, motors, etc.

Power Factor Service: Measure and record the ratio of the circuit power (watts) to the circuit volt-amperes. This service is used to determine if we are paying increased costs to our utility company because our power factor is in a higher rate schedule. In addition, correcting a poor power factor situation may allow us to expand our electrical system's capacity without costly system additions.

Power Quality Monitoring

Enables intelligent analysis of power data to prevent electrical system problems and the utility energy data to save money

Gives a graphic interface status of entire electrical & piped utility system.

Helps reduce utility bills by avoiding peaks.

Provides early detection of power quality problems.

Tracks and allocates energy usage.

Enables facility capacity planning & maintenance

Provides logs, trends and records events for quick troubleshooting.

Provides real time information and reports to highlight potential savings.

Hot Water Blend Valve

Energy efficiency upgrade designed to bypass boiler system when water temperatures are adequate to heat occupant areas.

Boilers use less natural gas.

Operators Work Station

Work Station will be monitored 24 hours a day, 7 days a week by an operator trained in building operations.

Operator will actively control all systems to ensure only the minimum amount of equipment required is working to maintain desired temperatures, pressures, humidity, and air flows.

Power Factor Study

An additional power factor study is being obtained for additional opportunities to increase our energy savings. This will be performed at no cost to the University.

Upgrading Supply and Exhaust Controls

We are currently working on upgrading the supply and exhaust controls in our Research and Education Building to ensure that only the required amount of air is circulating. Lower exhaust cfm means a decrease in the cooling and heating requirements for the chillers and boilers.

(4) Finance Strategy

The $3.2 million Energy Management and Conservation Project was financed through the Texas Public Finance Authority's Master Lease Purchase Program.

Energy Conservation Measures No.		Savings ($/yr)	Implementation Cost	Payback (Years)
1	Lighting Efficiency Improvements	$56,789	$265,776	4.68
2	New Chillers	$21,047	$493,584	23.45
3	Central Plant Direct Digital Controls	$76,133	$165,312	2.17
4	Air Side VAV and Box Retrofit with DCC	$190,598	$2,137,817	11.22
5	Domestic Water Conservation	$13,750	$60,511	4.4
	Detailed Energy Audit for Project Proposal		$77,000	
	Project Totals	**$358,317**	**$3,200,000**	**8.93**

Energy and utility conservation efforts, practices, and equipment are budgeted into all future building projects as a part of the overall design and construction budget.

The Center for BioHealth project was funded through Tuition Revenue Bonds.

Current projects to upgrade infrastructure systems, allowing for improved system reliability, safety, and energy efficiency are being funded through Higher Education Assistance Funds.

(5) Utility Awareness Plan

Dr. Ronald R. Blanck, UNTHSC President, has taken an active role in making university faculty and staff aware of utility conservation efforts. Campus wide notices have been sent out reminding personnel to turn off lights when leaving conference rooms, offices, labs, classrooms, etc. and turning off computers when they are not in use. Occupancy sensors have been placed in many offices, all applicable conference rooms, and public restrooms and are installed in all work spaces in new construction projects. Automatic lavatory faucets and flush valves are installed in new construction projects.

A new campaign to involve the campus community in energy conservation is being established with expected implementation prior to the end of the 2006 fiscal year. This will include ongoing energy usage, cost and conservation notices to the campus community. Suggestions of how to better conserve energy will be provided to the campus community on an ongoing basis. Possible energy conservation competitions and incentive programs may be implemented.

(6) Asset Management Inventory

Facility	*Address*	*Year Built*	*Facility Type* *	*Gross Sq. Ft.*	*Construction Type*	*# Full Time Employees M/F*
Education & Administration Bldg.	3500 Camp Bowie Blvd.,	1978	Administration	227,458	Reinforced Concrete Frames	300
Research & Education Bldg.	3500 Camp Bowie Blvd.,	1982	Research	150,520	Reinforced Concrete Frames	225
Gibson Lewis Library	3500 Camp Bowie Blvd.,	1986	Library	131,010	Reinforced Concrete Frames	200
Patient Care Center	855 Montgomery St.	1997	Clinical	135,172	Reinforced Concrete Frames	350
Education Annex 1	901 Montgomery St.	1973	Educational	6,003	Load Bearing Masonry Walls	30
Education Annex 2	999 Montgomery St.	1964	Administration	11,077	Wood Frame w/Brick	50
Administration Annex 1	3430 Camp Bowie Blvd.	1974	Administration	9,927	Steel Frame	30
Administration Annex 2	3440 Camp Bowie Blvd.	1968	Administration	4,100	Load Bearing Masonry Walls	30
General Services Building	3420 Darcy St.	1991	Service Depts.	15,965	Reinforced Concrete Walls	20

Facilities Management Bldg.	3416 Darcy St.	2000	Service Depts.	8,020	Reinforced Concrete Walls	20
Founders Activity Center	3515 West 7th St.	1955	Exercise Center	13,773	Wood Frame w/Brick	10
Geriatrics Annex (Blue House)	800 Clifton St.	1923	Administration	2,481	Wood Frame w/Brick	5
Parking Garage	3500 Camp Bowie Blvd.	2001	Parking Garage	262,951	Reinforced Concrete Frames	0
Chemical Storage	3500 Camp Bowie Blvd.	1990	Warehouse	807	Reinforced Concrete	0
Solvent Storage Building	3500 Camp Bowie Blvd.	1982	Warehouse	432	Reinforced Concrete	0
Seminary Clinic	1305 E. Seminary Dr.	1993	Health Care	10,390	Wood/Steel Frame w/ Brick	23
Center for BioHealth	3400 Camp Bowie Blvd.	2004	Laboratory	153,265	Reinforced Concrete Frames	0
Osteopathic Medical Center of TX	1000 Montgomery	1946	Vacant Hospital	325,310	Reinforced Concrete w/ Brick	0
Professional Office Strip Center	3601-3609 W. 7th St.	0000	Vacant Offices	8,508	Wood/Steel Frame w/ Brick	0
St. Emilion Restaurant	3617 W. 7th St.	1985	Dining: Family	1,560	Wood Frame w/ Brick	0
Floral Shop	3621 W. 7th St.	1957	Vacant Retail	5,615	Wood Frame w/Brick	0

Hospital Offices	3629 W. 7th St.	1965	Vacant Office	3,188	Wood/Steel Frame w/ Brick	0
Hospital Staff Development Off	3633 W. 7th St.	1955	Vacant Office	1,604	Wood Frame w/ Brick	0
Ellis Child Care Center	3624 Modlin Ave.	1995	Day Care Ctr.	5,725	Wood/Steel Frame w/ Brick	0
Sleep Center	3632 Modlin Ave.	1955	Health Care	3,992	Wood/Steel Frame w/ Brick	0
Medical Professional Building	1002 Montgomery	1981	Health Care	26,370	Wood/Steel Frame w/ Brick	0

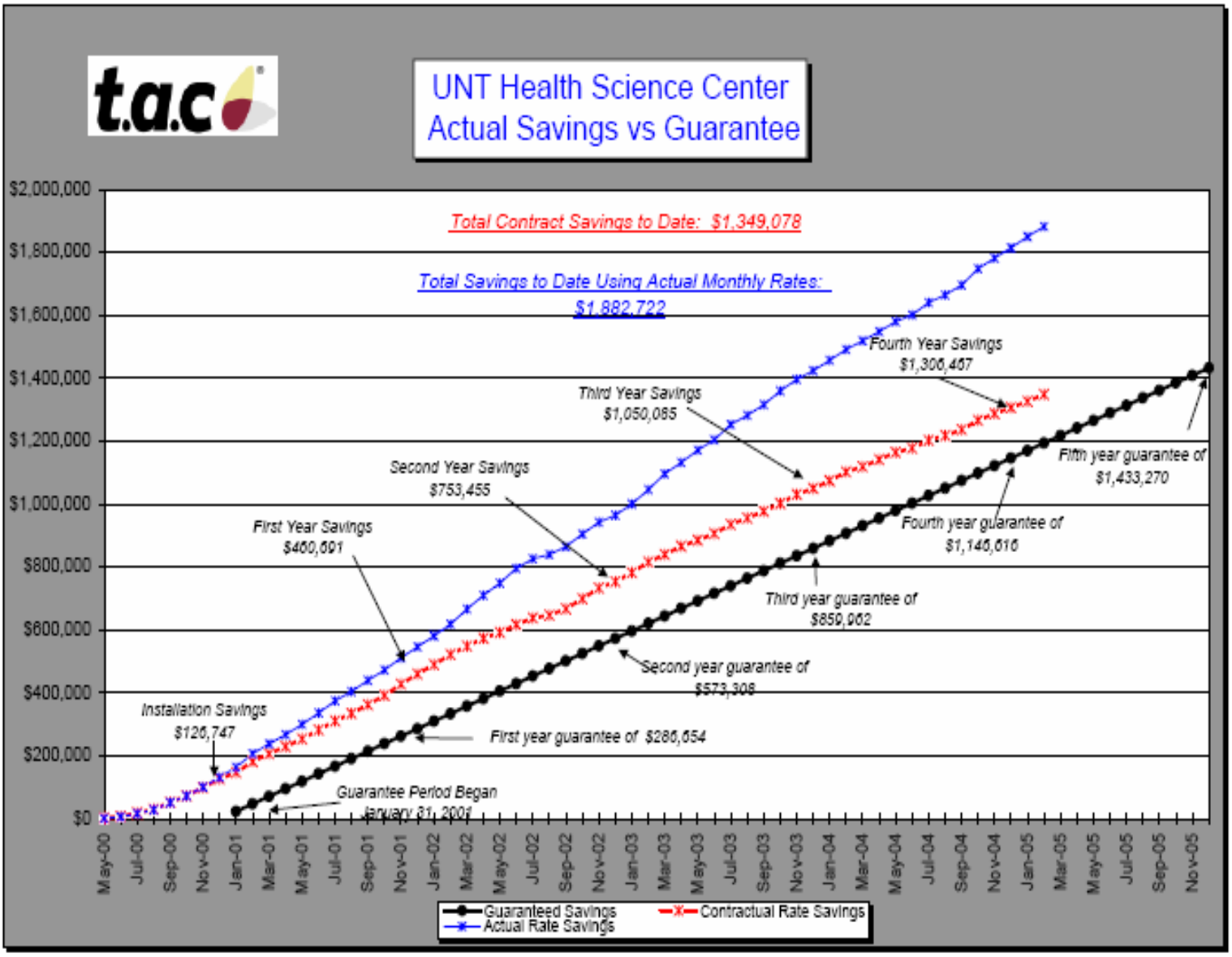
(7) Two-year history of utility use and expenditures

Date	Total Elec Cost	Natural Gas Cost	Water Cost	Irrigation Cost	Sewer Cost	Storm water Cost	Total Cost
3-Sep	$115,419.96	$12,688.11	$3,665.09	$489.93	$2,665.16	0	$134,928.26
3-Oct	$106,896.77	$22,298.48	$5,074.92	$456.05	$3,904.51	0	$138,630.74
3-Nov	$96,796.08	$6,690.50	$4,168.81	$371.79	$2,977.57	0	$111,004.75
3-Dec	$89,627.43	$8,296.58	$4,631.34	$234.59	$4,224.93	0	$107,014.86
4-Jan	$95,314.23	$8,186.43	$5,060.02	$167.02	$4,837.51	0	$113,565.20
4-Feb	$95,638.22	$46,606.67	$3,998.51	$187.98	$2,826.02	0	$149,257.40
4-Mar	$113,636.51	$46,662.03	$5,009.00	$368.77	$3,815.04	0	$169,491.35
4-Apr	$122,413.58	$31,735.64	$5,896.87	$680.66	$4,733.87	0	$165,460.63
4-May	$139,936.45	$51,878.17	$7,389.05	$969.68	$6,536.23	0	$206,709.58
4-Jun	$148,077.26	$23,854.02	$9,830.25	$751.02	$7,537.58	0	$190,050.14
4-Jul	$158,932.88	$6,174.20	$15,483.22	$1,382.74	$6,963.63	0	$188,936.68
4-Aug	$196,307.15	$19,727.79	$9,005.51	$1,048.07	$4,178.21	$2,913.47	$233,180.19
Annual Total	**$1,478,996.52**	**$284,798.62**	**$79,212.59**	**$7,108.30**	**$55,200.26**	**$2,913.47**	**$1,908,229.78**

Date	Total Elec Cost	Natural Gas Cost	Water Cost	Irrigation Cost	Sewer Cost	Storm water Cost	Total Cost
4-Sep	$140,717.68	$6,442.02	$7,946.59	$691.52	$2,013.76	$4,453.70	$162,265.28
4-Oct	$90,150.01	$21,635.63	$6,218.66	$784.79	$1,606.64	$3,318.94	$123,714.66
4-Nov	$117,257.62	$56,525.15	$4,750.14	$378.83	$865.60	$3,366.86	$183,144.20
4-Dec	$110,101.08	$74,485.50	$6,577.61	$190.12	$258.31	$1,690.69	$193,303.30
5-Jan	$116,557.27	$23,679.71	$6,336.02	$187.69	$451.59	$5.12	$147,217.39
5-Feb	$111,031.07	$10,234.87	$4,898.84	$224.47	$834.41	0	$127,223.67
5-Mar	$105,424.32	$67,836.09	$10,107.86	$472.16	$1,147.69	0	$184,988.14
5-Apr	$133,858.60	$75,297.98	$14,998.80	$988.56	$951.36	$1,014.50	$227,109.81
5-May	$220,171.35	$50,103.93	$25,870.24	$1,559.36	$2,166.40	0	$299,871.28
5-Jun	$239,440.31	$5,680.65	$25,237.08	$1,810.12	$1,611.30	$14.50	$273,793.96
5-Jul	$197,180.30	$66,466.82	$23,612.72	$2,799.97	$2,045.31	$49.50	$292,154.63
5-Aug	$169,918.22	$34,736.68	$24,388.16	$3,253.02	$2,442.51	$1,014.50	$235,753.08
Annual Total	**$1,751,807.83**	**$493,125.03**	**$160,942.72**	**$13,340.61**	**$16,394.88**	**$14,928.31**	**$2,450,539.40**

(8) Savings Monitoring and Evaluation Plan

A Measurement and Verification Plan is created and maintained by Tour Andover Controls (TAC) for the Energy Management and Conservation Project. This includes performance tracking using baseline and supporting information and evaluating other potential savings opportunities. TAC's Performance Assurance Support Service (PASS) representatives are assigned to UNTHSC to continually educate and train our personal to operate facilities at maximum efficiency. The PASS goal is to continuously increase the performance of the project and identify areas of greater savings.



(9) Project Implementation Update

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Utility conservation efforts are ongoing and will be evaluated and implemented in existing and future campus facilities.

The newest UNTHSC Center for BioHealth building was constructed with utility conservation as a major priority. High efficient boilers and chillers, high efficient lighting, occupancy sensors, automatic flush valves and lavatory faucets, Direct Digital Controls, and off-hour equipment shut downs were incorporated into the design and construction the new building.

(10) Names and Address of those responsible for the Resource Efficiency Plan

Mr. Steve Russell
Senior Vice President for Finance and Administration
3500 Camp Bowie Boulevard
Fort Worth, TX 76107

Mr. Stephen Barrett
Director of Facilities Management
3500 Camp Bowie Boulevard
Fort Worth, TX 76107

University of North Texas Health Science Center
Fleet Fuel Management Plan

1) Summary

The University of North Texas Health Science Center's fleet consists of twenty-five full size vehicles, nineteen golf carts, and two truck alls. The vehicular fleet represents an asset that is essential to the operation of the university President's Office, Facilities Management, Campus Police, Central Receiving, Mail Services, Animal Medicine and Clinics.

2) Fuel Savings Goal

The fleet was reduced from thirty-three to twenty-five full size vehicles in 2003. The total cost of fuel for fiscal year 2004-2005 was $17,164.47. The estimated cost of fuel for fiscal year 2005-2006 is approximately $25,000. The estimated forty-six percent increase in fuel expenditures is a direct result in the size of the campus doubling in acreage, an increased number of satellite facilities located off the main campus, and the significant rise in fuel costs. The goal is to reduce fuel consumption by five percent.

3) Preventative Maintenance Program

UNTHSC Facilities Management will follow those maintenance practices that maximize vehicle life and minimize down time. These maintenance procedures include, but are not limited to, the following:

A. Each vehicle will have its oil changed every 3,000 miles or 12 months, whichever comes first.
B. Every vehicle will be inspected once annually to meet state inspection requirements. At this time, fluid levels, refrigerant levels, braking systems, air and fuel filters, wiper blades, tire wear and air pressure, hydraulic equipment, and various other moving components that are subject to wear and tear and occasional replacement will be inspected, documented in the Garage Fleet Management Computer System, and replaced as needed.
B. Facilities Management will contact each vehicle user at the beginning of the month that their vehicle is scheduled for inspection through memo or e-mail. Users will be required to make their vehicle available that month. Facilities Management will provide loaner vehicles if needed and if available.
C. The Facilities Management Department shall provide a ready stock of the most frequently used parts and supplies on site so that routine repairs and maintenance can be performed on a timely basis.
E. The Fleet Mechanic shall clean vehicles weekly.

4) Employee Education

Non-student drivers who drive UNTHSC vehicles on a daily basis shall take the defensive driving course offered at UNT or by some other professional service in order to drive a University vehicle. The defensive driving course must be taken once in each three-year period during an employee's tenure of employment.

Employees are encouraged to utilize the golf carts and truck alls when possible while working on the main campus. Many of the golf carts are electric and the gas powered carts use minimal fuel. The truck alls get approximately 40 miles gallon. Employees are also expected to drive the vehicles in a conservative manner related to accelerating and braking.

5) State's Fleet Data Management System

The State Office of Vehicle Fleet Management's web based Fleet Focus program is fully utilized and monitored by the UNTHSC Fleet Mechanic and Facilities and Fleet Manager. The required data entry is updated and completed on a weekly basis.

6) Agency Best Practices

The University of North Texas Health Science Center's fleet consists of twenty-five full size vehicles, nineteen golf carts, and two truck alls. Ten of the full size vehicles have the capability of using alternate propane fuel, nineteen golf carts are used on the main campus to minimize use of the full size vehicles, and two truck alls (which get great than 40 miles per gallon) are also used on the main campus.