



# **Energy Management and Conservation Plan**

December 2005

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# **Section One**

## **Executive Summary**

## Executive Summary

On October 27, 2005, Governor Rick Perry implemented Executive Order RP-49 requiring state agencies and institutes of higher education to present a plan for reducing consumption of electricity, motor fuels and natural gas.

The Texas Transportation Institute (TTI) has been committed to reducing energy consumption, conserving water and recycling since the 1980's, with a renewed emphasis since 2002. The Texas Transportation Institute Energy Management and Conservation Plan documents various initiatives implemented which have reduced energy, water and fuel consumption and ensure employee awareness in related areas.

TTI has worked with the State Energy Conservation Office (SECO) to implement programs reducing consumption and improving efficiency. In addition, TTI has met, and continues to meet, all SECO applicable reporting requirements.

TTI is a **tenant agency** at all facilities that it occupies. The agency does not purchase, negotiate or directly pay for any utilities. Refer to Section Two – Tenant Agency for additional information.

TTI has actively participated in various energy conservation programs and is committed to working with and implementing procedures provided by SECO, TAMU and its' Lessors in regard to respective energy management and conservation plans.

In accordance with House Bills 1545, 3125 and 3227, TTI has adhered to the requirements of the State Vehicle Fleet Management Plan (SVFMP) as provided by the Office of Vehicle Fleet Management (OVFM), Texas Building and Procurement Commission (TBPC). In addition, as a component member of the Texas A&M University System (TAMUS), TTI adheres to the TAMUS Component Compliance Plan as required by the SVFMP. TTI provides fuel-efficiency awareness and procedures to its employees and continues to improve its in-house preventive maintenance program. Refer to Section Six – Fleet Fuel Management Plan.

# **Section Two**

## **Tenant Agency**

## **Tenant Agency**

TTI is a tenant agency at all facilities that it occupies. The agency does not purchase, negotiate or directly pay for any utilities. TTI does not receive utility bills for any of its occupied facilities.

TTI is headquartered on the main campus of the Texas A&M University (TAMU) in College Station, Texas. TTI occupies various TAMU-owned facilities on the campus. These facilities are maintained by the TAMU Physical Plant. Utility services and related energy management and conservation plans for these facilities would be reported, as applicable, by TAMU.

In addition to the TAMU-owned facilities, TTI also occupies leased office space in several major cities within Texas. All of the leases are full-service and include all utilities as well as janitorial services paid for by the Lessor.

A listing of all TTI facilities is included in this section as well as the agency's Resource Efficiency Plan as reported to SECO.

TTI adheres to State requirements for leased facilities in regard to energy conserving implementations. This includes, but is not limited to, various electrical, gas, lighting and plumbing fixtures and implements.

TTI has actively participated in various energy conservation programs and is committed to working with and implementing procedures provided by SECO, TAMU and its' Lessors in regard to respective energy management and conservation plans to reduce energy consumption at tenant facilities.

Facilities occupied by TTI, as a tenant agency, as of December 1, 2005 are noted in the following tables.

**Texas A&M University (TAMU) Buildings – tenant only:**

<b>Building No.</b>	<b>Building Name</b>	<b>Type of Facility</b>
385	CE/TTI Building	Office
740	JTL McNew Laboratory	Research-Asphalts/Pavements Lab
1600	Gibb Gilchrist Building	Office
6095	Storage	Research-Materials Storage
7030	Rainfall Simulator	Research-Environment Soils Research
7061	Environmental Management	Research-Environment Soils Research
7090	TTI Safety Division Hangar	Research-Vehicle Test Support
7091	TTI Hangar Office Building	Office
7092	Mechanical Tech Lab	Research-Vehicle Test Support
7093	Machining Shop	Research-Support
7500	TTI Pendulum Test Facility	Research-Vehicle Test Support
8510	Warehouse	Research-Asphalts/Pavements Support

**Lease and Co-Located Space – tenant only:**

<b>City</b>	<b>Location</b>	<b>Type of Facility</b>
Arlington	110 N. Davis, Suite 101	Office, Multi-tenant, Leased
Austin	1106 Clayton Lane, Suite 300E	Office, Multi-tenant, Leased
Dallas	9441 LBJ Freeway, Suite 103	Office, Multi-tenant, Leased
Houston	701 N. Post Oak, Suite 430	Office, Multi-tenant, Leased
San Antonio	1100 NW Loop 410, Suite 400	Office, Multi-tenant, Leased
San Antonio	3500 NW Loop 410, Suite 315	Office, TxDOT owned

# **Section Three**

## **Resource Efficiency Plan**

Originally reported to the State Energy Conservation Office on October 31, 2002.



**Texas Transportation Institute  
Resource Efficiency Plan  
December 01, 2005**

**Agency Contact/Energy Manager:**

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**Agency Information:**

The Texas Transportation Institute (TTI) is a state agency and a member of the Texas A&M University System. TTI is the largest university-affiliated transportation research agency in the United States. Created in 1950 in response to the needs of the Texas Highway Department, TTI has since broadened its focus to address all modes of transportation – highway, air, water, rail and pipeline.

Through a program of practical, applied research, TTI helps a wide variety of sponsors address a range of transportation challenges. TTI works closely with many state and federal agencies as well as the private sector to improve the safety and efficiency of the transportation system.

TTI has approximately 595 employees and is headquartered on the main campus of the Texas A&M University (TAMU) in College Station, Texas. TTI occupies various TAMU-owned facilities on the campus. In addition, it maintains leased office space in several major cities within Texas. A listing of these locations is provided in this report.

**Plan Requirements:**

**TTI does not purchase, negotiate or directly pay for utilities, therefore the following plan requirements are not applicable to the agency:**

- Utility assessment plans
- Implementation plans
- Financing strategies
- Asset management inventories
- Utility and expenditure histories
- Monitoring and verification plan

Facilities occupied on the TAMU campus are owned by TAMU and under the maintenance of the TAMU Physical Plant. Utility services for these facilities would be reported, as applicable, by TAMU. Leases for office space located off-campus have been acquired through the Texas Building and Procurement Commission (TBPC) or, more recently, through the TAMU System Real Estate Office. Utility services are included in the lease rate and paid by the respective Lessor. TTI does not purchase or negotiate utility services for its leased spaces. TTI does not receive utility bills.

### **Utility Awareness Plan:**

**TTI has a “Utility Awareness Plan”.** The agency is committed to ensuring that our employees are aware of and actively participate in utility conservation and management measures. TTI intends to incorporate any official TAMU or SECO plans as they are made available. As part of our Utility Awareness Plan, TTI does provide basic energy, water and fuel management guidelines throughout each year, particularly preceding holiday breaks when conservation can be maximized. In addition, TTI has its own in-house facilities management program that oversees the daily operations of all facilities occupied by the agency. They routinely tour facilities to ensure safe and effective work environments. They promptly report water leaks, lighting issues, temperature problems or other facility issues to the TAMU Physical Plant or respective Lessor’s building management as appropriate. The program maintains a reporting log to ensure resolution of maintenance issues.

TTI continuously works with respective service providers to upgrade capital equipment to more effective, utility-conserving products. For example:

- The agency, working with the TAMU Physical Plant, had lighting ballasts replaced in the headquarters building. Energy conserving ballasts were installed throughout the facility to help reduce resource consumption.
- The agency also requested an assessment on an older water distiller and tank system. Based on recommendations from the TAMU Physical Plant, TTI replaced the system with a new Reverse Osmosis System. The agency saved approximately \$25,000 in capital equipment funds and the new system has proven to be at least 50% more efficient in processing and providing service.
- TTI has installed dust and particulate filtration systems in various research labs and workshops. This has significantly improved the air flow demands in these areas while providing increased safety in work environments.

TTI has always actively participated in all energy conservation programs implemented by TAMU and its various lease space Lessors.

**Facilities occupied by TTI, as a tenant agency, as of December 01, 2005 include:**

**Texas A&M University (TAMU) Buildings – tenant only:**

<b>Building No.</b>	<b>Building Name</b>	<b>Type of Facility</b>
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San Antonio	3500 NW Loop 410, Suite 315	Office, TxDOT owned

**Reporting:**

TTI will report on a semiannual basis, or as required by SECO, regarding the progress on the Resource Efficiency Plan including the Utility Awareness Plan. In addition, should a Project Implementation Plan become applicable to the agency, updates shall be reported every two years or as required by SECO.

TTI will continue to monitor its status regarding utility services. Should there be a change in reporting status, the agency will implement a program to address required features of the Resource Efficiency Plan and provide related updates to SECO.

# **Section Four**

## **Utility Services Plan**

Originally reported to the State Energy Conservation Office on October 31, 2002.

**Texas Transportation Institute  
Utility Services Plan  
December 01, 2005**

**Agency Contact/Energy Manager:**

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Through a program of practical, applied research, TTI helps a wide variety of sponsors address a range of transportation challenges. TTI works closely with many state and federal agencies as well as the private sector to improve the safety and efficiency of the transportation system.

TTI has approximately 595 employees and is headquartered on the main campus of the Texas A&M University (TAMU) in College Station, Texas. TTI occupies various TAMU-owned facilities on the campus. In addition, it maintains leased office space in several major cities within Texas. A listing of these locations is provided in this report.

**Plan Requirements:**

**A “Utility Services Plan” is not applicable to TTI as the agency does not purchase, negotiate or directly pay for utilities.** Facilities occupied on the TAMU campus are owned by TAMU and under the maintenance of the TAMU Physical Plant. Utility services for these facilities would be reported, as applicable, by TAMU. Leases for office space located off-campus have been acquired through the Texas Building and Procurement Commission (TBPC) or, more recently, the TAMU System Real Estate Office. Utility services are included in the lease rate and paid by the respective Lessor. TTI does not purchase or negotiate utility services or receive utility bills for its leased spaces.

TTI is committed to ensuring that our employees are aware of and actively participate in utility conservation and management measures. Please refer to our related “Resource Efficiency Plan” and “Utility Awareness Plan” for additional information.

**Reporting:**

TTI will report on a semiannual basis, or as required by SECO, regarding the progress on the Resource Efficiency Plan including the Utility Awareness Plan. In addition, should a Project Implementation Plan become applicable to the agency, updates shall be reported every two years or as required by SECO.

TTI will continue to monitor its status regarding utility services. Should there be a change in reporting status, the agency will implement a program to address required features of the Resource Efficiency Plan and Utility Services Plan and provide related updates to SECO.

# **Section Five**

## **Utility Awareness Plan**

As reported to the State Energy Conservation Office and posted on the agency intranet for all employees.

## Texas Transportation Institute Utility Awareness Plan

### Agency Contact/Energy Manager:

Holly Crenshaw  
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979-862-1398 Fax  
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The Texas Transportation Institute (TTI) is committed to ensuring that our employees are aware of and actively participate in utility conservation and management measures. We all have a responsibility to conserve resources and minimize costs associated with utility services.

### ***You Can Help...***

- Turn off lights when out of the work area for ten minutes or more.
- Turn off lights and equipment when leaving a conference room.
- Turn off computers, monitors, printers, copiers and other non-essential electrical items when you leave for the day.
- Always turn off and unplug unattended heaters, coffee pots and other appliances with heat sources.
- Close window blinds, as necessary, to reduce heat and glare from the sun.
- Do not prop open exterior doors or windows.
- Do not engage in “thermostat wars”. It is important that temperatures are maintained. If you tend to be on the “cold side”, consider wearing a lightweight sweater while working in certain areas.
- Immediately report maintenance items to your respective building contact. In College Station, report to Facilities and Support Services at 979-845-6595. Urban research offices should report items to their respective building contact. Some items to include are:
  - Water leaks
  - Air leaks around doors or windows
  - Lighting problems (flickering or burned out bulbs)
  - Room temperature problems
  - Faulty restroom fixtures (leaks, flushing, etc.)
  - Insect problems (they can eat away sheetrock around utility pipes, etc.)
  - Any item of concern that affects our facility and **your** work environment

Thank you for your cooperation and assistance in this important matter. Everyone has a vital role in resource conservation.

**For more information or if you have comments or ideas to share, please contact TTI Facilities and Support Services at 979-845-6595.**



As part of our Utility Awareness Plan, TTI does provide basic energy, water and fuel management guidelines throughout each year, particularly preceding holiday breaks when conservation can be maximized.

TTI has its own in-house facilities management program that oversees the daily operations of all facilities occupied by the agency. They routinely tour facilities to ensure safe and effective work environments. They promptly report water leaks, lighting issues, temperature problems or other facility issues to the TAMU Physical Plant or the respective Lessor's building management as appropriate. The program maintains a reporting log to ensure resolution of maintenance issues.

TTI continuously works with respective service providers to upgrade capital equipment to more effective, utility-conserving products. For example:

- The agency, working with TAMU Physical Plant, had lighting ballasts replaced in the headquarters building. Energy conserving ballasts were installed throughout the facility to help reduce resource consumption.
- The agency also requested an assessment on an older water distiller and tank system. Based on recommendations from the TAMU Physical Plant, TTI replaced the system with a new Reverse Osmosis System. The agency saved approximately \$25,000 in capital equipment funds and the new system has proven to be at least 50% more efficient in processing and providing service.
- TTI has installed dust and particulate filtration systems in various research labs and workshops. This has significantly improved the air flow demands in these areas while providing increased safety in work environments.

TTI has always actively participated in all energy conservation programs implemented by TAMU and its various lease space Lessors.

# **Section Six**

## **Fleet Fuel Management Plan**

In accordance with House Bills 1545, 3125 and 3227, TTI has adhered to the requirements of the State Vehicle Fleet Management Plan (SVFMP) as provided by the Office of Vehicle Fleet Management (OVFM), Texas Building and Procurement Commission (TBPC). In addition, as a component member of the Texas A&M University System (TAMUS), TTI adheres to the TAMUS Component Compliance Plan as required by the SVFMP. TTI provides fuel-efficiency awareness and procedures to its employees and continues to improve its in-house preventive maintenance program.

TTI is committed to minimizing fuel use in its fleet vehicles while adhering to the requirements of the State Fleet Vehicle Management Plan (SFVMP).

Recognizing that regular maintenance greatly contributes in keeping vehicles at their peak efficiency, TTI maintains an in-house preventive maintenance program for all fleet vehicles. Preventive maintenance procedures as recommended by the SFVMP as well as vehicle manufacturers are implemented upon receipt of each fleet vehicle. TTI's utilization of the State's fleet data management system reports, vehicle scheduling calendars, accounting systems and employee communication ensure timely maintenance services are provided.

In addition to the preventive maintenance program, TTI provides in-house courier services for all of its employees based on the TAMU campus. The consolidation of local errands and mail services helps to reduce fuel requirements while increasing work efficiency.

Maintenance and fuel conservation awareness procedures are posted on the agency intranet for all employees.

TTI exercises great consideration to the manufacturer's vehicle efficiency rating when selecting the best value product for the agency. Some vehicles serve special purposes, such as vans or trucks, and typically have lower fuel ratings but are necessary for the required tasks. As of Fiscal Year 2005 reporting, the agency's current fleet vehicles attained 23.9 average miles per gallon of gasoline (data derived from the Vehicle Fuel Report through the State fleet data management system reports).

TTI fleet vehicles range in age, size and model with an average rating from 13.70 to 30.10 miles per gallon (data derived from the Vehicle Fuel Report through the State fleet data management system reports).

### TTI Vehicle Inventory with Average Miles per Gallon Fiscal Year 2005

Count	Veh #	Model	Year	License #	Average Miles Per Gallon
1	12	Chevy 3/4 Ton	1993	632-269	13.79
2	27	Lumina	1998	748-743	25.60
3	28	Lumina	1998	748-559	24.20
4	33	Chevy Astro Cargo Van	1999	755-520	18.40
5	36	Chevy Astro Cargo Van	1999	755-201	16.00
6	38	Taurus	2000	775-290	29.02
7	39	Taurus	2000	775-291	24.08
8	40	Taurus	2000	775-292	27.12
9	41	Taurus	2000	775-293	26.70
10	46	Ford Taurus	2001	811-118	27.68
11	47	Ford Taurus	2001	811-115	24.96
12	48	Ford Taurus	2001	811-116	26.50
13	53	Ford Taurus	2003	864-162	26.06
14	54	Ford Taurus	2003	864-163	19.60
15	55	Ford Taurus	2004	872-441	30.10

TTI continues to be proactive in the following fuel efficiency areas:

- Identifying methods to improve its preventive maintenance program
- Consideration of fuel efficiency rating when purchasing fleet vehicles
- Encouraging employees to carpool when possible
- Increasing use of agency courier services
- Increasing employee awareness of fuel efficiency procedures
- Documenting and implementing related Best Practices
- Monitoring fuel efficiency utilizing reports available through the State fleet data management system

Fuel usage data (as provided through the State fleet data management system) for TTI fleet vehicles for Fiscal Years 2003 through 2005 are:

Fiscal Year	Number of Vehicles	Gallons Purchased	Average Gal. per Vehicle
2002 - 2003	15	6,601	440
2003 - 2004	15	6,735	449
2004 - 2005	15	5,890	393

This data reflects actual purchases posted to the State fleet data management system as processed during each fiscal year. It does not reflect “real time” purchases as such items are posted when the actual expenditure is processed.

- Special Note: The total gallons noted for Fiscal Year 2004 – 2005 is significantly less than other fiscal years as the agency had not received several gasoline invoices from vendors prior to the close of the fiscal year.

Actual related expenditure costs are not listed as the cost per gallon for gasoline has significantly increased over the past several years. Comparing the expenditure costs per fiscal year would not provide an accurate comparison for reduction purposes.

In Fiscal Year 2006, TTI increased its fleet size to eighteen (18) vehicles to accommodate:

- increased facility locations and related staffing
- special purpose needs that address employee safety issues and reduce potential Workers Compensation claims
- increased fleet requests as more employees opt to no longer use their personal vehicles for official business

## **Target Reduction Goal**

TTI is committed to reducing fuel consumption and conserving vital energy resources.

Given that Fiscal Year 2003 - 2004 is the most accurate representation of fuel purchases and factoring the need for the additional three vehicles, TTI will strive for the target goal of a three percent (3%) reduction in the total of gallons purchased. The target goal is based on the current fleet size of eighteen (18) vehicles with an average of 449 gallons per vehicle for a total of 8,082 gallons purchased annually. Thus, based on the given formula, the Fiscal Year 2006 target goal will be a reduction of 242 gallons of fuel purchased resulting in a target total of 7,840 gallons purchased.

# **Section Seven**

## **Reporting**

The Texas Transportation Institute (TTI) will continue to report updates and submissions, as required, to the State Energy Conservation Office.

TTI shall submit Energy Management and Conservation Plan reports and updates, as required by Executive Order RP-49, to the Office of the Governor and the Legislative Budget Board.

TTI shall post all quarterly progress reports, as required by Executive Order RP-49, on its website under the common heading “State Agency Energy Savings Program”.

TTI will continue to partner with the owners of its occupied facilities, Texas A&M University and various lease space Lessors, in regard to energy conservation.