



Energy and Water Management Plan

Section 1: Instructions

[Texas Government Code §447.009](#) requires each state agency and institution of higher education to set and report percentage goals for reducing its usage of water, electricity, transportation fuel, and natural gas. Per [34 Tex. Admin. Code §19.14 \(2016\)](#), these goals must be included in a comprehensive energy and water management plan (EWMP) submitted every fiscal year to the State Energy Conservation Office (SECO) by **Oct. 31**. This requirement is intended to streamline and standardize the energy reporting requirements of state agencies and institutions of higher education.

Please complete Section 2: Agency Information and Section 3: Providing Agency or Section 4: Tenant Agency, as applicable, for **Fiscal Year 2020**. Save this form as "EWMP-Agency-FY2020.docx" and return this form by email to seco.reporting@cpa.texas.gov no later than **Oct. 31**.

Please visit the [SECO's Energy and Reporting website](#) for more information. For questions about reporting, please contact seco.reporting@cpa.texas.gov or call 844-519-5676.

Section 2: Agency Information

Please provide the name and number (if applicable) of the agency that is submitting an Energy and Water Management Plan.

Agency Name: Texas Department of Transportation

Agency Number: 601

Please provide the contact information for the person(s) responsible for implementation of the recommendations in the plan and the contact information for the person(s) responsible for reporting and submitting the plan, if different.

Implementation Contact

Name: Byron Hicks, P. E.

Title: Project Development Program Supervisor

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Reporting/Submission Contact

Name: Frederick Beebe

Title: Energy Management Coordinator

Email: Frederick.Beebe@TxDOT.gov

Phone: 512-484-5895

Section 3: Providing Agency

Does your agency occupy or manage a state-owned building and pay the utilities?

Yes No

If NO, please skip to [Section 4: Tenant Agency](#).

If YES, please complete the following:

Have you submitted, or will you be submitting by October 31, FY 2020, energy and water usage data for your agency and properties using the [ENERGY STAR Portfolio Manager](#) tool?

Yes No

Progress Report

The Progress Report section must outline the progress of activities related to the implementation of projects from the previous Energy and Water Management Plan (if applicable), including continuation of or new preliminary energy audits, a summary of the results, utility efficiency and cost savings. Agencies should periodically conduct preliminary energy audits to identify new utility savings opportunities.

With TxDOT occupying over 1,650 buildings located at over 360 sites throughout Texas, there are approximately 20,000 utility bills, paid monthly, to support buildings, highway lighting, sign lighting, pump stations, and traffic signals. Due to this magnitude, it is apparent that the largest energy usage is electrical and should be the focus of energy saving measures. TxDOT operates in both the regulated and unregulated utility locations within the state. Approximately 60% of all electrical energy is in the unregulated environment. Currently, TxDOT is in a 12-month extension period of the original three year negotiated contract with an unregulated provider to provide “green” energy. TxDOT plans to issue an RFP to negotiate a long-term contract with an unregulated provider to provide “green” energy.

During Fiscal Year 2020, TxDOT had a 3.5% reduction in electrical usage and an 8.3% reduction in natural gas usage. Below are some energy savings implementations during the past year:

- Completed capital construction projects in Tyler North, Kaufman, Henrietta, Dallas, Brownwood, and Angleton that included exclusive LED lighting and newer energy efficient HVAC systems.
- Several smaller statewide projects replaced high bay shop and warehouse lighting, as well as exterior site lighting with LED fixtures.
- Continued use of network capable thermostats in our facilities at the Austin Headquarters campuses has proven reliable. These are capable of remote access to be able to setback the temperature during unoccupied periods; limit the range that someone can adjust them; and remotely monitor the systems for proper operation. Installation of 2 of the thermostats was completed at our Camp Hubbard campus. The thermostats have performed well. As a result, this is the new standard in which we use for future new thermostats.

- Completed the installation of LED fixtures and automation control system (Lutron Vive) in our Austin Greer Building. All renovations now include an upgrade to LED lighting fixtures.
- Instituted a Preventive Maintenance (PM) program to PM the HVAC units at Austin Headquarter campuses to ensure operating optimum efficiency.
- Replace failed HVAC systems with higher efficiency systems.

Goals

The Goals section must summarize the future goals for utility conservation. Pursuant to [Texas Government Code §447.009](#), each state agency and institution of higher education shall set percentage goals for reducing the agency's or institution's use of water, electricity, transportation fuels and natural gas. The percentage goal should state a target year and reference the target goal relative to a benchmark year.

[click to enter your agency's Goals content.](#)

Utility	Target Year	Benchmark Year	Percentage Goal
Water	FY 2021	FY 2020	1%
Electricity	FY 2021	FY2020*	1%
Transportation Fuels	FY 2021	FY 2020	1%
Natural Gas	FY 2021	FY 2020	1%

*[Texas Government Code Section 388.005\(c\) and \(f\)](#). Entities who began energy conservation tracking prior to September 1, 2007 or in attainment areas, may substitute their own electricity benchmark year.

Strategy for Achieving Goals

The Strategy section must describe how the agency or institution plans to prioritize and implement cost effective utility efficiency measures in order to meet the established utility conservation goals.

TxDOT facilities statewide are installing LED lighting at a 100% rate for all new construction and major renovations. The agency is also installing LED lighting as replacements to existing lighting when possible.

In the area of signals since the early 2000s, TxDOT has aggressively pursued the replacement of signal lighting with LED; and, today are almost at a 100% rate for all signals. In addition, conversion to LED lighting for highway illumination continues.

In AY 2021, capital construction projects in McKinney, La Marque, Hondo, Alpine, Humble, Rosenberg, Pecos, Waco, Woodville, Austin and Presidio will be completed to include exclusive LED lighting and newer energy efficient HVAC systems.

In AY 2021, multiple smaller projects are planned statewide to replace office, shop, parking and warehouse lighting with LED fixtures.

All New Construction and Major Renovation projects comply with the latest edition of the ASHRAE standards.

TxDOT continues to evaluate alternative fuel strategies (CNG, propane, E85, hybrid/electric) to reduce gasoline use.

Propane trucks are now located in districts where access to fuel sources can maximize use. TxDOT is currently evaluating other locations that might be feasible for expanding propane use and integrating propane dispensing into more tightly into FNAV.

A CNG dump truck has also been acquired and will be rotated between districts to determine performance and needs

TxDOT continues to evaluate alternative fuel strategies (primarily hybrid/electric, propane and CNG) to reduce gasoline use. Propane trucks are now located in districts where access to fuel sources can maximize use. TxDOT continues to evaluate other locations that might be feasible for expanding propane use and integrating propane dispensing more tightly into the Fleet Navigator (FNAV) fleet management system.

TxDOT's cross-functional alternative fuels project team continues planning for the long-range use of alternative fuels within the agency. Recent efforts include applying for state and federal grants to defray the costs of alternative fuel vehicles, which are typically more expensive than standard vehicles. TxDOT has received \$2.2 million in alternative fuel grants from various sources since 2018.

- Environmental Protection Agency Diesel Emissions Reduction Act state allocation grant (2018): \$427,214
- Environmental Protection Agency Diesel Emissions Reduction Act competitive grant (2018): \$710,000
- Environmental Protection Agency Diesel Emissions Reduction Act state allocation grant (2019): \$528,827
- Texas Commission on Environmental Quality/Texas Emissions Reduction program (2020): \$498,084

Several grant opportunities are available for supplementing funding for alternative fuel vehicles in TxDOT's fleet. SB 1731, which was passed by the 85th Texas Legislature, created a governmental alternative fuels grant program under the Texas Emissions Reduction Plan, and TxDOT has attended recent meetings held by the Texas Commission on Environmental Quality to learn more about how the program will be administered. Federal and other grant programs are also available. TxDOT is researching these programs and will apply for those that are a good match for the agency.

TxDOT is responsible for properly obtaining, managing, using, and maintaining equipment to ensure appropriate use of tax dollars. TxDOT's equipment preventive maintenance (PM) program was established to comply with these responsibilities. All districts and divisions that have or use equipment must follow the PM program.

The current objectives of the PM program are the efficient and effective use of equipment, labor, tools, and facilities to achieve maximum serviceability and safety of the equipment fleet at the lowest overall cost to the agency.

TxDOT is conserving energy by maintaining vehicles in top operating condition to reduce fuel consumption.

Implementation Schedule

The Implementation Schedule section must outline a proposed timeline for implementing utility cost reduction measures and a strategy for monitoring utility savings of the installed utility measures.

See Strategy for Achieving Goals above

Finance Strategy

The Finance Strategy section must describe how the agency or institution plans to obtain funding for the recommended utility cost reduction measures. This section should show the estimated cost of all projects and the funding sources to be used.

Our sole strategy is to fund all projects from current TxDOT appropriations

Transportation Fuel Consumption (if applicable)

If your agency maintains one or more state-owned vehicles and **does not** report fuel usage via the [Texas Fleet System](#), document the total gallons of transportation fuel used by your facility and fleet vehicles below.

Does your agency maintain one or more state-owned vehicles? Yes No

Does your agency report its fuel usage via the [Texas Fleet System](#)? Yes No No Vehicles

Transportation Fuel Type	Amount
Unleaded Gasoline*	click to enter use in kgal
Diesel	click to enter use in kgal
Bio-Diesel	click to enter use in kgal
E85 (Flex Fuel)	click to enter use in kgal
Compressed Natural Gas (CNG)	click to enter use in kgal
Unleaded for Gas Hybrids	click to enter use in kgal
Liquified Petroleum Gas (LPG)	click to enter use in kgal
Ethanol	click to enter use in kgal

*Do not include unleaded gasoline for gasoline hybrids

Employee Awareness Plan

The Employee Awareness Plan section must outline how the agency will make employees aware of utility cost reduction measures, both directly (affecting change in behavior) and indirectly (not designed to affect behavior).

TxDOT also has a recycling team that puts out a monthly newsletter call Buy-Ways. This program encourages items such as:

- Being active in the Clean Air Plan (CAP)
- Turning lights out
- Recycling paper and cardboard
- Recycling aluminum cans
- Composting
- Using public transit or car pooling
- Using Energy Star products

TxDOT’s Clean Air Plan (CAP) encourages and incentivizes employees to use alternate commuting options (carpool, bus, bike, walk, or telecommute) to prevent vehicle emissions. This does have the co-benefit of reducing overall energy usage.

The team has also placed stickers on light switches to remind employees to “turn the lights out” when not in use as well as occupancy sensor in rooms.

Section 4: Tenant Agency

Progress Report

The Progress Report section must outline the progress of the implementation of projects from the previous Energy and Water Management Plan or Resource Efficiency Plan (if applicable), including a summary of the results of the projects in terms of utility efficiency and cost savings.

[click to enter your agency’s Progress Report](#)

Transportation Fuel Consumption (if applicable)

*If your agency maintains one or more state-owned vehicles and **does not** report fuel usage via the [Texas Fleet System](#), document the total gallons of transportation fuel used by your facility and fleet vehicles below.*

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Employee Awareness Plan

The Employee Awareness Plan section must outline how the agency will make employees aware of direct utility consumption. Plans might include employee training, signage or recognition programs.

[click to enter your agency's Employee Awareness Plan](#)
