



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: Midwestern State University

Agency Number: 735

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: Kyle Owen

Title: Associate Vice President for Facilities Services

Email: kyle.owen@msutexas.edu

Phone: 940-397-4648

Reporting/Submission Contact

Name: Kyle Owen

Title: Associate Vice President for Facilities Services

Email: kyle.owen@msutexas.edu

Phone: 940-397-4648

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.

Midwestern State University (MSU) provided an energy management master plan to the LBB in November 2012 in compliance with Executive Order RP 49 and updated the plan in a submission to the LBB in October 2017. An update on recommendations from the 2017 report are as follows:

1. Construction of the recently completed Facilities Services Shops building, renovations at J.S. Bridwell, and Moffett Library were per modern energy code standards.
2. Continuing efforts to replace compact fluorescent bulbs with LEDs when they burn out:
 - a. D. L. Ligon Coliseum: Coliseum ring lighting changed to LED high bay fixtures.
 - b. Clark Student Center: Exit/Emergency lighting changed to LEDs.
3. Wichita Falls Museum of Art at MSU: Changed incandescent bulbs to LED bulbs for track lighting and installed dimmers in conference room area.
4. As part of MSU's continued efforts to reduce energy costs, Ameresco conducted an equipment and energy audit of several campus buildings in September 2020 over a three day period. The information will be used to further direct and explore energy saving options for the campus when it is forwarded to MSU in December 2020.

Energy savings results are as follows: For FY20 compared to FY19, MSU observed a 1.0% decrease in electricity usage, an 11.8% decrease in gas usage, and a 15.7% decrease in water usage. It is not known how much of the reductions were a result of energy savings efforts versus shutdowns related to Covid-19, although it is suspected the vast majority was a result of Covid-19 and less overall demand. It is worth noting at least three months of irrigation water usage was not recorded in FY20 due to a failed City meter; expect ~5% of the water decrease is a result of this failed meter. For FY20 compared to FY15, MSU observed a 16.4% increase in electricity usage, a 5.7% decrease in gas usage, and a 33.3% increase in water usage (FY15 was during an extensive drought). MSU added ~7% more square footage between FY15 and FY20.

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.

Utility	Target Year	Benchmark Year	Percentage Goal
Water	FY2020	FY2015	1%/year
Electricity	FY2020	FY2020*	1%/year
Transportation Fuels		FY2015	1%/year
Natural Gas	FY2020	FY2015	1%/year

*[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.

MSU has been active in pursuing energy reduction technologies and procedures for ~15 years including a SECO loan in 2011 to save gas and electrical energy, and replacement of natural grass athletic fields with artificial turf in 2015 to reduce water consumption. In the fall of 2019 and in response to Health and Safety Code Section 388.005C passed by the 86th Legislature, MSU updated the energy master plan which is included with this year's submission. The consulting firm that developed the 2019 energy master plan determined the only financially feasible option for saving energy was to pursue LED light retrofitting (reference pages 4 and 5 of the master plan) at a cost of \$4.1 million. By retrofitting all campus lighting with LEDs, it is anticipated energy savings of 5.1% could be achieved. However, funding limitations restrict MSU's ability to invest \$590k per year necessary to realize the 5.1% savings at the end of seven years. Instead, MSU plans to invest ~\$100k per year for the foreseeable future to retrofit lighting.

With the continued pursuit of energy reduction in mind, MSU anticipates an energy usage report from Ameresco in December of 2020 to identify other potential energy savings investment options.

While it is our goal and intent to reduce utility costs by 1% per year, the economically feasible opportunities to achieve this goal is extremely limited due to years of continued efforts to reduce costs and install more energy efficient systems.

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.

MSU will be moving forward with retrofitting most of the fixtures in three of the campus buildings in FY21: Moffett Library (first floor only, 236 fixtures), Prothro-Yeager-Beawood-O'Donohoe (first floor and classrooms on second floor, 714 fixtures), and J.S. Bridwell (all remaining non-LED fixtures, 555 fixtures). Portions of buildings will have their lighting converted to LEDs each year for the foreseeable future.

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.

The cost of the lighting retrofit project for FY21 is \$225k and is being funded with Tuition Revenue Bond dollars used to partially renovate Moffett and Bridwell, as well as \$100k of HEAF funds. Future years will use \$100k per year of HEAF to fund additional lighting retrofit efforts.

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*	
Diesel	
Bio-Diesel	
E85 (Flex Fuel)	
Compressed Natural Gas (CNG)	
Unleaded for Gas Hybrids	
Liquified Petroleum Gas (LPG)	
Ethanol	

*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).

New construction for the Facilities Services Shops building, the renovation of Moffett Library, and the partial renovation of J.S. Bridwell included lighting control systems and motion sensors to reduce the use of electricity in these buildings. Attempted to obtain examples of educational programs through SECO and am waiting their input prior to proceeding (no need to reinvent the wheel).

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.

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*	
Diesel	
Bio-Diesel	
E85 (Flex Fuel)	
Compressed Natural Gas (CNG)	
Unleaded for Gas Hybrids	
Liquified Petroleum Gas (LPG)	
Ethanol	

*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 direct utility consumption. Plans might include employee training, signage or recognition programs.