



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 2021**. 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

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Reporting/Submission Contact

Name: Kyle Owen

Title: Associate Vice President for Facilities Services

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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 2021, 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. The two-year renovation of Bolin Hall was completed in August and included upgrades to modern codes and standards for the building envelop, new HVAC controls systems instead of pneumatics, modern air handlers, a ducted return air system, LED lighting throughout, and new electrical switchgear. Replacement of the greenhouse temperature control system also occurred. Of the \$43M spent on the project, ~\$19M was used specifically for infrastructure improvements/modernization and energy efficiency.
2. A significant effort to begin replacing fluorescent bulbs in campus buildings was initiated in FY21 and has continued through FY25. After completing LED replacements in Moffett Library and Prothro-Yeager-Beawood-O'Donohoe over the previous four years, efforts to convert lights in Fain Fine Arts continued as noted in (a) below at a cost of \$50.3k. Other replacement efforts when compact fluorescent bulbs burn out or as opportunities and funding allow it are also shown below:
 - a. Fain Fine Arts: Replaced fluorescent fixtures in classrooms C106, C108, C109A, C110, C111, and C114 (office) with LEDs. Fixture replacement counts included 124 - LED 4' strip fixtures, 18 - 1x4 retro fit kits, 4 - 2x4 - retro fit kits, and 6 - recess fixtures.
 - b. Clark Student Center: Upgraded 83 - 2x4 fluorescent fixtures to LEDs.
 - c. Hardin Administration: In office suite 112, 9 - 2x4 fluorescent fixtures were replaced with LEDs, and the north and south stairwells had 20 - 4' LED strip fixtures installed.
 - d. D.L. Ligon: Another 27 LED recess light fixtures replaced fluorescent recessed fixtures in the football locker room such that 85% of the space now has LEDs.
 - e. McCullough-Trigg residents hall: On the third and sixth floors, 54 - 2x2 LED fixtures and 16 - 2x4 LED fixtures were installed.

- f. Pedestrian walk east of Pierce/Killingsworth: Replaced 10 of the HID pole lights with LEDs.
3. Two worn out eighteen-year old 160-ton air-cooled chillers were replaced at Redwine with more efficient modern versions (\$319k).
4. The HVAC system in the TV studio in the Mass Comm portion of Fain Fine Arts has had humidity issues since it was built in 2016. A MEP firm reviewed the existing design, provided direction on changes to the hardware to improve the humidity and temperature control, and the modifications were installed; should result in a more energy efficient operation, too.
5. Six leaky steam joints in the tunnels were replaced to reduce steam losses (\$34k).
6. While not directly related to saving energy, but critical to providing air conditioning to most campus building, complete overhauls of the campus' two 2500-ton Central Plant chillers at a total cost of \$558k was initiated in August 2025.

Energy usage results are as follows: From FY24 to FY25, MSU observed a 2.9% increase in electricity usage, a 3.6% decrease in gas usage, and a 9.2% increase in water usage. The slight increase in electricity usage is attributed to construction for the renovation of our large science building, Bolin Hall, which continued throughout the year until it came back online in August. The decrease in gas usage is a result of a milder winter and the use of our new more efficient boiler. The FY24 water consumption was slightly higher when compared to usage from FY20 and FY23 (Covid skewed the numbers low for FY21 and FY22). In FY24 compared to FY20, MSU observed a 6.0% increase in electricity usage, a 2.2% increase in gas usage, and a 7.8% increase in water usage. The increase is attributable to a 10.7% increase in campus square footage during that same period. Based on energy usage per square foot, MSU's electricity has decreased 5.3% since FY20, gas has increased by 2.9%, and water has increased 8.5%.

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	FY2025	FY2020	1%/year
Electricity	FY2025	FY2020*	1%/year
Transportation Fuels	FY2025	FY2020	1%/year
Natural Gas	FY2025	FY2020	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 was included in the FY20 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 continues to invest ~\$50k-\$100k per year for the foreseeable future to retrofit lighting.

MSU continually seeks opportunities for energy efficient and reduction. In December 2020, MSU requested an energy usage report from Ameresco. Ameresco suggested LED lighting retrofits, upgrades to plumbing fixtures to low-flow technology, additional insulation for steam pipes, variable speed pumping for heating water hot water pumps, upgrades to fume hoods/fans for energy conservation, rehabilitation of cooling towers, replacement of an older boiler, and replacement of air handlers in two buildings (Hardin, Bolin) at a total of almost \$9 million with a twenty-year payback. Unfortunately, the payback period was unusually long and not reasonable. MSU continues to pursue LED retrofits at a more economical price with planned investments of approximately \$100k per year. MSU did address its aging concrete cooling tower in FY24, and finalized the replacement of a 1960s vintage boiler in Central Plant and the air handlers in Bolin in FY25.

The Legislature provided funding for MSU to upgrade the utility systems in Bolin Hall as part of a \$43M renovation project. Design work began in December 2022, construction in December 2023, and completion in August 2025. A significant part of the project's scope was to upgrade, replace, and re-commission the existing mechanical, electrical, and plumbing building systems in order to gain energy efficiencies, as well as, to comply with the current building codes. This included replacement of the pneumatic control system with Andover digital controls, replacement/retrofit of air handling equipment, replacement of exhaust fans and fume hoods, upgrade of electrical switch gear, and a new temperature control system for the greenhouse.

While the overarching university goal is to reduce utility costs by 1% per year, economic opportunities to achieve this goal are limited due to progress to date which has reduced potential project options to install more energy efficient systems with reasonable paybacks. The university still pursues cost effective options whenever available.

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 continue efforts of retrofitting fluorescent fixtures in C wing of Fain Fine Arts rooms 119, 120, and 114, and all of the rooms in suite 117. Portions of other buildings will be converted to LED lighting each year until fully upgraded, although it will take years to complete given the available budget for such expenditures. The Bolin Hall renovation design began in 2022 with construction ending in the fall of 2025, all upgrades have been completed.

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 FY26 is \$80k and will be funded by State Higher Education Funds (HEF). In future years, \$50k to \$100k/year of lighting retrofit upgrades will be implemented, and will be funded by State Higher Education Funds.

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).

A new lighting control system with motion sensors was installed as part of the Bolin Renovation Project, as well as an updated HVAC control system which should increase the efficiency of the heating and cooling equipment. Modern fume hoods whose extraction air volume changes with the sash height were also be installed in Bolin.

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.

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

In 2025, MSU began issuing semester progress report to the campus identifying energy savings efforts the administration has pursued over the previous ~6 months. Additionally, the work order system's input page includes instructions for the campus' ongoing energy conservation efforts to limit requests for room temperature settings that deviate from the campus standard.