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

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 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) has completed the following energy saving projects in the past twelve months:

1. A significant effort to begin replacing fluorescent bulbs in campus buildings was initiated in FY21 and has continued through FY26. 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 $80.6k. Other replacement efforts when compact fluorescent bulbs burned out or when opportunities and funding allowed it are also shown below:
   a. Fain Fine Arts: 273 LED fixtures were installed.
   b. Clark Student Center, Bookstore: 56 LED fixtures were installed
   c. Killingsworth Hall (dorm): 290 LEDs and 54 LED emergency/exit signs were installed.
   d. Legacy Hall (dorm): 130 LED emergency/exit signs were installed.
   e. Pierce Hall (dorm): 105 LED fixtures and 30 LED emergency/exit signs were installed on the second and third floors.
   f. Wichita Falls Museum of Art at MSU's outdoor pavilion had six LED fixtures installed.
   g. Plan to spend $47k in FY27 replacing fixtures in Fain Fine Arts to finish the LED retrofitting of this building, as well as some of the lights in the Band Hall.
2. The boiler for Sunwatcher Apartment's domestic hot water system was replaced with a newer boiler at a cost of $116k, and one of the boilers for Sundance was replaced for $31k. The second (and final) Sundance boiler will be replaced this fiscal year. The newer boilers should operate more efficiently than the older units.
3. Twenty-one fan coil units (FCU) in McCullough-Trigg Hall (dorm) were cleaned to improve their cooling efficiency ($29.4k). Another 42 FCU were cleaned in Killingsworth and Pierce Halls (dorms) in early FY27 ($98k).

4. A leaky heating system heat exchanger was replaced in Beawood for a more efficient one ($28.7k).
5. Failed DX package unit air conditioners were replaced or repaired with more efficient equipment at the Purchasing-Warehouse ($46k), Sundance Apartments ($43k), Clark Student Center ($10k), Wichita Falls Museum of Art at MSU ($8k), University Police Department ($6k), and Moffett Library ($4k).
6. One leaky steam joint in the tunnels was replaced to reduce steam losses ($2k).
7. Efforts to improve the structural integrity of our ~6000 LF of tunnels containing the steam and chill water lines (used to provide heating/cooling to a large majority of the campus buildings) continued this past year. Protection of these systems with the ~$4M CCAP investment is critical for their long-term use in order to deliver heating and cooling to campus buildings.
8. While not directly related to saving energy, but critical to providing air conditioning to most campus building, one of the campus' two 2500-ton Central Plant chillers was overhauled and the second one will be overhauled beginning November 1 at a total cost for the two of $593k.
9. In FY26, $271k was spent for the replacement of cooling tower and boiler systems equipment within Central Plant to ensure these systems continued to provide cooling and heating water to campus buildings.

Energy usage results are as follows: From FY25 to FY26, MSU observed a 3.7% increase in electricity usage, a 16.3% increase in gas usage, and a 29.7% increase in water usage. The increase in gas usage is a result of a colder winter compared to the previous year. The FY26 water consumption was significantly higher when compared to usage from FY25 and FY24 (Covid skewed the numbers low for FY21 and FY22). While utility consumption increased during FY26, the university identified specific contributing factors outside normal operating conditions, including a significant cooling tower leak and unusually hot summer temperatures that increased cooling demand. Corrective actions have been completed, and the university expects these measures to help moderate future utility consumption. In FY26 compared to FY22, MSU observed a 4.2% increase in electricity usage, a 10.8% increase in gas usage, and a 93.1% increase in water usage. Based on energy usage per square foot, MSU's electricity has increased 3.7% since FY22, gas has increased by 16.3%, and water has increased 29.7%.

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	FY2026	FY2022	1%/year
Electricity	FY2026	FY2022*	1%/year
Transportation Fuels	FY2026	FY2022	1%/year
Natural Gas	FY2026	FY2022	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 ~20 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 invests ~$50k-$100k per year for the foreseeable future to retrofit lighting.

MSU continually seeks opportunities for energy efficiency and utility consumption 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 pursued LED retrofits at a more economical price and slower pace with planned investments of up to $100k per year. MSU did address its aging concrete cooling tower in FY24, finalized the replacement of a 1960s vintage boiler in Central Plant and the air handlers in Bolin in FY25, overhauled one of two 2500-ton chillers in FY26, and will overhaul the second one in FY27.

In February 2026, Johnson Controls (JCI) developed a Facility Improvement Measures document after surveying the campus, similar to what Ameresco did in 2020. JCI had the same suggestion as Ameresco to retrofit all of the campus buildings to LEDs, but also added submetering to better track energy usage, Ligon Coliseum HVAC and BAS upgrades, Wi-Fi based occupancy tracking and a new facility management system, recommissioning of all campus HVAC systems, adding software for the optimization of Central Plant's operations, and installation of more low flow water fixtures. JCI only provided a cost estimate for the lighting project ($3.0M-$3.5M); all the others ranged in cost from "$" to "$$$$" and they noted defining the costs and the potential savings would require much more effort. Given current funding priorities, MSU is focusing on projects with the clearest operational and financial benefits, particularly LED lighting upgrades, critical HVAC modernization, and preservation of core utility infrastructure.

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 at a reasonable price.

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 which will complete this building's LED upgrades. We will also replace lighting in the Fain Instrumental Band Hall to LED fixtures in FY27. Portions of other buildings will be converted to LED lighting each year until fully upgraded, although it will take years to complete given the limited available budget for such expenditures. The second chiller will be overhauled in FY27 and repairs to the tunnel system should be completed in FY27.

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 FY27 is $50k 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).

Information about the university's efforts to reduce energy consumption will be relayed twice a year via email to the campus, once during the fall and once during the spring semesters.

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**
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 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.