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Memorandum

Date: October 31, 2019
To: State Energy Conservation Office
From: Kyle Owen
Subject: Energy and Water Management Plan Update
Re: Midwestern State University's Strategic Management Master Plan Update, 2017-2022

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. A yearly status report is to be submitted to SECO so the following update to energy conservation strategies listed in section G of the 2017-2022 Master Plan (included in this email for reference) are listed for your use:

1. Continuous self-commissioning: Monthly reviews of energy consumption data has continued and has resulted in reviews of various meters. The BTU meter for the student center was replaced this past year and we are currently investigating replacement meters for two dorms which do not provide consistent reliable data.
2. Education and Behavior Modification: Effort to educate personnel and students was minimal this past year.
3. Building System Evaluation: The following items were investigated or corrected this past year:
 - As a result of the passage of Section 388.005C of the Texas Health and Safety Code by the Legislature in May 2019, MSU has enlisted the assistance of an engineering firm to identify potential options for reducing electricity usage by at least 5% over the next seven years. The results of this study are anticipated to be delivered in November 2019, although funding to implement any significant changes will be limited until at least September 2020. It is worth noting MSU's continued efforts to reduce energy usage over the past ~10 years will most likely result in few cost

effective ideas for reducing energy to the proposed amounts in 388.005C, other than replacing existing lighting with LEDs.

- Construction of the new health sciences and human services building, Centennial Hall, was completed in August of 2019. The building includes all modern energy efficient equipment/systems including batt insulation at all exterior walls, continuous Polyiso board at all exterior walls and the roof, thermally broken curtain wall systems with a low solar heat gain coefficient and low U-value, entire lighting package consists of all LED lights, fan coil units connected to campus chilled water to cool electric room and data rooms, fan static reset and supply air temperature reset control loops to each AHU to minimize fan energy and reduce chilled water demand, and condensing boiler for comfort heating and VFDs for each pump to optimize flow.
 - Continuing efforts to replace compact fluorescent bulbs with LEDs when they burn out in two campus buildings: Dillard and D. L. Ligon's Football Locker Room.
 - Replaced the compact fluorescent fixtures on another floor in the McCullough-Trigg dorm; only one floor left to upgrade.
 - Still replacing halogen exterior security lighting with LED when they burn out.
 - Replaced five motor starters in a 40+ year old building (Fain Fine Arts) to ensure the safe operation of its electrical systems. Will continue this work as funds allow in other older buildings in FY20.
 - Infrared inspection of 26 building transformers by SORM was conducted in January 2019; "no equipment indicating a faulty thermal signature was located".
4. The SECO LoanSTAR Energy Conservation Project and the FY2017-FY2022 Strategic Energy Management master plan stated MSU had a goal of an additional 2% reduction in energy consumption over each of the next five years. For FY19 compared to FY18, MSU observed a 2.6% increase in electricity usage, a 9.2% increase in gas usage, and a 38.3% increase in water usage. For FY19 compared to FY12, MSU observed a 7.2% increase in electricity usage, a 0.1% increase in gas usage, and a 32.4% reduction in water usage. It should be noted that MSU added ~9% more square footage between FY12 and FY19.