



SAN MARCOS CISD ENERGY MANAGEMENT PLAN

PURPOSE

The purpose of this document is to outline a district-wide energy management plan with defined strategies for identifying and eliminating energy waste and achieving energy efficiency. It specifically supports Board Policy CL (Legal) for Buildings, Grounds, and Equipment Management.

OBJECTIVES

1. Improve energy efficiency in all San Marcos CISD facilities.
2. Provide a safe, comfortable, and healthy environment in all SMCISD facilities while minimizing operating costs.
3. Raise the level of energy conservation awareness among students, staff, and the community.

STRATEGIES

To achieve the objectives identified above, the following strategies will be utilized:

Strategy 1: Guidelines for Facility and Equipment Operation

Strategy 1 establishes general operating guidelines for facility use and primary energy consuming equipment.

Short term and long term costs will relate to any increased purchasing costs for the selection of higher-quality equipment, costs for energy efficiency projects to upgrade existing equipment or facilities, and costs related to the installation of control systems.

Savings from this strategy will come from the increased efficiency of facility and equipment use.

Assignments:

Energy Manager:

The Energy Manager will aid in establishing appropriate operating settings for equipment and control systems and work with District staff to advance conservation efforts. The energy manager will coordinate with all departments, facilities, and staff to ensure these settings are



San Marcos Consolidated Independent School District

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being implemented and followed within the District. Energy audits of campus will be performed periodically. Some audits may be performed on weekends and District holidays to ensure compliance with eliminating power waste.

Facilities Maintenance Department:

The Facilities Maintenance Department will be responsible for programming appropriate set points for equipment and control systems, assuring equipment is properly maintained, recommending and installing energy efficient upgrades, and keeping facilities in proper condition to support an energy efficient environment.

Custodial Services Department

The Custodial Services Department will directly support energy conservation at the facility level, particularly during non-business hours. Upon completion of work, custodial staff will bring buildings to an “unoccupied” mode by turning off lights, adjusting temperature controls as needed in general areas, and other related activities that minimize energy consumption during down time.

Facility Guidelines

Activity Scheduling

When suitable:

- Activities should be scheduled for the most appropriately sized building areas.
- The number of days per week for after-hour activities should be consolidated.
- Indoor campus activities should be scheduled to begin immediately after school ends.
- Energy efficient facilities should be utilized for special or seasonal programs/activities (summer school, etc.).

General Facility Use

- Air supply and return grills should not be obstructed and/or blocked.
- Thermostats and temperature sensing wall plates shall not be covered, blocked, or have a lamp or other heat source placed near the sensor in an attempt to manipulate it.
- Exterior doors and windows should be kept closed, with consideration to weather.
- Blinds or drapes on windows should be kept closed when rooms are unoccupied.
- Where available, and as appropriate, ceiling fans should be utilized to increase air circulation and comfort in occupied spaces.
- Recycling procedures and composting should be utilized, when available.
- Unnecessary water consumption should be reduced or eliminated.



Equipment Guidelines

HVAC Systems

- Systems will hold occupancy temperatures per facility schedules and will be set back to conserve energy when facilities are not in use.
- Systems will have set point temperature ranges programmed at levels recommended by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) and within District standards.
- As systems are in need of replacement, high-efficiency equipment and control systems are recommended to be installed.

HVAC Operating Procedures:

On days when school is in session, and staff work days, the Facilities department will set the District HVAC program controls to activate in order to ensure all campuses and buildings reach the “Normal School hours” HVAC settings by 7:15 a.m.

Middle Schools and High school gymnasiums and athletic areas may be programed to run in order to accommodate athletic practices. Please notify the SMCISD Facilities Department of any practices or activities scheduled outside normal school hours. All other areas of the secondary campuses, and all elementary campuses, will be set to unoccupied status @ 4:30 p.m. Administrative offices and support services offices at all facilities will be programed to an unoccupied status at 5:00 p.m.

If you have an event that is taking place outside of these times:

1. Please ensure you or your staff has contacted the Facilities Department by sending Kristal Arredondo an email, or a meeting invite, so that this can be scheduled in the HVAC programming. Please continue this practice until you and/or your designated scheduler has been trained in FS Direct. Please provide as much advanced notice as possible.
2. After you receive training, please schedule all extra-curricular events through FS Direct. Scheduling an event will send an email to the appropriate facilities personnel and they will have the HVAC programed to run during scheduled events.



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During Normal School Hours: 7:00 a.m. – 4:30 p.m.:

- Thermostats will be set for cooling in the range of 72 - 75 degrees.
- Thermostats for heating will be set in the range of 68 - 72 degrees.
- Turn the lights out when the room is unoccupied.
- Close classroom doors and keep the doors leading to the outside closed. Do not buoy these doors open.
- Discontinue any use of space heaters.
- Microwaves and refrigerators will only be allowed in teacher break rooms or as curriculum deems necessary.
- The use of personal lamps and fans will only be allowed, as curriculum deems necessary.
- The use of incandescent light bulbs is strictly prohibited due to these types of bulbs wasting 90% of the electricity they consume. If, during energy audits of campuses, these bulbs are found they will be removed from the District.

Lighting

- Lights should be turned off when a space is unoccupied or not in use and any inefficient lighting should be upgraded as appropriate.
- The use of incandescent light bulbs in any District owned facility is strictly prohibited. These bulbs waste 90% of the power they consume and produce unnecessary heat.
- Athletic field lighting should be brought on only when natural lighting levels dictate and turned off as soon as possible after activities are complete.
- Parking lot and exterior lighting should provide the minimum light level necessary to maintain security and ensure a safe environment.
- Natural lighting options (windows, tubular daylighting units, etc.) should be utilized, where suitable.
- Occupancy sensors and control systems should be utilized, where suitable.

Office Equipment

- Computers should be placed into sleep mode at the end of the day during the work week (to allow for system upgrades), and powered completely down prior to weekends and holidays.
- In addition to default control panel settings, users should manually turn off monitors and/or place computers into sleep mode when equipment is temporarily not in use.
- Copiers should be turned off at the end of each day



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Appliances

- All SMCISD appliances should be clean and in acceptable working condition. If personal appliances have been approved for use they must be clean and in acceptable working condition.
- Approved small, personal appliances should be unplugged prior to extended holiday periods.
- Inefficient appliances should be upgraded.
- Unnecessary appliances should be removed to increase energy savings.

Plumbing

- All leaks should be promptly reported and repaired.
- 1.8 GPM (or less) flush valves should be installed on all appropriate fixtures

Strategy 2: Utility Tracking and Reporting

Strategy 2 includes the tracking and reporting of utility information for all applicable SMCISD facilities. Tracking utility information provides insight regarding the District's energy usage, highlights improvement opportunities, and reveals errors in billing by utility providers. It also aids in establishing appropriate facility rental fees to properly compensate for costs related to non-SMCISD events. Reporting utility information communicates usage and aids in establishing goals and raising awareness.

- Short term costs are negligible, as current systems can be utilized.
- Long term costs could be several thousand dollars annually, depending on software upgrades.
- Savings from this strategy will come from identifying and correcting billing errors, proper compensation for facility rental, and the continuous improvement of energy management through monitoring usage and utilizing reports to communicate and plan effectively.

Assignments

Energy Manager

The Energy Manager will track and analyze utility information for the District, identify areas for investigation, make recommendations, and work with District staff to set goals, address issues, and implement improvements.



Strategy 3: Incentive Program

Strategy 3 includes the implementation of an incentive program for SMCISD campuses. The program aims to minimize overall electric consumption, recognizing campuses for the cost savings when they reduce consumption compared to prior years. This strategy utilizes reporting from Strategy 2 and creates a reward system for successfully pursuing conservation goals.

- Short term and long term costs are negligible, as this strategy can be implemented and maintained without additional investments.
- Savings from this strategy will come from the reduction in electrical consumption at campuses motivated to receive an incentive for their diligence and energy-saving efforts.

Incentive Program Guidelines

The incentive program will reward campuses for a reduction in monthly electrical consumption compared to campus baseline values.

- At the beginning of each fiscal year, monthly baseline values will be calculated for each campus. These baseline values represent a campus's average consumption for each month based on historical data from the previous three years.
- Throughout the fiscal year, each campus's current monthly consumption will be compared to the pre-determined baseline. Campuses with a current consumption value less than their baseline will qualify for an incentive reward/recognition that month.
- Based on a campus's kWh reduction and the overall cost/kWh, a total waste reduction (or cost avoidance) calculation will be determined. The campus will then be recognized based upon a waste elimination rate of 25% or more.
- Campuses will have the opportunity to earn recognitions every month throughout the school year.

Strategy 4: Culture of Conservation and Energy Consciousness

Strategy 4 aims to develop a culture of resource conservation and energy consciousness. The development of standard, energy-saving practices related to facility and equipment use promotes good habits and reduces unnecessary energy consumption. Analyzing current energy consumption and communicating ideas for improvement raises awareness for staff and students and create a dialog for collaborative problem solving. Through effective



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communication and education, a culture of energy consciousness can be developed in which individuals at all levels, staff and students, contribute to the reduction in energy costs and responsible stewardship of resources.

- Short term costs are negligible, as this strategy can initially be implemented without cost.
- Long term costs could be up to several thousand dollars annually depending on reporting and educational tool upgrades.
- Savings from this strategy will come from increased efficiency of facility and equipment use due to the conscious efforts of staff and students. The potential benefits from implementing this strategy successfully are significant, long term, and far reaching.

Assignments:

Energy Manager

The Energy Manager will support cultural development by utilizing Strategies 1, 2, and 3, to increase energy awareness, promote energy-saving habits, and encourage campus participation in energy reduction.

Principals and Energy Coordinators

Campus principals/administrators are designated energy coordinators and will support cultural development by emphasizing the importance of energy conservation and encouraging staff and students to utilize guidelines within the Energy Management Plan. Principals and/or their energy coordinators should review utility reports provided by the Energy Manager and be actively involved in identifying areas for improvement and implementing needed changes. Both should work to cultivate a campus environment in which students and staff are not only aware of energy management practices but inspired to responsibly care for the environment and its resources.

Teachers and Staff

Teachers and staff will support cultural development by contributing to the efficient use of energy. Staff should be familiar with recommended guidelines within the Energy Management Plan and work together to utilize guidelines. Teachers should discuss good energy management practices with their students, encourage them to make observations and suggestions, and have students actively participate in applying good energy management practices (such as helping to turn out lights, close doors, close blinds or curtains at the end of the day, turn off water faucets and report leaks, etc.).