

# Allegran County

Energy Management Planning

# Initiatives & Efforts

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- Energy star appliances
- Heating and cooling
- Lighting
- Technologies
- Hybrid work environments
- Solar panels
- Wind turbine
- Geothermal

# County Energy Management Plan

## Allegan County

Facilities Management

3283 – 122<sup>nd</sup> Avenue

Allegan, Michigan 49010

(269) 673-0220 Fax (269) 673-0303



### 2005-2006 Energy Management Plan

To meet budget objectives initiated in the 2003 County budget and carried forward through each of the 2006 Facilities Management budget activities, the following energy management regulations have been set. Due to the needs of their special population, these regulations may apply to the Medical Care Facility only where the Medical Care Facility Administrator deems appropriate.

#### REGULATIONS

Air conditioning activates when the temperature exceeds 74 degrees

Heating activates when the temperature drops below 68 degrees

HVAC fans will remain in continuous operation while facilities are occupied

Use of space heaters or fans not placed by Facilities Management is prohibited in all County-owned facilities. Facilities will work with Department Heads when the above temperature parameters cannot be met for an extended period of time to utilize portable equipment to attempt to maintain parameters

Use of coffee mug warmers is prohibited in all County-owned facilities

Coffee brewing, heating, etc. appliances are permitted one-per-department only

Employee-owned refrigerators are prohibited in all County-owned facilities

County-Owned Refrigerators are permitted only in central break/lounge/cafeteria areas except in the case of medical supply storage and departmental commercial kitchens

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Microwave ovens, toaster ovens, toasters, beverage machines and all other powered food preparation appliances are permitted only in central break/lounge/cafeteria areas except in the case of departmental commercial kitchens

Personal electronics that are plugged into a buildings' electrical system are prohibited in all County-owned facilities. County-owned televisions used for program purposes are permitted; and Department Heads may permit a limited number of personal radios within their Departments at the Department Heads discretion

Potpourri cookers, air freshener plug-ins, air cleaners, dehumidifiers, and humidifiers are prohibited in all County-owned facilities

Overhead fluorescent interior lighting shall be used in County-owned facilities; employees will not be permitted to use incandescent table lamps, desk lamps, floor

lamps, spot lamps, torch lamps, etc. Fluorescent task lighting supplied as a part of the County's modular furniture may be utilized within the workspace.

Exterior lighting at the Jail/Sheriff Complex, Juvenile Detention Center, and Medical Care Facility will operate 24/7. Exterior lighting in all other facilities will activate one hour before business commences at the facility until light and end one hour after business ends at the facility once dark. Lighting will be activated for Custodial operations based upon the Team Cleaning Schedule for each facility. In general terms exterior lighting will operate 7:00 a.m. until 8:00 a.m. and 5:00 p.m. until 6:00 p.m. Flag lights will operate 24/7 as we do not have adequate staff to raise and lower the flag each day. Department Heads may request on a limited basis for exterior lighting to be activated for special program events that may be scheduled to take place outside of the normal schedule. These special requests should be kept to a minimum and grouped together whenever possible.

Timed electronic shower control valves are installed at the Jail and will continue to be installed at the Jail and Juvenile Detention Center as the maintenance budget allows to reduce water consumption

Lavatory faucets have been replaced and will continue to be replaced in all facilities with low-flow models as the maintenance budget allows to reduce water consumption

The Finance Director and I will be monitoring this regularly throughout the year and will raise any concerns we have with the COW.

#### SPECIAL CIRCUMSTANCES

Individuals requesting special consideration for an exception to the policy must bring such request(s) to their respective Department Head. A Department Head making a request for special consideration to the policy for either an individual, group of individuals, or a program purpose, must submit the request in writing via email to the Facilities Management Director. Adequate advance notice shall be provided for consideration of any action that may be taken. The request must provide specific detail of the special consideration, including the impact of the regulation upon the department if the request is not granted, and the relief that the department head intends to achieve if the request is granted.

Requests will be evaluated by the Facilities Management Director and County Administrator to assess impact on health/safety, the integrity of the energy management plan, department operations, and impact on budget as the major contributing factors to granting/denying the request.

# Energy Usage

All Buildings	2023 (forecast)*	2022	2021	2020	2019	2018	2017
<b>TOTAL COST - ELECTRIC</b>	\$ 721,000.00	\$ 678,425.61	\$ 692,176.92	\$ 653,250.28	\$ 721,887.29	\$ 775,026.46	\$ 713,990.45
<b>TOTAL USAGE -ELEC(kwh)</b>	5,012,300	5,136,852	5,206,163	5,133,877	5,713,486	6,029,591	5,660,020
Electric usage YoY	-2%	-8%	18%	-27%	8%	0%	
<b>TOTAL COST - GAS</b>	\$ 170,000.00	\$ 218,144.00	\$ 180,503.13	\$ 99,971.08	\$ 145,973.98	\$ 174,078.98	\$ 160,254.52
<b>TOTAL USAGE - GAS(ccf)</b>	\$ 165,000	214,510	233,542	198,738	270,865	251,549	251,549
Gas usage YoY	-23%	-1%	1%	-10%	-5%	7%	

\* As of expenses incurred January-August

# Lighting

- ▶ LED bulbs - 5,800 interior lights replaced, 100 exterior replaced (as of Sept 2023)
  - ▶ Replacement and Reduction Plan began in 2019

	Energy Reduction	Wattage reduction	Estimated Annual Saving (based on avg 60 hr/week run time)
Exterior	75%	18,577	\$4,600
Interior	52%	86,065	\$32,000

- ▶ Automatic light switches
- ▶ Photo-cell parking lot lights w/ auto shut off
  - ▶ (prioritize security over efficiency, generally on dusk till dawn)

# Energy Efficient Appliances

- ▶ HVAC
  - ▶ Air handlers operate between 5:00a-5:00p (adjusted down from 10:00p)
  - ▶ Temperature set points at 68-72 (adjusted to 58-82 outside business hours) Economizers for shutting down or opening up dampers to bring in cooler air when available
  - ▶ System balancing. Fluctuate exhaust fans to vent smarter
  - ▶ Actively managing control system
- ▶ Printers / copiers
  - ▶ energy star compliant
  - ▶ Automatic fuser shutdown / sleep



# Technology

- ▶ Virtual servers: 8-1 ratio (164 servers in operation)
  - ▶ 127 are virtual hosts X 450watt power supplies = ~\$70,000/year saved in energy costs
  - ▶ Addn'l savings of a physical device @ \$2,500-3,000 = \$380,000 saved every 3 years
- ▶ Energy savings desktops - 17% reduction in power needs (from 240 to 200 watts)
- ▶ Deploying more laptops over desktops - 67% reduction in power needs
  - ▶ (100) desktops replaced by laptops over last 4 years
- ▶ Cloud apps and long term storage backups
  - ▶ (11) Cloud application solutions - no need for local server(s)
  - ▶ (3) more cloud systems in next 12 months
- ▶ Phone system shuts down phone displays outside of business hour
- ▶ Monitors set to power save mode

# Hybrid Work Environments

- ▶ Reduced equipment electricity
- ▶ Reduced lighting
- ▶ Reduced heating/cooling needs
- ▶ Reduced waste/trash
- ▶ Reduced water and sewer

# Next Steps

- ▶ Reinforce the energy management plan
- ▶ Continue to seek energy saving equipment during replacement cycles
- ▶ Incorporate energy savings solutions into new building constructions