

**COUNTY OF MARQUETTE, MICHIGAN
Sawyer International Airport
Airport Advisory Committee Meeting**

Thursday, November 4, 2010, 4:00 P.M.

**Airport Services Center
Second Floor Conference Room
Gwinn, MI 49841**

1. Call to Order

2. Public Comment

3. Approval of the Agenda

4. Approval of Minutes

➤ October 7, 2010

5. Items for Discussion

A. Long Range Planning / Fee Review & Discussion

6. Informational Items / Project Updates

A. Terminal Restroom

B. Energy Audit – Control Tower Findings

7. Public Comment

8. Staff and Committee Member Comment

9. Adjournment

**COUNTY OF MARQUETTE, MICHIGAN
Sawyer International Airport
Airport Advisory Committee**

**Thursday, October 7, 2010, 4:00 P.M.
Meeting Minutes**

**First Floor Conference Room
Airport Services Center
Gwinn, MI 49841**

Members Present: Committee Chairman Bob Struck, and Committee Members Steve Rodgers, Scott Schulz, John LaCourt, Andy Sikkema and Fred Benzie.

Members Absent: Committee Members Jim Cihak and Frank Rosado

Staff Present: Scott Erbisch, Director of Operations and Keith Kaspari, Airport Manager

Staff Absent: N/A

Guests Present: 1. Roger Bentlage, Member, Sawyer Chapter, EAA.
2. Ken Barrett, Employee, Boreal Aviation

1. **Call to Order:** The meeting was called to order at 4:07 p.m. by Chairman Struck.

2. **Public Comment:**

Ken Barrett, an employee of Boreal Aviation, Inc. provided comment to the Committee, on renting an end storage unit at the General Aviation T-Hangars.

Mr. Erbisch provided a reply to Mr. Barrette, led discussion, and updated Mr. Barrett and the Committee Members that he is working on finding a suitable location located adjacent to the airfield for those that may be interested in storage of recreational vehicles.

3. **Approval of the Agenda:**

The Committee Members reviewed the agenda for October. With no changes requested, a motion was offered by Committee Member Fred Benzie, with a second followed by Committee Member Steve Rodgers. Motion passed.

4. **Approval of Minutes:**

Committee Members reviewed the minutes from the Advisory Committee meeting held on September 2, 2010.

Keith Kaspari identified an error with regard to the minutes in the Staff and Committee Member update, regarding to an un-finished comment by Committee Member Sikkema. With revisions as noted, a Motion of Support was offered by Committee Member Scott Schulz, with a second by Committee Member Steve Rodgers. Motion passed.

5. Items for Discussion:

A. Long Range Planning

Scott Erbisch provided a number of handouts, and led discussion on the following:

- The Airport Department Budget;
- Status of Leased Properties; and,
- Realized Parking Revenue with annual rates and total passengers;

Discussion ensued.

Mr. Erbisch continued with a description of the lease with BWI, lease revenues, and requested improvements to the facility by BWI officials.

Additional discussion included lease revenue from the following tenants:

- Argonics;
- Frontier Medical;
- Tenant Airlines;

Mr. Erbisch continued discussion to update the Committee with regard to:

- The largest expenses to the department;
- Vehicle maintenance; and,
- Useables (materials and supplies) – cleaning / custodial, other/s;

General discussion continued with regard to:

- Rates and Fees assessed to airport users and tenants;
- Utility Charges;
- Use of Overtime for Department Personnel;
- Material Costs.

Committee Member LaCourt discussed the costs of materials such as sand and fuel. Committee Member Fred Benzie brought forward the concept of allowing the rental car tenants to refuel their vehicles at SAW's fueling station, in contrast with the rental car tenants refueling vehicles at the Crossroads, or in Gwinn.

- Reviewing the core services such as what was discussed during the April, 2010 meeting.

6. Informational Items:

A. DRAFT Revised Airport Capital Improvement Plan (FY's 2011 - 2020)

Airport Manager Keith Kaspari provided an additional update for the upcoming presentation to FAA and MDOT officials of SAW's 10-year ACIP.

B. Wide Area Augmentation System (WAAS)

Mr. Kaspari provided an update with regard to the WAAS project for Runway 1.

Mr. Kaspari spoke with a member of the FAA staff in the DFW office, and that there was no project identified in the system for SAW's Runway 1 WAAS.

Mr. Kaspari provided further comment that as a result of the above conversation, that airport staff submitted a request via the FAA's website to initiate such a request.

C. UPDATE: Terminal Restrooms -

Scott Erbisch led discussion regarding the future construction of two unisex restrooms for the airport passenger terminal.

D. Explorer Solutions / SBA Grant:

Scott Erbisch led discussion and provided an update to the Committee Members regarding the Explorer Solutions and the SBA Grant.

E. Airport Project Updates -

Airport Manager Keith Kaspari provided an update to the Committee Members on the following:

- Phase II, Taxiway Lighting Rehabilitation Project is now complete at 100%;
- Phase IV, Runway Slab Reconstruction Project is now complete at 100%;
- 400-Series Hangar Rehabilitation project has experienced continued delays in overall completion due to some failures of the proofing material to bond with the foam insulation. General Contractor, Subs and Mead & Hunt are working on a solution to rectify the failed areas.

The failed areas were re-sprayed on Thursday, September 30, and airport staff anticipates that Boreal staff can re-occupy the hangar on or about Monday, October 18.

F. Trip Report, Fall Conference, Michigan Association of Airport Executives -

Airport Manager Keith Kaspari provided an update to the Committee Members for regarding the September 13 - 16 MAAE conference in Bellaire, MI.

- The Number 1 concern of all present is the future funding capability of MDOT-Aeronautics, and the on-going concerns regarding the funding via the State Aeronautics fund.

Mr. Kaspari handed out a copy of the correspondence that was forwarded to the County Board of Commissioners for their consideration during their October 12, 2010 Annual Meeting. Staff is requesting the support with resolution for the passage of House Bill 5773.

- FAA ADO Detroit staff requesting airport sponsors receive permission first prior to using an aviation structure for non-aviation purposes.
- Air Service Trends:
One trend that could be forthcoming in the industry, is a concept whereby regional airlines, and to lower their station costs, may serve smaller communities with few arrivals and departures, yet with larger regional jet aircraft - in contrast with smaller 50-seat Regional Jets and more frequency.

7. Public Comment

Roger Bentlage provided comment regarding the future completion of a Cost-Benefit Analysis, or CBA, and the potential impacts of increased fees and usage.

8. Staff and Committee Member Comment

- Scott Erbisich provided comment with regard to the new airport website www.comehometosawyerairport.com, that provides a number of stories and articles with the assistance of Mr. Larry Chabot, and that Mr. Erbisich is requesting feedback from the Committee regarding content, etc.
- Mr. Kaspari handed out the flight schedules for November 1 and December 18, with the flight schedules reflecting changes in air service points beginning with departure times on Delta (no early morning departure) beginning November 1, and the return of an early morning departure to Detroit with Delta Airlines.

Mr. Kaspari also updated the Committee Members regarding recent correspondence received from Delta Airlines officials regarding the loss of service to Minneapolis beginning in early January for an expected 60-day period. Service to MSP is anticipated to return on or about March 2.

Staff (Mr. Erbisich) is also attempting to meet with Delta Airlines during his October 18-22 NBAA conference in Atlanta.

- Mr. Kaspari provided an update to the Committee with regard to a new General Aviation runway that was constructed for the Battle Creek, MI airport (BTL), for use by students at Western Michigan University.

The project is an asphalt runway constructed at 4,300-feet long by 75-feet wide, with an overall construction cost of \$7,000,000. It was communicated to staff that to justify this project, BTL officials had to justify a minimal annual usage of 500 or more operations.

- Keith Kaspari provided a number of handouts to the Committee with regard to the following:
 - Information from AAAE / USCTA Program; and,
 - MAP of Michigan, Page B-30, in the FAA's description of the National Plan of Integrated Airport System (NPIAS), and that the region that includes Michigan, has identified airport needs of approximately \$52.5B during FY's 2011 - 2015.

9. **Adjournment**

A Motion to Adjourn the meeting was offered by Committee Member Scott Schulz, with a Second offered by Committee Member Steve Rodgers.

Motion Passed.

Time of adjournment: 6:13.

5A



Airport Services Center: 125 G Avenue • Gwinn, MI 49841 • www.sawyerairport.com

Airport Administrative Office
(906) 346-3308

Water/Wastewater Department
(906) 346-3137

Maintenance Department
(906) 346-4336

Memorandum

To: Airport Advisory Committee

From: Scott Erbisch

CC: Keith Kaspari, Airport Manager

Date: October 25, 2010

Re: Terminal Parking Lot Daily Rates, Employee Parking Permit Fees, and T-Hangar Rental Fees

The following are the current daily parking fees for the Passenger Terminal Parking Lot:

- first 2 hours - Free
- 2-4 Hours - \$2.00
- 4-6 Hours - \$3.00
- 6-8 Hours - \$4.00
- 8+ Hours - \$5.00
- Tickets greater than 24 hours pay the maximum daily rate of \$5.00.

Corporate and Terminal Employee Annual Parking Permit Fees:

- Annual corporate parking permit - \$500.00
- Annual terminal employee parking fee - \$50.00 if paid before 12/31. Fee increases to \$65 January 1.

In 2010 \$7,979.75 was collected from corporate and employee parking permit fees. Please note that this amount does reflect a prorated fee for some of the employee and corporate permits.

T-Hangar Rental Fees:

	<u>Prior to 2006</u>	<u>Current</u>
Single		
North Facing	\$135	\$100
South Facing	\$150	\$135
Twin		
North Facing	\$150	\$135
South Facing	\$180	\$150

*Currently there are 2 single and 3 twin T-Hangar vacancies out of a total of 41 T-Hangars. All face North.

SAWYER INTERNATIONAL AIRPORT

Annualized Parking Revenue

CY-2003 \$123,328* @ \$3.00 per day

*Delay ensued with implementing the \$3.00 per day rate. Rate was not implemented until early spring.

CY-2004 \$186,497 @ \$4.00 per day

CY-2005 \$209,811 @ \$4.00 per day

CY-2006 \$224,000 @ \$4.00 per day

CY-2007 \$284,000 @ \$5.00 per day

CY-2008 \$241,140 @ \$5.00 per day

CY-2009 \$250,957 @ \$5.00 per day

CY-2010 \$212,850 @ \$5.00 per day

(Year-to-date)

(First two hours – FREE)

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Memorandum

To: Steve Powers, County Administrator

From: Scott Erbisch

CC: Sue Vercoe, Finance Manger

Date: August 30, 2010

Re: FBO Fee Schedule

Included with the budget packet is an updated Sawyer Airport Fee Schedule that is to coincide with the Fixed Based Operator (FBO) Agreement. This fee schedule addresses landing fees, ramp parking and tie down fees, and the fuel flowage fees. The fees listed have all increased.

Landing Fees:

Landing fees have increased minimally for the lower weight aircraft. Consistent with the original schedule, the revised fee schedule is not proposing to impose a landing fee for aircraft with a landed weight of 4,199 pounds or less. Planes that fall within this category are typically owned by private pilots and not part of a commercial operation. The most notable increases are applied to larger aircraft. One example is an aircraft weighing 40,000 – 59,999 pounds is currently charged a \$40.00 landing fee, but the revised fee schedule proposes to increase it to \$75.00. The fees for larger aircraft continue to increase as the planes become larger. Please note that the landing fees identified within this schedule are not for the commercial airlines. Commercial airline landing fees fall under separate agreements with Delta and American Eagle.

Also notable, staff is recommending the elimination of the “Minimum Purchase of Fuel for Waiver of Landing Fees”. The original fee schedule included a waiver of the landing fee if there was a purchase of a defined minimum amount of fuel. This waiver was specifically tied to the \$0.25 fuel flowage fee. For example, in the original fee schedule the landing fee of \$20.00 for an aircraft weighing 12,500 to 19,999 pounds would be waived if there was a purchase of 80 gallons of fuel (80 gallons x \$0.25 = \$20.00). To achieve a similar balance based on the revised landing fee of \$25.00 and the recommended \$0.11 fuel flowage fee for Jet A fuel, approximately 227 gallons of fuel would need to be purchased. Within the aviation industry it varies from airport to airport as to whether or not the landing fee will or will not be waived with a minimum fuel purchase.

Daily Ramp Parking Fees and Monthly Ramp Tie Down Fees:

The most notable change within these two categories is that the “medium jet and larger aircraft” will now be charged based on the published dimensions or its footprint. Currently, the “medium jet and larger aircraft” is charged a fixed fee of \$30.00 per month. This change will more accurately reflect the ramp space it occupies.

Fuel Flowage Fees:

The proposed fee schedule recommends increasing the fuel flowage fee from \$0.06 per gallon sold to \$0.09 for 100 LL and to \$0.11 for Jet A. These increases take into account that most private pilots will be purchasing 100 LL fuel and corporate aircraft will be purchasing Jet A. The fuel flowage fee increases also apply a \$0.02 increase to the scheduled (commercial) airlines. The defueling and refueling for American Airlines is also recommended to be increased by \$0.02. Angel Flights (non-profits) will continue to be exempt from the County's fuel flowage fee.

Since reducing the County fuel flowage fee effective in July 2005 to \$0.06 per gallon sold from \$0.25 per gallon sold, there was initially an increase in General Aviation (GA) fuel sales and an increase in general aviation traffic counts. As discussed in the past, fuel sales and traffic activity is dependant on a number of factors including, but not limited to, weather, total price of fuel, and the economy. The term "General Aviation" is comprised of corporate and private aircraft.

Total GA Fuel Sales and GA Traffic Counts:

<u>Year</u>	<u>Gallons</u>	<u>Fee Received</u>	<u>GA Traffic Counts</u>
2004	94,068.3	\$23,617.70	7,412
2005	108,707.35	\$11,975.49	9,097
2006	136,581.4	\$8,195.59	8,871
2007	121,883.69	\$7,253.63	7,061
2008	149,325.8	\$8,960.28	5,019
2009	97,886.83	\$5,873.11	4,523
2010	37,961.7 (Thru June)	\$3,7961.70	2,897 (Thru July)

Applying a \$0.03 increase per gallon sold for general aviation fuel, multiplied by the total gallons sold in 2009, the estimated increase in revenue for GA sales is \$2,937. This is a conservative estimate since this estimate is only applying a \$0.03 increase to all of the GA fuel sales even though there will also be Jet A fuel sales too and that total recommended increase is \$0.05 per gallon sold.

The total fuel sales through June of 2010 are approximately 5,000 gallons ahead of 2009.

Summary:

The proposed fee schedule is recommending an increase in all categories, but it does attempt to spread the increases to the variety of users of Sawyer Airport. The schedule also recommends larger increases to corporate users and those with larger aircraft so that the private pilot is less burdened by the fees.

Please note that these FBO fees are only one aspect of the total fees collected at Sawyer Airport. It is staff's intent to continue to review and recommend appropriate increases in the various fees so that no one group or individual is overly burdened by the fees charged.

Aircraft Max. Gross landing weight Lbs.			Landing Fee (\$)
0	- THRU -	4,199	-0-
Single Engine, 4 passenger and under			
4,200	- THRU -	5,999	\$7.50
i.e. Cessna Skymaster, 310 - 337 Piper Seneca, Aztec, Commanche, Chyenne Beechcraft Baron			
6,000	- THRU -	9,999	\$12.50
i.e. Cessna 340 - 421 Aerocommander Piper Navajos, Cheyenne, Turbo-Commander Aerostar Beechcraft Duke , King Air, Queen Air			
10,000	- THRU -	12,499	\$15.65
i.e. 690A Super Commander Beech 99 King Air A-100, Super King Air MU-2 Merlin II, III Twin Otter Lear 55			
12,500	- THRU -	19,999	\$25.00
i.e. Lear 23 - 25, 35 - 36 Citation Saberliner, Saberliner 75 Westwind Jet Commander Falcon 10 Mitsubishi 2L			
20,000	- THRU -	29,999	\$37.50
30,000	- THRU -	39,999	\$50.00
40,000	- THRU -	59,999	\$75.00
60,000	- THRU -	99,999	\$125.00
100,000	- THRU -	199,999	\$250.00
200,000	- THRU -	299,999	\$375.00
300,000	- THRU -	599,999	\$750.00
600,000	- THRU -	AND UP	\$750.00

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Daily Ramp Parking Fee	Fee (\$)
Single Engine, 4 passenger and under	\$7.50
Large Single & Light Twin Engine	\$15.00
Small Jet & Turbo Prop	\$45.00
Medium Jet & Larger Aircraft	\$0.02 per sq ft of footprint

Monthly Ramp Tie down Fee	Fee (\$)
Single Engine, 4 passenger and under	\$40.00
Large Single & Light Twin Engine	\$60.00
Small Jet & Turbo Prop	\$175.00
Medium Jet & Larger Aircraft	\$0.05 per sq ft of footprint

Fuel Flowage Fees	Fee (\$)
Contract Fuel (charter aircraft)	\$0.08/Gallon
DNR/State	\$0.06/Gallon
Into Plane (DoD aircraft under contract)	\$0.04/Gallon
General Aviation Jet A	\$0.11/Gallon
General Aviation 100 LL	\$0.09/Gallon
Fuel Sales - American Eagle Airlines/Delta Air Lines	\$0.09/Gallon
Defuel – American Eagle Airlines	\$0.04/Gallon
Refuel – American Eagle Airlines	\$0.04/Gallon
Angel Flights (non-profit)	Exempt

APPROVED LANDING FEES

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Aircraft based at Sawyer International Airport don't pay landing fees as they pay hangar rent. State of Michigan and federally owned aircraft are exempt from landing fees per grant agreement provisions. Scheduled airlines pay landing fees specified in the operating agreement.

Aircraft Max. Gross landing weight lbs.			Landing Fee (\$)	Minimum Purchase of fuel for waiver of landing fee (Gals.)
0	- THRU -	4,199	0	0
Single Engine, 4 passenger and under				
4,200	- THRU -	5,999	7.00	25
i.e. Cessna Skymaster, 310 - 337 Piper Seneca, Aztec, Commanche, Chyenne Beechcraft Baron				
6,000	- THRU -	9,999	10.00	40
i.e. Cessna 340 - 421 Aerocommander Piper Navajos, Chyenne, Turbo-Commander Aerostar Beechcraft Duke, King Air, Queen Air				
10,000	- THRU -	12,499	15.00	60
i.e. 690A Super Commander Beech 99 King Air A-100, Super King Air MU-2 Merlin II, III Twin Otter Lear 55				
12,500	- THRU -	19,999	20.00	80
i.e. Lear 23 - 25, 35 - 36 Citation Saberliner, Saberliner 75 Westwind Jet Commander Falcon 10 Mitsubishi 2L				
20,000	- THRU -	29,999	25.00	100
30,000	- THRU -	39,999	30.00	120
40,000	- THRU -	59,999	40.00	160
60,000	- THRU -	99,999	50.00	200
100,000	- THRU -	199,999	75.00	300
200,000	- THRU -	299,999	100.00	400
300,000	- THRU -	599,999	200.00	800
600,000	- THRU -	AND UP	300.00	1200

GB



Rebuild Michigan Comprehensive Technical Energy Analysis Report

Submitted to

Marquette County

Marquette County Courthouse & Annex

Marquette County Jail

Negaunee Service Center

Marquette County Medical Care Facility

Sawyer Control Tower

Youth Home

by

Johnson Controls Inc.

Tina M. Brueckner

2140 American Drive

Neenah, WI 54956

Phone: (920) 831-3800

Fax: (920) 831-3801

www.johnsoncontrols.com

October 11, 2010

1. Executive Summary

A Technical Energy Analysis (TEA) was performed for the County of Marquette as part of the Rebuild Michigan Program. The TEA was conducted by Tina Brueckner, CEM of Johnson Controls, Inc. on July 29th, July 30th and August 2nd. This evaluation includes the Marquette County Courthouse, Annex and Jail, which is referred to in this report as the Marquette County Courthouse Complex, Negaunee Service Center, Youth Home and Sawyer Air Traffic Control Tower. We appreciate the assistance from Larry Gould, Alan Feldhauser, Rob Cochran, Candace Faulkner, Scott Erbsch, and Terri Govern.

This report is submitted in accordance with the Rebuild Michigan Program. Rebuild Michigan, managed by the Michigan Department of Energy, Labor and Economic Growth, Bureau of Energy Systems, is designed to assist public schools, colleges/universities, local governments, public multi-family housing and selected community partner referrals with implementing energy efficiency projects in their buildings. Utility bill savings realized from implementing O&Ms and ECMs identified in this report can cover the cost of ECM financing. Rebuild Michigan program staff and partners provide building owners with information on project financing options and direct technical assistance before and after installation.



TEA Report Ref. Page	Check if Selected for Financing	Building	ECM Descriptive Name	Estimated Project Cost (\$)	Energy Cost Savings (\$/yr)	Utility Rebate	Simple Payback Period (yrs)	Estimated Energy Savings (BTU/yr)	Estimated Life (yrs)
19		Courthouse Complex	Upgrade ductwork after heat wheel removed	\$ 12,300.00	\$ 3,249.98		3.78	363,733,712.00	20
17		Courthouse Complex	Vending machine occupancy sensors	\$ 987.00	\$ 359.82		2.74	13,645,174.00	
19		Courthouse Complex	Burner upgrade	\$ 36,300.00	\$ 3,899.80		9.31	527,000,000.00	25
21		Courthouse Complex	Steam trap retrofit	\$ 2,317.00	\$ 434.75		5.33	58,750,000.00	5
21		Courthouse Complex	Install CO sensors in garage for ventilation	\$ 12,770.00	\$ 2,895.89		4.41	289,015,035.00	10
22		Courthouse Complex	Water conserving Flush valves	\$ 13,300.00	\$ 1,554.12		8.56		
22		Courthouse Complex	Waterless urinals	\$ 15,600.00	\$ 2,988.70		5.22		25
22		Courthouse Complex	Control zones in Common areas of Jail	\$ 37,019.00	\$ 4,843.21		7.64	370,154,557.00	10
18		Youth Home	Attic & ductwork insulation	\$ 18,668.00	\$ 1,150.64		16.22	151,400,000.00	30
22		Youth Home	Water conserving Flush valves	\$ 1,750.00	\$ 170.88		10.24		
23		Sawyer Tower	Setback temperature control	\$ 17,530.00	\$ 7,430.88		2.36	566,006,076.00	10
24		Sawyer Tower	Lighting upgrade	\$ 12,114.00	\$ 3,430.78	\$ 830.00	3.29	114,125,190.94	5
24		Sawyer Tower	Exterior lighting	\$ 2,557.10	\$ 164.03		15.59	5,456,363.10	5
23		Medical Care Facility	VFD on heating pump	\$ 5,140.00	\$ 2,458.00		2.09	119,844,832.86	10
22		Medical Care Facility	Water conserving Flush valves	\$ 52,500.00	\$ 4,859.35		10.80		
24		Medical Care Facility	Lighting upgrade	\$ 76,091.00	\$ 21,770.98	\$ 6,665.50	3.19	724,213,855.75	5
23		Medical Care Facility	Add OA economizer	\$ 6,198.11	\$ 619.81			235,046,166.08	10
24		Megaunee Service	Window upgrade	\$ 13,468.00	\$ 190.00		70.88	25,000,000.00	30
22		Megaunee Service	Water conserving Flush valves	\$ 4,200.00	\$ 600.46		6.99		
18		County-Wide	Computer shutdown program	\$ -	\$ 3,370.50		0.00	127,816,850.00	3

Table 1 – Energy Conservation Measure Summary

some insulation has been removed from its original position. Further evaluation of the HVAC duct system and/or attic insulation would be appropriate with LCTEA's to determine if improvements would be cost effective by reducing possible ex-filtration through abandoned heat ducts and improving attic insulation.

Marquette County Medical Care Facility

The Marquette County Medical Care Facility is 64,253 square feet. The original building was constructed in 1988 and in 2001 a special needs wing was added. There are 140 beds and 237 staff which operate the facility. All windows are aluminum double pane and operable. Mechanical rooms located throughout the facility house five boilers, seven water heaters, and four heat recovery ventilators. One 450,000 Btu Patterson-Kelley boiler, two 1.5 million Patterson-Kelley boilers, and two 71,000 Btu Fulton Pulpak boilers supply fin tube radiators with pneumatic thermostats. There are five 125 gallon 270,000 Btu natural gas Nickel Shield water heaters, and one 1 million Btu 300 gallon natural gas Nickel Shield water heater. Two Lochinvar boilers with 90 gallon storage tanks also supply domestic hot water. Ventilation is provided by four Reznor 200,000 Btu heat recovery ventilators. Two Trane and two Mcquay air conditioner units supply cool air. Many upgrades have been commissioned with Johnson Controls including boiler reset controls and variable frequency drives. The attic space of the original building is heated with fin tube radiators to keep sprinkler and other water lines from freezing. A cold roof was added in an effort to resolve ice damming and leakage issues but heat loss issues still exist. Analysis and design work has been contracted to isolate the areas of heat loss in the original building.

Sawyer Air Traffic Control Tower

The Air Traffic Control Tower is an eight story, 6,338 square foot facility, built in 1993. The building is constructed of reinforced concrete and windows are double pane, aluminum clad. Two Thermal Solutions 250,000 Btu natural gas boilers heat the tower and there are McQuay Snyder General heat recovery ventilators and air conditioning units. Domestic hot water is supplied by a 10 gallon electric water heater.

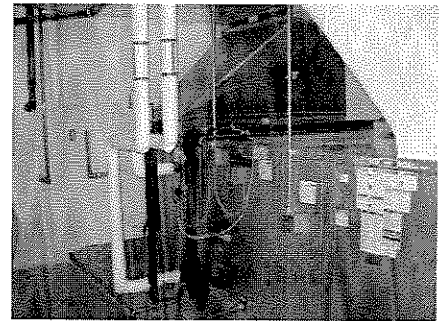
the Jail, these fans cannot be shut down, but they can be slowed down based on occupancy. The VFD will decrease the speed of the fan based on the occupancy of the area, saving fan and heating energy.

6.7.2. Setback Temperatures – Sawyer Control Tower

Sawyer Control Tower’s mechanical equipment cannot be scheduled off because the building cannot heat up in time for occupancy if the pumps are shutdown. This recommendation includes replacing the direct digital control system with Metasys, having the pumps continually operating, but resetting the temperature of the hot water loop, saving energy. The building systems will be scheduled off at night and allowed to run during the night to maintain setback temperatures during heating season and setup temperatures in cooling season.

6.7.3. Outside Air Economizer – Marquette County Medical Care

In the newer wing of Marquette County Medical Care the ventilation air that is provided to this section of the building has a constant amount of outside air. This retrofit would include modifying the structure, making the outside air opening larger and repairing it when complete. The controls on the air handling units, one per wing, would be upgraded to allow full control of the dampers and utilization of free cooling on the system which reduces the use of the mechanical cooling.



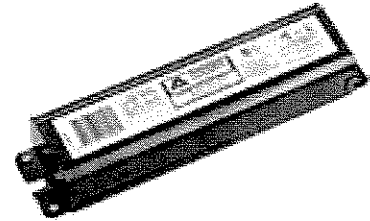
6.7.4. VFD on Heating Pump – Marquette County Medical Care Facility

The heating system for the original part of the building has parallel heating pumps that provide circulation in the facility. Variable frequency drives (VFDs) provide a means to slow down the pumps and only pump the water needed to heat the building. This reduces the electrical consumption of the pumps.

Building	Estimated Total Cost	Estimated Savings	Simple Payback
Zone control - Jail	\$ 37,019.00	\$ 4,843.21	7.64
Setback Temps - Sawyer	\$ 17,530.00	\$ 7,430.88	2.36
OA Economizer – MCMCF	\$	\$ 6,198.11	
VFD on Heating pump – MCMCF	\$ 5,140.00	\$ 2,458.00	2.09

6.8. Lighting Upgrade

Lighting upgrades, replacing T-12 lighting with T-8, was done in most of the County buildings, with the exception of Marquette County Medical Care Facility and Sawyer Tower. In these two facilities the lighting is T-12 fluorescent lamps that use about 20% more energy than T-8 lamps and ballasts.



The suggested project for these buildings includes Johnson Controls replacing the lamps and ballasts, keeping the lamps and ballasts consistent for ease of maintenance. The complete list of retrofits included in this project is outlined in the Appendix. This information is provided in the event that Marquette County wants to perform the labor themselves.

Building	Estimated Material Cost	Estimated Total Cost	Estimated Savings	Simple Payback
Marquette County Medical Care Facility	\$	\$ 76,091.00	\$ 21,770.98	3.19
Sawyer Control Tower	\$	\$ 12,114.00	\$ 3,430.78	3.29
Exterior Lights	\$	\$ 2,557.10	\$ 164.03	15.59

6.9. Window Upgrade – Negaunee Service Center



The original section of the building, built in 1969, still has the original single pane windows. These windows have significant leakage and are extremely inefficient. There is energy savings with this retrofit, but many options exist for replacing these windows and it is recommended that it be done for occupant comfort.

Estimated Total Cost	Estimated Savings	Simple Payback
\$ 13,468.00	\$ 190.00	70.88