



*We put a lot of energy into Northern Maine*

**MAINE PUBLIC SERVICE**

**P.O. Box 1209 · Presque Isle, ME 04769-1209**

The results of the walk-through audit performed for NMCC are as follows:

Listed on the enclosed spread sheet you will find, at the top of the sheet, areas such as:

1. location:
2. quantity: number of fixtures,
3. type of fixture,
4. convert to: what you *should be using*,

Lighting:

The CFL's (Compact Fluorescent Lamp) is taking the place of the incandescent lamp. The CFL is at least 75% more energy efficient and last 6 to 9 times the life of the incandescent lamp. See spread sheet for locations.

There are a number of old F96T12 fixtures and they should be replaced with the new T8 retro fit lamps and electronic ballast or replace with new T5 fixtures. The T5 lamps will not fit in the old T12 or T8 fixtures. ***Enclosed you will find a copy of the comparisons between the T8's and the T5 HO's. At this time, staying with the T8 fixture at this time is more economical than changing to the T5 system. See insert:***

There are a number of areas that could and should have Motion Sensors installed (see spread sheet). When someone moves into the range area of the sensor the sensor turns the lights on and after (around 15 minutes) if the sensor does not sense movement or heat, the sensor will turn the lights off, saving energy and lowering your energy bill.

HVAC:

Set thermostats for energy economy;

A comfortable setting is around 76 – 78 degrees in the cooling season.

If you have an inaccurate thermostat, you could be wasting a lot of energy. Check you thermostat against a thermostat you're sure is correct. If the temperature is off by 3 degrees, setting your thermostat at 81 degrees will give you a true 78 degree temperature.

Eliminate unnecessary HVAC use during unoccupied hours by using a programmable 7 day timer. During the day the HVAC will operate, but after hours the system shuts down.

Office Equipment:

Turn off PC's, monitors, printers, and copiers every night and weekend.  
Laptop computers consume 90% less energy than the standard desktop computers.  
Buy only *ENERGY STAR* PC's monitors, printers and copiers.

We had placed test meters on two soda machines and one ice maker. Their findings are: one soda machine was \$55 and the other was \$53 per month to operate. The ice-maker was \$70 per month. Enclosed you will find some material in regards to a (VendingMiser).

The weather-stripping for all doors should be checked to make sure there is ***no daylight showing around the edges of the doors***. If you can see daylight, then cold air can penetrate into the building, causing higher heating cost during the heating season.

Windows should be up graded when ever possible or if the windows are close to the ceiling, they should be removed and insulated and covered. A single pane window has an R-value of one and a wall (minimum) around R-13 to R-19.

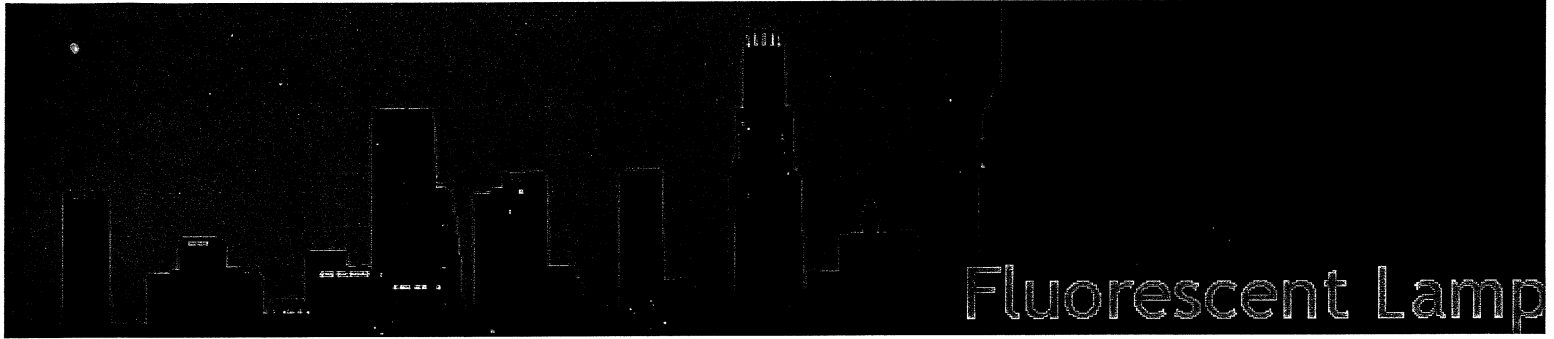
Enclosed is a booklet (Energy Efficiency Pays). A number of ways to help improve on the efficiency of your lighting and other areas.

If you have any questions or require further assistance, please do not hesitate to contact me.

Sincerely,



Bob Mosher  
Energy Auditor


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## Fluorescent Lamps

Fluorescent lamps are ever changing. Manufactures are producing longer life, lower wattage and brighter lamps almost weekly. So which lamp is right for you? At EnerTech Systems we are on top of this ever changing market place so we can find the option that best suits your need.

### T12 Lamps

T12 Lamps are the dinosaurs of the group. You can identify these lamps one of two ways:

1. They are 1 1/2 inches in diameter.
2. The code on the lamp will say something like F40/CW or F34/WW.

If you have these lamps you are an excellent candidate for a lighting retrofit.

### T8 Lamps

T8 Lamps have become the industry standard for energy efficiency. EnerTech install T8 lamps in place of T12 lamps because of all of the advantages, ([see T12 vs. T8](#)). To identify if you have T8 lamps try one of these two methods:

1. The diameter of the lamps is 1 inch.
2. The code on the lamp will say something like F32/741.

If you have T8 lamps your lighting system is more efficient than a comparable one that has T12 lamps, but it may not be as efficient as it can be. Numerous lighting retrofit companies would have you relamp going lamp for lamp. In doing so you are reducing your electrical bill, but you are not optimizing your lighting system. If you have T8 lamps from a retrofit performed three (3) or more years ago, the company that performed your retrofit replaced everything lamp for lamp, or if you just had new fixtures installed, call EnerTech. We can show you how we can further reduce your electrical bill while still providing you with an exceptional payback.

### T5 Lamps

T5 Lamps are relatively new in the market, but they have been around for a number of years. They normally are not used in standard retrofits because they only come in metric lengths, which are slightly shorter or longer than conventional T12 or T8 lamps. These lamps are also extremely bright and as a result typically used in fixtures where you are unable to see the lamp. A great application for these lamps has been in fixtures that replace high bay metal halide fixtures.

Northern Maine Community College

**NMCC**

Location	Quantity	Hours Used per month	Type of Fixture	Wattage of Appliance		Convert or change to
109 fitness	12		F32T8/3L			
109A stars	1		F32T8/2LU			
Metal class rm.	12		F32T8/3L			
exit sign	1	730	incandescent	30	263	LED
PC's	6					shut off at the end of each day
Metal shop	23	246	F96T12/2LHO			change to T5 fixture
exit sign	2	730	incandescent	30	526	LED
Rest rm.	1	246	F40T12/1L			F32T8/1L
Exhaust fan	2		2HP motors			use only as needed
Gym storage	1		incandescent	60		install ceiling fan to drive the heat down to floor
Custodian	1		incandescent	60		install 15 CAL with motion sensor
men's locker	2		F32T8/2LU			install 15 CAL with motion sensor
	3		F32T8/3L			motion sensor or sticker for switch plate as a reminder to shut lights off
weight ram	4		F32T8/3L			motion sensor or sticker for switch plate as a reminder to shut lights off
Training	Ice maker		installed test meter	cost \$71 per month		motion sensor or sticker for switch plate as a reminder to shut lights off
Googin's office	2		F32T8/2L			<u>shut off during summer months</u>
toilet	2		incandescent	60		motion sensor or sticker for switch plate as a reminder to shut lights off
shower	1		incandescent	60		install 15 watt CAL
Faculty locker ram						install 15 watt CAL
Garrett office						motion sensor or sticker for switch plate as a reminder to shut lights off
class ram						motion sensor or sticker for switch plate as a reminder to shut lights off
windows						motion sensor or sticker for switch plate as a reminder to shut lights off
Women's locker	1		biax lamp			install solar shield to cut down on heat gain and loss
Men's rest ram						change to LED
Women's rest ram						motion sensor or sticker for switch plate as a reminder to shut lights off
Gym		May be converted into ?			rooms = offices	motion sensor or sticker for switch plate as a reminder to shut lights off
	HVC	3 HP				use a Variable Speed Drive for all motors larger than a 2 hp
	HVC	2 HP				use a Variable Speed Drive for all motors larger than a 2 hp
GYM closet	1		biax lamp			motion sensor or sticker for switch plate as a reminder to shut lights off



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207	6	F96T12/2L	Should be converted to F32T8's or T5's
windows			install solar shield to cut down on heat gain and loss
Crawford	2	F32T8/4L	motion sensor or sticker for switch plate as a reminder to shut lights off
Joo-Kam	2	F32T8/4L	motion sensor or sticker for switch plate as a reminder to shut lights off
Cowett	2	F32T8/4L	motion sensor or sticker for switch plate as a reminder to shut lights off
Hotham	2	F32T8/4L	motion sensor or sticker for switch plate as a reminder to shut lights off
Soucie	3	F32T8/4L	motion sensor or sticker for switch plate as a reminder to shut lights off
windows			install solar shield to cut down on heat gain and loss
Spare office	2	F32T8/4L	motion sensor or sticker for switch plate as a reminder to shut lights off
Waste lamp rm.	2	F32T8/4L	motion sensor or sticker for switch plate as a reminder to shut lights off
R White	1	F32T8/3L	motion sensor or sticker for switch plate as a reminder to shut lights off
windows			install solar shield to cut down on heat gain and loss
<hr/>			
Christie - first floor			
Perminitor lighting (ceiling)	13	T12	change to T8's and install photo cell, if it is bright enough the fixture will not turn on
	8	F40T8/2L U	Should be converted to F32T8 2L U
Bath rms. (his and hers)		T8's	motion sensor or sticker for switch plate as a reminder to shut lights off
Lecture hall	4	T12/1L	Should be converted to F32T8's
lights	20	T12/2L	Should be converted to F32T8's
exit sign			change to LED
Corridor	3	F40T12/2L	Should be converted to F32T8's
	HVC	bearing a little noisy	Should be using synthctc grease, (less heat and wear) use a Variable Speed Drive for all motors larger than a 2 hp.
161 Joyce	2	F32T8/3L	Sticker for switch plate as a reminder to shut lights off
Punches	4	F32T8/3L	Sticker for switch plate as a reminder to shut lights off
Conference	5	F32T8/3L	Sticker for switch plate as a reminder to shut lights off
Hall	1	F32T8/3L	install motion sensor
John L Martin section	This section is all T8 fixtures except in the conference rm.		motion sensor or sticker for switch plate as a reminder to shut lights off
Conference	6	F96T12/2L	Should be converted to F32T8's or T5's
	2	F40T12/2L	Should be converted to F32T8's or T5's
windows			install solar shield to cut down on heat gain and loss
Bath rm.		exhaust fan	runs most all the time install timer, run only during the day, shut off at night
Christie complex first floor			
Financial aid	6	F32T8/2L-U	motion sensor or sticker for switch plate as a reminder to shut lights off
N. Smith	6	F32T8/2L-U	motion sensor or sticker for switch plate as a reminder to shut lights off
G Gagnon	4	F32T8/2L-U	motion sensor or sticker for switch plate as a reminder to shut lights off



Reed Dining Commons

Basement lights	5	F40T12/4L		Sticker for switch plate as a reminder to shut lights off
compressors			Keep the condenser and evaporator coils clean	Should be converted to F32T8's or T5's
stair well	1	F40T12/2L		Should be converted to F32T8's or T5's
Hood lights	6	incandescent	60 w	change to 15 watt CFL bulbs with 950 lumens
walk-in cooler	1	Fans run 24/7		average cost to run \$17 per month per on fan
walk-in freezer	2	Fans run 24/7		average cost to run \$17 per month per on fan
Serving Area	18	incandescent	60 w	change to 15 watt CFL bulbs with 950 lumens
grill-serving	1	incandescent	60 w	change to 15 watt CFL bulbs with 950 lumens
Eating area				install ceiling fan to drive the heat down to floor
lights	9	MV	175	there are more efficient units but because of lamp cost stay with MV
lights	12	F96T12/2L	138 w	Should be converted to F32T8's or T5's
lights	8	F32T8/2L	60 w	motion sensor or sticker for switch plate as a reminder to shut lights off
Hall				motion sensor or sticker for switch plate as a reminder to shut lights off
lights	2	F32T8/3L		motion sensor or sticker for switch plate as a reminder to shut lights off
lights	4	F32T8/3L		motion sensor or sticker for switch plate as a reminder to shut lights off
Keegan Rm.				motion sensor or sticker for switch plate as a reminder to shut lights off
lights	14	F32T8/3L		motion sensor or sticker for switch plate as a reminder to shut lights off
windows				install solar shield to cut down on heat gain and loss

TRUCK SCHOOL

This building is an existing historic building, however it should be torn down and rebuilt with the new R-values, windows, and baseboard or radiant heating.

windows				need to be replaced with Low-E and argon gas
Front office				
lights	4	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
lights	1	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
lights	1	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
Director				
lights	4	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
air conditioner				Keep coils clean / purchase only energy star models
hall light	1	incandescent	60 w	change to 15 watt CFL bulbs with 950 lumens
Tech Prep first				
lights	4	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
Tech Prep				
electric heat				
lights	4	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
table lamp	1	incandescent	60 w	change to 15 watt CFL bulbs with 950 lumens
bath				
lights	1	incandescent	60 w	change to 15 watt CFL bulbs with 950 lumens



Truck school continued  
class rm.

lights	6	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
Foundation office				
lights	4	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
AHEC				
lights	4	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
hall light	1	incandescent	60 w	change to 15 watt CFL bulbs with 950 lumens

This building has an electric water heater.

This building should be renovated or torn down and a new one constructed in its place. Using your building trades people and using the new standards of today.

This building is in no way energy efficient except for the lighting..

E. Perrin Edmunds section

B Ingraham	3	F32T8		wire in another switch to shut half of lighting off
IT shop	3	F32T8		motion sensor or sticker for switch plate as a reminder to shut lights off
Storage	1	F32T8		motion sensor or sticker for switch plate as a reminder to shut lights off
142	2	F32T8		motion sensor
141	2	F32T8		motion sensor or sticker for switch plate as a reminder to shut lights off
Kitchen	1	Refrigerator		shut off as soon as classes are over
lights	2	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
Men's bath	2	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
women's bath	2	F32T8/2L		motion sensor or sticker for switch plate as a reminder to shut lights off
Hall lighting	7	T5		
1% Art	3	incandescent	60 w	change to 15 watt CFL flood (dimmer switch will have to be removed and regulator switch installed)
Counter	10	T5/2L biax		motion sensor or sticker for switch plate as a reminder to shut lights off
Hall	3			install photo cell w/timer. If there is enough light the lights will not come on.
Library	9	MH	100	install photo cell. If there is enough light the lights will not come on.
lights	16	T5/2L biax		motion sensor or sticker for switch plate as a reminder to shut lights off
lights over books	9	T5/2L biax		motion sensor or sticker for switch plate as a reminder to shut lights off
lights over books	14	T5/2L biax		motion sensor or sticker for switch plate as a reminder to shut lights off
121	lights	F32T8/3L		motion sensor
Break area	lights			
Toilet	lights			
Lavatory's (2)				
Assist Dean	4	F32T8/3L		motion sensor or sticker for switch plate as a reminder to shut lights off
	1	F32T8/3L		sticker for switch plate as a reminder to shut lights off
	2	F32T8/3L		Install point of use water heater. install motion sensor

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Hub air conditioner

temp was 68 degrees, rise temp by 2 degrees every 4-5 days and employees will not notice the change. Recommended temp is 76 to 78 degrees.

Media Center	lighting	12	biax/2L	install motion sensor
Learn Center	lighting	8	biax/2L	motion sensor or sticker for switch plate as a reminder to shut lights off
	lighting	9	F32T8/3L	
Group Study	lighting	12	biax/2L	motion sensor or sticker for switch plate as a reminder to shut lights off
152	lighting	4	biax/2L	
154	lighting	4	biax/2L	motion sensor or sticker for switch plate as a reminder to shut lights off
Elevator	lighting	1	biax/2L	
Dean	lighting	5	F32T8/3L	no change
Continuing Education				
	lighting	15	F32T8/3L	motion sensor or sticker for switch plate as a reminder to shut lights off
Work Rm.	lighting	5	F32T8/3L	
Leah's	lighting	2	F32T8/3L	motion sensor or sticker for switch plate as a reminder to shut lights off
Break area	lighting	1	F32T8/3L	
Lab	lighting	8	F32T8/4L	install motion sensor
Toilet	lighting	1	F32T8/3L	
Nursing		13	F32T8/2L	sticker for switch plate as a reminder to shut lights off
203		16	F32T8/2L	
Boucher		2	F32T8/3L	sticker for switch plate as a reminder to shut lights off
Thompson		2	F32T8/3L	
McDougal		2	F32T8/3L	sticker for switch plate as a reminder to shut lights off
Flora		2	F32T8/3L	
Everett		2	F32T8/3L	sticker for switch plate as a reminder to shut lights off
Conant		4	F32T8/3L	
Rest rm.		1	F32T8/2L	sticker for switch plate as a reminder to shut lights off
		exhaust fan runs 24 / 7		install timer to shut fan off after classes
201		16	F32T8/2L	
		12	F32T8/2L	Install point of use water heater.
	windows south side			
Nursing Dept office		6	F32T8/2L	sticker for switch plate as a reminder to shut lights off
McDougal, J		2	F32T8/3L	
Cornello		2	F32T8/3L	sticker for switch plate as a reminder to shut lights off
Esquibel		2	F32T8/3L	

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Price		2	F32T8/3L	sticker for switch plate as a reminder to shut lights off
	windows			install solar shield to cut down on heat gain and loss
Bath rm.		1	2L - biax	sticker for switch plate as a reminder to shut lights off
	exhaust fan runs 24 / 7			install timer to shut fan off after classes
Lounge		5	F32T8/2L	install motion sensor
	windows			install solar shield to cut down on heat gain and loss
Lab 200		21	F32T8/2L	sticker for switch plate as a reminder to shut lights off
PC		2	F32T8/2L	sticker for switch plate as a reminder to shut lights off
Snowhall				
Entrance		11	2L - biax	Photo cell or motion sensor
Hall		4	2L - biax	Photo cell or motion sensor
Stair well		2	2L - biax	motion sensor
Dorm rooms				stickers should be installed on all the switch plates as a reminder to shut lights off to help conservation
	exit sign			change to LED
Boiler rm.				circulator was running when the boilers were shut off for the season
Conference rm.		12	incandescent floods	sticker for switch plate as a reminder to shut lights off
	windows			The windows need to be resealed around the frames
				The cement between the bricks should be sealed to keep water from entering,
	Exhaust fan			Bee's nest, should be cleaned and make sure flapper closes.
Maintenance Garage				
	Overhead door			needs new weather-stripping
Storage	lights			install motion sensor
Hot Air furnace				have checked and tuned up
Back storage	lights			install 18 w CFL lamps
Garage area	lights	8	F32T8/2L	sticker for switch plate as a reminder to shut lights off
Office	lights			sticker for switch plate as a reminder to shut lights off
General Duty				
	lights	9	F96T12/2L	change to T8 lamps and electronic ballast
office	lights	2	F32T8/2L	sticker for switch plate as a reminder to shut lights off
Electric water heater				install motion sensor
	Overhead door			Install point of use heater
				Should be replaced with newer more efficient units
Maintenance / Carpenter shop				
	Area light	1	MV	175 w
				should be changed to a 70 w HPS

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Janitor's closet	lights	3	incandescent	60 w	install 15 w CFL lamps
	water heater				Install point of use water heater.
Rest rm.	lights	6	incandescent	60 w	install 15 w CFL lamps
Office	light	1	F40T12/4L		Should be converted to F32T8's with motion sensor
		13	F40T12/4L		Should be converted to F32T8's with sticker on wall plate
Storage	light	1	F32T8/4L		sticker for switch plate as a reminder to shut lights off
					with install motion sensor
Storage	light	2	F32T8/4L		sticker for switch plate as a reminder to shut lights off
					with install motion sensor
Custodian supervisor					
	area light	1	MV	175 w	should be changed to a 70 w HPS
Auto Body Shop					
	Lights		F40T12/3L		Should be converted to F32T8's with sticker on wall plate
Rest rm.	Light		F32T8/2L		sticker for switch plate as a reminder to shut lights off
Back entrance door					needs new seal / weather-stripping
EMT door					needs new seal / weather-stripping
Class rm.		6	F96T12/2L		change to T8 lamps and electronic ballast
Coke machine ✓					sticker for switch plate as a reminder to shut lights off
					should be turned off during the summer season
					install Vending Miser (see information)
Back Parking lot		5	MV	175 w	should be changed to a 100 w HPS
		2	MH	250 w	should be changed to a 100 w HPS
<hr/>					
Carpenter Shop (new homes)	lights	67	F96T12/2L HO		change to T8 lamps and electronic ballast
					using 4100 color correction
Roof vents					Should be blocked off using (three layers) blue board - this will cut down on the heat loss
Class rm.	lights	12	F32T8/2L		sticker for switch plate as a reminder to shut lights off
Class rm.	lights	14	F32T8/2L		sticker for switch plate as a reminder to shut lights off
Supply rm.	lights	8	F32T8/2L		sticker for switch plate as a reminder to shut lights off
	lights	2	F96T12/2L		should have a lighting layout for better lighting
					and more efficient lighting
Tool rm.	lights	4	incandescent	135 w	install 20 w CFL lamps or install F32T8/2L for better efficiency
Jackson's office	light	2	F30 T12/1L		sticker for switch plate as a reminder to shut lights off

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Carpenter Shop (new homes)  
(continued)

Men's rest rm.	light				install motion sensor
Custodian	light	1	incandescent	100 w	install 15 w CFL lamp
Women's rest rm.	light				install motion sensor
Employee lounge	lights	4	incandescent	60 w	install 15 w CFL lamp with motion sensor
BUNN coffee maker	the coffee maker has a tank of water that stays hot all the time.				use a MR. Coffee
	lights	2	F40T12/4L		Should be converted to F32T8's with motion sensor
Overlock's office	lights	2	F32T8/2L		install motion sensor
Secretary office	lights	2	F32T8/2L		sticker for switch plate as a reminder to shut lights off
	soda machines	2 ✓			should be turned off during the summer season
					install Vending Miser (see information)
<b>Plumbing area</b>					
	lights	16	F96T12/2L HO		change to T8 lamps and electronic ballast
Class rm.	lights	9	F32T8/3L		shades should be cleaned and
Supply	lights	4	F32T8/2L		sticker for switch plate as a reminder to shut lights off
Rest rm.	lights	1	F32T8/2L		sticker for switch plate as a reminder to shut lights off or
Office	lights	2	F32T8/4L		install motion sensor
Hall to auto	lights	4	F32T8/2L	24/7	install motion sensor
Welding shop	lights	13	F32T8/4L		shades should be cleaned and
"	lights	18	F32T8/4L		sticker for switch plate as a reminder to shut lights off
Class rm.	lights	9	F32T8/3L		shades should be cleaned and
	walls				sticker for switch plate as a reminder to shut lights off or
	ceilings				install motion sensor
Rear entrance door					walls should be cleaned
Storage rm.	lights	3	F96T12/2L		ceilings should be painted to brighten area up
Michaud	lights	2	F32T8/4L		needs new seal / weather-stripping
Men's rm.	lights	1	F32T8/2L		change to T8 lamps and electronic ballast and install motion sensor
Women's rm.	lights	1	F32T8/2L		sticker for switch plate as a reminder to shut lights off or
					install motion sensor
					sticker for switch plate as a reminder to shut lights off

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Auto Mechanics	lights	50		F96T12/2L HO	change to T8 lamps and electronic ballast
Boyd's office	lights	2		F32T8/4L	sticker for switch plate as a reminder to shut lights off or install motion sensor
Class rm.	lights	12		F32T8/2L	sticker for switch plate as a reminder to shut lights off should be turned off during the summer season install <b>Vending Miser (see information)</b>
	Soda machine				
2nd class rm.	lights	9		F32T8/3L	sticker for switch plate as a reminder to shut lights off
Reading Manuals	lights	2		F32T8/2L	install motion sensor
	PC		left on 24/7		should be shut off at the end of the day or last class
Supply	lights	1		F96T12/2L HO	change to T8 lamps and electronic ballast or install motion sensor
Hallway to diesel	lights	2		F32T8/2L	sticker for switch plate as a reminder to shut lights off
	lights	30		F96T12/2L HO	change to T8 lamps and electronic ballast
	lights	2		250 w low bay	change to T8 lamps and electronic ballast
Diesel class rm.	lights	12		F32T8/2L	sticker for switch plate as a reminder to shut lights off

***THE END***