

MEMORANDUM

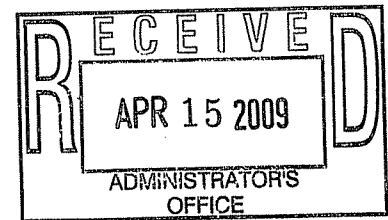
To: Members of the Town Council
From: Gary Stenhouse
Town Administrator
Date: May 14, 2009
RE: Energy Conservation Update

Attached is an update on our progress and results concerning energy use and conservation over the past year.

I am particularly pleased with the results shown by the Fire Department. They have spent a good deal of time not only on the physical improvements necessary to control energy usage, but have also made a concerted effort to modify behaviors of those men and women who live in the various fire stations. They have also put in an extra effort in getting participation and buy in from staff. Part of these results from the unique circumstances surrounding the fire services where the stations actually serve as places of residence for staff and the rest represents real efforts in staff involvement in decision making.

Both Public Works and Police have made progress. However much of the effort in Public works is related to weather related events. During this especially bad winter, we did not see the expected savings in motor vehicle fuel due to the number of winter storms, the ice storm and the still ongoing town wide clean up. At the same time, we were able to achieve a substantial propane usage savings as a result of reviewing operations and closing down our greenhouse.

Memorandum



MM09-121

To: Gary Stenhouse, Town Administrator
From: Michael A Fowler, Public Works Director *MAF*
Date: April 9, 2009
Re: Energy Use Reduction Efforts – FY2009

Town Code Sections 5-33 and 5-34 were passed in 2008 which established frameworks for vehicle purchases and building construction funded by the Town of Derry. Additionally, Department Heads were tasked with the goal of reducing overall energy usage by 20% through operational changes. The Department of Public Works has accepted this mandate and we have some updates to report:

Equipment Purchases:

Water Division – Ford F350 – Truck # 567 – This is a diesel powered medium duty truck to be equipped with a plow to gain access to pumping stations. A hybrid truck in this class was explored but not recommended since the model is less than a year on the market and there are under 1,000 models in production. In future years, technology may advance to allow for a hybrid application in this class.

Highway Division – Wheeled Excavator # 591 – This excavator is a heavy duty diesel powered piece of equipment. The specifications remained as diesel given there are no viable alternatives for this application.

Several Japanese manufacturers including Komatsu and Kobleco are developing machines for introduction into the United States market in 2011.

However, the specifications did include a requirement to meet EPA Tier III emissions standards. The standards do not become mandatory until 2010.

Building Renovations:

No major upgrades to Town Facilities were conducted in FY2009 other than a new energy management system was installed at the Derry Municipal Center. New computer software better controlling the HVAC System was installed along with new programmable thermostats. The system was fully operational in March 2009. Early results have been encouraging:

May 2008	1386 therms	May 2009	1247 therms	(10% reduction)
April 2008	926 therms	April 2009	823 therms	(11% reduction)

In FY2010, two major projects are included in the proposed budget. A new Recreation Facility has been recommended to replace Vets Hall. In the event a new facility is not financially feasible, \$133,000 from a Department of Energy Efficiency Grant will be used to replace doors/windows, upgrade the heating system and insulate the roof/ceiling.

The Police Department has also forwarded a \$70k project to upgrade their HVAC system, several components of which are from the original building construction.

Operational Activities:

A comprehensive review was conducted of the Department's operating procedure in an effort to reduce diesel and gasoline used. Some efforts included:

- Review of regular maintenance procedures such as checking tire pressures and air filters.
- Elimination of idling by Department equipment and vehicles.
- Staffing and truck sizes will be reviewed for optimum use on each task.
- The Department has reviewed alternative fuels with vendors. Conversion to bio-diesel was not cost feasible at this point.
- Several trucks are equipped with fuel tanks to save trips to the Kendall Pond Rd fill up station.
- Review of plow routes for optimization of fuel.
- A memorandum was distributed to all DPW employees on July 17, 2008 regarding measures to reduce fuel usage.

Unfortunately, the intensity of the winter required an elevated number of snow/ice responses. The Department did not achieve a substantial reduction in fuel usage. It is expected that in coming years, fuel usage will be reduced but this is dependant upon emergency responses to storms such as the 11 day ice storm we experienced in December 2008.

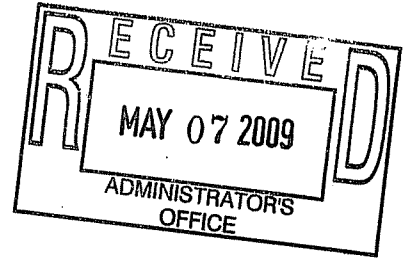
On a brighter note, the greenhouse at Don Ball Park was shut down this winter. Propane usage is down 25% as a result of this decision.

Please contact me with further questions.

Cc: Alan Cote, Supt. of Operations
Ron Robinson, Building Specialist
File

DERRY POLICE DEPARTMENT

MEMORANDUM



TO: Gary Stenhouse, Town Administrator

FROM: Edward B. Garone, Chief of Police *EBG*

SUBJECT: Energy Saving Initiative

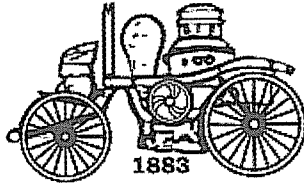
DATE: May 6, 2009

As stated previously the department had downsized its fleet of Admin Vehicles to the Ford Tarsus prior to this plan being started.

We have, through conservation efforts, reduced our electric consumption by approximately 20%. This equals a savings of about \$2,750.00 in the last 6 months as compared to the same time period the previous year. We can quantify the savings but are unable to be more specific as to exactly where it comes from, i.e. lighting, cooling, heating, etc.

We have also seen a slight reduction in fuel (auto) usage. This is probably a product of fewer cars on the road due to staffing shortages. These amounts are 1200 gallons less and \$3,600 less in costs.

DERRY FIRE DEPARTMENT



FIRE / AMBULANCE ADMINISTRATION
14 Manning Street
Derry, New Hampshire 03038

George Klauber, Fire Chief

Emergency: 9-1-1
Business: 603-432-6751
FAX: 603-537-9216

May 7, 2009

To: Gary Stenhouse, Town Administrator
From: George Klauber, Fire Chief
Subj.: Energy Conservation Efforts

A handwritten signature in dark ink, appearing to be "GK" or similar initials, written over the "Subj." line of the letterhead.

In July of 2008 the Fire Department embarked on an energy conservation initiative. Pursuant to the goals established by your office I issued a directive to all Department members outlining those goals, and challenged our employee's to meet those goals. This initiative targeted all aspects of the department; operations, training, apparatus, and facilities.

The Fire Department has reduced its energy consumption and is making a positive impact on the "carbon footprint" that we leave in our community. This is being accomplished through directives, changes in operations, building enhancements, efficient use of technology, developing an internal paradigm shift by our Department members' and through future capital projects. Each fire station and the apparatus/vehicles assigned to that station were requested to reduce all fuel, heating oil, propane and natural gas, and electricity usage by 20% as compared to FY 2008.

The Department has held meetings with all our Chief Officers and Fire Officers. These meetings have allowed us to not only explain the importance of this initiative but to seek the input from our members. Many of the ideas that were brought forth were insightful and will have a positive impact. Though some of the ideas that were discussed can not be accomplished immediately, they will be included in future Capital Improvement and Operating Budgets for the Department.

I have attached an updated Standard Operating Guideline that went into effect August 11, 2008 that will change the number of apparatus that will be dispatched and respond to many of our calls. This change is based on historic evidence of emergency calls in Derry as well as national trends based on USFA and NFPA data.

I have also directed the Fire Department to make changes in areas from fueling practices, facility and equipment use and personnel living habits. Please see attached Directive- Energy and Fuel Conservation August 11, 2008

Diesel Fuel

Fiscal Year	2009 to date	2008	2007
Fire	\$30,891.32	\$45,538.36	\$35,242.63
Dispatch	\$0.00	\$0.00	\$0.00
EM	\$158.49	\$173.08	\$160.49

Gasoline

Fire	\$4,988.04	\$8,007.05	\$6,415.24
Dispatch	\$428.57	\$548.90	\$619.50
EM	\$663.11	\$770.19	\$757.99

This goal is being first be accomplished by modification of employee behavior. Employees have had group discussions to talk about the importance of this issue through continuous dialogue between Chief Officers, Company Officers, and Line Personnel. Utility and fuel usage rates are being valuated on a monthly basis by Station Captains. Officers are being held accountable for unnecessary use of apparatus fuel and facility public utilities. Awareness is the most effective training that we can provide to assist with accomplishing this goal.

With regards to facilities - all room lights, equipment, and televisions are being turned off when not in use. Area lighting is reduced where safe to do so; energy efficient light bulbs are being utilized when replacement is required. Computers and other IT equipment are

logged-off and monitors turned-off when not in use. Temperature controls within the fire stations are controlled and monitored to assure consistent temperatures are maintained.

- Installed energy efficient lighting & occupancy light switches.
- Installed programmable thermostats.
- Removed 50% of “always on” lighting on apparatus floors.
- Poster campaign was initiated reminding employee’s to turn of electrical appliances.
- Adhered to maintenance schedules for heating & cooling units.
- Monitoring monthly energy usage.

These changes along with our employee’s efforts have resulted in substantial savings in energy consumption. Our records indicate a monthly average savings in electricity to be at or about 13%. Our average monthly heating savings is at or about 10%. Our biggest savings to date is at the Hampstead Rd. Station where a heating system replacement and building insulation in FY08 has netted a 34% decrease in fuel usage.

	2005	2006	2007	2008	2009	Dif 08-09
January		13000.00	9640	15200.00	13120.00	-2080.00
February		11480.00	14120	13120.00	10880.00	-2240.00
March	12880.00	11920.00	13000	12320.00	9360.00	-2960.00
April	10440.00	9640.00	10760	11400.00		
May	9000.00	9240.00	9400	8800.00		
June	10280.00	9920.00	8960	9480.00		
July	11600.00	11800.00	10600	11680.00		
August	13680.00	12600.00	12800.00	11000.00		-1800
September	11440.00	10360.00	11160.00	10040.00		-1120.00
October	9640.00	9920.00	11000.00	9480.00		-1520.00
November	10200.00	8160.00	9800.00	7400.00		-2400.00
December	12040.00	9280.00	13320.00	8037.00		-5283.00

The chart above is for Central Station electricity usage, the bold numbers indicate when the program started. The column farthest right indicates KWH savings per month.

	2007	2008	2009	
January		1715	1293	-422
February		1478	1760	+282

March		1507	1065	-442
April		1082	658	-424
May		421		
June		107		
July	48	46		
August	50	49		-1
September	39	56		+17
October	51	54		+3
November	175	270		+95
December	1058	576		-482

The chart above is for Central Station heating therms usage, the bold numbers indicate when the program started. The column farthest right indicates therm savings per month.

These initial savings are encouraging considering it is relatively early in our program. In the FY10 budget year, I see the department making even better progress with energy conservation due to our energy conservation project scheduled for the Island Pond Road Station. This project targets specific energy concerns; new heating & cooling units, building insulation and the necessary electrical upgrades needed to accomplish the project.

The Fire Department will in the future establish a program to have each of the facilities evaluated by an independent consultant to assure that ineffective building systems are identified and requested capital improvement projects are consistent with accomplishing this goal.

Further, apparatus are only moved for essential purposes to include responding to incidents, training purposes, and apparatus repairs. Staff vehicles are used for all Department business whenever possible. Apparatus are fueled only when necessary, as specified in directive from the Fire Chief. A portable diesel fuel tank was purchased and mounted on a utility vehicle to be used for in-station fueling of diesel apparatus and medic units. Apparatus no longer need to leave their station and utilize fuel to fill the apparatus or medic unit with fuel.

The Department continues to utilize on-line and internal web-based training will allow fire companies to remain in their quarters during some training activities.

Finally, apparatus response to routine commercial and residential alarm activations was be reduced by two engines. Full response of apparatus will continue for high life-hazard facilities such as the hospital, nursing homes, elderly complexes, schools in-session, and special hazards in the community.

Attached are the projects that have been completed or will be completed during the next fiscal year to date to meet our objectives.

DERRY FIRE DEPARTMENT
ENERGY CONSERVATION

	Project	Directive, Purchase, Modification	Completed Y/N	Completion Date
Operations	The Department has adjusted its responses to different incidents and alarm notifications throughout the community. This will require less apparatus to respond to most incidents and those that do will do so in a Code1 (no lights or sirens) to this calls.	D	In progress and being evaluated	
Apparatus and Vehicles				
	Apparatus shall be used for essential movement only.	D	Y	
	Essential movement of apparatus will be defined as "Responding to calls, Training, and Repairs". The Battalion Chief may at his discretion allow the movement of apparatus at any time that they determine it is necessary.	D	Y	
	Staff vehicles shall be used for all Department business whenever possible. Apparatus shall not be used to retrieve supplies, drop off paperwork etc.	D	Y	
	Apparatus idling time shall be limited to 5 minutes or less. In the cases of extreme weather conditions or when using warning lights the apparatus shall remain running	D	Y	
	Apparatus shall not be "short" started for checks or cleaning	D	Y	

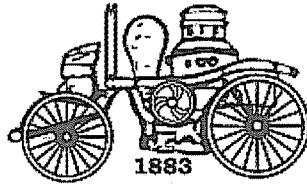
	Road test of apparatus and testing of boats shall be completed on the 1 st Monday of the month	D	Y	
	Tire Pressure shall be checked and adjusted weekly on Mondays	D	Y	
	Driver Training may be limited and shall be scheduled with the on-duty Battalion Chief	D	Y	
	Fueling - Kendall Pond Road fuel yard. Staff vehicles shall be fueled at ½ tank. Apparatus shall be fueled at ½ tank. Medic units shall be fueled at ¾ tank.	D	Y	
	All vehicles and apparatus shall refuel at the fuel yard whenever the tank is at ¾ or less before returning from the Kendall Pond Rd and Fordway area.	D	Y	
	A portable diesel fuel tank mounted on a utility vehicle shall be available for in station fueling of diesel apparatus. The utility fuel vehicle will be available to fill each apparatus each morning between the hours of 08:00 and 12:00. The utility fuel vehicle shall be full and prepared for on call fueling at all times	P	Y	
Training				
	The Department shall increase the use of on-line training	M	Y	
	Evaluate use of rental/purchase/ regional simulation training vs. actual apparatus training for pumps and driver training	M	Y	
	When members are assigned to attend offsite training they shall use a staff vehicle and require car pooling from Derry. Nothing will prohibit members from using their personal vehicles but they will only be reimbursed for mileage with prior approval.	D	Y	
Facilities	All facilities shall maintain a set temperature year round of 72 degrees within the living quarters; 60 degrees on apparatus floors as per department SOG # 310.08. Thermostats are tprogrammed and maintained at these parameters.	D	Y	
	All room lights, equipment, televisions to be shutoff when no member	D	Y	

	is in the room.			
	Reduce lighting where possible (remove bulbs when possible)	M		Y
	Replace all current light bulbs with energy efficient light bulbs when the bulb is required to be replaced	P - M/P		Y
	Prudent use of doors between the apparatus bays and the living quarters.	D		Y
	There shall be prudent use of apparatus bay doors to prevent heat loss in winter and heat infiltration in warmer weather	D		Y
	Computers shall be set in sleep mode and logged off when not in use.	D		Y
	Windows have been replaced in the living quarters to energy efficient windows.	P		Y
<u>Hampstead Road Station</u>				
	An energy efficient front door was installed	P		Y
	The exercise room was remodeled and insulation was upgraded.	P/ M		Y
	Energy efficient heater was installed in the exercise room	P/M		Y
	Apparatus floor area was insulated.	P		
	Storage room (second floor) was insulated.	P/M		Y
	The east door was replaced with an energy efficient door.	P		Y
	The apparatus bay doors were all replaced with energy efficient doors.	P		Y
	The stations electrical system was upgraded for code compliance.	P/M		Y
	Energy efficient fluorescent lighting was installed (PSNH program).	P/M		Y
	The stations heating system was replaced with a new energy efficient system.	P/M		Y
	A new energy efficient hot water heater utilizing passive water from the boilers was installed.	P/M		Y
	A new SCBA clean room off the apparatus floor was constructed with energy efficiency in mind	P/M		Y
	Advertisement bulbs removed from soda vending machine.	M		Y
	Replaced all thermostats with programmable thermostats.	P/M/D		Y

	Stations incandescent lighting was replaced with energy efficient compact fluorescent bulbs.			
	New washer and dryer with energy star ratings where purchased.	P	Y	
<u>Central Station</u>	Lighting was estimated by a PSNH Energy Audit in 2002 to comprise 57% of the energy consumption at Central Station. As a result of this audit the florescent lighting was upgraded to energy efficient "T-8 florescent lamps and ballasts".	P/M	Y	
	Replaced all incandescent bulbs with energy efficient compact fluorescent bulbs	P/M	Y	
	Occupancy sensing and timer controls for lights.	P/M	Y	
	Adjusting the lighting layout on the apparatus floor to make it more efficient.	P/M		FY10
	Lighting on the apparatus floor be integrated into the station alerting system	M		FY10
	Dispatchers to turn on the apparatus floor lights at night when pre alerting companies from our station.	D	Y	
	Removed approximately 50% of the always on lighting from the apparatus floor.	M	Y	
	Eliminate the "always on lighting" and replace with lighting controlled by a photo electric sensor.	P/M		FY10
	Repaired the parking light sensor so that it works properly.	D	Y	FY10
	Posted reminder posters around the station to conserve energy by turning lights and monitors off when not in use.		Y	
	A complete station efficiency evaluation and report (Castagna Report).	P		
	Monitoring and charting monthly energy use.	D	Y	
	The sleep timers on the computers were made to put computers in sleep mode more quickly when not in use	D	Y	

<u>Island Pond Station</u>	Replaced 220vlt station compressor with 110vlt unit.			
	Met with station officers RE: buy in on program.	D		Y
	Serviced all heating and A/C units for efficient operation.	D		Y
	Replaced bathroom fans with timed switches.	P/M		Y
	Replaced station lighting with low watt high efficient bulbs.	P/M		Y
	Parking lot lighting put on timers and motion activated.	D		Y
	Decreased use of vehicles through dept conservation plan.	D		Y
	Removed soda machine from station.	M		Y
<u>English Range Station</u>	Energy efficiency program lighting installed to reduce an estimated 4,378 KWH annually. (estimated \$408.88 savings/year)	P/M		Y
	Installed energy saving, programmable thermostats.	P/M		Y
	HVAC audit performed to check operational efficiency.	D		Y
	All non-essential lighting turned off or eliminated.	D		Y
	Changed outside security photo switch, now cutting lights off earlier.	P/M		Y
	CFL bulbs installed where possible to eliminate incandescent bulbs.	P/M		Y
	Purchase garage door timers.	P/M		FY10
	Reduced apparatus operation as applicable	D		Y

DERRY FIRE DEPARTMENT



FIRE / AMBULANCE ADMINISTRATION
14 Manning Street
Derry, New Hampshire 03038

George Klauber, Fire Chief

Emergency: 9-1-1
Business: 603-432-6751
FAX: 603-537-9216

To: All Department members
From: George Klauber, Fire Chief
Date: August 11, 2008

DIRECTIVE - Energy and Fuel Conservation

The Department will reduce its energy consumption and attempt to make a positive impact on the "carbon footprint that we leave in our community. This will be accomplished through a number of different methods including apparatus and vehicle usage and fueling, modifications to facilities, efficient use of technology and developing an internal paradigm shift by our Department members.

Effective immediately the following shall be adhered to by all Department members;

Apparatus and vehicles:

The Department shall operate all apparatus in the most fuel efficient manner. Apparatus shall be used for essential movement only. Essential movement of apparatus will be defined as "Responding to calls, Training, and Repairs". The Battalion Chief may at his discretion allow the movement of apparatus at any time that they determine it is necessary.

1. Staff vehicles shall be used for all Department business whenever possible.
Apparatus shall not be used to retrieve supplies, drop off paperwork etc.
2. Apparatus idling time shall be limited to 5, minutes or less. In the cases of extreme weather conditions or when using warning lights the apparatus shall remain running
3. Apparatus shall not be "short" started for checks or cleaning

4. Road test of apparatus and testing of boats shall be completed on the 1st Monday of the month
5. Tire Pressure shall be checked and adjusted weekly on Mondays
6. Driver Training may be limited and shall be scheduled with the on-duty Battalion Chief

Fueling - Kendall Pond Road fuel yard.

1. Staff vehicles shall be fueled at ½ tank
2. Apparatus shall be fueled at ½ tank
3. Medic units shall be fueled at ¾ tank
4. All vehicles and apparatus shall refuel at the fuel yard whenever the tank is at ¾ or less before returning from the Kendall Pond Rd and Fordway area
5. In the future a portable diesel fuel tank mounted on a utility vehicle shall be available for in station fueling of diesel apparatus. The utility fuel vehicle will be available to fill each apparatus each morning between the hours of 08:00 and 12:00. The utility fuel vehicle shall be full and prepared for on call fueling at all times

Training

1. The Department shall increase the use of on-line training
2. The Department shall increase the use of internal web training
3. Evaluate use of rental/purchase/ regional simulation training vs. actual apparatus training for pumps and driver training
4. When members are assigned to attend offsite training they shall use a staff vehicle and require car pooling from Derry. Nothing will prohibit members from using their personal vehicles but they will only be reimbursed for mileage with prior approval.

Facilities

1. Maintain a set temperature year round of 72 degrees within the living quarters; 60 degrees on apparatus floors as per department SOG # 310.08. Thermostats are to be set, locked and maintained at these parameters.

2. All room lights, equipment, televisions to be shutoff when no member is in the room.
3. Reduce lighting where possible (remove bulbs when possible)
4. Replace all current light bulbs with energy efficient light bulbs when the bulb is required to be replaced
5. Utilizing lamps as an alternative to overhead incandescing lights.
6. Doors between the apparatus bays and the living quarters shall remain closed at all times.
7. There shall be prudent use of apparatus bay doors to prevent heat loss in winter and heat infiltration in warmer weather
8. Computers shall be set in sleep mode and logged off when not in use.

As Directed,

A handwritten signature in cursive script that reads "George Klauber FC". The signature is written in dark ink and is positioned above the printed name.

George Klauber, Fire Chief