

North Hampton Energy Committee Select Board Briefing





North Hampton School Facility Energy Use

US EPA Portfolio Manager

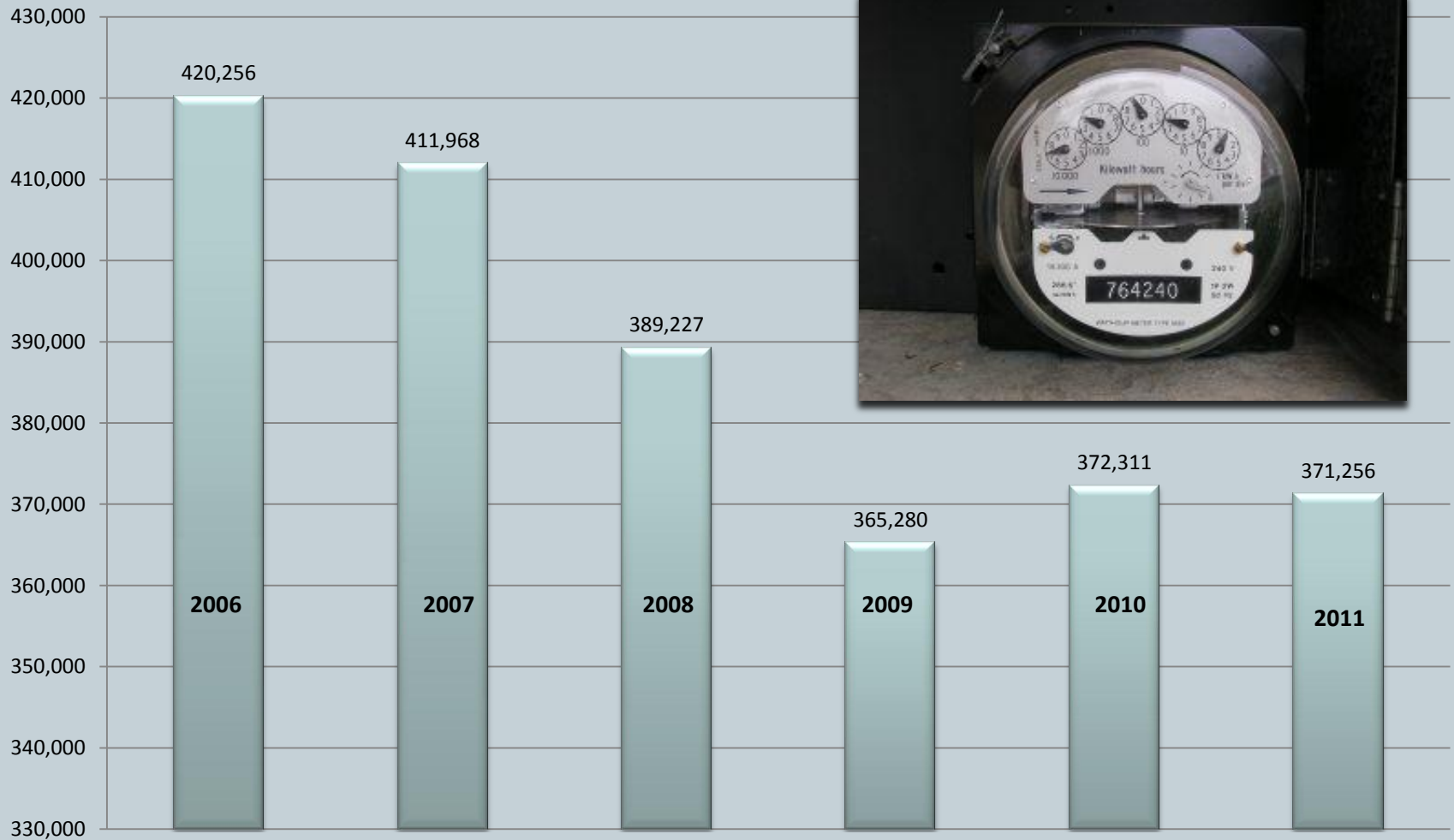
- Energy Management Tool
- Rate Building Energy Performance
- Estimate Carbon Footprint
- Gain EPA Recognition (Energy Star)

Entering Metrics – Data on Physical Structure, and
Complete Energy Usage

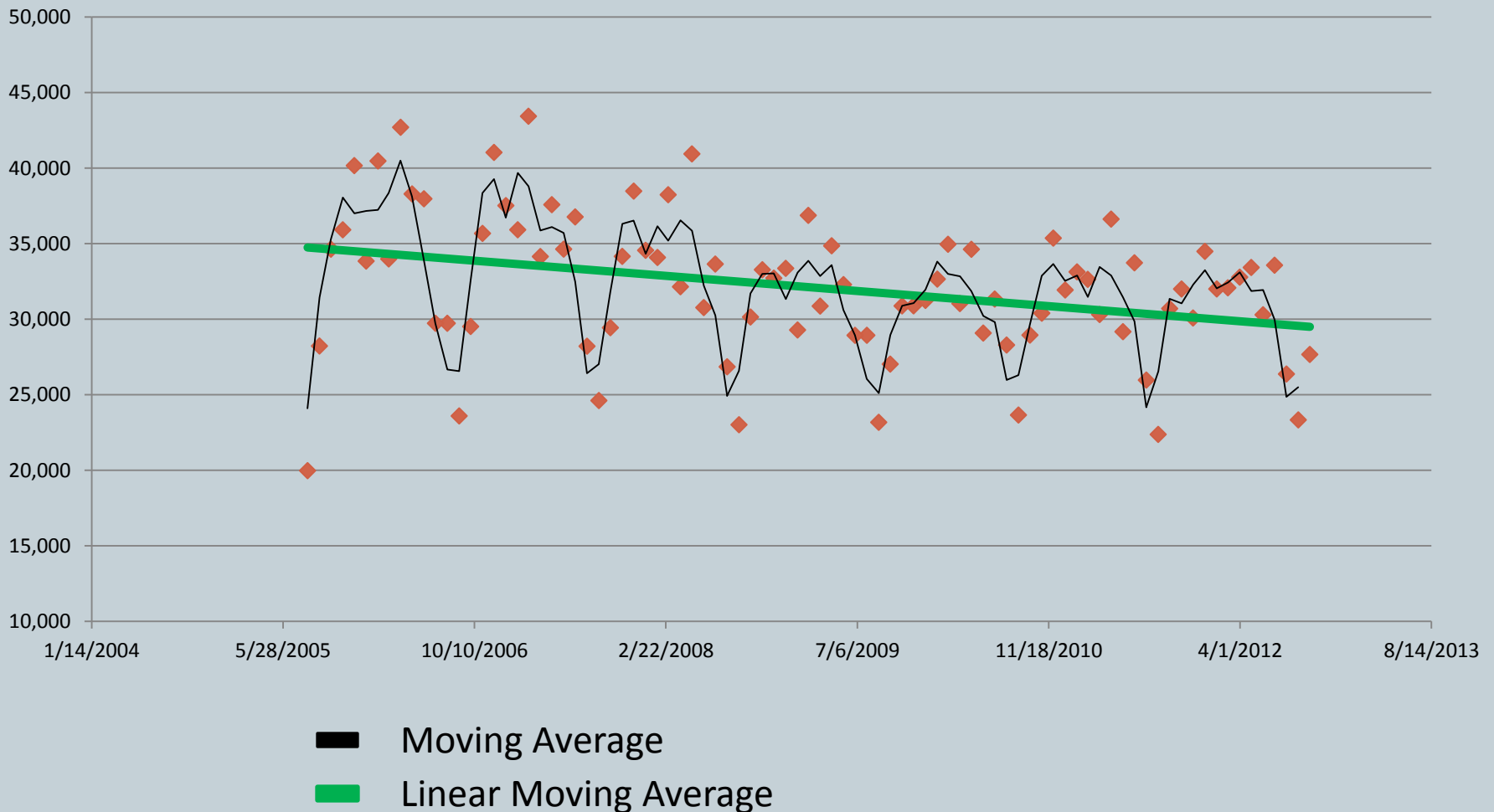


http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager

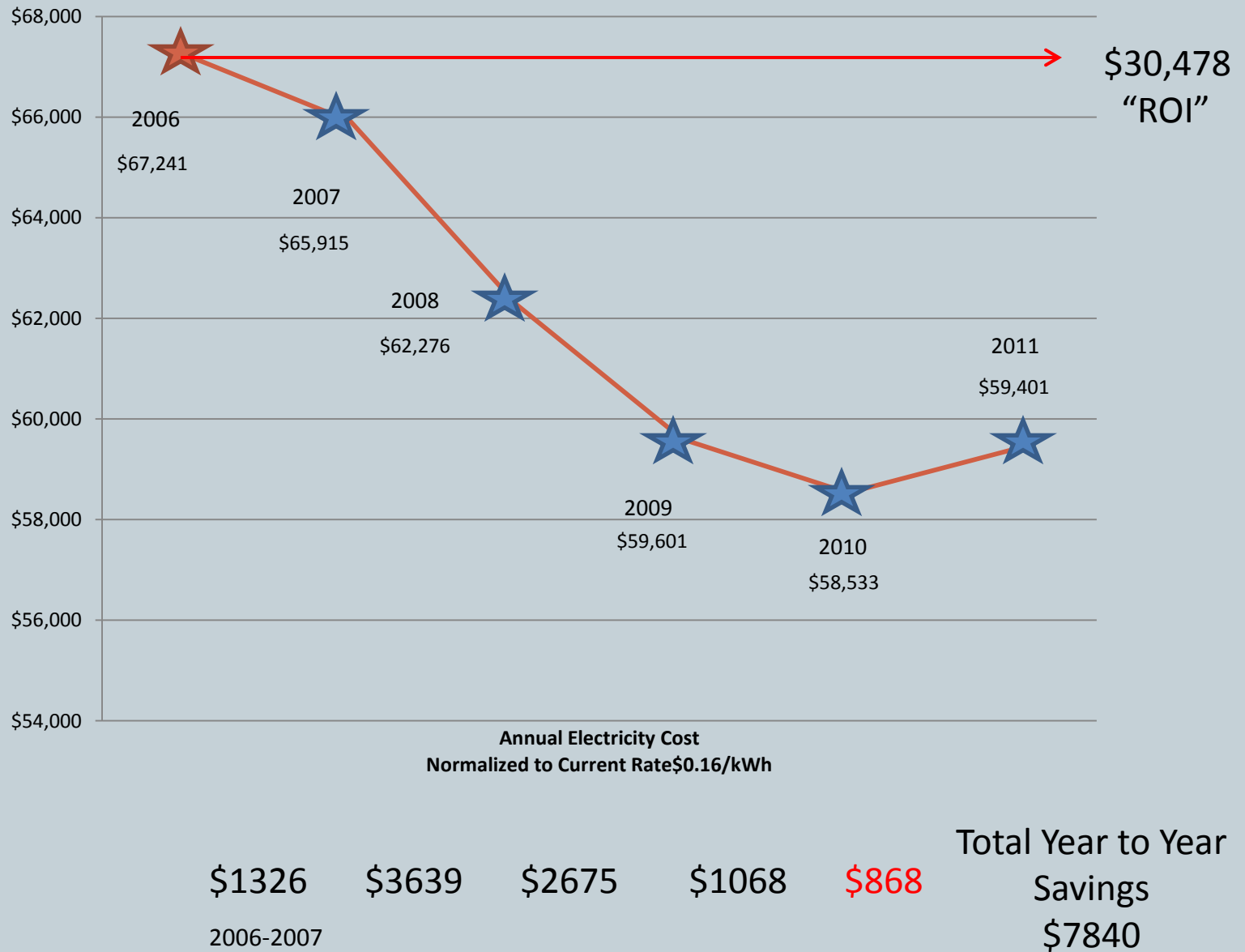
North Hampton School Annual Electricity Total KwH



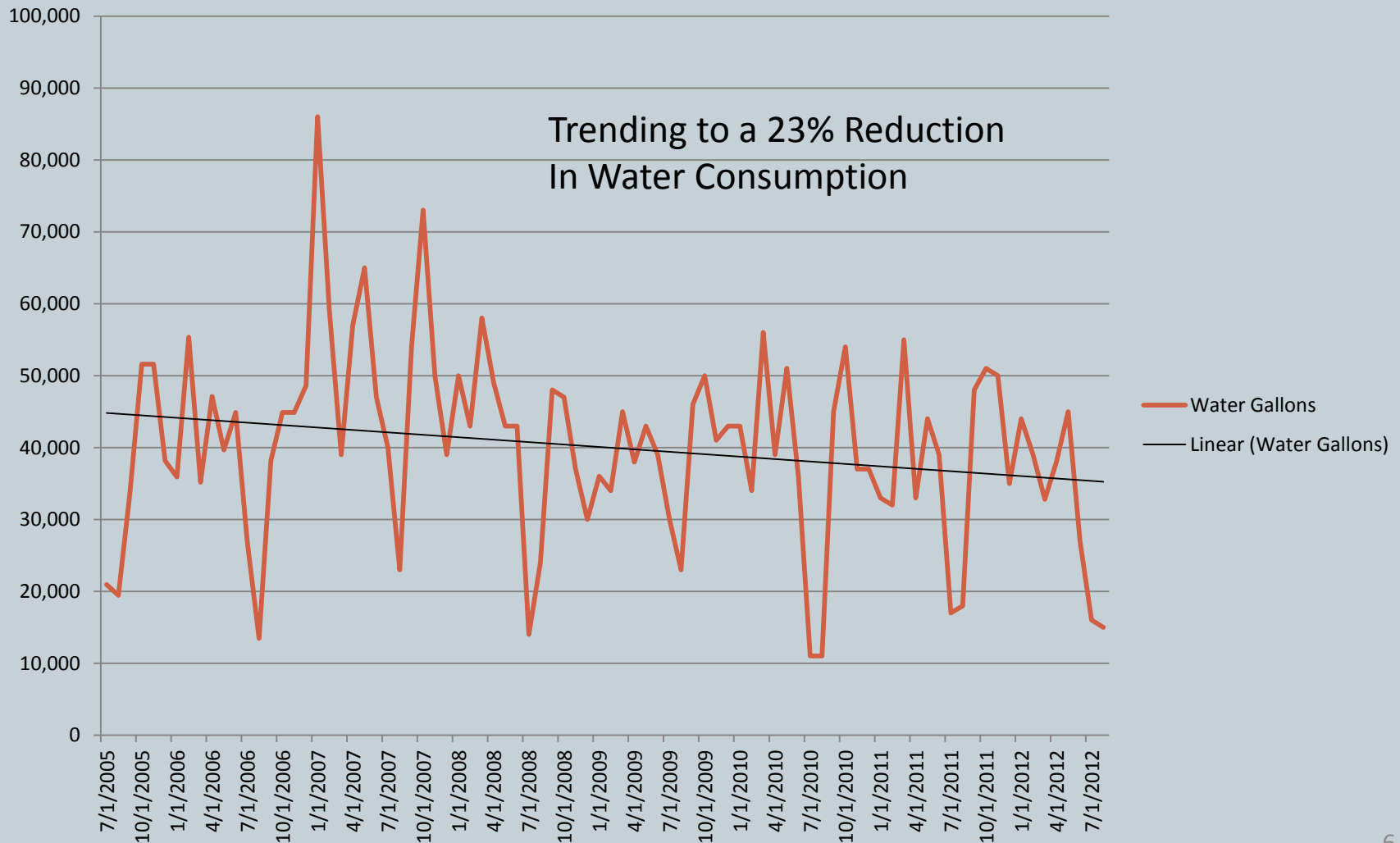
North Hampton School Electricity (KwH) 2005 - 2012



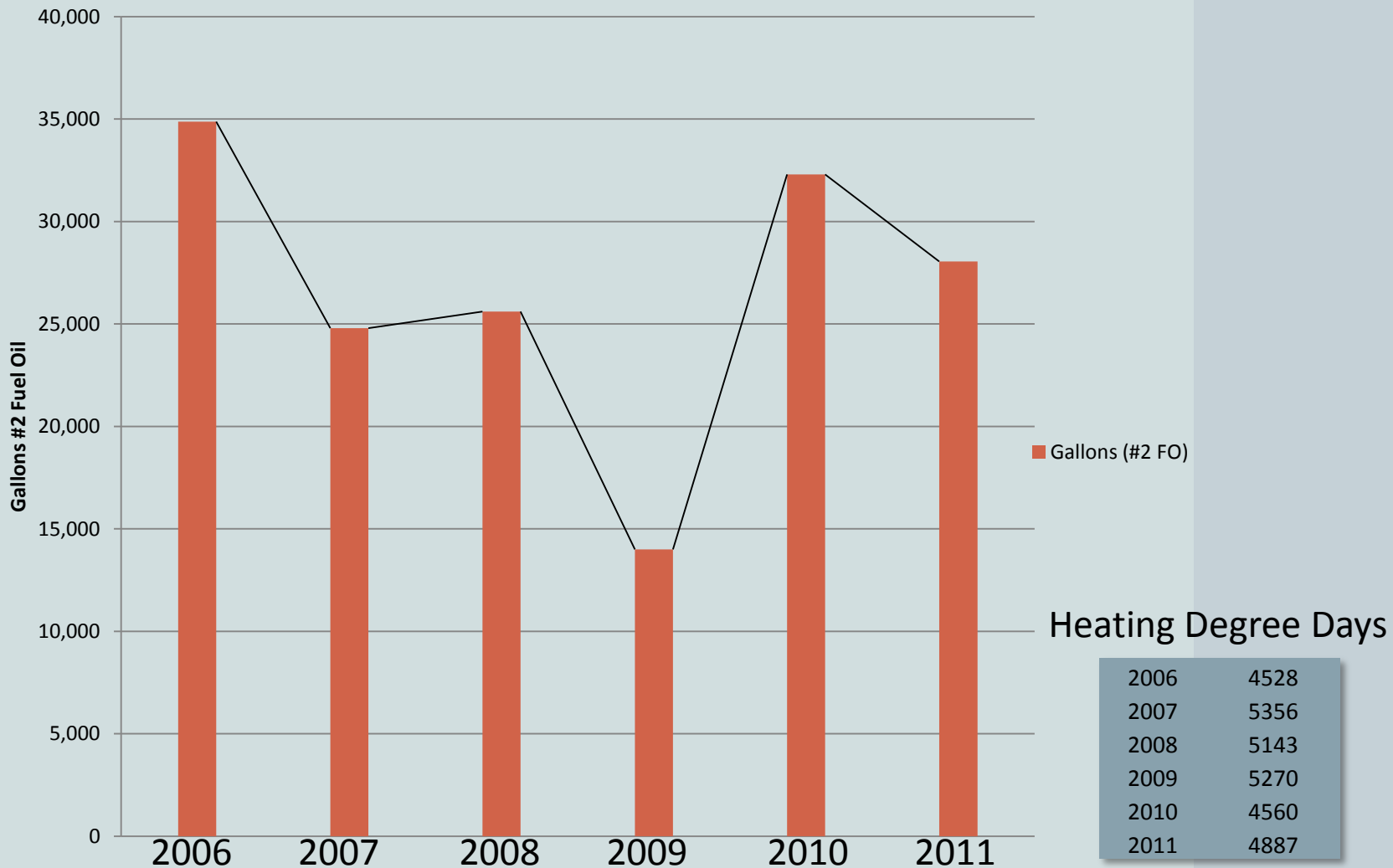
North Hampton School - Electricity Costs & Savings Over Time



Historical Water Use at NHS



North Hampton School Annual #2 Fuel Oil Consumption



Facility Metrics

Site Energy Use Summary Energy Intensity (12 month)

NHS Scores 85

“Most Efficient”

Up from a dismal 58 in 2007

“Jordan Institute Study”



STATEMENT OF ENERGY PERFORMANCE North Hampton School

Building ID: 1683042
For 12-month Period Ending: September 30, 2012¹
Date SEP becomes ineligible: N/A

Date SEP Generated: October 25, 2012

OMB No. 2060-0347

Facility
North Hampton School
Atlantic Ave
North Hampton, NH 03862

Facility Owner
N/A

Primary Contact for this Facility
N/A

Year Built: 1960
Gross Floor Area (ft²): 72,000

Energy Performance Rating² (1-100) 85

Site Energy Use Summary³

Electricity - Grid Purchase (kBtu)	1,256,032
Fuel Oil (No. 2) (kBtu)	2,948,976
Natural Gas - (kBtu) ⁴	0
Total Energy (kBtu)	4,205,008

Energy Intensity⁴

Site (kBtu/ft²/yr)	58
Source (kBtu/ft²/yr)	100

Emissions (based on site energy use)

Greenhouse Gas Emissions (MTCO ₂ e/year)	356
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Electric Distribution Utility

Public Service Co of New Hampshire [Northeast Utilities]

National Median Comparison

National Median Site EUI	96
National Median Source EUI	147
% Difference from National Median Source EUI	-32%
Building Type	K-12 School

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Stamp of Certifying Professional
Based on the conditions of time of my visit to this building the information contained in this statement is accurate.



Notes:
1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

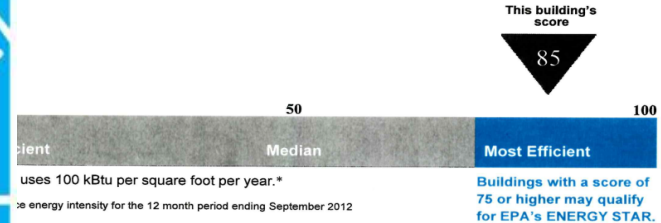
Statement of Energy Performance

2012

North Hampton School
Atlantic Ave
North Hampton, NH 03862

Portfolio Manager Building ID: 1683042

The energy use of this building has been measured and compared to other similar buildings using the Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 being the most energy efficient. For more information, visit energystar.gov/benchmark.



I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/25/2012

Energy Savings

Proactive & Reactive

Proactive Savings - Requires Thought & Action

Motion Sensing Lighting, Programmable Thermostats

Converting fluorescent lights from T-12 to T-8

Turning Things Off! (Printers, Computers, Set Backs for Weekend & Vacation Shut Down)

Building Upgrades (Kitchen, Bathrooms, ADA Doors, Windows, Science Labs)

Replacing Exit Signs With LEDs (on 24/7)

Reactive Savings – Replacing

When something breaks - The replacement item is Energy Star rated – or more energy efficient.

Computers , monitors (CRT to LCD), toilets, CFLs, Air Conditioners

Electrical Meters in Town

North Hampton Energy Committee

- Requested billing information from Town Administrator
- Reviewed list of all meters in town – highway dept. & cemetery
- Physically located meters, and determined purpose
- Determine where efforts should be focused
- Brief Town Administrator, and Select Board

Future Actions by NHEC

- Gather complete set of energy data
- Enter metrics into database to track historical usage
- Include fuel oil, propane and water
- Work with Town on future actions to reduce consumption

Meters in Town

(partial list)

- Dearborn Park
- Town Common
- Tax Collectors
- Library
- Police/Fire & Offices
- Town Hall
- Highway Dept.
- Traffic Lights
- Ornamental Lights
- Street Lights
- Recycling Center
- Cemetery

Electricity Usage Tax Collectors Office

Month	Cost	2011/2012	kWhr	2012/2013	Cost	Cash Savings
Jun	\$184	1056	-35.2	684	\$121	\$63
Jul	\$213	1356	-15.9	1140	\$172	\$41
Aug	\$275	1860	-20.6	1476	\$228	\$47
Sept	\$233	1596	-22.6	1236	\$193	\$40
Oct	\$176	1032	-12.8	900	\$146	\$30
Nov	\$143	900	-13.3	780	\$133	\$11
Dec	\$127	756	3.2	780	\$132	-\$5
Jan	\$126	792	0.1	793	\$135	-\$9
Feb	\$119	732	9.8	804	\$153	-\$34
Mar	\$127	672	1.8	684	\$117	\$10
Apr	\$120	732	4.9	768	\$126	-\$6
Totals	\$1,842	11484	-12.5	10045	\$1,656	\$186

Electricity Consumption Comparison

Location	kWhr per month	Electricity Consumption	Hours of Operation
Tax Collectors Office	893	Computers, Printers, HVAC, Dehumidifier, Lighting (Oil FHA)	~40 hours unoccupied 77% of the time
My House	760	Hot Water, Heat, Dishwasher, Clothes Dryer, Electronics, Dehumidifier, Lighting (Oil FHA)	Open 24/7
Average NH Household	619	Same as above	

Key is to turn things off, use programmable HVAC, set back thermostats

Ornamental Lights on Willow Ave



“2nd” Ornamental Light on Willow Ave.



Where did it go?

“Ornamental” Lights

Atlantic Ave, Ocean Blvd

Little Boars Head District



2 Electrical Meters	1 is missing
5 Ornamental Lights	2 are in disrepair
Only 4 of the 5 lights are illuminated	Willow Ave could be transferred to resident

Pedestrian Traffic Lights (2)

State Beach / State Highway

Beach Plum Crosswalk



Can we come up with a safer and more efficient solution?



- Flashing 24/7
- Town pays electrical and state maintains
- Not as effective since they flash 24/7
- Cost is \$450 per year (Placed in the 70's)
- Not needed - Dec/Jan/Feb
- Possible candidate for solar replacement
- Has cost the town close to \$18,000 in 40 years

Street Lights Used For Town Complex

Most Expensive Least Effective

- Library, Town Clerk/Fire, Town Hall
- Recommend re-thinking lighting for complex
- Hard wiring LED lights would significantly reduce costs, enhance night vision, provide higher quality lighting, would illuminate areas better, limit light pollution, more lights less cost.
- Be a better neighbor by reducing light trespass

Top Street Lights for Removal

Location	Pole #	Reason
Willow Ave.	4-15	Requested, has not been operating for 2 years
Willow Ave.	7-5	Has not operated since 2011, Street light (7-4A) illuminates area
Walnut Ave.	17-76	Re-engineered intersection
Elm Road	24-3	Straight away , not a safety issue
North Road	26-8	Slight curve, not a safety issue
Mill Road	11-24	Slight curve, not a safety issue
Cedar Road	27-17	Previously removed for 12 mo. / no complaints.
South Road	20-20	Serves no purpose
Exeter Road	19-49	Requested, slight curve
Exeter Road	19-60	Slight curve
Kimberly Dr.	46-5	Slight curve, development
Atlantic Ave.	2-147	Straight Away
Chapel Road	6-10	Straight Away
Chapel Road	6-34	Straight Away
Ocean Blvd	3-23A	Not necessary
Ocean Blvd	3-16	Straight Away
Appledore Ave	49-2	Requested, development
Woodland Rd	9-3	Straight Away
Woodland Rd	9-19	Straight Away