

Energy Update



Board of Selectmen Presentation

Monday, February 3, 2014

Wellesley Facilities Maintenance Department

Agenda

- Quick Building and Energy Facts
- Energy Management Overview
- Energy Use Performance
- Energy Conservation Measures
- Cost Avoidance
- SEC Pilot Program

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Quick Facts - Buildings

- Twenty (20) School and Town Buildings
- Total = 1,086,588 SF (Adjusted = 1,047,202 SF)
- Staff and Students \approx 6,310
- Percent Heated = 96% and Cooled = 48%
- Computers = 3,958 (PCs and iPADS)

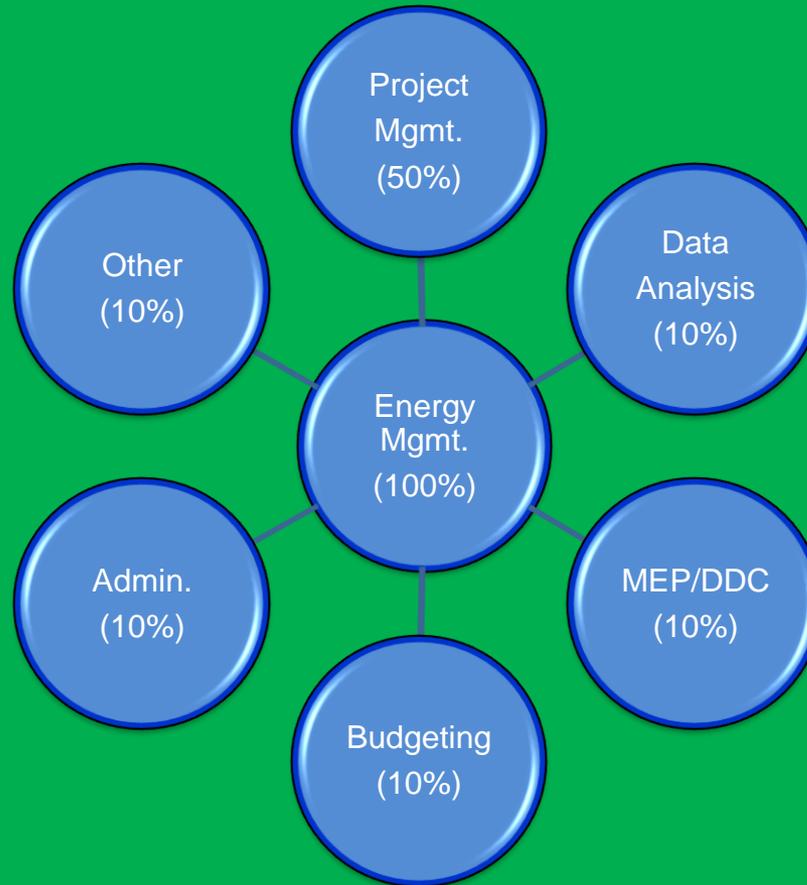
Quick Facts - Energy

- ELE Cost = \$0.125/kWh (\$3.66/100k Btus)
- NGS Cost = \$1.240 therm (\$1.240/100k Btus)
- ELE Use = 7,963,422 kWh/\$995,428
- NGS Use = 554,127 therm/\$687,117
- Total Energy Use = 82,583,896 kBtu /\$1,682,542
- EUI = 79 kBtu/SF (Min. 10, Max. 166)/\$1.61SF

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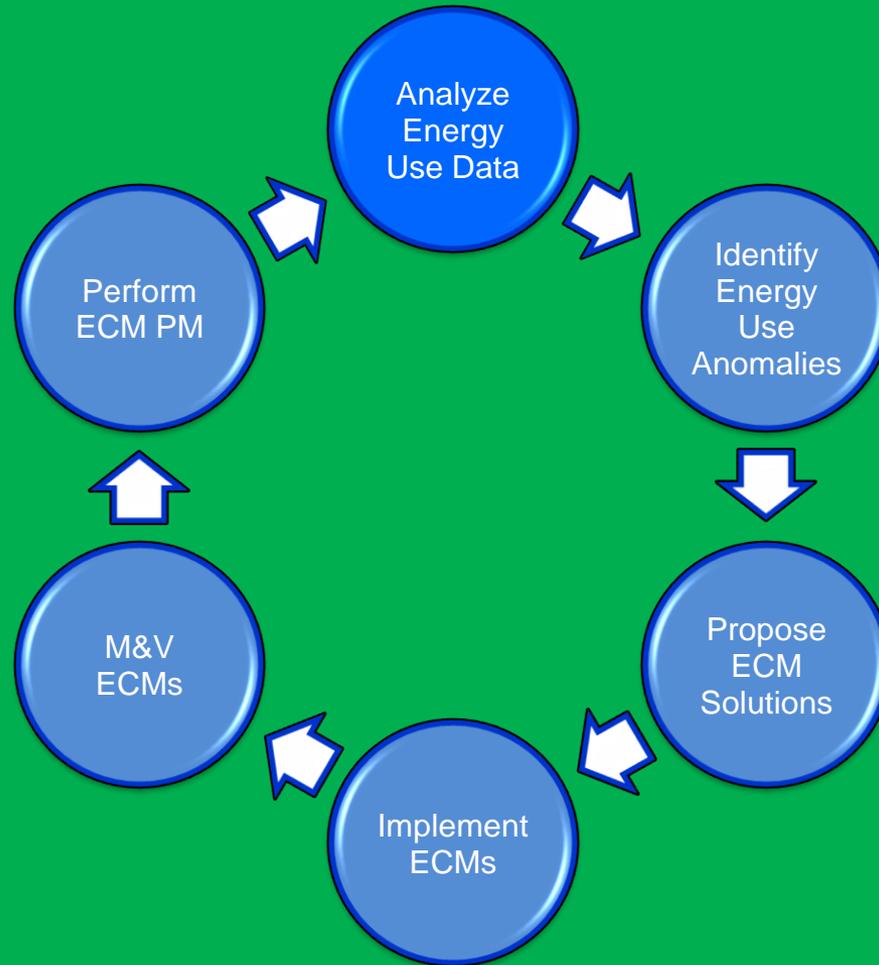
Energy Management - Activities



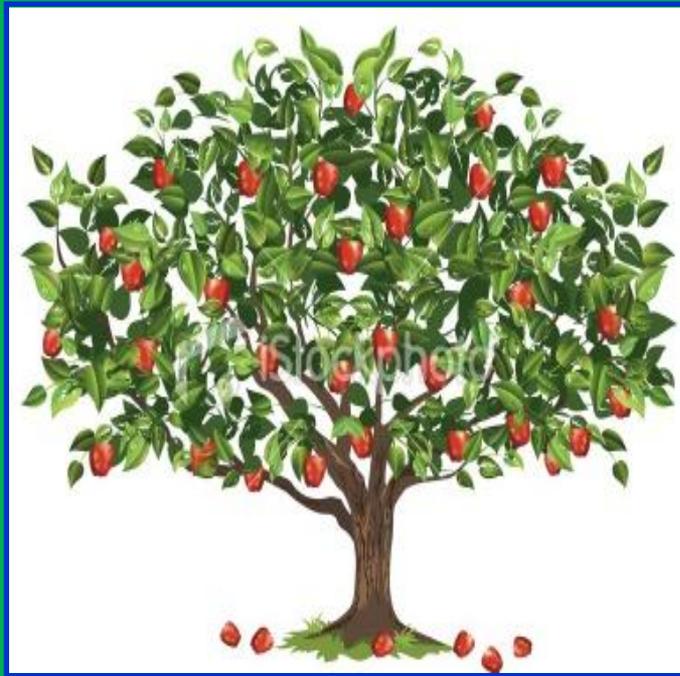
Energy Management - Scope

- Maintain EM Program
- Analyze Energy Use
- Day-to-Day and LT Energy Goals
- Sustainability and EC
- Optimize Comfort
- HVAC, Lighting, and Equipment
- Long Range Plans
- EC Project Budgets
- Energy/Project Reports
- Design and Construction
- Funding Sources
- Equipment Suppliers and Vendors
- Contact to SEC and MLP
- Purchase Utilities

Energy Management - Cycle



Energy Management - Plan



ECM Opportunity Tree

5+ Year SP ECMs
(HVAC)

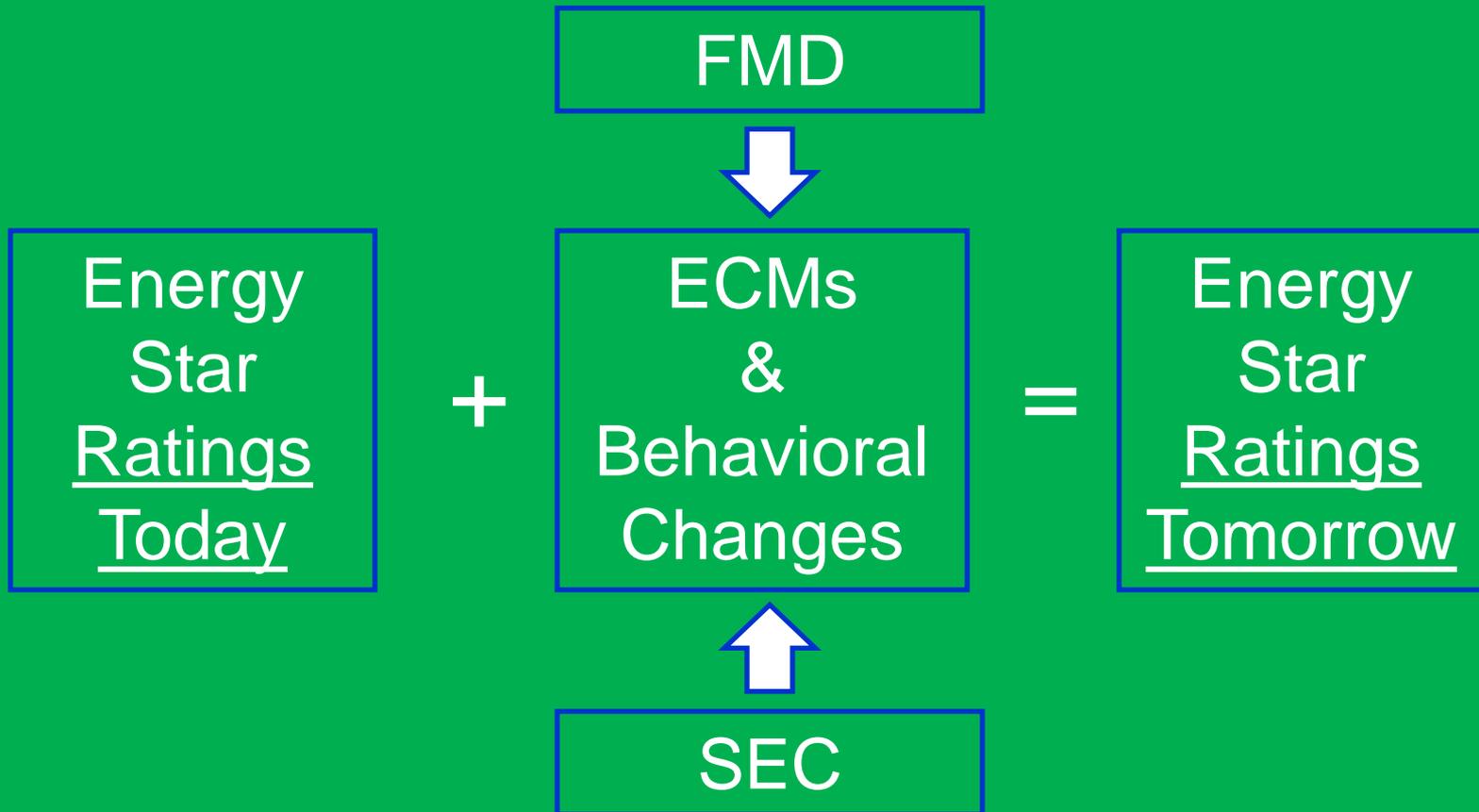
3-5 Year SP ECMs
(Metasys & Int. Lighting)

1-3 Year SP ECMs
(Maint. & Ext. Lighting)

Criteria for Selecting and Prioritizing ECM Projects

- 1) Major Capital Project Planned;
- 2) Efficiency of Existing Equipment;
- 3) Use/Hours of Operation; and
- 4) Simple Payback/LCCA.

Energy Management - Equation



This will help answer the question: “Are we making progress” for Building Managers and Principals.

Energy Management – Tools Overview



UtilityDirect “... is [a web-based] on-demand utility bill

management and reporting tool that audits, tracks, and analyzes utility consumption and costs.”



Portfolio Manager “... is the industry-leading, no-cost online tool

that lets you benchmark, track, and manage energy and water consumption and greenhouse gas emissions against national averages.”



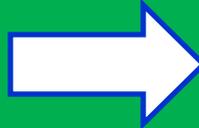
Metasys “... is the most comprehensive [web-based] building

management system ... [that] ... provides the essential instrumentation and control you need to coordinate, regulate and manage your building systems.”

Energy Management – Tools

UtilityDirect

UtilityDirect Natural Gas Use Worksheet [therm]				
Mo./Yr.	Middle School	Hunnewell	High School	Total
Jul-12	253	3	58	314
Aug-12	317	7	109	433
Sep-12	426	114	1,157	1,697
Oct-12	7,088	2,698	3,216	13,002
Nov-12	23,051	6,376	7,349	36,776
Dec-12	30,113	9,341	9,666	49,120
Jan-13	37,760	8,050	9,718	55,528
Feb-13	20,870	8,143	9,201	38,214
Mar-13	22,462	6,524	8,392	37,378
Apr-13	10,048	2,535	4,423	17,006
May-13	1,099	117	1,215	2,431
Jun-13	437	19	42	498
Total	153,924	43,927	54,546	252,397



Enter Bills						
Bill Account Number: 5071821704-WMS-Ngrid				Year: 2013		
Provider: Ngrid				Utility Type: Natural Gas		
Location: Town of Wellesley Schools - UD				Building: Middle School - UD		
Month	Start Date	End Date	Days	Est.	Use (Therms)	Cost
Jul	07/01/2012	08/01/2012	31	<input type="checkbox"/>	253.00	315.00
Aug	08/01/2012	09/01/2012	31	<input type="checkbox"/>	317.00	395.00
Sep	09/01/2012	10/01/2012	30	<input type="checkbox"/>	426.00	531.00
Oct	10/01/2012	11/01/2012	31	<input type="checkbox"/>	7088.00	8837.00
Nov	11/01/2012	12/01/2012	30	<input type="checkbox"/>	23051.00	28738.00
Dec	12/01/2012	01/01/2013	31	<input type="checkbox"/>	30113.00	37542.00
Jan	01/01/2013	02/01/2013	31	<input type="checkbox"/>	37760.00	47075.00
Feb	02/01/2013	03/01/2013	28	<input type="checkbox"/>	20870.00	26019.00
Mar	03/01/2013	04/01/2013	31	<input type="checkbox"/>	22462.00	28003.00
Apr	04/01/2013	05/01/2013	30	<input type="checkbox"/>	10048.00	12527.00
May	05/01/2013	06/01/2013	31	<input type="checkbox"/>	1099.00	1370.00
Jun	06/01/2013	07/01/2013	30	<input type="checkbox"/>	437.00	545.00
Totals			365		153924.00	191897.00

Save/Previous Year Save Save/Next Year Save/Next Account

Energy Management – Tools Portfolio Manager

Input Includes Energy and Building Use Data

Output Score Only as Accurate as Input Data

Middle School Example
Use and Cost Worksheet for Electricity (ELE)

Total ELE [kWh]	Start Date	End Date	Normal Use [kWh]	Green Use [kWh]	Cost [\$]
111,960	01/01/13	01/31/13	109,305	2,655	13,995
110,940	01/31/13	02/28/13	108,016	2,924	13,830
101,400	02/28/13	03/31/13	98,896	2,405	12,675
101,840	03/31/13	04/30/13	99,229	2,411	12,705
104,840	04/30/13	05/31/13	102,158	2,482	13,080
115,200	05/31/13	06/30/13	112,468	2,732	14,400
98,880	06/30/13	07/31/13	96,535	2,345	12,360
93,720	07/31/13	08/31/13	91,497	2,223	11,715
111,240	08/31/13	09/30/13	108,602	2,638	13,905
102,840	09/30/13	10/31/13	100,401	2,439	12,855
116,280	10/31/13	11/30/13	113,522	2,758	14,535
102,800	11/30/13	12/31/13	100,167	2,433	12,825
1,271,040			1,240,895	30,145	158,880

Use and Cost Worksheet for Natural Gas (NGS)

Total NGS [therm]	Start Date	End Date	Use [therm]	Cost [\$]
37,760	01/01/13	01/31/13	37,760	47,087
20,870	01/31/13	02/28/13	20,870	26,025
22,462	02/28/13	03/31/13	22,462	28,010
10,048	03/31/13	04/30/13	10,048	12,530
1,099	04/30/13	05/31/13	1,099	1,370
437	05/31/13	06/30/13	437	546
-	06/30/13	07/31/13	-	-
-	07/31/13	08/31/13	-	-
10	08/31/13	09/30/13	10	12
-	09/30/13	10/31/13	-	-
7,250	10/31/13	11/30/13	7,250	9,041
22,495	11/30/13	12/31/13	22,495	28,040
122,422			122,422	152,660

Use and Cost Worksheet for Water (WTR)

Total WTR [ccf]	Start Date	End Date	Use [ccf]	Cost [\$]
77	01/01/13	01/31/13	77	308
91	01/31/13	02/28/13	91	364
93	02/28/13	03/31/13	93	372
92	03/31/13	04/30/13	92	368
72	04/30/13	05/31/13	72	288
98	05/31/13	06/30/13	98	392
43	06/30/13	07/31/13	43	172
30	07/31/13	08/31/13	30	120
38	08/31/13	09/30/13	38	152
72	09/30/13	10/31/13	72	288
88	10/31/13	11/30/13	88	352
95	11/30/13	12/31/13	95	380
889			889	3,596

Annotations:
 - YELLOW data from "Energy Use Worksheet"
 - ORANGE data to be entered into Portfolio Manager.
 - GREEN data from "Green Power Worksheet" reference.
 - BLUE data for reference only.



ENERGY STAR® Scorecard

LEARN MORE AT energystar.gov

57

Middle School

Primary Function: K-12 School
 Gross Floor Area (ft²): 228,700
 Built: 1959

Property Address:
 Middle School
 50 Kingsbury Street
 Wellesley, Massachusetts 02481

For Year Ending: December 31, 2013
 Date Generated: January 19, 2014

ENERGY STAR® Score

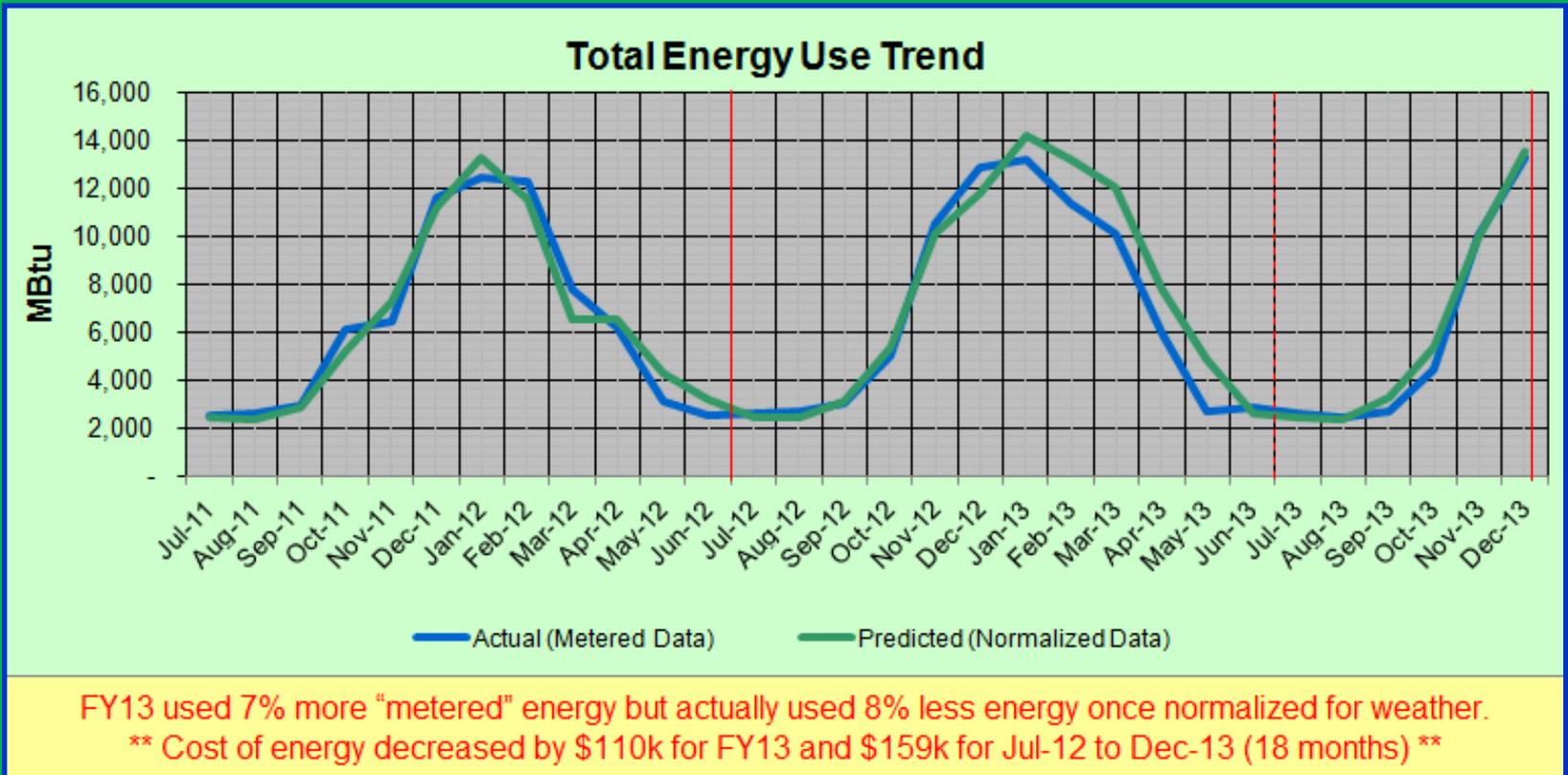
For the year ending in December 2013, this building used 114.3 (kBtu/ft²) on a source energy basis. The Environmental Protection Agency's (EPA's) ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

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Energy Use Performance – Actual v. Predicted Trend



Energy Use Performance - CY12 Energy Star Scores

FY12 Energy Use and CY12 Energy Star Scores Worksheet										
Building	GSF	Metered Usage		kBtu/GSF/Year			% of NGS and ELE to Total		Energy Star Scores	
		NGS [therm]	ELE [kWh]	NGS	ELE	Total	NGS	ELE	CY12 Score	CY11 Score
PAWS	9,072	2,913	59,800	32	22	55	58.8%	41.2%	93	NA
High School	280,091	60,335	2,301,760	22	28	50	43.4%	56.6%	88	NA
Town Hall	32,240	8,572	290,520	27	31	57	46.4%	53.6%	86	NA
Library - Main	70,179	12,882	912,320	18	44	63	29.3%	70.7%	77	NA
Upham	36,500	16,778	186,120	46	17	63	72.5%	27.5%	71	NA
Fire Station - Central	6,250	3,876	38,960	62	21	83	74.5%	25.5%	70	NA
Fire Station - Main	22,300	14,031	214,920	63	33	96	65.7%	34.3%	65	NA
Hardy	45,900	28,587	184,080	62	14	76	82.0%	18.0%	58	NA
Sprague	72,700	42,447	750,080	58	35	94	62.4%	37.6%	56	NA
Middle School	228,700	132,258	1,359,360	58	20	78	74.0%	26.0%	42	NA
Warren	26,151	8,570	249,200	33	33	65	50.2%	49.8%	40	NA
Police Station	21,200	17,624	452,160	83	73	156	53.3%	46.7%	29	NA
Hunnewell	36,400	34,098	156,307	94	15	108	86.5%	13.5%	28	NA
Bates	52,750	36,252	275,040	69	18	87	79.4%	20.6%	26	NA
Fiske	45,350	34,366	270,200	76	20	96	78.8%	21.2%	23	NA
Schofield	43,500	26,535	388,640	61	30	91	66.7%	33.3%	21	NA
Fieldhouse	5,670	4,370	18,780	77	11	88	87.2%	12.8%	NA	NA
Library - Hills	7,000	2,124	13,151	30	6	37	82.6%	17.4%	NA	NA
Library - Fells	1,872	-	7,365	-	13	13	0.0%	100.0%	NA	NA
Bathhouse	3,377	-	9,302	-	9	9	0.0%	100.0%	NA	NA
Totals	1,047,202	486,618	8,138,065	46	27	73	63.7%	36.3%	55	NA

Energy Use Performance - CY13 Energy Star Scores

FY13 Energy Use and CY13 Energy Star Scores Worksheet										
Building	GSF	Metered Usage		kBtu/GSF/Year			% of NGS and ELE to Total		Energy Star Scores	
		NGS [therm]	ELE [kWh]	NGS	ELE	Total	NGS	ELE	CY13 Score	CY12 Score
PAWS	9,072	3,556	57,000	39	21	61	64.6%	35.4%	TBD	93
High School	280,091	54,546	2,234,240	19	27	47	41.7%	58.3%	94	88
Town Hall	32,240	11,719	274,320	36	29	65	55.6%	44.4%	TBD	86
Library - Main	70,179	16,189	879,280	23	43	66	35.0%	65.0%	TBD	77
Upham	36,500	19,672	188,400	54	18	72	75.4%	24.6%	TBD	71
Fire Station - Central	6,250	4,470	39,065	72	21	93	77.0%	23.0%	TBD	70
Fire Station - Main	22,300	16,121	215,640	72	33	105	68.7%	31.3%	TBD	65
Hardy	45,900	34,142	190,080	74	14	89	84.0%	16.0%	70	58
Sprague	72,700	51,046	720,960	70	34	104	67.5%	32.5%	67	56
Middle School	228,700	153,924	1,294,440	67	19	87	77.7%	22.3%	57	42
Warren	26,151	10,173	255,360	39	33	72	53.9%	46.1%	TBD	40
Police Station	21,200	19,237	464,960	91	75	166	54.8%	45.2%	TBD	29
Hunnewell	36,400	43,927	153,521	121	14	135	89.3%	10.7%	37	28
Bates	52,750	43,994	288,240	83	19	102	81.7%	18.3%	27	26
Fiske	45,350	37,787	279,880	83	21	104	79.8%	20.2%	TBD	23
Schofield	43,500	27,000	376,960	62	30	92	67.7%	32.3%	TBD	21
Fieldhouse	5,670	4,470	20,323	79	12	91	86.6%	13.4%	NA	NA
Library - Hills	7,000	2,154	13,620	31	7	37	82.3%	17.7%	NA	NA
Library - Fells	1,872	-	7,284	-	13	13	0.0%	100.0%	NA	NA
Bathhouse	3,377	-	9,849	-	10	10	0.0%	100.0%	NA	NA
Totals	1,047,202	554,127	7,963,422	53	26	79	67.1%	32.9%	59	55

High School was fine tuned during warranty period. Middle School had Metasys upgrades. MS and Sprague had temperature setpoints adjusted. MS had boilers upgraded. Sprague and Bates had parking lot and security light LEDs installed. Hardy and Hunnewell had HVAC Maintenance work completed.

Energy Use Performance – Weather Data

Summary Weather Data for Boston (Logan Airport)				
FY12 v. FY13				
Month/Year	OAT	HDD	CDD	RH
Jul-11 to Jun-12	56	4,211	1,015	60
Jul-12 to Jun-13	52	5,362	920	64
Variation [%]	-7%	21%	-10%	6%
FY13 had a much colder winter and moderately cooler summer than FY12. Therefore, we used much more natural gas for heating in FY13 (554,127 therm) than we did in FY12 (486,618 therm). On the other hand, we used slightly less electricity for cooling in FY13 (7,963,422 kWh) than we did in FY12 (8,138,065 kWh).				
Dec-12 v. Dec-13				
Dec-12	38	817	-	72
Dec-13	33	973	-	69
Variation [%]	-15%	16%	-	-4%
Dec-13 was much colder than Dec-12 and, therefore, used much more natural gas for heating.				
NOAA Website to Calculate/Convert Weather Statistics http://www.erh.noaa.gov/box/calculate2.html				

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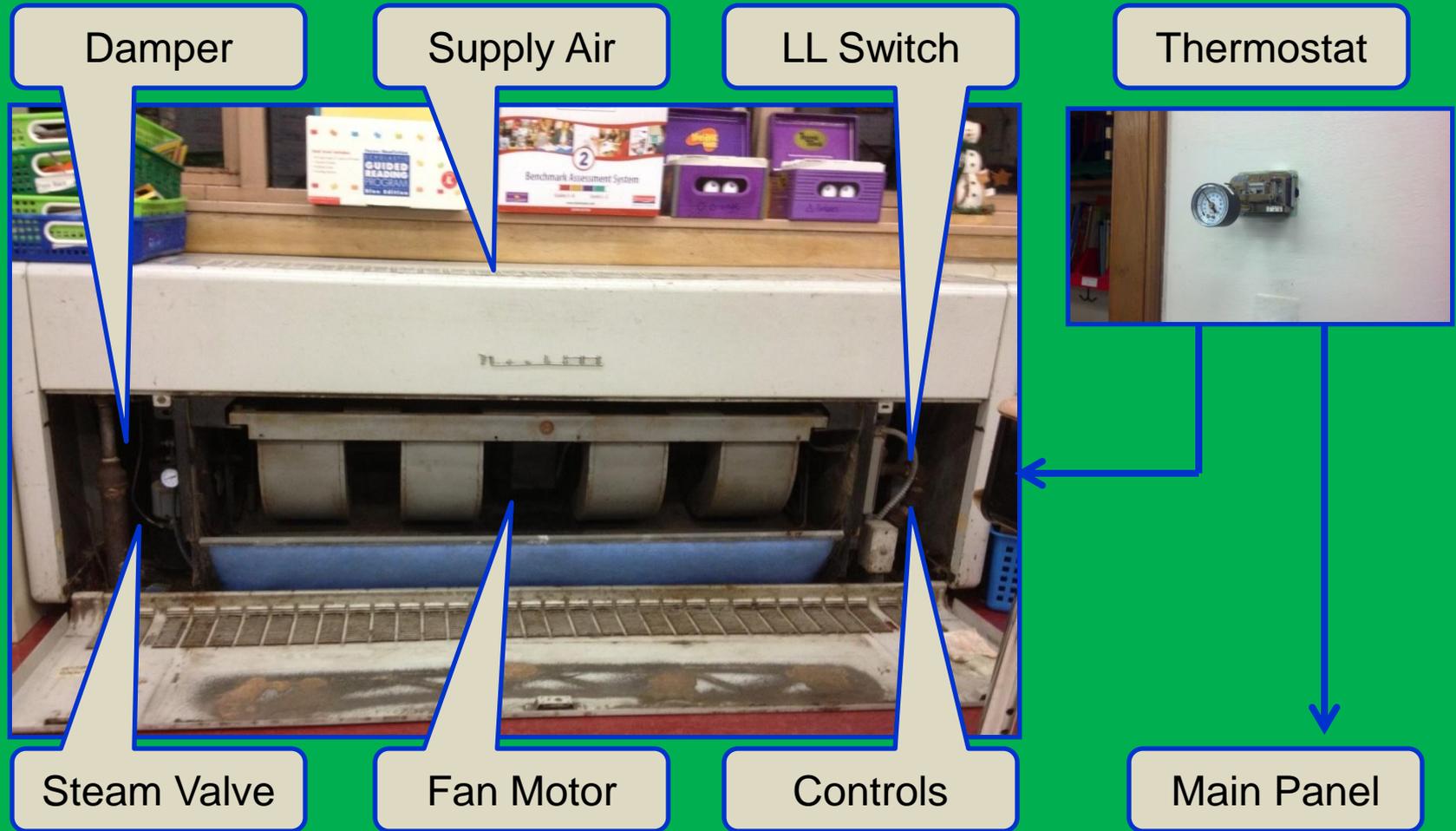
Energy Conservation Measures – HVAC Maintenance Project

- \$320,860 (570,872 SF/\$320,860 = \$0.56 SF) HVAC Maintenance Project at Hunnewell, Hardy, Upham, Schofield, Fiske, PAWS, Sprague, Bates, and MS
- Scope includes inspection, repair, and calibration of HVAC systems (Unit Ventilators, Radiators, AHUs, Pneumatic/DDC Controls, Other)
- Completed Hunnewell, Hardy, and Upham. Started Fiske. Will complete Fiske by 2/7. Will then move to PAWS, Sprague, Bates, and Middle School

Energy Conservation Measures – HVAC Maintenance Project



Energy Conservation Measures – HVAC Maintenance Project



Energy Conservation Measures – HVAC Maintenance Project



Defective Outside Air Damper Actuator Being Repaired

Energy Conservation Measures – HVAC Maintenance Project

Town of Wellesley Facilities Maintenance Department
HVAC Maintenance Project
Daily Service Report

Date: 9/3/13	Time Start: 6AM	Time Stop: 2:30	Service Report No.:	
Building: Hunnewell	Room No(s):			
Outside Temperature:	Obstacles (e.g., access):			
Description of Work: Continued working on 95 wing Replaced Freeze stat in library unit #3 on Rightside unit now operational. Replaced main air under school to library units. Replacing leak. Now all units and equipment in that zone shutting off at night time clock set 6AM to 6PM Mon-Fri OFF Sat. Sun. Nite setting 55° Day 70° Began working on nite operation for rest of Building				
Recommendations (Outstanding deficiencies not addressed): 95 wing Classroom units and Library units Do not have steam control valves This causes overheating will watch temps as outside temp drops.				
Parts and supplies used or equipment rented: 1-1341510 Freeze stat 4 mg48 mounting clips 4-120v EPS.				
Labor (Hours only, Not material cost)				
Hours	Technicians			Total
	Name: Jim	Name: Matt	Name:	
Regular	~8 HRS	8 HRS		16 HRS
Overtime				
Total				
Contractor Signature: <i>James Deak</i>		FMD Signature: <i>J.P. Tom</i>		

Contact Allen Hebert with any questions at 781-446-6210 ext. 5633 or ahebert@wellesleyma.gov

- Unit Ventilators Not Operating (Not Enough Pneumatic Air Pressure)
- Unit Ventilators Operating Continuously (Low-Limit Switches Stuck Closed)
- Thermostats Not Calibrated to UV Output (Set for 70 F but Supplying 80 F)
- HW/Steam Valves Not Operating or Leaking (Coils Too Cold/Hot)
- Outside Air Dampers Stuck Open or Closed (Not Enough/Too Much OA)
- NO NIGHT SETBACK!
(Always mid-70 F+ Day/Night)

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Cost Avoidance - ECMs

Electricity [kWh]					
Mo.-Yr.	Actual Use	Predicted Use	Actual Use		Reasons Why - ECMs Installed
Dec-11	123,240	112,833	-9.22%	LESS efficient	NA
Dec-12	112,440	112,833	0.35%	MORE efficient	T8's No. & So. Wings (40% Bldg.)
Dec-13	102,600	112,833	9.07%	MORE efficient	T8's Main Building (60% Bldg.)
Net Three-Year Change [%]			18.29%	MORE efficient	
Natural Gas [therm]					
Mo.-Yr.	Actual Use	Predicted Use	Actual Use		Reasons Why - ECMs Installed
Dec-11	30,000	23,932	-25.36%	LESS efficient	NA
Dec-12	30,113	25,587	-17.69%	LESS efficient	Boiler Improvements (100% Bldg.)
Dec-13	29,482	30,650	3.81%	MORE efficient	Temperature Setpoints (100% Bldg.)
Net Three-Year Change [%]			29.17%	MORE efficient	

Cost Avoidance - Behavior

Temperature Setpoint Analysis Using High School eQUEST Model				
Energy Use Savings (Per Andelman and Lelek)				
Utility	Temperature Setpoint			
	68°F	70°F	72°F	
ELE [kWh]	2,210,327	2,210,152	2,212,056	
NGS [therm]	40,950	45,219	49,957	
Cost Savings				
ELE [kWh]	\$ 276,291	\$ 276,269	\$ 276,507	
NGS [therm]	\$ 50,778	\$ 56,072	\$ 61,947	
Total	\$ 327,069	\$ 332,341	\$ 338,454	
Analysis				
Total Cost Savings by Decreasing Setpoint by 4° at High School			\$	11,385
Total Cost Savings by Decreasing Setpoint by 4° for ALL Buildings			\$	71,546
<p>Actual space temperatures are generally in the mid-70s range but should be in the 68°F range. ** Reducing setpoints/settings by 4°F would reduce energy costs by over \$70,000/year! **</p>				
Average Utility Rates				
ELE [\$/kWh]				\$ 0.125
NGS [\$/therm]				\$ 1.240

Cost Avoidance - Procurement

Example of Daily NYMEX Settlement Prices

Month	Open	High	Low	Last	Change	Settle	Est. Volume
FEB 14	5.153	5.442	4.828	-	-.335	4.847	147,682
MAR 14	4.958	5.199	4.650	-	-.324	4.674	243,735
APR 14	4.410	4.532	4.277	-	-.135	4.286	73,925
MAY 14	4.326	4.430	4.226	-	-.092	4.234	38,509
JUN 14	4.311	4.439	4.243	-	-.087	4.251	14,654
JULY 14	4.415	4.446	4.267	-	-.084	4.273	9,567
AUG 14	4.390	4.442	4.266	-	-.083	4.272	4,132
SEP 14	4.380	4.450	4.245	-	-.087	4.251	3,775
OCT 14	4.365	4.475	4.256	-	-.086	4.265	18,365
NOV 14	4.430	4.550	4.305	-	-.080	4.310	5,496
DEC 14	4.520	4.683	4.415	-	-.069	4.420	6,976
JAN 15	4.689	4.689	4.510	-	-.068	4.512	8,823
FEB 15	4.505	4.530	4.472	-	-.052	4.466	745

Daily Settlement Prices Vary Slightly

Example of Daily Basis Settlement Prices

Feb 2014		Mar 2014		Feb14-Mar14		Apr14-Oct14		Nov14-Mar15		Apr15-Oct15		Nov15	
Bid	Offer	Bid	Offer	Bid	Offer	Bid	Offer	Bid	Offer	Bid	Offer	Bid	Offer
26.0000	30.0000	5.5000	5.9000			0.3500	0.5000	8.0100	8.7990	0.2500	0.4100		

Daily Settlement Prices Vary Substantially

Cost Avoidance - Procurement

Natural Gas Price Worksheet						
As of 10/09/13						
Month Year	Est. Use [DTH]	NGS Price [\$/DTH]	Basis Price [\$/DTH]	Dist. Price [\$/DTH]	Total Price	
					[\$/DTH]	[\$]
Jul14	348	3.950	0.130	12.095	16.175	5,629
Aug14	323	3.966	0.130	6.526	10.622	3,431
Sep14	346	3.964	0.130	3.721	7.815	2,704
Oct14	516	3.986	0.130	3.731	7.847	4,049
Nov14	3,097	4.062	4.100	5.013	13.175	40,803
Dec14	8,849	4.216	4.100	4.991	13.307	117,756
Jan15	11,244	4.298	4.100	4.841	13.239	148,857
Feb15	11,543	4.273	4.100	4.843	13.216	152,556
Mar15	9,634	4.220	4.100	4.853	13.173	126,911
Apr15	8,508	4.023	0.130	4.459	8.612	73,275
May15	4,177	4.036	0.130	4.807	8.973	37,480
Jun15	743	4.061	0.130	4.807	8.998	6,685
Total/Avg.	59,328	\$ 4.187	\$ 3.099	\$ 4.853	\$12.138	\$ 720,137
Weighted Average [\$/DTH] Supply						\$ 7.285
Weighted Average [\$/DTH] Supply and Distribution						\$ 12.138

- Tracking NGS Supply Price (NGS + Basis) since early Fall '13
- Price continued to drop then bottomed-out in early October
- Locked-in NGS and Basis Price at \$7.285/ DTH on 10/09/13
- Price has been steadily increasing ever since

Cost Avoidance - Procurement

Natural Gas Price Worksheet						
As of 01/22/14						
Month Year	Est. Use [DTH]	NGS Price [\$/DTH]	Basis Price [\$/DTH]	Dist. Price [\$/DTH]	Total Price	
					[\$/DTH]	[\$]
Jul14	348	4.215	0.550	12.095	16.860	5,867
Aug14	323	4.223	0.550	6.526	11.299	3,650
Sep14	346	4.209	0.550	3.721	8.480	2,934
Oct14	516	4.222	0.550	3.731	8.503	4,387
Nov14	3,097	4.261	7.500	5.013	16.774	51,949
Dec14	8,849	4.360	7.500	4.991	16.851	149,117
Jan15	11,244	4.440	7.500	4.841	16.781	188,683
Feb15	11,543	4.403	7.500	4.843	16.746	193,303
Mar15	9,634	4.331	7.500	4.853	16.684	160,736
Apr15	8,508	4.033	0.300	4.459	8.792	74,806
May15	4,177	4.003	0.300	4.807	9.110	38,052
Jun15	743	4.020	0.300	4.807	9.127	6,781
Total/Avg.	59,328	\$ 4.294	\$ 5.691	\$ 4.853	\$14.837	\$ 880,267
Weighted Average [\$/DTH]: Supply						\$ 9.984
Weighted Average [\$/DTH]: Supply and Distribution						\$ 14.837

- NGS + Basis + Distribution = Total Natural Gas Price
- NGS +2%, Basis +84%, Distribution Unch., & Total +22%
- Total Cost Avoidance = ?

Cost Avoidance - Procurement

\$160,000

Agenda

- Quick Building and Energy Facts
- Energy Management Overview
- Energy Use Performance
- Energy Conservation Measures
- Cost Avoidance
- SEC Pilot Program

SEC Pilot Program

- Met with MS Principal Mark Ito: *See-The-Light* kit
- Possible “Behavioral” pilot program at MS
 - MS is largest utility user
 - MS has “Green Team” and is interested
- Will meet with SEC and MS to layout plan
- Draft plan by early March but kick-off in Sept. 2014

Thank You!



Questions?