City of Philadelphia
DEPARTMENTAL ENERGY EFFICIENCY INCENTIVE PILOT PROGRAM

Fire, Health, Parks and Recreation, Police, and Public Property

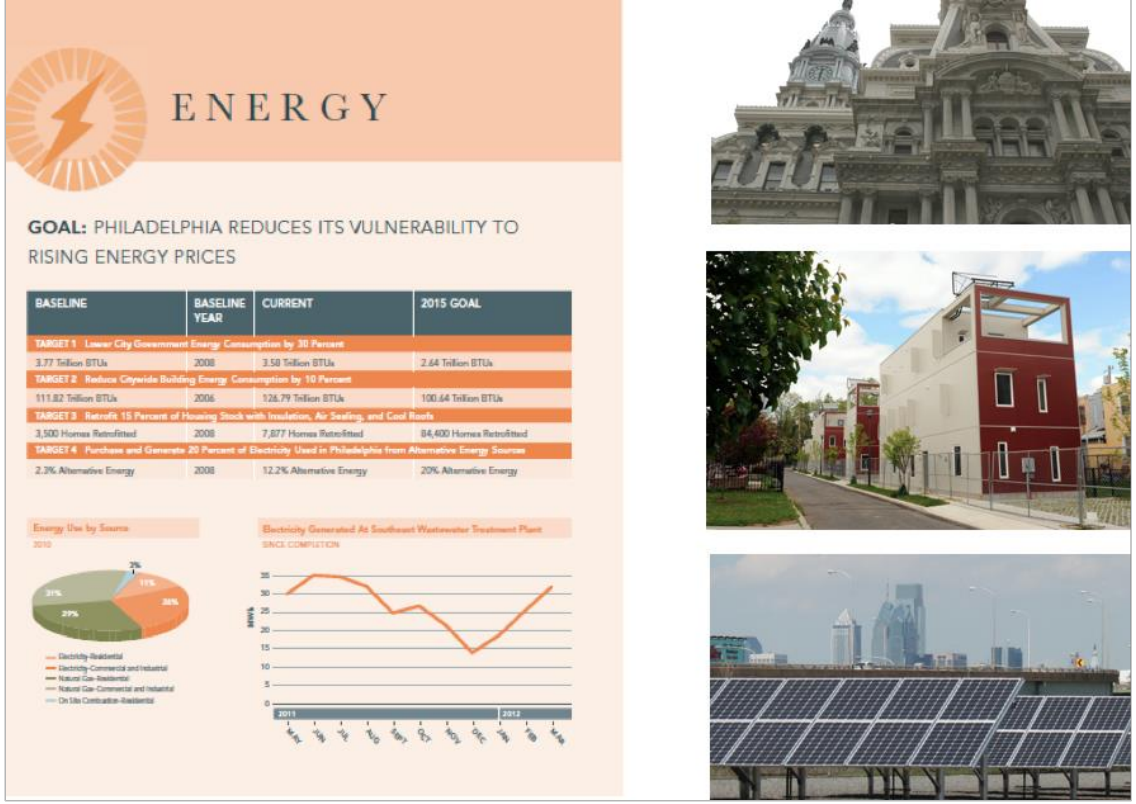
Wednesday, June 26, 2013 at 11:00 AM
1401 JFK Blvd. Municipal Services Building

AGENDA

GOAL

Introduce a few departments to this program, its mechanics, and obtain departmental feedback and suggestions

1. Introductions and Background
2. Program Concept
3. Pilot Program Basics
4. Scheduling
5. Performance
6. Tools and Support



TARGET 1 Lower City Government Energy Consumption by 30 Percent			
3.77 Trillion BTUs	2008	3.58 Trillion BTUs	2.64 Trillion BTUs
TARGET 2 Reduce Citywide Building Energy Consumption by 10 Percent			
111.82 Trillion BTUs	2006	126.79 Trillion BTUs	100.64 Trillion BTUs
TARGET 3 Retrofit 15 Percent of Housing Stock with Insulation, Air Sealing, and Cool Roofs			
3,500 Homes Retrofitted	2008	7,877 Homes Retrofitted	84,400 Homes Retrofitted
TARGET 4 Purchase and Generate 20 Percent of Electricity Used in Philadelphia from Alternative Energy Sources			
2.3% Alternative Energy	2008	12.2% Alternative Energy	20% Alternative Energy

FTI CONSULTING

ENERGY

GOAL: PHILADELPHIA REDUCES ITS VULNERABILITY TO RISING ENERGY PRICES

SUSTAINABLE STANFORD

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Water | Investing In Sustainability | Sustainable IT | Landscape & Gr

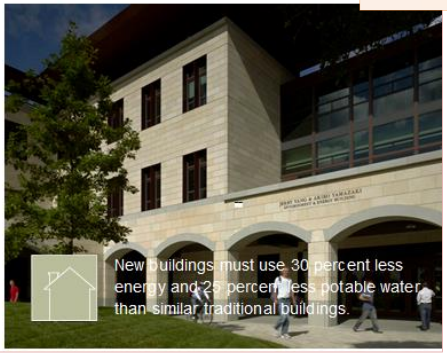
BUILDINGS

- BUILDINGS
- Green Buildings
- Guidelines
- Sustainable Demolition

Buildings represent one of our greatest sustainability opportunities and challenges. To evolve as a center of learning, pursue world-changing research and respond to pressing environmental concerns, Stanford designs and creates buildings that use resources wisely and provide healthy, productive environments.

In taking on this challenge, we're inspired by Stanford's original master plan designer—Frederick Law Olmsted, the visionary founder of American landscape architecture—and directed by Stanford's Guidelines for Sustainable Buildings. Olmsted envisioned a resource-conserving campus that would respond to its climate and context to achieve beauty and functionality. The guidelines, which new building projects are expected to follow, update that vision for today's context.

Ensuring that new buildings are as efficient as possible is essential to reducing campus greenhouse gas emissions. Energy generation for heating, cooling and electricity in buildings accounts for 85 percent of our carbon dioxide emissions—and



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NYC Citywide Administrative Services | Energy Management

GO

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  - Managing City Energy Accounts
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Managing City Energy Accounts

Energy efficiency retrofits and operational and maintenance improvements made by building managers and users are working to lower Citywide energy consumption! Agencies used about 3% less energy in June 2012 compared to June 2011, even adjusting for weather.

NYC Municipal Energy Use

Energy use for all New York City agencies and public institutions is tracked centrally by DCAS Energy Management. Agencies are provided with monthly reports, and agency energy team members can use DEM's web-based system, Energy Cost Control and Conservation (EC3), to access data to track and analyze their agency's energy use. The reports below show energy use and GHG emissions Citywide and by agency. Additional detailed reports are available by facility and account, for multiple years.

The Core Report shows Citywide energy use, greenhouse gas emissions, and cost by month with detail by energy type on the second page.

The Energy Change Report shows total energy use for current month and year-to-date; check how your agency is doing compared to the City as a whole.

HARVARD Campus Services

SERVICES | DEPARTMENTS | TOOLS | SEA

Energy & Utilities

Overview | Service

Energy Witness

Track consumption, invoices, energy trends and more.

PROGRAM GOALS & CONCEPT

- REACH Target 1 of GREENWORKS PHILADELPHIA: Lower City government energy consumption by 30% by 2015

- REDUCE wasteful energy use
- RAISE awareness about behaviors that help reduce that waste

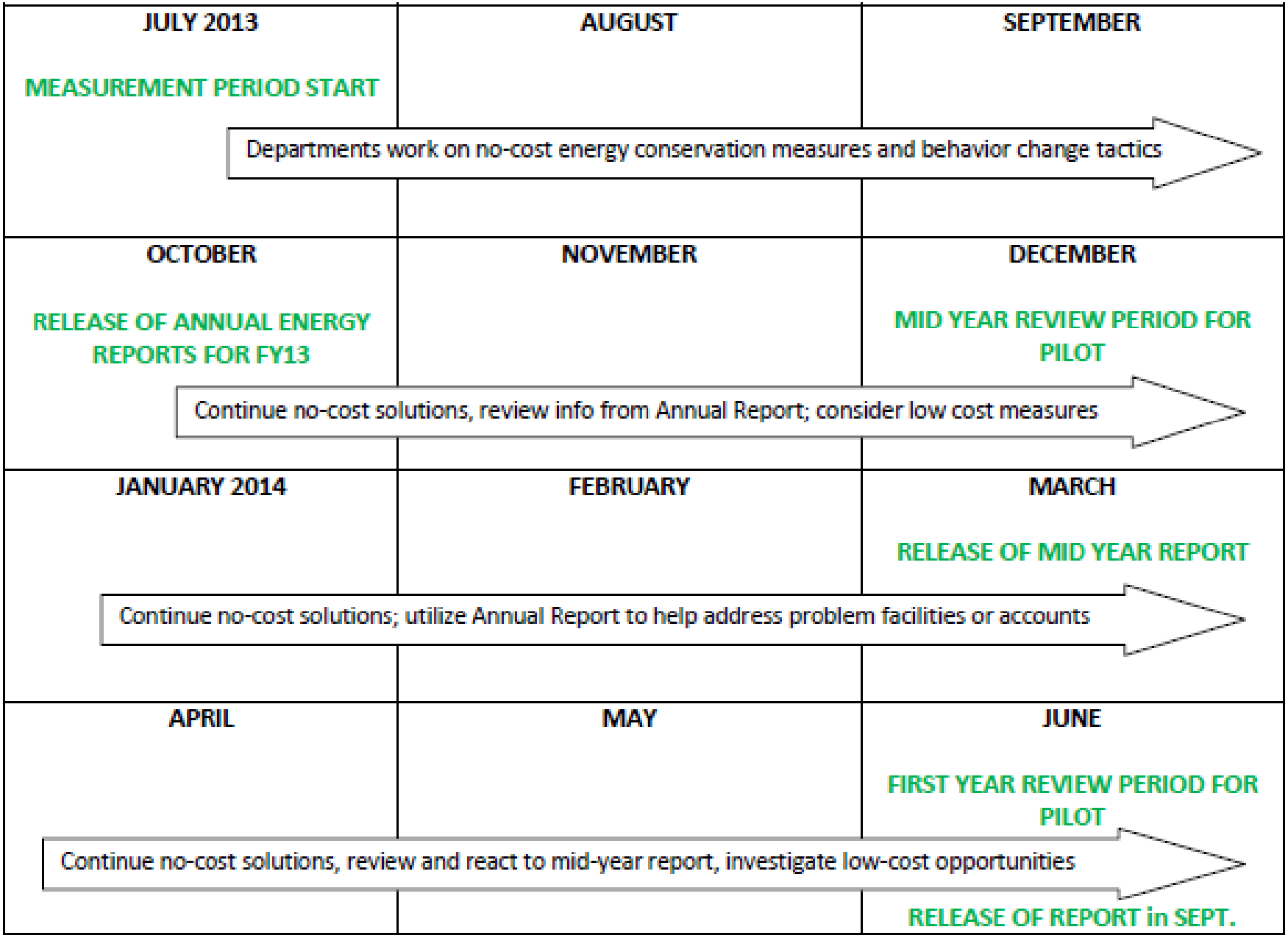
- RECOGNIZE effective behaviors and measures and share across departments
- REWARD departments for valuing energy conservation, creating a financial link to good energy-related practices
- CREATE a culture in our departments that prioritizes energy more

PILOT PROGRAM BASICS

Departments:	Parks & Recreation Health Public Property Police Fire
Energy Sources Tracked:	Electricity
Pilot launch:	July 2013
Full Program Launch:	July 2014
Purposes of Pilot:	• Proof of concept for operations • Estimate potential for savings • Improve program design and support

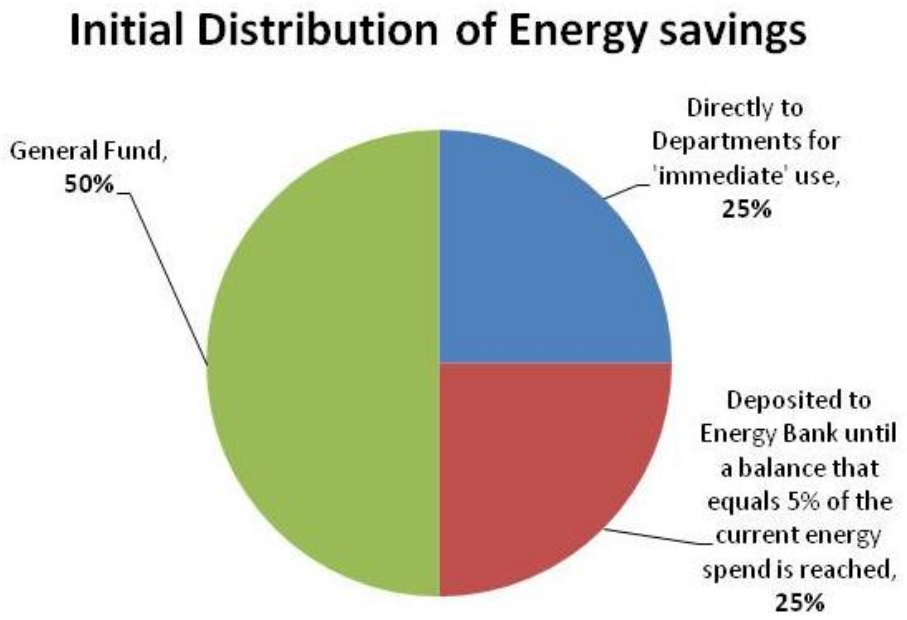
KEY ELEMENTS OF PROGRAM:

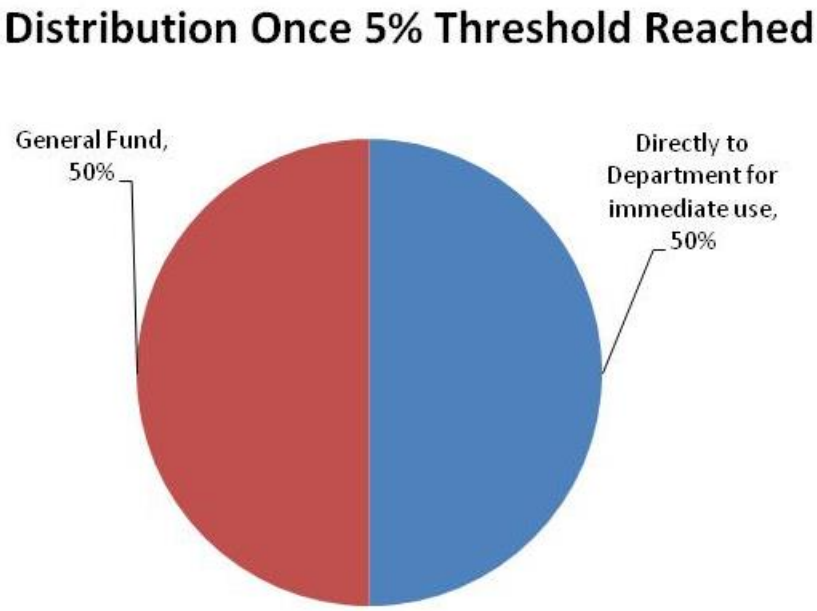
- Benchmark for Department performance:
  - 5 year average (FY09-FY13)
- Comparison will be in Kilowatt Hours of Usage
  - Difference controls for: weather, prices, inventory
  - Difference calculated in constant $/kWh
- Decreases in electricity consumption will result in net dollars for Department


JULY 2013
MEASUREMENT PERIOD START
AUGUST
SEPTEMBER
Departments work on no-cost energy conservation measures and behavior change tactics
OCTOBER
RELEASE OF ANNUAL ENERGY REPORTS FOR FY13
NOVEMBER
DECEMBER
MID YEAR REVIEW PERIOD FOR PILOT
Continue no-cost solutions, review info from Annual Report; consider low cost measures
JANUARY 2014
FEBRUARY
MARCH
RELEASE OF MID YEAR REPORT
Continue no-cost solutions; utilize Annual Report to help address problem facilities or accounts
APRIL
MAY
JUNE
FIRST YEAR REVIEW PERIOD FOR PILOT
Continue no-cost solutions, review and react to mid-year report, investigate low-cost opportunities
RELEASE OF REPORT in SEPT.

ENERGY BANK

Performance calculated twice a year and savings distributed once a year.



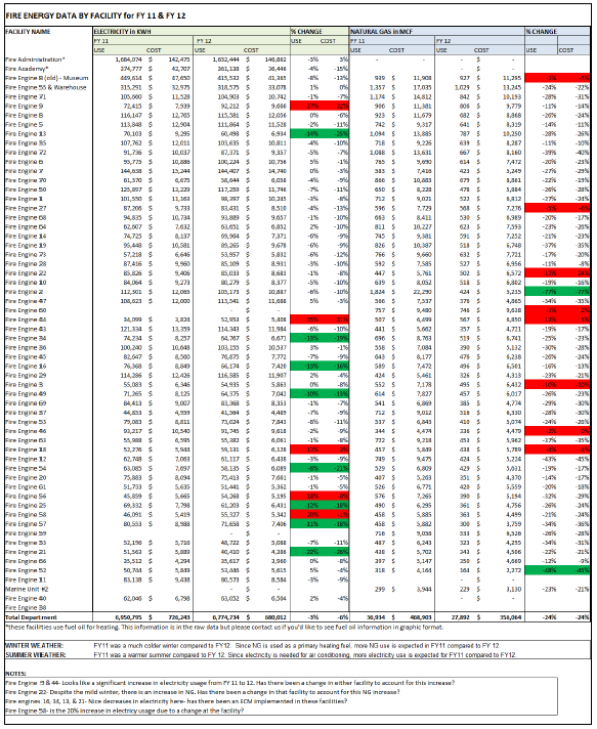


EXAMPLE

Time Period	Weather Normalized Benchmark	Results for Included Meters	KWh Savings	$ per KWh	Calculated Savings/(Loss)	Savings/(Loss) Retained by the General Fund	50% to Departments: Departmental Impact	50% to Departments: Department's Energy Bank Impact	Energy Bank Balance	Deposit Maximum on Energy Bank
Department A										
1. July through December 2013 (FY14)	7,046,364	6,905,437	140,927	$ 0.09	$ 12,683	$ 6,342	$ 3,171	$ 3,171	$ 3,171	$ 80,065
2. January through June 2014 (FY14)	8,247,260	8,329,733	(82,473)	$ 0.09	$ (7,423)	$ (3,711)	$ -	$ (3,711)	$ (540)	$ 80,065
3. July through December 2014 (FY15)	7,187,291	6,971,672	215,619	$ 0.09	$ 19,406	$ 9,703	$ 4,851	$ 4,851	$ 4,311	$ 80,065
Department B										
1. July through December 2013 (FY14)	6,883,524	6,745,854	137,670	$ 0.09	$ 12,390	$ 6,195	$ 3,098	$ 3,098	$ 3,098	$ 31,878
2. January through June 2014 (FY14)	8,161,245	8,242,858	(81,613)	$ 0.09	$ (7,345)	$ (3,673)	$ -	$ (3,673)	$ (575)	$ 31,878
3. July through December 2014 (FY15)	7,021,195	6,810,559	210,636	$ 0.09	$ 18,957	$ 9,479	$ 4,739	$ 4,739	$ 4,164	$ 31,878
Department C										
1. July through December 2013 (FY14)	15,186,394	14,882,666	303,728	$ 0.09	$ 27,336	$ 13,668	$ 6,834	$ 6,834	$ 6,834	$ 31,250
2. January through June 2014 (FY14)	16,011,054	16,171,165	(160,111)	$ 0.09	$ (14,410)	$ (7,205)	$ -	$ (7,205)	$ (371)	$ 31,250
3. July through December 2014 (FY15)	14,195,201	13,769,345	425,856	$ 0.09	$ 38,327	$ 19,164	$ 9,582	$ 9,582	$ 9,211	$ 31,250

AVAILABLE RESOURCES

- GET STARTED TODAY!
  - Review of no cost measures- immediately implementable
  - Look at your data, understand your accounts
- INFORMATION
  - Program performance REPORT by facility
    - 6 months; 12 months
  - Annual Energy Report
  - Utility Bill Database
- SUPPORT
  - MOS
  - MOTU
  - Budget & Finance
  - EEBHUB



FIRE ENERGY DATA BY FACILITY for FY 11 & FY 12

FACILITY NAME	ELECTRICITY in KWH				% CHANGE		NATURAL GAS in MCF				% CHANGE	
	FY 11		FY 12				FY 11		FY 12			
	USE	COST	USE	COST	USE	COST	USE	COST	USE	COST	USE	COST
Fire Administration*	1,684,074	$ 142,475	1,632,444	$ 146,862	-3%	3%	-	$ -	-	$ -	-	-
Fire Academy*	274,777	$ 42,707	261,138	$ 36,446	-4%	-15%						
Fire Engine 8 (old) - Museum	469,616	$ 67,450	415,532	$ 61,365	-8%	-13%	930	$ 11,908	927	$ 11,295	-0%	-5%
Fire Engine 55 & Warehouse	315,291	$ 32,575	318,575	$ 33,078	1%	0%	1,357	$ 17,035	1,029	$ 13,265	-24%	-22%
Fire Engine 21	105,960	$ 11,528	104,903	$ 10,742	-1%	-7%	1,174	$ 14,612	842	$ 10,153	-28%	-31%
Fire Engine 9	71,415	$ 7,939	92,212	$ 9,666	29%	22%	906	$ 11,381	806	$ 9,779	-11%	-14%
Fire Engine 8	116,147	$ 12,765	115,581	$ 12,656	0%	-0%	923	$ 11,679	682	$ 8,868	-26%	-24%
Fire Engine 5	113,848	$ 12,904	111,864	$ 11,528	-2%	-11%	742	$ 9,317	641	$ 8,319	-14%	-11%
Fire Engine 13	70,103	$ 9,295	90,498	$ 6,934	29%	-25%	1,094	$ 13,885	787	$ 10,250	-28%	-26%
Fire Engine 35	107,762	$ 12,031	101,635	$ 10,811	-6%	-10%	718	$ 9,226	639	$ 8,287	-11%	-10%
Fire Engine 22	91,736	$ 10,037	87,171	$ 9,357	-5%	-7%	1,088	$ 13,631	667	$ 8,160	-39%	-40%
Fire Engine 6	93,773	$ 10,888	100,224	$ 10,736	5%	-1%	765	$ 9,690	614	$ 7,472	-20%	-23%
Fire Engine 7	144,638	$ 15,244	144,407	$ 14,790	0%	-3%	583	$ 7,419	423	$ 5,249	-27%	-29%
Fire Engine 39	61,370	$ 6,675	58,644	$ 6,018	-4%	-9%	866	$ 10,683	679	$ 8,661	-22%	-19%
Fire Engine 50	120,897	$ 13,220	117,259	$ 11,746	-3%	-11%	650	$ 8,238	478	$ 5,884	-26%	-28%
Fire Engine 1	101,550	$ 11,163	98,397	$ 10,265	-3%	-8%	752	$ 9,031	523	$ 6,812	-30%	-24%
Fire Engine 27	87,206	$ 9,733	83,431	$ 8,518	-4%	-13%	596	$ 7,729	568	$ 7,278	-5%	-6%
Fire Engine 68	94,835	$ 10,734	93,889	$ 9,657	-1%	-10%	663	$ 8,411	530	$ 6,989	-20%	-17%
Fire Engine 64	92,907	$ 7,632	93,631	$ 6,852	2%	-10%	811	$ 10,227	623	$ 7,593	-23%	-26%
Fire Engine 14	74,725	$ 8,137	69,964	$ 7,371	-6%	-9%	745	$ 9,381	591	$ 7,252	-21%	-23%
Fire Engine 19	93,448	$ 10,581	89,265	$ 9,678	-6%	-9%	826	$ 10,387	518	$ 6,748	-37%	-35%
Fire Engine 25	57,218	$ 6,646	53,957	$ 5,832	-6%	-12%	766	$ 9,660	632	$ 7,721	-17%	-20%
Fire Engine 28	87,416	$ 9,960	85,109	$ 8,931	-3%	-10%	592	$ 7,585	527	$ 6,956	-11%	-8%
Fire Engine 22	83,826	$ 9,406	83,033	$ 8,683	-1%	-8%	447	$ 5,761	302	$ 4,172	-32%	-28%
Fire Engine 10	84,064	$ 9,273	80,279	$ 8,377	-5%	-10%	639	$ 8,052	518	$ 6,862	-19%	-15%
Fire Engine 2	112,301	$ 12,085	105,173	$ 10,867	-6%	-10%	1,824	$ 22,290	424	$ 3,215	-77%	-86%
Fire Engine 47	108,623	$ 12,000	113,541	$ 11,688	5%	-3%	346	$ 7,537	179	$ 4,065	-34%	-46%
Fire Engine 60		$ -		$ -			757	$ 9,480	746	$ 9,618	-1%	1%
Fire Engine 44	34,099	$ 3,828	52,953	$ 5,838	55%	53%	597	$ 6,499	567	$ 6,850	-5%	5%
Fire Engine 43	121,334	$ 13,359	114,343	$ 11,984	-6%	-10%	441	$ 5,662	357	$ 4,721	-19%	-17%
Fire Engine 56	74,234	$ 8,257	66,767	$ 6,671	-10%	-19%	696	$ 8,763	519	$ 6,741	-25%	-23%
Fire Engine 36	100,240	$ 10,648	101,155	$ 10,537	1%	-1%	558	$ 7,084	390	$ 5,132	-30%	-28%
Fire Engine 45	81,647	$ 8,360	76,875	$ 7,771	-7%	-9%	643	$ 8,177	479	$ 6,218	-26%	-24%
Fire Engine 15	76,368	$ 8,049	66,174	$ 7,428	-13%	-8%	589	$ 7,472	456	$ 6,041	-16%	-13%
Fire Engine 29	114,286	$ 12,426	116,585	$ 11,987	2%	-4%	424	$ 5,461	326	$ 4,313	-23%	-21%
Fire Engine 5	51,083	$ 6,346	54,935	$ 5,863	8%	-8%	552	$ 7,178	495	$ 6,412	-10%	-11%
Fire Engine 49	71,265	$ 8,125	64,175	$ 7,043	-10%	-13%	614	$ 7,927	457	$ 6,017	-26%	-24%
Fire Engine 69	84,413	$ 9,007	81,368	$ 8,353	-3%	-7%	541	$ 6,869	383	$ 4,776	-29%	-30%
Fire Engine 37	44,833	$ 4,959	41,994	$ 4,483	-7%	-9%	712	$ 9,012	318	$ 3,910	-28%	-30%
Fire Engine 53	79,083	$ 8,811	71,024	$ 7,841	-8%	-11%	537	$ 6,643	410	$ 5,074	-24%	-24%
Fire Engine 46	91,217	$ 10,540	91,745	$ 9,818	-2%	-9%	344	$ 4,474	226	$ 4,479	-34%	0%
Fire Engine 63	55,988	$ 6,595	55,383	$ 6,061	-1%	-8%	722	$ 9,158	493	$ 5,962	-32%	-35%
Fire Engine 18	53,276	$ 5,948	59,131	$ 6,128	11%	3%	457	$ 5,849	438	$ 5,789	-4%	-1%
Fire Engine 12	62,748	$ 7,083	61,117	$ 6,438	-3%	-9%	749	$ 9,475	424	$ 5,216	-43%	-45%
Fire Engine 54	61,065	$ 7,057	56,125	$ 6,038	-8%	-14%	525	$ 6,809	429	$ 5,611	-18%	-17%
Fire Engine 20	75,883	$ 8,094	75,413	$ 7,661	-1%	-5%	487	$ 5,263	351	$ 4,370	-14%	-17%
Fire Engine 61	51,733	$ 5,635	51,441	$ 5,362	-1%	-5%	526	$ 6,771	420	$ 5,559	-20%	-18%
Fire Engine 59	45,899	$ 5,665	54,388	$ 5,598	19%	-1%	576	$ 7,265	399	$ 5,194	-31%	-29%
Fire Engine 25	69,332	$ 7,798	61,203	$ 6,431	-12%	-18%	490	$ 6,295	361	$ 4,756	-26%	-24%
Fire Engine 58	46,091	$ 5,419	55,327	$ 5,343	20%	-1%	458	$ 5,885	363	$ 4,499	-21%	-24%
Fire Engine 57	80,553	$ 8,988	71,638	$ 7,408	-11%	-18%	418	$ 5,882	309	$ 3,759	-34%	-36%
Fire Engine 59		$ -		$ -			718	$ 9,038	333	$ 4,328	-26%	-28%
Fire Engine 31	52,196	$ 5,716	48,722	$ 5,088	-7%	-11%	487	$ 6,343	323	$ 4,255	-34%	-33%
Fire Engine 23	51,562	$ 5,889	45,410	$ 4,288	-12%	-27%	438	$ 5,702	343	$ 4,566	-22%	-20%
Fire Engine 66	25,512	$ 4,294	25,617	$ 3,960	0%	-8%	397	$ 5,147	250	$ 4,049	-12%	-9%
Fire Engine 52	50,766	$ 5,689	51,686	$ 5,853	5%	-4%	318	$ 4,161	164	$ 2,272	-48%	-45%
Fire Engine 11	83,138	$ 9,438	80,579	$ 8,584	-3%	-9%			-	$ -		
Marine Unit #2		$ -		$ -			239	$ 3,944	229	$ 3,130	-23%	-21%
Fire Engine 40	62,046	$ 6,798	63,652	$ 6,594	2%	-4%			-	$ -		
Fire Engine 26		$ -		$ -								
Total Department	**6,950,795**	**$ 726,243**	**6,774,734**	**$ 680,012**	**-3%**	**-6%**	**30,934**	**$ 408,903**	**22,892**	**$ 356,064**	**-24%**	**-24%**

*these facilities use fuel oil for heating. This information is in the raw data but please contact us if you'd like to see fuel oil information in graphic format.

WINTER WEATHER: FY11 was a much colder winter compared to FY12. Since NG is used as a primary heating fuel, more NG use is expected in FY11 compared to FY 12

SUMMER WEATHER: FY11 was a warmer summer compared to FY 12. Since electricity is needed for air conditioning, more electricity use is expected for FY11 compared to FY12

NOTES:

Fire Engine 9 & 44- Looks like a significant increase in electricity usage from FY 11 to 12. Has there been a change in either facility to account for this increase?

Fire Engine 22- Despite the mild winter, there is an increase in NG. Has there been a change in that facility to account for this NG increase?

Fire engines 16, 36, 13, & 21- Nice decreases in electricity here- has there been an ECM implemented in these facilities?

Fire Engine 58- is the 20% increase in electricy usage due to a change at the facility?

IMMEDIATE TOOLS

WHAT DOES IT TAKE TO SAVE?

Greenworks Philadelphia sets ambitious goals to incorporate energy efficiency and sustainability principles into City-owned facilities. The **Mayor's Office of Sustainability** (MOS), the Mayor's Office **for Transportation and Utilities** (MOTU), the **Energy Efficiency Building Hub** (EEB Hub) and the **Philadelphia Energy Authority** (PEA) are working together to offer a variety of services focused on reducing energy use in City owned facilities. The information in this brochure is a useful starting point, but represents only a handful of the many ideas and solutions available.

ENERGY EFFICIENCY FUND

In the last several years, MOS has provided competitive funding to City departments through its Energy Efficiency Fund. This program fully or partially supports projects that pay for themselves through energy savings in less than seven years.

TECHNICAL ASSISTANCE ON ENERGY EFFICIENCY

MOS has a consultant available, Practical Energy Solutions (PES), who specializes in energy efficiency. PES can help City departments and agencies perform energy audits and review capital projects for further inclusion of energy conservation measures. The EEB Hub is also available to provide technical guidance on projects or planning.

HISTORICAL ENERGY USE & BENCHMARKING

MOS and MOTU now have energy use and cost information in a web-based application based on the City's utility bills. Monthly energy reports provide departments with regular data on consumption, but this is a small portion of the data available. More detailed information is available on request. Additionally, all City buildings over 10,000 sq. ft. have been benchmarked with ENERGY STAR's Portfolio Manager. Using both of these resources departments can easily identify the facilities that are the most costly and least efficient.

BEST PRACTICES FOR MANAGING PLUGLOADS

1. **REVIEW.** Identify your needs, inventory your equipment and focus on the devices that use the most energy.
2. **REMOVE.** Eliminate or unplug unnecessary devices.
3. **REPLACE.** When it's time to replace, purchase the most energy-efficient devices.
4. **REDUCE.** Turn it off or power it down when not in use.
5. **RETRAIN.** Engage EVERYONE. Make sure they understand why, when and how to power down.

LOW-COST AND NO-COST ENERGY CONSERVATION MEASURES REDUCED PLUG LOAD ENERGY USE BY 40%

FOR MORE INFORMATION PLEASE CONTACT

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ENERGY EFFICIENCY INCENTIVE PROGRAM

REDUCING WASTE & REWARDING ACTION

PILOT PROGRAM

CITY OF PHILADELPHIA

GREENWORKS PHILADELPHIA

To: All Department X employees
From: Commissioner N.R. Gsaver
Re: Energy Usage

Good Afternoon,

Greenworks Philadelphia was launched back in 2009 and is an exciting and ambitious plan to transform Philadelphia into the greenest city in the United States of America. Target 1 of this plan commits us to reducing City government's own energy consumption by 30 percent by 2015, and Mayor Nutter is calling on us to help meet the goal. I want our department to play a major role in helping reduce energy use.

It is crucial to create sustainable practices here in City government. Our deliberate actions towards sustainable workplaces will encourage the city at large to follow suit and has the potential to create a groundswell of action.

In order to be a part of the plan and be a catalyst for change here in the city, I am establishing a new energy efficiency related policy in the X Department. This "Power Management Policy" will engage all City employees use our facilities to get their jobs done.

The purpose of this policy is to reduce energy use throughout our department by:

1. Procuring the energy efficiency alternative in our equipment
2. Working with IT establish and administer energy efficient default settings on our computer equipment
3. Using our existing equipment more efficiently:
   a. Shut down your computer and monitor when you leave for the day.
   b. Turn off lights in unused areas
   c. Use the revolving door option- it keeps the conditioned air inside
   d. Close blinds on hot summer days to keep offices cooler
   e. Turn off and unplug all appliances when you are done using them (i.e. coffee makers, cell phone chargers, etc.)

I appreciate all that you do to reduce energy use and help to save your department money, so thank you. Do you have a story about how you conserve energy at work? Please share it with us by emailing NRGsavers@phila.gov. I look forward to hearing about and recognizing your contributions to amore energy efficiency XXX Department!

Tuesday, June 25, 2013
Action Period: 3:00 - 6:00 PM ET

Today's PJM peak demand is above the normal range.

To help lower your capacity charge for the coming year, we recommend reducing your energy consumption during the entire action period identified above.

For more information on the PLC Predictor program, please reference the Program FAQ.

For questions, contact support@enernoc.com.

Dispatch History and PLC Outlook

Sun	Mon	Tue	Wed	Thu	Fri	Sat
23	24	25	26	27	28	29
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27

Outlook based on current conditions and expectations. Daily status subject to change; see future alerts for updates.

LONGER TERM TOOLS

- Use info from Energy Benchmarking results
- Facility Audits
  - Low and No Cost measures
  - What impacts capital planning
- Energy Efficiency Fund
- Use of Grants and Rebate Opportunities