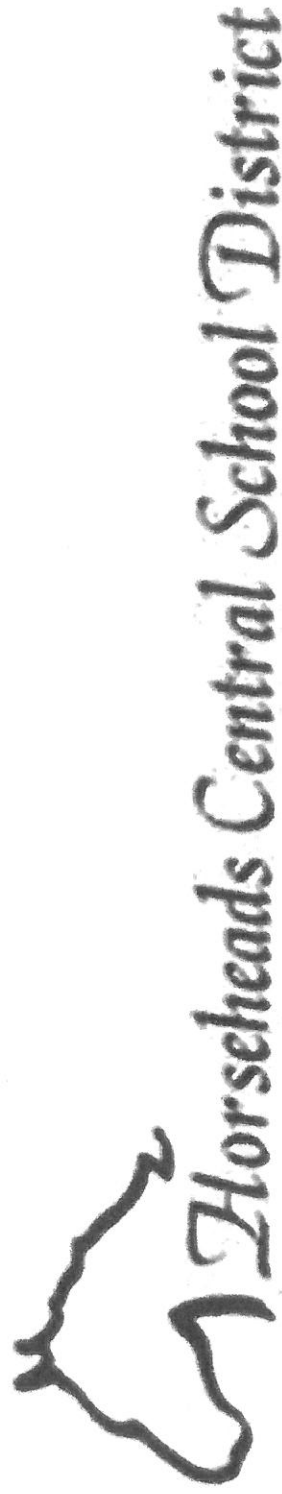


Horseheads Central School District



Energy Report April 2013

Ralph Marino

Superintendent

Dan DeLorme

Energy Manager

Encl. 6.2
May 30, 2013



ENERGY REPORT

Background Information

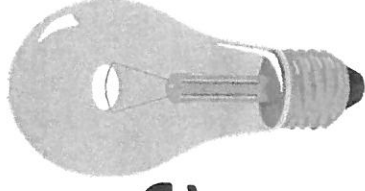
Contract awarded by Board action - December 1996

Energy Manager Start Date - February 1997

Base Period - February 1996 through January 1997

CONSERVATION GOALS OF ENERGY MANAGEMENT

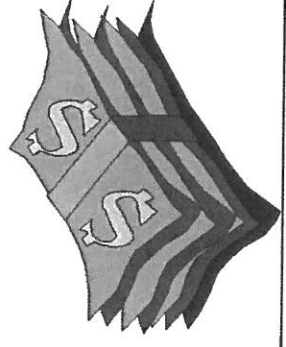
Minimize energy waste

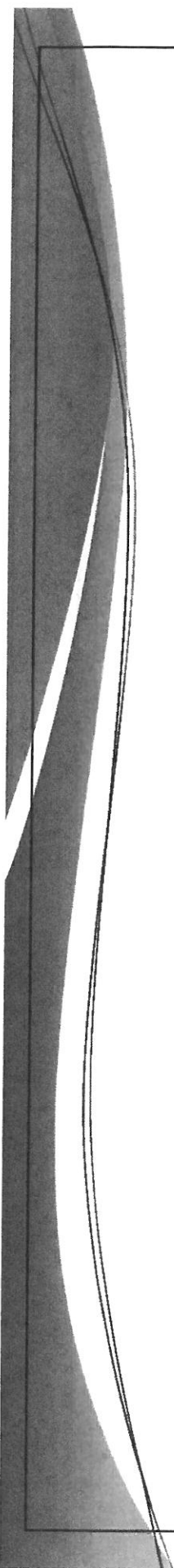


Maintain comfort in
occupied areas



Save \$\$\$





Duties of the Energy Manager

1. Plan, organize, and administer conservation program.
2. Maintain energy records and data.
3. Monitor usage of facilities in compliance with energy guidelines.
4. Conduct routine inspections of each facility to ensure that each building is operating efficiently.
5. Ensure that the district is on the proper utility rate schedule and is being billed correctly.
6. Report to the Board of Education on the status and success/failure of the program.



ACCOUNTING PROCESS

To Determine Cost Avoidance

The district uses EnergyCap Pro software for energy accounting that :

- ☆ Begins with usage during base period
- ☆ Adjusts for:

Temperature changes

Building size changes

Billing period lengths

- ☆ Develops adjusted baseline
- ☆ Applies to current rates

CHANGES IN THE DISTRICT THAT HAD AN EFFECT ON UTILITY CONSUMPTION

CHANGES:



New computers and other technology tools



Heating changes **



Changes in outside use of facilities



Other- New Air Conditioners, elevators, etc.



Sept 1, 2009 – March 31, 2010** compared to
Sept 1, 2008 – March 31, 2009

**Room temperatures lowered from 72° to 68°

- Cost avoidance Sept 2009 – March 2010: \$379,748.88
- Cost avoidance Sept 1, 2008 – March 2009: \$334,865.74
- Cost avoidance increase during period: \$44,883.14
- **We are just finishing the fourth year of heating at this set point so the cumulative cost avoidance should be approximately \$160,000 for making this change.



Cost avoidance for heating season 2010 – 2011** vs. 2009 – 2010

** No after school heating for outside activities – *first year of savings/cost avoidance*

- Cost avoidance Sept 2010 – March 2011:
\$394,302.45
- Cost avoidance Sept 1, 2009 – March 2010:
\$379,748.88
- Cost avoidance increase during period: \$14,553.57
- Cumulative savings to date (3 years) due to making this change is approximately \$40,000

Meter Code & Name	Cost		Actual Cost	Cost	
	Without CAP			Avoidance \$	Avoidance %
E19-520-08-996730-09 - MS/SING SING ELECTRIC	\$245,018.58		\$106,195.55	\$138,823.03	56.66%
E14-520-08-378380-04 - HIGH SCHOOL MAIN ELI	\$225,458.98		\$139,580.99	\$85,877.99	38.09%
G01-520-99-998484-01 - MS/SING SING GAS	\$147,281.57		\$49,150.44	\$98,131.13	66.63%
G01-520-99-379377-04 - HIGH SCHOOL/CENTER	\$142,893.57		\$113,874.26	\$29,019.31	20.31%
E19-520-08-996652-03 - GARDNER ROAD ELECT	\$46,756.09		\$31,034.73	\$15,721.36	33.62%
E21-520-07-996846-07 - BIG FLATS ELECTRIC	\$39,254.71		\$24,351.14	\$14,903.57	37.97%
E19-520-08-996520-03 - RIDGE ROAD ELECTRIC	\$38,624.68		\$24,896.32	\$13,728.36	35.54%
G01-520-99-379390-07 - GARDNER ROAD GAS	\$36,253.97		\$22,748.71	\$13,505.26	37.25%
G01-520-99-379380-09 - BIG FLATS GAS	\$34,953.39		\$18,397.62	\$16,555.77	47.37%
E14-520-08-378375-01 - CENTER STREET ELEC	\$34,054.82		\$27,111.91	\$6,942.91	20.39%
E14-520-08-378867-06 - BROAD STREET ELECT	\$33,596.63		\$18,681.61	\$14,915.02	44.39%
G01-520-99-379410-03 - BROAD STREET GAS	\$32,882.66		\$21,510.33	\$11,372.33	34.58%
E14-520-08-378864-09 - BUS GARAGE ELECTRIC	\$28,075.87		\$13,461.41	\$14,614.46	52.05%
G01-520-99-379400-05 - RIDGE ROAD GAS	\$28,025.03		\$19,187.92	\$8,837.11	31.53%
G14-520-08-378864-09 - BUS GARAGE GAS	\$19,570.34		\$11,064.77	\$8,505.57	43.46%
G14-520-08-378372-04 - FIELD HOUSE GAS	\$7,785.57		\$3,704.40	\$4,081.17	52.42%
E14-520-08-001900-07 - MAINTENANCE ELECT	\$3,814.35		\$1,907.13	\$1,907.22	50.00%
G14-520-08-001900-07 - MAINTENANCE GAS	\$3,679.03		\$3,613.99	\$65.04	1.77%
E14-520-08-378372-04 - FIELD HOUSE ELECTRIC	\$2,496.36		\$1,546.13	\$950.23	38.06%
E14-520-04-002100-03 - MAINTENANCE ELECT	\$1,781.58		\$1,066.16	\$715.42	40.16%
Totals:	\$1,152,257.79		\$653,085.52	\$499,172.27	43.32%

Feb 1, 2012 through Jan 31, 2013

Meter Code & Name	Cost		Actual Cost	Cost	
	Without CAP	Avoidance %		Avoidance \$	Avoidance %
E14-520-08-378380-04 - HIGH SCHOOL MAIN ELI	\$3,889,872.30		\$2,838,121.89	\$1,051,750.41	27.04%
E19-520-08-996730-09 - MS/SING SING ELECTRI	\$3,821,510.81		\$2,184,513.41	\$1,636,997.40	42.84%
G01-520-99-379377-04 - HIGH SCHOOL/CENTER	\$2,738,623.16		\$2,410,121.53	\$328,501.63	12.00%
G01-520-99-998484-01 - MS/SING SING GAS	\$2,567,110.54		\$1,392,376.27	\$1,174,734.27	45.76%
E19-520-08-996652-03 - GARDNER ROAD ELECT	\$833,328.44		\$629,801.00	\$203,527.44	24.42%
E21-520-07-996846-07 - BIG FLATS ELECTRIC	\$721,830.87		\$489,580.98	\$232,249.89	32.18%
E19-520-08-996520-03 - RIDGE ROAD ELECTRIC	\$698,745.99		\$491,263.42	\$207,482.57	29.69%
G01-520-99-379390-07 - GARDNER ROAD GAS	\$676,431.99		\$555,433.45	\$120,998.54	17.89%
E14-520-08-378867-06 - BROAD STREET ELECTI	\$652,467.98		\$408,240.99	\$244,226.99	37.43%
G01-520-99-379410-03 - BROAD STREET GAS	\$612,342.16		\$447,120.18	\$165,221.98	26.98%
E14-520-08-378375-01 - CENTER STREET ELEC	\$605,532.96		\$516,417.29	\$89,115.67	14.72%
G01-520-99-379380-09 - BIG FLATS GAS	\$602,231.24		\$404,700.10	\$197,531.14	32.80%
G01-520-99-379400-05 - RIDGE ROAD GAS	\$563,052.26		\$413,811.71	\$149,240.55	26.51%
E14-520-08-378864-09 - BUS GARAGE ELECTRIC	\$405,108.55		\$304,362.10	\$100,746.45	24.87%
G14-520-08-378864-09 - BUS GARAGE GAS	\$371,914.87		\$252,943.71	\$118,971.16	31.99%
G14-520-08-378372-04 - FIELD HOUSE GAS	\$147,843.10		\$114,487.41	\$33,355.69	22.56%
G14-520-08-001900-07 - MAINTENANCE GAS	\$79,258.15		\$72,097.07	\$7,161.08	9.04%
E14-520-08-001900-07 - MAINTENANCE ELECTR	\$77,122.02		\$55,274.14	\$21,847.88	28.33%
E14-520-08-378372-04 - FIELD HOUSE ELECTRIC	\$47,805.19		\$39,648.83	\$8,156.36	17.06%
E14-520-04-002100-03 - MAINTENANCE ELECTR	\$36,077.36		\$25,196.20	\$10,881.16	30.16%
ZE14-520-08-378379-0 - STUDENT SERVICES EL	\$9,941.53		\$9,166.65	\$774.88	7.79%
ZG14-520-08-378379-0 - STUDENT SERVICES G/	\$7,276.57		\$5,017.53	\$2,259.04	31.05%
Totals:	\$20,165,428.03		\$14,059,695.86	\$6,105,732.17	30.28%

Feb 1, 1997 through April 2013



SUMMARY

For Period February 1997 – April 2013

Anticipated costs without Energy Program:

Adjusted Baseline Cost: \$ 20,165,428.03

Actual Cost: \$14,059,695.86

Cost Avoidance..... \$6,105,732.17

Energy Conservation Program

April 2013

Cumulative Energy Savings

Expected Energy Usage	1,205,487MMBTU
Actual Energy Usage	874,189MMBTU
Program Savings	331,298MMBTU
Savings Percent	27.48%



Expected Energy Usage

Amount of energy you would have used without energy management program.

This is the base year usage adjusted for changes in weather, equipment, schedules, occupancy and prices

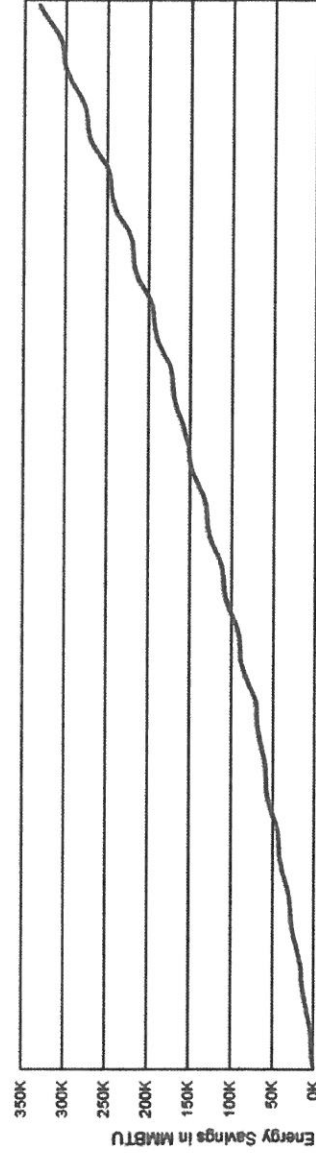
Actual Energy Usage

Actual energy usage for electricity, gas, etc obtained directly from utility bills.

Program Savings

The difference between Expected and Actual Usage, calculated in accordance with the International Performance Measurement & Verification Protocol.

Cumulative Energy Savings

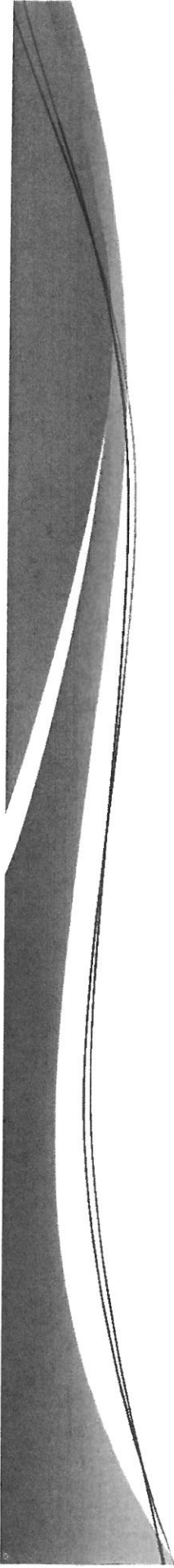


Cumulative Greenhouse Gas Reduction

Energy Reduction Impact:	331,298 MMBTU	31,772 equiv. metric tons of CO2
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This is equivalent to the following:

Passenger cars not driven for one year:	5,703
Tree seedlings grown for 10 years:	812,656



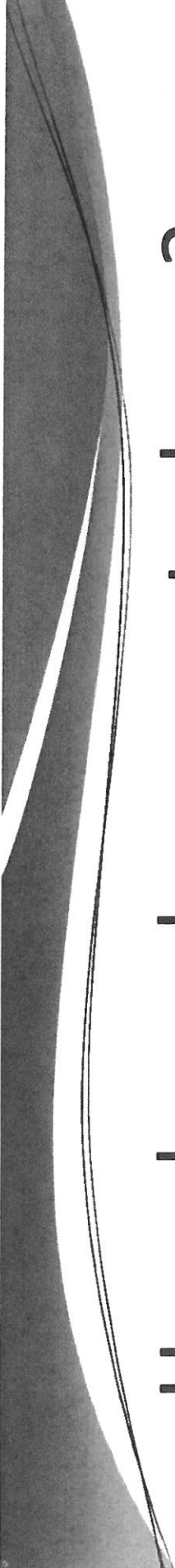
SUMMARY continued

- Cost avoidance for February 1, 2012 through January 31, 2013 was \$499,172.27
- Annual operating cost of program is less than \$15,000
- Program pays for itself in about ten days each year. Two weeks of cost avoidance = an average of \$19,198.92



Summary continued

- Good planning and foresight from past HHDS school board members and administrators, along with ongoing support from current district staff members, has kept HHDS CSD ahead of the curve with respect to energy usage and cost and that has helped the board in its budget preparations.
- Other districts have had to take emergency measures to contain costs. So far, we have not. The only impact on staff has been the reduction in classroom temperatures from approximately 72 degrees to 68 degrees.

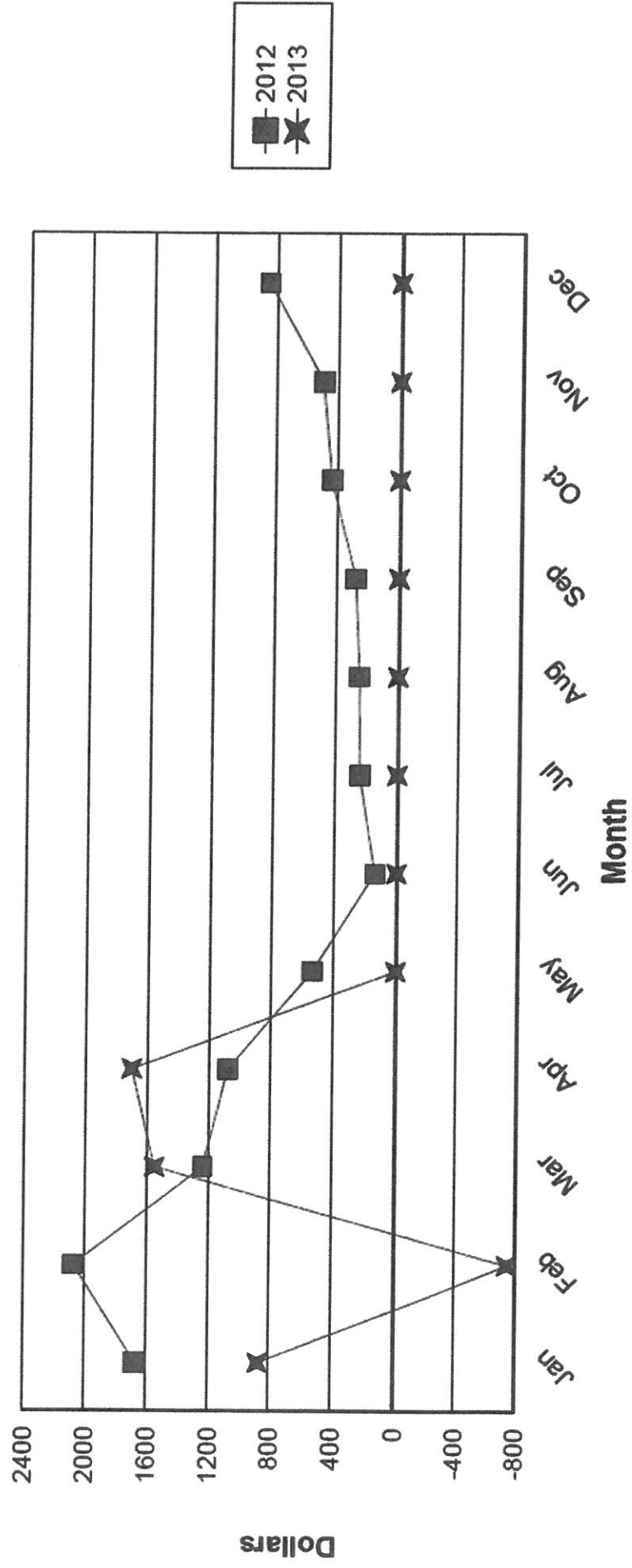


How do we keep costs down?

Primarily through constantly monitoring usage through data analysis of incurred costs/usage, HVAC programming and by doing energy audits on an ongoing basis throughout the district.

Ex: bus garage flagged; audit generated recommendations for follow up; results on next slide

Bus Garage Gas



April 2013

	Cost Without CAP	Actual Cost	Cost Avoidance \$	Cost Avoidance %
MS/SING SING ELECTRI	\$19,405.00	\$8,674.53	\$10,730.47	55.30%
HIGH SCHOOL MAIN ELI	\$17,508.53	\$10,810.13	\$6,698.40	38.26%
MS/SING SING GAS	\$11,515.69	\$3,177.67	\$8,338.02	72.41%
HIGH SCHOOL/CENTER	\$9,857.11	\$7,845.73	\$2,011.38	20.41%
GARDNER ROAD ELECT	\$3,505.45	\$2,394.58	\$1,110.87	31.69%
RIDGE ROAD ELECTRIC	\$3,180.92	\$2,013.43	\$1,167.49	36.70%
BIG FLATS ELECTRIC	\$3,091.97	\$2,090.06	\$1,001.91	32.40%
CENTER STREET ELEC	\$3,058.37	\$2,224.14	\$834.23	27.28%
GARDNER ROAD GAS	\$2,869.49	\$1,289.91	\$1,579.58	55.05%
BROAD STREET ELECTI	\$2,630.71	\$1,494.45	\$1,136.26	43.19%
BROAD STREET GAS	\$2,400.02	\$1,448.94	\$951.08	39.63%
BUS GARAGE ELECTRIC	\$2,271.33	\$1,057.92	\$1,213.41	53.42%
BIG FLATS GAS	\$2,246.32	\$1,302.04	\$944.28	42.04%
BUS GARAGE GAS	\$2,132.05	\$427.41	\$1,704.64	79.95%
RIDGE ROAD GAS	\$1,729.41	\$1,302.72	\$426.69	24.67%
FIELD HOUSE GAS	\$539.25	\$329.34	\$209.91	38.93%
MAINTENANCE GAS	\$405.73	\$278.75	\$126.98	31.30%
MAINTENANCE ELECTR	\$338.94	\$169.35	\$169.59	50.04%
MAINTENANCE ELECTR	\$135.02	\$121.66	\$13.36	9.89%
FIELD HOUSE ELECTRIC	\$131.13	\$150.51	(\$19.38)	(14.78%)
Totals:	\$88,952.43	\$48,603.27	\$40,349.16	45.36%



What Now?

- We will continue to promote and implement the energy management program,
 - On HS/CS campus, exterior lighting is now all LED
 - Possible exterior LED lighting project at MS/IS
 - Working with NYSEG rep to identify potential projects with NYSEG rebates
 - Identifying funding opportunities from NYSERDA to upgrade lighting and equipment
 - Installing controls in previously identified areas that are/were not being well controlled or not being controlled at all – such as HS North Office, HS Guidance office area and library; Hallway controls in A, B, and C wings at Gardner Road
 - Replacing boilers in HS South to high energy efficiency control boilers
 - We will continue to look for ways to structurally reduce energy costs for the district
- We will continue to purchase our natural gas and electric supplies from the New York School and Municipality Energy Consortium (NYSMEC).



Questions for us?

