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Introduction:

The Oyster River Sustainability Committee serves the Oyster River School District in an effort to facilitate a sustainability forum to implement, create, and plan long-term initiatives with the Oyster River Cooperative School District. The Committee follows 5 principles of sustainability: renewability, substitution, interdependence, adaptability, and institutional commitment. The sustainability committee focuses on issues related to food, energy, transportation, school curriculum, and community outreach.

The sustainability committee has created the “no idling” bus campaign, biodiesel bus conversions, created school gardens, introduced local foods to school lunches, facilitated community outreach events, and several other ongoing programs. This is the second Ecological Footprint report and serves to build upon what the sustainability has gained from the previous report.

This report goes in depth on electricity, propane, natural gas, water/sewer, transportation, and waste/recycling costs and usages. The previous report recorded data from 1 academic year, this report uses the previous 3 years of data for better analysis. The purpose of this document is to give the Sustainability Committee a clear picture of the carbon footprint of the entire district and all of its individual pieces.

This document will begin with a brief look into each school and their energy usages and costs per month over 3 academic years. The second section goes more in depth on each school and shows trends over times as well as adding in overall water/sewer, transportation, and waste/recycling costs and usages. The final section provides insight on what the committee has done correctly as shown throughout the report and what they can do in the future to better the district.

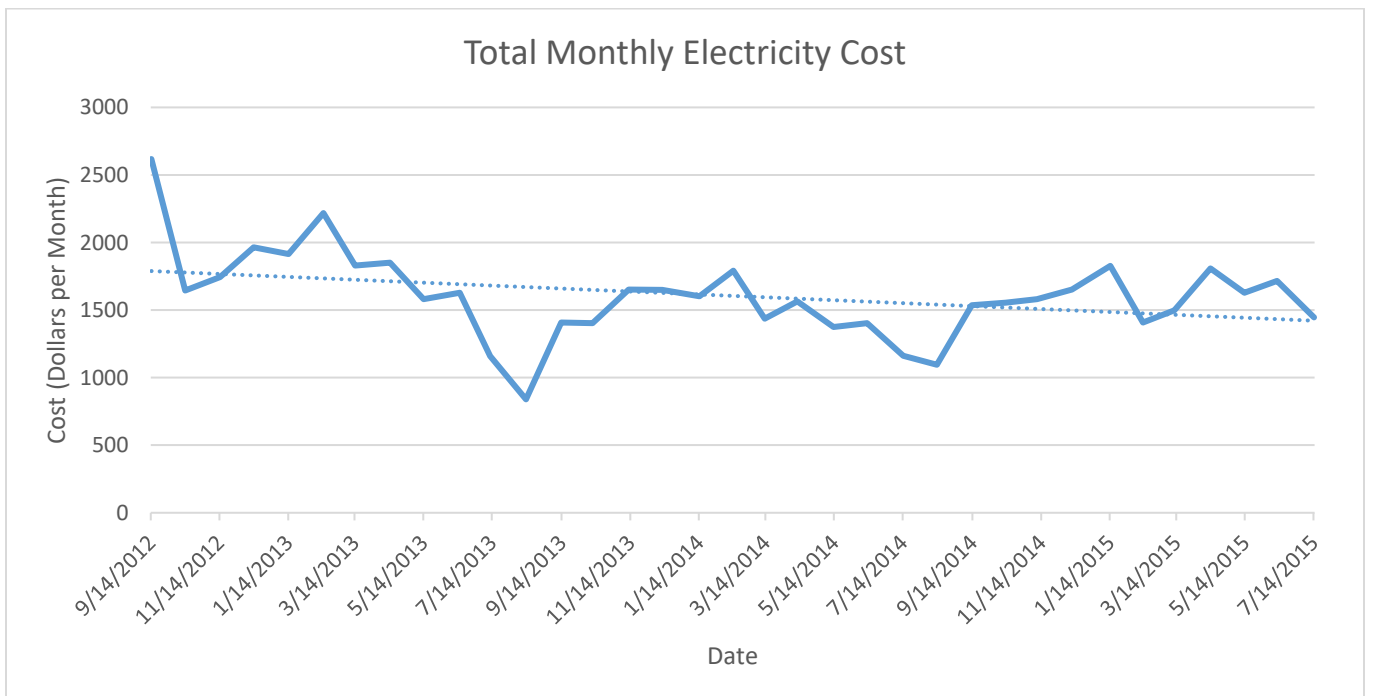
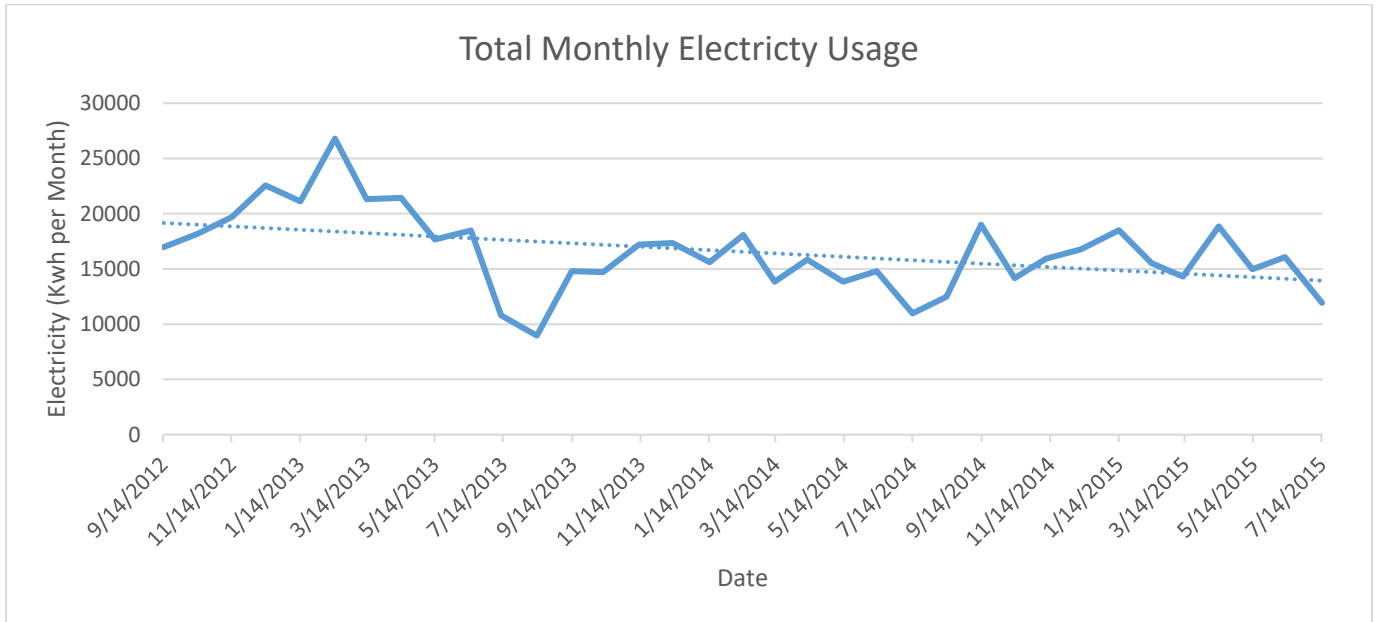


Part I: Individual School/Facility Evaluations

Mast Way Elementary School:

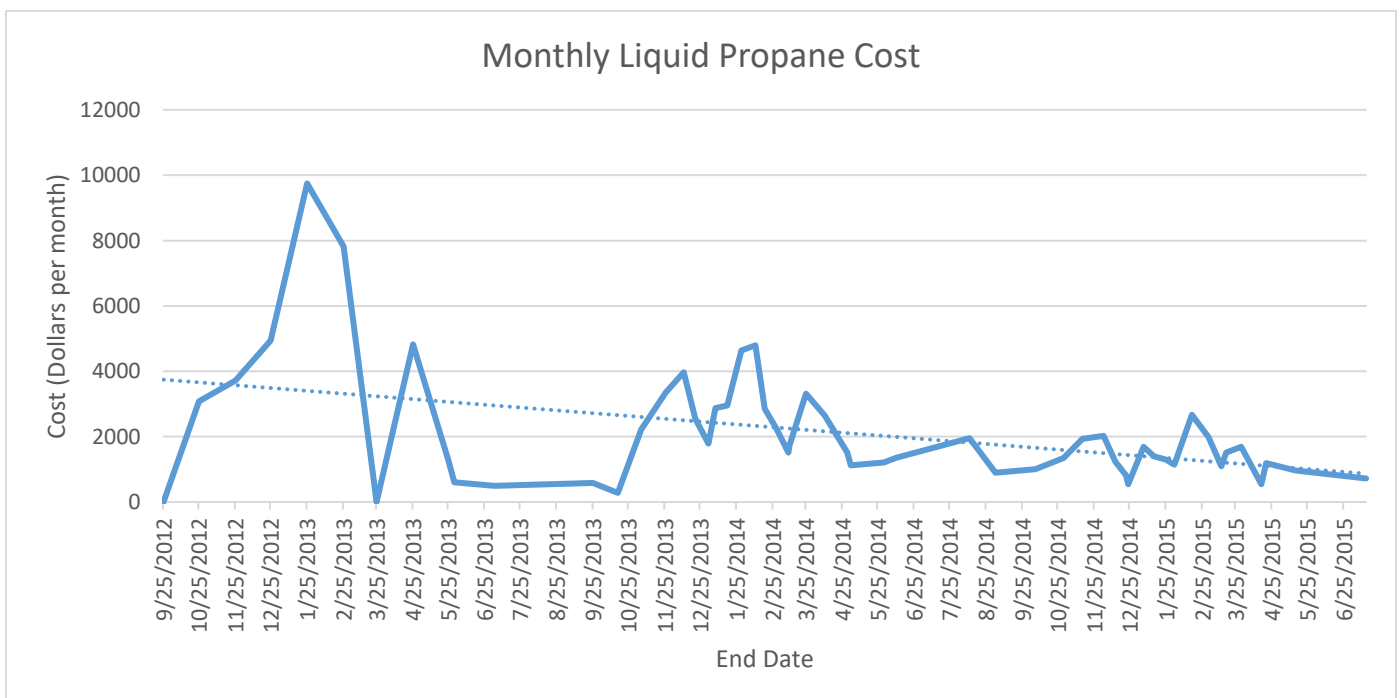
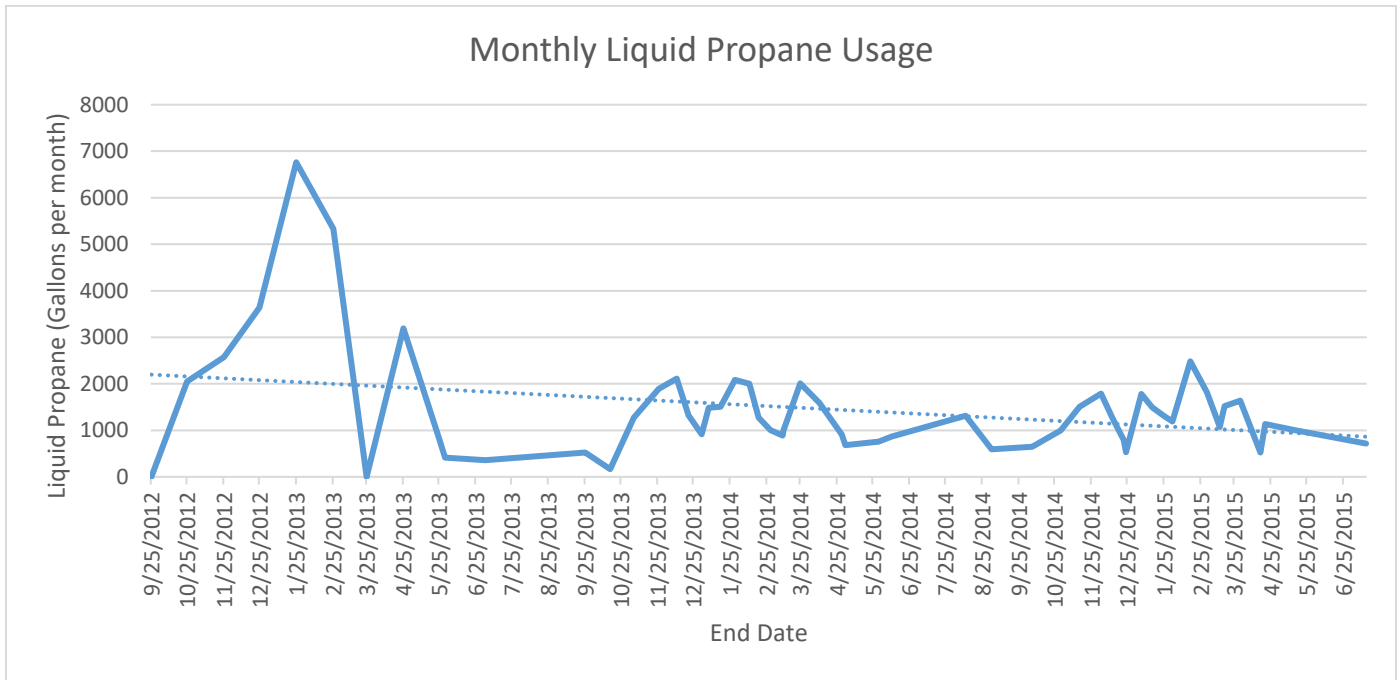
Electricity:

Academic Year	Total Usage (KWH)	Total Cost
2012/2013	223,960.00	\$ 20,994.83
2013/2014	179,520.00	\$ 17,538.44
2014/2015	184,960.00	\$ 18,670.39



Energy: Liquid Propane

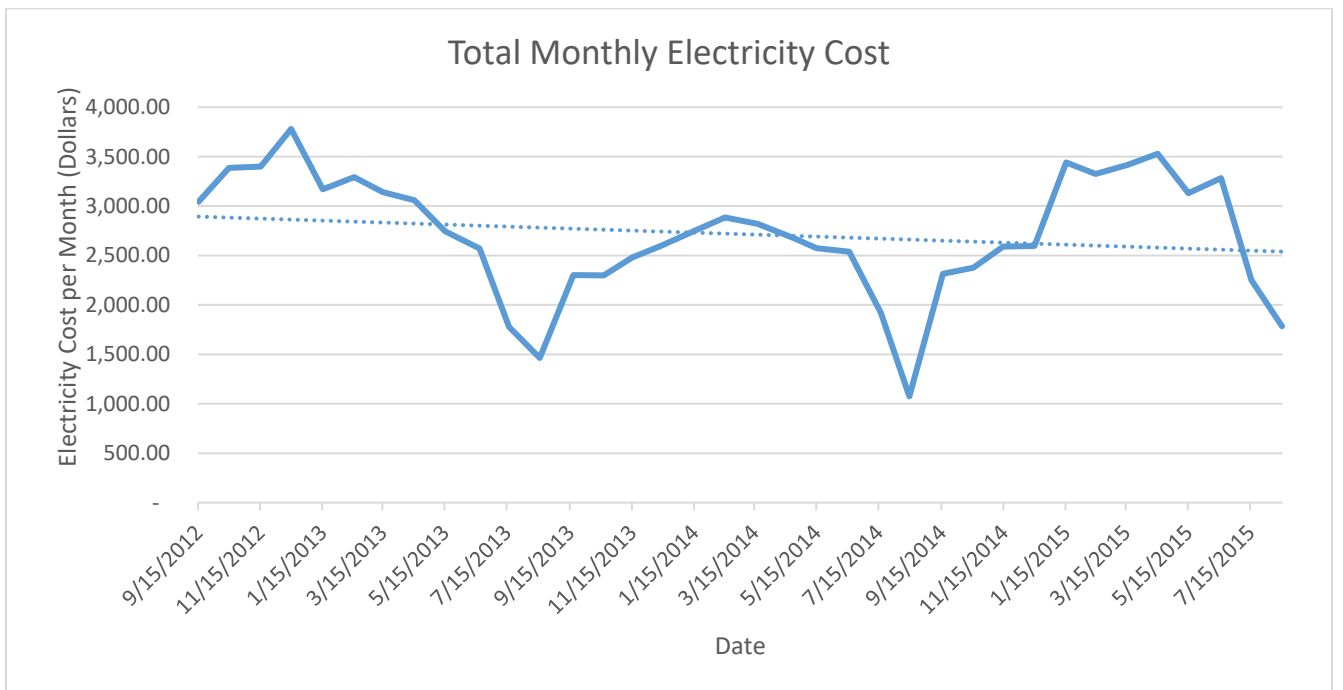
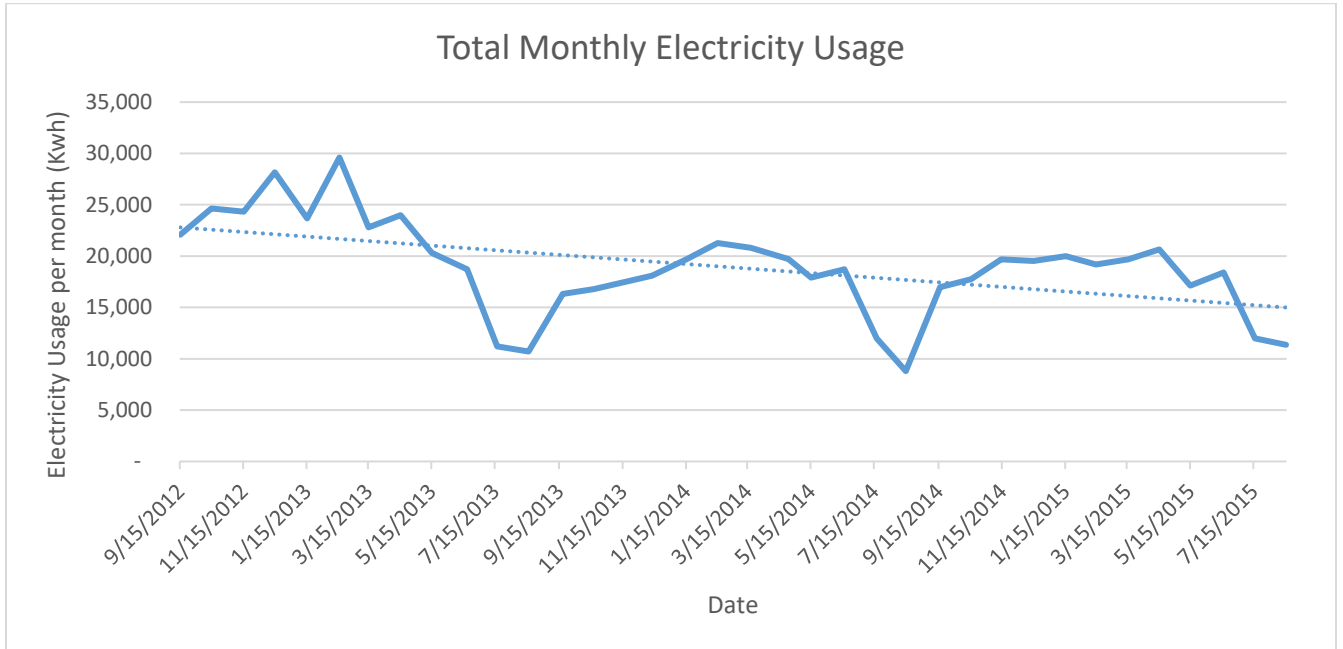
Academic Year	Usage (Gallons)	Cost
2012/2013	25,164.00	\$ 36,525.91
2013/2014	26,272.80	\$ 49,495.87
2014/2015	27,088.00	\$ 29,650.98



Moharimet Elementary School:

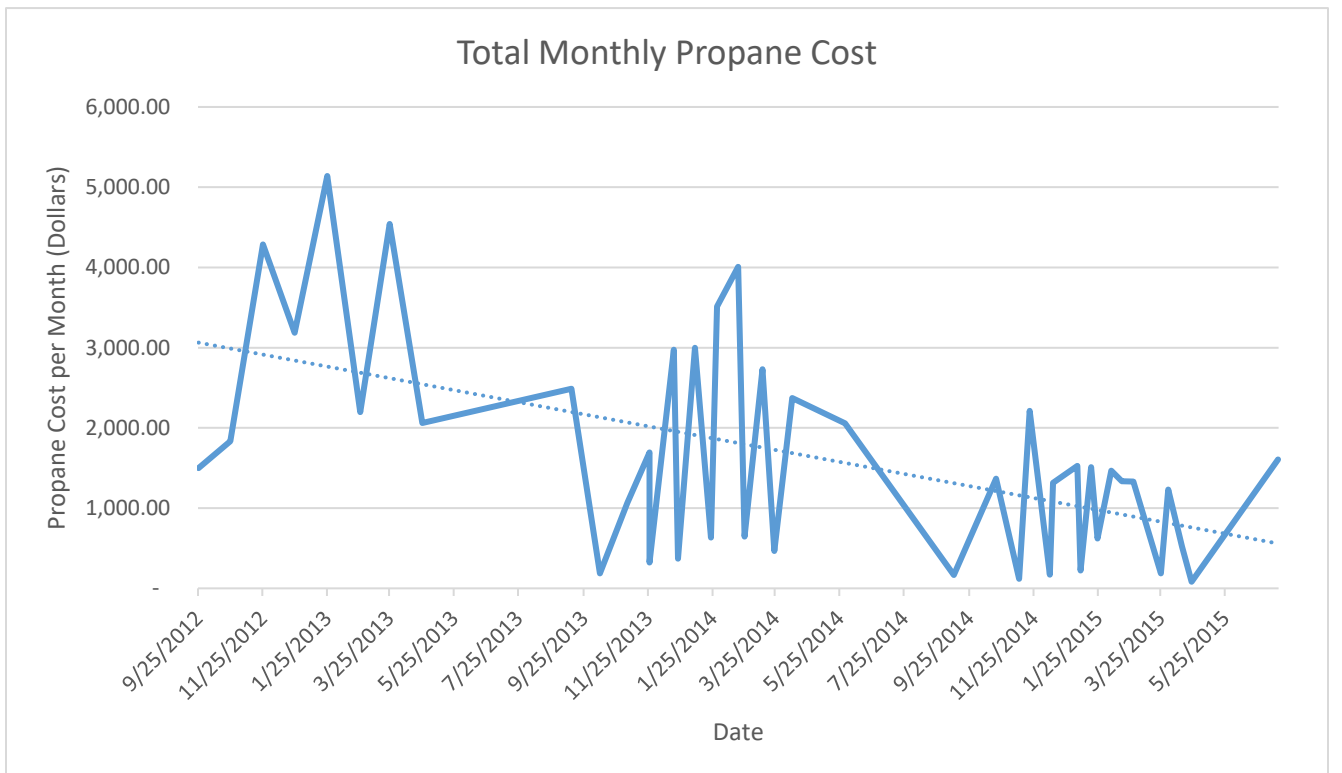
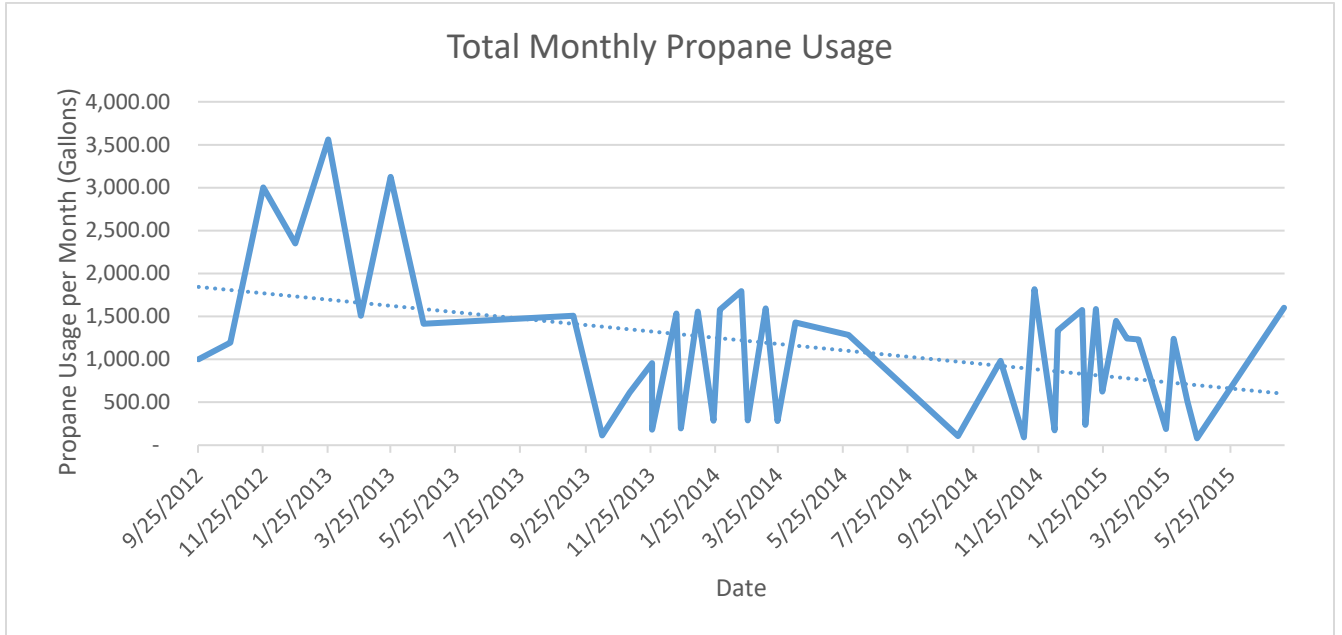
Electricity:

Academic Year	Total Electricity Usage (Kwh)	Cost
2012/2013	260,240	\$ 34,833.51
2013/2014	207,560	\$ 28,918.98
2014/2015	212,320	\$ 34,039.40



Energy: Liquid Propane

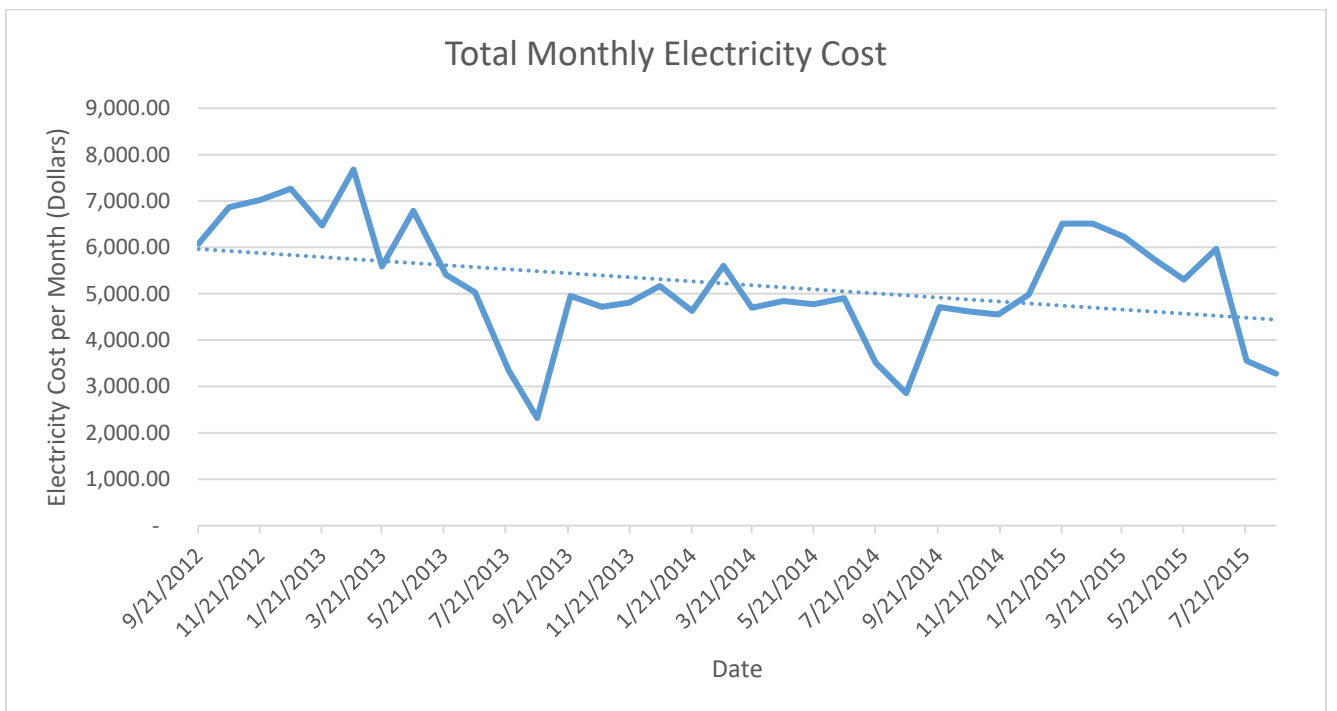
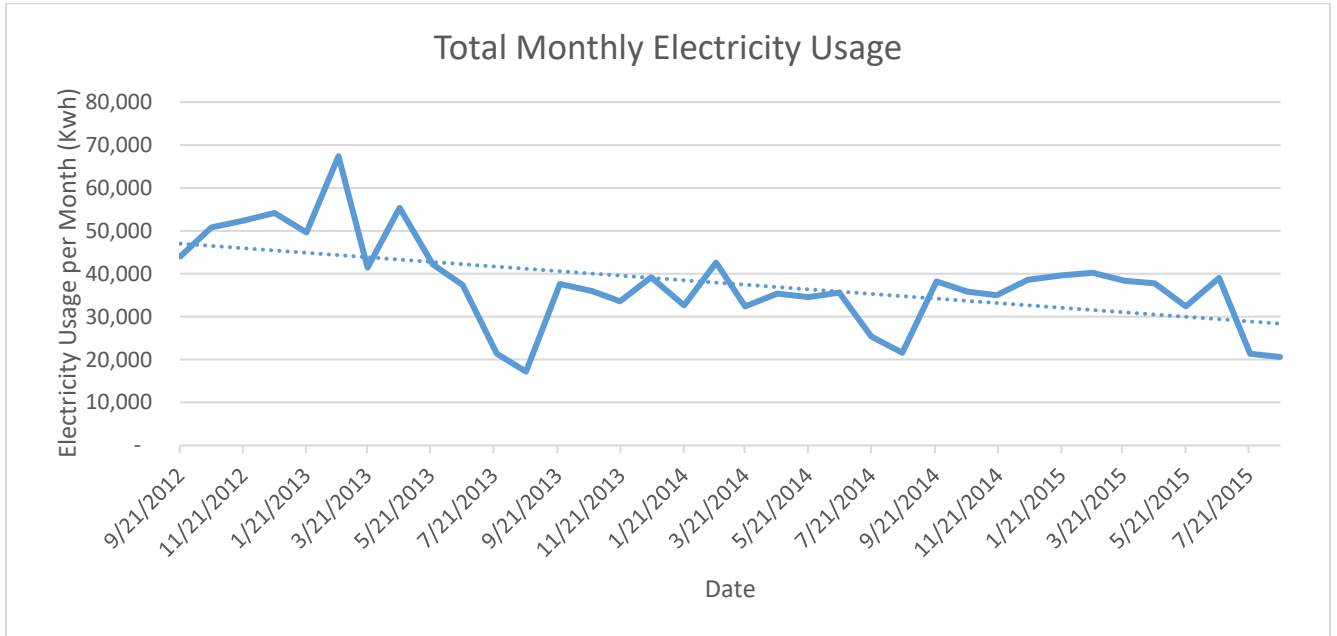
Academic Year	Total Usage (Gallons)	Cost
2012-2013	18,665.90	\$ 27,233.66
2013-2014	13,786.80	\$ 26,200.35
2014-2015	15,964.20	\$ 16,819.71



Oyster River High School:

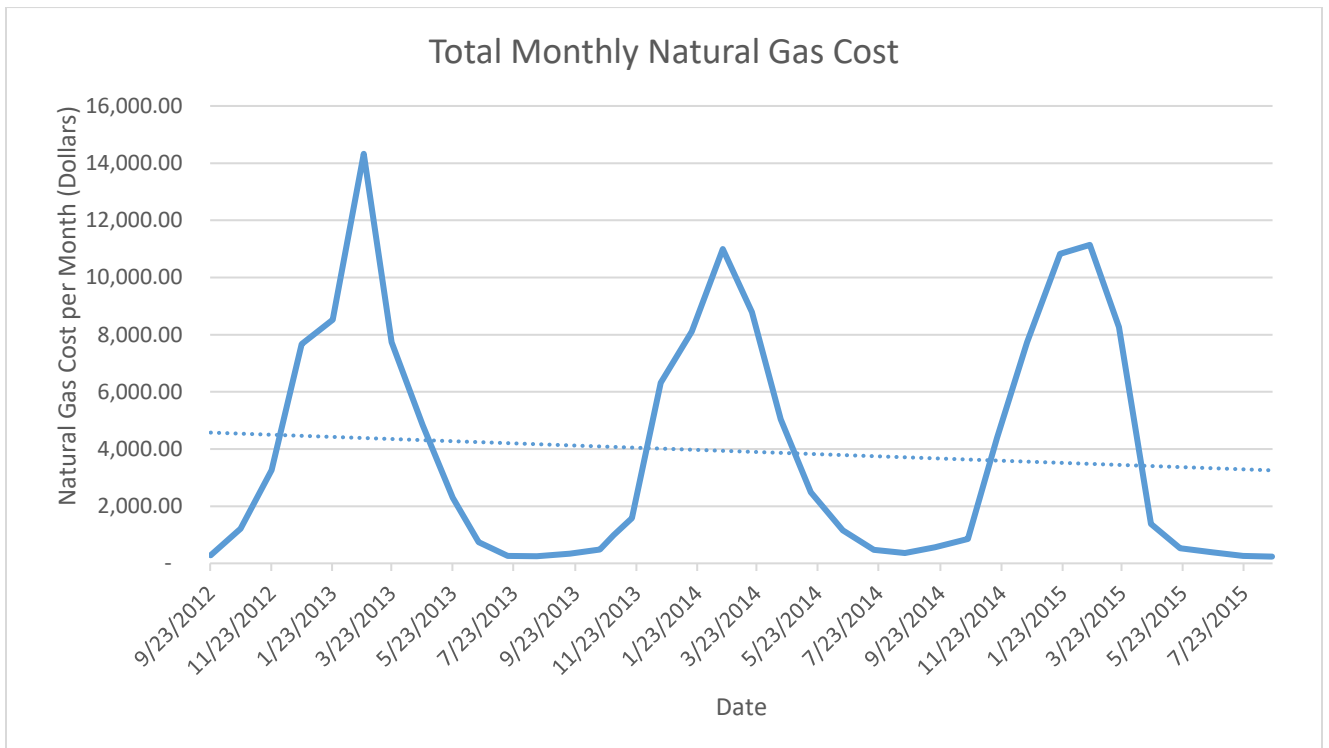
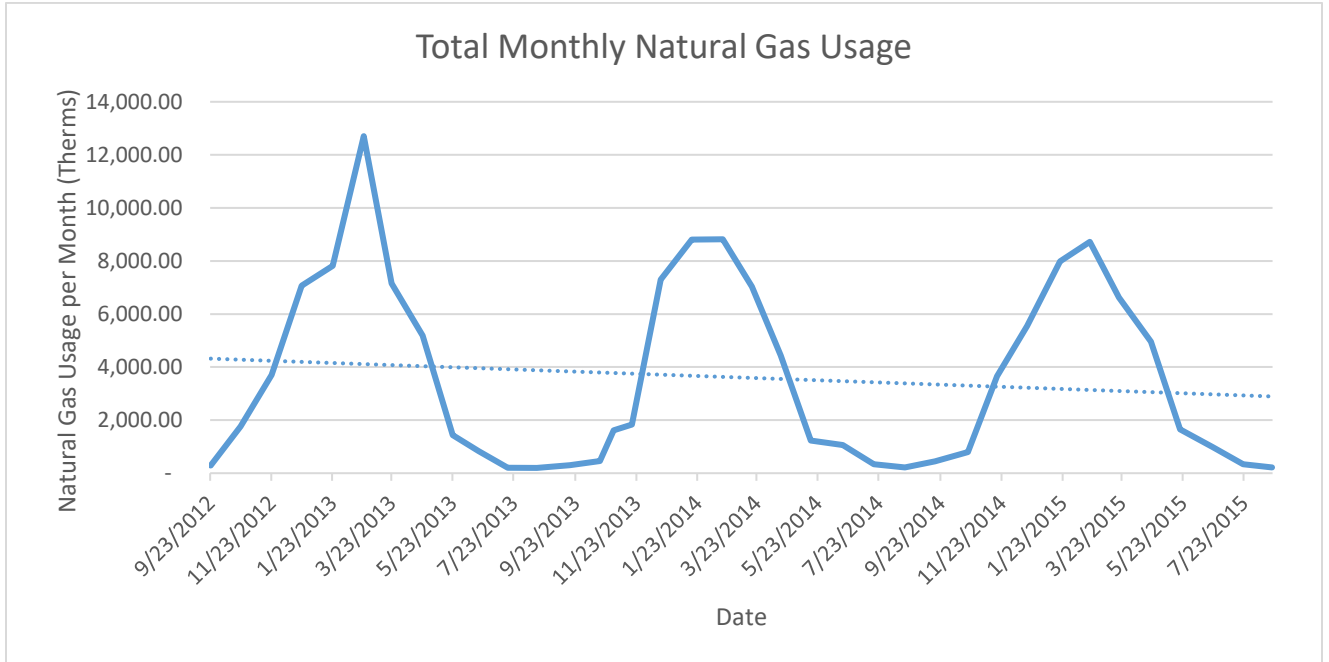
Electricity:

Academic Year	Total Usage (Kwh)	Total Cost
2012-2013	533,400.00	\$ 69,867.60
2013-2014	406,600.00	\$ 55,458.29
2014-2015	417,000.00	\$ 61,974.71



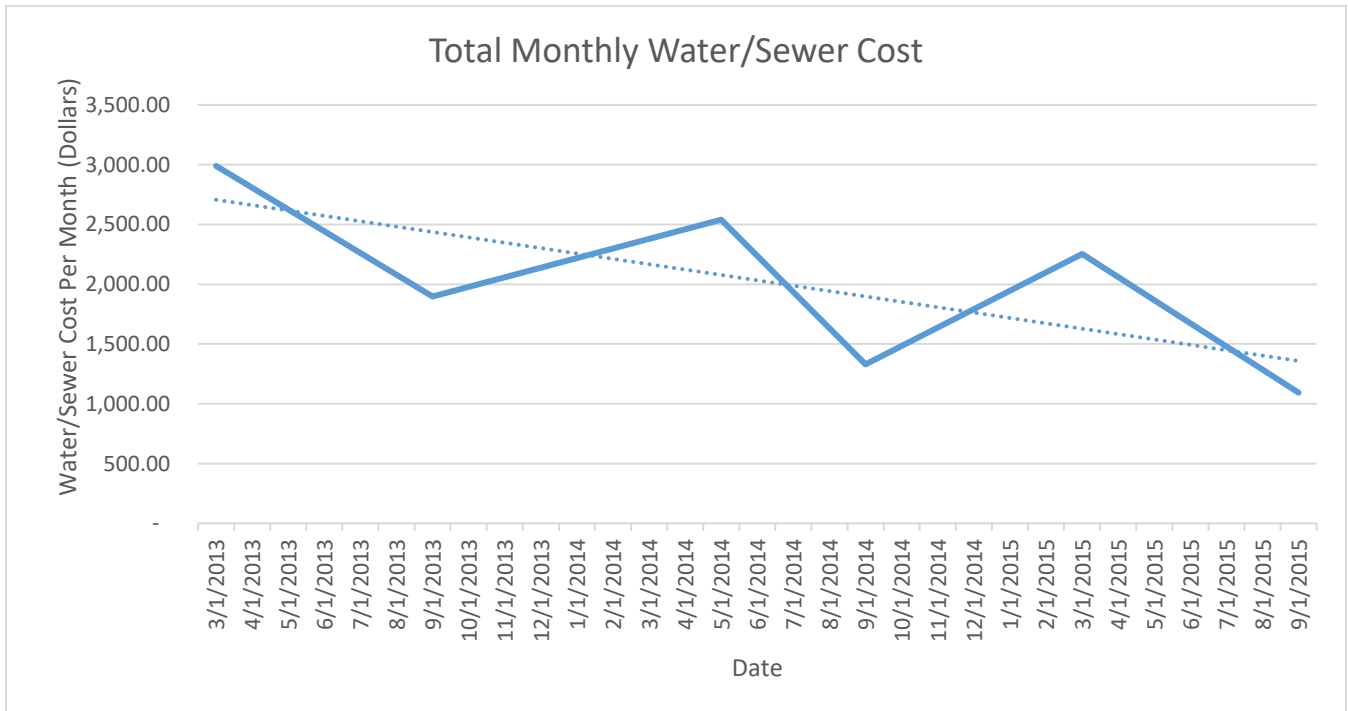
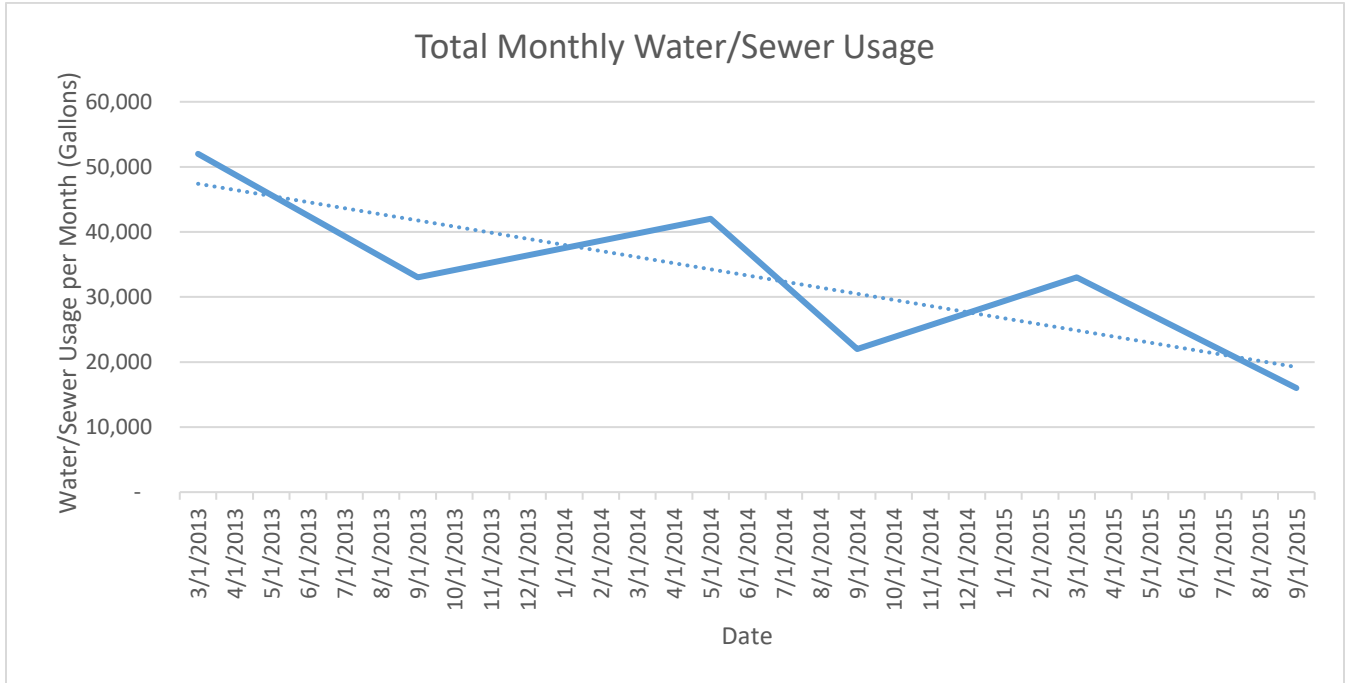
Energy: Natural Gas

Academic Year	Total Usage (Therms)	Total Cost
2012-2013	48,354.56	\$ 51,396.06
2013-2014	43,438.78	\$ 47,141.32
2014-2015	41,896.45	\$ 46,550.86



Water/Sewer:

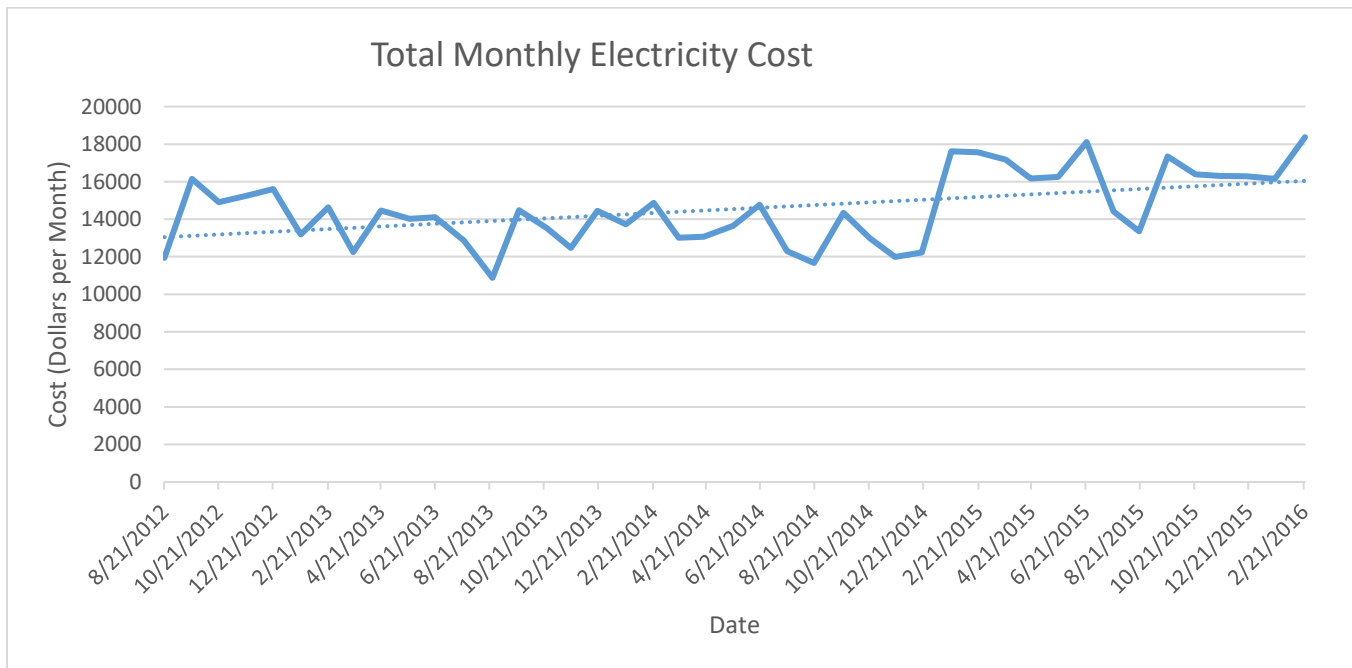
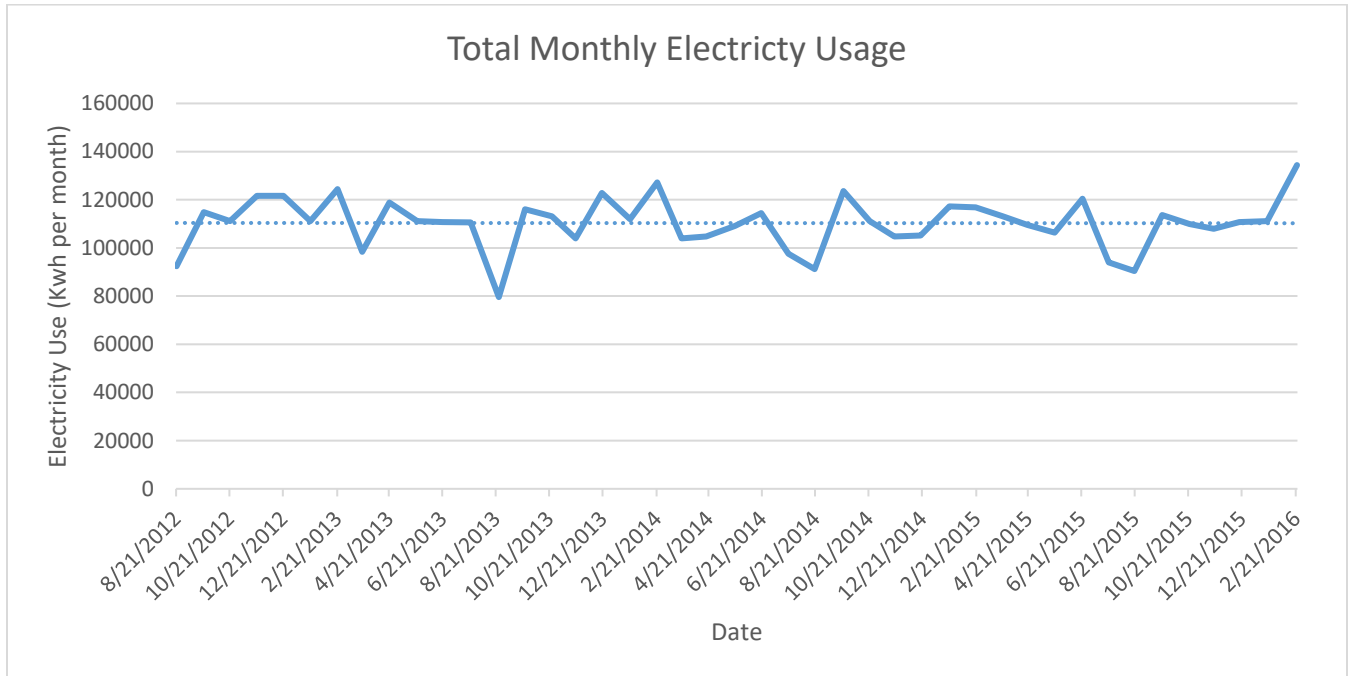
Academic Year	Total Usage (Gallons)	Total Cost
2012/2013	85,000.00	\$ 4,887.50
2013/2014	64,000.00	\$ 3,872.00
2014/2015	49,000.00	\$ 3,346.70



Oyster River High School:

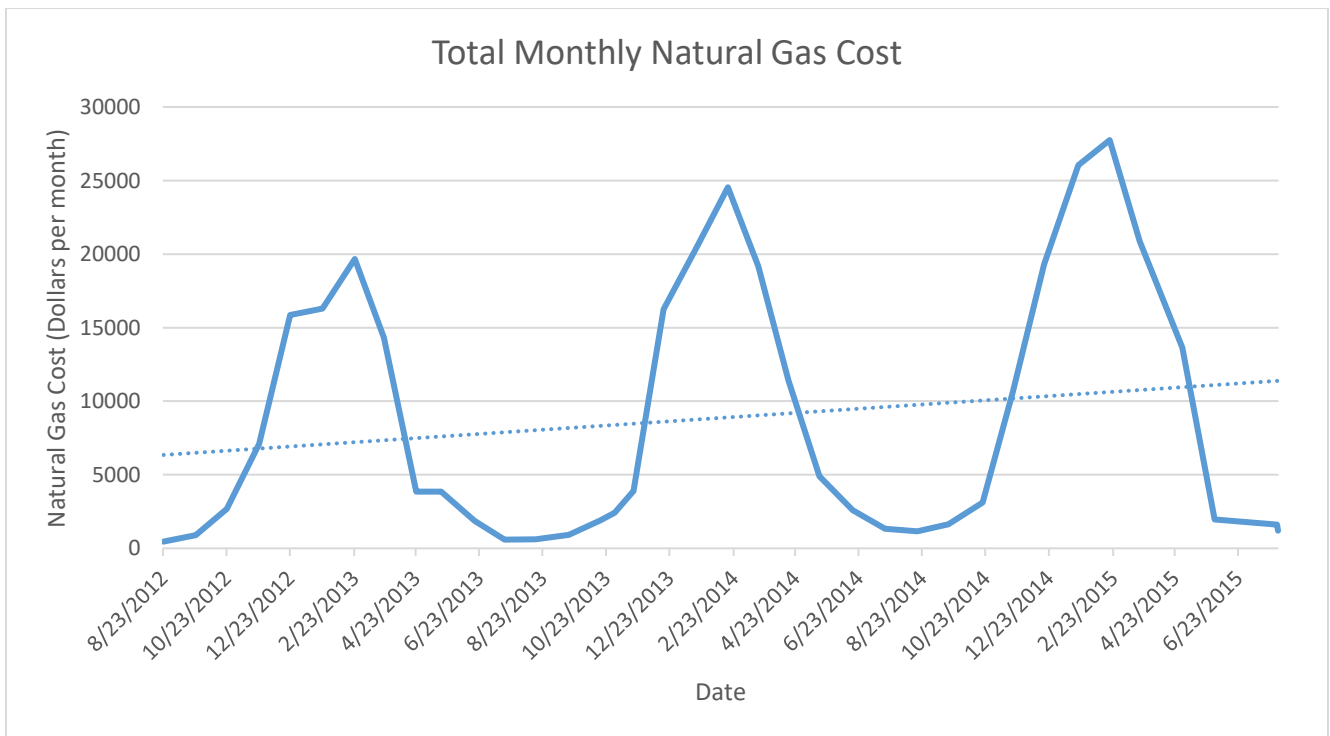
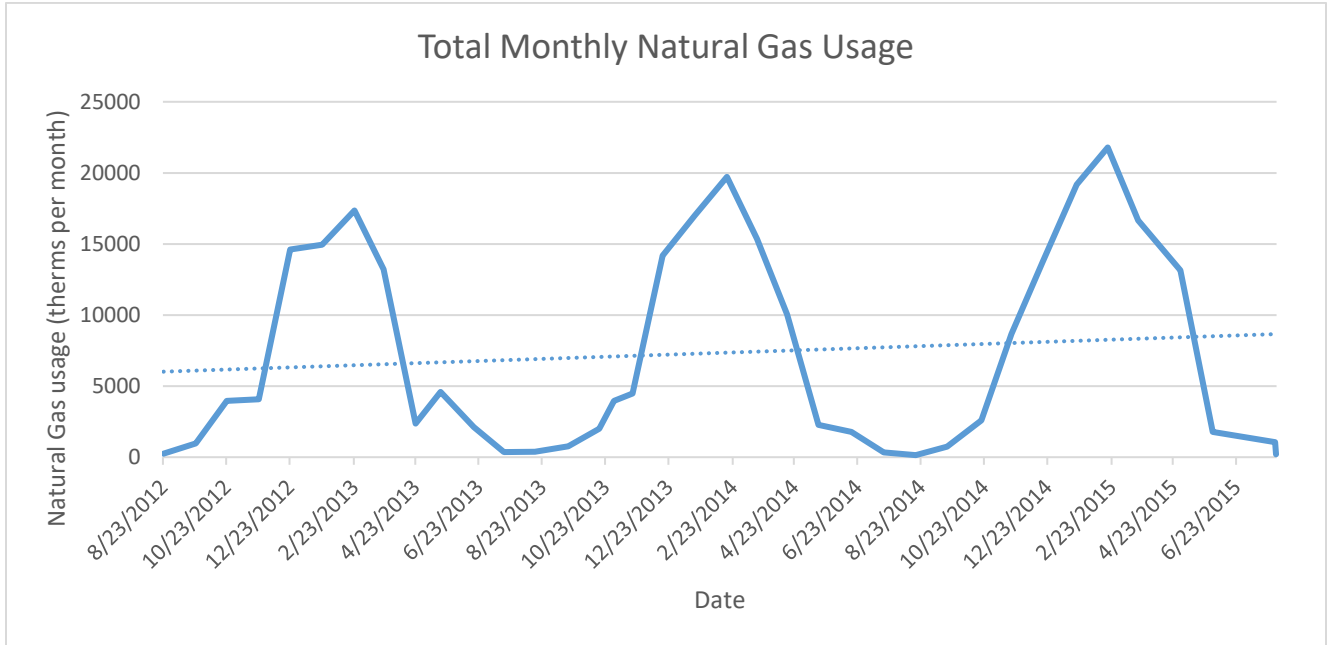
Electricity:

Academic Year	Total Usage (Kwh)	Total cost
2012-2013	1,347,000.00	\$ 169,360.06
2013-2014	1,304,800.00	\$ 161,198.81
2014-2015	1,313,600.00	\$ 180,502.32



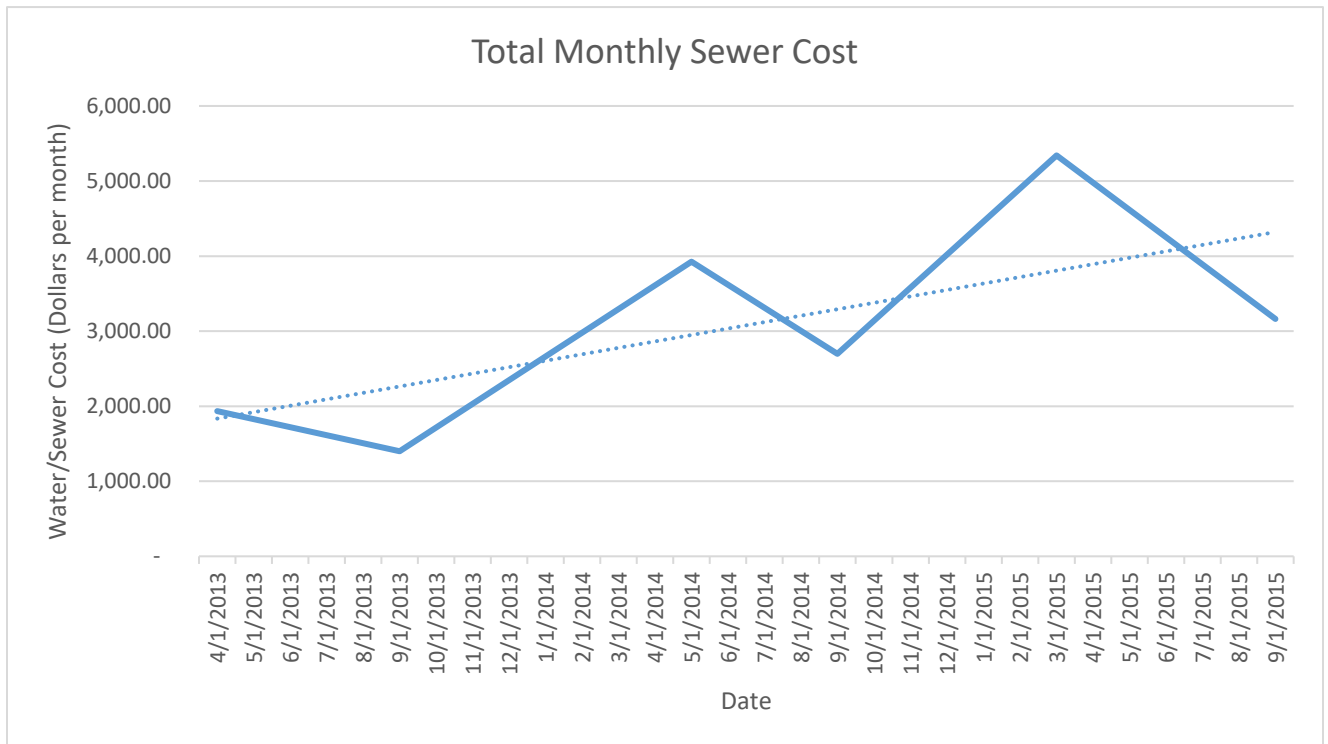
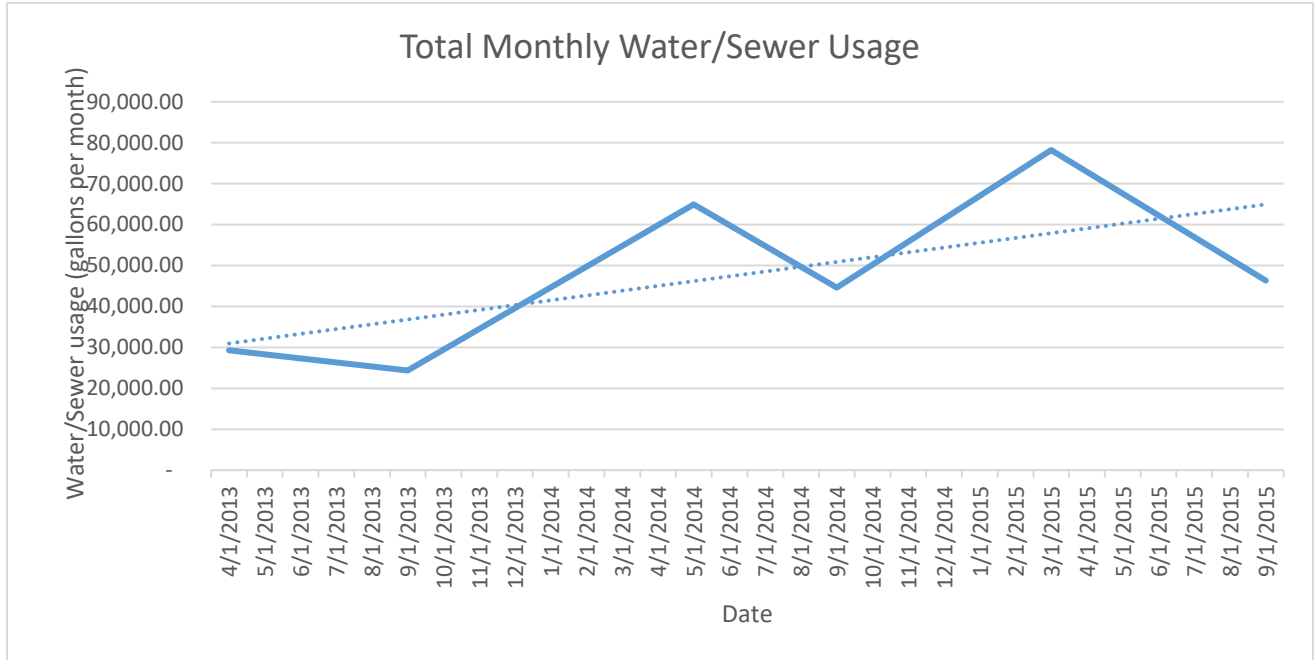
Energy: Natural Gas

Academic Year	Total Usage (Therms)	Cost
2012/2013	78,784.63	\$ 87,454.61
2013/2014	92,278.67	\$ 110,300.66
2014/2015	99,687.87	\$ 128,949.76



Water/Sewer:

Academic Year	Total Usage (Gallons)	Cost
2012-2013	53,642.00	\$ 3,333.91
2013-2014	109,477.00	\$ 6,623.36
2014-2015	124,514.00	\$ 8,504.31





Part II: Total Measurements for Transportation, Solid Waste/Recycling,
Electricity, Propane, Natural Gas, and Water/Sewer

Transportation:

	July 2011-June 2012		July 1,2015 to Date		% Change per bus
	Totals	Average Per Bus	Totals	Average Per Bus	
Miles Driven	506,588.00	14,899.65	390,146.00	11,474.88	N/A
Average Miles Per Gallon	9.10	9.10	9.10	9.10	N/A
Total maintenance/repair Costs	\$182,084.90	\$5,355.44	\$100,850.00	\$2,966.18	N/A
Gallons Consumed	60,002.00	1,764.76	42,869.00	1,260.85	N/A
Average Cost per Mile	\$0.36	\$0.36	\$0.26	\$0.26	-27.77%
Average Gas Consumed Per Month	5,000.17	147.06	4,286.90	126.09	-14.26%

Since the last Ecological Footprint report costs of transportation have dropped. The most recent data shows average cost per mile to be 10 cents less than the previous data. The price per mile traveled by the bus fleet this year is 27.77% less than it was in 2011/2012. The average gas consumed per month also follows this pattern and has dropped 14.26% in the same time frame. This drop in cost and usage can be attributed to consolidation of bus routes and by taking 2 busses off the road. Replacing older busses with newer models has also helped minimize repair cost. The transportation director Lisa Huppe cites these factors as well as reduced idling and Webasto heaters as the reason for the drops in cost and fuel usage.

Solid Waste and Recycling:

Solid Waste and Recycling Cost										
School	Cardboard		Recycling		Composting		Compactor		Waste	
	2011/2012	2015/2016	2011/2012	2015/2016	2011/2012	2015/2016	2011/2012	2015/2016	2011/2012	2015/2016
					\$					
Mast Way	-	-	\$ 912.00	\$ 828.00	1,200.00	-	-	-	\$ 2,160.00	\$ 2,160.00
					\$	\$				
Moharimet	-	-	\$ 912.00	\$ 912.00	1,200.00	1,125.00	-	-	\$ 2,160.00	\$ 2,160.00
	\$	\$			\$	\$				
ORMS	534.00	534.00	\$ 912.00	\$ 912.00	1,200.00	2,175.60	-	-	\$ 2,160.00	-
	\$	\$			\$	\$				
ORHS	534.00	528.00	\$ 912.00	\$ 912.00	1,200.00	2,175.60	-	\$ 2,459.25	\$ 5,715.60	-

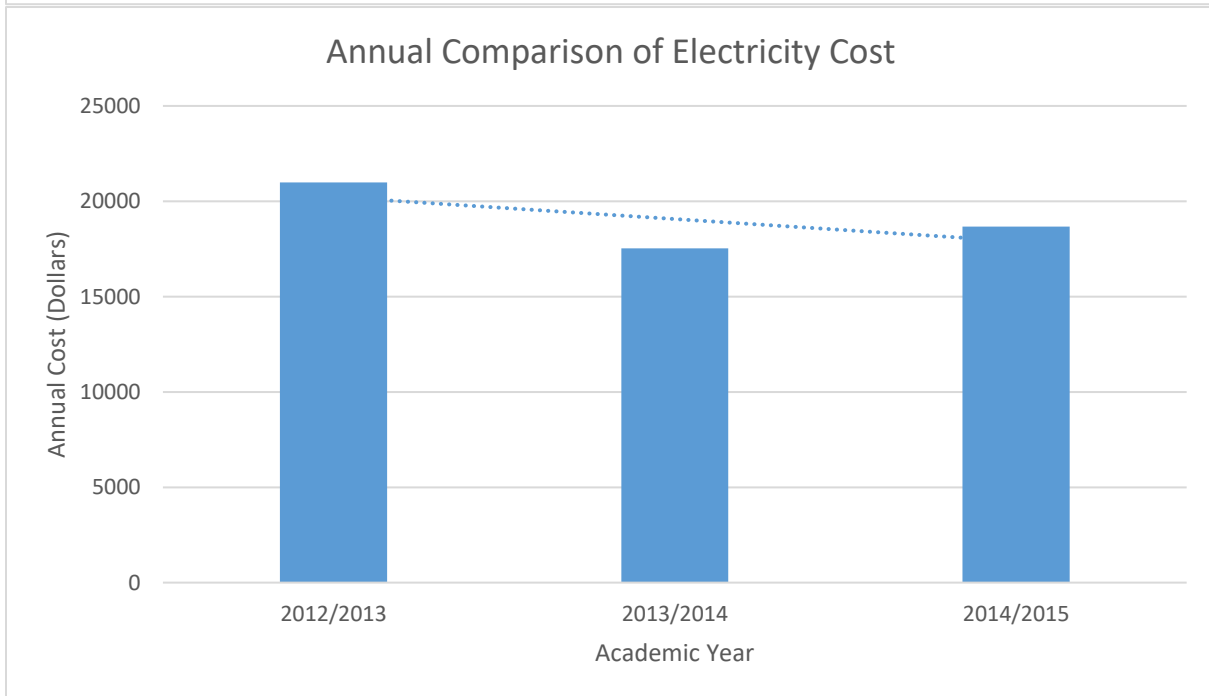
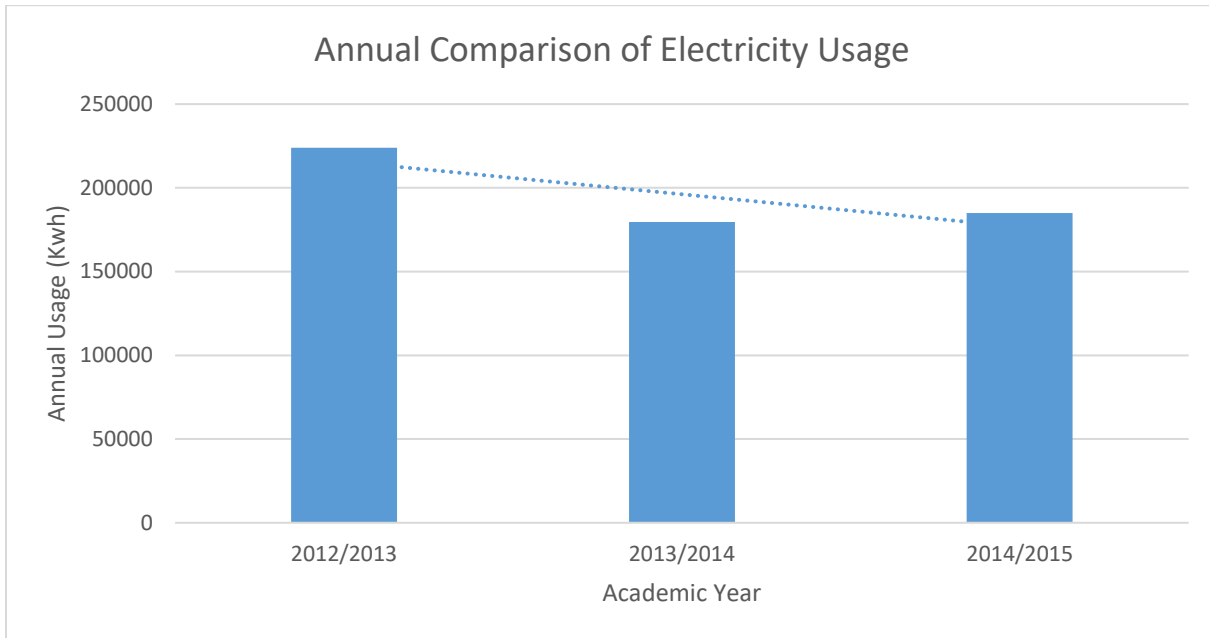
Total Solid Waste/Recycling Cost			
	2011/2012	2015/2016	% Change
Mast Way	\$ 4,272.00	\$ 2,988.00	-30.06%
Moharimet	\$ 4,272.00	\$ 4,197.00	-1.75%
ORMS	\$ 4,806.00	\$ 3,621.60	-24.64%
ORHS	\$ 8,361.60	\$ 6,074.85	-27.34%

The last Ecological Footprint report showed much more spending in waste amongst the four schools in the district. In the four years since the previous report spending has been shifted to composting. Aside from those two methods of disposal every other form has flat lined or decreased. Every school has seen a decrease in overall waste/recycling cost from as much as -30.06% to as little as -1.75%. What isn't seen within this data is the Eco-Throw program at ORHS which started in December of 2015. This program will be highlighted further in the 3rd section of this report.

Electricity:

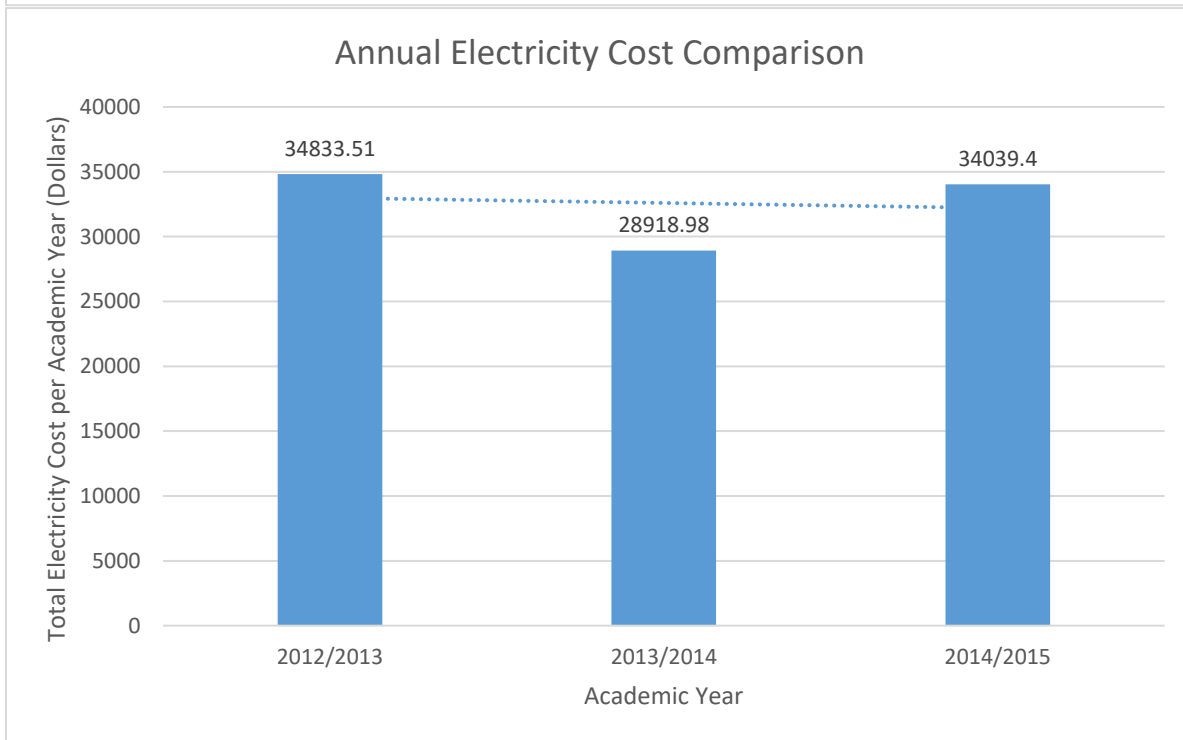
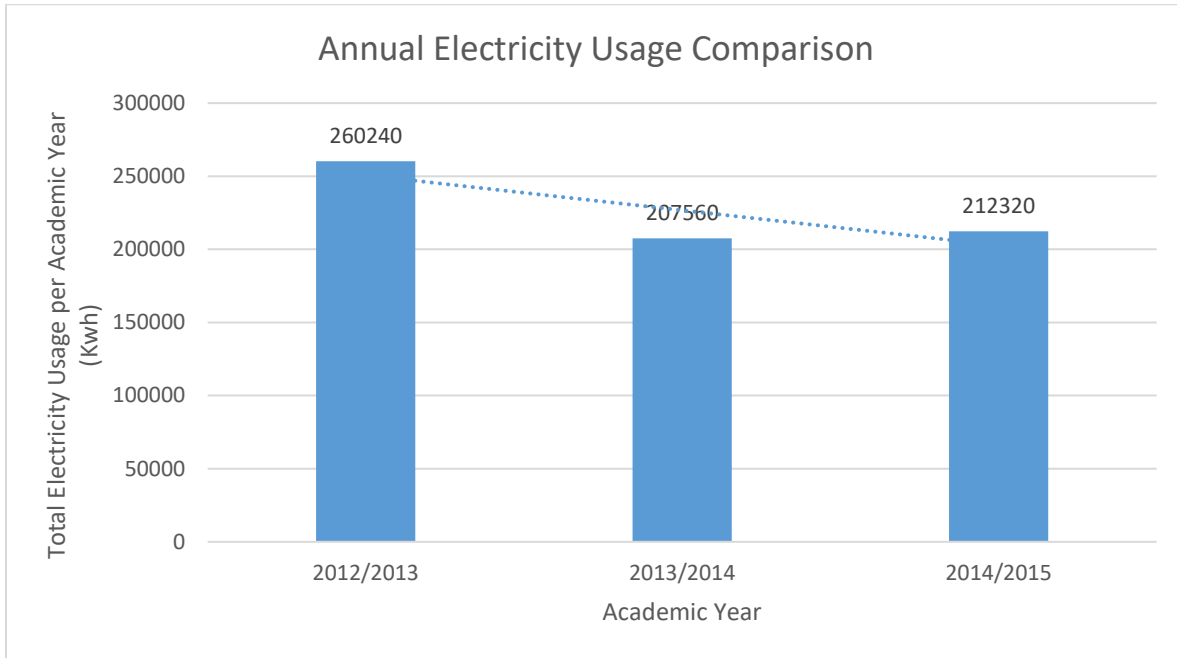
Mast Way Elementary School:

Academic Year	Total Electricity Usage (Kwh)	Cost	% Change Cost
2012/2013	223,960.00	\$ 20,994.83	-
2013/2014	179,520.00	\$ 17,538.44	-16.46%
2014/2015	184,960.00	\$ 18,670.39	6.45%



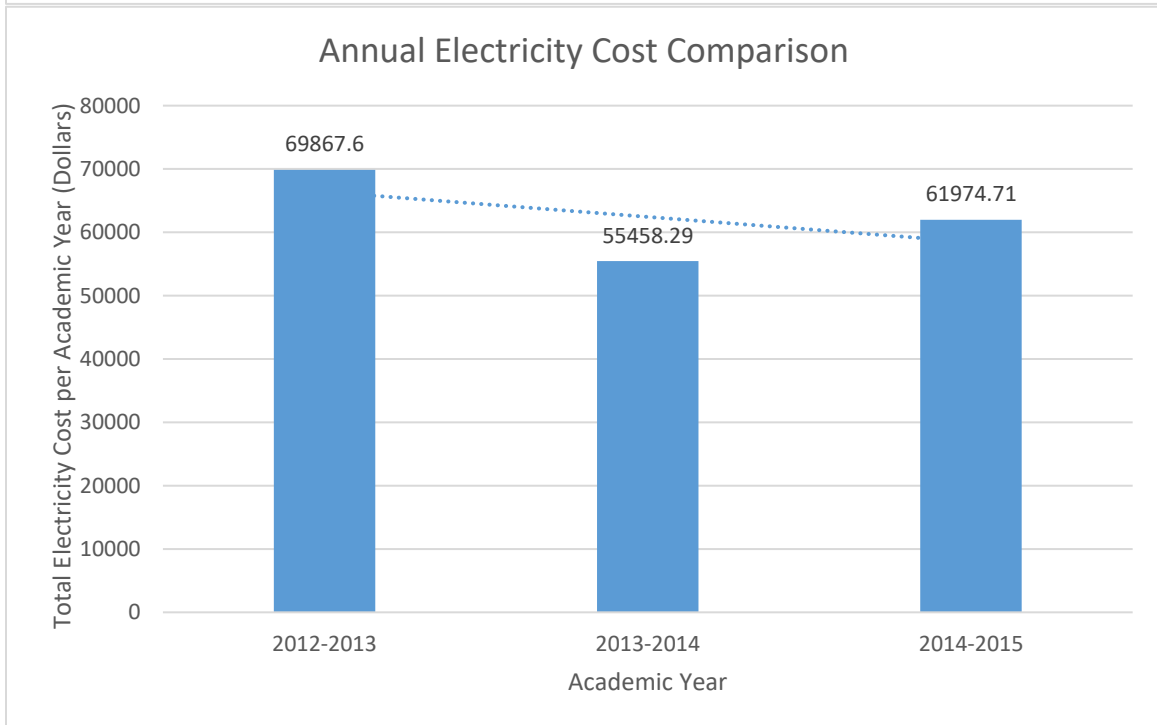
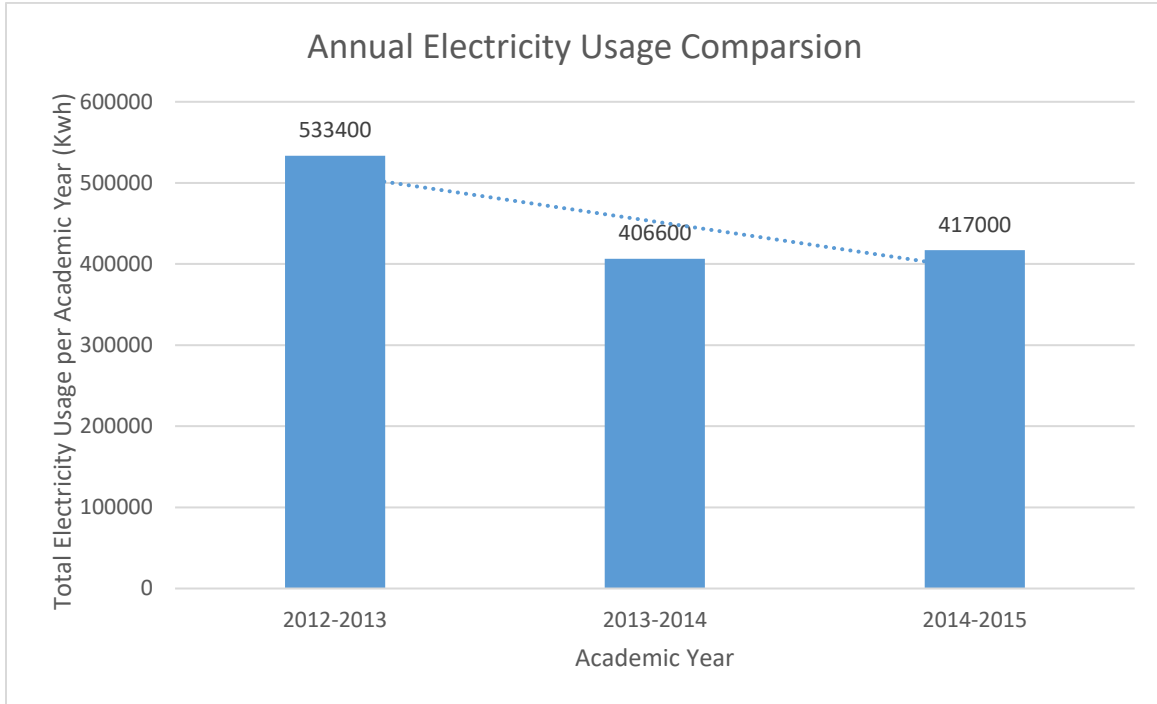
Moharimet Elementary School:

Academic Year	Total Electricity Usage (Kwh)	Cost	% Change Cost
2012/2013	260,240.00	\$ 34,833.51	-
2013/2014	207,560.00	\$ 28,918.98	-16.98%
2014/2015	212,320.00	\$ 34,039.40	17.71%



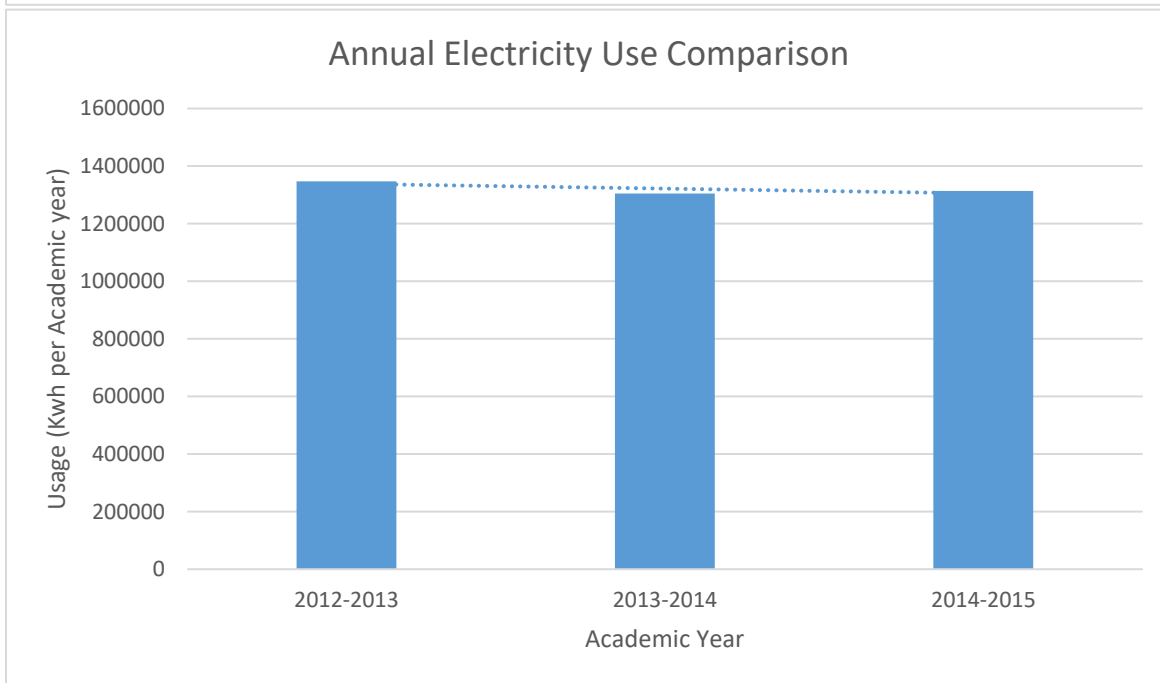
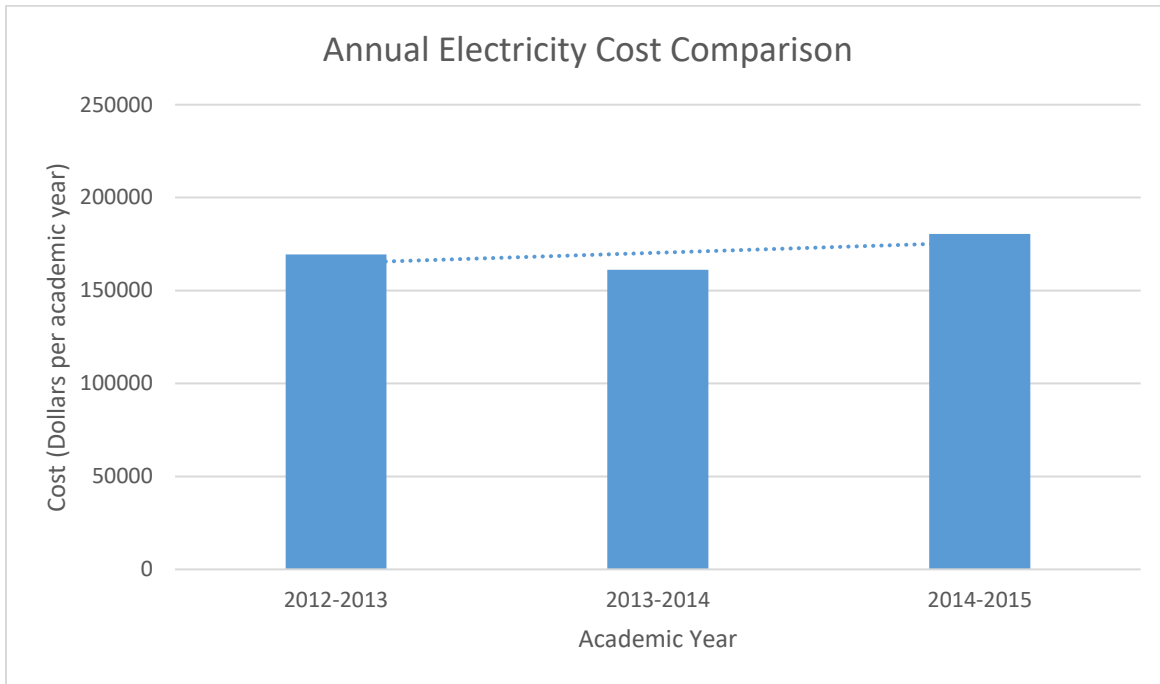
Oyster River Middle School:

Academic Year	Total Electricity Usage (Kwh)	Cost	% Change Cost
2012-2013	533,400.00	\$ 69,867.60	-
2013-2014	406,600.00	\$ 55,458.29	-20.62%
2014-2015	417,000.00	\$ 61,974.71	11.75%



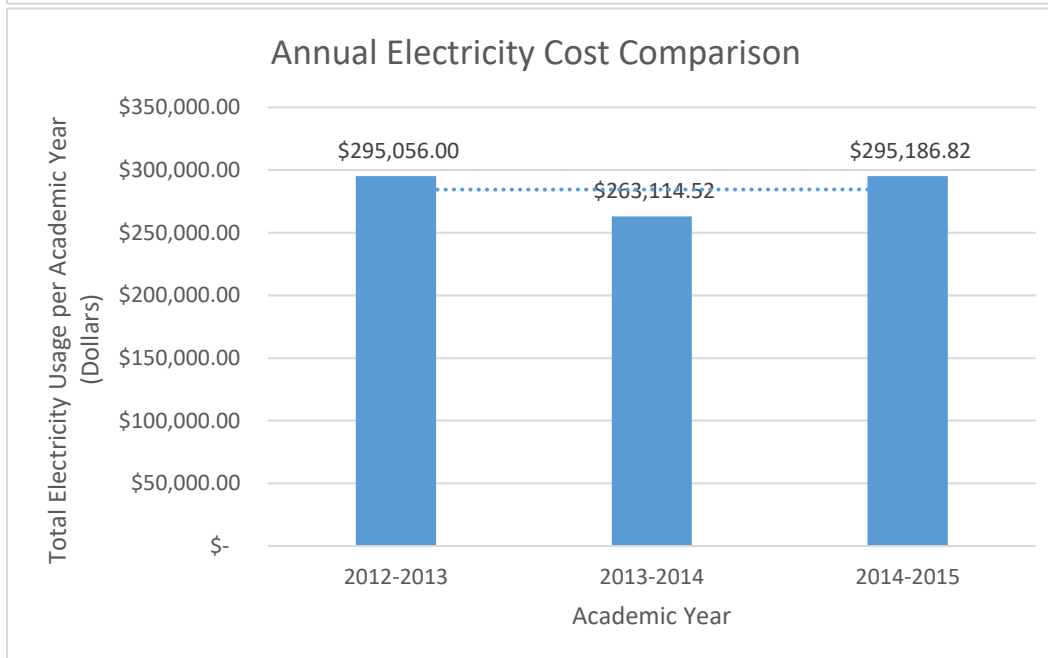
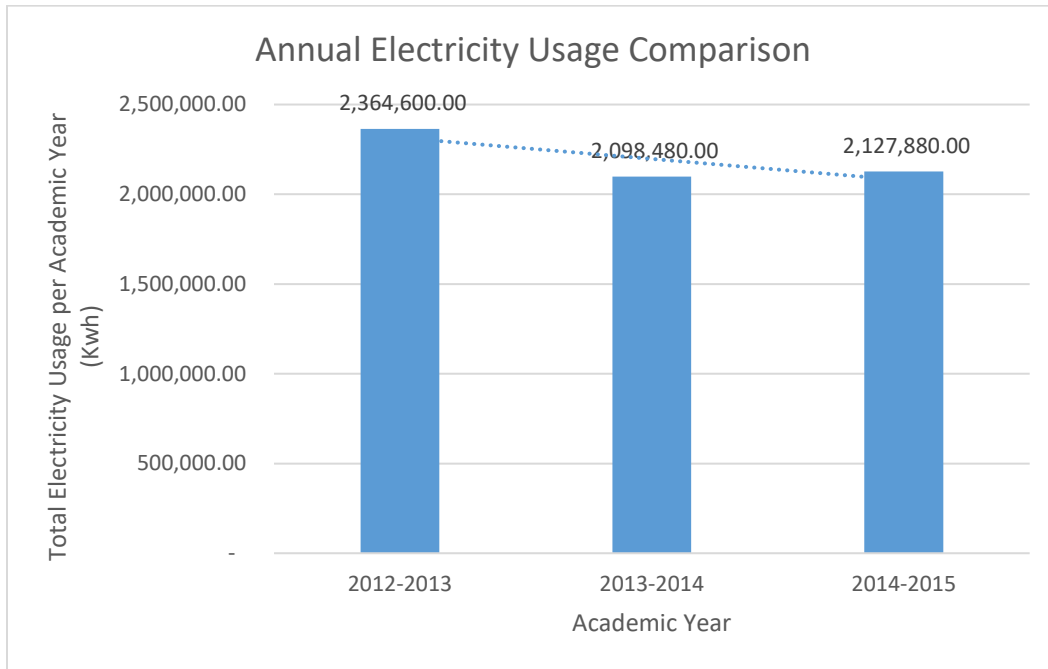
Oyster River High School:

Academic Year	Total Use (Kwh)	Cost	% Change Cost
2012-2013	1,347,000.00	\$ 169,360.06	-
2013-2014	1,304,800.00	\$ 161,198.81	-4.82%
2014-2015	1,313,600.00	\$ 180,502.32	11.97%



All Four Schools:

Academic Year	Total Use (Kwh)	Cost	% Change Cost	% Change Usage
2012-2013	2,364,600.00	\$ 295,056.00	-	-
2013-2014	2,098,480.00	\$ 263,114.52	-10.83%	-11.25%
2014-2015	2,127,880.00	\$ 295,186.82	12.19%	1.40%



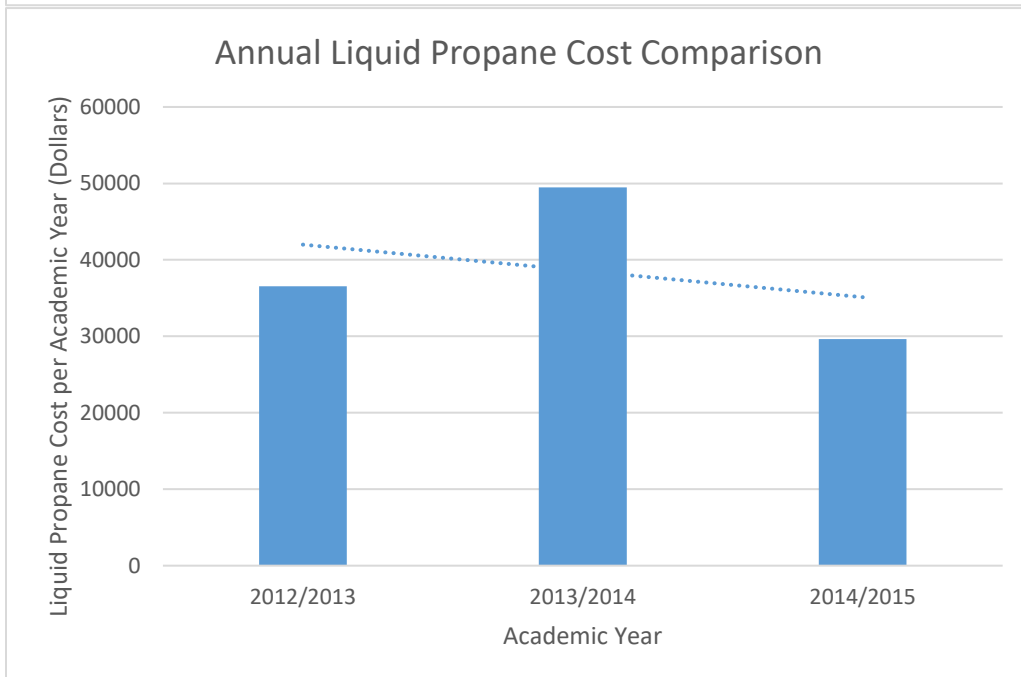
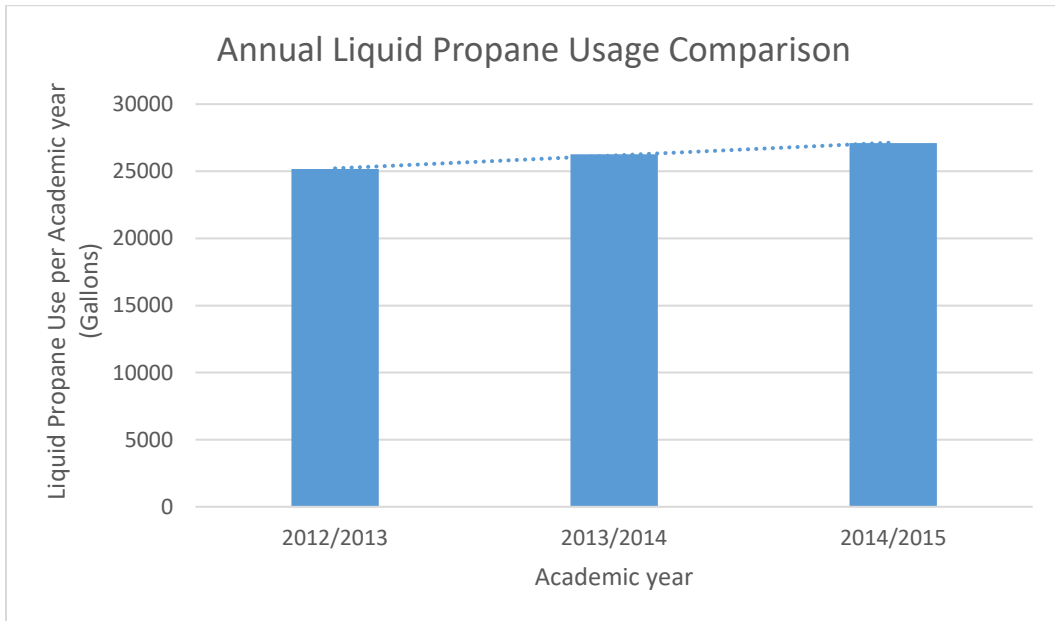
Analysis:

All in all the entire district managed to use about 200,000 less kilo-watt hours of electricity from 2012 to 2015. However with the changing prices of electricity over that time increasing the district spent about the same amount of money for less kilo-watt hours. Within the district some schools did better than others as seen in the previous charts and graphs. Oyster River High School (ORHS) was the only school to spend more money on electricity in the 2014/2015 academic year compared to the 2012/2013 academic year. Oyster River High School did use less electricity over that time frame, but not nearly as much percentage wise as the other schools. Oyster River Middle School (ORMS) actually did the best in regards to saving money and electricity. ORMS managed to use a little over 110,000 less kilo-watt hours and save nearly \$8,000 in 2014/2015 compared to 2012/2013. ORHS has implemented a power down program which shuts down all power usage during thanksgiving and Christmas break. This current year was the first implementation so the results will be seen in the next ecological footprint report.

Propane:

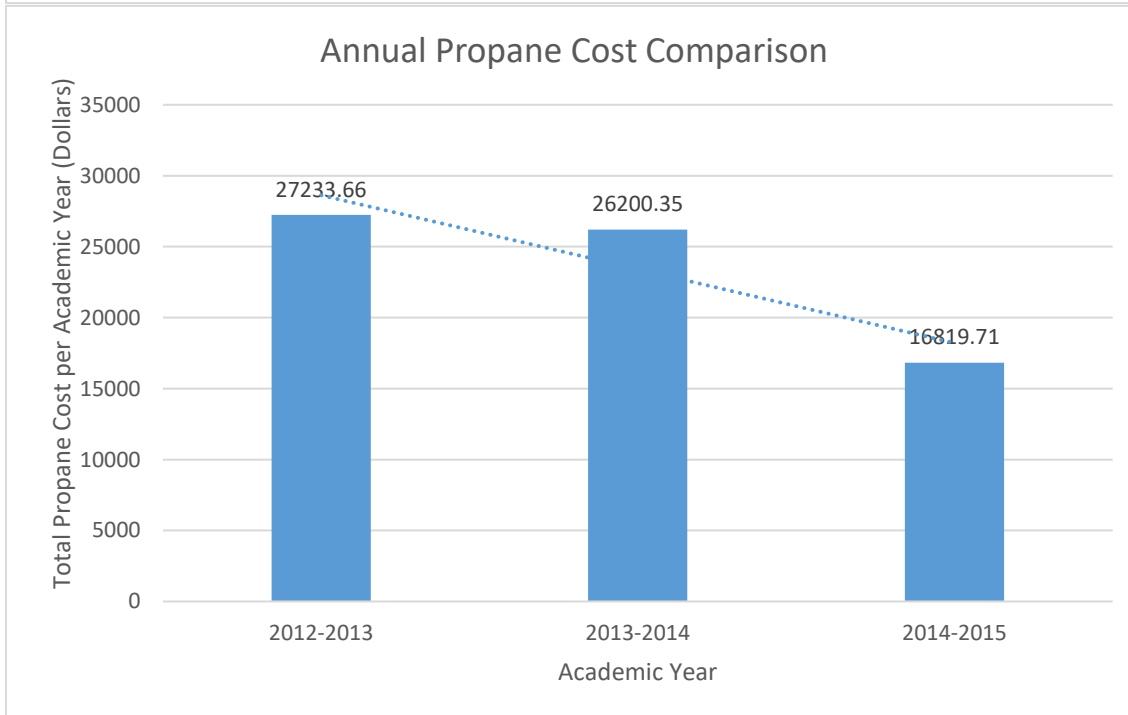
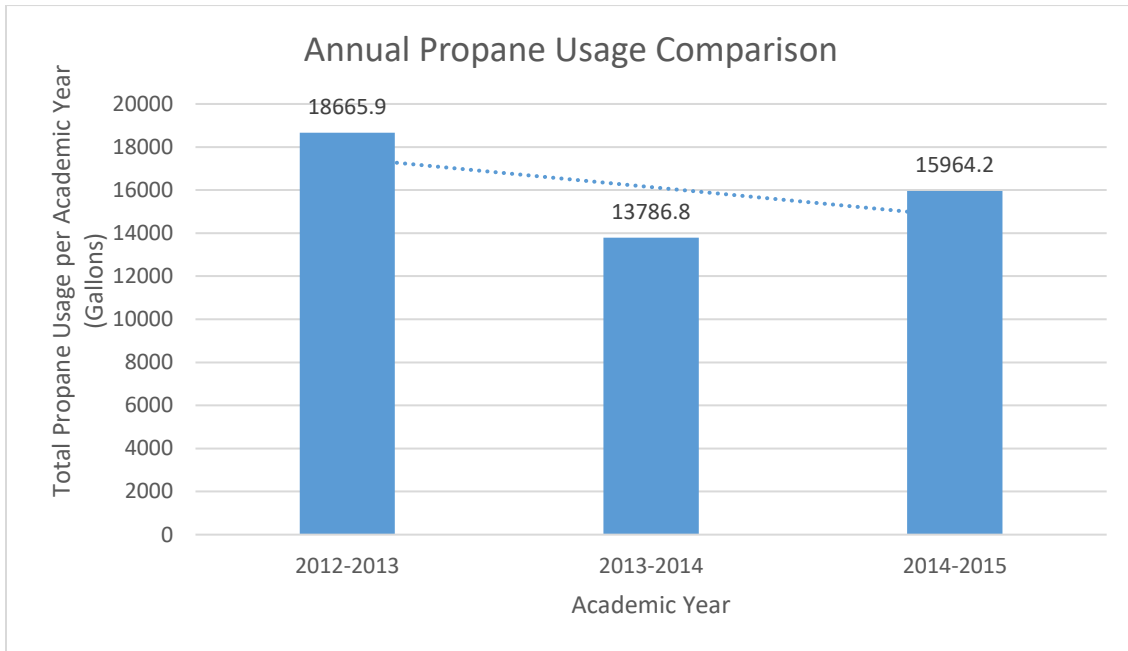
Mast Way Elementary School:

Academic Year	Total Usage Gallons	Cost	% Change Cost
2012/2013	25,164.00	\$ 36,525.91	-
2013/2014	26,272.80	\$ 49,495.87	35.51%
2014/2015	27,088.00	\$ 29,650.98	-40.10%



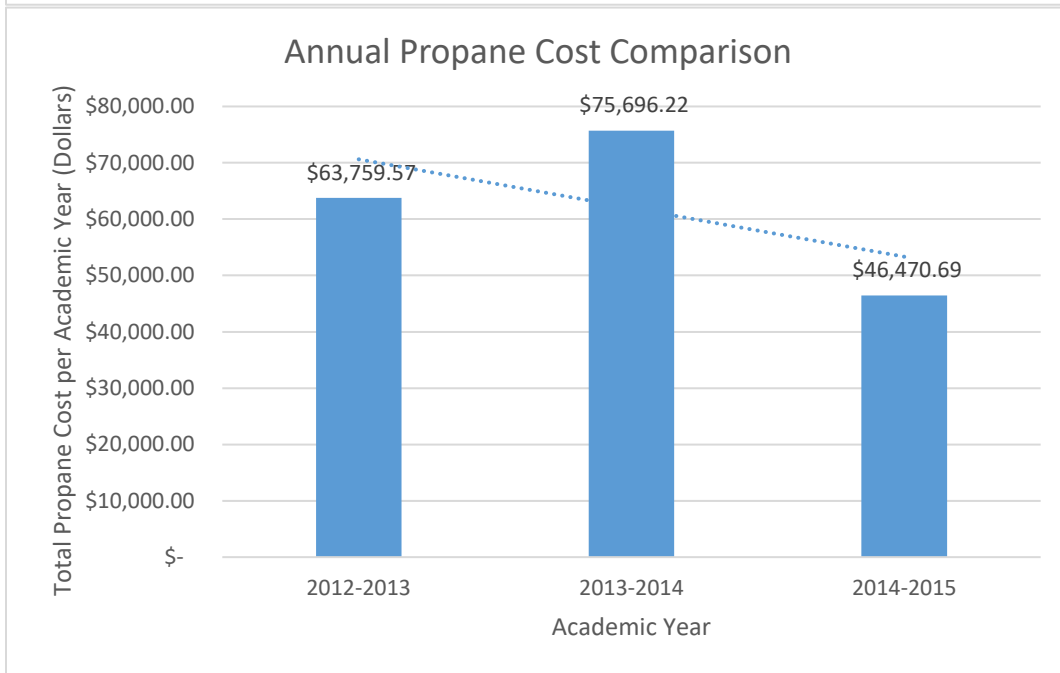
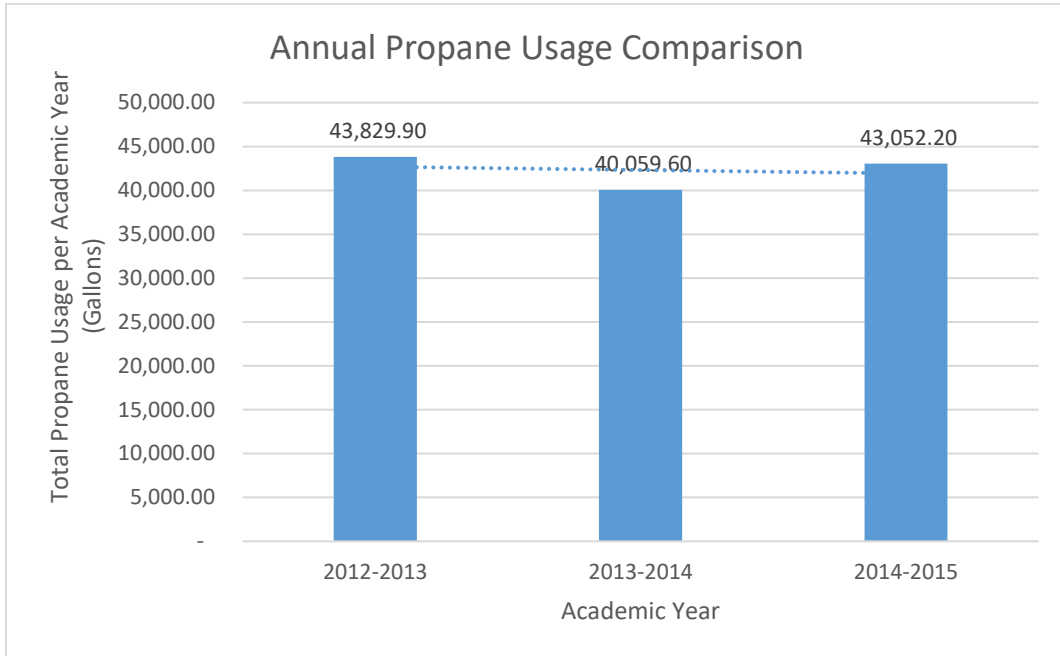
Moharimet Elementary School:

Academic Year	Total Usage (Gallons)	Cost	% Change Cost
2012-2013	18,665.90	\$ 27,233.66	-
2013-2014	13,786.80	\$ 26,200.35	-3.79%
2014-2015	15,964.20	\$ 16,819.71	-35.80%



Mast Way Elementary School and Moharimet Elementary School:

Academic Year	Total Usage (Gallons)	Cost	% Change Cost	% Change Usage
2012-2013	43,829.90	\$ 63,759.57	-	-
2013-2014	40,059.60	\$ 75,696.22	18.72%	-8.60%
2014-2015	43,052.20	\$ 46,470.69	-27.12%	-1.77%



Analysis:

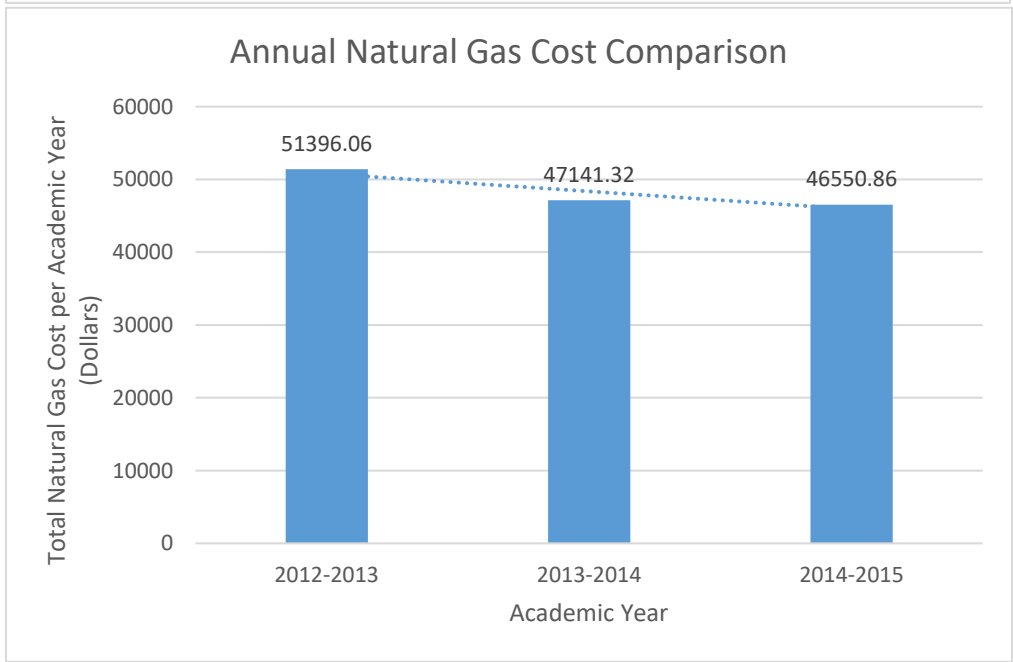
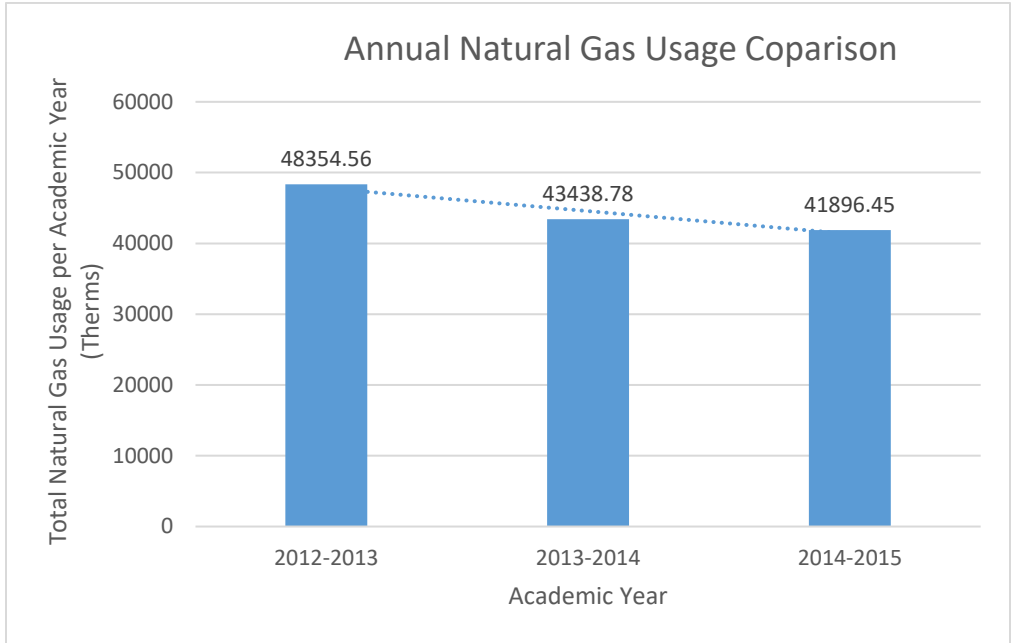
Only Mast Way and Moharimet use Propane which is why the other two schools weren't included in this section of the report. Overall the schools used slightly less fuel and spent significantly less money over the 3 year time frame. Both schools combined to spend almost 25,000 dollars less on propane in 2014/2015 compared to 2012/2013. Between the two schools Moharimet saved the most fuel (2,600 gallons) over the three year period. Both schools saved over 7,000 dollars and saw their costs drop by 35-40%.

This drop in expense not relative to drop in use is a sign of falling prices. With heating the amount of fuel used is also very dependent on severity of winter storms which makes this set of data slightly less useful.

Natural Gas:

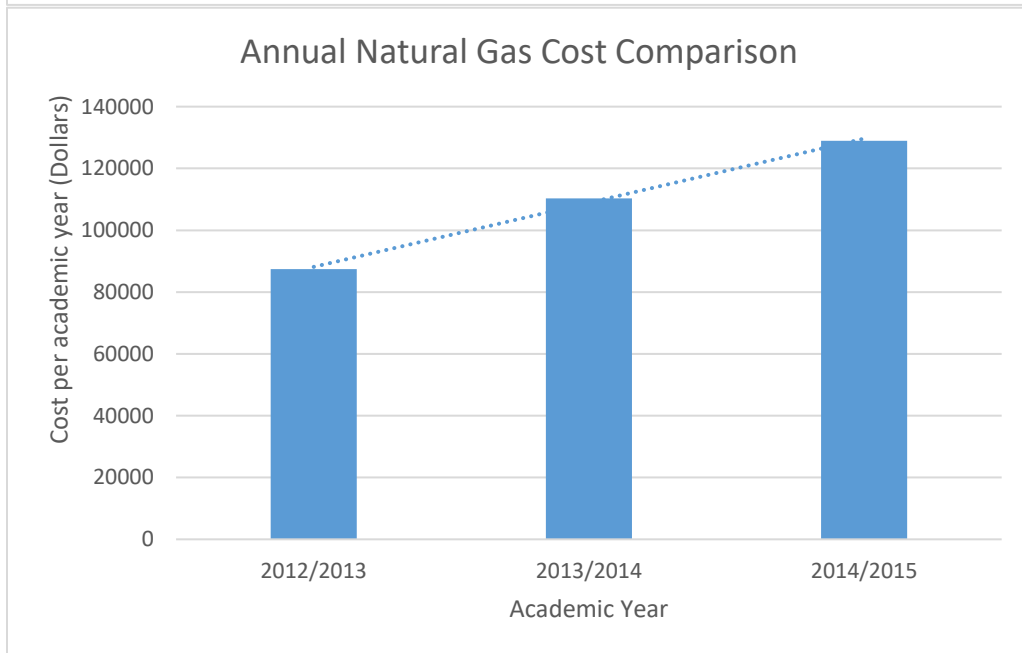
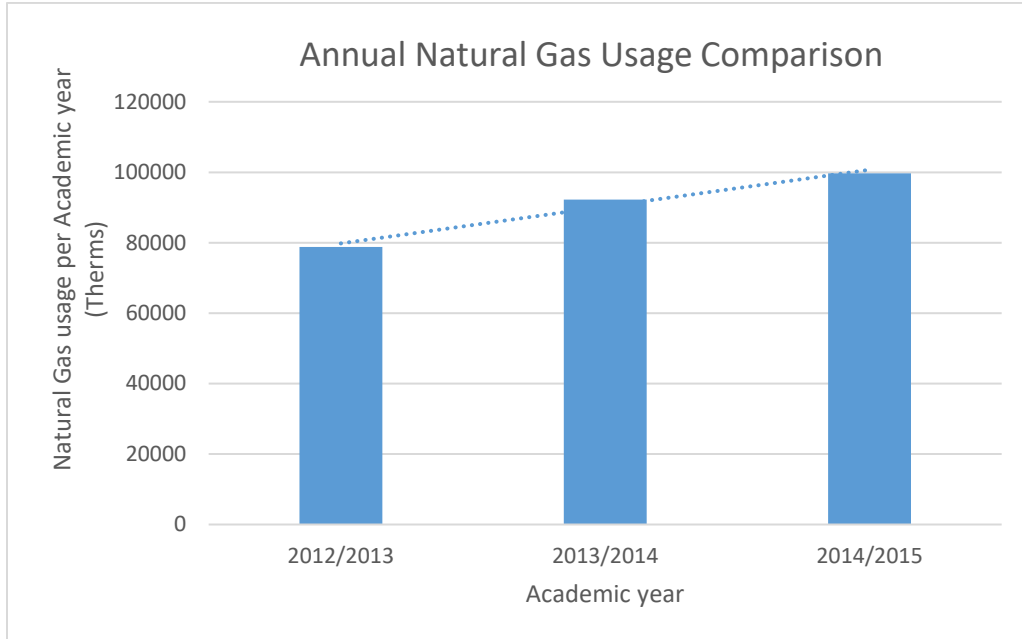
Oyster River Middle School

Academic Year	Total Usage (Therms)	Total Cost	% Change Cost
2012-2013	48,354.56	\$ 51,396.06	-
2013-2014	43,438.78	\$ 47,141.32	-8.28%
2014-2015	41,896.45	\$ 46,550.86	-1.25%



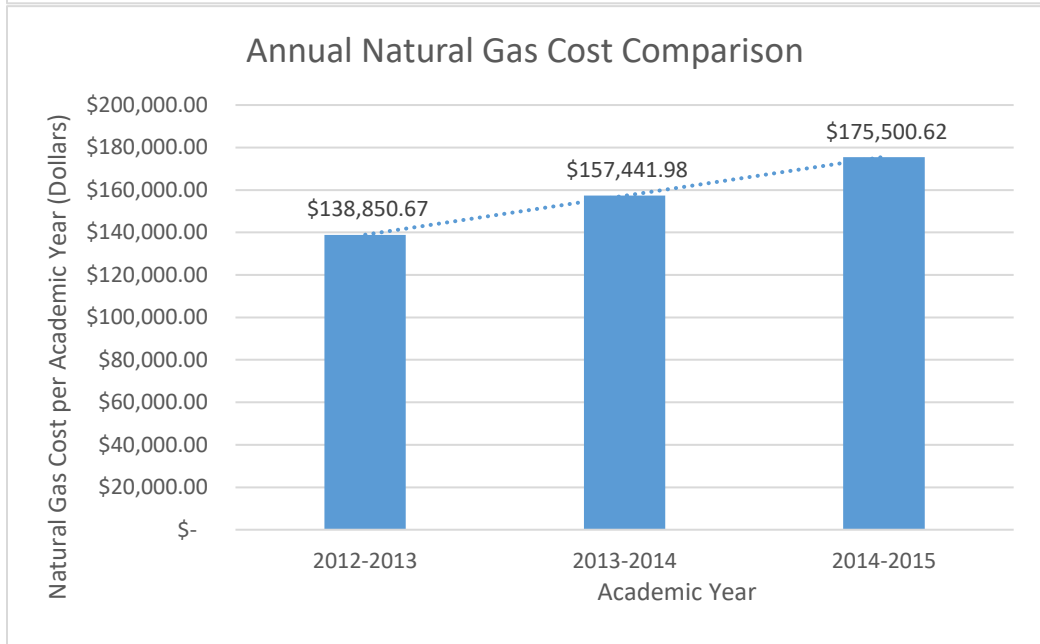
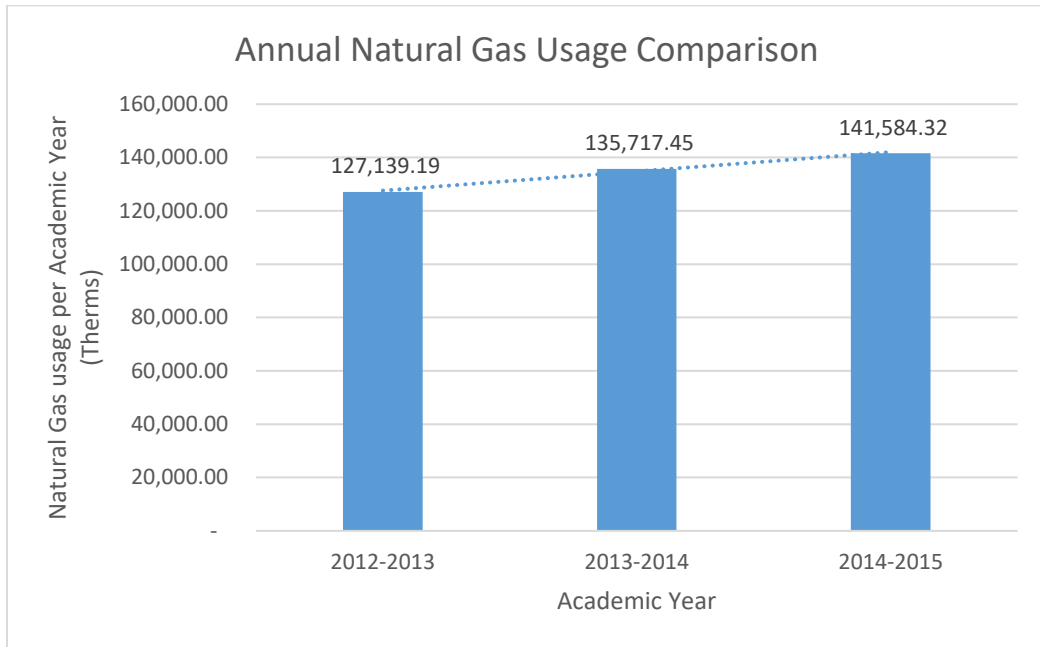
Oyster River High School:

Academic Year	Total Usage (Therms)	Cost	% Change Cost
2012/2013	78,784.63	\$ 87,454.61	-
2013/2014	92,278.67	\$ 110,300.66	26.12%
2014/2015	99,687.87	\$ 128,949.76	16.91%



Oyster River Middle and High School:

Academic Year	Total Usage (Therms)	Total Cost	% Change Cost	% Change Usage
2012-2013	127,139.19	\$ 138,850.67	-	-
2013-2014	135,717.45	\$ 157,441.98	13.39%	6.75%
2014-2015	141,584.32	\$ 175,500.62	26.40%	11.36%



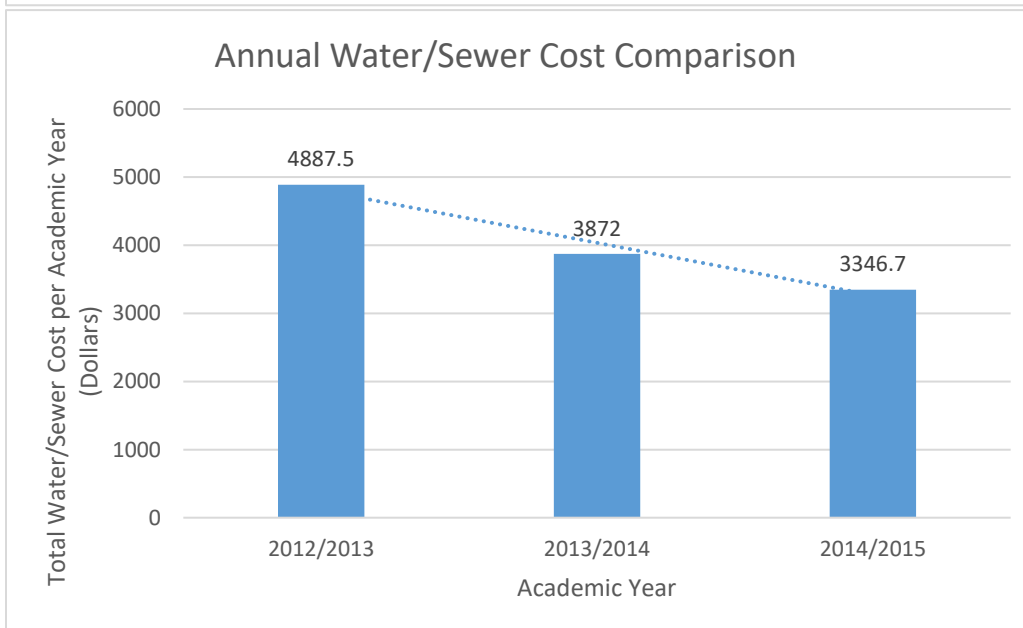
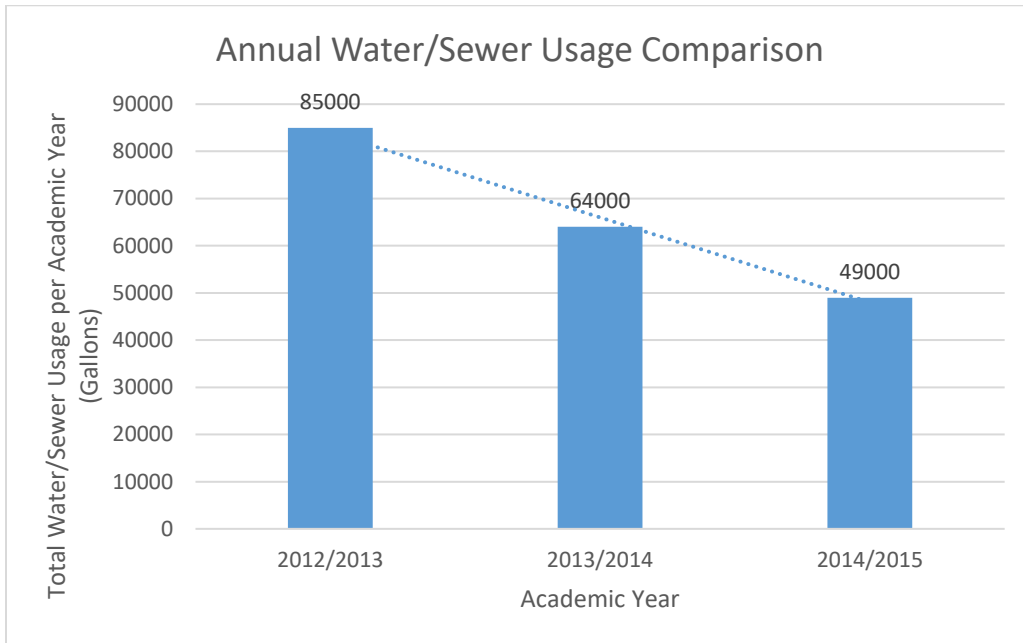
Analysis:

Mast Way and Moharimet heat with Propane which why they are excluded from this section of the report. Natural Gas is the only utility in this entire report that shows a largely increased usage as well as cost. Between ORHS and ORMS usage increased 11.36% and nearly 15,000 Therms over the 3 academic years. Cost increased 26.4% and nearly 40,000 dollars over the same time frame. Between the two schools the high school saw significantly higher increases in demand and cost. ORHS accounted for all of the increased total cost and all of the increased demand. ORMS actually used less natural gas and spent less in the 2014/2015 academic year then the 2012/2013 academic year.

Water/Sewer:

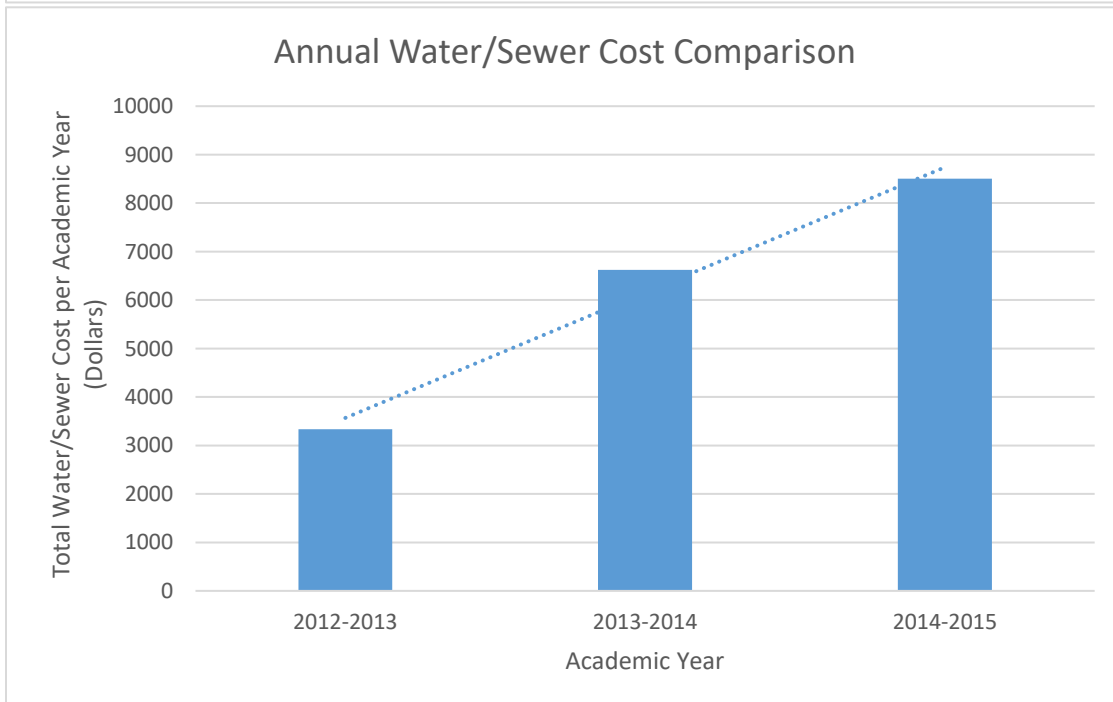
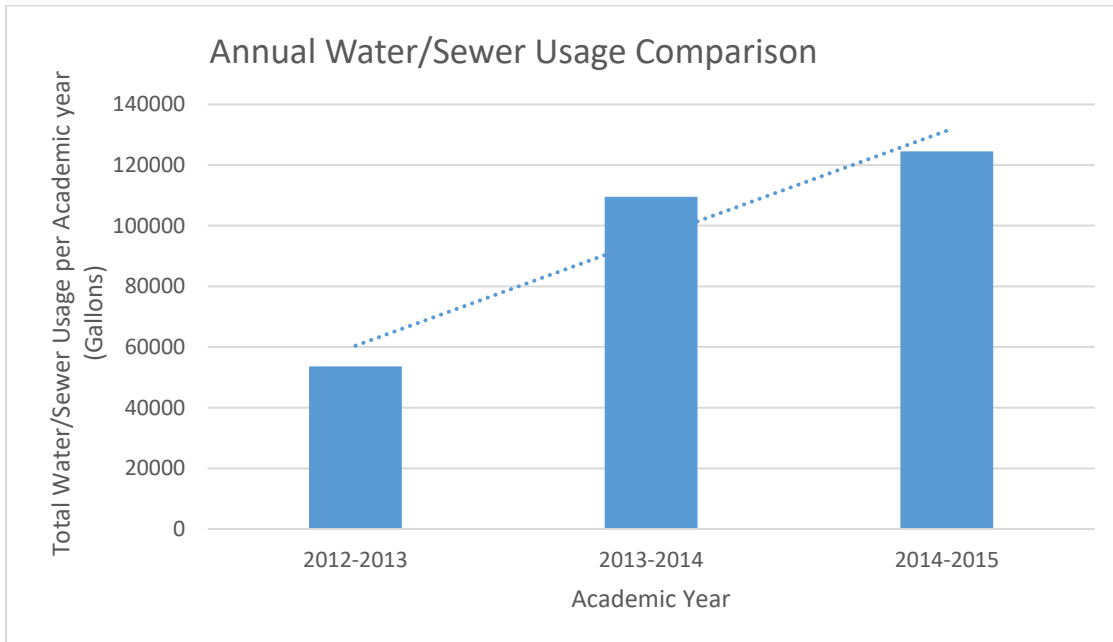
Oyster River Middle School:

Academic Year	Total Usage (Gallons)	Total Cost	% Change Cost
2012/2013	85,000.00	\$ 4,887.50	-
2013/2014	64,000.00	\$ 3,872.00	-20.78%
2014/2015	49,000.00	\$ 3,346.70	-13.57%



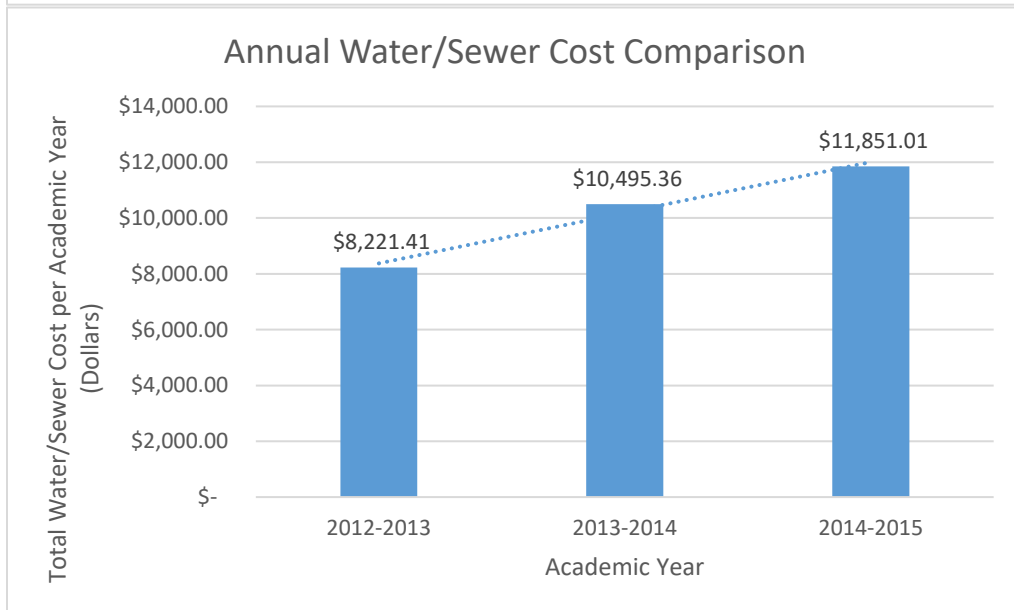
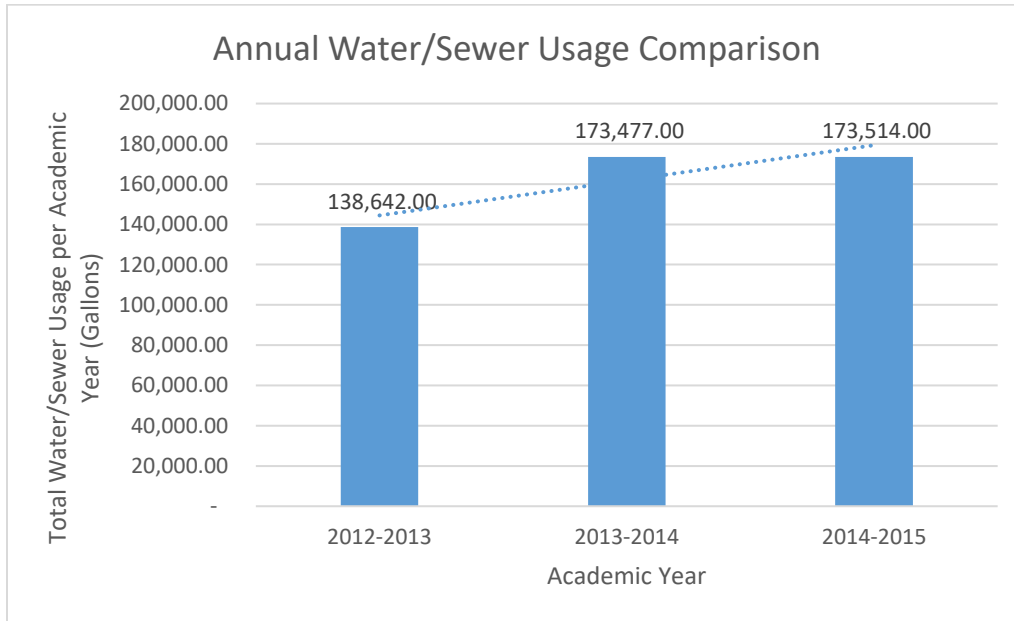
Oyster River High School:

Academic Year	Total Usage (Gallons)	Cost	% Change Cost
2012-2013	53,642.00	\$ 3,333.91	-
2013-2014	109,477.00	\$ 6,623.36	98.66%
2014-2015	124,514.00	\$ 8,504.31	28.40%



ORMS and ORHS:

Academic Year	Total Usage (Gallons)	Cost	% Change Cost	% Change Usage
2012-2013	138,642.00	\$ 8,221.41	-	-
2013-2014	173,477.00	\$ 10,495.36	27.66%	25.13%
2014-2015	173,514.00	\$ 11,851.01	44.15%	25.15%



Analysis:

Moharimet and Mast Way operate with well and septic systems which is why they are excluded from this section of the report. Water/Sewer shows a similar pattern to natural gas, where ORHS uses more each year and ORMS uses less. Combined the two have increased usage by over 35,000 gallons and costs by 2,500 dollars in three academic years. ORHS can account for all of that difference and more with an increased usage of over 70,000 gallons and over 5,000 dollars of increased costs in 3 academic years. ORMS is the polar opposite reducing use by 36,000 gallons and cost by 1500 dollars.



Part III: Improvements and Recommendations

Noted Improvements:

Overall the Oyster River School District has reduced its carbon footprint since the last report in 2011/2012. Notable improvements can be seen in overall electricity usage dropping over 235,000 kilo-watt hours. Solid Waste/Recycling fees dropping for every school as much as 30%. Transportation costs dropping by 27.77% per mile. And propane usage staying the same despite harsh winters. The only utilities to increase were Water/sewer and Natural gas which only increased at ORHS. Mast Way, Moharimet, and ORMS all reduced their use of every utility involved in this report.

These drops in use of utilities coincide with several footprint shrinking programs going within the district. The sustainability committee has helped implement several program such as the Foss Manufacturing Eco-Throw program and the Electrically Activated Water program to clean the buildings. Eco-Throw is a recycling program which uses #1 plastic to create fibers used in sneakers, car interiors, and many other materials. The sustainability helped facilitate adding receptacles at the high school. The outcome of this program will likely be seen in the next ecological footprint report.

Electrically activated water is a cleaning process which uses water brine and electricity in order to create cleaning solutions. This program was in place when shared with the sustainability committee and continues to be in place to reduce costs and carbon footprint.

Recommendations:

This report has built on a lot of what was done in the previous 2011/2012 report. This report should be used by the sustainability committee to see that what they are doing is working and how to improve in the future. The issues of increased use and cost of water/sewer and natural gas at the high school have to be addressed. Looking to the middle school as a model is something this report has proved to be a viable option in this case. Implementation of programs such as hydration stations, electrically activated water, and Eco-Throw should be monitored in the future to prove their effectiveness. Further building on this report in the future will make decisions on sustainability much clearer.

For future reports a more in depth look at programs sponsored by the sustainability committee would be helpful.

