

NORMAN PUBLIC SCHOOLS ENERGY MANAGEMENT



JANUARY 2020

NORMAN PUBLIC SCHOOLS

ENERGY MANAGEMENT

The Norman Public Schools Board of Education embraces energy conservation and believes that it is our shared responsibility to conserve energy and natural resources while exercising sound financial management. To this end, in 2010 the Board of Education adopted an energy conservation policy in an effort to manage the District's energy resources.

Using 2010-11 as a base for comparison, Norman Public Schools during the month of January 2020 realized a monthly cost avoidance (savings) of \$46,394.

Since the inception of the program in 2011-2012 the District has realized a 17.2% cost avoidance (savings) of

\$3,025,961.

The District has accomplished this despite adding an additional 279,972 Square Feet of real estate during the same time period. An increase of 11.7%.

To ensure the continued success of this program the following areas are emphasized:

- Conduct periodic energy audits with feedback to the faculty and staff of a site.
- All personnel at each campus are expected to make positive contributions to maximize energy conservation and produce energy savings.
- The energy education specialist will implement the District's energy program in accordance with the District "Energy Guidelines".
- Accurate records of energy consumption and costs will be maintained by the energy education specialist to provide verifiable performance results on the goals and progress of the program.

The goal of the energy conservation is to make good use of our resources while providing students a safe and comfortable environment in which to study and grow.

Keeping the preceding in mind, each of us has the share responsibility to use our resources wisely and efficiently. This responsibility makes it essential that energy conservation be practice in all phases of energy use. Air conditioning, heating and lights typically account for 70 to 80 percent of the energy consumed in the District, therefore, it is especially critical that the guidelines be adhered to when operating air conditioning and heating equipment and when using lights.

Any exceptions or changes to these guidelines must be approved by the Chief Operating Officer or the District Energy Specialist.

The focus of the Energy Conservation Program has been behavioral. Thanks to the passage of Bond issues and taking advantage of incentive programs, we have been able to replace HVAC equipment, some of which are 30-40 years old with new higher efficiency equipment. Gains are being made to improve the energy efficiency of District lighting and HVAC (Heat and Air) systems.

Incentive programs have made it more cost effective to replace old outdated T12 Florescent bulbs with new LED lighting.

To date **LED lighting has been added to over 20 school and District sites.**

Taking advantage of incentives offered by OG&E and working through CleaResult we have reduced the costs to replace old outdated fluorescent bulbs with new LED lighting by 40% to 45%, saving the District approximately \$276,00 in upfront costs.

LED Lighting Incentives

2013 to Present

\$275,777

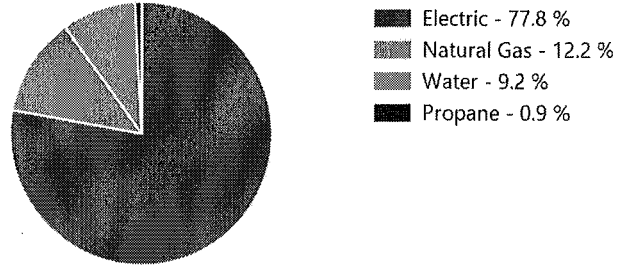
Continuing efforts to ensure that we use energy when it is necessary, shutdown and/or setback equipment when students are not present (overnight, weekends, breaks), managing energy consumption when being used, and replacing old inefficient equipment with newer more efficient equipment we can continue to provide students the best possible learning environment.

Executive Summary

Billing for Current Year Jul 2018 - Jun 2019

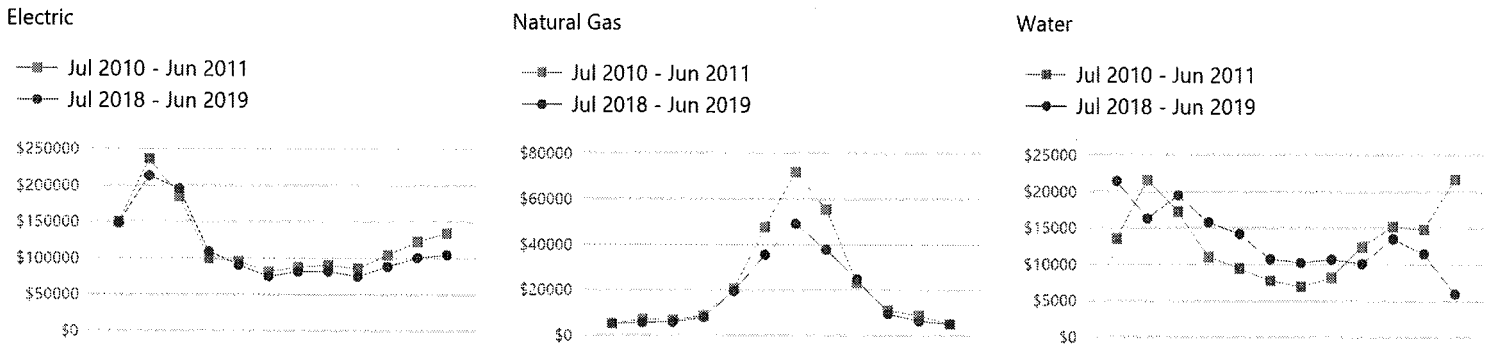
Commodity	Use	UOM	Cost	
Electric	17,541,851	kWh	\$1,361,369	\$31.797
Natural Gas	44,909	DKTHM	\$213,326	\$6.884
Water	208,681	HGal	\$160,417	\$3.060
Propane	8,350	Gal	\$15,168	\$0.307
Total			\$1,750,279	\$42.048

Cost Percentage



Cost Comparison	\$0	\$1,549,000	Jul 2010 - Jun 2011	Jul 2018 - Jun 2019	Diff	Diff %
Electric			\$1,471,067	\$1,361,369	(\$109,698)	-7.5% ▼
Natural Gas			\$272,529	\$213,326	(\$59,203)	-21.7% ▼
Water			\$160,286	\$160,417	\$131	0.1% ▲
Propane			\$24,429	\$15,168	(\$9,262)	-37.9% ▼

Current Year vs Base Year Cost Trend (Top 3 commodities)



Use Comparison	0%	100%	Jul 2010 - Jun 2011	Jul 2018 - Jun 2019	Diff	Diff %
Electric			19,547,941	17,541,851	(2,006,090)	-10.3% ▼
Natural Gas			41,783	44,909	3,127	7.5% ▲
Water			353,449	208,681	(144,768)	-41.0% ▼
Propane			9,685	8,350	(1,335)	-13.8% ▼

Billing Period equals January 2020

	BATCC Cost	Actual Cost	Cost Avoidance	Cost Avoidance %
Norman High School [NHS]	\$31,173	\$20,102	\$11,070	35.5%
Norman North High School Site [NNHS]	\$16,567	\$12,715	\$3,852	23.2%
Longfellow Middle School Site [LMS]	\$8,404	\$6,562	\$1,842	21.9%
Whittier Middle School [WMS]	\$6,553	\$6,132	\$421	6.4%
Irving Middle School [IMS]	\$7,331	\$5,804	\$1,527	20.8%
Alcott Middle School [AMS]	\$8,462	\$5,205	\$3,258	38.5%
Performing Arts Center [PAC]	\$3,382	\$3,503	(\$121)	-3.6%
Cleveland Elementary School [CLEVELAND]	\$5,632	\$3,386	\$2,246	39.9%
Kennedy Elementary School [KENNEDY]	\$4,245	\$3,193	\$1,052	24.8%
Roosevelt [ROOSEVELT]	\$3,647	\$3,161	\$486	13.3%
Jackson Elementary School [JACKSON]	\$5,162	\$3,027	\$2,135	41.4%
Eisenhower Elementary School [EISENHOWER]	\$4,318	\$2,859	\$1,459	33.8%
Adams Elementary School [ADAMS]	\$4,089	\$2,839	\$1,249	30.6%
Madison Elementary School [MADISON]	\$4,686	\$2,538	\$2,147	45.8%
Washington [WASHINGTON]	\$3,449	\$2,373	\$1,077	31.2%
Truman [TRUMAN]	\$4,638	\$2,297	\$2,341	50.5%
McKinley [MCKINLEY]	\$2,178	\$2,244	(\$67)	-3.1%
Monroe [MONROE]	\$4,081	\$2,156	\$1,925	47.2%
ISC [ISC]	\$3,266	\$2,049	\$1,217	37.3%
Central Services Center [CSC]	\$3,212	\$2,008	\$1,205	37.5%
Jefferson Elementary [JEFFERSON]	\$3,534	\$1,995	\$1,539	43.5%
Wilson [WILSON]	\$2,192	\$1,962	\$230	10.5%
Truman Primary Elementary School [TRUPRIME]	\$3,055	\$1,944	\$1,111	36.4%
Administrative Service Center [ASC]	\$3,410	\$1,895	\$1,515	44.4%
Lincoln Elementary School [LINCOLN]	\$2,796	\$1,887	\$909	32.5%
Lakeview Elementary School [LAKEVIEW]	\$1,771	\$1,637	\$134	7.5%
Professional Development Center [PDC]	\$1,352	\$885	\$467	34.5%
Reagan Elementary School [REAGAN]	\$924	\$757	\$167	18.0%
Total	\$153,509	\$107,115	\$46,394	30.2%

Cost Avoidance by Organization

Since Program Inception	BATCC Cost	Actual Cost	Cost Avoidance	Cost Avoidance %
Norman High School [NHS]	\$3,252,423	\$2,815,998	\$436,425	13.4%
Norman North High School Site [NNHS]	\$2,479,511	\$2,169,092	\$310,419	12.5%
Longfellow Middle School Site [LMS]	\$890,293	\$783,871	\$106,422	12.0%
Whittier Middle School [WMS]	\$990,863	\$760,411	\$230,451	23.3%
Irving Middle School [IMS]	\$840,049	\$705,411	\$134,637	16.0%
Alcott Middle School [AMS]	\$858,489	\$626,849	\$231,640	27.0%
Cleveland Elementary School [CLEVELAND]	\$476,330	\$404,124	\$72,205	15.2%
Roosevelt [ROOSEVELT]	\$503,615	\$397,648	\$105,967	21.0%
Jackson Elementary School [JACKSON]	\$529,917	\$385,718	\$144,199	27.2%
Kennedy Elementary School [KENNEDY]	\$428,628	\$375,450	\$53,178	12.4%
Lakeview Elementary School [LAKEVIEW]	\$445,488	\$372,819	\$72,669	16.3%
Madison Elementary School [MADISON]	\$464,487	\$361,191	\$103,296	22.2%
Washington [WASHINGTON]	\$410,353	\$352,950	\$57,403	14.0%
Truman [TRUMAN]	\$486,520	\$338,019	\$148,501	30.5%
Adams Elementary School [ADAMS]	\$369,882	\$337,612	\$32,270	8.7%
Eisenhower Elementary School [EISENHOWER]	\$427,803	\$337,078	\$90,726	21.2%
Performing Arts Center [PAC]	\$462,186	\$327,301	\$134,884	29.2%
Truman Primary Elementary School [TRUPRIME]	\$450,979	\$308,427	\$142,552	31.6%
ISC [ISC]	\$325,810	\$300,641	\$25,170	7.7%
Reagan Elementary School [REAGAN]	\$290,759	\$298,107	(\$7,347)	-2.5%
Monroe [MONROE]	\$383,060	\$281,280	\$101,780	26.6%
Jefferson Elementary [JEFFERSON]	\$316,670	\$259,846	\$56,823	17.9%
McKinley [MCKINLEY]	\$295,236	\$256,029	\$39,207	13.3%
Lincoln Elementary School [LINCOLN]	\$316,683	\$247,409	\$69,274	21.9%
Wilson [WILSON]	\$281,796	\$233,970	\$47,826	17.0%
Central Services Center [CSC]	\$224,720	\$213,169	\$11,551	5.1%
Administrative Service Center [ASC]	\$255,203	\$194,811	\$60,392	23.7%
Professional Development Center [PDC]	\$129,487	\$116,048	\$13,440	10.4%
Total	\$17,587,241	\$14,561,280	\$3,025,961	17.2%

Cost Avoidance by Organization