

**Rowan County Schools
Intelligent Services Program
December 2010 – May 2017**



Rowan County Schools

Together We Can!

EXECUTIVE SUMMARY

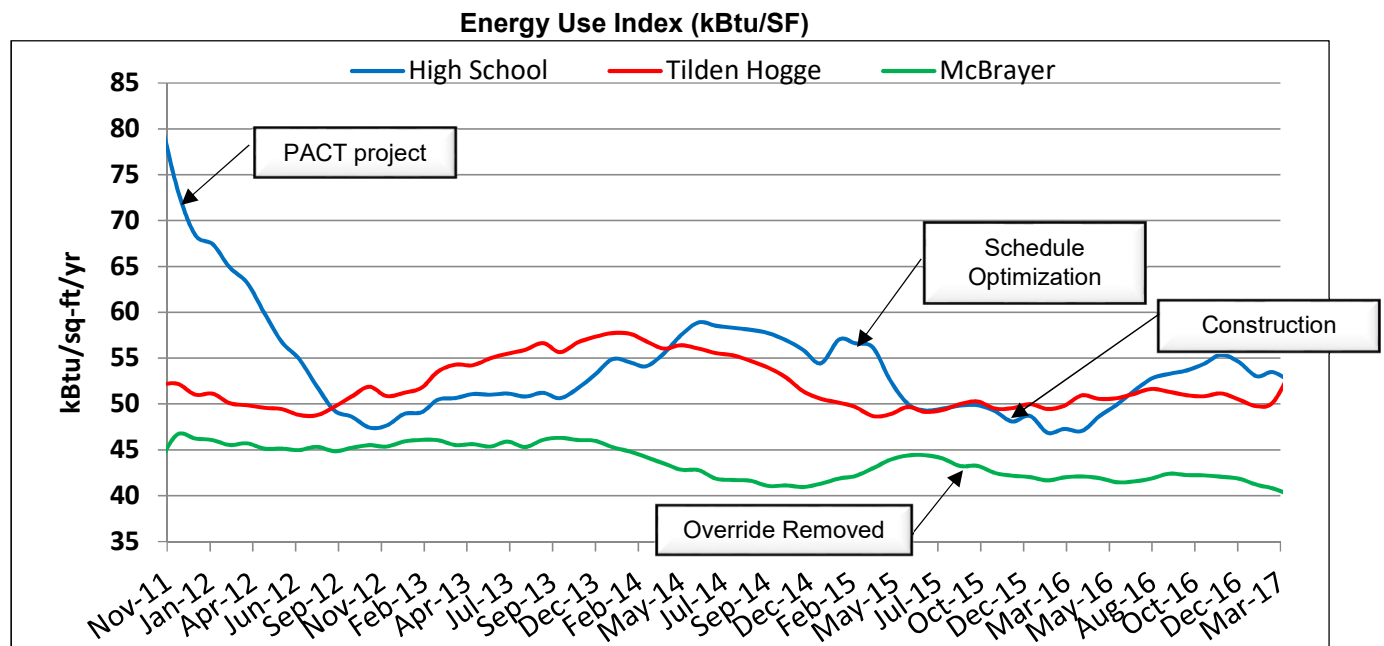
Intelligent Services Scope:

Intelligent Services is provided for three facilities – **Rowan County High School**, **McBrayer Elementary School** and **Tilden Hogge Elementary School**.

Good News:

- From January 2017 – May 2017 the district has avoided **\$33,450**
- The district has achieved **\$546,440** in **total cost avoidance since 2010**.
- Rowan County High School and McBrayer Elementary School are eligible for Energy Star!

Performance Snapshot:



Key Observations/Opportunities:

- Review Schedules for Summer Break
- Review Occupied and Unoccupied Temperature Setpoints
- Address Space Sensor Failures
- Address Heat Pump Loop Controller at McBrayer
- Review Overrides at McBrayer

ENERGY PROFILE

Cumulative Energy/ Cost Avoidance - December 2010 thru May 2017				
	Baseline Use / Cost	Actual Use / Cost	Avoidance	% Avoidance
kWh	21,995,588	15,993,497	6,002,091	27%
CCF	354,789	192,707	162,082	46%
\$	\$2,081,055	\$1,534,615	\$546,440	26%

School	Current Year Electric Consumption (kWh) and Cost Avoidance					
	Adj. Baseline	2017 YTD	% Change	Baseline Cost	2017 Cost YTD	Cost Avoidance
McBrayer	408,312	325,400	-20%	\$25,317	\$20,283	\$5,034
Tilden	129,042	121,390	-6%	\$8,597	\$8,121	\$476
High School	914,250	514,560	-44%	\$57,887	\$32,650	\$25,237
Totals	1,451,604	961,350	-34%	\$91,801	\$61,054	\$30,747

School	Current Year Nat. Gas Consumption (ccf) and Cost Avoidance					
	Adj. Baseline	2017 YTD	% Change	Baseline Cost	2017 Cost YTD	Cost Avoidance
Tilden	1,075	2,750	156%	\$633	\$1,961	-\$1,328
High School	14,161	10,422	-26%	\$6,427	\$6,273	\$155
Totals	15,236	13,172	-14%	\$7,060	\$8,233	-\$1,173

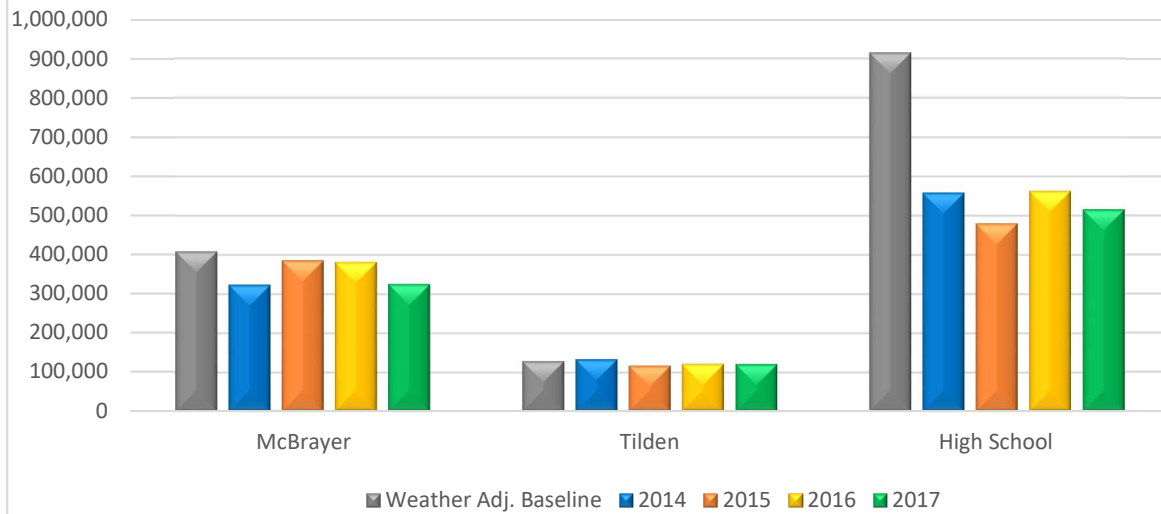
School	Current Year Electric Demand (kW) and Cost Avoidance					
	Baseline	2017 (YTD)	% Change	Baseline Cost	2017 Cost (YTD)	Cost Avoidance
McBrayer	1,666	1,327	-20%	\$11,545	\$9,195	\$2,351
Tilden	483	489	1%	\$3,348	\$3,388	-\$40
High School	2,146	1,920	-11%	\$14,869	\$13,304	\$1,566
Totals	4,295	3,736	-13%	\$29,763	\$25,887	\$3,876

Compared to the weather-adjusted baseline, the district has achieved the following savings so far in 2017:

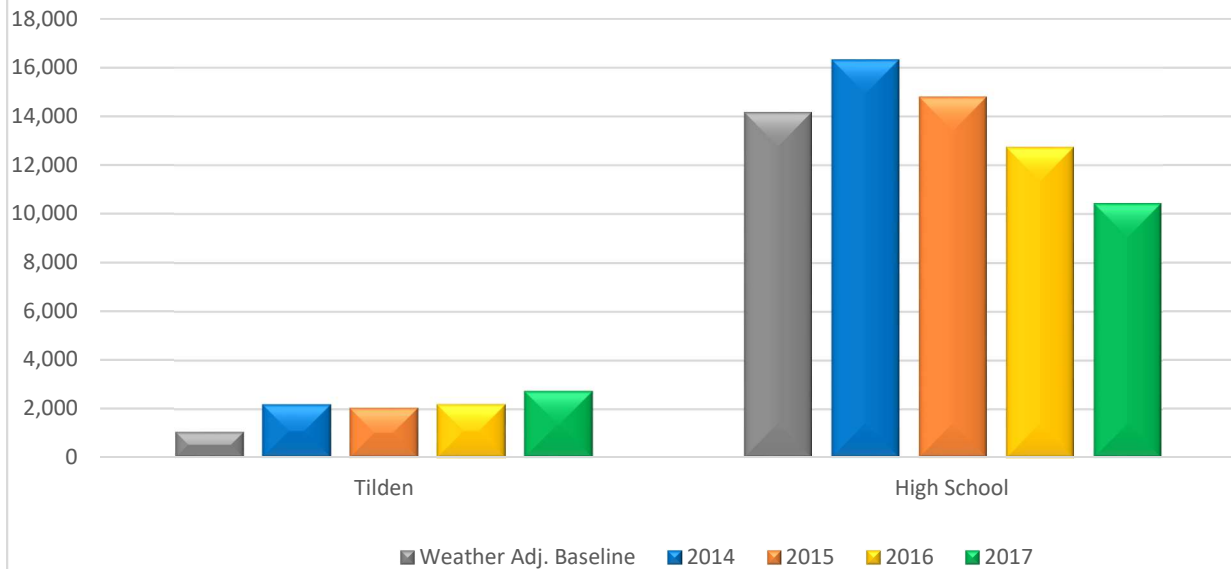
961,350 kWh - or - **\$33,450**
13,172 ccf

ENERGY PROFILE

Electric Use (kWh) Comparison January - May



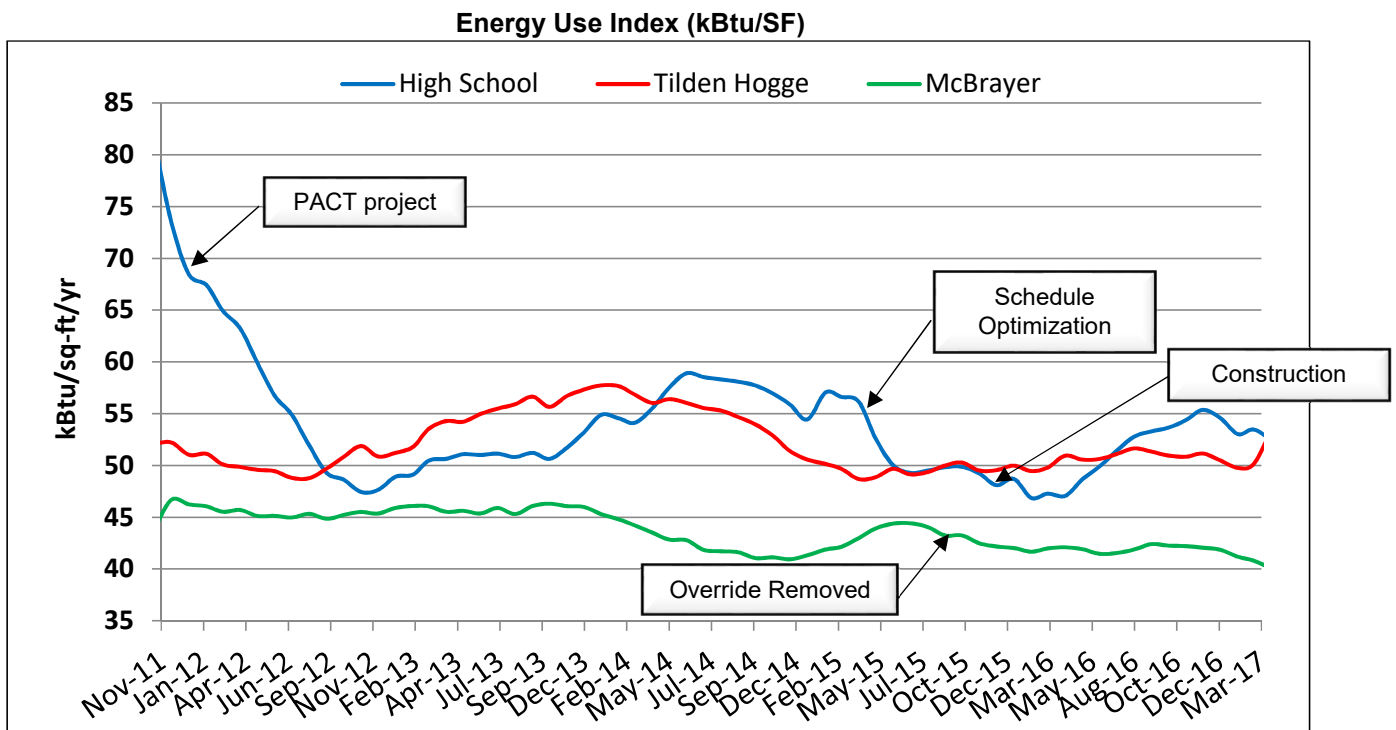
Natural Gas (ccf) Comparison January - May



ENERGY PROFILE

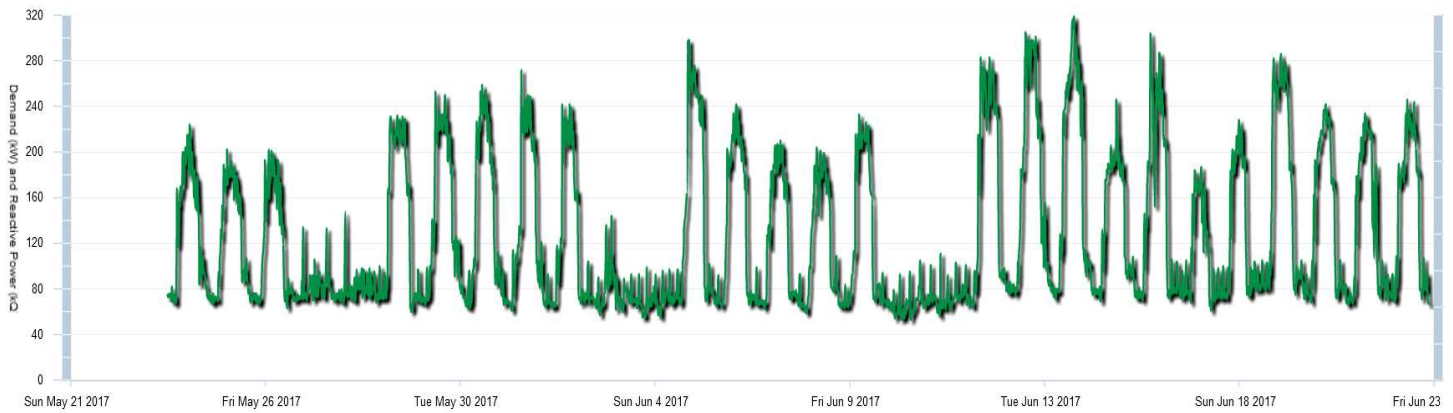
Facility	Baseline (kBtu/ft ²)	Last 12 Months Actual Usage (kBtu/ft ²)	ECI (\$/ft ²)	Energy Star Score
State Average		53	-	-
McBrayer	44	40	\$1.03	75
Tilden Hogge	52	53	\$1.13	83
Rowan High School	81	52	\$1.00	75

McBrayer and Rowan High School
are eligible for Energy Star.

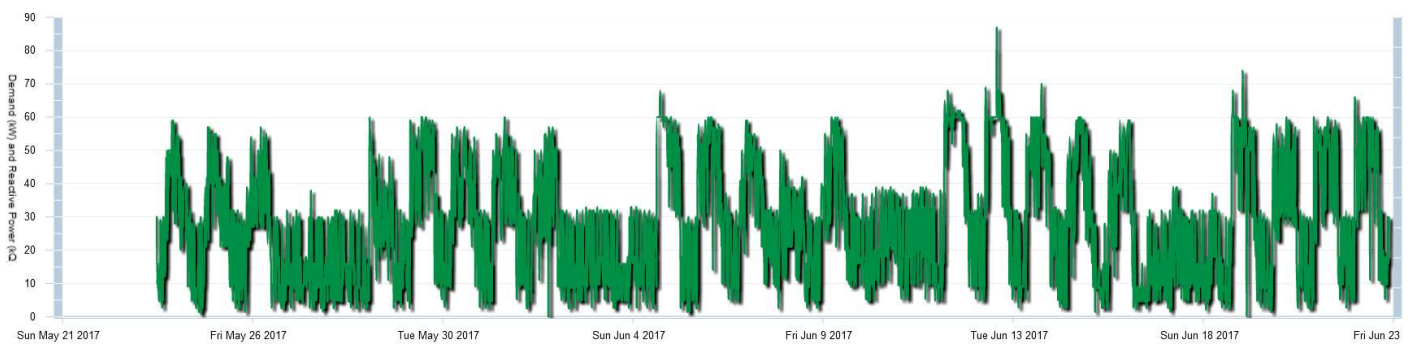


DEMAND PROFILE

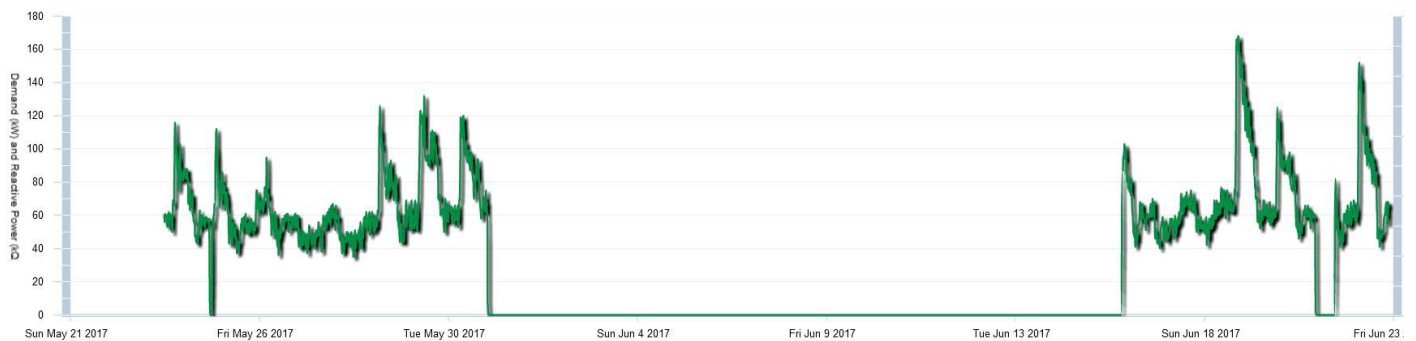
High School Average Demand Profile (Last 30 Days)



Tilden Hogge Average Demand Profile (Last 30 Days)



McBrayer Demand Profile (Last 30 Days)



EQUIPMENT PERFORMANCE

Equipment Performance		
School	Unit	Diagnostics
Rowan High School	Rm 25, Rm 34, Rm 50, Rm 57, Rm 71B, Rm 76, Rm 88, Rm 89, Rm 131, Rm 96, Rm 147, Lobby	Space sensor showing "NaN" value for space temperature.
	Auditorium	Unoccupied Setpoint 72-deg
	Learning Lab	Occupied Setpoint 68-deg; Unoccupied Setpoint 70-deg
Tilden Hogge	Classroom 106	DAT sensor failure
	Various Classrooms	Space temperatures set low for cooling 65-deg
McBrayer	Heatpump Loop	Controller in Fault
	HP-15 Rm 129; HP-40 Rm A11 ; HP-3 Rm 140 ; HP-1 Mech Rm	Occupancy Overridden
	Cafeteria	Unoccupied Setpoint 72-deg
	HP-26 Corr; HP-61 Rm 208A; HP-51 Rm 221A	Not Communicating

Current High School Schedules

Area	Weekday Schedule	Weekend Schedule
Gym	6:00am – 6:00pm	Sunday 6:30am – 3:00pm
Media	6:30am – 3:30pm	Unoccupied
Admin	6:00am – 4:30pm	Unoccupied
→ Cafeteria	5:00am – 4:00pm	Sunday 6:00am – 3:00pm
Classrooms	6:00am – 6:00pm	Area C & D Sunday 6:30am – 3:00pm
Locker Rooms	6:30am – 6:30pm	Unoccupied
PAC	6:00am – 3:00am	Sunday 6:30am – 3:00am
→ MAU	8:00am – 10:00am	Unoccupied

Consider setting Cafeteria and MAU schedules to unoccupied during summer. Reduce Auditorium, Classroom and Gym schedules according to summer use schedules.

EQUIPMENT PERFORMANCE

Current Tilden Hogge Elementary School Schedules

Area	Weekday Schedule	Weekend Schedule
Admin	6:00am – 6:00pm	Unoccupied
Classrooms	6:00am – 6:00pm	Unoccupied

Current McBrayer Elementary School Schedules

Area	Weekday Schedule	Weekend Schedule
Gym	6:00am – 6:00pm	Unoccupied
Media	5:00am – 4:30pm	Unoccupied
Admin	6:00am – 5:00pm	Unoccupied
Lobby	6:00am – 6:00pm	Unoccupied
Cafeteria	5:00am – 4:00pm	Unoccupied
Classrooms	6:00am – 5:00pm	Unoccupied
Alt. Class	6:30am – 5:00pm	Unoccupied
2 nd Floor	6:00am – 4:30am	Sunday 6:30am – 3:00am

OPPORTUNITIES

Future Opportunities						
Need	Energy	Comfort	Reliability	Budgetary Cost	ROI	Notes
Utilize Help Desk	X	X	X	-	-	-
Set Exceptions for Summer	X	-	-	-	-	-
Review Occupied and Unoccupied Setpoints	X	-	-	-	-	-
Address Space Sensor Failures	X	X	-	-	-	High School
Address Loop Controller	X	-	X	-	-	McBrayer
Review Overrides – Release if no longer necessary	X	-	-	-	-	McBrayer
Reduce Boiler Size	X	-	-	TBD	TBD	Tilden Hogge
Mini-Split for Server Room	X	-	-	TBD	TBD	Tilden Hogge
Implemented Opportunities						
Need	Energy	Comfort	Reliability	Budgetary Cost	ROI	Notes
Check Pump Controls	X	-	-	-	-	High School
Establish Comm. with the JACE	X	-	-	-	-	McBrayer
Re-establish Communication with Units	X	X	X	-	-	High School
Remove Manual Control	X	-	-	-	-	High School
Check Pump Controls/Alarms	X	-	-	-	-	High School
Optimize Occupied Setpoints	X	-	-	-	-	Tilden Hogge
Adjust Unoccupied Setpoints	X	-	-	-	-	Tilden Hogge

Help Desk

Intelligent Services utilizes a remote operation to diagnose and resolve system issues; thus eliminating the costs associated with sending a technician to the site such as: technician time; rolling out an equipped truck, travel costs, and administrative costs.

How to request support via Telephone:

- 1) Contact Service Coordinator @ **502-499-7000**
- 2) Service Coordinator to validate request via Tracer ES
- 3) Service Coordinator to create work order #, urgency level and assign to Help Desk
 - Urgent: Client contacted within the hour
 - Non-Urgent: Client contacted the same day
- 4) Help Desk Tech shall provide client with:
 - Time expected to address issue
 - Provide work order updates
 - Notify owner of resolution or if Truck Roll is required
 - Email copy of work order upon completion of call

How to request support via Email:

- 1) Email Intelligent services: helpdesk@harshawtrane.com
- 2) Provide question or specific instruction regarding system issue that you would like investigated.
- 3) Client shall receive immediate email with work order # for reference.
- 4) Client shall receive email updates and copy of final work order upon completion.