

BOARD OF EDUCATION
The School District of South Orange and Maplewood
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MEMORANDUM

To: Cheryl Schneider, Business Administrator
Brian Osborne, Superintendent
Members, Board of Education

From: Steve Gardberg, Asst. Business Administrator

Date: October 21, 2013

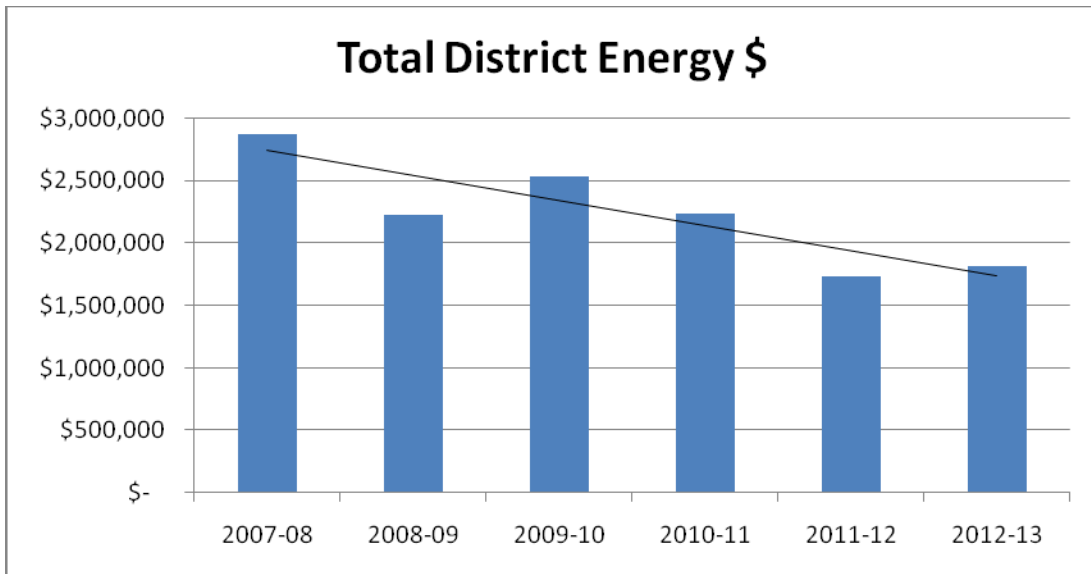
Subject: Energy Update

The energy update presented to the Board of Education last year reported the impact of energy usage in the district resulting from capital projects. Energy efficiencies and controls are integral to all new construction programs in order to reduce energy consumption and costs toward meeting the annual district goals. Capital projects intended to address this goal are in various stages of completion throughout the district.

The district is also beginning two new initiatives to identify and implement energy-saving programs. First, PSE&G's Direct Install program pays 100% upfront and absorbs 80% of energy-saving upgrades – funded by the Board of Public Utilities. The District is responsible for just 20%, which is paid interest free for 24 months on utility bills to PSE&G. This program has a focus on lighting and yields estimated net savings immediately. The District has received nine proposals, and four more are expected. PSE&G's contractors are expected to start the upgrades this fall.

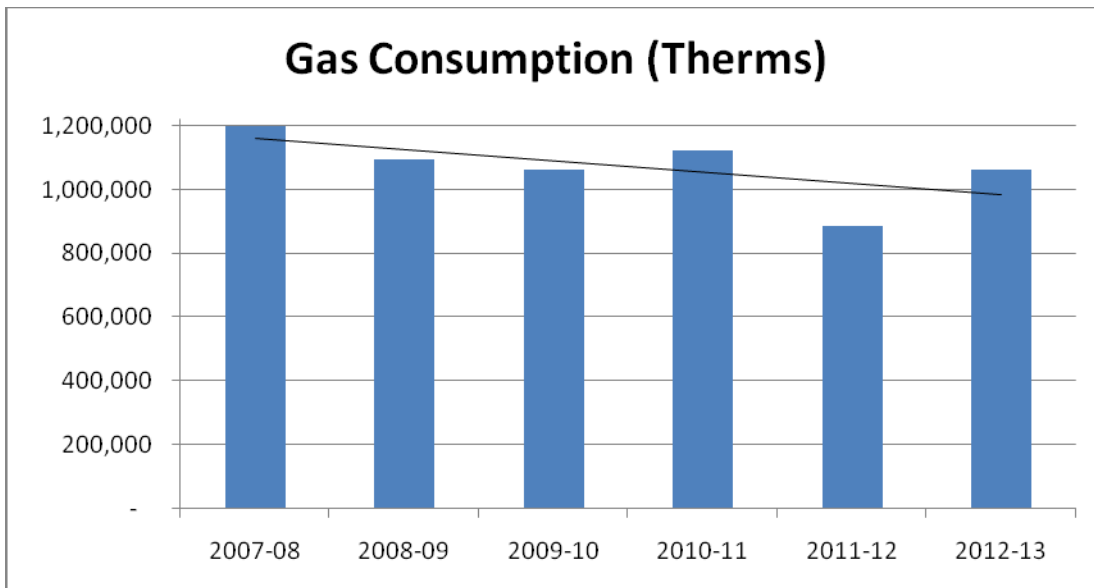
Second, the district is participating in the NJ Local Government Energy Audit Program, also funded by the Board of Public Utilities. Following state guidelines, the district will select one of five state-approved firms by Request for Proposal (RFP). This firm will conduct a comprehensive audit of energy systems district-wide and present suggestions for short-, medium- and long-term upgrades. BPU will pay 100% of the cost of this audit, up to \$100,000, directly to the firm; the total is expected to stay below this threshold. The district may implement as many of these suggestions as it chooses – either on its own or with an Energy Savings Company (ESCO), which would guarantee future energy savings that it helps to implement. The ESCO would be chosen by RFP and utilize long-term financing via the Energy Savings Improvement Program (ESIP).

Capital improvements are still helping, shown by a district-wide downward trend in energy usage and expenses since 2007-08. In 2012-13 the schools realized average consumption increase of 20% in gas and no change for electric since 2011-12; and decreases of 5% in gas and 2% in electricity since 2010-11. Overall expense for energy was up 5% from 2011-12 (warm winter) and down 19% from 2010-11, with gas expenses representing larger annual changes than electricity.

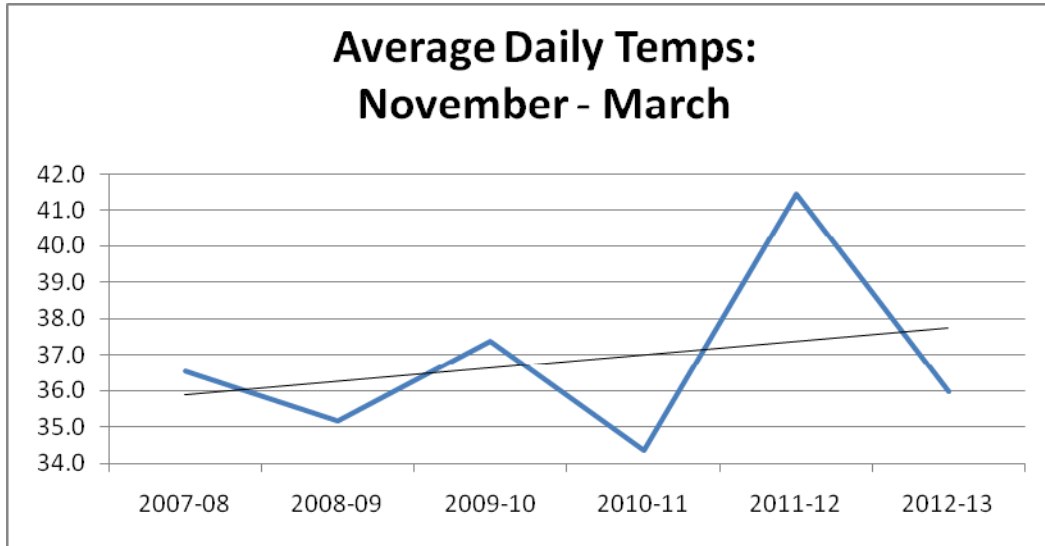


Gas Consumption

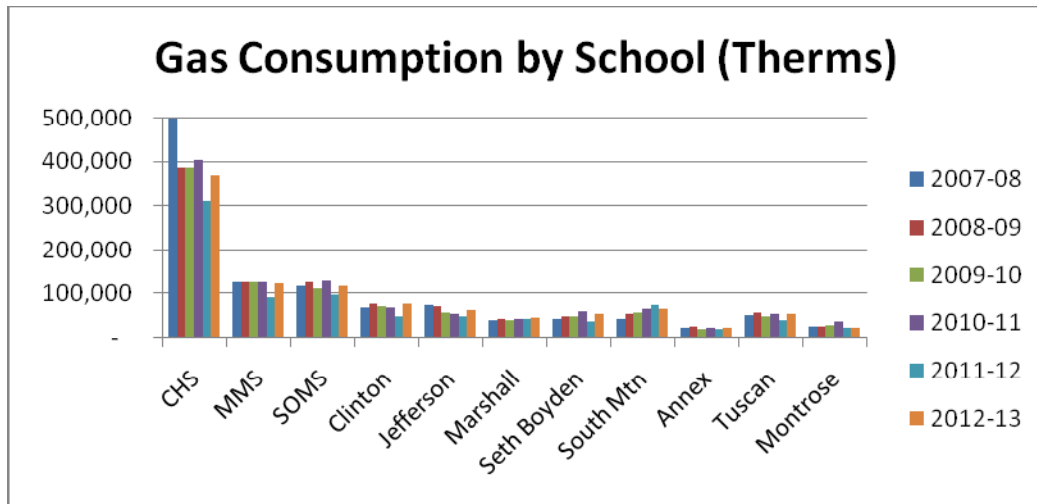
The overall consumption continues to trend downward, indicating a decrease in gas usage since 2007-08.



Though the 2011-12 school year saw significant district-wide decreases in energy consumption and expenses, 2012-13 had a colder winter (by almost 6 degrees) and a 20% increase in gas consumption.



Looking at the usage by building over the same time frame indicates some fluctuation from year to year. Overall usage levels, with the exception of Marshall, Seth Boyden and South Mountain, continue to be fairly consistent and are trending downward or staying flat.



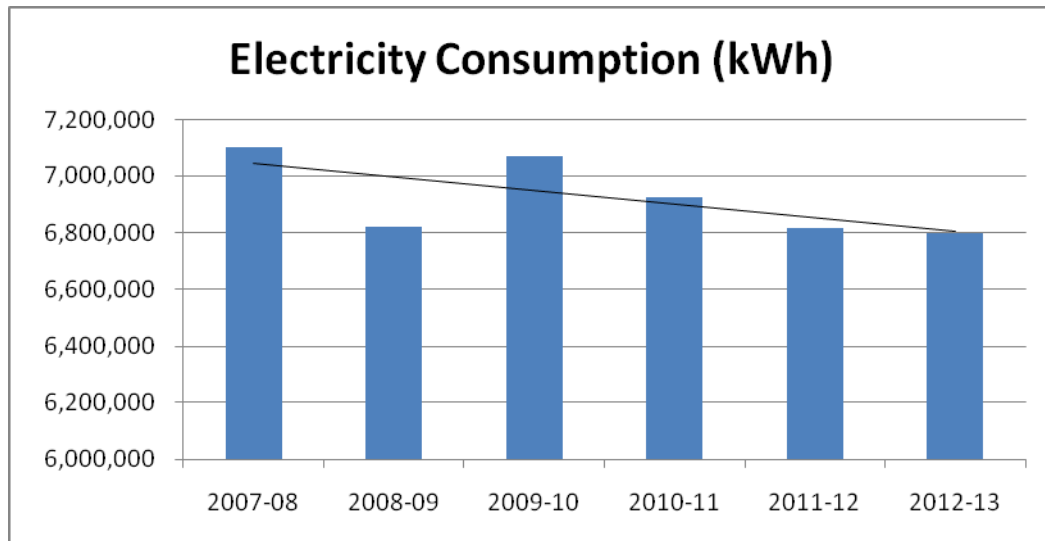
Control system had been installed at seven schools to help the heating systems operate more efficiently room-to-room, but their performance is not meeting expectations. An engineering firm recently visited these schools to review the systems and will present an assessment and proposal (at no charge) to update and monitor the controls. These schools are Columbia HS, South Orange MS, Maplewood MS, Clinton, Jefferson, Marshall and South Mountain Annex.

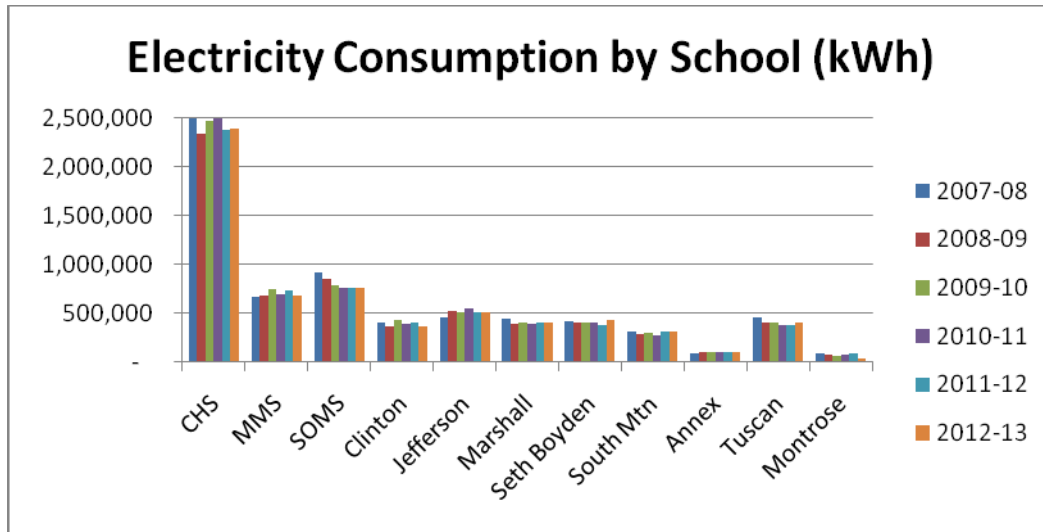
Electric Usage

After four years of annual consumption decreasing between 2% and 5% from 2007 through 2012 (except for 2009-10), total consumption for 2012-13 was flat from 2011-12. School-by-school, some had increased consumption, some had lower.

Lighting upgrades have been made in all buildings, converting to more efficient systems while improving comfort as well. In addition, lighting upgrades for the Columbia auditorium are part of the auditorium restoration project, including a transition of the house lights to LED lights with dimming capabilities.

Decreases in electricity consumption are especially significant because of the increased load over time from new computer labs, SMART Boards, servers, other technology items and additional air conditioning. We should continue, however, to encourage buildings to conserve energy and expenses.





Future Considerations

We should prepare for yet colder temperatures (and more precipitation) in 2013-14 than 2012-13, which was colder than 2011-12. According to Old Farmer’s Almanac, November and January will be about 1.25 degrees warmer than normal, but December, February and March will be about 2.3 degrees colder than normal. As a result, we will likely see a rise in gas consumption compared to last year.

The anticipated energy audit is expected to suggest a number of mechanical, roofing and window upgrades to further address heating disparities and to improve efficiencies in the buildings. This would be a large undertaking and would need to be transitioned in stages over many years.