Status Report for the Omaha Public Schools
Board of Education

April 15, 2013
Introduction

The Omaha Public Schools’ Green Schools Initiative launched in early 2010, supported by a grant from an Omaha-based foundation. The grant concludes in May, 2013. This report primarily focuses on the high-level accomplishments of the Initiative. A final report summarizing the full three years will be completed by June 1, 2013.

Where We have Been

Verdis Group completed the district’s first Energy Action Plan in early 2010, which set the stage for the next phase of the work: the Green Schools Initiative (GSI). The GSI undertook the challenge of navigating, mobilizing, and motivating individuals within one of Omaha’s largest and oldest institutions. Under the GSI, people across the district achieved one success after the next and helped change OPS for the better in many areas of its operations.

There are many notable achievements, but the financial effect of the GSI stands out. The estimated financial benefits from the GSI to the district conservatively exceed $2.7 million dollars, a figure that clearly shows a positive and beneficial return on investment. A quick breakdown:

- $1.8 million in cumulative energy savings since September 2010
- $545,000 in lighting incentive rebates
- $400,000 value in energy audit services through State of Nebraska and City of Omaha grant programs

In addition to the financial benefits, the district received several awards related to the Green Schools Initiative. They include:

- 2011: Omaha Public Power District’s J.M. Harding Award for demonstrating efficient and innovative utilization of energy, given to the district as a whole
- 2012: U.S. Department of Education’s Green Ribbon Award, given to Lothrop Science & Technology Magnet and Miller Park Elementary
- 2012: U.S. Environmental Protection Agency’s ENERGY STAR Award, which recognizes high achievement in energy efficiency and conservation, given to four schools in 2009, five schools in 2010, and twelve schools in 2012 (no applications were submitted in 2011)

Finally, the environmental benefits were noteworthy as well. Energy conservation in buildings kept almost 14,300 metric tons of carbon dioxide (CO2) out of the atmosphere, which is the equivalent of removing nearly 2,700 passenger cars from the road per year. Fewer emissions results in cleaner air. Cleaner air results in healthier young people. Healthier young people are better learners.

Where We are Going

While the results thus far have been great, the work is not done: OPS experienced an extreme increase in water consumption associated with the drought of 2012, many schools do not have a recycling program in their cafeterias (which is the largest source of landfill-bound waste), and there are additional opportunities to reduce energy consumption.

The district remains dedicated to creating clean, healthy, and green learning environments for students. Studies show that the healthiness of the learning environment has a direct correlation to the performance of students. The Center for Green Schools notes that healthy indoor air quality (a requirement for ENERGY STAR awards) will often improve both attendance and student performance. Other research shows that sustainability initiatives typically create a more engaged workforce, which in turn creates a more productive workforce. In the coming months, much of the focus will be on expanding current efforts so as to further embed a culture of sustainability into the organization.
Progress Summary

The Omaha Public Schools’ Green Schools Initiative has established a firm foundation for creating an organizational culture that values and acts upon environmental respect and resource efficiency. Through a collaborative process involving many parties important to the district, goals were developed during 2010 for energy use, waste and recycling, water use, paper use, pest management practices, green teams development and community involvement. Excellent progress has been made in most goal categories, and most are on track or ahead of schedule.

Energy
The most important goal category, ENERGY STAR, has seen continual improvement district-wide. As noted in Figure One, the district’s average ENERGY STAR rating (a measure of energy use in buildings) climbed from a three-year low of 47.4 in September 2010 to a current high of 65.1 as of November 2012. As noted in Figure Four, the district has saved approximately $3 million compared to the “business as usual” trend, from which the district changed course in mid-2010. In the 12 months leading up to the 65.1 ENERGY STAR score in November 2012, the district is spending $1.25 million less on an annual basis than its recent peak period, the 12 months ending in September 2010 (see Figure Two).

The district also achieved a record number of ENERGY STAR Awards in 2012. Twelve of the 37 schools that have ratings higher than 75 passed a series of three tests related to indoor air quality, lighting and thermal comfort and received the ENERGY STAR Award: Beals, Harrison, Jackson, Jefferson, Kennedy, King Science & Technology, Miller Park, R.M. Marrs, Sherman, Springville, Wakonda, and Washington. The ENERGY STAR verification process ensures adequate thermal comfort, indoor air quality, and proper lighting in schools, all of which directly result in improved student alertness and concentration, which translate into improved performance.

Emissions
The district has reduced carbon dioxide (CO₂) emissions associated with building energy conservation by 14,300 metric tons, which is the equivalent of removing nearly 2,700 cars from the road for one year. Further decreases in emissions will occur as a result of the district’s new bus contract, which will power hundreds of busses on liquid propane rather than diesel.

Waste and Recycling
After slow progress initially, the district has made significant recent improvements in waste reduction. As seen in Figure 5, when comparing the last seven calendar years, 2012 boasts the lowest volume of trash sent to the landfill for the district; a significant accomplishment given the growth in programs at many schools. Recycling volumes are also at an all-time high.

Water
The district is behind schedule in meeting its goal to reduce water consumption. The drought of 2012 drove the district’s water consumption up. When comparing the summer months (primarily mid-June through mid-September) of 2011 versus 2012, the district’s water consumption increased 51%.

Paper
The district is only slightly behind schedule in reducing paper consumption. During the most recent 12-month period ending in December 2012, schools ordering from the Distribution Center used 8,649 cases of paper, which is slightly over the milestone goal of 8,500 in August 2012.
Great progress has been made in achieving most of the district’s goals. The chart below summarizes the progress in each of the seven goal areas.
Energy

The district has continued to make great strides in conserving energy, although the record heat during the summer months of 2012 slowed progress a bit. As of November 2012, the district-wide ENERGY STAR rating is 65.1. Energy efficiency and conservation continues to be a high priority within the district, and the OPS Energy Management Team, in particular, continually focuses on finding ways to be more efficient.

Figure 1: The dark green line (solid) represents annual energy expenses for 83 OPS schools ending in the given month. The light green line (dashed) represents the district’s average ENERGY STAR rating for the same 83 schools, which climbed 19 points to arrive at its current high of 65.1. Both are clear indicators that the current strategy to reduce energy has been successful as the ENERGY STAR rating goes up, energy expenses go down (see Figs. 2–4).

High schools in particular have shown dramatic improvements in energy efficiency over the last few years. On average, high schools have improved their ENERGY STAR ratings by nearly 30 points with Central High School leading the way with a 49-point increase in three years.

Significant strides have been made, and the district will continue to focus on energy efficiency. Despite the expiration of grant funds for lighting retrofits, the district has continued seeking opportunities to replace inefficient lighting with better alternatives. In addition to seeking other technical alternatives, efforts to educate and engage students and staff across the district continue to expand and will ideally carry forward into future years.
Figure 2: Annual spending on energy in 83 OPS schools is $1.25 million lower in November 2012 than it was at the recent peak in September 2010.

Figure 3: Cumulative savings from reduced spending on energy in 83 OPS schools from September 2010 to November 2012 (26 months) is about $1.85 million.
Figure 4: The dashed line with arrows shows what the district's energy expenses could have been had the 83 OPS schools continued the trend of increased energy costs it experienced from August 2009–September 2010. Since that time, OPS has completed a number of energy conservation measures including lighting retrofits in dozens of schools and multiple behavior change strategies to reduce energy use. Compared to the “business as usual” trajectory, OPS has saved about $3 million in the past 26 months.
Waste and Recycling

Since the district started its single-stream recycling program about five years ago, there has been a steady increase in the amount of recyclables that are diverted from the landfill. Interestingly, the volume of trash sent to the landfill over the same timeframe has not decreased accordingly since the initial reduction in 2008; that is, until 2012. As indicated in Figure 5 below, the district’s volume of trash is now at a seven-year low. Many building engineers and custodians are working closely with green champions in their school to improve recycling efforts and decrease the number of times their waste dumpster is pulled, which results in a net decrease in costs for waste and recyclables hauling services.

![Trash Sent to Landfill by Calendar Year](image)

*Figure 5: The district’s total trash sent to the landfill in a calendar year is at a seven-year low. This reduction is an important step for the district and bodes well for future reductions in the amount of waste created. Initiatives to focus on waste reduction are just taking shape in many school cafeterias, especially in high schools, and will have a significant impact on reducing waste and increasing recycling.*

Given their sheer size and frequency of use for extracurricular activities, high schools present the biggest opportunity for reducing waste. The district received a grant from the U. S. Green Building Council’s Flatwater Chapter this year to start or expand recycling efforts in all seven high school cafeterias. Such an expansion is not an easy task; there are many complexities that play into the process, but the high schools are making progress. Benson High School students recently helped conduct an analysis of the cafeteria waste from all seven high schools, the results of which will help inform strategies for further reductions in waste.

Once high school cafeteria recycling programs are established, the positive environmental impact could be significant: Annually, OPS high schools use over 1.3 million juice boxes and 1.5 million plastic milk bottles, which can all be recycled. Diverting them from the waste stream is a high priority going forward.
Water

The drought of 2012 had a dramatic effect on the district’s water consumption. The dry, hot conditions in the summer of 2012 contributed to a 51% (36,546 hundred cubic feet) increase in consumption when comparing to the summer of 2011 (mid-June to mid-September). The increase is equivalent to using an additional 41 Olympic-sized swimming pools of water during those three months alone.

As noted in Figure 6, nearly half of the increase was due to increases in water consumption at just eight schools. Figure 7 shows the breakdown at each of those eight schools.

The Energy Management Team is currently developing an education and awareness platform to help everyone across the district better understand their role as it relates to water conservation. The district expects another dry summer, and being prepared for the torrid conditions will ensure the water consumption spike is mitigated.
Grant Financial Summary

The Sherwood Foundation generously provided the Omaha Public Schools with a three-year $1.3 million grant to primarily cover the costs of a major lighting retrofit and Verdis Group's services. The majority of grant funds have been expended, with most of the funding used for the lighting retrofit. A full summary of the financial picture is below.

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<tr>
<th>Income</th>
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<tbody>
<tr>
<td>Sherwood Grant (3 installments)</td>
<td>$1,300,000</td>
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<tr>
<td>2010 Lighting Retrofit - Phase 1 OPPD Rebates</td>
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<tr>
<td>2011 Lighting Retrofit - Phase 2 OPPD Rebates</td>
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<td>2012 Lighting Retrofit - Phase 3 OPPD Rebates</td>
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<td>Miscellaneous Income from Lighting Retrofits</td>
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<td>USGBC Grant</td>
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<td><strong>TOTAL INCOME</strong></td>
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<th>Expense</th>
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<tr>
<td>2010 Lighting Retrofit - Phase 1</td>
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<tr>
<td>2011 Lighting Retrofit - Phase 2</td>
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<td>2012 Lighting Retrofit - Phase 3</td>
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<td>USGBC Grant</td>
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<td>Verdis Group (33 months)</td>
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<td><strong>TOTAL EXPENSES</strong></td>
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<th>Remaining Funds</th>
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<td><strong>NET FUNDS AVAILABLE</strong></td>
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Of the remaining $56,692, approximately $18,965 is earmarked for the remainder of Verdis' work through the end of May 2013, which is when the agreement terminates. Roughly $37,727 remains for additional investments in efficiency. One of the longer term goals for the GSI is to create a more structured revolving loan fund that will ensure the district has the capital to continually invest in energy efficient activities. The district did commit to and is continually investing funds in energy-saving activities, but there are no prescribed amounts.

It’s also worth noting that Verdis Group has assisted the district in seeking out additional grant opportunities to expand the Green Schools Initiative. Most notably, through two local grant programs, the district indirectly received approximately $400,000 in services to conduct energy audits at eighteen schools. The results of these audits have proven extremely valuable in helping the district prioritize its building-related expenditures. Because the district did not receive funds to pay for these services, but rather received the services directly, for free, through the program, the funds are not reflected in the financial summary above.