

Bethlehem Area School District Climate and Sustainability Commitment

Exploring the 'Recommended Action Steps'

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Introduction

This is a recap of preliminary work by Alliance interns who worked this summer to explore possibilities for implementing the Climate and Sustainability Commitment adopted by the Bethlehem Area School District. It expands on the 'Recommended Action Steps' document prepared by Lindsay Meiman and distributed at school board meetings in the spring. We pass them on to you as suggestions for your consideration. (Additional detail is available in the form of one-page fact sheets on most of the individual points.)

We had hoped to have time to pull together a suggested framework for assessment and reporting, but we decided to spend additional time exploring possibilities so we can integrate guidelines for the 'Green Ribbon' program and develop a more-complete framework. That work has not yet been completed, so those documents are not available at this time.

Much of our work is based on key concepts of sustainability that also guided development of the original Commitment. Some of this thinking may not be widely known, so we want to take a few words here to provide this background.

When we talk about sustainability, we are not talking about simple environmental protection or even what it will take to survive; we are talking about the need to build systems that are dynamic, regenerative, and continually evolving—resilient systems like the ecosystems that have sustained and supported life for hundreds of centuries. This starts with the recognition that humans are part of these living ecosystems and that disruptions to these natural systems can have serious impacts on our health as individuals and as societies. Education for ecoliteracy and sustainability can help build a foundation for a generation of environmentally conscious and socially responsible students.

One reason for the integrated approach of the Climate and Sustainability Commitment is recognition that students learn from many experiences at school, not only what's taught in the classroom. For example, they learn about the importance of conserving energy by seeing how their school deals with heating and lighting; they learn about healthy eating by seeing what is served at school. Hands-on experience may be the most effective way to learn, so we hope BASD will develop ways to actively involve students in finding solutions to the challenges they face, using the unique features and challenges of the Lehigh Valley and its communities wherever possible.

We think it is extremely important to make sure that the schools' goal of serving all students is reaffirmed in connection with the Climate and Sustainability Commitment, to make sure it doesn't

reach only those who take Environmental Science or other sustainability-related classes or come from homes where awareness is already high.

We hope the District will give strong consideration to maximizing the spirit of inquiry and opportunities for project-based learning, and help teachers move beyond conveying content and become active co-learners.

Two books published by Fritjof Capra's [Center for Ecoliteracy](#) are highly rated by educators, and we think they can be helpful in getting a good picture of what can be done — they show practical approaches and initiatives in both public and private school classrooms. We mention them here for those teachers and administrators who may not be familiar with them:

- [Ecoliterate](#) (Daniel Goleman, Lisa Bennett, Zenobia Barlow) – This book will help teachers who want to gain an in-depth understanding of this area, and it is also a good read for older students.
- [Smart by Nature](#) (Michael Stone) – Also a good read for older students, but has many examples of successful curriculum and instruction models that will help teachers who want to move forward in their own classroom.

The National Science Teachers Association said this is 'a clarion call to educators and other community leaders to join the movement to prepare students to meet the environmental challenges of the future.... For facilitators, this book provides numerous strategies for developing interdisciplinary lessons designed to help students understand that they are an integral part of nature and the interconnectedness of all living systems. This is a must for educators interested in schooling for sustainability.'

To make it easier to use, this report is divided into three sections — immediate steps, an intermediate phase that includes both implementation and developing a comprehensive plan, and longer-term leadership goals. In each case, the section covers the three principal operational areas from the Commitment: Curriculum, Facilities & Operations, and Public Engagement. Although these are, in some ways, separate areas of responsibility, they are also interdependent and **present** opportunities for synergy. We have included reminders of some of the clear connections, but there undoubtedly are others yet to be discovered.

The division into topics, areas of responsibility, and implementation phases is somewhat arbitrary, with the ultimate decisions to be made by BASD.

Initial Steps (August – September 2014)

Taking some initial steps right away demonstrates the District's readiness to translate the Climate and Sustainability Commitment into action and begins engaging people in the longer-term processes of implementing the Climate and Sustainability Commitment and of integrating climate & sustainability in curriculum, facilities & operations, and public engagement.

Principals meetings – We think the District's plan to introduce the Community Fellow and what is being done at these meetings is a good way to remind principals of the Commitment and let them know that they will have a key role in its success.

Sustainability Committee / Team / Task Force – We strongly support the district's plan to invite people to join a working group to explore and develop ideas for implementing the Commitment and to coordinate and oversee this work, especially the development of a comprehensive plan. As noted in the Commitment, we think every effort should be made to include administrators, teachers, students, and some members of the public. One possibility is to have a coordinating committee at the District level, with separate committees at the school level.

Curriculum

Curriculum Mapping – The district's planned curriculum mapping process is a good way to identify where teachers have already developed strong units or lessons related to sustainability and where more needs to be done. It is important to make sure faculty and staff see this as recognition for what they are already doing and as an invitation to participate. As the school year begins, we hope the district will consider taking some steps towards the goal of incorporating sustainability more fully into the curriculum across grade levels and disciplines. Although this process may span several years, there are some elements that might be possible to initiate or introduce now.

Arts Integration & 'STEM to STEAM' – The district already offers classes in all these subjects, of course, but should consider ways to integrate them across the curriculum outside of specific science classes. In the education world, the integration of arts into science education is getting a lot of attention right now—but it is equally important to make sure STEM concepts are integrated in other subject areas. If possible, mentioning these ideas now could help pave the way for future development and help identify potential leaders in this area.

Call for Teacher Innovation & Research – We hope the district will give strong consideration to this element, which was first proposed in the spring. We think it will help encourage teachers to share what they are doing and to initiate formal or informal action research projects to explore new ways to address these subjects. In addition, it will reinforce the idea that teaching climate, environment, & sustainability — in all subject areas — is encouraged and welcomed by the administration and school board.

Student Art, Writing, & videos – The district should consider inviting students to produce art, writing, and short videos emphasizing some aspect of sustainability and its importance. In addition to art for public display and writing for school & community newspapers, students' short documentary videos could be featured on a BASD YouTube channel, maybe even at next year's SouthSide Film Festival.

Facilities & operations

Inventory of Greenhouse Gas Emissions – By publishing an initial GHG inventory, the District will raise the level of public awareness and provide information for both students and teachers. The inventory should be completed as soon as possible so the district can see where it stands with its emissions and increase awareness of its successful efforts in this area.

Nitschmann planning – Although it probably is too late for any major changes, those involved in the planning process should review the Nitschmann Plans to see if any minor changes could help support the Commitment, especially because if minor adjustments can be made, it may be at a much lower cost.

School Gardens – A number of teachers, principals, and community school coordinators have expressed interest in adding school gardens at their schools; in many cases this is in partnership with the Kellyn Foundation. We think school gardens can be strong, integrating features and an important element for the Climate and Sustainability Commitment. We hope the district will consider ways to encourage this trend.

Public Engagement

To initiate a new level of public engagement and recognition of all it is doing, BASD may have to develop ways to increase the transparency of its work.

Examples of steps the District can consider this fall:

- Issue a news release that announces initial steps and the importance of the leadership role being taken by BASD.
- Consider ways to present information & a recap from the [Inventory of Greenhouse Gas Emissions](#) at a Board meeting.
- Ask teachers to identify sustainability-related student **work** for presentation & recognition at Board meetings or committee meetings later in the fall and winter. If the District decides to encourage [Art, Writing, & videos](#) related to sustainability, as mentioned above, that could also be a source of presentations.
- Encourage high school students to look at sustainability-related [Community Service](#) opportunities. (The Alliance's *Sustainable Lehigh Valley 2014* directory is one possible way to identify appropriate organizations.)
- Ask selected teachers to see if student teams can use this report to create follow-up reports. (Publishing this information is as important for public engagement as it is as a learning tool and metrics for progress.)

We also urge you to consider applying for recognition as a '[Green Ribbon](#)' district not only as a tool for improving curriculum, health & wellbeing, and facilities, but as an important way to engage the public as well. It will take some time to analyze all that is involved, but if the district can engage teachers, administrators, and parents in looking at **it** as a possibility, that will be another opportunity for news coverage and recognition. (If desired, an Alliance intern can analyze the possibilities this fall and report findings to the Superintendent.)

Finally, BASD should consider asking [BAVTS to fully implement the commitment](#) as well to ensure that all students in the District are exposed to ecoliteracy and sustainability.

Intermediate (2014–2016?)

As teachers begin looking at possibilities for making limited changes within their own classrooms and within the structure of the existing curriculum, they also can develop action research projects—both formal and informal—that will help develop innovative and effective ways to implement the Commitment in ways that are most beneficial for students.

One significant challenge of this intermediate phase is to develop the comprehensive plan described in the Climate and Sustainability Commitment:

“Develop a comprehensive plan, by involving administrators, students, faculty, staff, and community members, to guide the development and implementation of ways to integrate academic, operational, and public engagement aspects of climate change and sustainability.”

Examples of areas to consider in the planning process are listed below under their primary areas of curriculum, facilities & operations, and public engagement, but many actions can and should impact all of these areas.

Curriculum

Over the next few years, the district can continue to build on the foundation it sets this fall, beginning the process of integrating sustainability- and climate-related content more fully into the curriculum in all grade levels and subject areas. The district should consider ways to provide resources and opportunities for teachers, such as in-service programming and the ability to act as an advisor for sustainability-related clubs.

We also suggest that the district find ways to encourage teachers to integrate some aspects of sustainability into their practices, to propose possibilities for 'living laboratory' approaches and immersion projects, and to develop action research projects. Such efforts can inform and be informed by ongoing work on curriculum mapping and drafting the comprehensive plan.

We were unable to assess a number of more-specific possibilities due to inability to obtain copies of BASD's existing curriculum documents, but following are some ideas that we hope can be considered as the District develops the comprehensive plan:

Climate & Sustainability Across the Curriculum – Incorporating climate and sustainability concepts and issues in subjects outside the sciences offers some great opportunities to enhance student interest and participation in other subject areas while contributing to the development of critical thinking skills. This component will improve classes based on the information and observations gathered in the curriculum mapping component.

Arts Integration & STEM to STEAM' – As noted in the first section, the district should search for ways to integrate STEM topics across subjects throughout the next few years. If possible, introducing these ideas could help pave the way for future development and identify potential leaders in this area. Numerous studies have shown that more involvement with the arts & humanities supports innovation and critical thinking, which helps produce more successful scientists & technical specialists.

Professional development to support climate & sustainability – While some specific, subject-oriented programming may be required, the most important factor may be time for collaborative planning by teachers. According to Stanford University's Linda Darling-Hammond, two key elements of successful education systems are “extensive opportunities for ongoing professional learning, embedded in substantial planning and collaboration time at school; and teacher involvement in curriculum and assessment development and decision making.” We think the same principles apply to ecoliteracy and that teachers should be given proper training to teach sustainability topics to students.

Stipends for teachers to revise curriculum – The availability of modest stipends could have a significant impact on the rate and quality of curriculum integration; the Alliance would be happy to assist in approaching outside sources for funding.

Standards for continuing Ed Reimbursements – School districts reimburse teachers as a way to encourage continuing education that improves teaching and benefits the district—but it does not make sense to pay for credits that do not do benefit students or the district. BASD should consider reviewing criteria for tuition reimbursement, which will compel teachers to take meaningful credits that benefit the district. We suggest BASD find ways to encourage programs that support action research, ecoliteracy, and cross-curriculum integration.

Student Videos, Art, & Writing – These activities provide opportunities for students to integrate sustainability content into a variety of creative areas. If school activities or practices are covered in student work, they support the 'living laboratory' concept, provide feedback for Facilities & Operations, and support efforts to increase public awareness of District efforts.

Immersion projects – In-depth projects, especially those with a long-term approach, facilitate learning in multiple subjects by integrating various subjects into a single project. Immersion projects help make learning more relevant to students and help develop their higher-order thinking skills.

School Gardens – School gardens give students hands-on experience with growing healthy, organic foods and educate them about wellness and nutrition. Several BASD schools already have gardens, and others are interested in creating them. This is a timely project which will tie in directly with food and wellness improvements and additionally could be worked on as an immersion project. [Supports student health and several Green Ribbon criteria.]

Waste Minimization & Recycling – A strong district-wide focus on recycling and reducing waste will help reduce both environmental impact and disposal costs, of course, but will also provide opportunities for learning in several subject areas and encourage students to make smart decisions about their waste. [Also supports Green Ribbon criteria.]

Composting food waste – Educational institutions have traditionally been community leaders in developing and implementing innovative projects. The Lehigh Valley is behind other parts of the country and world in composting efforts, so this project is a good opportunity for BASD to pioneer the trend among local institutions. Composting provides interesting connections in biology, public policy, history, social studies, and other subjects. [Also supports Green Ribbon criteria.]

Career Pathways, including 1st-year intro classes, Graduation Requirements, and Guidance – An integrated, multi-disciplinary approach to sustainability may, at some point, require revision of some existing practices. It is particularly important to emphasize the cross-disciplinary nature of most major concepts and issues, and it may be possible to adapt existing first-year courses or create new courses to orient students accordingly. It might also be desirable to ensure that all students have had some exposure to sustainability concepts by adding a new graduation requirement. As the plan is developed, it may be necessary to make help Guidance staff incorporate ideas such as sustainability and arts integration into their counseling strategies, including advising on course selection and career pathways.

Clubs & Extracurricular Activities – Clubs and other co-curricular activities provide important ways to develop student interest in sustainability. They are opportunities for learning, self-expression and skill development in a variety of interesting settings. They also allow students to apply and develop their knowledge in practical, real-life environments.

Student clubs – Clubs & co-curricular activities can also serve as task forces to support other projects, for instance to maintain student gardens, to encourage recycling, to turn off classroom lights after school, etc. By getting involved in sustainability outside of the school day, students will become hands-on learners and active, responsible citizens.

A future **ecoliteracy assessment?** – One of the ideas Lindsay Meiman proposed in the spring was moving towards an ecoliteracy assessment at some point in the future. The district should consider a survey to capture some baseline data this year, as this would help inform that process and also provide a basis for comparison in future years.

Facilities and Operations

As the district continues its ongoing work to minimize wasted energy and reduce greenhouse gas emissions, staff should also consider other options. Many of the possibilities suggested below will improve health, reduce GHG emissions, and contribute towards recognition as a 'Green Ribbon' school district. To track progress, BASD should publish an annual [Inventory of Greenhouse Gas Emissions](#) report.

Although the District is a clear leader in reducing energy costs, there is still room for improvement, especially in reducing unnecessary [lighting](#) and possibly by looking at [heating & cooling](#) in certain buildings.

Reducing solid waste – BASD can reduce costs and GHG emissions by improving its recycling rates and developing a composting program for food waste.

Food & Health – BASD should consider ways to serve healthier school lunches, as some other districts are already doing, to reduce students' exposure to harmful chemicals and processed foods. Another way school lunch impacts students is through the atmosphere of the cafeteria and the time allowed. Changes to the lunch infrastructure would pose some difficult issues, but the district should consider long-term options for improvement. Based on reports from other districts, changes in food and the cafeteria environment can increase student achievement and reduce disciplinary problems.

Air Quality & Health – The Lehigh Valley is classified as an 'air basin' that tends to trap harmful pollution, and for decades it has failed to attain Clean Air Act standards for ground-level ozone and fine particulate matter [PM2.5]. Both of these pollutants contribute to the high incidence of asthma and other respiratory disease in the Lehigh Valley and in BASD. Listed below are some ways BASD can reduce these negative health impacts and, in many cases, reduce costs & GHG emissions at the same time. They are also considerations for 'Green Ribbon' recognition.

- Strengthening anti-idling policies for BASD vehicles, which also reduces costs and GHG emissions
- Exploring ways to reduce idling by employee, student, and parent vehicles

- Encouraging students to bike or walk to school when possible (which also increases their physical activity)
- Purchasing low-VOC products [VOC refers to volatile organic compounds]. This includes paint, floor coverings, and other products.
- Make sure all custodial staff are trained in 'green' cleaning practices.
- For grounds and landscape, use native & water-resilient plantings wherever possible.

These practices also strengthen the requirement for 'asthma-friendly' schools and other Green Ribbon criteria.

In addition, the district should consider ways to increase use of school grounds & facilities for community, social & environmental benefits, as this would also strengthen a Green Ribbon status.

Public Engagement

All work in the curriculum, student activities, facilities, and operational areas creates opportunities to inform and engage the community. Some specific policy proposals present especially good opportunities to draw on partners in the community and engage the public. For example:

- Developing a wellness policy that considers the importance of sustainable, local, and organic foods in school lunches
- Developing a wellness policy that encourages less vehicle use and less idling
- Considering a district policy to make all new buildings and major renovations meet LEED standards
- Educating students, employees, and families about the importance of understanding sustainability and the impacts of global warming and the climate crisis.
- Evaluating requirements to become a Green Ribbon district

These projects will translate BASD's commitment into concrete results and promote BASD as a leader in the area of climate and sustainability.

Long-Term Leadership Goals

Understanding of climate and sustainability are continually evolving, so we urge the district to consider ways the Sustainability Committee / Team / Task Force can continue its work even after the comprehensive plan has been developed and implemented. Some possible long-term leadership goals are noted below.

Curriculum

As BASD proceeds to implement its comprehensive plan, various methods to assess Ecological Literacy will be helpful, and it will be important to develop or select assessment methods that are easy to administrate and encourage in-depth learning.

Ways to assess the success and productivity of other elements of the plan should also be considered. If possible, it would be good for students to assist in researching and identifying possibilities in both areas.

Facilities & operations

The District should explore ways to design future facilities so they not only meet the highest LEED standards but are climate neutral and designed to facilitate students' exposure and learning opportunities related to climate & sustainability.

Public Engagement

After initiating its projects and making headway, the Bethlehem Area School District will need to share its progress with the BASD community. To do so, we suggest the school district develop reports and presentations to present to the public, perhaps at a School Board meeting or public town hall meeting. This step will be beneficial for BASD's publicity and will increase the transparency of the district. BASD will be able to receive feedback from the community as well as boast its accomplishments. This step is necessary for the district to engage with the public and share its progress for it to get the recognition it deserves.

Conclusion

Many actions designed to implement the Climate and Sustainability Commitment also meet the health, environmental, and educational criteria for the 'Green Ribbon' awards (and possible funding opportunities). Even more important, we believe that the more fully and comprehensively the District implements the Climate and Sustainability Commitment, the more it will contribute to achieving other District goals. We urge the District to integrate these suggestions as it moves forward with its plan.

Prepared as part of an Alliance Internship project, summer 2014.