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## **National Wildlife Federation®**

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**Valley Forge Christian College  
Phoenixville, Pennsylvania  
Spring 2005, Energy**

### **BACKGROUND**

#### **Campus Profile**

Valley Forge Christian College (VFCC) is a four-year private college with approximately 900 students. The school's mission is to prepare individuals for a life of service and leadership in the church and in the world. Students study a variety of majors focusing on people-serving professions such as education, nonprofit management, psychology, and church-based ministry.

The campus of VFCC was once the Valley Forge Military Hospital, which was constructed in the 1940s. Within the past five years, a shift has occurred from simply improving the campus to making environmentally conscious decisions. This year, VFCC has undertaken a massive energy efficiency improvement program that this project is a part of. The program involves changing all the light fixtures to more efficient lighting and replacing more than 1,000 single-pane windows with double-pane windows. A project coming soon will be placing regulators on all the residence hall radiators, thereby allowing further energy savings.

#### **Contacts**

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### **GOALS AND ACCOMPLISHMENTS**

#### **Goals**

As we headed into the project, our overall goal was to reduce the energy consumption, cost, and green house emissions produced by the lighting in our gymnasium by replacing the fixtures with more efficient ones. A complementary goal was to promote campus and community awareness of the project and of the school's conservation efforts by using the campus-wide Creation Club. This focus included creating posters, sending out articles and press releases, and doing short presentations about the project covering practical ways to conserve energy.

Goals for the next two to three years include (1) using the cost savings from the lighting to fund other conservation projects and (2) deepening the effect of the Creation Club in its education efforts.

## **Accomplishments**

Of the goals mentioned above, the most significant event thus far was the installation of 21 new light fixtures in the gymnasium. The older mercury vapor lights were replaced with new T5 fluorescent fixtures, which caused a reduction in the wattage from 450 watts per fixture to 234 watts per fixture. Over a period of 10 years, this change will create a savings of 11,794 kilowatt hours. Overall, the new lights are almost twice as efficient as the old ones.

The contractor, GreenTech Energy Services, writes, "Our program objectives are simple. Maintain or increase light levels according to code, reduce energy usage, and provide a positive cash flow." Working with this company made it much easier to accomplish the goals set because we were all working toward the same thing.

As for the education goals, efforts have only just begun. There has been mention of the project in an ecology class and during chapel (a daily school wide meeting). A short article was submitted to be sent to alumni and friends of the college and should be published soon. Several other prospects will also be considered, and more detailed presentations will be given in classes and local elementary schools in fall 2005.

As a result of this project, it is likely that the Creation Club will begin a student-led recycling initiative during the 2005-2006 school year. This return is much quicker than we have expected and fulfills part of the future goals for this project. We hope these small steps will begin a campus greening awareness that will continue in the years to come.

## **Challenges and Responses**

No significant challenges have been involved with this project. The retrofitting occurred very quickly and was almost completed without my knowledge because the school's contractor worked in the gym at night while working on the school's other lighting projects. This night work resulted in a lack of pictures being taken of the lighting change in progress, but this lack is rather insignificant considering the challenges that could have been faced.

There has been an overwhelmingly positive response to the change. Jon Mack, the athletic director said, "The lighting of the gym has been a tremendous improvement. It has been the best renovation project to this date." Various students noticed the change after simply walking into the renovated area before being informed about the project.

## **ENGAGEMENT AND SUPPORT**

### **Leaders and Supporters**

There were many people to whom the credit of this project is due. The original idea was presented to me (Rebecca McAtee, NWF Campus Ecology Fellow) by Dr. Todd Guevin, who is mostly responsible for the overall project. He worked as my project advisor, but also gave me encouragement, resources, time, and incredible wisdom. It was because of him that I have become a NWF Fellow and that this project was initiated. Next to him, the VFCC administration, specifically John Yacko, was key to the success. Administrators were willing to work with me and have even allowed me to take part in larger, campus-initiated projects as a result. If it were not for their support, the project would not have been completed. The Creation Club has also been helpful in providing an avenue through which I could present the results of this

conservation effort. The last group that deserves mention is the NWF Campus Ecology Program. They have provided me with anything I have needed - from resources to reminders.

### **Funding and Resources**

The entire school project cost \$216,622. Because the gym was retrofitted within this project, I do not know the exact costs related to the gym lighting. I have estimated that the cost for the targeted section of the gym (primarily the basketball court) was \$2,000. The NWF Campus Ecology Fellowship grant covered \$1,200 of the costs for the overall project, which was used not only for the lighting but also for the costs involved with community education. VFCC has been very supportive and has absorbed any additional costs for my project that were not covered by the grant, which is primarily the result the way this project fit into theirs.

### **Community Outreach and Education**

Education efforts have only just begun and presentations will begin September 2005. A PowerPoint presentation is in the process of being created and will be used to educate students in undergraduate environmental science classes. There will also be a mobile presentation created to be used in at least one local elementary school. Each of those presentations will focus on the completed project and will use pictures, facts, and discussion to promote awareness for the need of energy conservation. Students will also be challenged with practical ways that they can conserve energy.

To reach out to the campus community and to promote awareness, we made a sign and hung it in the gymnasium to give an overview of the project, the sponsors (including NWF involvement), and the conservation facts. The Creation Club will also hang posters in dorm halls encouraging students to conserve.

### **Climate Change**

Because of the increase in lighting efficiency, there has been a decrease in cost and greenhouse emissions. The estimates for the reduction in emissions are as follows: carbon dioxide, 4,235 pounds; sulfur dioxide, 15,811 grams; nitrogen oxides, 7,058 grams. Although there have been no visible changes in the climate surrounding the gymnasium, even the smallest change in the release of harmful gases makes a difference within the environmental context of eastern Pennsylvania.

### **National Wildlife Federation's Campus Ecology® Program**

The NWF Campus Ecology program has played an integral part in the success of my project. Even though the probability of the lighting being changed without my involvement is high, because of the administration's existing retrofit plan, the community education and student initiative would not have been present. The support and encouragement of the Campus Ecology staff was enough in itself to add to my motivation. The opportunity of being able to attend NWF's annual meeting was incredible, and I received a wealth of invaluable information and resources. I was able to meet other fellows who were doing similar projects, and I was inspired by their enthusiasm. The NWF name has also been useful in my working with the community. For a small school, recognition by a national organization has been extremely beneficial.

## **CLOSING COMMENT**

Becoming a Campus Ecology Fellow was an honor I never expected to receive. As an education major, it was hard for me to see how I could lead a greening project that would make a difference in the environment or on my campus. However, my project has created many opportunities for conversations concerning the human effect on the environment, and there has been more student interest in conservation than ever before. Therefore, the completion of this project has shown me that anyone can make a difference, and any effort, no matter how small, can have a huge effect.