

New Program Application: South Dakota ***Engineers Without Borders 2010/2011***

Goal of Application

This application was designed to help you, the applicant, accurately present your program to the EWB-Duke Executive Board for potential chapter adoption. The Executive Board will be evaluating applications on the following criteria: adherence to the [EWB-Duke mission](#), compatibility with chapter capabilities, and ease of logistics.

We understand a paper application may fail to capture these criteria due to misinterpretations of the questions and the answers. Therefore, we have tried to make the questions focused while also as open-ended as possible so that you can include this information but not leave out other important details. However, you *do not* have to answer all the questions. You may also provide more information as you see fit. Keep in mind that this is only the first part of the application process. We will work with you to ensure that we understand your program in its entirety. Thanks for applying!

Process Summary

- September 7: ***new program application available.***
- September 20: ***submit an intent to apply.*** Compose a short description, 3 sentences maximum, of your proposed program and email it to Philip Danser, VP Projects (pad13@duke.edu). Shortly afterward you will receive a response to schedule a meeting with the purpose of clarifying questions on the application and beginning a dialogue meant to strengthen the proposed program.
- October 31: ***new program applications due*** to Executive Board by midnight. Before this time, applicants can request a conference with the VP of Projects and the Executive Board to make amendments to proposed details of the program to make them more aligned to the selection criteria. Any meetings are meant to be a building and suggestion process, *not* a critique. We are here to help offer our experience and expertise to craft your program to work better with EWB's model.
- November 10: ***programs are put to a weighted vote of the Executive Board and the general body*** in a GBM and the preferred program is selected. The chapter adopts the winning proposal and work begins immediately.

Community Background Information

In this section we want to “see” the target community. This means that we’d like to know where it is, who lives there, and the circumstances for residents. How do people live at this site? Pictures are always helpful if you have them. Please be as objective as possible in this assessment to separate your personal projections from reality.

- Where is the site located?

The site is located at the Rosebud Indian Reservation, in South Dakota. The predominant community on the reservation is St. Francis. This is the community in which we plan to undertake our project.

- What are the demographics at the site? What is the ethnic makeup? What is the language, and who speaks it? What is the religion, and who practices it?

The Rosebud Reservation is the home of the Sicangu Oyate tribe, also known as Sicangu Lakota, the Upper Brulé Sioux Nation, and the Rosebud Sioux Tribe. The population is estimated at 25,000 (as of 2005), and approximately 90% is enrolled as members of the Rosebud Sioux Tribe, while the other 10% of the population are teachers and/or missionaries. Lakota is the language of the tribal members, however, everyone speaks English as well. There are several Christian churches represented on the reservation, the Catholic Church being dominant. However, after the Freedom of Religion Act passed in 1978, traditional Native spiritual practices became more prevalent.

- What is the political structure? Who are the community leaders? What does the local government do? Is there any political tension in the area? What are the big interests in the community?

The political structure of the reservation is based on the Indian Reorganization Act of 1934 and modeled after the US government political structure. The Oglala Sioux Tribal government maintains jurisdiction within the boundaries of the reservation including all rights-of-way, waterways, watercourses and streams running through any part of the reservation and to others land that may be added to the reservation under the laws of the United States. The tribe is governed by an elected body consisting of a 5 member Executive Committee and a 16 member Tribal Council, all of whom serve a four-year term. There is a Community Chair, a vice-chair, a secretary, a treasurer and various committees. The rather abrupt change to the present form of government from the traditional tribal leadership model has caused some confusion and resulting tensions among tribal members.

The main interests among the residents of the reservation are raw sewage and the aging infrastructure. The water pipes are old and frequently break, and the electric system is also old and power lines break in the wind (there is always a very strong wind on the reservation). Also, a large interest is safe heating (as many of the residents live in trailers that are very flammable) and safely disposing of piles of trash/junk that have accumulated over the years.

- What is the lifestyle of the typical resident? What is the household size? What is the weekly income and how is this income earned? How do family members use their time? Do they have access to education and/or work?

The Rosebud Reservation has been described as "a third world country in America's heartland." According to the 2006 U.S. census, the unemployment rate is 89% across the reservation. One in six residents owns a car (and most of the available cars are not in good working condition). Two or three families or family members live in a home: adults, grown children, and multi generational family groups. Of the people who are employed, most are employed at the school or with the Catholic organization.

The Oglala Sioux Tribe's major economic occupation is cattle ranching and farming for tribal operators. The Tribe operates a large Parks and Recreation Department, guided hunting for small game, big game, including buffalo and elk and the Cedar Pass Lodge which includes a motel, restaurant and gift shop. The Tribe also operates the Praire Wind Casino including black jack, poker, and slot machines. However, on the Rosebud Reservation, there are only two businesses: a small gas station/convenience store and a small family operated store. Some community members work for the tribal organizations. There is no regular public transportation so tribal members often have to depend on extended family to move around the reservation. Since most tribal members do not have money for gas, transportation is a very real problem. Finally, the young women often have children very early, and are usually a single parent.

- How is the infrastructure? Are there transportation, energy, and water systems in place? About what percentage of the population has access to these services?

On the Rosebud Reservation, the road system is relatively good. However, the section roads are can be dangerous during the cold weather and distances can be pretty far between the towns. The gas used to heat homes is propane. Although there is no regular public transportation, there is a van that runs once a week between the hospital in Rosebud and the major hospitals in Sioux Falls and Rapid City. Other services include water and phone lines. About 85% to 90% of the population has access to the systems. Also, cell phones work in most areas on the reservation.

- What are the largest problems that face community members?

*- **Means of Income** - There are few means of income on the Reservation, which leads to the extremely high unemployment rate.*

*- **Water** – The system consists of water pipes from the 1940s that frequently break (especially in cold South Dakota winters). Thus, the community is often without water. There is data regarding water quality is questionable/unclear.*

*- **Sanitation/waste disposal** – There is a raw sewage lagoon behind and adjacent to the community center. There is no waste processing, and it appears that raw sewage feeds directly into the lagoon and into ground filtration. There are no filters or aeration systems in place. The site is surrounded by a fence that does not appear to be very solid; a small child could easily go over the fence and onto the site.*

- **Solid Waste Disposal/Trash** – There is no recycling system in place. Garbage is picked up by a firm contracted by Tribal leadership to collect trash, but they will not pick up any items that do not fit into the designated plastic garbage cans. Trash is then hauled approximately 50 miles to the town of Carter, SD to a waste disposal site. There are not enough trucks and equipment. Large items such as furniture, appliances (with doors intact), televisions, hazardous waste (discarded computer components, medical supplies, and broken glass) are just dumped by residents along a gravel road that runs next to the community center and back to the sewage lagoon. Old car bodies have been put down against the banks of the local rivers to stop erosion.

- **Heating** – There are three propane vendors – two on the reservation and one located off the reservation about 40 miles away. Due to the distances between communities, vendors become overwhelmed during high demand (winter) and there are difficulties in delivering propane during bad weather. A small number of residents use wood stoves when they run out of propane. Wood availability is variable and inconsistent, and propane is expensive. Most people cannot afford the size order that would ensure regular delivery. The distribution of orders within the communities determines delivery protocol (For example, a required number of orders within an area to facilitate a cost effective delivery schedule).

- **Electricity** – Tribal utilities personnel oversee all utilities coming into the area. All electric service is provided by Cherry Todd Electric Company. There are no energy rate controls and costs can increase unexpectedly. Also, there is no opportunity or regulatory agencies to challenge the arbitrary increases.

- **Housing** - SWA Corporation (Sicangu Wicoti Awanyakapi), formally known as the Rosebud Housing Authority, manages the housing programs for the Rosebud Sioux Tribe. The SWA receives funding for its activities from the U.S. Department of Housing and Urban Development, BIA (Bureau of Indian Affairs), Tribal contributions, and financial institutions. The tribe received a four million dollar grant to build homes and improve infrastructure. According to information provided by community leader Lone Quigley, a number of participants were selected and had solar panels hooked up to their homes. She has no information about results or conclusions at this time.

- **Clean Energy** – Some solar panels were installed at the tribal university in the 1970s, but the batteries became obsolete and no support followed. There was also a proposal of a forty windmill farm site (Owl Bonnet Wind Farm) south of St. Francis. It was proposed by the Rosebud Economic Development Corporation located in Mission, SD in about 2004-2005. Lone Quigley participated in archeological and ethnological surveys. A biological survey was also conducted on the property. Unfortunately, the project was stalled for unknown reasons, and has not been restarted.

Logistics

In order to complete a program in a site, that site must be readily accessible by EWB groups over several years.

- Is the site accessible? What would it take to get there from Durham, North Carolina?

There are many airline flights to South Dakota. There is a bus that comes to the town of St. Francis from the airports (Pierre or Sioux Falls would most likely be the closest airports). Also, From Durham, the drive is roughly 25 hours.

- Are there any grants or fellowships that can be applied to travel or research in the area?

A possible grant is available through the Horizon's Leadership Project. This project was implemented through a grant that was obtained by our community partner, Lone Quigley, and is used support the projects of volunteers in the community. However, this grant was relatively small, and the funds are beginning to dwindle.

A grant through the U.S. Department of Energy may also be available for research and implementation of our project. This grant is specifically intended for the development of sustainable energy on low-income Native American reservations.

- Where would EWB members stay?

EWB members would stay at The Rosebud Educational Society Guest House or lodging would be provided through The Tree of Life (a local NGO).

- Is there reliable phone and e-mail access? How many days a week? Is it difficult to obtain?

There is reliable phone service that is usually available (some more remote areas may not have service) and always e-mail access.

- Are you aware of any significant safety risks in the proposed area such as disease, war, extreme weather or lack of access to medical treatment?

There are no significant safety risks in the area. There is a hospital in the town of Rosebud (7 miles from St. Francis) and larger accessible hospitals in Sioux Falls and Rapid City.

Impact

It is very important that the abilities of the community and the abilities of our chapter align so that we can serve the community in a way that also benefits our members.

- What is the community's investment in this program? How did you find out about it? Were you approached by a member of the community? Can they provide materials? Money? Transportation? Labor?

We discovered the needs of this community through Linda Verbeke and Lone Quigley. After hearing about the hardships that the community faces, we approached Ms. Quigley and Ms. Verbeke with the possibility of an EWB project, and they responded very positively and strongly. Labor and transportation can certainly be provided, however the materials and funds will not be able to be provided because of the community members economic situation. There is a tribal university (Sinte Gleska University) located in Mission, South Dakota. Students regularly do community service and will definitely become involved in our project. In St. Francis, there is a group called Horizons Leadership Committee, which is a group of women leaders who have been exploring ways of improving the community. The Tribal Council Representative and administration would also have a strong investment in the program.

The Lakota Sioux have lost their pride and many have lost their tribal and individual identity. When a person cannot find gainful employment to feed and provide shelter for his or her family, depression can bring a feeling of powerlessness and helplessness. Abraham Maslow, a researcher, discusses a "hierarchy of needs" where the basic needs for survival must be met before an individual can focus on values such as esteem and self-actualization. We truly believe that the community of St. Francis will pull together and work beside the EWB participants when they feel valuable and respected and can begin to believe that there is hope in improving their situation. We also believe that this pride in investment will continue long after the project is completed.

- Are there any other groups (EWB, NGOs or otherwise) working in this area? What have they done? Were they successful?

The Tree of Life is a NGO that provides redistribution of goods and shelter. During the summer, some volunteers will take on repairs (roofs, windows, floors, etc.), plant gardens, provide seeds, and train residents on how to maintain gardens. They also help with weatherization of homes. Tree of Life has been on the reservation for a number of years and has been very successful. Lakota Funds is another NGO that aids tribal members in developing small businesses.

· Do you have reason to believe that the community has sufficient infrastructure and interest in the program to sustain a project in the absence of an EWB team after completion? In other words, does the community have the capacity to service and provide maintenance for the project independently?

Absolutely. As a respected and very involved member of the community, Ione Quigley will lead the maintenance of the project. Most likely, students from Sinte Gleska University will consist of the bulk of the maintenance team, along with other members of the community. This way, students could pass the project down from class to class, ensuring that a dedicated and enthusiastic maintenance team would always be in place.

Community Partner Information

The community partner contributes a useful perspective in accurately determining community needs, and helps coordinate activities when members are not at the site. Choosing a reliable and appropriate partner is therefore very important.

- Is there a community partner identified for this program?

Yes. Our first community partner is Linda Verbeke. Our second partner is Lone Quigley.

- What is the history of the partner? What is their mission? Have they done any similar work in the community?

Ms. Verbeke is accepted in the Rosebud community, and has been very involved in the reservation for the past fifteen years. She has done much work in fundraising for money to donate to members of the Reservation to support their families, and has also done much work in providing warm clothing, bedding, school supplies, and kitchen supplies to members of the tribe. Ms. Quigley is a member of the tribe and a resident of the reservation. She is currently in her sixth year as the vice-community chair of the St. Francis community on the Rosebud Reservation. Her past projects have been an attempt at implementing a community garden (the food from which feed elders at the Elder Nutrition Center) and the development of the Horizons Project. Once a year Lone recruits volunteers from both inside and outside the community to work on community building and repairs. Ms. Quigley is also a teacher at the tribal college, Sinte Gleska University.

- Is the partner staffed full-time? Will they be able to do monitoring and coordination activities when EWB members are not present?

Both partners are staffed part time, and would be able to help coordinate and monitor project activities when EWB members are not present. Also, both partners would be available to travel to the site during EWB trips to the reservation.

- Is the partner a reliable magnifying glass of the community? Are their opinions trustworthy and relevant to the larger population they will represent?

Yes. Both the opinions of Ms. Verbeke and Ms. Quigley are very trustworthy, as both are deeply involved in the tribe. As a member and leader of the community, Ms. Quigley is a great representative of the tribe; she is also respected by the community and her opinions carry the voice of the community as a whole.

- Will the community partner be able and willing to maintain close contact with the EWB team during the school year?

Yes.

Proposer Information

We'd like to get to know a little more about you, too!

- Why do you care about this program? Why did you propose it?

We care deeply about this program because of the alarming hardships that people of the Rosebud Reservation face. The promises of The Treaty of 1868 were not kept and the Lakota people live in hunger and poverty and, yet, they are a proud people who do not complain about their living conditions or blame others for their problems. They are good and generous people and deserve hope and promise for a better future for their children. The community of the reservation is so rich in culture and pride, and it is unbelievable and heartbreaking that such extremely poor living conditions can exist so close to home; in the same nation that is often criticized for its obsession with opulence. Kathryn is also related to members of the Sicangu Oyate tribe, and was inducted into the tribe during a traditional naming ceremony as a child. She often visited this land during childhood visits to her great grandfather's homestead.

We proposed this program because we feel that the problems that face the Rosebud Reservation (water, sanitation, waste disposal, heating, electricity, housing) are easily addressable, and well within a reasonable budget. Although we will inevitably not be able to solve all of the reservation's problems, to quote Lone Quigley, "any difference is the biggest difference." We feel that addressing even only one of these problems will significantly improve the lifestyles of the residents of the Rosebud Reservation, and that these improvements will be an impetus for further advances.

Many people wonder why Native Americans simply do not leave the reservation. However, the reservation is a cultural base, a cultural haven for its residents. Among the residents, there is an incredibly strong sense of family and community, and leaving the reservation is out of the question for most members of the Sicangu Oyate tribe. We feel that the residents should not need to leave their homeland, and the land of their ancestors to improve their way of life.

We also proposed this project because we feel that there is the potential for students focusing in many areas of study to become involved. Apart from engineering students, students focusing on finance, business, or economics could also become involved by working with tribal members to develop business plans, as boosting the economic condition of the tribe would greatly contribute to an increase in the quality of living. As someone who has participated in and traveled with an EWB project before, Ale knows not only how much dedication it takes to follow through with a project but also how meaningful and rewarding it is. This is the type of problem-solving experience that both Kathryn and Ale hope to be a part of once they move beyond college and are practicing engineers.

- Have you recruited others to your cause?

Yes. We have talked about this idea with our fellow engineers at Duke, and there have been several students that have shown interest in joining us. Whether it is for the engineering aspect or the policy/economic aspect, students have responded with enthusiasm to the idea. In addition, while Ms. Verbeke was on site this October, she discussed the potential of our project

with residents of the reservation who all responded with extreme interest in the project and demonstrated that they would support it. Especially given the multi-lateral nature of this project, we believe recruiting others to our cause will not be difficult.

· Do you intend to be the project leader of this program or do you plan to recruit another student for that role?

Yes, both applicants (Kathryn Latham and Ale Ferrara) intend to be co-project leaders.