

PROJECT SUMMARY SHEET

PROJECT TITLE: South Dakota Envirothon

PROJECT PERIOD: June 2017 to July 2019

PROJECT SPONSOR: Belle Fourche River Watershed Partnership

Belle Fourche River Watershed Partnership

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319 NONPOINT SOURCE FUNDS: \$ \$30,000 annually/\$60,000 for two-year project

MATCH: \$ 53,920 annually/\$107,840 for two-year project

OTHER FEDERAL FUNDS: \$30,000 annually/\$60,000 for two-year project

TOTAL PROJECT COST: \$227,840 for two-year program

319 FUNDED FULL-TIME PERSONNEL: 0.33

PROJECT TYPES: [] PLANNING [] WATERSHED [X] I&E [] GROUNDWATER

PROJECT LOCATION: Statewide

303(d) Listed Stream: NO

HYDROLOGIC UNIT CODE: all

Counties: All

Latitude:

Longitude:

NPS CATEGORY select and list percent

- | | |
|--|---|
| <input type="checkbox"/> AGRICULTURE: | <input type="checkbox"/> CONSTRUCTION |
| <input type="checkbox"/> AFOs | <input type="checkbox"/> HYDRAULIC MODIFICATION |
| <input type="checkbox"/> URBAN RUNOFF | <input type="checkbox"/> SILVICULTURE |
| <input type="checkbox"/> RESOURCE EXTRACTION | <input checked="" type="checkbox"/> OTHER 100% |

NPS FUNCTIONAL CATEGORY- select and list percent

- | | |
|---|---|
| <input type="checkbox"/> BMP IMPLEMENTATION | <input type="checkbox"/> TECHNICAL ASSISTANCE |
| <input checked="" type="checkbox"/> INFORMATION AND EDUCATION | <input type="checkbox"/> PLANNING |
| <input type="checkbox"/> WATERSHED ASSESSMENT | <input type="checkbox"/> GROUNDWATER |
| <input type="checkbox"/> WATER QUALITY MONITORING | <input type="checkbox"/> OTHER |

NPS POLLUTANTS TO BE ADDRESSED

- | | |
|---|---|
| <input type="checkbox"/> EXCESS NITROGEN | <input type="checkbox"/> PESTICIDES |
| <input type="checkbox"/> EXCESS PHOSPHORUS | <input type="checkbox"/> OIL AND GREASE |
| <input type="checkbox"/> SEDIMENTATION | <input type="checkbox"/> TEMPERATURE |
| <input type="checkbox"/> PATHOGENS/BACTERIA | <input type="checkbox"/> pH |
| <input type="checkbox"/> METALS | <input checked="" type="checkbox"/> OTHER |
| <input type="checkbox"/> LOW DISSOLVED OXYGEN | <input type="checkbox"/> OTHER |

SUMMARY STATEMENT:

Envirothon: Natural Resource Education Competition for High School-Aged Students

South Dakota Envirothon builds natural resources literacy through a hands-on, environmental education program and team competition for high-school aged students.

PROJECT GOALS:

The goals of the SD Envirothon are as follows:

- To promote a desire to learn more about the natural environment and equip students with the knowledge and skills needed to apply the basic principles and practices of resource management and ecology to complex environmental issues.

- To promote stewardship of natural resources and to encourage the development of critical thinking, cooperative problem-solving, and decision-making skills required to achieve and maintain a natural balance between the quality of life and the quality of the environment.
- To provide students with experience in environmentally-oriented activities, enabling them to become environmentally-knowledgeable citizens.
- To increasingly supplement grant monies with private investments.

PROJECT DESCRIPTION:

South Dakota Envirothon builds natural resources literacy through a hands-on, environmental education program and team competition for high school-aged students. Teams are formed from associated high schools, home school groups, 4H, and FFA, and train/study through the year with their coach/advisor/teacher, in preparation for the state-wide competition in late spring. A team of five students, and an alternate, are invited to participate in the competition. Natural Resource professionals assemble resources, to assist in the education/study process, in the areas of soil, forestry, wildlife, aquatic ecosystems, and a current topic. The topic released for the 2017 year of study is Agricultural Soil and Water Conservation. One of the teams competing at the South Dakota Envirothon Competition, also has the opportunity to advance to the North American Envirothon Competition.

The goal of the SD Envirothon Project is to educate and strengthen participants' knowledge and use of natural resources, so that they can become better stewards of the water and its relationship to other natural resources. Envirothon provides an opportunity for participants to use science-based information to gain knowledge and use problem-solving skills to make educated management decisions concerning water and other natural resources. Envirothon targets our high-school aged youth, who are soon to become independent consumers of our natural resources.

2.0 Statement of Need:

South Dakota Envirothon is an ongoing program targeted to strengthen the understanding of high school-aged students to restore and maintain water quality, and its association with other natural resources. The following goals reflect the desire of Envirothon to culture a new generation of environmental stewards.

The goals of the South Dakota Envirothon Program are:

- To promote a desire to learn more about the natural environment and equip students with the knowledge and skills needed to apply the basic principles and practices of resource management and ecology to complex environmental issues.
- To promote stewardship of natural resources and to encourage the development of critical thinking, cooperative problem-solving, and decision-making skills required to achieve and maintain a natural balance between the quality of life and the quality of the environment.
- To provide students with experience in environmentally-oriented activities, enabling them to become environmentally-knowledgeable citizens.

2.1 History of Envirothon

In 1979, the Pennsylvania Soil and Water Conservation Districts created an "Environmental Olympics" as a way to encourage high school students to become interested in natural resource conservation and environmental issues and careers. It was soon shortened to Enviro-Olympics, and in 1988, became known as Envirothon. Teams from neighboring states began to form, and the competition began to spread, eventually including many other states, as well as many provinces in Canada.

Other countries outside of the US and Canada have also expressed interest in the Envirothon program, and this year, at the national competition, a team from China participated.

2.2 Rationale for the Current I & E Program

Currently, the program is part of the National Conservation Foundation, and is known as the NCF-North American Envirothon. Each year, the Envirothon program reaches over 500,000 high school-aged students, including students in South Dakota. South Dakota has offered Envirothon since approximately 2010, with approximately 30 teams, or 150 students, involved to date. The mission of the NCF-Envirothon is to develop knowledgeable, skilled, and dedicated citizens who have an understanding of natural resources and are willing and prepared to work towards achieving and maintaining a balance between the quality of life and the quality of the environment. The goal of the SD Envirothon is to reach even more students in the coming year, increasing young people's understanding of the principles and practices of natural resource management. As has occurred in other states, where students have been active in Envirothon, we also hope to foster a desire for more of our young people to consider careers in environmental science. However, more importantly than career development, is the need to foster an awareness, knowledge, and appreciation for the importance of water quality in their daily lives, as well as the need to be responsible stewards of all natural resources, and be able to communicate that knowledge in the communities in which they reside.

South Dakota Envirothon also serves as a "feeder" program to the North American—NCF Envirothon, as the winners of the state competition, have an opportunity to participate in the international competition. Resources for preparation for the South Dakota Envirothon can be found on the SD Envirothon website at <https://sdenvirothon.org>.

3.0 Project Description

As stated in the SD Nonpoint Source Management Plan September 2014-September 2019, the third objective for the plan, is to: "Provide for an outreach program that conveys information and participation opportunities to targeted segments of the state's urban and rural populations." Envirothon is a program that will reach young people of both rural and urban populations in South Dakota. Envirothon provides hands-on learning opportunities to bridge the education of the classroom to real-world experiences in, not only water ecology, but other natural resources as well, providing a way for young people of both urban and rural backgrounds an opportunity to learn about the importance of water management.

3.2 Project Outcomes

The goals of the SD Envirothon are as follows:

- To promote a desire to learn more about the natural environment and equip students with the knowledge and skills needed to apply the basic principles and practices of resource management and ecology to complex environmental issues.
- To promote stewardship of natural resources and to encourage the development of critical thinking, cooperative problem-solving, and decision-making skills required to achieve and maintain a natural balance between the quality of life and the quality of the environment.
- To provide students with experience in environmentally-oriented activities, enabling them to become environmentally-knowledgeable citizens.
- To increasingly supplement grant monies with private investments.

By implementing the educational pieces of Envirothon, striving to achieve the goals listed above, and growing the program to reach more young people, the Envirothon Project will help fulfill the objectives of the NPS plan by providing an outlet for outreach to SD future leaders and citizens. This program will help them better understand, the importance of resource management including water usage, management, and conservation.

3.2 Project Objectives and Tasks

Objective 1: Provoke, in youth, continuing interest concerning natural resources that will mature through their lifetime, stimulating an interest to make positive decisions using problem-solving skills to address water quality challenges. Provide a bridge to hands-on understanding of natural resources from classroom experiences by connecting current, and former, natural resources professionals with educators and students. Provide up-to-date information for high school youth and educators

Task #1: Increase knowledge of and further educate youth on natural resources issues involving the stewardship of the land, water, wildlife, forestry and other issues related to sustaining and conserving natural resources.

Product 1: Mid-Year Seminar

Cost: \$5,390 annually

Milestone: Winter 2017-2018
Winter 2018-2019

Product 2: Education Outreach

Cost: \$8570 annually

Milestone: Ongoing FY 2018
Ongoing FY 2019

Product 3: Create and maintain <https://sdenvirothon.org> website

Cost: \$300 annually

Milestone: 24 months: ongoing

Objective 2: Further develop, maintain, promote, and grow the South Dakota Envirothon Program which will provide natural resource literacy through hands-on environmental education and team competition for secondary students. Promote, develop, and grow the South Dakota Envirothon Program. SD Envirothon will contract with a coordinator to promote, develop, and implement the SD Envirothon. Coordinator will be secured as a contracted services provider to the Belle Fourche River Watershed Partnership.

Task #2: Provide South Dakota secondary education students the opportunity to put their natural resource knowledge to test against students of other schools, statewide. The winning team will also have the opportunity to advance to the international competition.

Product 4: South Dakota Envirothon Competition
Cost: \$29,910 annually/\$59,820 for two years
Milestone: Spring 2018
Spring 2019

Product 5: NCF North American Envirothon
Cost: \$9,750 annually/\$19,500 for two years
Milestone: Summer 2018
Summer 2019

3.3 Milestone Table

(See Attachment)

3.4 Project Management and Tracking

South Dakota Envirothon will be managed by the SD Envirothon Steering Committee which consists of professionals in the fields of various natural resources, the Envirothon Coordinator, and other interested parties. Success will be measured by the number of teams entered into the spring competition and from evaluations given to all participants, guests, coaches, and volunteers of the SD Envirothon Competition.

4.0 Coordination Plan

4.1 Cooperating Organizations

Cooperating organizations for the SD Envirothon include, but are not limited to:

- Belle Fourche River Watershed Partnership
- Day County Conservation District
- Smithfield Foods
- NRCS
- SD Conservation Commission
- SD Conservation Districts
- SD DENR
- SD Department of AG

- SD Game, Fish and Parks
- US Fish and Wildlife
- SDSU
- DOE

These organizations have offered assistance in progressing toward the mission and goals of South Dakota Envirothon in various ways, using their areas of expertise.

4.2 Local Support for the Project

Local support for the project includes several private individuals and businesses, as well as the aforementioned organizations. That support is ongoing. Most of these organizations have pledged cash, in-kind assistance, or both, to helping make Envirothon a success in South Dakota. Most of these organizations have also had representatives present at recent steering committee meetings, helping plan for the future success of the program. The intention of the South Dakota Envirothon Program is to work to obtain more private sponsorship.

4.3 Duplicate Effort

Sponsors are not aware of any other programs that would replicate what Envirothon does. Envirothon is structured to reach all high school-aged students in classrooms, homeschooling situations, and “out-of-school” groups such as 4H and FFA in all watershed areas in South Dakota, giving them an opportunity to learn to be better stewards and advocates of water usage and conservation in South Dakota, as well as the other areas of natural resource study.

4.4 Assumption of the Responsibilities of Other Entities

A diverse group of organizations are also taking on fiscal responsibilities for the success of this program. Each organization has a responsibility to assist in the activities of Envirothon in this watershed project. 319 funding would be in addition to funding from other sources, to help make Envirothon a success throughout all watershed areas.

5.0 Evaluation and Monitoring Plan

5.1 Monitoring and Evaluation Strategy

Project success will be an ongoing monitoring process. First, the number of teams registering for a competition year, will be an indicator of the success of the program. Teams will have access to study information at the start of the school year, or soon thereafter, to begin preparing for the competition. In the spring, teams will gather to be evaluated on their success of learning the given materials. Each team will take part in trail tests written by natural resource professionals, in all four disciplines. Those tests will then be corrected by professionals in the discipline areas. A situation, based on the current issue, will then be presented to the teams and they will have a given amount of time to come up with a presentation that offers problem-solving solutions, based on their knowledge of the situation and the studies that they’ve done in the respective natural resource areas, and present their solution to a panel of judges. All of these evaluation tools will be a representation of the effectiveness of the Envirothon program for its participants.

In addition to the competition itself, two types of evaluations will be presented to the participants. One, an evaluation for the student participants to evaluate several aspects of the program and subsequent competition, and second, an evaluation for the coaches, judges, guests, and volunteers to complete. Both evaluations will allow the participants, on all sides, to give feedback and recommendations to the Envirothon committee/coordinators, to assist in improving the program.

The Envirothon Steering Committee and Coordinator will review the evaluations following the competition to make improvements for the upcoming study year, and subsequent competition. Sample evaluations are included at the end of this document.

6.0 Information and Education

6.1 Information and Education Activities

Envirothon, by its nature, is a major activity that promotes the spread of information and education for high school participants of water conservation and other natural resource education. This program reaches participants of every possible economic status and geographic location of the watersheds in our state. As the students learn the science associated with water conservation, it is likely that they are going to pass that information on to others in their schools, homes, and communities, and thus the education concerning clean water and what it takes to keep it clean, or make it clean and useable, in our state, will also grow, leading to a greater citizen awareness and stewardship of all natural resources in our state, and beyond.

The public will be invited to volunteer and assist with various activities throughout the school year, as well as assist at the spring competition. South Dakota Envirothon encourages the public, sponsors, parents, and guests to attend the state Envirothon competition. News articles, social media posts, brochures, etc., will be used to share the Envirothon story and help build public awareness across the state, about responsible, science-based stewardship of all of our natural resources.

7.0 BUDGET (See attached)

8.0 Attachments

- Milestone Table: Attachment A
- Funding Sources: Attachment B
- Budget: Attachment C

<i>Attachment A: Milestone Table</i>			
<i>Goal/Objective/Task</i>	<i>Quantity/Amount</i>	<i>Year 1</i>	<i>Year 2</i>
<i>Objective 1: Provoke interest in Natural Resources in our high school aged youth and promote continuing natural resources education through a variety of activities to bridge hands-on understanding of natural resource conservation and stewardship.</i>			
<i>Task 1:</i> Increase knowledge of, and further educate, youth on natural resources issue involving the stewardship of the land, water, wildlife, forestry, and other issues related to sustaining and conserving this important resources.			
Product 1: Mid-Year Seminar	2	1	1
Product 2: Education Outreach	35 Teams	15 Teams	20 Teams
Product 3: Website Maintenance	24 months	ongoing	ongoing
<i>Objective 2: Further develop, maintain, promote, and grow the South Dakota Envirothon Program, which will provide natural resource literacy through hands-on environmental education and team competition for secondary students.</i>			
<i>Task 2:</i> Provide SD secondary education students the opportunity to put their natural resource knowledge to test against students of other schools statewide. The winning team may also have the opportunity to advance to national/international competition.			
Product 4: SD Envirothon Competition	2	Spring 2018	Spring 2019
Product 5: NCF North American Envirothon	2	Summer 2018	Summer 2019

<u>Attachment B: Funding Sources</u>			Total for Two Years
Funding Sources	Year 1	Year 2	
EPA Seciton 319 Grant	\$30,000	\$30,000	\$60,000
Local Cash & InKind			
Smithfield Foods	\$2,500	\$2,500	\$5,000
SD Conservation Commission	\$20,000	\$20,000	\$40,000
First Interstate Bank	\$500	\$500	\$1,000
SD Association Conservation District Auxiliary	\$2,000	\$2,000	\$4,000
InKind	\$28,920	\$28,920	\$57,840
Federal Non-Matching			
NRCS	\$30,000	\$30,000	\$60,000
Subtotal	\$113,920	\$113,920	\$227,840

Attachment C: Budget for Envirothon 319 I & E Grant								
Item	Year 1	Year 2	Total	319 EPA	Conservation Commission	Local/ In-kind	Other Fed	Total
Personnel/Administrative:								
<i>Envirothon Coordinator</i>	\$60,000	\$60,000	\$120,000	\$60,000	\$0	\$0	\$60,000	\$120,000
<u>Personnel/Administrative Totals</u>	\$60,000	\$60,000	\$120,000	\$60,000	\$0	\$0	\$60,000	\$120,000
Objective 1--Provoke interest in Natural Resources in our youth and promote continuing natural resources education through a variety of activities to bridge hands-on understanding of natural resource conservation and stewardship.								
Task 1: Increase knowledge of, and further educate, youth on natural resources issue involving the stewardship of the land, water, wildlife, forestry, and other issues related to sustaining and conserving this important resources.								
Product 1: Mid-Year Seminar	\$5,390	\$5,390	\$10,780		\$4,000	\$6,780		\$10,780
Product 2: Education Outreach	\$8,570	\$8,570	\$17,140		\$3,860	\$13,280		\$17,140
Product 3: Website Maintenance	\$300	\$300	\$600			\$600		\$600
<u>Objective 1 Totals</u>	\$14,260	\$14,260	\$28,520	\$0	\$7,860	\$20,660	\$0	\$28,520
Objective 2: Further develop, maintain, promote and grow the South Dakota Envirothon Program, which will provide natural resource literacy through hands-on environmental education and team competition for secondary students.								
Task 2: Provide SD secondary education students the opportunity to put their natural resource knowledge to test against students of other schools statewide. The winning team may also have the opportunity to advance to national/international competition.								
Product 4: SD Envirothon Competition	\$29,910	\$29,910	\$59,820	0	\$12,640	\$47,180		\$59,820
Product 5: NCF North American Envirothon	\$9,750	\$9,750	\$19,500	\$0	\$19,500			\$19,500
<u>Objective 2 Totals:</u>	\$39,660	\$39,660	\$79,320	\$0	\$32,140	\$47,180	\$0	\$79,320
<u>Grand Totals:</u>	\$113,920	\$113,920	\$227,840	\$60,000	\$40,000	\$67,840	\$60,000	\$227,840