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## 2010 Innovations Awards Application

Deadline: March 1, 2010

ID # (assigned by CSG): **10-MW-30SD**

**Please provide the following information, adding space as necessary:**

State: South Dakota

Assign Program Category (applicant): Natural Resources (Use list at end of application)

1. Program Name South Dakota Game Fish and Parks GPS Mapping Program
2. Administering Agency South Dakota Game Fish and Parks
3. Contact Person (Name and Title) Chris Marsh, GIS Specialist
4. Address 523 E. Capitol Avenue, Pierre, SD 57501
5. Telephone Number (605) 773-2868
6. FAX Number (605) 773-6245
7. E-mail Address [Christopher.Marsh@state.sd.us](mailto:Christopher.Marsh@state.sd.us)
8. Web site Address [www.sdgfp.info](http://www.sdgfp.info)
9. Please provide a two-sentence description of the program.  
This free program enables users to download South Dakota's public hunting area boundaries to their recreational and navigational GPS units. The program includes both how-to videos and step by step instructions for users.
10. How long has this program been operational (month and year)? Note: the program must be between 9 months and 5 years old on March 1, 2010 to be considered.  
The GPS Mapping Program was unveiled in June of 2009.
11. Why was the program created? What problem[s] or issue[s] was it designed to address?  
The GPS Mapping Program was created to provide sportsmen another medium to access South Dakota public hunting maps. The objective was to provide hunters an accurate, easy to use electronic map of all of the public hunting areas in South Dakota.
12. Describe the specific activities and operations of the program in chronological order. Three stages comprise the activities and operations of this program:

### DEVELOPMENT

In the fall of 2008, SDGFP Secretary Jeffrey Vonk initiated the development of a GPS-friendly public lands mapping application. A search of software vendors with applications to convert the departments existing Geographic Information System (GIS) data into a format that was compatible with recreational GPS devices was completed. No single software that would work for multiple GPS formats was found. Next, three manufacturers were selected (Garmin, Lowrance, Magellan) and explored programs that would be compatible with respective hardware. Communication with the manufacturers discussed guidelines and support and software was agreed upon that would create the desired data, and development of base maps

for the different GPS devices began. Maps were created and tested for accuracy in March 2009, and were ready to showcase to public. Camouflage colored USB flash drives were purchased to load information on and distribute at public events. Flash drives contained a Web page with instructions and video showing how to load the data onto specific GPS units, the GPS base map files, links to other resources, and applications needed to install onto specific devices.

#### DISTRIBUTION

In June 2009, the program was unveiled at the South Dakota Outdoor Expo. Approximately 200 USB flash drives were given to sportsmen over the 2-day event. In late June, approximately 70 flash drives were distributed to local, regional, and national media. The program Web page was uploaded to the SDGFP Web site by the end of June. The updated version requires a user e-mail address before downloading the GPS map files. The user address is also used to notify customers when updates are made to map files. As a follow-up public notification, a statewide press release was issued directing the public to the GPS mapping Web page.

#### IMPLEMENTATION

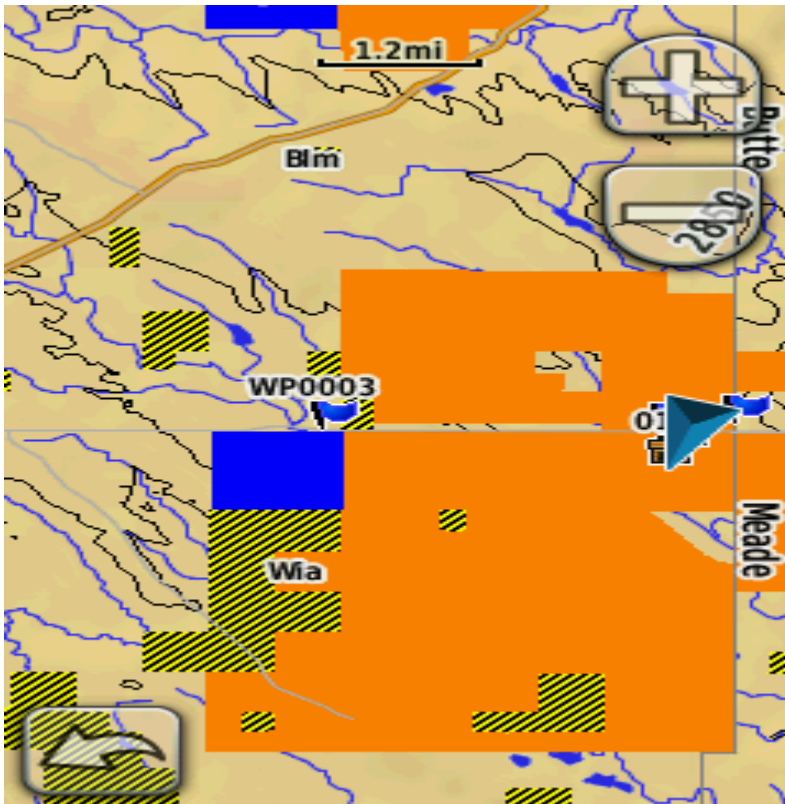
As the fall 2009 hunting seasons approached, 2,500 users signed up for the GPS maps. The Department then sent an e-mail on September 1 to all users notifying that maps had been updated with the latest 2009 information. As the hunting seasons progressed into the month of October, daily questions and comments on the map system were received. In mid-October, another e-mail notification was sent to make users aware of an additional 50,000 acres of public lands that had been added to the GPS maps. In late fall 2009, feedback and comments were evaluated and efforts now focus on ways to improve the product.

13. Why is the program a new and creative approach or method? Important and desired information is now available to the public using technology that has become extremely popular and a standard for the outdoor enthusiast.

South Dakota provides map booklets to sportsmen and women that include all public lands in South Dakota. South Dakota has a wide range of habitat and topography, ranging from wide open prairies to the mountainous Black Hills. In the mix of this public land, both federal and state owned lands are open to public hunting, but unfortunately some are poorly marked on the landscape. In some situations, sportsmen find themselves unsure of their exact locations. Another form of public access is private land leased by SDGFP in the Walk-In Program. Each year, staff enrolls additional acres for public access after Public Hunting Atlas is printed. The Public Lands GPS Mapping Program is an effective mechanism to notify hunters via e-mail that maps have been updated. Sportsmen can then upload this information to their GPS unit, giving them the knowledge of where they are on these public hunting areas.

The Department has heard on several occasions that the checkerboard of public and private lands in western South Dakota can be very intimidating. The main concern of this checkerboard from sportsmen is the inadvertent trespass. In a few circumstances, hunters have notified the Department they would forgo hunting an area to avoid a landowner conflict. The GPS Mapping Program gives outdoor enthusiasts the confidence to venture out in the field and enjoy the opportunities our public lands can provide.

The image below is an actual display from a Garmin Unit. The areas represented in orange are acres enrolled in South Dakota's Walk In Area program and are open to public hunting. School and Public lands, represented in blue, and Bureau of Land Management, represented by the black/yellow crosshatch, are also areas open to public hunting.



14. What were the program's start-up costs? (Provide details about specific purchases for this program, staffing needs and other financial expenditures, as well as existing materials, technology and staff already in place.)  
 Start up costs for this project was minimal. SDGFP purchased 500 256 mb jump drives for \$2,375. A Magellan Triton 400 series GPS unit was purchased for \$200 to test the program and \$100 was expended on the Mapwel program to convert digitized map files to useable files for the Garmin GPS units. Two hundred-fifty (250) media mailers were purchased at a total cost of \$300.

The Department already had the map files digitized for an existing program used by department land managers, thus the staff costs/time for that major hurdle was negligible. GIS Specialist, Chris Marsh, was in charge of converting these files and testing them to ensure they worked.

15. What are the program's annual operational costs?  
 The cost is under \$1,000 annually.
16. How is the program funded?  
 The program is funded through the SDGFP Division of Wildlife Budget.
17. Did this program require the passage of legislation, executive order or regulations? If YES, please indicate the citation number.  
 No legislation, executive orders or rules were required for this program.
18. What equipment, technology and software are used to operate and administer this program?  
 There are a number of different software and hardware used to create the GPS mapping program:
- ESRI ArcGIS desktop suite to manage all of our GIS data (existing)
  - MapWel GPS program used to convert ESRI data into Garmin GPS format.

- c. TritonRMP software to create basemaps for Magellan Triton GPS units.
- d. GPS MapEdit to create basemaps for Lowrance iFinder GPS units
- e. Sony Video Camera to record parts of instructional videos.
- f. Camstudio desktop screen capture software to record instructional videos
- g. Windows Movie Maker to create the How-to videos for the web page
- h. Garmin Oregon 400t, Garmin eTrex Venture HC, Lowrance iFinder Expedition and H20 GPS units, Magellan Triton 400 to test the GPS basemaps created
- i. HP Desktop to create all of the maps.
- j. 256 mb flash drives to hand out to public at regional offices and sport shows
- k. SQL database to record all of the e-mail addresses
- l. My Emma database program to send out e-mails to notify users of any updates.

19. To the best of your knowledge, did this program originate in your state? If YES, please indicate the innovator's name, present address, telephone number and e-mail address.

To our knowledge, South Dakota is the only state that offers this product. However, there are companies that sell a similar application for other states.

20. Are you aware of similar programs in other states? If YES, which ones and how does this program differ? We are unaware of similar programs, but have received interest inquiries from other states in our program.

21. Has the program been fully implemented? If NO, what actions remain to be taken?

Based on the interest and volume of users, over 4200 currently, SDGFP has reached and exceeded goals established at the beginning of the program.

22. Briefly evaluate (pro and con) the program's effectiveness in addressing the defined problem[s] or issue[s]. Provide tangible examples.

The GPS Mapping Program has had many positive outcomes for the Department. It has been well received by our sporting public as indicated by the amount of positive feedback, shows sportsmen the Department is working for them by providing new technology and tools for access opportunities, and has created a positive working relationship with Garmin Inc. Their technical support, assistance in promotion and suggestions on how to improve our program has proved invaluable.

There have been some challenges as well. The program has some limited functionality with some GPS units. Initially the program worked on many Lowrance units, but Lowrance changed their base map programming and our maps currently will not work on the new Lowrance models. Also, maps only work on one Magellan model. In response, improvement efforts will include the search for additional mapping software to keep up with changing technologies. With the different technologies between the GPS companies, confusion from users in regards to downloading the program has occurred. To address that issue, Frequently Asked Questions have been added to the webpage.

23. How has the program grown and/or changed since its inception?

SDGFP is looking for ways to enhance the product in its current form by looking for alternative software's to create maps for other known GPS manufacturers. Improvements also include the possibility of incorporating some functionality to our online interactive maps. Garmin has also worked with the department to create an avenue where users can create a custom map from the SDGFP interactive map site and save to Garmin Colorado, Oregon and Dakota GPS units. Features would include mark ups the user puts on the map as well as aerial photography and other digital layers that are currently not available in the GPS maps.

24. What limitations or obstacles might other states expect to encounter if they attempt to adopt this program?

The biggest obstacle a state may face with a project like this is getting the public lands digitized. South Dakota has been working with GIS for quite some time and that critical portion of this program has been completed. The other major hurdle is remaining ahead of technology and assuring the mapping program continues to work with as many GPS models as possible.

CSG reserves the right to use or publish in other CSG products the information provided in this application. If your agency objects to this policy, please advise us in a separate attachment.



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## 2010 Innovations Awards Application Program Categories and Subcategories

Use these as guidelines to determine the appropriate Program Category for your state's submission and list that program category on page one of this application. Choose only one.

### *Infrastructure and Economic Development*

- Business/Commerce
- Economic Development
- Transportation

### *Government Operations and Technology*

- Administration
- Elections
- Information Systems
- Public Information
- Revenue
- Telecommunications

### *Health & Human Services*

- Aging
- Children & Families
- Health Services
- Housing
- Human Services

### *Human Resources/Education*

- Education
- Labor
- Management
- Personnel
- Training and Development
- Workforce Development

### *Natural Resources*

- Agriculture
- Energy
- Environment
- Environmental Protection
- Natural Resources
- Parks & Recreation
- Water Resources

### *Public Safety/Corrections*

- Corrections
- Courts
- Criminal Justice
- Drugs
- Emergency Management
- Public Safety

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**This application is also available at [www.csg.org](http://www.csg.org).**