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# 2010 Innovations Awards Application

## DEADLINE EXTENDED: MARCH 15, 2010

ID # (assigned by CSG): **10-MW-25OH**

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

State: Ohio

Assign Program Category (applicant): Infrastructure and Economic Development (Use list at end of application)

1. Program Name – Ohio VRS for Precision Agriculture and Machine Control
2. Administering Agency – Ohio Department of Transportation, Office of Aerial Engineering
3. Contact Person – John Ray, P.E., Administrator, Office of Aerial Engineering
4. Address – 1602 West Broad street, Columbus, Ohio 43223
5. Telephone Number – (614) 275-1357
6. FAX Number – (614) 275-1673
7. E-mail Address – John.Ray@dot.state.oh.us
8. Web site Address - http://www.dot.state.oh.us/Divisions/ProdMgt/Aerial
9. Please provide a two-sentence description of the program. The Ohio VRS offers users of precision farming equipment and machine control a real time solution for accurately guiding their equipment. This solution helps reduce costs and increase productivity and efficiency.
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 Ohio VRS has been operational since late 2004; however, ODOT has been working on the agricultural and machine control applications since early 2009.
11. Why was the program created? What problem[s] or issue[s] was it designed to address? This program was created to allow farmers and construction operations to use Ohio's VRS Network. By using the VRS, farm machinery and construction equipment can be guided by GPS using a high accuracy network. This eliminates the need for a costly base station to be set up every time the GPS is used.
12. Describe the specific activities and operations of the program in chronological order. The Ohio VRS was operational in late 2004. In early 2009, ODOT was approached by a local farmer about using the VRS on his farm machinery. ODOT began investigating ways to utilize the system with both farm and construction equipment. By February 2010, ODOT had approximately 100 agricultural users on the VRS. ODOT also successfully tested VRS for machine control on a bulldozer in 2009.
13. Why is the program a new and creative approach or method? The VRS was designed for surveying with precision in mind. In the past, the agricultural community was not that interested in the type of precision that this system would offer. As the agricultural community realized the benefits of accuracy, more applications were developed to use a highly accurate network. Now farmers can use this system to control the amount of fertilizer and chemicals they apply, where they plant and how they harvest providing cost savings, saving fuel and helping to create higher crop yields
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.) The start-up costs of this program were negligible because the system was already in place. The great thing about this program is that ODOT was able to use an existing system that was designed for other purposes and simply find a

way to allow other industries to benefit from its use. ODOT already had the entire infrastructure, stations, software and servers operating.

15. What are the program's annual operational costs? The cost is approximately $500.00 per user.
16. How is the program funded? The program is funded through transportation funds combined with planned user funding.
17. Did this program require the passage of legislation, executive order or regulations? If YES, please indicate the citation number. No.
18. What equipment, technology and software are used to operate and administer this program? The Ohio Department of Transportation currently operates 54 Continuously Operating Base Stations which are GPS antennas mounted on either a concrete monuments or placed on a building, with receivers that sent information over the internet. This information is sent to a server which sends correctors to users. A user must have a cell phone or modem with a data plan, and a compatible GPS system.
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. Yes, Alan and Brian Thompson of Thompson Farms Inc. 5928 Paulin Rd., Jamestown Ohio, 45335. Ph# 1-937-605-4731. E-mail address: thompsonfarms68@hotmail.com
20. Are you aware of similar programs in other states? If YES, which ones and how does this program differ? Yes, Iowa and Minnesota currently have precision agriculture and machine control users operating on their statewide real time network. Agricultural and machine control users began utilizing their system in mid 2009. The difference is that the Ohio Department of Transportation implemented a VRS Outreach program that actively promotes our system to the agricultural and machine control users. We work with the end user to fully obtain the maximum potential of the Ohio Real Time VRS Network for their particular application.
21. Has the program been fully implemented? If NO, what actions remain to be taken? Yes.
22. Briefly evaluate (pro and con) the program's effectiveness in addressing the defined problem[s] or issue[s]. Provide tangible examples. The VRS has allowed agricultural and machine control users to accurately guide equipment in the field. It has taken away the need to set up a base station and reduced costs. It has also helped farmers to cut down on costly fertilizer and chemicals and helped them to plant more efficiently.
23. How has the program grown and/or changed since its inception? At the beginning of 2009, there were no agricultural or machine control users on the VRS. After a year there are currently 100 plus agricultural users and that number is expected to grow rapidly.
24. What limitations or obstacles might other states expect to encounter if they attempt to adopt this program? Other states that have private networks already in place are likely to see some resistance to implementing a statewide program of this nature. Other potential issues are the cost and time needed to build the infrastructure to support the program.

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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

**Save in .doc or rtf. Return completed application electronically to innovations@csg.org or mail to**:
CSG Innovations Awards 2010
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**This application is also available at www.csg.org.**