



## Sustainable Solutions

### Client

Ceágo Vinegarden

### Location

Nice, California, USA

*“Our judges were thoroughly impressed with the way this particular project integrated so many technologies in such an innovative way to solve a business problem.”*

Amy Stankiewicz,  
Editor-in-Chief,  
Geospatial Solutions Magazine

## Information Management System Design and Installation

### Project Description

CH2M HILL was selected to develop an information management system to integrate sustainability and technology while reducing operating costs for Ceágo Vinegarden.

In 2001, Jim Fetzer, a second generation vintner, launched Ceágo Vinegarden. His mission was to produce certified biodynamic wines using the perfect recipe of light, moisture, and temperature, along with organically amended soil and healthy vines.

Ceágo Vinegarden uses state-of-the-art geospatial technologies to manage the day-to-day activities of the vineyard. The data, such as field, row, and roads, is provided by geospatial technology firm Geovine, Inc. and commercial weather sensors that monitor microclimatic parameters such as soil moisture, light, and ambient temperatures.

Fetzer worked with CH2M HILL on a technology-integration/cost-reduction initiative, in which three factors were most important: growing methods, weather conditions, and times to harvest. These components led to five project requirements:

- Detailed survey of all relevant vineyard assets
- Installation of radio frequency identification (RFID) tags for field data collection
- Installation of the real-time microclimatic solar sensors
- Integration of Internet services with the real-time climatic sensors
- Google Earth visualization with ongoing attribute maintenance (that is, updating the location of new vines) through mobile data collection

CH2M HILL's experts led the effort to survey, install, develop, and integrate these technologies into one system that wirelessly transmits real-time field and climate data to a web site. CH2M HILL developed a management system that represents the first-time integration of wireless technology, environmental sensors, high-resolution geographic information system (GIS) mapping surveying, and e-mail/personal digital assistant notification.

### Sustainable Components

- Using sustainable, technologically advanced, biodynamic agricultural practices that are in harmony with the local ecosystem
- Management system integrates data to optimize growing methods, while considering weather conditions and time to harvest, and reduces amount of water required



## **Awards**

In recognition of CH2M HILL's innovative work with the Ceágo Vinegarden, the Consulting Engineers and Surveyors of California presented the company with a merit award in January 2007. The project was recognized because it represents the first-time integration of wireless technology, environmental sensors, RFID tags, an Internet interface, high-resolution GIS mapping surveying, and e-mail/personal digital assistant notification. Geospatial Solutions magazine also named CH2M HILL as first-prize winner of the 2006 Geospatial Solutions Applications Contest.