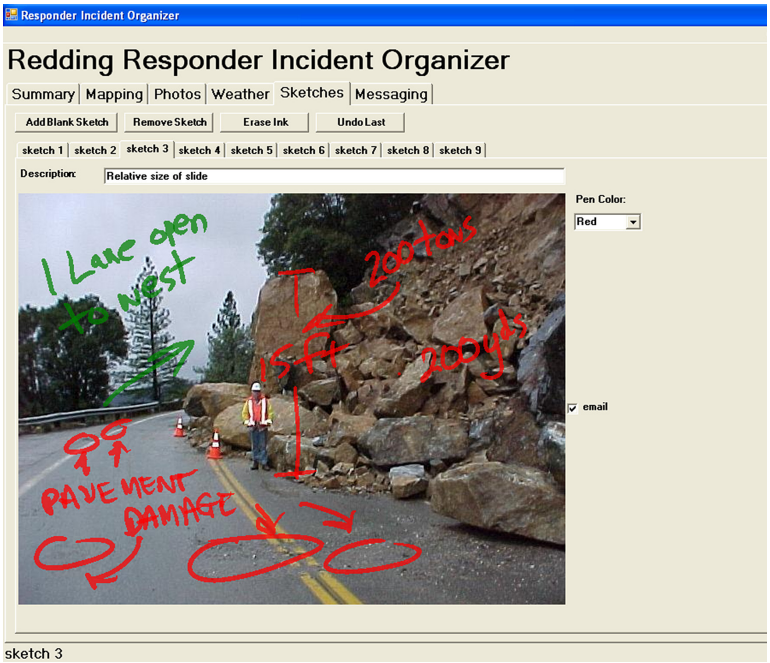
SYSTEMS ENGINEERING DEVELOPMENT AND INTEGRATION PROGRAM

Redding Responder - Remote Communications & Incident Reporting

Problem:

When DOT maintenance personnel respond to incidents in rural areas with sparse communications coverage, it can be difficult to accurately convey the extent of the situation to those involved in managing the incident scene. Existing data collection measures can require several trips to the scene by different responders who have to assess the situation. With driver safety and traffic flow at stake, it is important to be able to expeditiously collect, track and share incident information with at-scene responders, the Traffic Operations Center (TOC) and secondary incident responders.



Solution:

To best facilitate the research focus and proof-of-concept development nature of this project, a generalized Systems Engineering approach using a Spiral/Iterative Process Model was followed. The Western Transportation Institute developed a framework for collecting and sharing incident information using a Tablet PC, GPS, satellite modem and cellular modem.

Arriving at the scene of an incident, a responder will use a Tablet PC that can communicate with a GPS to determine location and display aerial photos and topographic maps. If digital photos are taken at the scene, the photos can be uploaded to the PC and a pen can be used to highlight certain points in the photo. All of this information can then be transmitted to the

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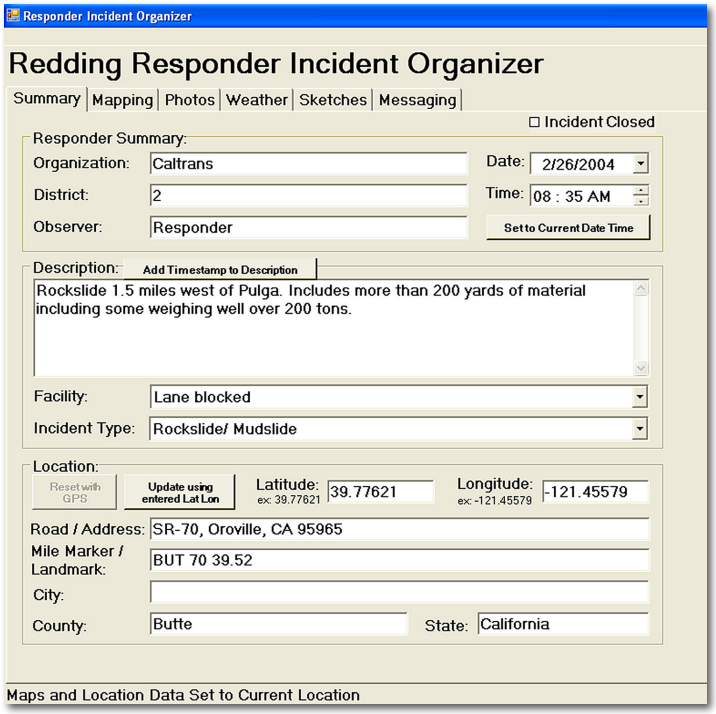
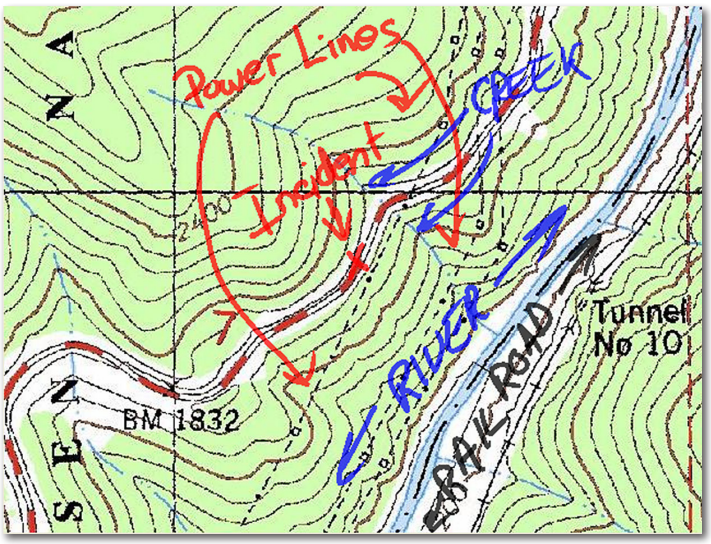
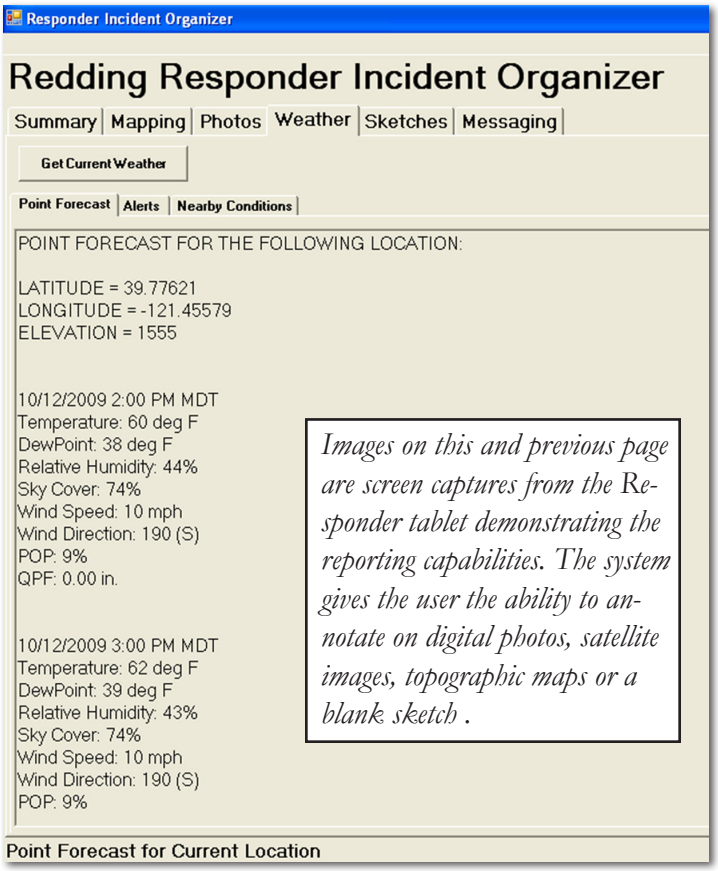
TOC where management can make immediate decisions on what needs to be done. Maps and weather information are also available for automatic, location specific display at the scene.







Images on this and previous page are screen captures from the Responder tablet demonstrating the reporting capabilities. The system gives the user the ability to annotate on digital photos, satellite images, topographic maps or a blank sketch .

Benefits:

The ability to collect and share incident information will:

- Enhance the understanding and improve management of the incident scene;
- Improve the responder's understanding of the incident which will enhance their response activities;
- Improve the information flow between primary and secondary responders; and
- Enhance the deployment of response equipment and personnel.

For further information, please visit
www.westernstates.org or www.westernstates.org/Projects/Responder/

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