

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.



Responder Incident Organizer

Redding Responder Incident Organizer

Summary | Mapping | Photos | Weather | Sketches | Messaging

Add Blank Sketch Remove Sketch Erase Ink Undo Last

sketch 1 | sketch 2 | sketch 3 | sketch 4 | sketch 5 | sketch 6 | sketch 7 | sketch 8 | sketch 9

Description: Relative size of slide



Pen Color:

Red

email

sketch 3

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

Western Transportation INSTITUTE

Rural Research Matters

Innovation - Integration - Implementation

WESTERNTRANSPORTATIONINSTITUTE.ORG • (406) 994 6114



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.

Responder Incident Organizer

Summary | Mapping | Photos | Weather | Sketches | Messaging

☐ Incident Closed

Responder Summary:

Organization: Caltrans Date: 2/26/2004

District: 2 Time: 08:35 AM

Observer: Responder Set to Current Date Time

Description: Add Timestamp to Description

Rockslide 1.5 miles west of Pulga. Includes more than 200 yards of material including some weighing well over 200 tons.

Facility: Lane blocked

Incident Type: Rockslide/ Mudslide

Location:

Reset with GPS Update using entered Lat Lon Latitude: 39.77621 Longitude: -121.45579

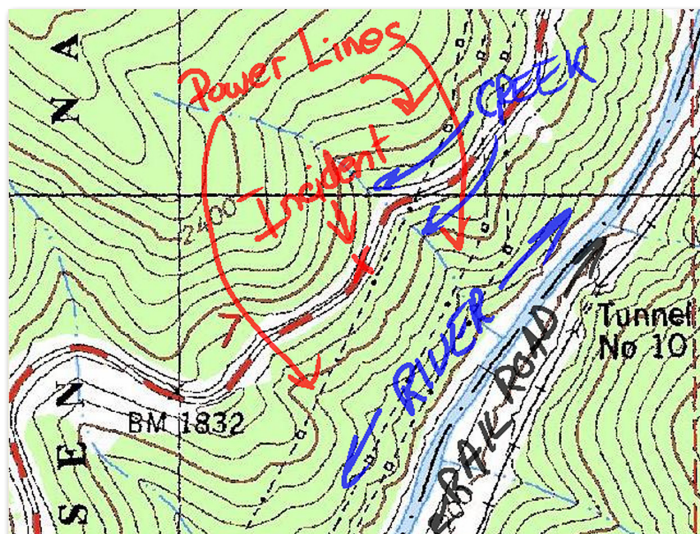
Road / Address: SR-70, Oroville, CA 95965

Mile Marker / Landmark: BUT 70 39.52

City:

County: Butte State: California

Maps and Location Data Set to Current Location



Responder Incident Organizer

Summary | Mapping | Photos | Weather | Sketches | Messaging

Get Current Weather

Point Forecast | Alerts | Nearby Conditions

POINT FORECAST FOR THE FOLLOWING LOCATION:

LATITUDE = 39.77621
LONGITUDE = -121.45579
ELEVATION = 1555

10/12/2009 2:00 PM MDT
Temperature: 60 deg F
DewPoint: 38 deg F
Relative Humidity: 44%
Sky Cover: 74%
Wind Speed: 10 mph
Wind Direction: 190 (S)
POP: 9%
QPF: 0.00 in.

10/12/2009 3:00 PM MDT
Temperature: 62 deg F
DewPoint: 39 deg F
Relative Humidity: 43%
Sky Cover: 74%
Wind Speed: 10 mph
Wind Direction: 190 (S)
POP: 9%

Point Forecast for Current Location

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/

or contact:

Douglas Galarus,

Principal Investigator
Senior Research Associate/Program Manager
WTI Systems Engineering Development
and Integration Program
(406) 994-5268 • dgalarus@coe.montana.edu

Mandy Chu, P.E.

Caltrans Project Manager
Senior Transportation Engineer
State of California Department of
Transportation Division of
Research and Innovation
(916) 654-7656 • mandy_chu@dot.ca.gov

Ian Turnbull, P.E.

Caltrans Project Champion
Chief, Office of ITS Engineering and Support
Caltrans District 2
(530) 225-3320 • ian_turnbull@dot.ca.gov