National Wildfire Coordinating Group

Fire Environment Working Team

RAWS/ROMAN STUDY REPORT

EXECUTIVE SUMMARY

October 10, 2007

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Purpose

The National Wildfire Coordinating Group (NWCG) tasked the Fire Environment Working Team (FENWT) in January 2006 to assess the needs/requirements of the fire community for fire weather in order to resolve two concerns:

- Unplanned growth in the size of the interagency Remote Automated Weather Station (RAWS) network while agency budgets are in decline;
- Should the agencies support the Real-time Observation Monitoring and Assessment Network (ROMAN) and if so how?

The purpose of the study was to develop recommendations for the RAWS network and the ROMAN system.

Methods

FENWT's study plan was to assess whether our needs for fire weather going forward are being and can continue to be met by the RAWS network and by our fire weather data systems, including ROMAN.

To identify and understand our needs for fire weather, FENWT worked closely with four assessments that occurred during the period of study:

- National Weather Service Customer Satisfaction survey;
- National Predictive Services Group's user needs ;
- National Wildland Fire Weather Needs Assessment of the Office of the Federal Coordinator for Meteorology (OFCM);
- National Wildland Fire Enterprise Architecture project (NWFEA).

FENWT also gathered information from program leads of these primary stakeholders:

- Remote Automated Weather Systems (RAWS)
- Automated Sorting Conversion and Distribution System (ASCADS)
- Wildland Fire Management Information System (WFMI)
- Weather Information Management System (WIMS)
- National Interagency Fire Management Integrated Database (NIFMID)
- FAMWEB Data Warehouse
- Wildland Fire Assessment System (WFAS)
- Western Regional Climate Center (WRCC)
- Real-time Observation Monitoring and Assessment Network (ROMAN)
- Meteorological Assimilation Data Ingest System (MADIS)

And FENWT incorporated other relevant information we encountered along the way including:

- Predictive Services RAWS-related workload
- Fire Planning Analysis (FPA)
- Wildland Fire Decision Support System (WFDSS)
- Oklahoma Mesonet
- Review of the Basis for the Remote Automated Weather Station Network
- Great Basin RAWS Network Analysis
- Review of the Forest Service Remote Automated Weather Station Network

The OFCM survey was instrumental in defining fire weather needs that RAWS and ROMAN should be supporting. Implementing our recommendations will help meet at least 15 data and decision support needs identified in their survey.

Recommendations of the NWFEA Core Blueprint Team, such as the Virtual Single Agency and master website concepts, were also influential in developing our recommendations.

Conclusions
The critical importance of fire weather data to many significant aspects of fire business can not be overstated. The original RAWS network was conceived to support the coarse-scale application of fire danger rating. Today, RAWS data are routinely used to support decisions impacting firefighter safety, whether or not to initiate a fuels treatment prescription, air quality, crew readiness, and strategic seasonal and multi-year resource allocations to name a few. Demand for these data happens every day. Last year the ROMAN website received 125 million hits in pursuit of fire weather data. The future use of RAWS data to support gridded, digital data products is already here and growing quickly.

The purpose of the RAWS network is to support point and gridded applications of fire weather for fire program analysis, fire danger rating, fire behavior prediction fire weather forecasting, and smoke management. We believe this purpose is both necessary and appropriate to meet the current and future needs identified by the fire community.

The size of the RAWS network to achieve this purpose is finite and can be determined through analysis beyond the resources for this study. This network size should be determined by
- leveraging other non-RAWS weather observation networks that can contribute to the needs of the fire community and by
- understanding the number and location of RAWS and non-RAWS observations required to support the gridded applications we need.

The functionality provided by ROMAN must be fully supported. It is a vital part of our fire weather data access infrastructure. As the implementation of NWFEA

unfolds, we should find ways to link, combine, or merge our other data access systems while maintaining the functionality of ROMAN.

Recommendations

RAWS

Low and high resolution grid emphasis, network size is finite and may increase or decrease. Establish a primary core set of RAWS emphasizing gridded data applications while continuing to support point data needs. Support fire weather with a combination of RAWS and non-RAWS observations, as determined by specific research.

ROMAN

Short-term:

Fully support / sanction ROMAN as an NWCG mission critical data access system. Upgrade ROMAN software. Provide programmatic funding level to include project management, maintenance, and operations. Add enhancements such as fuel moistures and fire danger rating. Establish backup system to provide for Continuity of Operations. Maintain RAWS archive at WRCC.

Long-term:

Advance to an Enhanced ROMAN. Begin work fall 2007 to develop opportunities with MADIS for fire weather data access. Partner with NOAA for MADIS to be the future source of RAWS and other observation networks and gridded products. Pursue ways to link, combine, or merge our other data access systems and functionality with ROMAN.