



## **Study Plan**

### *User Needs Assessment for Fire Weather*

#### **Problem Statement**

Resolution of significant interagency fire weather program issues requires a comprehensive assessment of the fire community's requirements for fire weather data.

#### **Background**

##### *FENWT*

Two recent developments in fire weather have led the National Wildfire Coordinating Group (NWCG) to task the Fire Environment Working Team (FENWT) to assess the needs/requirements of the fire community for fire weather: 1) growth in the size of the interagency Remote Automated Weather Station (RAWS) network is out-pacing the agencies' financial ability to maintain it; 2) the uncertain fate of the Real-time Observation Monitoring and Assessment Network (ROMAN), a popular web-based system for accessing fire weather information, must be resolved.

In Spring 2005, NWCG asked FENWT to resolve these issues. In October, the team provided a near-term response: 1) the current size of the RAWS network is about right for conventional use on a national scale, but at the local level, there will continue to be demand for more stations. Scale is a key consideration. Broad-scale applications such as fire danger rating require fewer stations than site-specific applications such as fire behavior. 2) ROMAN does not overlap or duplicate other existing fire weather systems in such a way that support for another system could be instead provided to ROMAN. It is unique and requires separate financial support in the short term.

FENWT also recommended that the long-term solution to both of these issues can be found in a more comprehensive assessment of what the fire community's needs are for fire weather in the foreseeable future. This assessment should address the fundamental requirements we have for fire weather data for an era that is now much different technologically than the late 1970s/early 1980s when RAWS stations were first deployed, and also different than the early 1990s when the legacy fire weather systems (including the Weather Information Management System – WIMS and the Automated Sorting,

Conversion, And Distribution System – ASCADS) used today were implemented. This assessment should inform NWCG about any possible shifts in the way we do things that could require a significantly different network of RAWS stations and a different configuration of “fire weather systems”, of which ROMAN is a part.

FENWT has identified seven priority strategies to meet its goals and objectives. Understanding user requirements for fire weather data is a significant component of these strategies:

- (1) Identify and prioritize existing and emerging technologies  
*Stay informed in emerging/existing technologies*
- (2) Utilize an iterative process to assess user needs, evaluate products, and monitor feedback.  
*Assess business requirements at the national, regional and local levels.*
- (3) Establish partnership with research and development
- (4) Promote spatial database system that can produce a variety of decision products from core underlying environmental data (occurrence, fuels, weather, topography and resources)
- (5) Develop an integration plan  
*Promote the integration and merging of platforms and data sets to ensure interoperability*
- (6) Collaborate with R&D to develop and implement a comprehensive communication strategy for moving science into application  
*Develop an evaluation and implementation process to move things from research to operations*
- (7) Support development of science-based and peer-reviewed (as applicable) tools.

### *OFCM*

In June 2005 the Western Governor’s Association (WGA) passed a resolution regarding fire weather which included a recommendation that an assessment of user needs for fire weather be conducted by the NOAA Office of the Federal Coordinator for Meteorology (OFCM). Since then, the National Weather Service (NWS) has formally requested this assessment from OFCM. As of November 2005, OFCM has begun what will be a fairly comprehensive undertaking, entitled the “National Wildland Fire Weather Needs Assessment.”

OFCM has two goals for their assessment.

- Conduct a comprehensive review and assessment of weather and climate requirements of providers and users in their wildland fire and fuels management activities.
- Assess the capabilities of the provider agencies to ensure that needed weather and climate information is available to fire managers and other users.

This assessment will involve a wide array of “stakeholders” including federal agencies from several departments (Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, Interior, and Transportation), EPA, NASA, state and local agencies, private industry, academia, insurance, and professional societies.

The functional areas OFCM plans to address are data collection, modeling and prediction, products and services, training/education/outreach, information dissemination, user response/decision support, research and development, resource considerations, partnering and collaboration, and socioeconomic impacts.

The expected steps in this assessment are to establish a Joint Action Group (JAG) (by January 2006) to conduct the assessment, review federal agency’s wildland fire programs, compile list of stakeholders, develop assessment questions, conduct workshops (by Spring 2006) and JAG meetings to gather information, identify gaps to meet needs, develop the report outline, and draft the report. An interim or draft assessment report is expected by September 2006. The final product is planned for the WGA Conference Spring 2007.

This assessment is managed and funded by OFCM. The cost to NWCG agencies is in-kind participation on the JAG and other activities. The JAG is expected to meet monthly in Washington DC and the impact on an individual’s workload to participate in this effort may be substantial. However, the cost to fire agencies of not participating fully could be more troublesome.

#### *NWS*

In the summer of 2005, the Western Region of the NWS conducted a survey focusing on its fire weather program. The questions were sent to Federal customers only and centered on gaining a sense of the satisfaction with the products that are issued on a routine basis by the NWS. The fire weather survey questions focused on satisfaction with Fire Weather Forecasts, Spot Forecasts and the Red Flag Warning program. It also asked questions focusing on the experimental Weather Planner product and use of Lightning Activity Level. The results of this survey and the question content were used to develop a national fire weather survey to be conducted December 2005.

The national fire weather survey will be one in a series of national customer surveys that NOAA/NWS has conducted over the past two years to establish a baseline of customer satisfaction. Public, Emergency Manager, and Broadcast surveys already have been completed.

The national fire weather survey is an OMB approved survey produced in conjunction with the Claes Fornell International Group (CFI). It expands the customers to be surveyed to all fire weather customers nationally, including state and local users. The questions again address satisfaction with routine products, but also expand to include questions concerning Storm Prediction Center Outlooks, dissemination methods, customer actions and digital forecast product evaluation. Results of the national survey are planned for January 2006. Results from both surveys will be used to determine NWS-centered product satisfaction.

#### *NPSG*

The National Predictive Services Group (NPSG) has developed a scientifically rigorous user needs survey that is scheduled for release in January 2006. The purpose of the survey is to assess the interest in and the application and effectiveness of products and services offered by Predictive Services. Gaps in information desired but not now provided will be queried. The survey addresses a NPSG goal to implement a process to understand, define, and satisfy user needs. Specific objectives include:

- Assess the need for program services
- Examine program design, such as format and delivery
- Examine program operations
- Examine and explain program outcomes
- Examine program cost and efficiency

The final report for this project is scheduled for late June 2006.

#### *BSRW*

BSRW is an evaluation of the application of BlueSkyRAINS (BSR) to wildfires in the Western US. The intention is to compare BSR modeled outputs for actual wildland fire events in 2005 to field monitoring data from the same events. The comparison will be used to assess the value of BSR applications for predicting air quality impacts from wildland fire events. This project began about a year ago. Data collection concluded after the summer fire season of 2005. Analysis has been underway and the final report is expected in early 2006.

One component of the evaluation is a user survey. This survey was made available to BSRW users through the BSRW website (<http://www.fs.fed.us/rmc/>) during the summer and fall of 2005. Results of the survey and the data analysis are expected to identify user requirements for fire weather data.

#### *NWFEA*

The NWCG has chartered the National Wildland Fire Enterprise Architecture (NWFEA) Project to integrate wildland fire business products, services, organizations, and technology components. One of the goals of the project is to work with business leadership, including NWCG working teams, to identify and interview stakeholders and customers of the wildland fire business areas to determine pertinent needs, current perceptions, and ideas for future improvements. This effort was advanced with the creation in October 2005 of a Business Transformation Team (BTT) to identify user

needs. The FENWT chair is now a member of the BTT. Our expectation is to work closely with NWFEA and BTT during and after the study plan to meet FENWT enterprise architecture-related objectives.

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A significant assumption of this plan is that the timely convergence of these related efforts to understand the fire weather needs and requirements of the fire community can create the backbone for the FENWT user needs assessment study plan.

## **Purpose**

The purpose of the study is to define business requirements for fire weather for the next 10-15 years.

## **Objective**

The objective of the study is to assess the requirements for fire weather data to support fire management decision processes. These requirements for data include the type of data (sources, standards, quality, spatial and temporal scales, etc); distribution; access; validation; storage; and integration with fuels, topography, occurrence and other data sets in use today. It is expected that these data requirements will be driven by the national, regional, and local fire management decisions that are supported by the application of fire weather data. Such applications include fire danger rating, and fire behavior, fire weather, and smoke forecasts.

## **Methods (Preferred Alternative)**

The primary approach to collecting requirements information will be to participate fully in and leverage results of five on-going and highly related assessments and surveys. These are the efforts of the BlueSkyRAINS West project, the National Weather Service Customer Satisfaction survey, the National Predictive Services Group's user needs survey, the National Wildland Fire Weather Needs Assessment of the Office of the Federal Coordinator for Meteorology, and the National Wildland Fire Enterprise Architecture project, as described in the Background section.

Once each of these five efforts is underway, it will be necessary for FENWT to determine if any gaps exist between them that must be filled to meet the objective. If necessary, steps will be taken to address these gaps. FENWT may hold workshops or conduct interviews to gather specific information that is not collected from the other efforts. FENWT will track the progress of each effort by participating in each effort. The final report of each survey effort will be reviewed for analysis and recommendations appropriate for the purpose of this study.

Findings on requirements users have for fire weather data will be used to develop recommendations for future infrastructure to meet these requirements including data collection (such as fire weather station networks) and data management (such as distribution, access, display, processing, and storage).

A draft report will be presented to the National Wildfire Coordinating Group by October 2006. A final report will be prepared by July 2007 that defines the Fire Environment Working Team perspective on NWCG fire weather requirements and associated impacts on system infrastructure. This report will be made available on the Fire Environment Working Team website.

Results will be important to achieving priority FENWT goals/strategies to identify and prioritize emerging technologies, to develop an on-going process to assess user needs, to promote systems that meet user needs, and to ensure decisions can be made with robust and trusted information.

### **Timeline, Personnel, and Budget**

Survey	Project Start	Survey Start	Survey End	Final Report Date
OFCM	Nov/2005	Jan/2006		Draft: Sep/2006 Final: Jun/2007
NPSG	Jan/2005	Jan/2006	Feb/2006	Jun/2006
NWS	Jul/2005	Dec/2005	Jan/2006	Jan/2006
BSRW	Jan/2005	July/2005	Dec/2005	Feb/2006
NWFEA	Oct/2005	-	-	On-going
FENWT	Jan/2006 (NWCG Study plan approval)	-	-	Draft: Oct/2006 Final: July/2007

The Fire Environment WT and its committees will perform the tasks of this project. There are no funds committed to this study for FY 2006.

### **Alternative Methods**

The methods and schedule for the preferred alternative have been outlined above. They reflect the convergence of several independent but highly-related survey efforts. Significantly, this approach is also due to a lack of funds provided. However, in order to meet the proposed delivery date of October 2006, there are two possible, but less desirable, alternatives. In general, neither of these alternatives would foster the interagency coordination and collaboration in this arena that has been growing recently.

*Alternative 1.*

Scale back on the effort to determine user needs. This approach would likely consist of limited interviews and rely heavily on FENWT member knowledge and perspectives.

*Alternative 2.*

Provide significant funding in FY 2006 to contract the work. This would likely cost several hundred thousand dollars. However, it is doubtful that such an effort can be as comprehensive as the OFCM approach appears to be and be complete by October 2006.

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