[Title Page]

White Paper:
ASCADS/WIMS/WFAS

Introduction/Background

Purpose of meeting

The need to provide new functionality to ASCADS, WIMS, and WFAS has been understood by those involved in these systems since the late 1990s. The reasons for this system advancement was then and is now to provide the reliable service, ease of use, and modern data integration and analysis functionality that would be expected of an integrated system that serves the national applications for fire weather, fire danger rating, fire behavior prediction, and fire planning.

In 2000 NWCG established weather station standards (PMS 426-3) that were developed to meet the needs of future advancement to, in particular, fire danger rating. These standards, to be fully implemented by 2005, define a national network of remote automated weather stations (RAWS) that are satellite telemetered, provide hourly or more frequent observations, and provide a solar radiation observation that will replace the manually-entered "state of the weather" in the calculation of 10-hour timelag fuel moisture and lead to a higher level of system automation.

In the spring of 2000, interagency meetings (both ad hoc and for the Fire Danger Working Team) were held to chart a course of action. Acknowledged at that time was the perceived good fortune that all three systems were approaching a re-engineering process at approximately the same time. It was anticipated that re-engineering could occur simultaneously and in a coordinated fashion, with beneficial results to both systems and their users.

Although much synergy of ideas occurred, in the end progress towards system re-design was left to the responsible agencies (BLM, FS). It was determined that the creation of an NWCG-sponsored project (eg. IQCS) would not have been supported, and so it was not proposed. However, FS provided a timeframe for completing WIMS re-engineering of 3 years: to be completed in 2003. ASCADS re-engineering was scheduled to be completed in ____. The FDWT established a Task Group to provide interagency field-level feedback and technical review of agency re-engineering efforts.

As of November 2003, re-engineering of both ASCADS and WIMS had completed only Phase 1 of 3 planned phases. Progress towards developing and implementing new functionality had appeared to stall. At a joint FDWT/FWWT meeting, the FDWT was asked to task out a needs assessment workshop of these systems to develop a recommendation to both teams regarding how to place a priority on the advancement of these systems.

Both BLM and FS have conducted needs assessments prior to this effort. This effort is not meant in any way to replace previous more detailed efforts. All available data from earlier studies continue to have value. This assessment was made to provide current context to a strategic recommendation.

Objectives

To broadly assess the current needs of those who use data from Remote Automated Weather Stations (RAWS).

To develop a recommendation to the FDWT and FWWT for a strategy to complete the re-engineering of ASCADS, WIMS, and WFAS in a timely manner.

Participants

Name	Agency	Function/System Representation
Jeff Barnes	FS	WIMS
Mike Barrowcliff	FS	WIMS
Larry Bradshaw	FS	Fire Danger/WFAS
Ed Delgado	BLM	Predictive Services/ROMAN
Russ Gripp	FS	Fire Danger/WIMS task group
Charles (Kaz) Kazimir	BLM	RAWS/ASCADS
John Kwait	BLM	Fire Danger/WIMS task group
Greg McCurdy	WRCC	RAWS archive
Rick Ochoa	BLM	Predictive Services
Sue Petersen	FS	WIMS
Paul Schlobohm	BLM	Fire Danger
Kolleen Shelley	FS	RAWS
Sheri Shetler	BLM	Facilitator
Phil Sielaff	BLM	ASCADS

Where are we now

A high-level view of the functional role of ASCADS, WIMS, WFAS and related systems, applications, and procedures is to provide decision support for Safety and Health, Fire Preparedness, Fire Suppression, and Fuels Treatments. Together, these systems, applications, and procedures provide a standard description of the fire environment across the United States.

A more granular view describes a business of observations and forecasts. Observations are made of fuel/vegetation and weather conditions. Observations are archived for future analysis applications including fire planning. Observations are converted into (observed and forecasted) fire weather products, fire danger ratings, and fire behavior predictions.

An extensive network of systems is involved in describing the fire environment. A summary with brief descriptions is provided in Appendix 1. These are the systems that either provide information to or receive information from ASCADS, WIMS, and WFAS. Administrative sources of data to support these systems are outlined in Appendix 2.

If this entire system can be compared to a living person, the weather data is the blood, ASCADS is the heart, WIMS is the brain, and WFAS, ROMAN and other applications are the skin.

As of April 2004, re-engineering of both ASCADS and WIMS had completed only Phase 1 of 3 planned phases. For both systems, Phase 1 was a necessary step to keep each system running, but it was only preparatory for the large-scale redesign and implementation of Phases 2 and 3. Progress towards developing and implementing new functionality has appeared to stall.

What is at stake: the Impact/Risk of not advancing the national system

Take a close look at this section. I think it is critical to this proposal's success. If we can't articulate WHY?, then we will not get the support. This is the hook.

Simply put, the status of the "national system" is that ASCADS, WIMS, WFAS are all operational. So why should time and money be spent to improve it? There are several critical issues at stake:

- The NWCG Weather Station Standard takes effect next year. Those agencies who do not switch to GOES-telemetered stations will not be participating in the national system for processing fire danger ratings.
- In Phase 1, WIMS updated its user interface, but has no new functionality that would attract agencies/users not currently using WIMS. Some users have seen these changes and are still not interested in joining the national system.
- Continued participation of some agencies/users is at risk due to the lack of new functionality in WIMS.
- ASCADS experiences occasional periods of "downtime" that interrupt data flow to applications and users for several hours, potentially impacting firefighter safety.
- Loss of specific data (wind shifts, etc) potentially impacts firefighter safety
- Full RAWS network capability that was designed to support fire fighter safety cannot be implement
- Loss of data to weather data processors like WIMS and archives like WRCC and NIFMID.
- WFAS continues to provide national maps that were "breakthrough" when they were initiated, but are now of limited value. It offers few advancements for decision makers at the national level and fewer products for the local manager.
- Cite the Cramer Report Can someone articulate this argument?
- ASCADS is the vital link. Each of these last 4 items needs help to remain here
- Maintenance – data availability
- Impact on Forecast/warnings capability (NWS)
- Dependant on RAWS network & ASCADS/timelines

Goals

Goals – Short Term

Implementation of ultimate or long-term goals for the National System is necessarily a few years away. In the meantime, for the next 2 years or so, short term goals for the National System include:

- Stability of ASCADS & WIMS (Status Quo)
- Implement NWCG Weather Station Standards (Intro) what does Intro refer to?
- Meet Current Needs (Fix problems – not new functionality)
- Prepare for implementing long term goals
- Data quality/packaging I don't recall what this refers to? Would this be a new functionality?
- Maintain User-Interfaces

Goals – Long Term

Our long-term goal is to meet the needs of the fire management community today and tomorrow by creating a trusted, robust, and flexible suite of nationally integrated and supported applications and communication networks that provide a rich and complete description of the physical fire environment, specifically weather, fuels and topography.

Our long-term goal is to provide a system with the following characteristics:

- **Robust & Flexible**. In the future, massive system overhaul will not be necessary in order to make relatively minor enhancements.
- **Remain state of the art & state of the science**. As advances are made in the laboratory and the field, the system will be able to adjust accordingly, continuing to meet user's evolving requirements.
- **Modular components**. System design will enable maintenance or upgrade of system components without impacting the entire system.
- **Shell/user interface supported by modules**. Can someone explain this shell concept?
- **Single method of access**. Single method as opposed to single point of access, was a significant distinction I believe, but I can't wrap my brain around it! Can someone provide an example or otherwise straighten this out.
- **Password only where required**. Passwords should be necessary where it is possible to edit or manipulate data. Passwords should not be required to simply view raw and value-added data.
- **Suite of nationally supported products**. New functionality would include analysis and product development found in FireFamily Plus, GIS applications, and more.
- **Integrated data and GIS**. The system will enable the user to integrate, display and analyze spatial data in both pre-built and custom formats.

- **GUI**. A modern, user-friendly, graphical user interface will be maintained.
- **Reporting**. To what does this refer? A link to the NWCG fire occurrence reporting system now under consideration?
- **Minimized duplicated effort**. Duplicate system function and user entry will be minimized except for the purpose of system backup. For example, user entry of information needed in both ASCADS and WIMS would be entered once and understood by both systems.
- **Retrieve data from system of record**. Data will reside in the system of record, but the user will be able to seamlessly access and analyze the data from any application in the suite.
- **Searchable**. Data from throughout the system can be located by search queries.

Stakeholders

Measures of weather, climate, and fuels are so elemental that they are valued by a wide range of interest groups. Applications of these data to specific functions such as weather forecasting or fire danger rating are of important to specific groups. The RAWS network was funded by and developed specifically for fire management. However, many non-fire business functions utilize these data. The network of systems involved in delivering these data and their numerous applications is extensive. Collectively, all these interest groups are the stakeholders of a National System. A review of specific stakeholders is provided.

Fire management-related stakeholders include federal, state, and local fire agency fire managers at every level, including policy-makers at national/headquarters offices; those involved in implementation including fire planners, fire operations, incident management, dispatch, fuels management, fire behavior analysis, incident meteorology; those involved in preparedness, assessments, and forecasting, including predictive services, fire weather (National Weather Service), smoke modeling and fire danger rating.

Resource management-related stakeholders include managers and technicians with responsibility for hydrology, recreation, wildlife management, range management, air quality, and public/external affairs.

Other government entities that are stakeholders include those involved with emergency response such as the Department of Defense, and FEMA.

Academic and agency research programs are stakeholders. The dataset provided by this National System is essential to finding solutions to fire and non-fire related questions.

Private sector stakeholders include fire-related contractors. The general public is also a stakeholder because they can access displays of outputs such as the adjective fire danger map in WFAS.

Aviation what kind of aviation? Fire, commercial, private?

What works well

Successes and valuable features of the systems as they are today were discussed. They are listed here in five catagories.

Data
Lightning Data
Daily observations

Applications
FireFamily+ - robust tool
PocketCards
Ability to analyze fire danger and fire business

Systems
RAWS-WFMI & Lightning
WIMS
Internet
Spatial display of WFAS, etc.
Wx Station Network
Weatherbug.com
Roman

Services
Constant flow of WX Data
Near Real time access to WX data
Verbal support
User support – Interagency 7x24 helpdesk
Interagency access
Appropriate access control
7-24 availability of data
WX Station Metadata mgmt.
Training – S-491
Continue Marketing and training
Data Archiving
Keep functionality fdrs processing

Groups
More sophisticated users
Fire Danger Working Team

What are the problems and issues

Issues and concerns about the current "National System" were characterized. They are listed here in five categories.

Data
Different quality

Applications
GIS challenged

Systems
Adolescent
Disconnected
Splintered
Pieces in different stages of development
Obsolescence
Redundant
Insufficient funding
Varying levels of priority and support
Incremental evolution
Uncoordinated
Many attempts
No commitment from Management
Individual agency commitment
Pat on the back syndrome
Limited system support (ASCADS, LRGS, DRGS)
Pass the buck syndrome
Not user friendly
No data integration
Not always mindful of all stakeholders
Low accountability
Change in technology
Not meeting full scope of fire environment
Guarantee of availability
Quality/currency

Services
WIMS Training
Maintain RAWS to standards

Stakeholders
Ever Changing
Stakeholders have changed and needs
Corporate memory loss
Reluctance to change

Alternative Solutions
[I think these descriptions need more muscle]

The following alternatives apply primarily to the core infrastructure systems of ASCADS, WIMS, and WFAS.

Alternative 1

Maintain the status quo. ASCADS, WIMS, and WFAS remain as they are. Includes minimal patch and repair to these existing systems. No new functionality [Have we provided examples of what this new functionality might be?]. No integration of data.

Strength: This alternative requires the least action and funding in the short term.

Weakness: This alternative will not meet our current needs. [Have we fully developed what we mean here by "our current needs"?] Funding required to maintain the systems will increase. Greatest risk of catastrophic failure [I don't think we have articulated in the How things are Section Now why this risk exists].

Alternative 2

Integrate existing systems. ASCADS, WIMS, and WFAS remain as they are and a new "shell" is developed to enable the integration or sharing of observations and station catalog data. No new functionality.

Strength: May be implemented sooner than alternatives that provide system improvements.

Weakness: May not reduce duplication. May not include integration of outputs and related data. Continues with current system maintenance issues. Does not meet current needs. Would be subject to varying levels of sponsor-agency support and priority. Relies on decentralized support systems. [what do we mean by this…the FS helpdesk is centralized. BLM support is located here at NIFC…] The new "shell" component adds risk to the system design.

Alternative 3

Improve existing systems. ASCADS, WIMS, and WFAS all receive new functionality, but it is separate and uncoordinated. There is, however, no ability for data and system integration.

Strength: Separate, individualized improvement of each system mean greater reliability of each component of the "National System". New functionality meets some user needs for applications and tools. System redundancy may be reduced.

Weakness: System improvements proceed on independent timelines. Lack of system integration reduces value of new functionality. Incentive for system improvement is low.

Alternative 4

Improve and integrate existing systems. ASCADS, WIMS, and WFAS all receive new functionality coordinated across all systems. A "shell" or [what?] is developed to integrate input and output data. Current sponsoring agencies remain in control of their systems. This option does not require a paradigm shift; familiar, existing system structure continues with additional features.

Strength: A commitment is made of direction, resources, and funding. Users received new functionality, enabling users to work with current technologies. Development is independent, but also coordinated. Goals may be achieved sooner at lower cost than a complete system overhaul. May reduce unnecessary duplication and require less processing (how do we know this?). User support is centralized.

Weakness: This is essentially the same alternative that was proposed and initiated four years ago. Advancement, flexibility, adaptability and integration are limited by use of existing paradigm and system structure. If work progresses at current pace, high risk that existing stakeholders will lose patience and drop out of WIMS.

Alternative 5

Develop a new system. ASCADS, WIMS, and WFAS all go away as we know them and are replaced by a new system and a new way of doing business (paradigm). The current functionality of these systems would be retained, but their location and structure may be different. The new system would be designed to optimize efficiency, new functionality, and integration of data and applications. This might be analogous to creating one new qualifications system or one new fire reporting system.

Strength: Ensures integration and that products support the business function. Evolves from the state of the art and science. All stakeholders are involved in developing system and in sharing costs. Eliminates unnecessary duplication. Most likely to achieve long-term goals (pg 5). Least long-term risk. Centralized customer support.

Weakness: Likely to be most expensive, require longest time to complete, and involve the greatest risk until completion. Greatest impact to training development. Some changes likely to impact dependent applications/users.

Recommendation

The recommended option is Alternative 4. Alternative 5 may appear more likely to achieve the long-term goals, but it was also regarded as unattainable or unrealistic at this time. Alternative 4 was regarded as more likely to succeed.

We need to recommend a mechanism for Alternative 4 to succeed.

Perhaps an NWCG-supported steering group is needed to shepherd the agencies.

What else can we include here to both further explain what Alternative 4 is and clear an opening in the thicket to see how to get to the other side?

Since we didn't get to considering decision criteria, I don't have the documentation in our notes for why we chose this option. Help!

Next Steps

1. Develop draft white paper – Paul completed 4/30/04

2. Complete Edits/Review/Final version with Needs Assessment Workshop participants

3. Present to Fire Danger and Fire Weather Working Teams – Larry

4. Recommendation WT –

5. Approval from NWCG
    a. Business Analysis
    b. Approve short terms (Oct Mtg)

6. Find a Champion

Approval

[signature page]

Appendix 1

System descriptions

[alphabetize]

DOMSAT	"Domestic Satellite." A private-owned communications satellite under contract to NOAA to rebroadcast data retrieved via the GOES system. An alternate communications capability for all government agencies. A link in data flow to move measured weather data from the RAWS to the fire danger processor in WIMS. End users include all who use WIMS.
Fire Weather Plus (FTS, Inc.), Fire Weather Pro (Remsoft, Inc.)	Two commercially available off the shelf (COTS) fire danger rating processor applications. Uses weather data that flows directly from the user's weather stations to the user's computer. These are alternative fire danger processors to WIMS. Unlike WIMS, their station data and processed outputs are not nationally available.
ASOS	Automated Surface Observing System. A system of automated weather stations owned by NOAA NWS and linked through NOAAPORT to AWIPS. Used by anyone making forecasts.
California Hourly Fire Danger Product	An internet-based display of hourly fire danger by fire danger rating area that is updated hourly. Hosted on a server at the Desert Research Institute's Program for Climate, Ecosystem, and Fire Applications (CEFA). Uses the RAWS data fed from ASCADS and an adaptation of the NFDRS processor. Produced under contract by CEFA for the fire agencies in California.
Oklahoma MesoNet	[See description on WFAS website.] An hourly, 1-km display of fire danger in Oklahoma based on NDVI, 10-hour fuel moisture, and their weather station network. Owned by University of Oklahoma. Used for severe weather forecasting, fire danger forecasting, etc.
NDVI	Normalized Difference Vegetation Index. [See definition on WFAS webpage.] Used by Missoula Fire lab to develop Greenness imagery which are used by fire agencies and managers to assess growing conditions of wildland fuels. Data comes from EROS data center and their polar orbiting satellites.
GEOMAC	[see website for description] Owned by USGS. Web-based GIS mapping application for user-defined data display. Used by PIOs and agency fire managers.
BlueSky/Rains	BlueSky links the models of fuel consumption and emissions, fire, weather, and smoke dispersion into 1 system for predicting the cumulative effects of smoke from prescribed fire, wildland fire, and agricultural fire. Rains is the Rapid Access Information System. A web based system to overlay layers (topography, census data, Class 1 wilderness areas, etc). Allows user to zoom and pan and query the database. Owned by PNW FS. Used by ____
Other Weather Models	Smale scale mesoscale models to large scale global models. RAWS data would have more impact on smale scale models. A user of RAWS data. May produce long range fire danger forecasts and the like.
FCAMMS	See website definition. Consortium of Federal, State agencies, universities. Used by regional managers and regulators and predictive services.

KCFAST	A data retrieval and report writing utility for interagency weather and NFDRS observations and Forest Service fire occurrence data from WIMS and NIFMID. Owned by the Forest Service. Used by anyone in fire management with a need for historical data. Password required.
WIMS	Weather Information Management System. A system to collect, store, and manage current and past (to 18 months) fire weather observations and fire danger rating parameters. Serves as host to NFDRS processors and as user interface for NFDRS inputs and outputs. Owned by the Forest Service. Used by anyone who needs to process fire weather observations, run NFDRS calculations, and retrieve observed/forecast indices. Password required.
ASCADS	Automated Sorting, Conversion, and Distribution System. A system for automated sorting, conversion, and distribution of GOES telemetered weather data, and management of maintenance records and station metadata. Owned by the Bureau of Land Management. Used directly or indirectly by anyone who maintains RAWS stations and anyone who retrieves or utilizes RAWS observations (i.e., fire agencies, NWS, ROMAN, etc.). Password required.
WRCC	Western Regional Climate Center. A repository for climate and weather data, primarily in the western US, but nationally for RAWS and lightning data. Under agreement with BLM, WRCC is the official archive for RAWS observations. WRCC is one of several NOAA regional climate centers in the US. Used by anyone who needs climate data from RAWS and other sources. Access controlled for data older than 30 days.
DAPS	Data Acquisition Processing System. A data relay for GOES-telemetered data and a repository for station metadata. Owned by NOAA/NESDIS. Used directly or indirectly by anyone who needs environmental data. Password protected.
ROMAN	Real-time Observation Monitor and Analysis System. A national database query and retrieval system for monitoring and analyzing weather data in real-time. Owned by the BLM. Used by anyone who needs weather data.
WFAS	Wildland Fire Assessment System. A system for spatial analysis and display for fire danger data and satellite-derived vegetation data. Owned by the FS. Used by anyone who needs national, coarse-scale resolution fire danger (observed and forecasted) information.
NIMBO and others	A variety of government and non-government weather data display systems. Similar to ROMAN but on smaller scales. Owned by various public and private organizations.
FireFamily Plus	Fire weather, fire danger, and fire occurrence analysis software. Owned by the FS. Used by anyone who needs to perform analyses of fire weather, fire danger, and or fire occurrence data.
RAWS	Remote Automated Weather Stations. A satellite-telemetered observation network for support of fire operations and resource management. RAWS units are owned by many wildland fire agencies and organizations. Used by anyone who needs fire or resource management weather data. Access to the observations is possible through a variety of sources – controlled or not controlled.
AFS IAMS	Alaska Fire Service Initial Attack Management System. An application to record, monitor, and report aviation hazards and restrictions that also incorporates weather data for computing fire danger ratings. Owned by the BLM. Used by fire management and dispatch in Alaska.
Other Fire Danger Rating Systems	Many local or state-wide fire danger rating systems exist. The Canadian Forest Fire Danger Rating System is also used in some states.

	Ownership is varied. Users are those who need fire danger ratings for fire decision support but have not adopted the national system (NFDRS).
FARSITE	A software application that simulates fire behavior characteristics spatially and temporally. Owned by the FS. Used by fire planners, fire behavior analysts, and academics.
PCHA	PC-Historical Analysis. A software application that enables the user to analyze historical wildland fire occurrence and fire weather for fire planning purposes. Owned by the FS and used by fire planners.
RERAP	Rare Event Risk Analysis Process. A software application used to assess potential fire spread. Owned by the FS. Used by anyone managing fires for resource benefit.
WFMI	Wildland Fire Management Information System. A system for display of and access to current RAWS data, lightning data, and BLM fire occurrence data. Owned by the BLM. Used by wildland fire agencies who view and or download these data.
AWIPS	Advanced Weather Interactive Processing System. A weather analysis and forecasting system developed and owned by the National Weather Service. Used by NWS and (soon) predictive service program managers.
FX-NET	A meteorological PC workstation used to analyze and forecast weather observations. Owned by NOAA Forecast Systems. Used by incident meteorologists.
FPA	Fire Program Analysis. Currently under development, a common interagency process for fire management planning. A suite of modules will use historical weather and fire data. Owned by the FS. Used by fire planners.
GOES	Geostationary Operational Environmental Satellite. Network of satellites owned by NOAA used to transmit RAWS observations from the weather station to ASCADS. Used indirectly by all who use RAWS data.
NFDRS	We didn't include this in the meeting

Appendix 2

Data Sources

Weather
- National Weather Service (NWS) (observed, forecasted)
- Predictive Services (short/long forecasts)
- NOAA
- Remote Automated Weather Station network (RAWS)
- Automated Lightning Detection System (ALDS, contract)
- Climate Centers (archived observations, climate products)
- Other weather data networks

Vegetation/Fuels
- Resource specialists
- Remote sensing (NDVI-derived greenness imagery, Landfire fuel models)

Topography (static)
- Digital Elevation Models (DEMs)
- Conventional USGS maps

Appendix 3

Original meeting notes

<u>What are the Issues / Problems?</u>

Ever Changing
Adolescent
Disconnected
Splintered
Pieces in different stages of development
Obsolescence
Redundant
Insufficient funding
Different quality
Varying levels of priority and support
WIMS Training
Incremental evolution
Uncoordinated
GIS challenged
Many attempts
No commitment from Management
Individual agency commitment
Pat on the back syndrome
Limited system support (ASCADS, LRGS, DRGS)
Pass the buck syndrome
Not user friendly
No data integration
Not always mindful of all stakeholders
Low accountability
Stakeholders have changed and needs
Corporate memory loss
Change in technology
Reluctance to change
Not meeting full scope of fire environment
Guarantee of availability
Quality/currency
Maintain RAWS to standards

Systems

KCFAST
WIMS
ASCADS
BLM Fire Report
FAMWEB
WRCC Website
DAPS
ROMAN
WFAS
NIMBO, etc.
FireFamily Plus
RAWS
BLM-WFMI
NOAA Port
GOES
Landsat
USGS
HUB
PCHA
FPA
FARSITE
RERAP
AWIPS
FX-Net
DOMSAT
Private Sector
- WX Pro
- WX Plus
- Weather bank
- OK Weather Net

ASOS
Custom Regional Products
NDVI
GEOMAC
FEIS
FOFEM
Bluesky/Rains
Behave +
Weather Models
Air Quality/Dispersion
WX Data Assimilation Systems
AFS IAMS
Stand Alone IAMS
HI FDRS
CFFDRS
AFF
State Systems (FD)

Breakout instructions to briefly describe each system:
Description
System owner
Who uses it?

What works well?

Weatherbug.com
Roman**
Constant flow of WX Data
RAWS-WFMI & Lightning
WIMS
Near Real time access to WX data
Internet
Verbal support
User support – Interagency 7x24 helpdesk
Interagency access
Appropriate access control
7-24 availability of data
Spatial display of WFAS, etc.
FireFamily+ - robust tool
PocketCards
Ability to analyze fire danger and fire business
WX Station Metadata mgmt.
Lightning Data
Daily observations
Training – S-491
Continue Marketing and training
Data Archiving
Keep functionality fdrs processing
More sophisticated users
FDWT
Wx Station Network

Goals – Short Term (within 2 years)

- Stability of ASCADS & WIMS (Status Quo)
- Meet Current Needs (Fix problems – not new functionality)
- Prepare for long term
- Data quality/packaging
- Maintain Interfaces
- Implement NWCG Weather Station Standards (Intro)

Goals – Long Term

- Robust & Flexible
- To remain state of the art & state of the science
- Continue to meet user's evolving requirements
- Modular components
    - Independent enough to work on each alone
- Single method of access
- Password only where required
- GIS/GUI
- Integrated (data)
- Reporting
- Minimized duplicated effort
- Suite of nationally supported products
- Retrieve data from system of record
- Ease of use
- Searchable
- Shell/user interface supported by modules

Our Business

Forecast
Station Maintenance?
Observations
Historical weather fire danger
Fuels/Vegetation
~~NFDRS Fire Danger~~
~~Research~~
~~Decision Support~~

A wider perspective on Our Business:

Support
Fire Suppression
Rx Burning
Safety & Health
Fire Preparedness

Standardized description of fire environment
Rich & complete

What is at stake: the Impact/Risk

- Loss of near real time data (intermittent) from all or part of the RAWS network
- Loss of specific data (wind shifts, etc) can impact FF safety
- Can't implement full capability of the RAWS network that was designed to support fire fighter safety
- Data may not be available to the "national" database, not avail to the ff
- Site the Cramer Report
- ASCADS is the vital link
- Maintenance – data availability
- Impact on Forecast/warnings capability (NWS)
- Dependant on RAWS network & ASCADS/timelines

Data Sources

Weather
NWS (obs,fcst)
Predictive Services (short/long forecasts)
NOAA
RAWS
ALDS (contract)
Climate Centers
Other weather data networks

Veg/Fuels
Resource specialist
Remote sensing (IR, Thermal, Radar, Landfire)

Topography (static)
DEMS
Maps
USGS

Stake Holders

Fire Managers (political, High level decision)

Fire Implementers
- Fire Ops, Rx, Planners
- On incident
- On the ground

Resource Specialists

- Hydrologists, recreation, wildlife, air quality, range mgmt, public affairs

Research/acadamia/FCAMMS

Emergency response/safety
- FEMA

Private Sector

Public

Aviation

Other government agencies

Predictive services

NWS

Military

Alternatives – for core applications - WIMS, ASCADS, Roman, WFAS, WFMIS

1. Minimal patch and repair
    a. No integration
    b. No new functionality
    c. Will not meet our current needs
    d. $'s to maintain systems will increase
    e. greater risk of catastrophic failure

2. Square 1
    a. Ensures integration
    b. Shares cost
    c. Ensures products support business function
    d. Evolves with state of art
    e. All stakeholders involved
    f. Eliminates duplication
    g. Greater risk until implementation
    h. Minimum long term risk
    i. Long timeline
    j. Impact on training
    k. Impact on external/dependent applications/users
    l. Centralized support

3. Integrate existing systems
    a. Quicker
    b. May not reduce duplication
    c. Pontential of not being able to integrate
    d. Current system maintence issues
    e. Great risk due to third compoent
    f. Does not meet current needs
    g. Varying levels of support and priority
    h. Decentralized support systems

4. Improve and Integrate
    a. Commitment of resources , dollars, direction
    b. New functionality
    c. Better use of current technology
    d. Independent & coordinated development
    e. May reduce duplication
    f. Faster development
    g. Potenial less dollars
    h. Less processing
    i. Centralized support
    j. No paradigm shift
    k. Same as what we proposed 4 years ago
    l. Expansion is still limited
    m. Impacts on existing stakeholders
    n. Agencies still control applications

5. Improve existing systems
    a. No integration
    b. Greater reliability for each component
    c. New functionality
    d. Reduce redundancy
    e. Potential independent timelines
    f. Minimum incentive

Next Steps

1. Develop white paper – draft Paul (4/16)
2. Distribute to this group for review (5/1)
3. Present to WT – Larry (5/27)
4. Recommendation WT – (5/27)
5. Approval from NWCG
   a. Business Analysis
   b. Approve short terms (Oct Mtg)
6. Find a Champion