



*FGDC Subcommittee for Cadastral Data*

<http://nationalcad.org>



February 13, 2007

Jan Goodwin, Department Secretary  
New Mexico Taxation and Revenue Department  
1100 S. St. Francis Drive, Suite 3002  
Santa Fe, New Mexico 8750

Dear Ms. Goodwin

The FGDC Cadastral Data Subcommittee (Cadastral Subcommittee) has formed a Wildland Fire Project Team at the request of the National Interagency Fire Center (NIFC). I am writing to you as the Co-chair of the Cadastral Subcommittee and as a representative of the Cadastral Wildland Fire Project Team.

We would like to request your assistance in preparation for the 2007 wildland fire season. We are seeking the acquisition of a limited set of local assessment data from each county in your state. These data will be used by the U.S. Forest Service Rocky Mountain Research Center's RAVAR system (Rapid Assessment of Values At Risk) which utilizes fire modeling technology along with land use data for wildland fire management. Local government assessment data is one of the most critical components of the system providing firefighters with information about the location of structures, land use and the value of properties that are threatened by a wildland fire event. With this technology and information in place, firefighters can rapidly identify strategic protection needs, allowing incident command *to get firefighters in the right place for the right reason.*

Attached you will find a briefing paper that provides more detail about the data that is needed, the RAVAR system and how the data will be used. We are on a tight schedule with a May 1, 2007 time line for locating, gathering and processing this information for thirteen states. It is expected that this will be an annual request that is coordinated with the state. We will be contacting you or your designee in the near future to see how we can best work together. If you have any questions please feel free to contact me at 303-239-3817

Sincerely,

Bob Ader  
Co-chair  
FGDC Subcommittee for Cadastral Data

Attachment

cc. John Salazar, Tim Eichenberg and Roy Soto



## **Briefing Paper**

### **Pre-deploying Parcel Data for Managing Wildland Fires**

The FGDC Cadastral Data Subcommittee (Cadastral Subcommittee) at the request of the National Interagency Fire Committee (NIFC) has formed a Wildland Fire Project Team with representatives from the Bureau of Land Management (BLM), the U.S. Forest Service, the USGS, State Representatives and others to prepare for the 2007 wildland fire season. This briefing paper describes the background and activities of the Wildland Fire Project Team for the 2007 season.

**Background:** The National Interagency Fire Center (NIFC, <http://www.NIFC.gov>) is utilizing GIS technology with wildland fire projection modeling and local government assessment data to make decisions on how to best allocate resources in the event of a wildland fire. The technology was tested during the 2006 fire season and proved to be successful in over forty events in eight states. The collection of data was done on an ad hoc basis and fortunately it was possible to acquire parcel data for nearly all events. Although the results were extremely good, data acquisition and processing is a labor intensive process and occurs during a fire event when resources could be better focused on fire assessment. As a consequence NIFC wants to use the time before the beginning of the 2007 fire season to acquire and pre-deploy the necessary parcel data so that it is ready to use during a wildland fire event. This technology can also be used in mitigation to identify priority fuel reduction areas and in post-event situations for damage assessment of real property and to identify structures and communities that may be vulnerable to flash flooding.

**What needs to be done:** The Project Team will be requesting a small subset of parcel data from county assessment offices. These data will need to be updated on an annual basis and we want to work closely with the states on coordinating this effort. The most crucial data are parcel boundaries that can be used in a GIS, information about the presence or absence of structures, the value of the property, improvements and land use description (agriculture, commercial and private property). Although it is not as accurate, a parcel point, situs address and the parcel area can be used as an alternative to parcel boundary files. Where a parcel location is not available from local governments, the USGS will identify structures in the remaining areas by analyzing available aerial photography. The assessment of imagery is considerably more time consuming, which may put lives and structures at risk and it does not include the value or structure types, but it can provide an identification of many structures in the areas that do not have parcel data that is or can be spatially enabled.

The Project Team will be piloting a legal description text analysis tool in a limited number of counties. If the legal description is structured properly, this tool can decode the text to locate properties within forty acre areas and tie these clusters to assessment data. This is also an alternative to the parcel boundary files, but the time and costs required for processing and the availability of properly structured data are anticipated limiting factors



### **Why and How the Assessment Data Will Be Used**

“The protection of human life is the single, overriding suppression priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection..”<sup>1</sup>

What is happening? Over the past decade, an increase in larger wildland fires has converged with rapid growth in the wildland-urban interface. Suppression resources, including firefighters, equipment and money, are pressed to their limits. Attacking every fire with equal priority is not an option logistically nor is it desirable as some fires play an essential role in keeping forests healthy.

The questions that wildland fire managers must answer as they approach any wildland fire event are: Which wildland fires should be attacked first and what resources should be allocated? What resources should be allocated to protect public and private assets? Where is it not necessary to suppress wildland fires so resources can be preserved for priority areas? Addressing these questions requires the use of sophisticated technology with information to determine fire spread (vegetation, topography and weather) along with information that describes the land use and values-at-risk in the path of expected fire spread. With this information in place the firefighters can rapidly identify what needs protection allowing them *to get firefighters in the right place for the right reasons.*

The technology component is in place. Over the past several years the NIFC has been testing and utilizing Geographic Information Systems (GIS) mapping technology to compare the different areas that are threatened by wildland fires. The U.S. Forest Service Rocky Mountain Research Station’s RAVAR system (Rapid Assessment of Values At Risk) utilizes fire modeling technology along with land use data. During the 2006 wildland fire season the RAVAR system was first implemented and used in forty incidents in eight states. Information about structures, their value and land use (residential, commercial, agriculture) that comes from local government assessment offices contains the most critical information for providing intelligence to the RAVAR maps.

The RAVAR map on the following page illustrates how this data has been used during a wildland fire event. Having the most accurate and up-to-date land use data can do much to protect help us protect the firefighters, citizens, and communities in your county.

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<sup>1</sup> From “Interagency Strategy for the Implementation of the Federal Wildland Fire Policy” Available at: [www.nifc.gov/fire\\_policy](http://www.nifc.gov/fire_policy)

Summary of Values-at-Risk per FSPro Fire Spread Probabilities: 7 days as of 6 September 2006

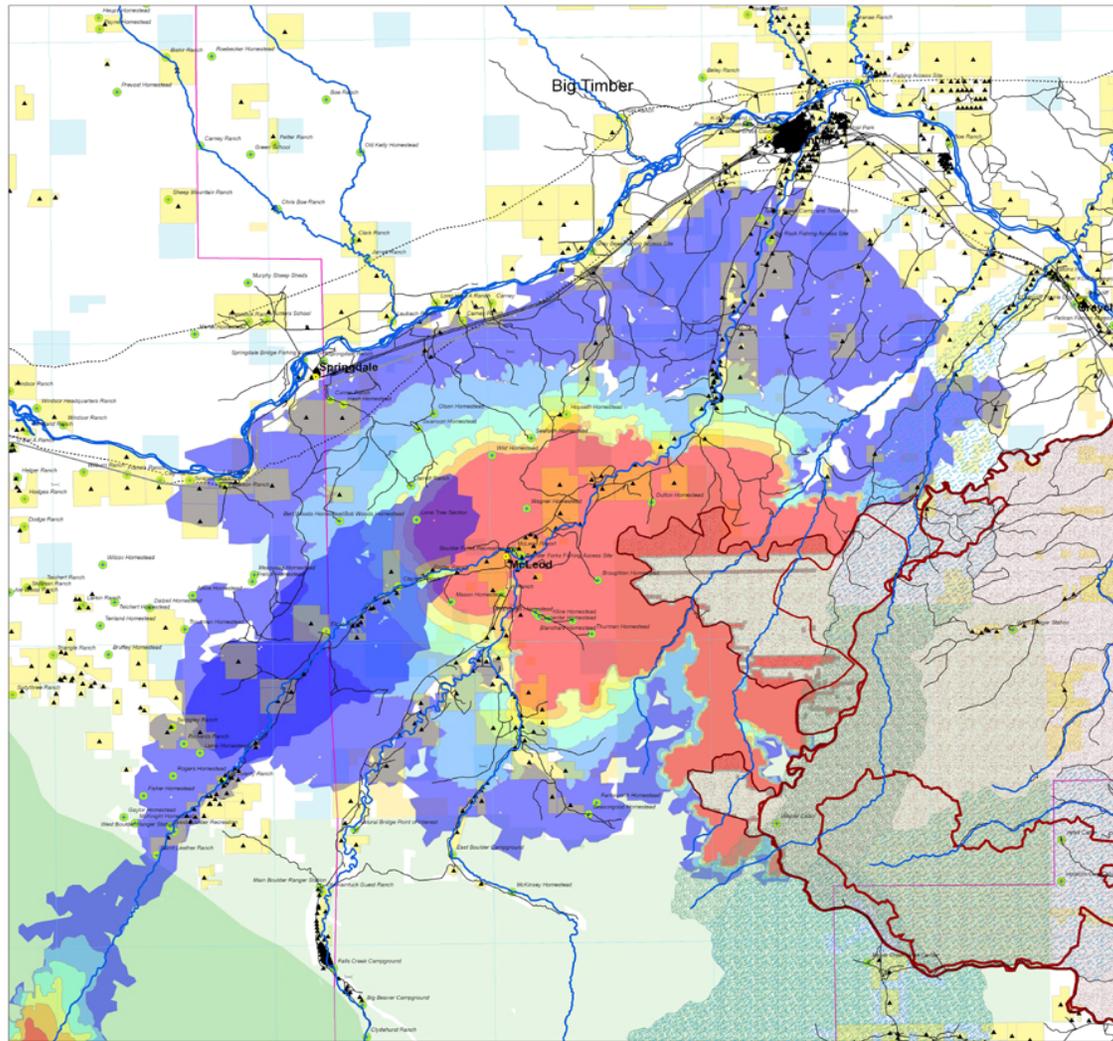
Legend

- Perimeter 0905\_0200\_MODIS
- MODIS Last 7 days 060907
- FSPro Fire Spread Probability**
- > 80 %
- 60 - 80 %
- 40 - 60 %
- 20 - 40 %
- 5 - 20 %
- << 5 %
- Building Clusters (06Jul)
- Improved Private Parcels
- Other Landmarks
- Highway Bridges
- Pipelines
- County Lines
- Roads
- Roads
- Cities\_2mil
- R1 Watershed Restore Priority 06-2
- R1 Fish Restore Priority 06-2
- R1 Restore/Protext Priority 06-2
- Jurisdictions**
- State
- BLM
- USFS
- Wilderness
- Streams

\*Building Clusters represent the center of parcels where county assessor records indicate taxable improvements are present. One or more structures and other improvements may exist proximate to these point locations.

CAUTION: Defer to air photos or local knowledge for exact structure locations.

NOTICE: FSPro and RAVAR are experimental products of USFS Forest Service, Rocky Mountain Research Station, Fire Sciences and Forestry Sciences Labs in Missoula, MT.



This was one of the maps used during the 2006 Montana Derby Fire in 2006. The fire is approaching from the west and the burned areas are in gray. The edge of the fire is indicated by the dark red lines. The 7 Day probability is color coded in a range from greater than 80% to less than 5%. Clusters of structures are indicated by triangles. Information that is not seen but available as a result of being tied to assessment data include value, land use and structure type. The information presented greatly improves decision making of field officers allowing them to better protect the threatened communities by placing firefighters in the right place for the right reasons. RAVAR was developed by the U.S. Forest Service Rocky Mountain Research Center.