

## **A Web Based Geographic Information Platform to Support Fire Modeling Efforts in the Wildland Urban Interface**

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Urban development continues to expand into adjacent wildlands increasing the density of homes and vegetation that contribute to the risk of catastrophic fires in California. If current trends continue, California's population will increase 20 million in the next 15 years adding to both natural and human built fuels in the Wildland Urban Interface (WUI). This increase, combined with steep topography and periods of extreme weather, create the potential for catastrophic fire behavior. The resultant firestorms can destroy homes, threaten public safety, damage plant and wildlife communities and potentially contribute to the erosion and sedimentation of the streams and reservoirs that supply drinking water to many California residents.

This relentless urban spread into peripheral areas demands the implementation of a comprehensive fire response strategy which includes: a method for gathering and maintaining a comprehensive data base on fuel conditions, models predicting fire spread, a mechanism for interacting and delivering information to residents, and an educational program to aid in mitigation efforts. Communities that begin to implement a fire response strategy are quickly faced with the daunting task of gathering and maintaining a comprehensive data base on fuel conditions. California's current fiscal crisis has rendered traditional solutions to this problem vacuous leaving room for new invention where comprehensive, current and cost effective parameters are revered.

We argue that community participation is key in solving the fuel conditions data gathering problem and new information technologies will make it affordable. Until now, the implementation of new information technologies for supporting public participation faced strong limitations. Although cost has traditionally been the barrier to incorporating new technologies in the participatory planning process, with the advent of the Web, this issue has all but disappeared. However, taking its place is the lack of Web based bi-directional solutions for information exchange. The existing popular Web-GIS solutions are limited to viewing functionalities, accepting queries and returning static images as results. We eliminate this problem and develop a more convenient and relevant solution, a bi-directional Web based GIS-mapping instrument we call MinuteMap. Our solution provides the public an instrument with functions that allow data, downloaded from a server through common Web protocol, to be edited (both spatial and attribute data) locally and uploaded to the server immediately or at some later time.

MinuteMap is based on a new web-mapping component (.dll) included in an ActiveX Web-information platform (.ocx). The implications for community participation are great and render a bottom up approach to data collection and distribution.

**Key words:** Web-GIS; Planning Support Systems (PSS); Wildland Urban Interface (WUI ); Firestorm; Web public information platform; Participation; Regional, urban and environmental land-use planning and management; Fire hazard.