



Fire Program Analysis Update

June 15, 2007

Issue: This report provides interim progress on development of the FPA prototype.

Background:

At its October 2006 meeting, the Council concurred with the FPA Executive Oversight Group recommendation to move forward with FPA development and requested a range of options and cost estimates for further consideration. The Council in December endorsed development of a prototype to be delivered by June 30, 2007. At the Council's request, a report will be developed concurrently to outline the feasibility and estimated cost of adding the large fire probability simulator component recommended by the Interagency Science Team (IST). This report provides the Council a status report of progress made to date on the prototype. A presentation will be scheduled for July so the Council may consider the prototype and report, and decide on the next steps for development of FPA.

Key Points:

The FPA prototype incorporates initial response simulation and large fire probability surrogate models with a decision support system. The design ensures the ability to include a large fire probability simulation model at a future date. Although the schedule for developing the prototype was only six months, all indications are that the FPA Team in partnership with the Interagency Science Team will be able to deliver a report at the end of June 2007 that provides an assessment of how well the simulation approach works, feedback on how the design meets the stakeholders' needs, and an estimate of what it will take to implement the full operational model for use by both local FPU fire planners and national budget planners.

Accomplishments:

- **Initial Response Simulation Model** - The initial response simulation (IRS) model prototype, which has as its basis the fire modeling tool developed by the California Department of Forestry and U.C. Berkeley researchers, has been built and all seven Fire Planning Units (FPU) involved in the prototype development have evaluated the implementation using actual data sets from their area. The IRS prototype has been tuned based on these data runs and another more detailed analysis was conducted with two of the FPUs in preparation for the final prototype.



- **Large Fire Probability** – The Interagency Science Team developed a statistical approach for modeling large fire size and intensity as a function of fuels, topography, weather, containment and burn duration. This statistical approach accounts for 80%-90% of the variability in large fire size and rate of spread. Initial results from the first of seven FPU analyses using the statistical approach were favorably reviewed by all FPUs at the May Prototype Workshop. Work is ongoing to refine modeling results.

- **Bayesian Decision Network** - Significant evolution has occurred in understanding how to exploit the power of Bayesian Decision Networks. The network is providing FPA a means to integrate the results of the IRS and large fire models to enable comparative effectiveness and efficiency performance of investment alternatives at the local FPU level. Prototype networks have been developed and are jointly being refined by members of the IST and the FPA Team.

Other Activities:

Stakeholder involvement in the development of the prototype is critical for its success. To ensure business requirements are being met in the prototype design, two workshops were held with the seven FPUs, and three workshops with the national budget planners. From these workshops formal requirements have been identified, and acceptance criteria developed to test the resulting prototype performance.

To ensure that communications remain open and useful, FPA newsletters have been issued at least bi-monthly, technical news notes have been distributed as specialized information is available, and regular electronic list server items have been sent to over 700 subscribers. Governance was restructured to include a Senior Executive Service Project Manager and two Business Leads representing the Department of the Interior and the Forest Service, with oversight provided by an Executive Oversight Group reporting to WFLC.

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