FIRE MODELING INSTITUTE

CHARTER, 2006-2011

This document renews the charter of the Fire Modeling Institute (FMI), a joint national effort between Fire and Aviation Management (F&AM, Washington Office) and Research and Development (RMRS, Rocky Mountain Research Station). FMI will operate under this charter for five years (subject to annual review and amendment) and may be renewed. **The program described in this charter supports the National Fire Plan, the 10-year Comprehensive Strategy, the Cohesive Strategies (Forest Service and Department of Interior), and Forest Service organizational effectiveness by maintaining and enhancing a center of expertise to support fire management planning and fire science implementation.** Tasks supported by FMI include model development, prototype application, and training in fire ecology, fuel dynamics, fuel treatments, fire behavior, and fire suppression; mapping vegetative and fuel characteristics; maintaining and improving the Fire Effects Information System (FEIS); and supporting fire regime and fire regime condition class (FRCC) information. FMI will be able to coordinate tasks between F&AM and any of the three Research Work Units and one Program at the Fire Sciences Laboratory. Additions may be made to this charter annually as agreed to by both parties and approved by the Director, Fire and Aviation Management, and the Director, Rocky Mountain Research Station.

MISSION

The mission of FMI is to connect fire managers, technical experts, scientists, the best fire analysis technology available, and current information from the scientific literature to respond to fire-related resource management needs.

Fire management plans and actions, to be scientifically sound and defensible, must be based on the most accurate, current knowledge of fire available, especially in today's arena of contentious resource issues. But, because of the increasing number and complexity of wildland fire computer tools and the large, growing body of research results pertaining to natural resources, land managers are unable to keep abreast of the skills and knowledge needed for decision making. Managers have placed increasing demands on fire scientists to be actively involved in responding to specific resource problems. FMI has evolved to assist scientists and managers in sharing the responsibility for science delivery in fire management (Figure 1).

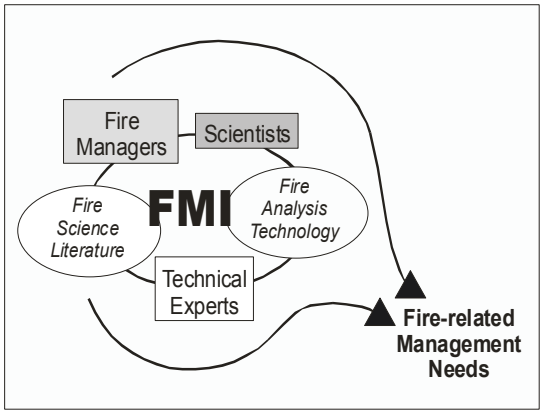

Figure 1. FMI brings together people and tools so the best current knowledge and technology are brought to bear on fire-related resource management issues.

HISTORY

FMI was chartered in 2001 to provide a programmatically stable organization and work force that would support, maintain, and further develop successful collaborations between Forest Service Research and Development and fire managers in the field, specifically the Fire Effects Information System (FEIS) and the original Fire Modeling Institute. FEIS, established in 1986, provides state-of-the-knowledge reviews of fire effects information to managers. The system now contains reviews of more than 1,000 species and plant communities in North America and is available to managers, scientists, and the public at www.fs.fed.us/database/feis. The original Fire Modeling Institute began in 1996 as an ad-hoc grassroots effort by Fire Sciences Laboratory scientists (Fire Behavior and Fire Effects Projects) to provide specialized fire modeling support to fire managers in the implementation of hazard reduction and fire restoration goals. This charter identifies the original Fire Modeling Institute and future applications in modeling, spatial analysis, and data analysis as the Fire and Fuels Application and Development (FFAD) function within FMI.

By 2001, both the FEIS and the FFAD Teams were floundering due to lack of consistent financial support and permanent staff. RMRS collaborated with F&AM to develop the FMI charter, with the following expected benefits to managers and scientists:

- Increased ability to move research results quickly into field application through modeling, spatial analysis, data analysis, and literature reviews
- An enhanced scientific basis for fire management decisions in support of the National Fire Plan, the 10-year Comprehensive Strategy, and the Cohesive Strategies (Forest Service and Department of Interior)
- Improved consistency, coordination, and protocols in applying technical knowledge to National and Regional assessments, Forest Plans, and implementation of projects
- A stable, responsive technical consulting service for managers to turn to when local resources are unable to help
- Advancement in application of modeling and spatial technology and integrated resource databases to solve landscape-scale fire management problems
- Hands-on experience in modeling, data development, and data analysis for field users
- Opportunities for scientists to develop and pilot new models and access data from field areas
- Increased flexibility to respond to requests from managers for modifications to models, applications, data analyses, and FEIS content
- Freeing of scientists from constant involvement in model applications and requests for synthesis of research results from the scientific literature

ACCOMPLISHMENTS

Stability in FMI funding and staff provided under the 2001 charter has enabled the Institute to fulfill its mission by maintaining and enhancing FEIS and by applying science in modeling and mapping technologies to address emerging fire management issues.

FEIS productivity has grown substantially since 2001. The Fire Effects Literature Collection, the basis for FEIS literature reviews, has increased by approximately 2,000 articles per year, and more than 100 literature reviews ("species summaries") have been added or completely revised. FEIS is currently used by managers in all federal wildland management agencies for planning and implementation of projects relating to fuel management, hazard reduction, postfire rehabilitation, weed control, and wildlife habitat improvement. FEIS is now included in training for all federal wildland fire managers. All of the federal land management agencies provide links to FEIS from their Web sites, as do many state agencies, universities, and nonprofit conservation organizations. The Joint Fire Sciences Program (JFSP) provided funding for 45 FEIS literature reviews covering 60 species of nonnative invasive plants. Support for additional work was provided by the Bureau of Land Management and Forest Service Region 5. Current work includes a 2-year project to publish a 6th volume of the "Rainbow Series," which will review scientific knowledge about fire and weeds, and a 3-year project to add new knowledge FEIS literature reviews on 200 species; both of these projects are supported by JFSP.

Under the 2001 charter, FFAD has collaborated with managers at all levels—local through national—to apply state-of-the-art modeling, spatial analysis, and data analysis tools to fire management. The FFAD team has used these technologies to address fuels and vegetation issues, provide real-time wildfire support to fire suppression units, and support landscape fuel treatments at local, regional, and national levels. Prime examples of these efforts include the development of spatial data layers and the application of FARSITE and FlamMap models for several Forest Service and BLM offices throughout the West. Through collaboration with the FFAD team, data were supplied to managers to satisfy their specific project goals, and managers gained hands-on experience with models—a crucial aspect of successful model implementation. Science and technology applications piloted by FFAD in collaboration with managers have developed into management tools and applications for all levels. The Fire Regime Condition Class concepts and national maps demonstrate incorporation of the latest science into management planning from the landscape level to the national level. Most FFAD projects were partly funded by JFSP, regional and district Forest Service units, or the Bureau of Land Management.

With its highly skilled, experienced staff and ready access to research scientists, FMI has collaborated fruitfully with F&AM and numerous other fire management professionals. Tasks and deliverables are set out each year in a work plan developed by the F&AM and RMRS Co-Leaders. In addition to working on these tasks throughout the year, FMI technical experts respond to urgent, unforeseen information needs from F&AM. For example, during the summers of 2002-2004, the FFAD staff provided maps of FRCC and FARSITE runs for active large fires and provided additional maps and analyses in

support of fire suppression activities at the Multi-agency Coordination Group and Incident Command levels. In 2002, the FFAD team coordinated GIS analysis for the Hayman Fire Review Team. FEIS staff search the scientific literature for data to be used in GIS and modeling, and to locate research addressing specific questions from F&AM. Finally, a stable and productive FMI has led to numerous other collaborations. Partners that have brought management questions and attendant fiscal support to FMI include the Joint Fire Science Program, the Bureau of Land Management, and numerous Forest Service Regions and National Forests. Appendix 1 lists FMI accomplishments and partners during years 1 through 4 of the 2001 charter; Appendix 2 shows the proposed work plan for year 5.

FMI TASKS UNDER THIS CHARTER

FMI tasks will focus on providing science and technical expertise to inform and support fire management decisions by collaborating with F&AM on continuing tasks (such as FEIS and FRCC support) and also on new tasks negotiated between the Program Co-Leaders. In addition, FMI will partner with other Forest Service units and other federal agencies, as supported by soft dollars, to address issues within the scope of the Mission Statement. FMI tasks under this charter will be identified each year in the annual work plan and may include any of the following:

DEVELOPMENT

- Develop new products (literature syntheses, maps, spatial layers, and publications)
- Develop methods for targeting strategic locations for fuel treatments based on fire behavior modeling, spatial analysis, ecological modeling, and integration of other resource needs.
- Assist in the development of Fire Behavior Condition Classes
- Assist in the comparison of analytical tools, including models, for addressing fuel management issues, fire suppression activities, and other fire and fuel related issues.

SUPPORT

- Provide long term technical support for fire suppression, prescribed fire, wildland fire use, and fuel management
- Support managers in implementing strategically placed fuel treatments on the landscape
- Respond quickly to requests for technical support in addressing critical issues that may arise at the national, regional, and local levels
- Support fire computer systems by membership in the Information Resource Management (IRM) Working Team, which is part of the National Wildfire Coordinating Group (NWCG)
- Provide communications services (distribute data, publications, and models; develop and maintain as needed on Internet)
- Support LANDFIRE technology transfer by

    - Continuing development of methods for using LANDFIRE data to answer management questions at the appropriate scale of analysis
    - Developing methodologies for integrating LANDFIRE data with local or regional data to address specific management issues
    - Working directly with managers by helping incorporate LANDFIRE data on local projects that address management issues (e.g. effective fuel treatment placements), demonstrating other potential analysis procedures (e.g. landscape changes over time), and documenting these procedures for future applications
- Support other interagency activities (e.g. Fire Program Analysis (FPA) Systems or Fire Regime Condition Class (FRCC) Interagency Team) by helping fine tune model applications, mentoring users, developing new methodologies, documenting methods for use in future applications, and interacting with teams to help address future issues.

TRAINING

- Mentor managers in the use of models, spatial analysis, and data analysis in management applications (for instance, in application of FRCC and LANDFIRE data)
- Provide training (develop curricula and courses, develop training materials, put on workshops)

MAINTENENCE

- Maintain products, including FEIS, the Fire Effects Literature Collection, and the Coarse Scale analysis
- Continue support for all levels of Fire Regime Condition Class mapping and application efforts

ORGANIZATION AND FACILITIES

Both managers and scientists will contribute to and benefit from the Fire Modeling Institute. The organizational structure and sharing of responsibility (Figure 2) ensure that needs of managers will be addressed and managers will have opportunities to enhance their skills in modeling, spatial analysis, data analysis, and application of science. Scientists will have opportunities to contribute expertise to FMI products, test new technology and management tools, and access FMI resources. At the same time, FMI frees scientists from requests for continual involvement in the details of management applications and summarizing research results for managers.

FMI will operate under a Program Leader (initially the Project Leader of the Fire Ecology and Fuels Project, RMRS), in cooperation with a Co-Leader provided by F&AM (Figure 2). Work will be completed mainly at the RMRS Fire Sciences Laboratory, Missoula, MT. FMI can work on tasks between F&AM and any of the four research units/programs at the Fire Sciences Laboratory (Fire Ecology and Fuels, Fire Behavior, Fire Chemistry, and LANDFIRE). The planned organization of FMI is sufficient to handle the

responsibilities identified in the list above, support collaborations with other partners (mostly funded by soft money), and expand collaborations with F&AM as determined through discussion between the Program Co-Leaders. Extensive additional responsibilities can be negotiated annually (see "Additions to the Charter" below).

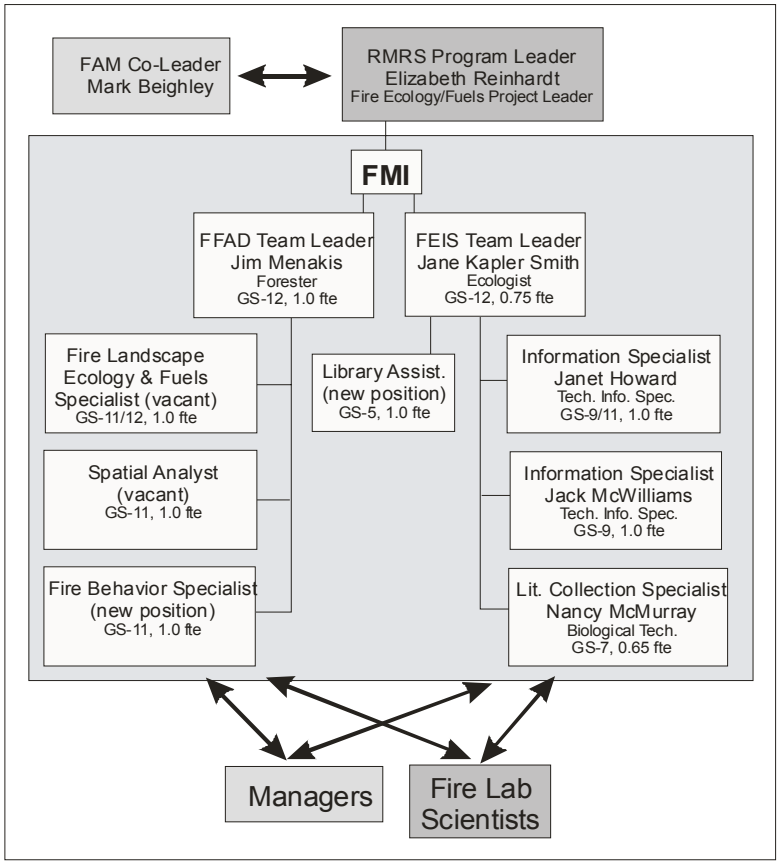

Figure 2. FMI organizational structure, leadership, and relationship to managers and scientists.

FEIS will operate under the FEIS Team Leader (Ecologist, GS-12) in collaboration with the FEIS Advisory Committee, with consultation from Fire Lab scientists as needed. Two Technical Information Specialists will ensure clear, concise writing and accurate content of each literature review. A Biological Technician will keep the Fire Effects Literature Collection and reference database accurate and up-to-date. A LibraryAssistant will handle literature orders, data entry, and filing for the Literature Collection and will also handle some clerical tasks for both the FEIS and FFAD teams. The staffing level shown here is insufficient to synthesize substantial new information into FEIS; for this work, additional term positions will be filled as funding becomes available. For example, FEIS currently includes 8 term positions to complete work funded by JFSP: 1 Technical Information Specialist, 6 Biological Technicians, and 1 Library Assistant.

FFAD tasks (fire and fuels modeling; spatial analysis; data analysis; development of applications, training, and tools; and other collaborations) will be conducted under the FFAD Team Leader (Forester, GS-12), with direction and consultation from the F&AM Co-Leader and managers at local through national levels. Fire Lab scientists will participate in individual projects as needed, based on their expertise and availability. Specialists in Fire Landscape Ecology and Fuels, Spatial Analysis, and Fire Behavior will complete tasks in modeling, spatial analysis, data analysis, and other arenas. Tasks supported by soft funding will be managed by the FFAD Team Leader, with work completed by term positions or contracts.

FMI will provide work space at the Missoula Fire Sciences Lab for managers to work with FMI and Fire Lab scientists to accomplish particular analytical tasks and acquire modeling, spatial analysis and applications skills.

BUDGET

To fill all positions shown in the Organization Chart (figure 2), and to address the list of potential tasks shown above, FMI will require 8.6 full-time equivalents, an increase from 6.4 fte in the 2000 charter. The increases include hiring for one position that was never filled under the earlier charter (Fire Behavior Specialist), and adding one fte (Library Assistant) to handle the clerical workload for the Fire Effects Literature Collection. See Appendix 3 for a more detailed comparison of the organization and budget in the 2000 and 2005 charters.

At the planned staffing level of 8.6 fte, total costs for FY06 will be $821,981. Salaries are expected to increase 5% per year, so the total cost in FY10 is estimated at $910,295—despite a decrease in computer/equipment costs after FY06.

The FMI budget is very sensitive to cost-of-living adjustments and step increases because 80 percent or more of the program's costs usually go to salary. The past 5 years have demonstrated the value of doing FMI work with a core of permanent staff, but permanents will be hired only insofar as funding is available for the duration of the charter.

Item	FY06	FY07	FY08	FY09	FY10
Salaries	557,617	585,497	614,772	645,511	677,786
Grants & Agreements	0	0	0	0	0
Other:					
Travel & Training	36,500	36,500	36,500	36,500	36,500
Materials & Supplies	10,000	10,000	10,000	10,000	10,000
Office, Computers/equipment, other	93,660	48,460	48,460	48,460	48,460
Total Direct:	**697,777**	**680,457**	**709,732**	**740,471**	**772,746**
Indirect (17.8% of Direct):	124,204	121,121	126,332	131,804	137,549
Total Estimated Expense/Yr:	**821,981**	**801,579**	**836,065**	**872,275**	**910,295**

ROLES AND RESPONSIBILITIES

Management and operational responsibilities for FMI will reside at the Fire Sciences Laboratory and will be coordinated with F&AM. Collaboration of managers and scientists on FMI tasks will be determined on a case-by-case basis.

FMI will be staffed by a core team of permanent Forest Service employees. Individual tasks are likely to require temporary or contract work, but it is essential for continuity and quality of collaborations that FMI have a core of permanent technical experts to carry out tasks.

The Rocky Mountain Research Station will participate in FMI in the following ways:

- Provide a Program Leader, located at the Fire Sciences Laboratory, at the Project Leader level. RMRS will assign the Program Leader in consultation with F&AM. Initially, this will be the Leader of the Fire Ecology and Fuels Project.
- Negotiate an annual work plan for FMI with the Program Co-Leader. The work plan will include, at a minimum, a budget and description of deliverables to be produced by the core staff.
- Provide personnel ceilings for FMI permanent staff within RMRS
- Accomplish the tasks set out in the annual work plan
- Provide current research results and assign scientists from Fire Sciences Laboratory Projects and Programs needed for specific tasks
- Assess accomplishments annually with Program Co-Leader

Fire and Aviation Management will participate in FMI in the following ways:

- Provide a Program Co-Leader as a point of contact with FMI
- Negotiate with the Program Leader an annual work plan for FMI
- Provide management perspective regarding needs
- Provide individuals to work with FMI as needed to carry out tasks
- Provide access to agency data as needed to carry out tasks
- Assess accomplishments annually with Program Leader
- Provide financial support to FMI within the range of $822,000 to $911,000 annually, as agreed upon in development of the annual work plan.

ADDITIONS TO THE CHARTER

Additions to the scope and funding of this charter may be proposed annually, when the work plan is being developed by the Program Co-Leaders. If both parties agree, a revision will be prepared and submitted with a decision memorandum to the Directors, F&AM and RMRS, for their consideration.

APPENDIX 1. FMI ACCOMPLISHMENTS, 2001-2004

Task Type	Task	Completion	Partners
Data Development	Developed Coarse-Scale Spatial Data for Wildand Fire and Fuel Management for Conterminous United States -- Version 2000 (7 GIS Layers)	FY2001	F&AM
Literature Review	Assigned Fire Regime Groups to Kuchler PNVG – Needed for the Coarse Scale	FY2001	F&AM
Data Development & Analysis	Mapped wildland fire risk to flammable structures for the conterminous United States.	FY2001	F&AM
Data Development	Provided support for LANDFIRE	FY2001-FY2004	F&AM
Literature Collection	Kept Fire Effects Literature Collection and reference database (Citation Retrieval System) accurate and up-to-date. Approximately 2,000 citations added/year.	FY2001-2004	F&AM
FEIS Literature Review	Wrote 70 species summaries (covering 71 species) for FEIS. Includes summaries that received complete review and revision.	FY2001-2004	F&AM
FEIS Literature Review	Wrote 30 species summaries covering 44 species of nonnative invasive plants; by end of FY05, total will be 41 summaries covering 60 species.	FY2001-2004	JFSP, F&AM
FEIS Literature Review	Managed quality of FEIS species summaries: Reviewed content and writing as summaries were produced, revised online summaries as needed	FY2001-2004	F&AM
Short courses	Taught 8 master classes (3 day duration) in FireWorks trunk-curriculum program. Also presented numerous 1-day classes & 1-hour presentations, reaching about 500 agency staff & classroom teachers.	FY2001-2004	RMRS, R4, Salish Kootenai College
Modeling	Modeled risk of catastrophic fires for Southwest Eco-group using VDDT	FY2002	Payette NF, Sawtooth NF, Boise NF
Data Development	Coordinated GIS for Hayman Fire Review Team	FY2002	RMRS
Data Development & Analysis	Mapped the Cheatgrass – Caused Departure From Historical Natural Fire Regimes in the Great Basin, USA	FY2002	F&AM
Modeling	Produced simulation of fuel treatments effects using FlamMap for Pahvant Range Healthy Forest Restoration Project	FY2002	Fishlake NF, JFSP
FEIS Literature Review	Wrote species summaries for 3 T&E species in California	FY2002	R5
FEIS Literature Review	Wrote species summary for sage-grouse	FY2002	BLM
Using FEIS	Provided support for developing Reference Condition Models for FRCC Guidebook	FY2002-2003	F&AM
Tech Transfer and Analysis	Provided Support of Coarse-Scale Data and Concepts (Maps, Tables, White Papers, Presentations, Customer Support, Emails, and Phone calls)	FY2002-FY2004	F&AM

Analysis	Provided Maps of FRCC by Active Large Fires (2002-2004)	FY2002-FY2004	F&AM
Tech Transfer	Provided support for FRCC Concepts	FY2002-FY2004	F&AM
Data Development & Analysis	Provided support to Multi-Agency Coordination Group in Northern Rockies During Fire Season 2003	FY2003	R1
Literature Review	Provided Fire Regime Assignment in the Relative FRCC project	FY2003	F&AM
Data Development	Produced Relative Fire Regime Condition Classes (Western US)	FY2003	F&AM
Modeling	Modeled Vegetation succession using VDDT for Beaver River Watershed Analysis	FY2003	Fishlake NF, JFSP
Modeling	Produced simulation of fuel treatments effects using FARSITE and FlamMap for Ash Creek Fuel Reduction Project	FY2003	Utah BLM, JFSP
Analysis	Provided analysis of optimum fuel treatments using FlamMap for Greenville Fuel Reduction Project	FY2003	Utah BLM, JFSP
Modeling	Produced simulation of fuel treatments effects using FVS-FFE for Duck CreekFuel Reduction Project	FY2003	Dixie NF, JFSP
Tech Transfer	Provided support in Development and Training for FRCC Guide Book	FY2003-2004	F&AM
FEIS-- tech transfer	Developed FEIS advisory committee-- 18 ologists and managers from BIA, BLM, FS, FWS, NPS, USGS, and TNC-- to guide decisions on FEIS content and structure	FY2004	JFSP, F&AM
Using FEIS	Provided support for developing Reference Condition Models for Rapid Assessment	FY2004	F&AM
Data Development	Provided support for Rapid Assessment -- Part of LANDFIRE	FY2004	F&AM
Literature Review	Developing Rainbow Series publication on fire & nonnative invasive plants	FY2004-2007	JFSP, CIPM, TNC-WIST
FEIS Literature Review	Writing new species summaries or synthesizing new information into existing summaries for 255 species	FY2005, renewable for 2 more yr	JFSP, F&AM

APPENDIX 2. FMI WORK PLAN, FY2005

Task Type	Task	Completion	Partners	Lead FMI person
Communications				
	Develop charter for renewal of FMI	Current charter expires 1/4/2006		Jane
Tech. Transfer	Get information about FMI online	FY2005		Jane
Prof. Presentation	Give presentations on FMI: S&TA meeting, Athens, GA; JFSP PI workshop; other	FY2005		Jane
Training				
Short course, training	Teach FEIS, provide materials on FEIS and Rainbow Series for Rx courses	FY2005		Jane
Short course, training	Teach 2-4 FireWorks classes/presentations, reaching ~100 educators & agency communicators	FY2005	Project Learning Tree	Jane
Products-- Data, Maps, Data Analysis, Modeling				
Tech. Transfer	Develop GIS layers for use in keywording articles for CRS, writing literature reviews for FEIS	FY2005		Jane & Jim
Tech. Transfer	Provide VDDT analysis & improved maps for Dixie/Fishlake NF Forest Plan Revision	FY2005	Dixie/Fishlake NF	Don
Tech. Transfer	Complete data layers & assess FRCC for Richfield BLM Resource Management Plan	FY2005	BLM, JFSP	Don
New inventory tech	Support the Rapid Assessment geospatial product	FY2005	LANDFIRE	Jim
Tech. Transfer	Make the Relative Fire Regime Condition Class geospatial data layer available online	FY2005	DOI	Jim
Tech. Transfer	Develop mapping products to link with FEIS literature reviews	FY2005	F&AM	Jim & Jane
Products-- Literature				
TT- literature review	Develop Rainbow Series publication on fire & nonnative invasive plants	FY2007	JFSP, CIPM, TNC-WIST	Jane
TT- literature review	Write new FEIS literature reviews or synthesize new information into existing reviews for up to 200 species. Note that JFSP funding is contingent on continued F&AM funding of FEIS	FY2009	JFSP	Jane
Tech. Transfer	Improve access to CRS online, streamline CRS procedures for accessioning articles	FY2005	Science Synthesis team, FRAMES	Jane
Tech. Transfer	Reconfigure FEIS to a database format, so users can access groups of FEIS literature reviews organized by growth form, plant community, genus, invasiveness, geographic location, etc.	FY2005		Jane

Tech. Transfer	Consult with FEIS Advisory Committee on providing access to research results (information currently in FEIS "case studies") by species, plant community and/or geographic location; get 2-4 examples done	FY2005		Jane
	Products-- Publications			
New inventory tech	Map Relative Fire Regime Condition Class for the Western United States	FY2005	DOI	Jim
	Support			
Tech. Transfer	Keep Fire Effects Literature Collection and reference database (Citation Retrieval System, CRS) accurate and up-to-date. Approximately 2,000 citations will be added.	FY2005		Jane
Tech. Transfer	Update, maintain, & package fuel & vegetation data created for Northern Rockies Geographic Area Command during the fires of 2003	FY2005	R1 fire	Don
Tech. Transfer	Continue support of the Coarse Scale Geospatial Data Layers	FY2005	F&AM	Jim
Tech. Transfer	Continue support of the Relative Fire Regime Condition Class geospatial data	FY2005	DOI	Jim
Tech. Transfer	Continue support of the Forest Service Geospatial Regional Fire Leads (Joe Frost, F&AM, & regional GIS/fire leads)	FY2005	F&AM	Jim
Tech. Transfer	Provide geospatial support during 2005 fire season at national and regional levels	FY2005	F&AM, R1	Jim
New inventory tech	Coordinate and support new Interagency & The Nature Conservancy Fire Ecology Technology Team (Wendell Hann)	FY2005	F&AM, DOI	Jim
New inventory tech	Coordinate and support the Fire Regime Condition Class (FRCC) Working Group & FRCC Guidebook Team; develop standards, educate audience (Wendell Hann)	FY2005	F&AM, DOI	Jim
Tech. Transfer	Provide on-call help to resolve potential national level problems for WO F&AM and WO DOI Fuels Managers	FY2005	F&AM, DOI	Jim
Software	Correct programming problems reported in the beta test version of Nexus 2.0 crown fire hazard assessment system, and delivery a full release.	FY2005	SEM	Eliz
Tech transfer	Provide occasional help to land managers using firelab software to plan fuel treatments.	FY2005		Eliz
Tech. Transfer	Hire detailer for summer of 2005 to support managers determining strategic locations for fuel treatments based on fire behavior modeling, spatial analysis, ecological modeling, and integration of other resource needs	FY2005		Jim

APPENDIX 3. COMPARISON OF 2000 CHARTER WITH 2005 CHARTER

The 2000 FMI charter was linked to a work plan that included a budget of $511,236 (below). The 2000 budget reflected the cost of the positions shown in the charter, with the exception of the Fire Model & Application Specialist—a position established but never filled under the 2000 charter. (In the 2005 charter, this is the "Fire Behavior Specialist" position.) If FMI were staffed at the same level in FY05 as it was in FY01, the total cost would have been $679,012. Because the Fire Model/Application Specialist position was not filled and other staff adjustments were made from year to year, we were able to meet F&AM needs with the fixed funds provided ($500-$600K annually).

FMI staff is planned to increase under the new charter from 6.4 to 8.6 fte to enable FMI to answer increased requests from F&AM. Under the new charter, the Fire Behavior Specialist position will be filled; a Library Assistant will be hired mainly to handle literature orders, data entry, and filing for the Fire Effects Literature Collection; and time commitment for a few other positions will increase.

Total budget for FY06 is estimated at $821,981. Salaries are expected to increase 5% per year through the life of the charter, so the total cost in FY10 is estimated at $910,295—despite a decrease in computer/equipment costs after FY06.

If F&AM supports FMI with a fixed amount through the life of the charter rather than with incremental amounts, then only the permanent positions supported by the fixed amount in FY10 will be filled. In the initial years of the charter, additional work will be completed with temporary staff (term positions, detailers, or contractors).

	___2000 Charter___		___2005 Charter___	
	FY01 Cost	**FY05 Estimate**	**FY06 estimate**	**FY10 estimate**
Salaries				
6.4 fte in 2000 charter, 8.6 fte in 2005 charter	334,800	491,931	557,617	677,786
Grants & Agreements	0	0	0	0
Other:				
Travel & Training	15,500	15,500	36,500	36,500
Materials & Supplies	8,000	8,000	10,000	10,000
Office Space, Computers & equipment, other operating expenses	106,460	60,980	93,660	48,460
Total Direct:	**464,760**	**576,411**	**697,777**	**772,746**
Indirect (10% of Direct in 2000/17.8% in 2005)	46,476	102,601	124,204	137,549
Total Estimated Expense/Yr:	**511,236**	**679,012**	**821,981**	**910,295**

The main differences between FMI as budgeted in the 2000 charter and as planned in the 2005 charter are:

1. Indirect rates increased from 10% to 17.8% in FY03, while the cost of office space decreased.

2. Amount budgeted for travel is greater because travel costs have increased and travel has been identified as an essential aspect of science delivery through FMI.
3. Salaries and positions (fte's):
   - Program Leader (10% fte) and Graphics Specialist (30% fte) salaries were covered under the 2000 charter. Under the 2005 charter, they will be considered in-kind support. The 2000 charter funded 50% of an Office Assistant salary; under the 2005 charter, this fraction drops to 20%.
   - FFAD: Time allotted to the FFAD Team Leader has increased from 50% to 100% fte. This position was identified in the 2000 charter as the "System Manager," and it was moved to LANDFIRE in 2004, leaving only 4 fte's on the Fire Modeling/FFAD team. A new fte is required. The Fire Behavior Specialist position ("Fire Model and Application Specialist" in the 2000 charter) will finally be filled. All FFAD analyst-specialist positions are at higher grades than specified in the 2000 charter because of the work's technical nature and the importance of technical communications with managers at all levels.
   - FEIS: Time allotted to the FEIS Team Leader and Biological Technician for FEIS is increased to 75% and 65% fte, respectively. The FEIS Team Leader position is upgraded since team size, duties, and responsibilities have grown in the past 5 years. One Technical Information Specialist is upgraded since technical and training aspects of the position are much more complex than 5 years ago. A full time Library Assistant (new fte) is planned to order articles, photocopy, enter data, and file materials for the Fire Effects Literature Collection and to handle other clerical tasks for FMI.

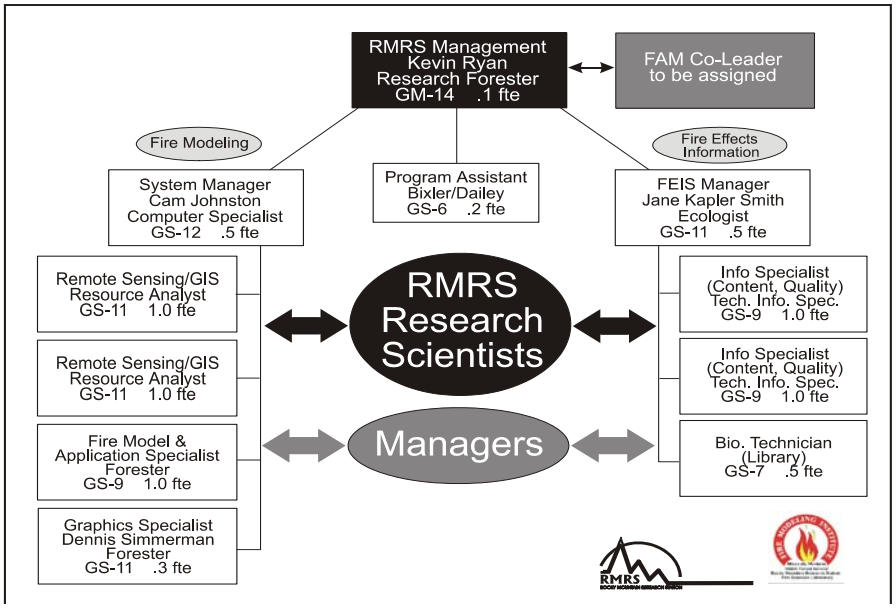

Figure 3. Organization chart for 2000 charter.