REVIEW AND RECOMMENDATIONS:
ENHANCING FIRE RESPONSE AND MANAGEMENT
IN COLORADO STATE GOVERNMENT

April 23, 2012

Review Team Co-Chairs:

Roxane White, Chief of Staff, Governor John Hickenlooper

Mark Gill, Chief of Staff, President Tony Frank, Colorado State University

Table of Contents

Executive Summary	**3**
Mandate from Governor John Hickenlooper and Colorado State University President Tony Frank: Goal of Report	**4**
Incident Leading to Request	**5**
Restructuring Options for State Agencies	**5**
Recommendation	**8**
Current Structure: Overview of Agencies and Role in Wildfire Management	**9**
Ongoing Challenges and Opportunities	**12**
Lower North Fork Fire: Response to Recommendations	**13**
Status and Description of Additional Reviews	**18**
Appendices:	
A. Members of Review Team	**20**
B. Summary of Roles in Wildland Fire Management	**21**
C. Organization Chart for Preferred Recommendation	**22**
D. Organization Chart for Alternative Recommendation	**23**
E. Options Considered but Not Recommended	**24**
F. Current CSFS Organizational Chart and Total FTEs	**25**
G. Current CSP Organizational Chart and Total FTEs	**26**
H. Current DOLA Organizational Chart and Total FTEs	**27**
I. Documents Consulted	**29**
J. Congressional Letter Requesting Review of Wildland Fire	**30**

EXECUTIVE SUMMARY

On March 26, 2012, a wildfire fire occurred in the foothills of Jefferson County, Colorado. This fire, called the Lower North Fork fire, burned for a week and resulted in the tragic deaths of three people and the loss of 24 structures (21 primary homes, one secondary homes, one rental property and one community building) and the scorching of 4,140 acres in a populated area near Conifer, Colorado. At the peak of the fire, over 900 homes in the area were evacuated.

Governor John Hickenlooper and Colorado State University President Tony Frank requested a thorough examination of the state's emergency response capabilities. The team (hereinafter referred to as the "Review Team") was directed to review the structure of the emergency coordination between the State Forest Service and the Division of Emergency Management—and their processes and communication systems—in order to improve the state's response to fires and protect people and property.

Currently, the Colorado State Forest Service, housed at CSU, is identified as the lead agency for wildfire suppression in the Colorado Revised Statutes §29-22.5-103 (3)(a) and in the State of Colorado's Emergency Operations Plan, with primary responsibility for Emergency Support Function 4a (wildland fire response). After careful analysis, the team felt that moving this authority to an executive agency would provide improved accountability and ensure a single point of authority for prescribed burns and wildfire suppression.

THE OPTIONS: Two options emerged as viable: a move to the Department of Public Safety or a move to the Department of Local Affairs. While the Department of Local Affairs has extensive experience in recovery, the team felt that moving the Division of Emergency Management to the Department of Public Safety would improve emergency operations while maintaining sensitivity to the needs and abilities of the local entities during recovery operations.

THE RECOMMENDATION: The review team recommends that the prescribed fire and wildfire management portions of the Colorado State Forest Service (CSFS) in CSU be moved into the Division of Fire Safety, within the Colorado Department of Public Safety (CDPS), and the entire Division of Emergency Management (DEM), within the Department of Local Affairs (DOLA), be moved into the CDPS.

THE BILL BASS REPORT ON THE PRESCRIBED FIRE: Immediately, following the Lower North Fork Fire, the Governor and the President of Colorado State University convened a separate independent team to review the prescribed fire and key factors that led to its escape. The review team also made recommendations with respect to the Colorado Emergency Resource Mobilization System and the Lower North Fork Prescribed Fire Review. Their findings are detailed in their final report Lower North Fork Prescribed Fire, Prescribed Fire Review (also known as the Bass Report). Among the conclusions of the Prescribed Fire Review Team are recommendations for minimizing future risk of prescribed fire. For each of those recommendations the relevant agencies have responded with implementation plans, detailed in this report.

MANDATE FROM GOVERNOR JOHN HICKENLOOPER AND COLORADO STATE UNIVERSITY (CSU) PRESIDENT TONY FRANK: GOAL OF REPORT

President Frank and I have directed our chiefs of staff (Roxane White for the State of Colorado, and Mark Gill for CSU) to convene officials of the Colorado State Forest Service, the Department of Natural Resources, the Department of Local Affairs, the Colorado Division of Emergency Management, the Department of Public Safety, the Division of Fire Safety and Colorado State University to thoroughly examine our emergency response capabilities. We have asked them to review the structure of the emergency coordination between the State Forest Service and the Division of Emergency Management—and the processes and communication systems—so that we can improve our response to fires and protect people and property. They have been asked to develop written recommendations to enhance and define accountability and responsibility for firefighting activities by the State of Colorado. They have until April 23 to develop specific, written recommendations based on the Prescribed Fire report and on their experiences with fire management. They will be reviewing activities such as but not limited to clarifying roles and responsibilities, creating one central point of accountability for fire management which is done with State personnel, identifying obstacles that may inhibit better coordination and communication, and resource allocation. We have instructed them to submit a report to me by April 23rd in order to ensure that recommendations for statutory changes or resource needs may be addressed this legislative session and for this fire season.

INCIDENT

On March 26, 2012, a wildfire fire occurred in the foothills of Jefferson County, Colorado. This fire, called the Lower North Fork fire, burned for a week and resulted in the tragic deaths of three people and the loss of 24 structures (21 primary homes, one secondary homes, one rental property and one community building) and the scorching of 4,140 acres in a populated area near Conifer, Colorado. At the peak of the fire, over 900 homes in the area were evacuated.

RESTRUCTURING OPTIONS FOR STATE AGENCIES

To attain a single point of responsibility and accountability for fire response within state government, CSU has asked the State of Colorado to immediately assume management of prescribed burns and wildfire management. Given the long history and working relationship between CSFS and CSU, the Review Team agreed that all other components of the CSFS would remain at CSU at this time. Separating and then structurally re-defining the way the state conducts prescribed burns and wildfire response was therefore the question before the team.

The Review Team agreed on two fundamental objectives to guide the discussion:

- Goal: improving wildfire response and the management of prescribed fire.
- Identifying one ultimate point of authority on wildfire and emergency management.

GENERAL FACTORS THE REVIEW TEAM CONSIDERED

In crafting a recommendation for new structure, the team carefully evaluated both the wildfire suppression and recovery needs. In addition, issues such as infrastructure support, ability to immediately assume responsibility, relationship with counties and local jurisdictions, and budget and staffing needs were essential elements to the final recommendation.

To help provide guidance and comparison, the team reviewed the practices of other states. Emergency management and state forest services are housed in a number of different agencies throughout the country. These include Agriculture, Military Affairs, Natural Resources, Public Safety, and agencies such as DOLA. In addition, some states have Departments of Homeland Security and Emergency Management.

Because CSU has not requested and the Review Team has not recommended a move that would include all functions of the CSFS, agencies such as Agriculture and Department of Natural Resources were not seen as viable options. Neither department currently manages prescribed fire or wildfire suppression or recovery. The Department of Military and Veterans Affairs was not considered to be a viable option due to their role is as a support agency and not a lead agency. See Appendix E for more information about options that were considered but not recommended.

After careful analysis, the Review Team felt that two options were viable: a move to the Department of Public Safety or a move to the Department of Local Affairs. A summary of the discussion points follows, in Table 1.

Table 1: Summary of Strengths for Required Relocation Tasks, by Agency

Required Task	Department of Public Safety (CDPS)	Department of Local Affairs (DOLA)
Fire Suppression	Crisis experience	Crisis experience limited
Fire Recovery	Delegates to local entities	Extensive recovery support experience
Emergency Operations	Extensive experience	Not a crisis agency
Dispatch	Equipment and resources in place	Experience limited
Date for Assuming Reponsibility	June 1, 2012	August 1, 2012
Current Fire Experience	Division of Fire Safety	Division of Emergency Management
Coordination with Homeland Security	In place	In place
Coordination with Law Enforcement	In place	Coordinated through DPS
Physical Space	Available	Tenant finish required, at a cost of $225,000
Financial Capacity to Absorb	In place	Would need to add one FTE, at a cost of $63,180
Human Resource Capacity to Absorb	In place	Would need to add one FTE, at a cost of $55,440
Communication Systems & Experience	In place, with substantial expertise managing	Limited experience
Local Government Relations	In place	Extensive relations in place
Ability to Manage Physcial Assets	Similar assets	No similar assets
Experience with Federal Contracts	Extensive experience	Extensive experience
Requirements for Additional FTE	None	Two additional FTE
Experience with Mergers	Port of Entry, current	Division of Housing, 2011
Fiscal Impact	Budget neutral	Annual cost of $118,620 per year and one-time cost of $225,000

RECOMMENDATION

Because wildland fire activities involve a crisis response, the team recommends that serious consideration be given to moving wildland fire activities, including prescribed fire, operations to the Department of Public Safety. The Department of Public Safety has extensive experience responding in times of life threatening crises. While the Department of Local Affairs has extensive experience in recovery, the review team felt that moving the Division of Emergency Management and its personnel to the Department of Public Safety will ensure that recovery efforts are still handled with a great deal of sensitivity to the needs and abilities of the local entities.

The review team recommends that the prescribed fire and wildfire management portions of the Colorado State Forest Service in Colorado State University be moved into the Division of Fire Safety within the Colorado Department of Public Safety and the entire Division of Emergency Management within the Department of Local Affairs be moved into the Colorado Department of Public Safety, respectively called the Division of Fire Prevention and Control and the Division Homeland Security and Emergency Management to reflect their consolidated roles

CURRENT STRUCTURE: OVERVIEW OF AGENCIES AND ROLE IN FIRE MANAGEMENT

Colorado State Forest Service

Overview: In 1911, the Colorado General Assembly established the Office of the State Forester at what was then the Colorado State College of Agriculture and Mechanic Arts, now known as Colorado State University (CSU). This office continued under the College of Forestry until 1933. Because of funding and other commitments, this was deemed an unsatisfactory arrangement, so the General Assembly consolidated the State Forester's Office with the State Land Board. This arrangement continued for four years but it, too, was deemed unsatisfactory, primarily because of the State Land Board's interests. In 1937, State Forestry functions were transferred back to CSU, this time under the auspices of the Extension Service. By 1945, the General Assembly again decided to transfer the State Forestry function back to the State Land Board, where it remained for ten years.

In 1955, the Society of American Foresters and several legislators took steps to establish a stronger, more cohesive State Forestry Program and initiated new legislation that would transfer the forestry program from the State Land Board back to CSU. Realizing the importance of developing a strong forestry program, the Board of Agriculture, CSU's governing body, designated the Colorado State Forest Service as a branch of the university. In 1965, additional legislation was passed that officially named the forestry function of the Board of Agriculture as the Colorado State Forest Service.

Since that time, the CSFS has served under the direction of the Vice Provost for Agriculture and University Outreach and the Dean of the Warner College of Natural Resources, where it remains today.

In addition to its service and outreach responsibilities within CSU, the CSFS also provides service to the Division of Forestry in the Colorado Department of Natural Resources. The division was created through legislation passed in 1999. The purpose of the division is to strengthen natural resource policy formulation addressing all 25 million acres of forestland in Colorado. The CSFS was tasked with providing forestry expertise to the Division of Forestry through a 2001 Memorandum of Understanding between the Colorado Department of Natural Resources and Colorado State University.

Wildfire Roles & Responsibilities: The CSFS is identified as the lead agency for wildfire suppression in the Colorado Revised Statutes §29-22.5-103 (3)(a) and in the State of Colorado's Emergency Operations Plan, with primary responsibility for Emergency Support Function 4a. Through a series of cooperative agreements with counties (called Emergency Fire Fund or EFF agreements), the CSFS is positioned to assume responsibility of a wildfire only when it exceeds the capacity of a local sheriff and when the sheriff requests that CSFS take over. In most cases, the CSFS immediately delegates authority to an interagency incident management team to fight the fire; therefore, the CSFS rarely has command and control over a wildfire for any significant period of time.

The CSFS manages wildfire through a range of efforts and funding sources. The Wildfire Preparedness Fund, which is administered by DOLA and comes from Federal Mineral Lease dollars, supports equipment and staff. Preparedness efforts include the development of mitigation plans and operating guides for wildfires. A fire equipment shop is maintained at the Foothills Campus and is self-funded. The CSFS also uses prescribed fire as part of its approach in managing forests, and personnel in the field are likely to be trained and certified to work on both prescribed fires and wildfire suppression efforts.

Colorado State Forest Service has a total operating budget of $14,319,117 and 146.25 FTE. The funding for prescribed fire and wildfire includes $3,641,497 in state funds and $814,494 in earnings from fire shop operations. Earnings from application of the indirect rate (facilities and administration) to fire billing is currently budgeted in Fiscal Year 2012 at $1,191,000. This amount varies from year to year based on fire activity.

Division of Emergency Management

Overview: Located within the Department of Local Affairs, the Division of Emergency Management (DEM) has the mission of implementing the five core emergency management functions of Preparedness, Prevention, Mitigation, Response, and Recovery. The DEM addresses wildfire as part of its all-hazards responsibilities. Responsible for implementing the State Emergency Operations Plan (SEOP) and operating the State Emergency Operations Center (SEOC), DEM's authorities are found in Colorado Revised Statutes 24-32-2101 through 24-32-2607. One of the DEM's responsibilities is resource mobilization during a large-scale incident beyond the capacity of a county except for wildfires with resource ordering through the national interagency system. The DEM has 30.1 full time employees (FTE) funded through a combination of General Fund, re-appropriated and federal funds. Six core functions form the structure for the DEM: Preparedness & Prevention, Chemical Stockpile Emergency Preparedness Program, Response, Mitigation, Recovery, and Grant Administration. To implement these six core functions, the DEM expends $3,854,460. Total revenue for the DEM is approximately $16.55 million, with the difference being passed to local jurisdictions for their emergency management programs.

Wildfire Roles & Responsibilities: The DEM does not have any direct wildfire suppression capability or responsibility. However, when a fire exceeds the inter-agency system's capacity, the DEM can authorize resource mobilization as part of its "response" role. The response function includes 3.95 FTE and an annual expenditure of $504,810. Wildfire is the number one reason for activation of the SEOC. Communication support in the form of radios and assistance with communication planning is also available as needed. The DEM takes a leadership role in providing situational updates for partners and the Governor's office and has the SEOP responsibility of coordinating the assistance provided by all state agencies and partners in response to a wildfire.

Department of Military and Veterans Affairs (DMVA)

Overview: As the first military responders in the state, the DMVA's National Guard is available in response to an Executive Order declaring a state emergency or for immediate response when requested by local authority at the site of the emergency. National Guard

forces and equipment are available for any emergency. Access to the National Guard depends upon the type of emergency and level of government involvement. Primarily funded by the federal government, these resources are available for state use in a support role. The National Guard is never in command or control of state emergencies.

Wildfire Roles & Responsibilities: The DMVA participates in wildfire suppression efforts only upon request, and those requests come only when all other resources have been overwhelmed.

Department of Public Safety: Office of Preparedness, Security and Fire Safety (Division of Homeland Security), Division of Fire Safety

Overview: The mission of the Office of Preparedness, Security and Fire Safety (also known as the Division of Homeland Security) is to ensure the safety and security of Colorado through unity of effort with federal, local, state and tribal partners in order to prevent, protect against, respond to and recover from all-hazards. The Division has 47 FTE and a budget of $15.35 million, excluding resources available through state, federal and local partners.

The Division of Fire Safety works to prevent fire threats through code enforcement and by strengthening emergency response capabilities to those incidents that cannot be prevented. The agency is responsible for all fires except wildland fire.

Wildfire Roles & Responsibilities: The agency does not have any direct wildfire suppression capability or responsibility. It provides voluntary training and certification of firefighters and is responsible for maintaining the state's emergency resource mobilization plan and resource database, which are used for mobilizing resources to all large-scale incidents. The Division also provides training and certification of the state's all-hazards incident management teams.

ONGOING CHALLENGES AND OPPORTUNITIES: COLORADO'S EMERGENCY RESOURCE MOBILIZATION SYSTEM

Longstanding concerns about resource mobilization have previously prompted recommendations that include restructuring and moving wildfire functions from CSU, updating technology, streamlining communications, tightening dispatch systems, and restructuring state agencies that deal with emergency management. The recommended reorganization provides an opportunity to address some of these ongoing challenges, summarized briefly here.

Technology and resource mobilization systems in Colorado need immediate attention. In response to concerns about recent wildfire responses in the state, the Colorado State Fire Chiefs Association (CSFCA) tasked a multi-disciplinary working group to develop a position paper to be presented to the Governor with recommendations regarding what could be done to fix the resource mobilization system in Colorado. Resource ordering and resource availability during wildfire incidents were identified as pervasive and urgent problems.

The CSFCA Working Group recommends implementing a single statewide plan for the mobilization and deployment of resources for all-hazard emergency response. This all-hazard plan should be supported by a single database for the inventory and tracking of available and mobilized resources, and should interface with the National Interagency Dispatch System. The State also needs to evaluate how it uses the Interagency Dispatch System, particularly the Zone Dispatch Centers. In the short term, fixing Connect Colorado (the State's resource inventory database), and then linking that to WebEOC (the State's Emergency Management system) and developing a means to interface with the National Interagency Dispatch System at the Geographic Area Level (Rocky Mountain Area Coordination Center) will enhance resource mobilization. The combination of these efforts is likely to take approximately one year, and could be done in concert with structural reorganization.

Interoperable communications between local and state emergency responders is an ongoing problem as local government transitions to Digital Trunked Radio (DTR) systems and as the State builds out the infrastructure. Communication plans should be incorporated into all Annual Operating Plans and all responders should have copies of the communications plan. Also, the Consolidated Communications Systems Authority, which will be created by HB 12-1224, should include interoperable communications for wildland fire in its plans for addressing DTR infrastructure needs.

LOWER NORTH FORK FIRE: RESPONSE TO RECOMMENDATIONS IN PRESCRIBED FIRE REVIEW, APRIL 13, 2012, WILLIAM BASS

After the Lower North Fork Fire was contained, the Governor and the President of Colorado State University requested that an independent team review the prescribed fire conducted by the Colorado State Forest Service that led to the wildfire. This team, led by William Bass of the US Forest Service, examined the factors that led to its escape. The team interviewed personnel associated with the implementation of the prescribed fire and reviewed and examined the written record or events and actions leading up to the escape. Their findings are detailed in their final report titled "Lower North Fork Prescribed Fire, Prescribed Fire Review" (April 13, 2012) (hereinafter referred to as the "Bass Report"). Among its conclusions are recommendations for minimizing future risk of prescribed fire.

In addition, on March 28, 2012, Governor Hickenlooper issued an Executive Order (D 2012-006) that suspended all prescribed fire conducted by state agencies or on state property until a thorough review of prescribed fire protocols and procedures is conducted. That review is underway (see section STATUS AND DESCRIPTION OF ADDITIONAL REVIEWS below). As per this suspension, the CSFS will review its prescribed fire protocols and procedures to address the recommendations in the Bass Report and any further recommendations produced in the larger prescribed fire protocol review currently underway.

As a start to that review and revision of procedures, below are the specific recommendations from the Bass Report and the agencies' responses to how these recommendations are and will be addressed. The Review Team concurs with all recommendations from the report.

Note: Although these responses include dates for completion of the action to address the recommendations, it is important to emphasize that no prescribed fire will be conducted by state agencies or on state property until all reviews are complete, all reforms are adopted and incorporated, and the Governor's suspension is lifted.

Recommendation #1:

The WIMS--RAWS--NFDRS program needs to be improved to insure safe and more effective fire operations across jurisdictions throughout the year. Inconsistent procedures must be resolved in the Rocky Mountain Area (RMA) between fire management agencies, cooperators and the supporting agencies involved with weather data collection, National Fire Danger Rating System (NFDRS), and information dissemination. The interagency Rocky Mountain Coordinating Group (RMCG) includes the Colorado State Forest Service, whose personnel rely on accurate and timely weather observations, NFDRS outputs, fire weather forecasts (NWS) and long term large fire risk assessments (Predictive Services). NFDRS output from some weather stations were erroneously moist during this period. Maintenance of weather stations is variable by agencies and this can degrade data outputs. Red flag watch and warning criteria are interpreted differently by the Predictive Services specialists and the National Weather Service which directly led to the issuance of a SAFENET for events that occurred during the time period under review.

The National Fire Danger Rating System (NFDRS) is a critical component of public safety. The system is used to develop fire danger predictions and manage elements of risks associated wildland fires. The system supports strategic decision making regarding prescribed fire, pre-event resource placement, staffing levels, appropriate suppression response, and likely evacuation areas. The system provides a variety of indices that portray current and potential fire danger conditions.

The network of Remote Automatic Weather Stations (RAWS) supporting the NFDRS was developed in a piecemeal fashion with different ownership and inconsistent maintenance standards among federal agencies. These inconsistencies compromise system reliability. Realizing the importance of a robust and reliable network of RAWS, the Review Team received a commitment from U.S. Department of Agriculture and U.S. Department of the Interior officials at the Rocky Mountain Geographic Area Coordination Center to conduct an assessment of the stations and systems that support the NFDRS within the Rocky Mountain Geographic Area. The assessment will include the following:

- A review of station maintenance and accuracy records and aspects of hardware-software integration in order to identify problems, that when resolved, will improve the reliability and robustness of the station network.
- A review of NFDRS concerns within the Rocky Mountain Geographic Area from 2002 to present in order to identify trends, reoccurring issues and progress in making improvements to the NFDRS.
- Prioritization of identified issues and concerns that warrant consideration and action by the Rocky Mountain Area Coordinating Group member agencies and personnel.
- Recommendations for solutions to issues identified will be presented, in written form, to Rocky Mountain Area Coordinating Group executives and the Co-Chairs of this review team by June 15, 2012.

While information from the NFDRS is critical in decisions concerning prescribed fire, field verification of the data is also critical. Field verification of weather conditions allows improved analysis of predicted fire behavior, fire weather forecasting, and smoke management. Therefore, the state will implement the use of portable RAWS at the treatment area prior to planned ignitions. Portable RAWS will help prescribed fire teams better determine and predict small-scale weather features in or near the treatment area.

Recommendation #2:

Colorado State Forest Service prescribed burn plans have a sound staffing plan based upon measures of fire danger and cumulative drought. However, consider replacing the Keetch-Byram Drought Index (KBDI) with indices such as NFDRS indices of Energy Release Component (ERC) and/or 1000 hour timelag fuel moisture. These two are in common use by the interagency fire community. Ensure all prescribed fire plans include up-to-date information prior to implementation.

Fire Management Officers and Burn Plan Preparers will update existing prescribed fire plans, and all future plans and staffing will utilize NFDRS indices, such as Energy Release

Component (ERC) and 1000-hour fuel moisture content, as the primary drought indicators. Effective April 19, 2012, the format of prescribed fire plans has been changed to reflect the use of ERC and 1000-hour fuel moisture indices; this work will be completed by May 14, 2012. By October 5, 2012, all existing prescribed fire plans will be reviewed individually and will be updated to reflect the use of ERC and 1000-hour fuel moisture. All new prescribed fire plans will use the revised format that reflects ERC and 1000-hour fuel moisture indices.

Recommendation #3:

CSFS prescribed fire operations need to be strengthened with specific attention to mop-up standards tied to fuel consumption and residual heat remaining in the burn unit. Consider adding an element of long-term patrol and monitoring to the existing table of organization. Patrol and monitoring activities should be maintained on prescribed fires in Wildland-Urban Interface (WUI) areas at a level commensurate with the risks until heat sources are minimal or non-existent or the fire is declared out.

Patrol and mop-up procedures will be analyzed for each burn plan and updated as follows.

- The required number of resources will be identified by kind and type for extended mop-up until a specific percentage of mop-up (commensurate with burn complexity and fuel conditions) has occurred around the unit. Plans that have identified heavier fuels will be analyzed for commensurate mop-up needs. Resources will remain committed until the designated percentage of mop-up has occurred, based on fuel types.
- Mop-up standards for each prescribed fire plan will dictate when the unit can be put into patrol status. Frequency, timing, and duration of patrols will be specified until the fire is declared out. Plans will be identified in the wildland-urban interface and patrol and monitoring activities will be commensurate with risks including Fire Weather Watch, Red Flag Warning, or High Wind Warning/Watches, until heat sources are minimal or nonexistent, or the fire is declared out.
- Key indicators will be included in the prescribed fire plan that identify the frequency, timing, and duration of patrols until the fire is declared out. These indicators will be commensurate with risk, especially in the wildland-urban interface. Fire Weather Watch, Red Flag Warning, or High Wind Warning/Watches are minimum key indicators. Additionally, the following will be included in the plan: resources ordered, timing for order, and duration of commitment.
- Heat imaging technology will be one of the tools used to identify heat sources in the interior of the unit.
- Spot weather forecasts will be obtained prior to use of prescribed fire on any unit. Updated spot weather forecasts will be requested for the following days until minimum mop-up standards have been met or the fire is declared out. When Fire Weather Watch, Red Flag Warning, or High Wind Warnings/Watches are issued, updated spot weather forecasts will be obtained.
- Portable weather stations will be used and will adhere to specific maintenance and calibration schedules, based on manufacturer recommendations.

- Commencing April 17, 2012, the format of prescribed fire plans will be changed to reflect the strengthening of prescribed fire operations and will be completed by May, 17, 2012. By October 5, 2012, all existing prescribed fire plans will be reviewed individually and will be updated to reflect the strengthening of prescribed fire operations. All new burn plans will use the revised format that reflects the strengthening of prescribed fire operations.

Recommendation #4:

Refine the Prescribed Burn Plan with its Technical Review process. An outside reviewer for more complex burns, particularly those within multiple jurisdictions, may be helpful to CSFS in this next phase of organizational recovery.

The review process for prescribed fire plans will be amended to include the following:

- In addition to the CSFS internal review process, plans within multiple jurisdictions, that are in the wildland-urban interface, or are complex will be reviewed by an outside technical expert.
- Commencing April 17, 2012, plans requiring additional reviews will be identified and outside technical reviews will be initiated. All plans will be internally reviewed no later than October 5, 2012; all plans requiring external review will be completed by December 31, 2012.

Recommendation #5:

Segregate mastication fuels from un-masticated and/or natural fuels by sub-dividing or redesigning treatment units to address fuel moisture and potential fire behavior variation.

Existing plans that have both masticated and natural fuel components will be identified and the benefits of segregating the fuel types will be analyzed; all treatment options will be considered to meet plan objectives while reducing risk.

Commencing April 17, 2012, foresters will identify plans that have masticated and natural fuel components. By October 5, 2012, all existing prescribed fire plans that have masticated and natural fuel components will be reviewed individually and updated to reflect the segregation of those fuels with consideration of other treatment options to meet plan objectives. All new prescribed fire plans that have masticated and natural fuel components will use the revised format that reflects the segregation of fuels with consideration of other treatment options to meet plan objectives.

Recommendation #6:

Update medical plan to list new address of St. Anthony's Hospital and its helipad coordinates.

All future prescribed fire plans will have current and updated contact information for officially designated Burn Trauma Centers, and all hospitals and medical facilities listed in

the prescribed fire plan. All medical plans will be reviewed prior to any ignition to confirm accuracy.

STATUS AND DESCRIPTION OF ADDITIONAL REVIEWS

The Prescribed Fire Protocol Review

Following the Governor's Executive Order (D 12-006, March 28, 2012) suspending prescribed fire application by state agencies or on state property, a review of the procedures and protocols used by the Colorado State Forest Service for conducting prescribed fire has been initiated by a review team. The review team will especially focus on the lessons learned and recommendations of the Bass Report on the prescribed fire that lead to the Lower North Fork Wildfire, and the forest conditions and special challenges applying prescribed fire within high threat red zone near communities and along the Front Range. The Governor's prescribed fire suspension will remain in place until these recommendations are adopted and incorporated, until the Prescribed Fire Protocol Review Team has completed its work and its recommendations are also adopted and incorporated into the protocols for prescribed burns, and until the Governor has lifted his suspension of prescribed fire.

The Lower North Fork Wildfire Review

The Governor, along with Senators Udall and Bennet and Representative Coffman, in an April 16, 2012 letter to US Forest Service Chief Tom Tidwell (see APPENDIX J), requested that the US Forest Service Research branch conduct a thorough review of the Lower North Fork wildfire. Similar reviews were conducted of the Hayman Fire (Hayman Fire Case Study, September 2003) and the Fourmile Canyon Fire (Fourmile Canyon Fire Preliminary Findings, October 2011). As with those previous reviews, this review will look at the atmospheric, geographic, and vegetative conditions that affected the behavior of the fire. The review will also look at the effect of any previous fuels treatment within the burn area, defensible space measures around homes, and the suppression activities conducted and resources available in fighting this fire. This review will also pay special attention to the social aspects of this fire, such as evacuation procedures, human response to the fire, economic impacts, and other similar factors. For this reason, this review will involve the affected community through public input and community meetings. This review will be initiated within the next month, and will take many months to complete.

APPENDICES

A. **Members of Review Team**
B. **Summary of Roles in Wildland Fire Management**
C. **Organization Chart for Preferred Recommendation**
D. **Organization Chart for Alternative Recommendation**
E. **Options Considered but Not Recommended**
F. **Current Colorado State Forest Service Organization Chart and Total FTEs**
G. **Current Colorado Department of Public Safety Organization Chart and Total FTEs**
H. **Current Department of Local Affairs Organization Chart and Total FTEs**
I. **Documents Consulted**
J. **Congressional Letter Requesting Review of Wildland Fire**

APPENDIX A: MEMBERS OF REVIEW TEAM

Roxane White, Chief of Staff, Governor John Hickenlooper **(CO-CHAIR)**

Mark Gill, Chief of Staff, President Tony Frank, Colorado State University **(CO-CHAIR)**

Joyce Berry
Dean, Warner College of Natural Resources, Colorado State University

Reeves Brown
Executive Director, Colorado Department of Local Affairs

Peter Byrne
Director Joint Staff, Colorado National Guard

Paul Cooke
Executive Director, Colorado State Fire Chiefs Association

Lisa Dale
Colorado Department of Natural Resources

James Davis
Executive Director, Colorado Department of Public Safety

Joe Duda
Deputy State Forester, Colorado State Forest Service

James Eklund
Senior Deputy Legal Counsel, Governor's Office

Dave Hard
Director, Colorado Division of Emergency Management

Mickey Hunt
Deputy Director, Colorado Department of Military and Veterans Affairs

Mike King
Executive Director, Colorado Department of Natural Resources

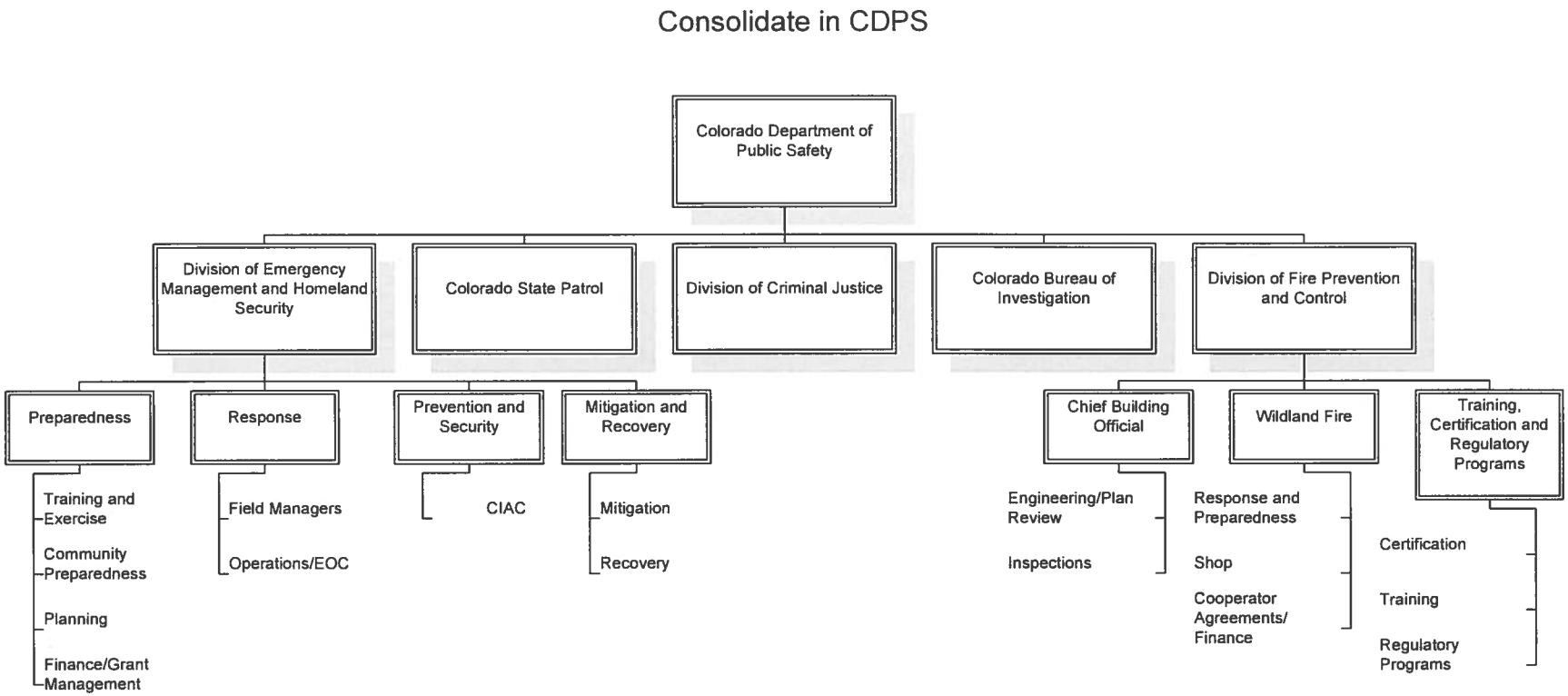
Kevin Klein
Director, Colorado Division of Homeland Security

Doug Young
Policy Director, Governor's Office

APPENDIX B: SUMMARY OF CURRENT ROLES IN WILDLAND FIRE MANAGEMENT

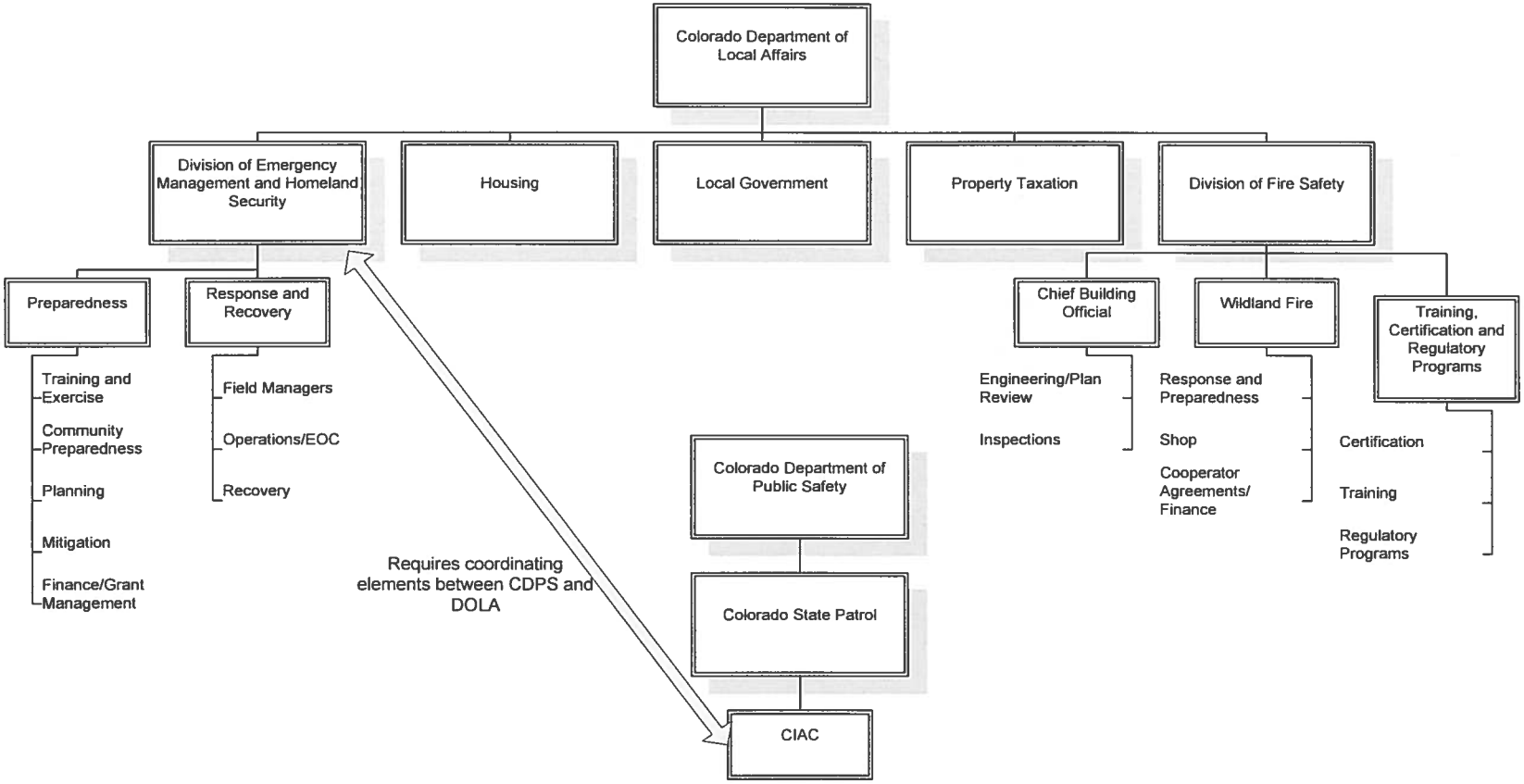
Issue	CODHS	DEM	CSFS
Resource Mobilization	Fire Safety is responsible for developing and implementing the plan and resource database	Has the authority to implement the system during a large-scale incident, but does not yet own the plan or database.	Uses a different system until it is exhausted.
Emergency Support Functions	Provides DEM with Fire (other than wildland fire), Urban Search and Rescue, Logistics, and Law Enforcement Emergency Support Functions.	Implements the State Emergency Operations plan with 15 Emergency Support Functions	Provides wildland fire Emergency Support Function
Training and Exercise	Coordinates homeland security related training and exercise, provides incident management training, provides firefighter training including wildland fire training.	Provides training and exercise for emergency management and incident management	Provides wildland fire training
Planning	State homeland security strategy and State Threat and Hazard Identification and Risk Assessment, facilitates regional homeland security strategies.	State Emergency Operations Plan, mitigation plans, recovery plans, State Threat and Hazard Identification and Risk Assessment, facilitates local emergency operating plans.	Facilitates Annual Operating Plans, develops mitigation plans, develops and implements operating guides for wildland fires.
Fire Departments	Fire Safety is primary contact to the state for local fire departments.	Facilitates operations and relationships among fire departments and their respective emergency managers.	Develops cooperator agreements with local fire departments.
Emergency Response	Fire Safety provides incident management support to large-scale incidents, typically wildland fires, on an as-needed basis.	Field personnel provide incident management support on a regular basis for a large variety of incidents.	Field personnel provide incident management for wildland fires.
Incident reporting	Provides CSFS with data on wildland fires for risk assessment and related federal funding.		

APPENDIX C: ORGANIZATION CHART FOR PREFERRED RECOMMENDATION



APPENDIX D: ORGANIZATION CHART FOR ALTERNATIVE RECOMMENDATION

Consolidate in Local Affairs



APPENDIX E: OPTIONS CONSIDERED BUT NOT RECOMMENDED

- **Move into Colorado Department of Military and Veterans Affairs**

The Department of Military and Veterans Affairs consists of the Division of the National Guard, the Division of Veterans' Affairs, and Division of Civil Air Patrol and is headed by the Adjutant General of Colorado. The Division of the National Guard is further divided into the Joint Staff (responsible for Defense Support of Civilian Authorities), the Colorado Army National Guard and Colorado Air National Guard. Placement of wildland fire management under DMVA would blur the lines of command with military response and civilian response. Primary funding for DMVA is provided by the federal government to support its mission of national defense. Lines of authorizations, authorities and appropriations would be blurred if DMVA took the lead in wildland fire management.

- **Move into Department of Natural Resources**

The DNR does not currently do emergency response. In the event of a blow-out on an oil and gas well, response protocols exist that shift primary responsibility to external chains of command. Similarly, in the event of a mine collapse, the Division of Reclamation and Mining Safety does not take the lead. Moving wildfire suppression into the Department would not achieve the goal of solidifying a single point of accountability.

- **Move into Department of Agriculture**

The Department of Agriculture also does not have responsibility for emergency response. With eight divisions focused on inspections, consumer services, markets, and other forms of agricultural support, the Department lacks both the infrastructure and the capacity for wildfire management.

- **Create a new stand-alone agency**

Constitutional limits on the number of state departments, uncertainty about the efficiency of a new department, and the likelihood that a new department would expand government eliminated this option from further consideration. Furthermore, the estimated costs associated with creating a new department are prohibitive.

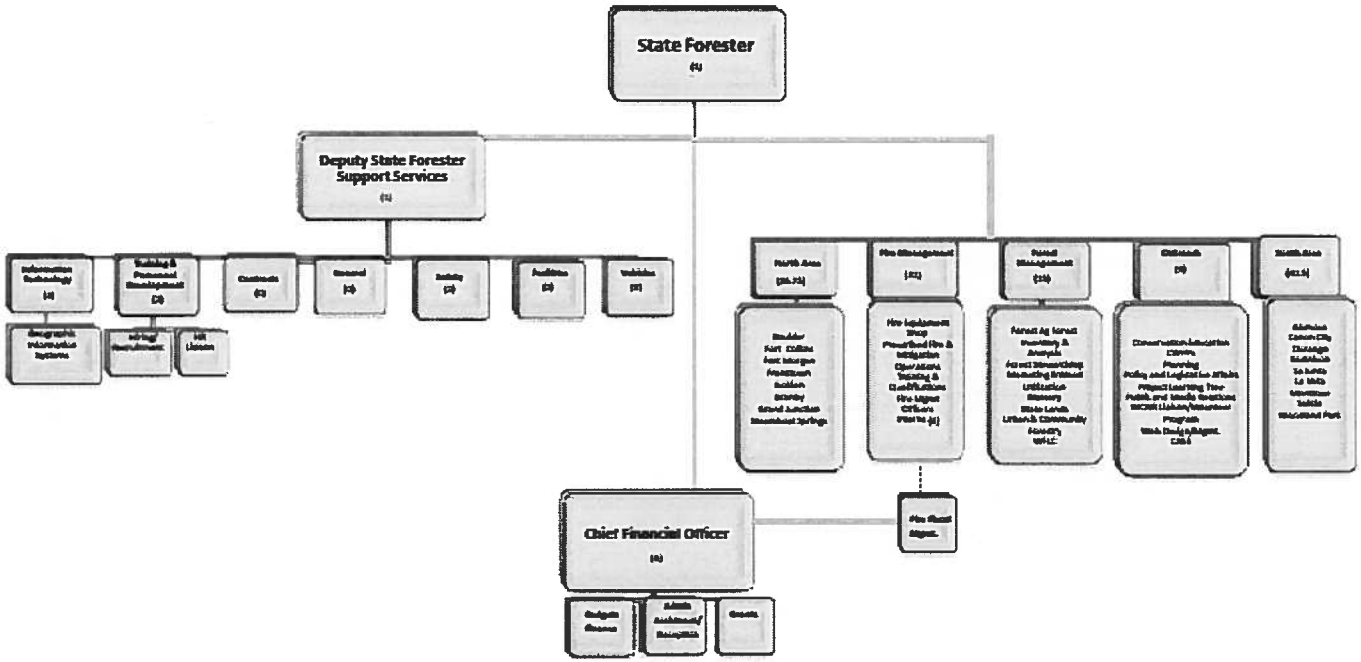
- **Divide up DEM / Office of Preparedness in CDPS**

One option considered was dividing the functions of the DEM in DOLA and those of the Office of Preparedness in CDPS to create new units. All response-related units could be housed within CDPS and all local support and assistance could be housed with DOLA. Drawbacks identified included creating new lines of accountability, likely adding new FTE, duplicating preparedness efforts in both departments, breaking apart functioning working relationships, requiring a switch between state agencies during the transition from response to recovery, and segmenting emergency response into two different state agencies. Ultimately the team agreed that the six functions of DEM work best in concert with one another, and separating them was not preferred.

APPENDIX F: CURRENT COLORADO STATE FOREST SERVICE ORGANIZATION CHART AND TOTAL FTE

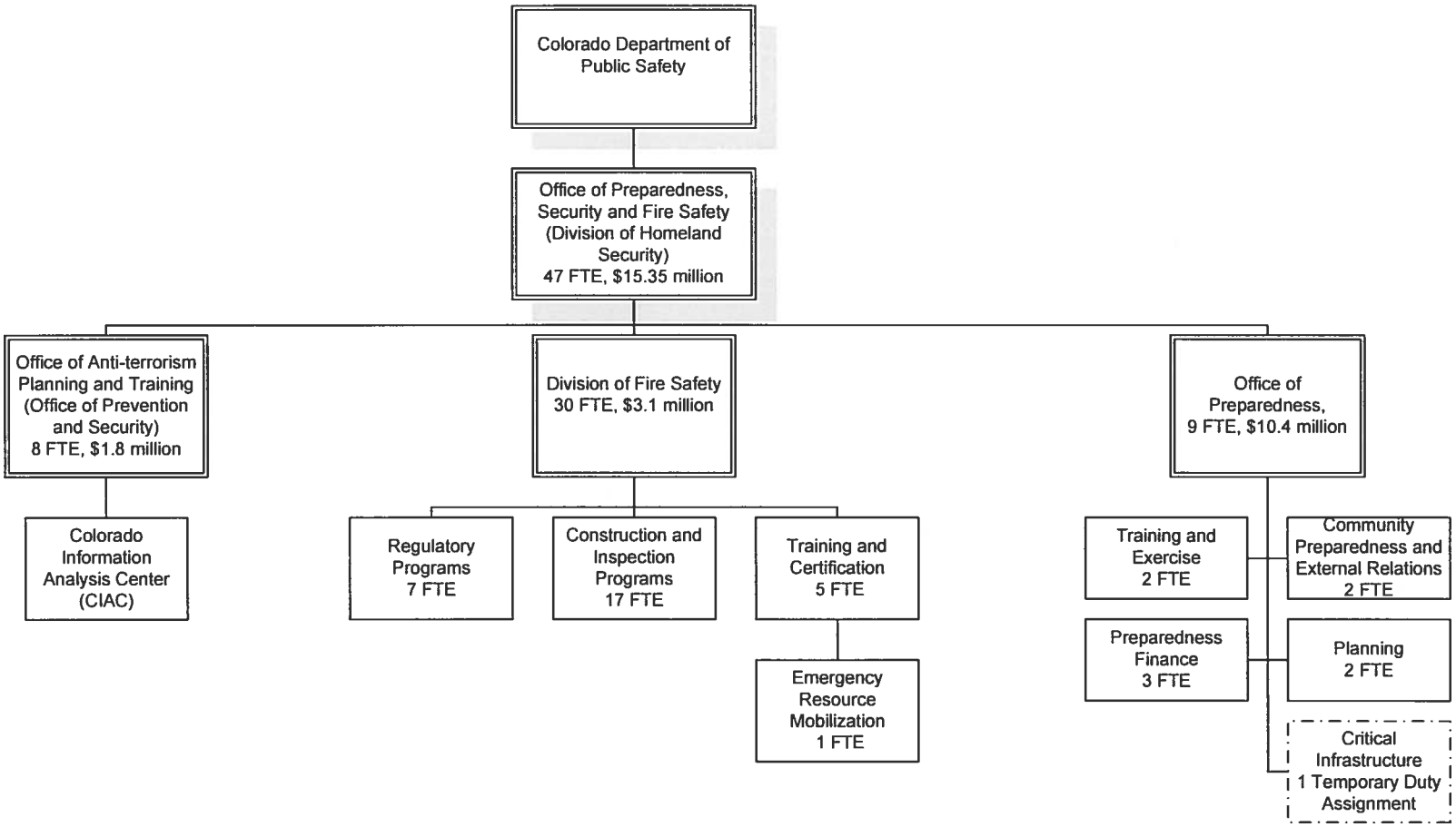
Colorado State Forest Service
Agency Organizational Chart
April 2012

Total Salaried FTE = (146.25)

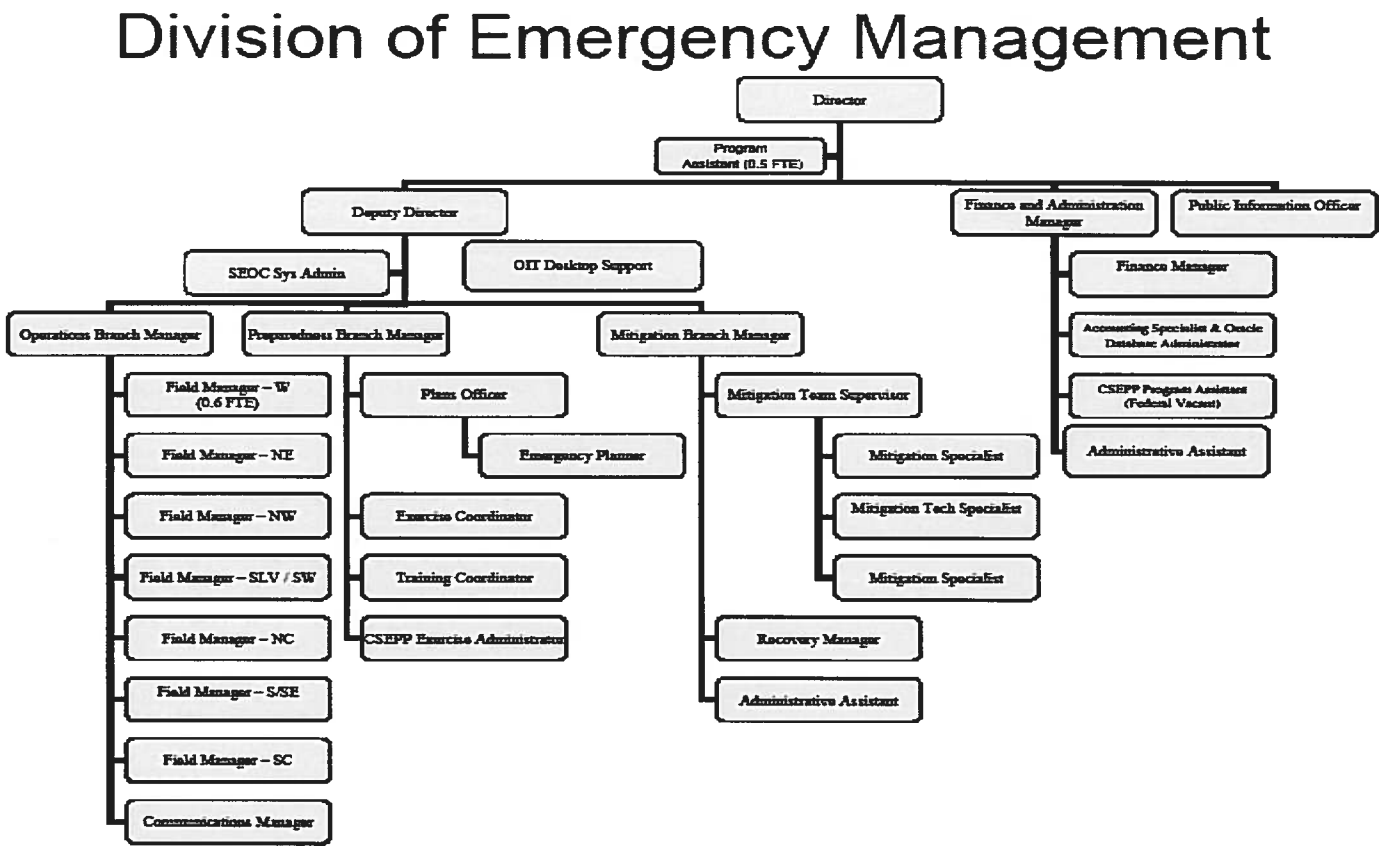


APPENDIX G: CURRENT COLORADO DEPARTMENT OF PUBLIC SAFETY ORGANIZATION CHART AND TOTAL FTE

Current Structure in CDPS



APPENDIX H: CURRENT DEPARTMENT OF LOCAL AFFAIRS ORGANIZATION CHART AND TOTAL FTE



DOLA/DEM Core Function Chart with FTE count and Cost per Function

- Plan- 0.95 FTE Maintain and Improve State Emergency Operations Plan; EMPG Grants to Local Govts for plans
- Organize and Equip - 0.4 FTE- maintain and improve SEOC communications and IT systems; EMPG Grants to Local Govts.
- Train - 0.45 FTE -EMPG Eligible Courses for State & Local Govt Officials;
- Exercise -0.95 FTE-Create and Execute State Exercises of the SEOC for CO specific hazards
- Evaluate/Improve - Assist Local Govts through EMPG grants and technical assistance with improving overall EM programs. 6.3 FTE calculated by labor hours of all Field Managers, EMPG Program Mgr. and Finance Chief
- Colorado Emergency Planning Commission -0.4 FTE
- Total 9.45 FTE, Personnel Cost including indirect (13%) = $960,320
- All Operating Costs = $317,420

Preparedness & Prevention:
9.45 FTE
Total Cost = $1,277,940

- State Level Preparedness (including all noted in the Preparedness Function)
- Grants and Preparedness Assistance (including all noted in the Preparedness Function) to the CSEPP County (Pueblo)
- Total 4.6 FTE
- Personnel Cost including indirect (17.9%) = $475,880 (diff indirect rate due to program rules)
- All Operating Costs = $163,840

Chemical Stockpile Emergency Preparedness Program (CSEPP):
4.6 FTE
Total Cost = $639,720

- Field Managers (FM) Assist Local Govts. with each activation 1.4 total FTE by labor hrs. spent by all FMs.
- Maintain Situational Awareness 0.7 FTE
- Coordinate State Level Response to Local Requests for Assistance
- Maintain SEOC and Operate during Disasters and Emergencies - 0.75 FTE hrs. spent during activations
- Most P&P and all CSEPP staff shift to Response during disasters
- Executive Order Management 0.05 FTE
- Soon to include Resource Mobilization (adds 1 FTE)
- Organize and Equip 1.05 FTE- maintain and improve SEOC communications and IT systems
- Total 3.95 FTE
- Personnel Cost including indirect (13%) = $371,700
- All Operating Costs= $133,110

Response:
3.95 FTE
Total Cost = $504,810

Colorado's Comprehensive Emergency Management Program

All Six Functions are Interconnected: Grand Total FTE 30.1, and $3,854,460

- State Hazard Mitigation Plan
- Chair the State Hazard Mitigation Team
- Oversee post-disaster mitigation operations and coordinate mitigation resources
- Conduct mitigation trainings, workshops, and exercises
- EMPG Grants to Local Governments for Plans & Projects
- Pre-Disaster Grants and Assistance to Local Governments for Plans & Projects
- Post-Disaster (Recovery) Grants and Assistance to Local Governments for Projects
- Total 4.55 FTE
- Personnel Cost including indirect (13%) = $393,910
- All Operating Costs= $153,590

Mitigation:
4.55 FTE
Total Cost =$547,500

- State Recovery Plan
- State Housing Task Force
- Coordinate State Recovery Assistance and all Recovery Support Functions
- Assist with Local Recovery from Disasters and Emergencies
- 0.95 total FTE during non-disaster periods
- All Grant Admin, Mitigation, and most P&P FTE shift to Recovery after a disaster
- Personnel Cost including indirect (13%) = $98,810
- All Operating Costs = $30,720

Recovery:
0.95 FTE
Total Cost = $129,530

- Issue and maintain all awards to Local Govts. and any other Grant recipients – Awards include:
  - EMPG - 110 Total Awards divided between 75 Annual Program Awards, 15 - Mitigation, and 20 - Projects; 7 Haz-Mat Prep Grants; 20 Pre-Disaster Mitigation; 10 - Response, usually CSFS and/or Nat. Guard; 3 or 4 Recovery with no Presidential Disaster; have had up to 350 awards for a Presidential Disaster Declaration
- Track all grants, budgets and performance periods
- Fiscal and Performance Monitoring and review of all Grants made by the DEM
- Meet all grant reporting requirements
- All Field Managers, Program staff and Managers, all Finance staff, and all Admin. staff participate in these processes – Total 6.6 FTE by total labor hours of all involved personnel
- Personnel Cost = $529,690
- All Operating Costs = $225,270

Grant Administration:
6.6 FTE
Total Cost = $754,960

April 16, 2012 - DEM

APPENDIX I: DOCUMENTS CONSULTED

Agreement for Cooperative Wildfire Protection in County, template agreement dated January 2003. Available from the Colorado State Forest Service.

Colorado All-Hazard Incident Management Team Training and Certification Program Advisory Committee Charter and Bylaws, 2009. Available from the Colorado Division of Emergency Management

Colorado State Forest Service Summary Report, February 1, 2012. Available from the Colorado State Forest Service

Colorado Statewide Cooperative Wildland Fire Management and Stafford Act Response Agreement, final June 1, 2011. Available from the Colorado State Forest Service.

FEMA – State Agreement – 2012, Fire Management Assistance Grant Program, State of Colorado, March 5, 2012. Available from the Colorado State Forest Service.

Great Plains Interstate Forest Fire Compact. See: http://csfs.colostate.edu/pdfs/2011-Great-Plains-Forest-Fire-Compact-AOP.pdf

Intergovernmental Agreement for Participation in the Colorado Emergency Fire Fund (EFF), template revised January 2012. Available from the Colorado State Forest Service.

Issue Brief: Colorado's Dysfunctional Emergency Resource Mobilization System Draft, April 4, 2012. Available from the Colorado State Fire Chiefs Association

Memorandum to Rich Homann – CSFS, Wildfire Partners Committee, and Emergency Fire Fund Committee, March 2, 2012. Available from the Colorado Division of Emergency Management

State of Colorado Emergency Operations Plan – 2010 Basic Plan Executive Summary. Available at: http://www.colorado.gov/cs/Satellite?c=Page&childpagename=DOLA-Main%2FCBONLayout&cid=1251595696267&pagename=CBONWrapper

State of Colorado Emergency Operations Plan – Wildfire Suppression Emergency Support Function #4a, November 2010. Available at: http://www.colorado.gov/cs/Satellite?c=Page&childpagename=DOLA-Main%2FCBONLayout&cid=1251595696267&pagename=CBONWrapper

State of Colorado Emergency Resource Mobilization Plan, April 2010. Available from the Colorado Division of Fire Safety.

Wildfire Emergency Response Fund (WERF) as published in the Colorado Revised Statutes

Wildfire in Colorado, Six Areas of Wildland Fire Management, March 2012. Available from the Colorado State Forest Service

APPENDIX J: CONGRESSIONAL LETTER REQUESTING REVIEW OF WILDLAND FIRE

April 16, 2012

Mr. Tom Tidwell
Chief, U.S. Forest Service
1400 Independence Ave., SW
Washington, D.C., 20250-0003

Dear Chief Tidwell:

As you know, on March 26th a fire occurred in the foothills of Jefferson County, Colorado. This fire, called the Lower North Fork fire, burned for a week and resulted in the tragic deaths of three people and the loss of 23 primary homes and the scorching of over 4,000 acres in a populated area near Conifer, Colorado. Thankfully, the fire is now contained and the process of reviewing its origin and the use of prescribed fire is underway. There are many other issues that have been raised that we believe warrant review as well.

We are writing to seek the U.S. Forest Service's (USFS) assistance to conduct an impartial and scientific review of this fire. We appreciate that the USFS Rocky Mountain Research Station did important reviews of the Hayman and Fourmile Canyon fires in Colorado and we are now seeking a similar review of this fire. The review is not only important given that the dry forest and climate conditions in Colorado present serious continued fire threats to communities but also because there has been a tragic loss of life.

As a result, we are seeking a similar comprehensive review by the Forest Service's Research branch of the Lower North Fork fire that would examine the factors that lead to its ignition, its behavior, the suppression response activities, the emergency response coordination, and the communication to the area residents on evacuation and information regarding the fire's threat.

In addition to scientific factors that were examined by those other fire reviews, given the loss of life and concerns raised by the residents affected by this fire, we feel it is imperative that the USFS Research branch include a formal review of the "human and social dimensions" of this fire as part of its review. Therefore, we feel it is important that this study involve the community affected by this fire in the review process, including a public involvement process and community meeting, in order to form a comprehensive understanding of what happened and how to prevent similar incidents in the future.

Specifically, we would like this review to address the following issues (this is not meant to be an exhaustive or exclusive list of topics):

- the activities and communications among emergency personnel at the local, state and federal levels, as well as the communications to residents about evacuation and information regarding this fire;

- the activities of fire crews and responders (and resources that were available) from the wildfire's initiation until full containment, including offers to provide assistance and how these resources were employed;
- the conditions—including fuel, forest structure, prior fuel treatment, topography, weather, wind, and land ownership—that affected fire behavior and intensity and to what extent did these factors influence where the fire stopped, how hot the fire burned, whether soil was damaged, etc.
- the effectiveness of thinning treatments and prescribed fire—including defensible space work and other wildfire mitigation activities around structures—in stopping or slowing the fire, reducing fire intensity and damage;
- the degree and under what circumstances firefighting activities were successful in limiting the spread of the fire; were aerial suppression resources timely, readily available and effective; to what extent was controlling the fire dependent on the weather; and
- the factors that influenced which structures burned.

We expect that you would incorporate the findings from all other available post-fire reviews, such as the prescribed fire independent review led by William Bass and the investigation underway by the Jefferson County Sheriff's Office.

As you know, it is imperative that we continue to reduce the risk of catastrophic fire in the ever-expanding wildland-urban interface. This important review will provide critical independent analysis so that we can learn from this fire and be better prepared and appropriately respond to future fires.

We would welcome the USFS Research branch review of this fire and stand ready to assist in this effort.

Sincerely,

John Hickenlooper
Governor

Mark Udall
U.S. Senator

Michael Bennet
U.S. Senator

Mike Coffman
U.S. Representative