Wildfires in the Colorado Front Range Fact Sheet

Fourmile Canyon Fire Findings
July 2012

Providing scientific knowledge and technology to sustain our nation's forests, rangelands, and grasslands

For additional information, contact:

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Wildfires will happen in Colorado.

- Wildfire plays a necessary role in Colorado's ecosystems. However, the interruption of historic fire cycles has led to the dangerous buildup of fuels in some wildland areas.
- During wildland fire events, public and firefighter safety is the highest priority. While property losses experienced during the Fourmile Canyon Fire were tragic, there was no loss of life thanks to an efficient, coordinated emergency response.
- There are no guarantees when it comes to protecting homes from wildfires, but when homeowners create defensible space and communities establish fuel treatments, chances increase that structures will survive.

We have a shared responsibility to reduce wildfire risk.

- Wildland firefighters count on landowners in fire-prone areas to clear brush, trees and other flammable materials from around homes and maintain this cleared space in order to make their properties accessible and safe for firefighters to defend.
- Dry grasses, needle litter and brush fueled the surface fire that was largely responsible for home destruction in the Fourmile Canyon fire. This serves as a reminder that creating defensible space near homes is more than a one-time effort to thin dense stands of trees and other large fuels — it also requires regular maintenance like keeping tall grasses mowed, pruning shrubs and clearing debris from roofs and gutters to remain effective.
- The US Forest Service, Bureau of Land Management and state and county land management agencies will continue to work with private landowners to address wildfire risk across ownership boundaries.

Actions taken by individuals and agencies can make a difference.

- Homeowners have the opportunity to significantly reduce the potential for wildland-urban interface disasters by creating and maintaining a *home ignition zone* (HIZ). An HIZ is based on the design, material and maintenance of the home in relation to its immediate surroundings within 100 feet. To learn more about defensible space specific to Colorado ecosystems go to the Colorado State Forest Service website at csfs.colostate.edu/pages/wf-protection.html. To learn more about HIZs go to www.firewise.org.
- Fuel treatments can affect fire behavior by diminishing the intensity and slowing the spread of wildfires, which can provide an outlet for residents to evacuate safely during a wildfire, and a safe entrance and exit for firefighters.
- Where woody fuel was not removed after a fuels reduction treatment, fire on the ground burned much more intensely. Prescribed fire provides a means to remove excess fuels and is an effective tool when used appropriately.

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Questions and Answers

Q **What was learned from this study about wildfires on the Front Range?**

A Wildfires are a common occurrence on the Front Range Mountains of Colorado. The average fire return interval in low elevation ponderosa pine (*Pinus ponderosa*) forests in the northern Colorado Front Range varies from 8 to 18 years. Based on research over the past 40 years, a wildfire burns structures somewhere in the Colorado Front Range on an average of every two years.

Q **Is there anything in the final findings that wasn't addressed in the preliminary findings?**

A The findings did not change but we have addressed comments on the preliminary findings from land managers from the U.S. Forest Service, Rocky Mountain Region, Colorado State Forest Service and the Bureau of Land Management. A response to all comments and a summarized list of individuals contacted by the Assessment Team during the course of the scientific study are provided in appendices in the final findings.

Q **How did the overall conditions affect fire suppression efforts on the Fourmile Canyon Fire during the first 24 hours?**

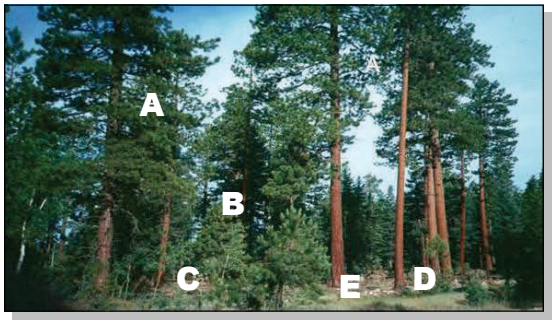
A The Fourmile Canyon Fire was reported at 10 a.m. on Sept. 6, 2010 and spread rapidly in multiple directions due to high winds and very low humidity. The winds carried firebrands over a distance up to a half mile ahead of the flame front, creating new spot fires.

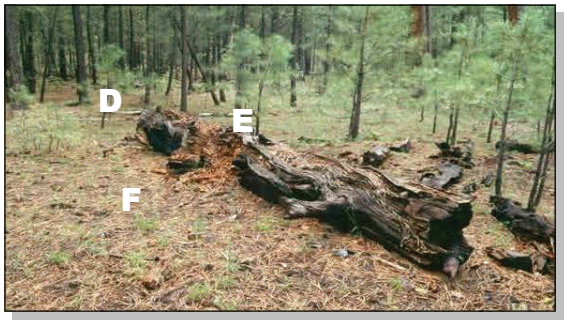
Under these conditions, suppression efforts focused on firefighter and public safety, evacuations, and protection of homes when and where safely feasible.

High wind speeds exceeded safe flying conditions and made retardant use ineffective so all aircraft were grounded until 5 p.m. Helicopters could not be used until the following day.

Q **What other factors contributed to the overall fire behavior of this fire?**

A Surface fuels such as grasses, shrubs, pine needles and small branches were contributing factors in the fire behavior of the Fourmile Canyon Fire. Observers noted rapid fire spread through surface fuels in the open ponderosa pine forest with many trees torching and spot fires starting in advance of the fire front.





The most effective strategy for reducing crown fire occurrence and burn severity is to 1) reduce surface fuels D, E, F; 2) remove ladder fuels B, C; increase canopy base heights A; and lastly reduce canopy continuity and density A. Photos Russ Graham

Questions and Answers

Q **Although fuel treatments had previously been applied to several areas within the fire perimeter, the study concluded these treatments had minimal impact in affecting how the fire burned or the damage it caused. Why?**

A Fuel treatments were often focused on improving the health of the forest, developing safe travel corridors, and to create wildfire defendable zones using a shaded fuel break near homes and communities. Surface debris from the treatments had not been removed either physically or by prescribed fire. Thus, the efficacy of the fuel treatments was very limited.

What we learned from this study is consistent with the knowledge that surface fuel removal plays an important role in changing fire behavior.

High wind speeds and low air humidity are common weather conditions associated with large wildfires along the Front Range. Recognizing these high wind speeds and low relative humidity conditions is critical when developing fuel treatment prescriptions. We need to appropriately design fuel treatments — treating surface fuels, ladder fuels, and canopy fuels in this order of importance — in and among landscapes in conjunction with treating fuels in the *home ignition zones* (HIZ) across the Front Range to improve the effectiveness of fuel treatments.

Q **What is the best defense for home survivability?**

A Creating and regularly maintaining an HIZ is a homeowner's first and best line of defense. Survival or destruction of homes exposed to wildfire flames and firebrands is not determined by the overall fire behavior or distance of firebrand lofting but rather, the condition of the HIZ — the design, material and maintenance of the home in relation to its immediate surroundings within 100 feet. For more information regarding HIZs go to http://csfs.colostate.edu/pages/wf-protection.html or www.firewise.org.

Example of an HIZ and how it reduces ignition potential within 100 feet of a home under extreme conditions.

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COLORADO
Department of Natural Resources

CSFS Prescribed Fire Desk Guide

Subject Matter Expert Review

Prepared by: Jay C. Stalnacker

Fire Management Officer

Colorado Department of Natural Resources
CSFS Rx Fire Desk Guide
SME Review

Summary

In early May 2012 a small group of prescribed fire subject matter experts was assembled by the Colorado Department of Natural Resources (DNR) Deputy Director Robert Randall to provide a review of the protocols and procedures currently used by the Colorado State Forest Service (CSFS) for the planning, preparedness, implementation and accountability of prescribed fire activities. A set of interrelated documents described as the “CSFS Prescribed Fire Desk Guide” was sent to the group to assist with this request. In addition, an updated version of this “guide” was sent to the group by CSFS Fire and Fuels Program Manager Jane Lopez.

I began a detailed review of each document based upon three subjective factors; relevancy, currency and applicability. It was important to first weigh the relevance of the content of each document against the overall review team objectives. Second, it became apparent that the “guide” was under current edit, thus a comparison of both sets of documents was required to determine if any recommendation was not already considered. Last, the content had to also be screened in the context of value to the end user.

Twenty-one documents were reviewed totaling 517 pages. The documents included templates, published research, additional material contained instructions, checklist, timelines and reviewer/editing tools along with specific air quality worksheets and applications for permit.

Inside

Summary

After careful review of this extensive compilation of information, my main observation of the CSFS prescribed fire program can be summarized by sharing that the CSFS program is typical of many local government programs. The documents appear to provide a common link to both institutional (CSFS) and standard accepted practices within modern fire management. The CSFS has adopted and in some cases established systems, checklist and methods that would be found in many prescribed fire programs across the nation.

The missing connection seems to be the rather loose compilation of this information into the "CSFS Prescribed Fire Desk Guide" . I found no consistent attempt to bring this valuable information into one user friendly "guide". Instead, the entire set of documents relies on the users understanding of internal policy, cultural lessons and trainings along with a degree of individual discretion. This lapse of program coordination can easily be mended and it appears that the CSFS has already begun to take steps to better present this information to the prescribed fire program employees. With a dedicated effort, the current "CSFS Prescribed Fire Desk Guide" can be morphed into a progressive, encompassing and valuable tool for fire managers across the state. My summarized recommendation is to support a taskforce of fire management specialists in a effort to complete this consolidation of information and develop a statewide prescribed fire desk guide for all local fire managers to access and use for a consistent approach to the planning, preparedness, implementation and accountability processes we all face in prescribed fire operations.

Of the entire packet of material, I focused my main review effort towards:

- Prescribed Fire Procedures (10/2011)
- The Prescribed Fire Plan Instruction Sheet (05/2012)
- CSFS Prescribed Fire Plan Template Form #170 (05/2012)

A review of these documents will be provided in the following several pages of information.

Prescribed Fire Procedures 10/2011

Section 1 CONTRACTING:

No Comment

Section 2 PERMITTING:

No Comment

Section 3 WRITING:

Recommend that a Prescribed Fire Burn Boss Type 2/1 (RXB2/1) write and prepare all Prescribed Fire Plans. The subject matter expertise enables for a more efficient review of each plan by the appropriate reviewing and approving officials.

Section 4 REVIEW AND APPROVAL:

Recommended that at least (2) additional outside agency RXB2/1 review, provide comment and signature to the final Prescribed Fire Plan prior to final agency approval and signature. This "outside" review provides an extra layer of recommendations and support that can eliminate "group think" review as the plan moves forward.

Section 5: IMPLEMENTATION:

Recommendation that a "checklist" be developed and provided to the RXB2/1 prior to implementation, as numerous steps need to be completed and a simplified format such as a checklist can provide the RXB with a tool to help ensure these task are managed.

Section 6: REPORTING:

Recommend to develop a final report template that the RXB can use to document the entire planning and operations of the project. Including objective success measurements, issues, concerns, challenges along with verification of mop up and eventually control and "out" declarations.

Section 7: ESCAPED PRESCRIBED FIRE

Probably need to define "escaped" more clearly; as it appears now, the RXB has a little too much discretion in this. If the purpose of the report is to provide corrective actions then defining the action more clearly seems appropriate. Typically, escaped prescribed fires are infrequent. It appears this section is driving at capturing lessons learned from very uncommon incidents. Maybe this section and section 6 should be combined into one "final report" identifying and summarizing a larger scope.

The actual Escaped Prescribed Fire report should be an independent investigation of by an inter-agency and inter-discipline team of qualified individuals. I.e. a team consisting of SMEs in wild fire, criminal investigations, fire behavior and RXBs. This independent review should not be placed upon the RXB that implemented the prescribed fire. Again, if the determination of a significant v. non-significant "escaped fire" is clearly defined for the RXB, his/her role during the investigating will be more detached. Typically, within the RX Plan this "declaration of escape" is clearly defined and once this trigger is pushed, no matter how small or large, the investigation should be consistent and completed by a team outside the burn organization. This section is confusing as to what an escape fire is and when and how it is to be reported. Any fire that escapes outside of the allowable burn area and/or outside the project area is usually how this "escaped fire" is defined. Size of the escape, injury, fatalities, damage , etc. are all insignificant in the fact that there is fire somewhere you do not want nor planned for it to be.

GENERAL:

No Comment

ANNUAL REVIEW AND UPDATE:

It appears a edit within this process has already been planned. I concur with the author, the plan should be updated bi-annually.

SIGNATURE PAGE:

Again, the edit to section is a sound recommendation. I would only add, a review should be required by a qualified Type 2/1 Burn Boss from outside of the agency.

TABLE OF CONTENTS:

No Comment

EXECUTIVE SUMMARY:

No Comment

GOALS AND OBJECTIVES:

No Comment

COMPLEXITY ANALYSIS:

No Comment

SCHEDULING AND NOTIFICATION:

There seems to be no consideration for public informational meetings. I would suggest that at least one public meeting is scheduled 6-months prior to implementation.

PUBLIC AND MEDIA INFORMATION PLAN:

I would recommend that a strategic media plan and "talking points" handout be completed for all prescribed fire operations and given to not only the media but also public safety dispatch centers and local cooperators.

BURN AREA FUELS AND PROJECT DESCRIPTION:

Possibly consider adding a section for unique fuels and fuel loading.

PRESCRIPTION:

I am not a believer in using the word "prescription" in a burn plan. This word is defined as , *the act of establishing official rules, policy or directions*, ties the planner and consequential Burn Boss to a set of relatively static inputs and out puts that truly can not be accurately depicted in current fire modeling. Our environment on the ground is dynamic and ever changing. It would be nearly impossible to develop a "prescription" for every condition for every possible "burn window". Rather, I suggest developing a set of standard operating guidelines (SOGs) for the entire process from planning to burning. This sets the ground rules for the agency and ensures each employee is aware of the programs expectations at all times. SOGs should be considered in every plan development and used as a tool for developing checklist to operate from.

Prescribed Fire Plan Instruction Sheet and Template Form #170 05/2012

GUIDANCE PARAMETERS:

Along with the recommendations from the "prescription section", I would add "fire behavior" as a one of the parameter elements.

SMOKE MANAGEMENT:

No Comment

RESOURCE REQUIREMENTS:

Recommend adding section to specifically identify "contingency resources" both during active burning and patrol and mop up. Although this occurs in the "escape fire" section, accounting for these resources now ensures the Burn Boss will have a good understanding of staffing needs, thus helping to identifying the type (complexity) of the project.

SAFETY PLAN:

The safety and medical plan should include a more detailed plan to address issues surrounding the "Dutch Creek Incident", I.e. in the field medical treatment, evacuation and staffing plans.

MEDICAL PLAN:

See above

COMMUNICATIONS PLAN:

Using a prearranged and common communication plan is critical. Try to stay away from using exclusive "agency frequencies" as in the event of the need to request additional resources this could be a substantial challenge.

IGNITION PLAN:

Understandably, this plan needs to have a degree of flexibility, but in general, this plan should be well thought out, including, logistic support, staffing and contingency.

HOLDING AND MOP UP PLAN:

See above

ESCAPED FIRE ANALYSIS AND ACTION PLAN:

This plan is what generally takes a majority of our agencies time and effort. It is important to have know established "triggers" and well developed plans for the operational resources to follow in the event of an escape. In addition, this planning helps to develop a realistic "picture" of resource needs, complexity and consequences.

ESTIMATED COST AND FUNDING SOURCES:

No comment

MAPS AND ATTACHMENTS:

I would recommend adding a sensitive smoke receptor and a series of tactical escape fire plan maps.

Closing

After my entire review of the CSFS Prescribed Fire Desk Guide considering planning, preparedness, implementation and accountability, I have concluded that the entire process is impeded by a failure to provide a clear, concise and user friendly product for the fire manager to use to produce a high-reliability prescribed fire plan. As fore-mentioned, the documents contained within the packet are all relevant, professionally sound and research supported. Unfortunately, the "Desk Guide" is nothing more than a compilation of these documents along with a on-going attempt to consolidate the information into generic outline.

The consequences associated with using fire as a forest health and/or fire mitigation tool on the landscape within the Wildland Urban Interface requires professional fire managers to move towards a more efficient, effective and organized process. The CSFS is not alone in the quagmire of moving fire management from an outdated historical and cultural perspective towards a modern and evolving fire management perspective. As a leader in fire management over the past 50-years, CSFS has established the official and "unofficial" ground rules. There are no current state statues, laws, directives and regulations that define how we should implement prescribed fire projects. The work in this area that the CSFS has completed has ultimately made prescribed fire activities safer. Yet, our landscape has changed and the consequences of our actions have recently far exceeded even the most conservative fire managers imagination. Now is the time to embrace the work that has moved us this far and take it the next level. As public servants and caring land managers who only wish to make a positive difference, we now have an opportunity to move forward.

We need to come together in a diverse arrangement of federal and local government along with non-governmental organizations to finish the development of a sound, safety and science based process to implement prescribed fire that is consistent, standardized and effective. With organizational changes afoot for wildfire prevention, suppression, and prescribed fire oversight in Colorado, now is the time for a comprehensive review of our systems across the state. The participation of local stakeholders in this discussion is critical to ensure that any improvements we make in these systems are integrated, safe, and effective.

Respectfully,

Jay C. Stalnacker

09/06/2010

Four Mile Canyon Fire After Action Report

Authors of After Action Reports:

-Boulder County Sheriff's Department
-Boulder Incident Management Type 3 Team
-Boulder County Community Services
-Boulder Office of Emergency Management
-Boulder Multi Agency Coordination Group
-Four Mile Environmental Stabilization Team
-Four Mile Recovery Task Force

Report Prepared by:
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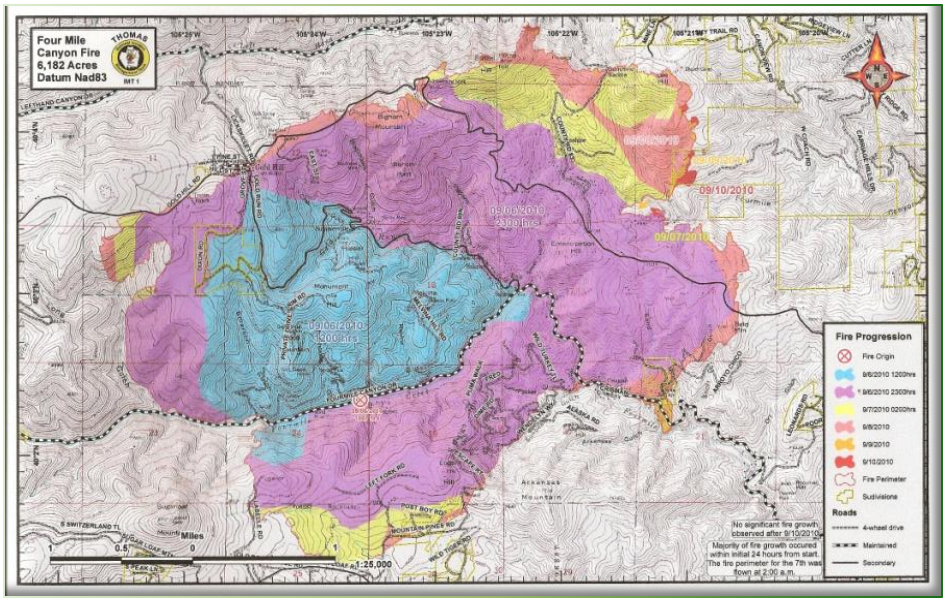
1/3/2011

EXECUTIVE SUMMARY

The purpose of this report is to provide the information collected from after action reporting activities conducted by the Boulder County Sheriff, Boulder Incident Management Type 3 Team, Boulder County Community Services and Boulder Office of Emergency Management (Emergency Operations Center) and Emergency Support Functions in response to the Four Mile Fire. The report goal is to collect all lessons learned and best practices and share the information with all County and City departments to make improvements in the large scale incident and disaster response system.

The Fire

The wildfire fire occurred on September 6, 2010 at 10:02 a.m. originating in the Emerson Gulch area and named the “Four Mile Fire”. The fire was a wind driven event that experienced severe sustained winds and high gusts exceeding 60 mph. The relative humidity was in the single digits throughout the area associated with a low relative humidity. The fire conditions and behavior were erratic and fire growth was approximately 300 acres by 12:00 p.m. and 6,000 acres by 11:00 p.m. on the evening of September 6, 2010. The fire ultimately grew over the remaining five days to 6,200 acres by the time it was under control. One-hundred and sixty nine residences were destroyed by the fire and over 3,000 residents evacuated during the course of the fire. The fire did not cause any significant injuries or loss of life to residents or first responders. The wildfire was considered in Mop –Up Operations over the weekend of September 12th and continued into the following week. Residents were allowed back into the evacuation areas within days under strict re-entry guidelines established by the Sheriff.



The response to the fire was initially managed by local first responders and very quickly transitioned into a severity requiring assistance from the Boulder County Incident Management Type 3 Team and subsequently the Rocky Mountain Type 2 Incident Management Team. Wildfires are categorized by level of severity from a type 5 (local response) to a type 1 (Federal response). When a fire exceeds local mutual aid resource capability a type 3 fire requires specialized management, coordination and resources from outside the local capability. The Boulder County Type 3 team is a State of Colorado resource capable of managing this incident level. The Four Mile Fire quickly grew in severity into a type 1 incident and the Great Basin Type 1 Incident Management Team responded to manage the incident. The total fire suppression

costs exceeded ten-million dollars and was paid for through the State Emergency Fire Fund and FEMA's Fire Management Assistance Grant (FMAG).

Community Services and Recovery

Fires of this magnitude require extraordinary community safety nets to prevent or reduce human suffering. The infrastructure established in response to the fire included: emergency sheltering, behavioral counseling, animal care and sheltering, resident assistance centers, donation collection and distribution centers, and the establishment of the Four Mile Fire Recovery Task Force.

The Four Mile Recovery Task Force is a Boulder County Commissioner created entity. The mission of the task force is to assess the current situation and develop contingency plans. Efforts that are on-going include public health issues, environmental stabilization, resident support networks, road and transportation issues, and emergency preparedness for subsequent secondary hazards created by the fire. The task force is currently active and developing a strong community relationship with residents affected by the fire. Information about the work of the task force is available upon request from the Boulder Office of Emergency Management or the Boulder County Commissioner's Office.

After Action Reporting

The following report includes all after action reports submitted to the Boulder Office of Emergency Management. There are still reports being conducted and they will be added to the report as they become available.

The report is structured in the following manner:

1. Throughout the report the term *phase* can be seen to define a specific period that occurred during the event. Many of the disciplines conducting after action reporting divided their analysis into phases such as *initial response phase,* or *extended operations phase etc*. Not all after action reports filed followed the exact format and the intent of this report is to bring all after action reports into a common format without diluting the original intent of the report.

2. Identify what went well during the event to ensure that successes are recorded and replicated.

3. Improvements identify challenges experienced during the event and corrective actions indicated when possible.

4. Target capabilities indicate the items of improvement that are of significance and resolved before the next event.

5. An improvement plan template is provided at the end of the report for agencies to use to convert improvement areas into work plans.

TABLE OF CONTENTS

Law Enforcement After-Action Review Four Mile Canyon Fire

Initial Attack/Response to the Incident

What Went Right?

- Deputy Nanney given fire district map early on
- Communications van and MCP at staging by 12:00 noon – able to take communication from Sheriff Communications Center - handled out of MCP and went very well
- Unified command immediately
- Officers arriving and showed up and responded – asking where/what they should do
- Department take home cars
- Paging went out quickly
- Evacuations – marked houses well so when called back on the second evacuation, deputies knew which houses had been evacuated second go around; used color tapes
- Utilize rangers and anyone else to turn into a one way in only allowing fire fighters for access;
- Boulder PD responded quickly
- State Patrol from all area to assist
    - This freed up deputies allowing our deputies to get into the areas they knew while outside agencies
- Command Post up and going and had a good handle on situation

What Went Wrong?

- 911 call back
- **Evacuations / Roadblocks / Re-entry**
    - **In the future, possibly make exceptions**
    - **Fire/entry – resident access**
- Not enough fire updates
- Fire behavior training
- Fire resistant uniforms
- Media – fire behavior training
- Road closures needed – hard and soft closures
- Mountain officers assigned districts – should be utilized in mountains due to familiarity
- Prioritize evacuations / prioritize resources
- Designate staging areas for those responding from page
- Organize resources
- Get info on law enforcement channel
- Working on three channels?? – get dispatcher to monitor Red 3 and Red 6
- **Begin tracking of assignment, to include;**
    - **officer positions and assignments – tracking hours**
    - **vehicles positions, assignments – tracking miles**
- Securing at staging area
- **Fire Behavior Training (work on in future)**
- **Involving hard and soft closures**
- **Have PPE's in field – deputy's responsibility (work on in future)**
- **Security/Credentialing**

Gaining/Maintaining Control

What went well?

- Command team staffing came together quickly (both days and nights)
- Staffing with experience
- Roving patrols
- Public Information
- Type I / County PIO
- Citizen Meeting – Needing and wanting information
- Investigation went well
- USFS closed forest service areas
- Deputies took care of people – cared for community
- Communication in EOC and Command Post
- WEB EOC very helpful
- Same deputies in same area consistently

What Went Wrong?

- **Jail was not utilized – they are an available resource**
- **Prior EOC experience – not utilized**
- **Jail overall not utilized**
- **Credentials of jail deputies**
- Maps not accurate
- **Put together a damage assessment team (GIS) early on to assess damage**
- How to do damage assessment
- What does a local damage assessment team look like and who is on that team?
- Pass-on information not passed on to those on the perimeter
- Tons of food at command post but deputies on the perimeter did not have breaks or food
- Double up people if possible
- Move cars to a central staging area
- Cars/mileage – need documentation
- Evacuation list ineffective
- Keep track of paperwork for FEMA
- Two lines coming into Command Post – in future, will dedicate one to dispatch and one to Ops
- One single point of Communication between Command Post and EOC

Law Enforcement Reentry Planning

Resident Reentry

What went well?

- Access Passes - keep permit/reentry passes longer
- PIO/EOC contacts
- Donna/Advocates
- Handing out access passes – Justice Center worked well
- Website phone numbers and info helped citizens
- Command staff page including fire chiefs, command staff to notify of opening of fire areas
- Infrastructure at EOC / MAC Group
- Commanders Prentup and Williams at Command Post
- EOC went very well

What Didn't Go Well?

- **Traffic issues / backup**
- **More personnel to assist with traffic problems**
- **Resident area knowledge**
- **Passes available for next event**
- **Maps**
- **Vendor passes**
- **Reentry route**

Demobilization

What went well?

- Need person in Command Post that was long term planning (including demobilization)
- Ordered from outside source should be done through the EOC
- Transferred communications back to green channel (some glitches with BPD and CSP – should have right equipment)
- Vehicle Maintenance – great job

What Didn't Go Well?

- **Keep track of receipts, mileage, and vehicle unit #**
- **Needed to transition other people/teams into our plans – involve in early planning**
- **Long-term Recovery Team**
- **Demobilization team planning early**
- **Process needs to be refined for demobilization – continue with formalized discussions and define process**
- **Extra patrols in areas for longer period**

Recovery

Flood Task Force

- Moving forward with planning – Emergency Services is working on Ops plans
- Boulder County Incident Management Team After Action Review
- Activation Phase

Boulder County Incident Management Type 3 Team After-Action Review Four Mile Canyon Fire

Activation Phase

• Use of Everbridge system to notify team members of potential activation and eventual deployment worked well. • Identifying the ICP or staging prior to sending Everbridge message is critical.	• Insure that all team members are on Everbridge. (**BCIMT-Coord**)
• Transition of initial attack to the team was not widely known throughout the county. (see Pt I.10)	• Information concerning significant county-wide actions should be distributed by the EOC as its impacts are outside the footprint of the fire. (**EOC**)
• Staging areas and ICPs that can accommodate potentially large incidents need to be pre-identified and appropriate use agreements established.	• Identify at least four locations (north) (Lyons area), east-central (fire training center), west-central (Nederland area) and south (Hwy 93 vicinity). (**BCIMTLSC).** • Pre-plan IT/phone support needs and options. (**BCIMT LSC/CTSP**) • Identify multiple staging areas associated with each ICP. (**BCIMT LSC**) • Establish use agreements with identified facilities. (**EOC or County/SO finance**). • Establish provisions and agreements for providing emergency IT/phone service at the pre-identified sites. (**EOC or County/SO finance**) • Strive to not change staging areas during operational periods (**IMT3**).
• Improve communications link between T4 organization and the T3 team. ○ It is important to provide strong communication and coordination between the T4 & T3 organizations during transition.	• The T4 IC should communicate with his key leaders (operations & staging) of the impending arrival of T3 resources. (**ICT4**) • The T4 & T3 operations section chiefs should have a face-to-face to coordinate transition. (**OSC4 & OSC3**) • The ICT4 & ICT3 should have a face-to face meeting to coordinate transition. (**ICT4 & ICT3**) • Secondary fire districts should be contacted and their leadership should tie in with the BCSO representative and discuss the implications of the SO taking responsibility of the fire. (**BCSO**) • The fire chief/designee should tie-in with the ICT3 or LOFR to discuss concerns, opportunities, limitations and incident objectives & strategies. (**FD Chief & ICT3/LOFR**)

• It is critical to make sure all resources assigned to the incident are informed when transition occurs.	• **ICT3** to make an announcement of the transfer of command and receive positive affirmation from field leadership.
• It is important to provide on-going communication and coordination between the IMT3 and the affected fire district(s) during incident. • Need to consider local policies, big picture, resources/hazards.	• Assign an IMT3 LOFR to be the primary point of contact for FD leadership and insure that phone numbers & contact info is exchanged. (**LOFR**) • When safety considerations permit, assign a FD leadership person (e.g. Chief, AC) to work side-by-side with the DIVS assigned to that FD's division(s). (**FD Chief & OSC3**)
• Consider appropriate timing relative to accepting the incident from the BCSO.	• Conduct a brief IMT3 C&G meeting (with whatever members are present, but at least IC, OSC, LSC) to discuss timing and expectations. (**ICT3**) • T4 organizations shall be expected to provide a list of assigned resources prior to C&G meeting. (**ICT4**)
• Improve T4 accountability process.	• Implement effective check-in and staging (**ICT4**). • Capture local check-in sheets during transition (**ICT4, IMT3**). • Order and utilize a RESL early on complex and rapidly evolving incidents (**IMT3-PSC**). • Emphasize the importance of obtaining full accountability of all assigned resources early (**ICT4, BCSO-ES**).
• Staggered infusion of IMT members as they arrive as based on incident needs and priorities.	• Get DIVS into field as early as possible (**IMT3**) • Utilize SCKNs & STAMs as early as possible. (**IMT3**)
• Many firefighters needed incident-supplied food and water relatively early in the operational period.	• All engines and single resources should carry sufficient food and water for at least one operational period (**BC FDs**). • Water and MREs should be available at staging/check-in; resources should be queried prior to taking an operational assignment as to whether they have sufficient food and water (**IMT3-LSC,EOC, BCSO-ES**).
• Notify all county chiefs of IMT location (ICP) and of transition.	• EOC should send a Fire Major page with relevant information (**EOC**).
• EFF & coordination with CSFS done early	• Big benefit. (**BCSO**)
• Need team member identifiers	• Consider Team name tags/badges, vests, etc (**IMT3-PSC**).
• Utilize locals within their own district	• Have affected chiefs (or liaison) at ICP to make necessary coordination. (pt I.5.b) •

• Clarify Red Card issues & policies	• County and/or Team to develop policies: ○ In-district ○ Mutual Aid ○ Out-of-county ○ BCSO-ES, ICT3s
• Four-Mile map books-good quality	• County to coordinate all-district mapping • project (**BCSO-ES**)
• Communications and radio frequency assignments were poor • STAMs and OSC could not communicate and update needs and availability	• Work to develop, distribute and promote countywide, large-incident IA and EA communication plans (**IMT3 LSC, COML and BC radio techs**). • Dedicate a radio freq for the two to communicate-possibly on the 800 system (**IMT3 LSC, COML and BC radio techs**).

Initial – Extended Attack Phase

• Resources arriving without basic necessities: food, water, shelters and tools	• L. Oliver (**BCIMT3**) to develop supplemental check-in form to query necessary items. • Provide a list of expectations (e.g. PPE, food, water, tools, etc) to fire departments (**BCSO-ES**) • Have MREs & water available at check-in and staging areas (IMT3-LSC)
• Clarify Staging Areas & Processes ○ Need to educate departments on the terms “staging” & “check-in” and the different meanings of those two.	• Include as part of an ongoing educational process to the county fire departments (**BCSO-ES**) • Stress arrival in staging means resources are ready for immediate deployment (e.g. have checked-in, have all necessary supplies as per Pt II.1, etc) (**IMT3-STAM**).
• Need to pre-identify staging areas around the county based on expected	• BCIMT3 LSC & EOC representative will evaluate and, where necessary, establish necessary agreements. • Implement recommendations of Pt I.4
• Resource Needs & Availability: ○ There was poor communication between the EOC and the county fire departments about incident resource needs and department available resources.	• Consider sending a page at various intervals (driven be **IMT3 PLOPS**) to fire departments to assess resource availability (**EOC**).
• Map Quality & Availability: The availability and quality of maps during IA was limited.	• The BC Mountain Addressing Map Book needs to be updated and distributed (**BCSO-ES**). • The IMT3 needs to complete building a “hard drive” with all of the necessary county data-layers (**IMT3-GISS**). • The IMT3 needs to acquire a good quality 11” x 17” color printer

	• Arriving resources need to be provided with a good map of the incident area & transportation routes (**IMT3-PSC**).
• Medical Unit – functioned well	• Had an ICS 206 largely prefilled out which facilitated the rapid development of a proper medical plan (SUSTAIN). • AMR Ambulance was quick to provide necessary ambulance coverage quickly (SUSTAIN). • MEDL to develop a more formal relationship between AMR and the IMT3
• Aircraft Operations & Processes – functioned well	• Having an experienced AOBD in place early was critical (SUSTAIN). • Process of working directly with Ft Collins dispatch worked well (SUSTAIN).
• Roles, responsibilities and relationships of PIO3 and EOC PIOs was strained and at times appeared to be in conflict.	• The two groups should continue to foster greater understanding of the purpose and intent of one another. • Identify individual roles and responsibilities of each group. • Establish an information sharing and communications protocol between the two. **(IMT3 PIO, BC PIO)**
• Fuel Supply was inadequate	• Need to develop a more comprehensive fuel plan **(IMT3 LSC, EOC)**. • Need to consider hours and locations of availability. • Need to further investigation the limitations of Bio-Diesel (IMT3 LSC).
• Process of ordering of additional resources broke down. ○ Lead to inadequate work/rest-unsafe conditions. ○ Forced the modification of night ops and day ops the following day.	• Improve resource ordering processing so adequate relief resources arrive in a timely fashion **(EOC, IMT3).** • Develop feedback mechanisms that validate and verify resource order status.
• Local FDs need to be returned to their home district as soon as possible	• Information about this need can be facilitated through issue I.5.b above. • Local FDs need to consider the tradeoff between providing mutual aid versus remaining in-district **(Fire Chiefs**

What Went Well

- Early team activation
- Quick team mobilization
- Qualified AOBD in place early
- 2 GIS Specialists in place at start of fire
- CTSP in place – laptops were brand new and CTSP had to install I suite on-site during the night,
- Planning process used, IAP generated for day shift
- Big improvement over old stage fire
- Majority of incoming units went to staging
- Good intel from field ops to planning ops critical need
- EFF completed early on
- CJ was good as initial staging
- Got DIVS in the field early to supervise
- initial attack resources and provide leadership
- 800 system worked well, even in canyons – functioned much better than VHF
- Incoming units were checked-in, staged and accounted for. Complete Information entered into I-Suite for transition to Type II team.
- Resources not sent into field from staging until qualified leadership was available

Target Capabilities

General – All Team • Promote increased use of general message forms	• PSC to hang "mailboxes" at ICP early on (**IMT3 PSC**). • Establish FAX connection to EOC early on (**IMT3 CTSP**).
Planning Section • Complete Complexity Analysis early and then review at the end of each operational period. • Copy & distribute copies of Delegation to C&G. • Need to increase communication and coordination between RESL, SCKN, STAM and PLOPS. • Provide basic fire area transportation maps & DP sites for ground support. • Need to establish and adhere to IMT3 meeting schedule	•
Logistics Section • Continue to develop pre-order lists on everything from operational resources to logistical needs.	•
Liaison Officer • Need 1 at the ICP and 1 at the EOC	•

Emergency Operations Center After-Action Report Four Mile Fire

Situational Awareness / Common Operating Picture for September 06, 2010: 1002 hours to September 07, 2010: 1047 hours

Activation and Initial Response Phase

• 1047 hours IMT III paged (EOC activated)
• Quick transition from suppression mode to defensive mode. • 45-1 hour communication center completely staffed.

• EOC initially:
  • Experienced difficulty filling ESFs
  • 3-1/2 – 4 hrs until EOC was set up & established.
  • Set up difficulty while receiving order requests
  • Delay in call center set up

• 1230 – 4 mile --- sheriff office---- IMT III
  ○ Declaration being developed state notified.
  ○ Type II team ordered as transition to type III happened
  ○ EOC 1330-1400 hours More Solid Team in EOC
  ○ ESF 13- EOC operations periods did not sync with ICP ops periods, Need coverage for multiple operational periods
  ○ Social media issues chatter from families effected

• 1300 Finance – confusion as to whether IMT III had taken over.

• PIO
  ○ Initially little info
  ○ Difficulty acquiring info
  ○ No speakers to watch WEB
  ○ WEB redesign issues

• 1300 Operations Section Chief Managing City responsibilities while working EOC
• ESF 6   ○ Evacuation points managed and transitioned to shelters ○ Shelters first opened at CU event center
• ESF 8 Used people from other counties but difficult with local issues
▪ ICP vs. IMT III coordination problems and Command Structures?
▪ Page Confusion – Better System needed to call out EOC personnel.
▪ ESF 13 Established evacuation points at Nederland & North Boulder Recreation Center

• 1330
  ○ IMT III- initial confusion as to who is in charge
• 1600-1800
  ○ ESF 6 shelter at CU event center no hot water or air conditioning
  ○ 3500 residents evacuated
  ○ 20-30 night residents in shelter
  ○ 60-70 during the day

EOC

- Requests for equipment early on before system fully operational.
- Trying to fill in pieces incomplete resource requests, multiple orders, unclear resource ordering responsibilities tactically.
- Confusion of logistics ordering IMT III requests
- Northern Dispatch closed, state help was great
- Shifting of command posts strained the EOC
- ESF 4 not occupied until 1500-1600
- Resource order delayed from Incident management team type 3 due to ESF 4 shift transition problem in communication
- Staffing for next ops period difficult in ESF positions.
- CDEM aided in staffing EOC for multiple operational periods.
-

ESF 2

- Better to have Information technology personnel in position and assisting with EOC activation
- Radio Techs should be in the field

Improvements

• Better communications between IMT III ICP and EOC	• Interface poor during initial period, no communication made until early evening.
• Information Technology personnel in EOC	• No Information Technology Staff on page and difficult to contact resulting in delay.
• Virtual EOC positions	• No plan for virtual staffing of EOC positions.
• IPICS utilization	• Personnel not familiar in use therefore technology not utilized during activation.
• Section Chief positions need to fully staffed	• Only some of the section chief positions were staffed resulting in information bottle necks in community services and infrastructure sections.
• ESF 8 activated with evaluations for shelter support	• ESF 8 needs to be notified when ESF 6 is activated for shelter evaluations.
• Call center activation	• Call center operational procedures not fully developed and slow to implement.
• Dispatch better connected to EOC resource Tracking • CAD Interface	• EOC has difficulty knowing what is assigned to the incident making resource acquisition and coverage plans difficult to assemble.

• Communication Center:
  • Better evacuation boundaries
  • Delayed eoc activation page
	• Evacuation boundaries not clearly communicated from ESF 13. Due to call volume and

	workload there was a delay in sending the activation page.
• Resource Tracking Field vs. ordering	• Does the EOC need to track field resources under command?
▪ How are evacuation points chosen?	▪ No operational plan for implementing evacuation sites or management.
• Communications with shelters	• Maintaining situational awareness with shelters not coordinated and operational plan not currently developed.
• Contact info in web eoc	• Initially no way to track all the contacts being generated from EOC activities.
• Dispatch info page constantly updated though	• Update pages not conducted throughout due to lack of understanding their need and who should receive them.
• Behavioral health and more info at shelters	• Need to make behavioral health assessments and staff specialists at shelter sites.
• Logistics issues in web eoc	• Procedures for logistics support for incident command not clearly defined for interagency resources requests. • Logistics ordering EOC 213 resource request from did not have completion status field in web eoc initially.
• Section Chief training	• EOC personnel not comfortable with section chief responsibilities.
• 7a and 7b plans for donations and volunteers	• No operational plan for donation and volunteer management.
• Visual maps GIS, digital globe	• Need to develop a system to incorporate digital globe into EOC map production.
• Interface between PIO, field and GIS	• Public information and GIS team not connected to field Incident Management Teams.

What went well during the Activation Initial Response Phase

- Support from other agencies to staff EOC operations.
- IT support once staffed
- Practice and eoc set up helped to make sure as EOC positions arrived personnel knew responsibilities.
- Interactions between ESFs
- Logistics support for ESF positions not associated with Fire Incident Command.
- Teamwork
- Staying focused on Common Operating Picture once defined.
- Public Information Officer Help from other cities and agencies great.

Target Capabilities to Develop for Activation and Initial Response

- Call out procedures and technology
- Link EOC with field incident command
- SOPs for Emergency Support Functions
- Establish better logistics processes with IMT III
- Call out system for EOC staff and personnel
- Link EOC and dispatch
- Information Technology start up procedures and support
- Thin Clients should be removed from EOC.
- BVSD needs more trained staff

Situational Awareness / Common Operating Picture for September 07, 2010: 0700 hours to September 13, 2010: 1700 hours

Extended Operations Day 2-13 Phase

EOC Operations

- Day 2: EOC met with IMT II and received 50 plus interagency orders and filled them no problem encountered.
- Utilized 27 emergency managers from throughout the region and over 270 MAC members to operate the EOC.
- EOC staffing fully achieved and operational periods planned for extended operations
- Logistics processes refined and improvements made
- Logistics support for event ESF positions only, IMT I has all incident logistics support covered.
- Worked to establish connection with IMT during transition and finally linked and coordinating well by 09/09/10.
- Worked to resolve Website slow down and corrected on Weds all social media tools working well.
- ESF 14 working on recovery guidance documents for policy group.
- Support for community recovery services and donations management were primary objectives for this period
- 7a and 7b support acquiring facilities and logistics support
- Assisted with developing damage assessments for SBA, and FEMA

- Conducted initial, situational and close out briefings each day.
- Daily Policy group meetings at 1200 with all county department heads and 1600 with City Manager's team.
- Filled over 170 resource requests throughout event
- Public heath support logistically
- Maintained strong connection with CDEM throughout the first week.
- Developed virtual EOC staffing as incident severity lowered in the second week.
- Worked on demobilization policy plan with Commissioner's Office

- City ordinance changes for reservoir use

- Public and private school contacts

ESF 4

- Donation overload at fire stations and command post
- Busy with resource ordering

ESF 6 & 8

- Assistance center issues with space, transportation and coordination with incoming resources.
- Red Cross and county resources experiencing confusion over roles.

ESF 11 & 14

- Performing damage assessment and recovery plans

ESF 15

- Concerns from ICP about releasing info
- Public unhappy with info about damage to houses
- Where were the issues?
- Lack of communication with IMT II and III
- Delay in press release approval
- Conflict in models i.e. JIC
- Fluid info flow.
- ESF 15 web site / band width issues

Overview comments

- Recovery group fully active client assistance center at IRIS and Broadway
- TERT requested from communications center
- PIOs meeting with type I PIOs
- Gaps between EOC and Type II
- List of homes burned published on web site
- 7a 7b policy decisions with volunteers need to be pre planned- Liability waivers
- SOPS locations of centers
- 211- was telling the public what is needed.
- EOC members not reading sit reports general awareness

Improvements

• Transition between management team	• Make sure the EOC is part of the delegation to ensure coordination
• Link between incident management teams and EOC	• Develop EOC forward team to establish link and obtain required information for effective EOC operations.
• Communications post policy meetings	• Brief EOC after each policy meeting and record the information in the situation report in WEB EOC.
• Hard copies of donation center address and contact #s •	• Place in contacts list in WEB EOC
• Organizational access in web eoc •	• Use MACS meetings to ensure that all agencies have the level access that they require.
• Situation report use by EOC personnel •	• Provide WEB EOC training at MACS meetings on the use of the Situational reporting feature.
• Regular EOC briefings reports include call center and dispatch •	• Make sure to include the communications center ESF 17 and ESF 15 manages call center personnel now.
• Electronic or written info to public information officers •	
• Meeting rooms •	• Create and post current meeting schedules for all rooms in the EOC building.
• Staff replacement •	• ESFs should create a staff replacement list. WEB EOC now has an EOC staff directory for use during activations to find replacement personnel.
• Donations, recovery, needs work ○ Facilities ○ Policies under disaster declaration •	• See community services debrief results.
• EOC ESF 15 and JIC interface	•
• Damage assessment process and timeline	• Once contact is made with the Incident Commander utilize FOBS to achieve this process early in the event. Emergency Services coordinates field activities so the EOC shall make contact and advise of the information needs of the EOC elements requiring damage assessment information. All damage assessment information now reports to the planning section chief in the EOC.

What went well during the Extended Operational Phase

- Volunteer reception center
- Contact with eoc was good
- Civil air patrol
- Training and changes in 2009 to EOC operations
- BES
- Strong community services
- Leadership
- Amount of donations
- EOC organization
- Diverse MAC group

EOC Community Recovery Section After-Action Report Four Mile Fire

ESF 14 Response Phase

ESF 14A Mission is to coordinate the damage assessment process, to provide accurate information to stakeholders as quickly and efficiently as possible. Many groups need or desire similar damage assessment information including residents, PIO, responders, other ESFs such as Road and Bridge, Red Cross, County Assessor, and County Planning and other interested parties such as insurance companies, State, and FEMA.
ESF 14B Mission is to provide assistance for immediate stabilization, intermediate recovery and long-term recovery to designated entity created by the County Commissioners or City Manager.
Based upon risk assessments and impacts, provide evaluation of post disaster conditions and needs, identify opportunities hazard mitigation, economic, social) and identify specific projects in affected areas (i.e. post disaster potential for mud and rock slides due to heavy rain or snow), and long term redevelopment and revitalization to new-normal

What Went Well During Response

• Recent revamping of Adams County's ESF 14A
• Recent Damage Assessment Training provided by State
• EOC exposure and WebEOC practice
• Clancy Phillipsborn's response, expertise, and contacts
• Response by City RM Staff from Boulder & Longmont
• Response by Boulder County Planning - Denise Grimm
• Coordination with Red Cross
• Invitations to IC briefings
• Introduction to and communication with Type 1 Team Liaison
• Coordination with Forward Observer Team for Initial Site Assessment
• Opportunity to go to the burn site
• Coordination with ESFs Road and Bridge and Planning
• Coordination with CU Library regarding structures of historical significance
• Watching and learning with other ESF's did in real time

Improvements

• ESF 14A Annex is not final	• Review ESF 14A and clarify mission roles, responsibilities, authority and essential partnerships • Write ESF 14B annex - Possibly BOCO Planning takes lead?
• Lack of ESF 14B	• ESF 14A and B training for all members
• Lack of coordination with State, BOCO Appraiser, IC, Insurance Companies	• Coordination of all entities desiring access to burn site
• Lack of standardized forms	• Create ESF 14 forms
• No ESF 14 liaison at IC to coordinate needs from there	• Digital Globe information attached to database
• Confusion of roles, responsibilities and authority	• ESF 14 Rep at IC and authority to go out to burn area with damage

	assessment teams
• Initial site assessment results not reported back to ESF 14	• Assessment reports now are reporting back to planning section.
• BOCO Chief Building Official as ESF 14 member	• Chief Planning Official trained and member of ESF 14
• Did not avoid having several different entities seeking site assessments going directly to IC or the burn site for access to do DA's - utilizing responder resources as escorts.	• Assign an ESF 14 liaison at IC
• We learned more about the situation from the media than we did at the EOC	• Training on WEB EOC information sources for all recovery section personnel
• Not sure what damage assessment information went to residents or by what methods	• Create a standardized, shared database that can be accessed by Assessor, IC, Building Inspectors, Insurance Companies, Red Cross, State, FEMA, Planning, Road & Bridge, PIO, etc.
• Not working closely with the State representatives or understanding roles (were we stepping on toes? - felt like it)	• Work closely with State recovery section personnel in future and attend all meetings.

Community Services (Volunteer and Donation Management) After-Action Report Four Mile Fire

Activation and Initial Response Phase

Volunteer Connection

- Emailed and called Merrie Leach in the EOC to determine what was needed.
- Checked voice mail morning of day 2 and no request for help.
- Expectations unclear from EOC, people calling not knowing what to do.
- Over 1500 inquiries came into Volunteer Connection

211

- Tuesday call center activated and called the EOC 3 times to offer services.
- Tuesday 1400 an agreement on 211 is the system to use for volunteer and donation management..

Adventist /COVOAD/ DVCT

- Adventist standing by waiting for the State to activate the response team.
- VOAD calls started on Tuesday
- Bob Wold from CDEM requested to stand up committee each day adding people to the group for coordination.
- COVOAD representative Michael Bright out of country communicating with other officers.
- Tuesday A-Matrix decision to utilize and set up on Wednesday active on Thursday.
- Donations going all over the place

Community Services

- Director Bohannin at EOC initially and no one was at 7a or 7b.
- Deb and Donna Koehler assigned to 7a and 7b.
- Community Services on board Wednesday morning and state connection not made.

State Animal Rescue Volunteer Organization

- Phone call placed to Boulder County Animal Control on first day.
- CART team assisted with animal evacuation and shelter,
- Tuesday had 2 requests for assistance from community, skilled evacuation support, and formal letter of request offering help, CO veterinarian rescue corps on line at Boulder County shelter.
- State reached out because Boulder County does not have evacuation team (CART)
- Tuesday fully operational by 4:00 p.m.
- American Humane Association arrived but not let into the scene by Boulder County Sergeant of animal control.
- Was getting calls on what to do with large animals.

PIO / ESF 15

- Call center and media line established
- State bombarding with resources available
- Overload with media calls.
- County administrative services looking for facilities for donation management.
- People calling into the call center wanting to bring stuff and donations.

ESF 7a & 7b

- Very quickly realized that we could not do this alone.
- Parks and open space along with State CDPHE helped

Improvements

• PIOs overwhelmed with media requests, requests from community wanting to know where and how to donate or volunteer. • It took 24 hours to create messaging for what to donate and how to volunteer, too long.	• Messaging on what to donate and how to volunteer immediately.
• Did not anticipate volume at the volunteer connection.	•
• Donation clarification messaging	• Coordinate future messaging based on donations and volunteer plan.
• Identify local funding sources	• Policy decision
• PIOs did not provide clear direction on where to send donations, goods and money.	• Coordinate future messaging based on donations and volunteer plan.
• 211 messaging	• Build 211 procedures into plan
• Media blitz on story of events / pattern or rhythm	•
• Donation messaging from State to EOC	• EOC should establish meeting with state on donations and volunteer management earlier in activation process.
• Local control versus other support partners coming in to help.	• Develop MOUs and a delegation of responsibility (DOR) process
• Life safety concerns in getting animals out of hazard area.	• Work with ESF 11a personnel to develop plan
▪ Referral forms and process for aid.	▪ Community Services should develop a disaster assistance plan
• Verbal communications not working well with ESF 15 and community service operations.	•
• Equipment management with rental companies	• EOC logistics section will develop process and plan
• There was not a clear process for ordering and canceling orders, delivery was sporadic and uncoordinated.	• Make sure that the DOR specifies the process and is understood by assisting agencies.
• Community Services Director not included in meetings with the State.	• Better coordination, responsibility of Community Services Section Chief in EOC
• No MOUs or Delegation of Responsibility process with assisting agencies.	• Establish MOUs with known assisting agencies. • Develop DOR policy and procedures.
• No ESF 7a or 7b plan	• Develop 7a and 7b plan
• AMatrix and Red Cross data base access by county	• Obtain prior agreement for access to these databases
• 7a / 7b tension between local versus outside attitudes on management long term and operational practices	• MOUs and DOR should resolve

• Spontaneous actions of public	• Community outreach knowing what government will do during a disaster
• Meals for volunteers	• Coordinate with EOC logistics feeding plan.
• Staffing requirements throughout the event and long term.	• Work with local plan and COVOAD
• County Personnel need to step in earlier in the 211, donations and distribution activities.	• Work with county administrative services to determine involvement of other departments.
• Who is responsible for 7a and 7b?	• Policy decision
• Need a proactive approach to AMATRIX	• DCT/VCT outreach
• Widen scope to other agencies earlier	• Create a contact and call out list, use EOC call out technology to accomplish.

What went well during response

- Tracey from 211 was great in establishing system and getting resources
- CVCN swooped in and helped
- PIOs edit, sent messages quickly once they got them and very professional
- Facilities once established very impressive
- Boulder Valley YMCA space was good and collocating animal shelter
- Civil Air Patrol in support of operating the collection center early on and through the first weekend. Over 900 hours logged.
- EOC having a 7a & 7b and 211
- Coordinated training and planning of eoc operations paid off
- Planning concepts good execution needs a little more work.
- Media responsiveness to requests around donations and volunteering
- Updates on web page
- 211's ability to quickly expand
- Daily calls coordinating all activities as the incident progressed
- Support at shelters and animal sites
- Messaging to public good

Target Capabilities to Develop

- MOUs
- Training
- Local VOAD system better developed and coordinated
- Format for information and developing key information (data, info, intel, display, and interoperability)
- North Central Animal Plan adoption and accept help from CART
- ID system for personnel
- Specification sheet for facilities design and requirements (collection, distribution, warehouse and assistance center)
- Develop best practices for messaging
- Update plans between state and local ESF 7a and 7b

- Declaration training and impacts for county employees and decision-makers (liability, regulations and code changes)
- Logistics process in MOU for assisting agencies for better coordination
- State and Boulder EOC connection in donation and volunteer management
- Develop a communications, operations and plan for 7a and 7b
- Develop an animal plan
- Develop a 7a Volunteer plan
- Develop a plan for a coordinated disaster relief site
- Develop collocating policy for facilities (shelter, animals and assistance center)
- Develop evacuation plan
- Support plan for mountain communities

Four Mile Improvement Plan

Capability	Observation	Corrective Actions	Capability Element	Responsible Agency	Agency POC	Start Date	Completion Date

Key

1. **Capability** – area that is to be improved
2. **Observation**- notes about what caused the problem
3. **Corrective actions**- steps to resolve the issue
4. **Capability element**- is the problem a training issue, communication issue, policy issue or procedure issue.
5. **Responsible agency**- the agency or person responsible for completing the work or coordinating the work.
6. **Agency Point of Contact (POC)-** email, fax and phone numbers.
7. **Start Date**- when is the work to begin.
8. **Completion Date**- When is the work to be completed?

Four Mile Environmental Recovery Stabilization Team

Date of Report:10/10/2010

FOURMILE EMERGENCY STABILIZATION BURNED AREA REPORT

PART I - TYPE OF REQUEST

A. Type of Report

[x] 1. Funding request for estimated funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[x] 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation measures)

[ ] 2. Interim Report
[ ] Updating the initial funding request based on more accurate site data or design analysis
[ ] Status of accomplishments to date

[ ] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Fourmile Canyon Fire

B. Fire Number: CO-BLX-000321 FUL0

C. State: CO

D. County: Boulder

E. Region: Rocky Mtn (R2)

F. Forest: Arapaho-Roosevelt

G. District: Boulder

H. Date Fire Started: 9/6/2010

I. Date Fire Contained: 9/13/2010

J. Suppression Cost: $9,500,000

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred and rehabilitated (miles): 19.5
2. Fireline seeded (miles): 0
3. Other (identify):

L. Watershed Number: 6th Code watersheds – Fourmile Creek (WS #101900050403), Boulder Creek (WS #101900050406) and Fourmile Canyon Creek (WS #101900050405). Subwatersheds include Ingram Gulch, Melvina Gulch, Emerson Gulch, Sweet Home Gulch, Sand Gulch, Schoolhouse and Bummers Gulch.

M. Total Acres Burned: 6,179

Private (4086), BLM (1397), Boulder County/State Land Board (380), USFS Acres(306), Gold Hill OS (10)

N. Vegetation Types: Predominanately open ponderosa pine. Denser mixed douglas fir with aspen on north facing slopes. Some nonforested openings with grass, mountain mahogany and other shrubs. Major drainages and springs have riparian vegetation with narrowleaf cottonwood, Rocky mountain maple, river birch, shrubby willows and other common riparian vegetation.

O. Dominant Soils:

Soil and Terrestrial Ecological Land Units within the Fourmile Canyon Burned Area:

Map Unit	Components	Acres	% Area	General Landscape Position and Vegetative Cover
JrF	Juget-Rock outcrop complex 9-55% slopes	3539	54%	Mountain side slopes and ridges Ponderosa pine, Rocky Mt. juniper, Shrubs, Mountain Mahogany, Grasses
PgE	Peyton-Juget very gravelly loamy sands 5-20% slopes	296	4%	Open park lands, uplands Grasses, Shrubs
FcF	Fern Cliff-Allens Park-Rock outcrop complex 15-60% slopes	2116	32%	Mountain side slopes, ridges, and short fans Douglas fir, Ponderosa pine, Shrubs, Grasses
2703B	Cypher-Ratake families complex, 5 to 40 percent slopes	70	1%	Mountain slopes Pondo. Pine, Shrubs, Mountain Mahogany, Grasses
2704D	Typic Haplustolls-Cathedral family-Rock outcrop complex, 40 to 150 percent slopes	261	4%	Mountain slopes Pondo. Pine, Shrubs, Mountain Mahogany, Grasses
2705D	Ratake-Cathedral families-Rock outcrop complex, 40 to 150 percent slopes	26	.5%	Mountain slopes Pondo. Pine, Shrubs, Mountain Mahogany, Grasses
2706D	Cypher family-Rock outcrop complex, 40 to 150 percent slopes	140	2%	Mountain slopes Pondo. Pine, Shrubs, Mountain Mahogany, Grasses
4703D	Bullwark-Catamount families-Rock outcrop complex, 40 to 150 percent	110	2%	Mountain slopes Lodgepole pine, Douglas Fir

	slopes			
5101A	Pachic Argiustolls-Aquic Argiudolls complex, 0 to 15 percent slopes	24	0.5%	Stream terraces Grasses, shrubs

P. Geologic Types: Metamorphic and igneous intrusive rocks

Q. Miles of Stream Channels by Order or Class:
Perennial – 7 miles, Intermittent – 13 miles, Ephemeral – unknown

R. Transportation System

Trails: 0.6 miles Roads: 31.5 miles Note: Because of incomplete mapping, mixed land ownership and unclear road ownership, there are unmapped roads and trails within the fire perimeter that are not included in the total.

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 2,492 unburned/low 3,001 moderate 684 high

B. Water-Repellent Soil (acres): The degree and extent of water repellent soils is largely unknown due to limited collection of field data However, limited observations indicate strong repellency at a depth of 2-6 inches for some observations and no repellency for others.

C. Soil Erosion: Overall, pre-burn conditions (Figure #1) had a sediment yield at the bottom of hillslopes in the range of 0-.7 Megagrams/Hectare (0 to 0.3 tons/acre). Post-burn sediment yields increased up to 14 Megagrams/Hectare (6 tons/acre) (Figure#2).

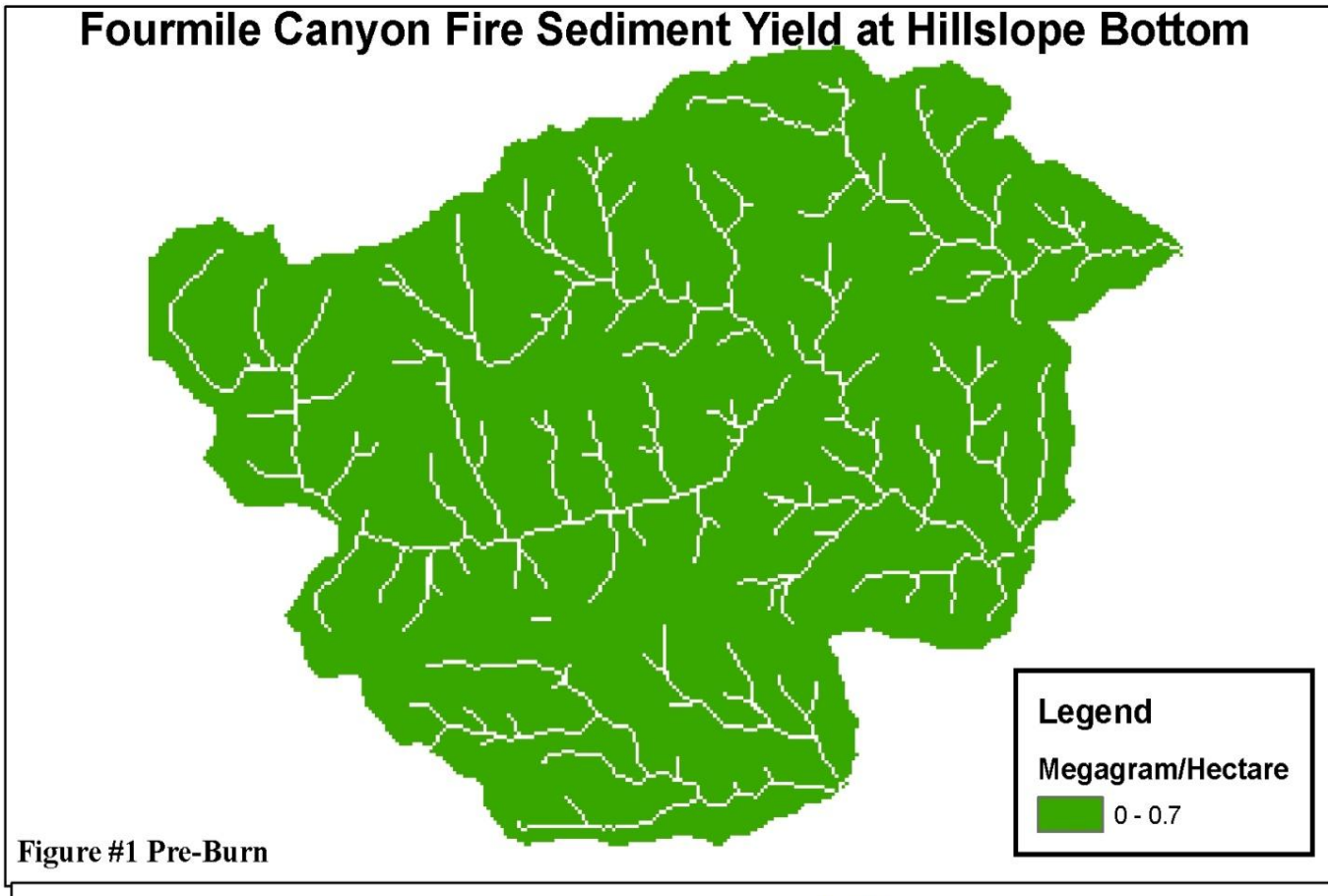


Figure #1 Pre-Burn

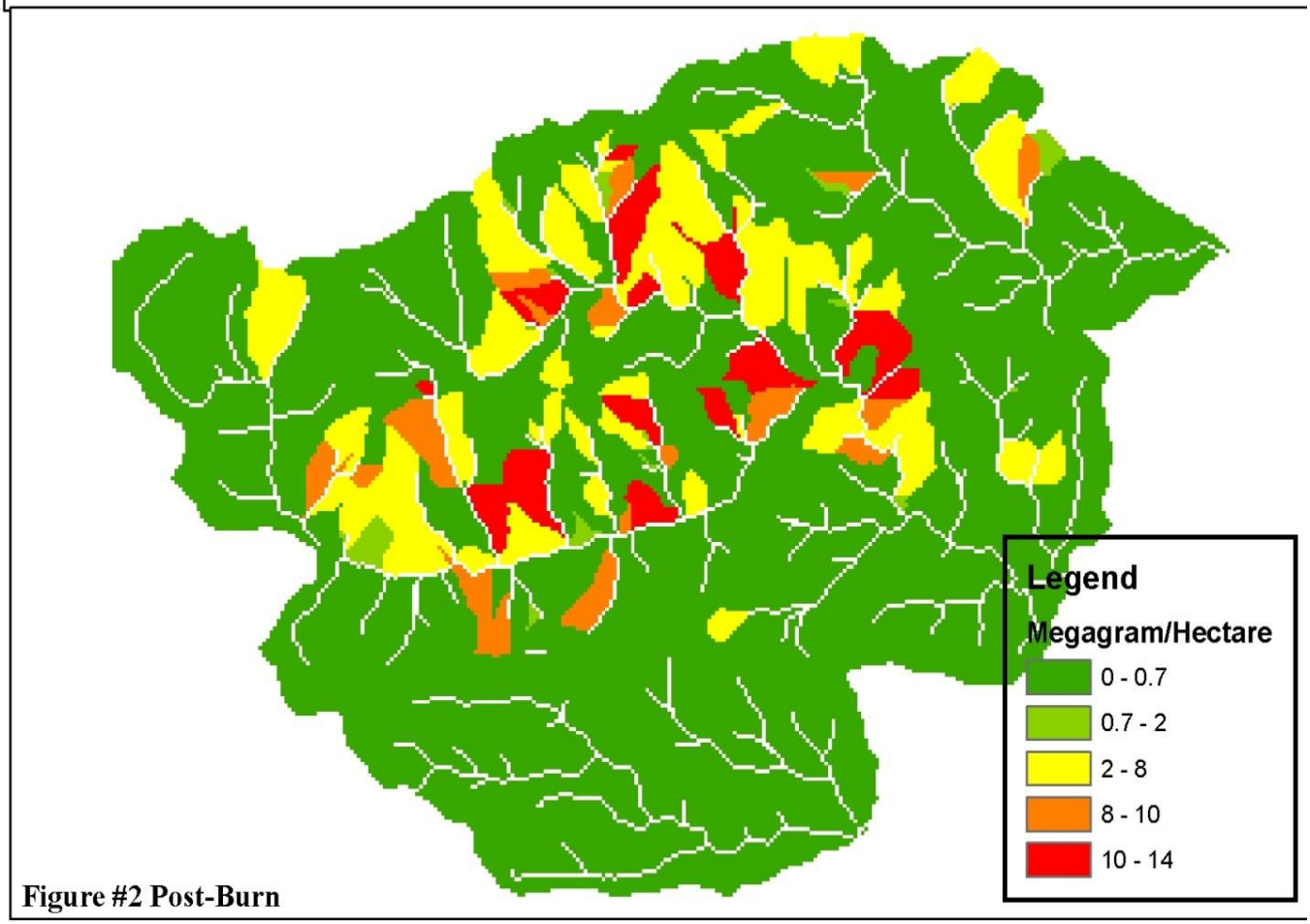


Figure #2 Post-Burn

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 2-5 yrs grass and shrubs, 20-80 trees

B. Design Chance of Success, (percent): 80

C. Equivalent Design Recurrence Interval, (years): 10

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 2.0

Fourmile Canyon Fire Pre-Fire, Post-Fire, and Treated Hydrology Peak Flow Estimates

	Prefire	Postfire	
Watershed Name	Estimated Discharge (cfs)	Estimated Discharge (cfs)	% change
Fourmile Canyon Creek East	54	115	215%
Fourmile Canyon Creek West	78	108	140%
Packer/Sunbeam Gulches	58	63	110%
Sweet Home Gulch	51	99	195%
Fourmile Above Gold Run Composite	48	98	205%
Gold Run Creek above Fourmile Composite	54	142	265%
Unnamed Tributary between Ingram and Sweet Home	14	30	215%
Ingram Gulch	59	155	265%
Blackhawk Gulch	63	101	160%
Cash Gulch	40	63	160%
Emerson Gulch	52	140	270%
Schoolhouse Gulch	46	89	195%
Melvina Gulch	43	96	225%
Long Gulch	94	103	110%
Monument Hill/Gold Hill	5	30	600%
Upper Gold Run Creek Above Goldhill	4	11	275%
Unnamed tributary to Fourmile #1, West of Emerson	18	38	210%
Unnamed tributary to Fourmile #2, South of Emerson	0.8	25	3125%

Nancy Mine Gulch	30	53	175%
Unnamed Tributary to Fourmile #3, S. of Nancy Mine	1.4	15	1070%
Unnamed Tributary to Fourmile #4, S. of Melvina Gulch	1.4	10	715%
Unnamed Tributary to Fourmile #5, E. of Melvina Gulch	14	22	155%
Short Cut and Sand Gulch	84	135	160%
Fourmile Creek above Fire Perimeter	89	158	180%
Unnamed Tributary to Fourmile Above Crisman Drive	26	49	190%
Upper Bummer Gulch	6	13	220%
Unnamed Tributary east of Bummers Gulch	2	5	250%
Fourmile Creek above Gold Run	193	345	180%
Gold Run at Fourmile Creek	140	329	235%

Notes: -Short duration, high intensity summer thunderstorms are the events of greatest concern. However, no recording guage coverage is available locally and no precipitation-frequency maps for thunderstorms are available. Therefore, we used NOAA maps with the lowest duration (6 hour) storm as the closest estimate of thunderstorms.
-Because of modeling limitations, the estimated peak flow values should only be used as indicators of relative post-fire increases, rather than as absolute values.

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The Fourmile Canyon Fire was driven by high winds that changed directions several times. Generally, the fire was fast moving and resulted in a mosaic pattern of low, moderate, and high soil burn severities. The burned area extends from the Sugarloaf Area in the south to the Lee Hill Area in the north.

The fire was the most destructive fire in Colorado history in terms of damage to personal property with an estimated cost of $217,000,000 in losses. The fire burned through steep, heavily forested canyons just west of Boulder, Colorado destroying 166 homes. Towns within the burned area include Salina, Wallstreet and Gold Hill. While the number of homes destroyed is large, there are an estimated 300 homes within the fire perimeter that did not burn, resulting in a very large number of people living in and around the burned area. This coupled with the high population density adjacent to the fire leaves many people vulnerable to post fire effects. Many of the unburned houses lie along the canyon bottoms, making people vulnerable to flooding. The steep topography and mobile soils of the area make floods and debris flows very probable following fires. This has been seen in several nearby fires and is expected following the Fourmile Canyon Fire. Dominant vegetation in the fire area consists mainly of ponderosa

pine with native shrubs and grasses on south-facing slopes and Douglas fir on north-facing slopes.

A watershed emergency exists because of the increased threat of flooding and debris flows to homes and infrastructure, the potential for noxious weeds invasion, threats to downstream community water supply, and threats to roads within the burned area. Public health and safety are also threatened due to increased flooding and debris flow potential. For the purposes of this assesment, high intensity thundershowers are the precipitation events of concern.

The single most complicating factor in the emergency stabilization of the Fourmile Canyon Fire revolves around the land ownership within the perimeter. The fire burned through a historic mining district with a mixture of land ownerships and very small parcels. Locating property lines and identifying land ownership would be very difficult and expensive. In order for stabilization techniques to be effective, close coordination with private, county, and federal land managers will be necessary. The plan is written on a watershed basis, not on individual land ownership. The Natural Resources Conservation Service (NRCS) will work with private land owners on the implementation of this plan on private and county owned lands, while the Bureau of Land Management (BLM) and US Forest Service will work with the NRCS to get projects implemented across the landscape. Ideally, one contract could be used to treat federal, county, and private lands.

The emergency stabilization plan includes mulching the moderately and severely burned slopes between 20 and 60% gradient, seeding to prevent noxious weed invasion, culvert upsizing, storm inspection and response, channel clearing, warning signs, flood warning systems, and water diversions.

Threats to Property:

- **Homes and Driveways:** Throughout the burned area, houses and buildings located within or at the bottom of steep burned gulches or in flood-prone areas adjacent to Gold Run Creek or Fourmile Creek are at increased risk. Many houses within the burned areas have driveways that cross Gold Run or Fourmile Creeks. Post-fire sediment laden flows and/or debris flows are expected to increase as a result of the fire, increasing the risk for impacts to homes and driveways.

- **Roads:** Roads within the burned area are at increased risk for impacts from increased water, sediment, and/or debris. Impacts include damage to the road and/or loss of access due to severe erosion of the road surface, or deposition of sediment or debris. Increased risk for temporary loss of access/egress exists on Gold Run Road, Fourmile Canyon Road, and on roads in gulches within the burned area. Any damage to, or blocking of, the county road network, or private roads, could eliminate access to residents or emergency service providers. Roads within the burned area are also likely to exacerbate the risk of flooding and erosion by collecting surface water, concentrating it and delivering it to hillslopes or stream channels. Most of the roads within the burn have inadequate cross-drainage and several are bermed. The berms will contain water on the road surface rather than allowing it to drain off.

- **Irrigation:** There are 12 irrigation water supply ditches that take out of Boulder Creek downstream of the confluence with Fourmile Creek, starting with the Silver Lake ditch (0.8 miles from the confluence) to the Boulder Weld ditch (14.4 miles from the confluence). These ditches serve approximately 22,700 acres of agricultural lands in Boulder County and 13,900 acres in Weld county. There are approximately 20 large farm operations, plus several hundred small acreage producers in the service area. Each ditch has a head gate structure on Boulder Creek to control water intake. Consequently, risk to irrigation water from runoff-induced sediment and debris loading is expected to be minimal due to the ability to monitor and close the intake structures if significant runoff events occur along Fourmile Creek.

Threats to Human Life and Safety:

- **Increased Flooding and Debris Flow Risk**: Threats to life and safety exist in valley bottom areas and in steep burned gulches throughout the burned area. Residents and road users will be exposed to increased risk of flooding and debris flow. Houses, driveways, other private property, and roads located in valley bottoms adjacent to or in the floodprone areas of Gold Run and Fourmile stream channels are at increased risk for flooding and debris flow. In several locations, structures and roads are located on debris flow fans at the outlets of severely burned gulches. Within steep, burned gulches tributary to Fourmile and Gold Run Creeks, increased threats to life, safety and property also exist as a result of the wildfire. These areas are characterized by steep burned hill-slopes, unpaved roads with poor drainage, houses and structures.

  A relatively high density of houses within the valley bottom of Gold Run and Fourmile Creeks extends from the Salina area downstream to the Crisman area. This is a zone of concern for flooding because there are several burned gulches upstream on both Gold Run and Fourmile Creeks. There is a high risk that increased stream-flow, sediment, and/or debris will be deposited on Gold Run Road and Fourmile Canyon Drive.

- **Abandoned Mine Lands:** Abandoned mine hazards were identified throughout the burn area including Hoosier Hill, Sweet Home, Ingram, Emerson, and Melvina Gulches. These hazards include open pits, adits, and shafts, and present a high risk to human life and safety. Many of the known adits and shafts had the support structure timbers burned during the fire, and now have compromised structural integrity. There is no complete inventory of mine sites and mine waste/tailings in the affected area. It is unknown how many mine shafts and adits were exposed by the Fourmile Canyon Fire. It appears sedimentation issues due to runoff will be more directly impacted by burned and disturbed soils/vegetation than by existing mine wastes in the area of the fire. The observation team did not examine areas where significant ground cover remained, as those areas will not present a greater risk to water quality, safety or structures than they did before the fire.

- **Hazard Trees:** Hazard trees killed by the fire increase threats along the public and private roads within the burn.

Threats Natural Resources:

- **Noxious Weed establishment and/or Spread:** Based on experience from recent fires in nearby areas, noxious weeds are expected to establish and expand within the burned area. Myrtle spurge (State List A), leafy spurge, spotted knapweed, Canada thistle, musk thistle, bull thistle, Scotch thistle, yellow toadflax, oxeye daisy, scentless chamomile, and cheatgrass have been documented within the perimeter. Orange hawkweed (State List A), diffuse knapweed, dalmation toadflax, and St. John's wort are present in surrounding areas. Weed infestation is highly probable, particularly along travel corridors and riparian areas, and in areas of high and moderate burn intensity.
- **Threats to Water Used for Domestic and Municipal Supply:** Fourmile Creek, below the confluence with Gold Run Creek, serves as a source for public water supply to the community of Pine Brook Hills. The Pine Brook Water District withdraws water near the Poorman Road and pumps it up to a reservoir located in Twomile Creek. Increased risk to the water supply from impacts related to sediment laden flood flows can be avoided by ceasing diversions until the flood wave has passed. However, potential threats to this water quality, such as increase in total organic carbon (TOC), nutrients, and metals could increase treatment costs.
- **Threats to Water Quality from Mine Waste:** There are numerous mine tailings within the burn perimeter. The Evans Mine tailings are located close to the bottom of Gold Run and have the possibility of entering the drainage network. The reactivity of the tailings within the burn is unknown; however nearby tailings in the Left Hand Creek watershed are known to contain heavy metals. The risk of mine wastes within the fire perimeter entering the drainage network are expected to present a low to moderate risk to water quality.

Threats to Cultural/Heritage Resources:

- **Cultural Resources** are site specific. Potential values at risk are unique to each site. Threats to the integrity of the site and threats to public safety at the site created by the fire will have to be evaluated on an individual basis. Initial site visits proved to be time consuming, but with those few sites visited there was a wide variety of post fire conditions. Some sites were untouched by the fire, while others were completely burned over. Some sites have safety concerns that were unchanged by the fire, while others have hazards that were created by the fire (e.g. the Nancy Mine). Treatments at the sites will have to be on an individual basis.
- There might be a variety of post fire conditions occuring at the cultural resources sites. Those initially examined represent a small fraction of those to be analyzed. Efforts for the near future should focus on field visits to the sites to analyze for stabiliization efforts and mitigation for safety concerns.

Critical Values Considered but No Emergency Determined:

- No increased risk for critical habitat or suitable occupied habitat for federally listed threatened or endangered terrestrial, aquatic animal, or plant species was identified.

B. Emergency Treatment Objectives:

- Re-establish ground cover (mulch) to reduce threats to human life and safety, homes and infrastructure by reducing risk of flood and debris flow and/or by mitigating the effects to threatened structures.
- Coordinate with the National Weather Service and Boulder County's Office of Emergency Services existing flood warning system to provide flood warning to residents at risk of flooding and to water supply providers.
- Provide for upgraded stream crossings on County roads to better handle expected flow and debris increases.
- Reduce risk of noxious weed invasion and promote re-establishment of native vegetation.
- Augment and stabilize road drainage on roads affected by the fire.
- Reduce risk of hazard trees in the burned area.

Proposed emergency treatments to reduce threats are identified in Section A, and treatment objectives are discussed in detail in Section E:

C. Cost of Selected Alternative: $1,809,540

Treatment	BLM Costs	U.S.Forest Service Costs	Boulder County Costs	State Costs	NRCS/Private Costs	Total
Mulching	$582,800	$60,500	$122,100		$894,600	$1,660,000
Weeds	$5,000	$700	$1,048		$8,452	$15,200
Seeding	$11,443	$1,592	$2,886		$44,080	$60,000
Channel Clearing/Outreach			$1,000			$1,000
Storm Inspection Response			$19,400			$19,400
Culverts			$20,000			$20,000
Secure Mine openings				$25,000		$25,000
Flood Warning Systems			$500			$500
Warning Signs			$1,440	$500		$1,940
Debris Removal			$1,500			$1,500
Hazard Tree Removal			$5,000			$5,000
Agency Total	$599,243	$62,792	$174,874	$25,500	$947,132	$1,809,540

D. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[X] Soils	[ ] Geology	[X] Range	[X] Cultural
[X] Forestry	[X] Wildlife	[ ] Fire Mgmt.	[X] Engineering	[ ]

[ ] Contracting [X] Ecology [X] Botany [X] Archaeology [ ]
[ ] Fisheries [ ] Research [ ] Landscape Arch [X] GIS

Team Leader: Eric Schroder, Soil Scientist

Email: eschroder@fs.fed.us Phone: (303) 541-2538 FAX: (303) 541-2515

E. Treatment Narrative:

Land Treatments:

Purpose: To reduce runoff and expected increases in peak streamflows, reduce soil loss and the occurrence of debris flows. To maintain long-term ecological health by limiting the spread on noxious weeds.

Aerial Mulching: Aerially apply mulch to approximately 1800 acres of severely and moderately burned slopes in gulches tributary to Gold Run and Fourmile Creeks. Woodstraw would be preferred; however, certified weed-free cereal grain straw could be substituted if sufficient quantites of woodstraw are not available. We have identified approximately 1800 acres that are suitable for treatment. Further refining during implementation could reduce the acreage to 1200. Mulch will be applied at the rate of approximately 50-75% ground cover on slopes of 20-60%. Aerial application has been used successfully at the Overland Fire (Jamestown area) and Barnes Canyon (NV) fires, and reduces the logistical and safety problems of transporting large quantities of straw to the site and spreading by hand on steep slopes. Areas included in the mulching include stabilization of mine waste piles; however the real coverage of these areas are not known, but most fall within the mulching polygons.

Treatment cost for straw mulching is estimated at $960,000
Treatment costs for woodstraw mulch is estimated at $700,000
Total costs for mulching: **$1,660,000**

Mulching Effectiveness: Mulch effectively replaces the ground cover lost to the fire, increases infiltration and decreases runoff, and reduces the detachment of soil and transport of materials from the hill-slope. Mulching treatments have been shown to be highly effective at reducing sedimentation at the hillslope/research plot scale. While there is less documentation available about its effectiveness at reducing runoff in the watershed scale, it is believed that by replacing the ground cover formerly provided by organic matter, litter and duff, rates of runoff should be slowed, and amounts of runoff should be reduced. It is effective immediately after application and for several years thereafter. Because of the mixed land ownership, close cooperation between the Natural Resource Conservation Service, private land owners, Boulder County, and the Bureau of Land Mangement will be essential so that federal, county, and private lands can be treated.

Monitor and Treat Noxious Weeds: Treat existing known populations of weeds, including myrtle spurge, leafy spurge, and spotted knapweed, which is a very small percentage of the burned area. Since weed infestations pre-burn are largely unknown, monitoring weed establishment and spread within the burned area will be necessary. If monitoring shows that weed populations are expanding, treat weeds using an integrated weed management strategy that could include mechanical, biological, and

chemical treatment. Any chemicals used would be approved by the responsible agency. We anticipate that treatment may occur in 2011 and in the two following years. The number of acres that will need treatment in years 2012 and 2013 is unknown at this time.

The estimated costs for weed treatments is **$15,200/year**.

Noxious Weed Treatment Effectiveness: With early detection, limiting the spread of weeds should be fairly effective. Because weeds are present in the burned area and in adjacent areas, we will not be able to completely prevent their establishment, but rather limit the spread and permanent establishment. Because of the intermixed land ownership, cooperation with private landowners will be critical to effectiveness.

Seeding: Manually broadcast and rake in seed on approximately 600 acres of severely and moderately burned areas with 0 to 60% slopes. Seed will be applied within a 100 foot buffer on each side of roads and driveways. The objectives of the seeding is to prevent the introduction or spread of noxious and invasive plants. Seeding may also provide erosion control after the first year when grasses are established (Smith, unpublished paper).

The cost of seeding is estimated at $100/acre for 600 acres or **$60,000** total

Seeding Effectiveness: Seeding alone has become less popular as a treatment due to its limited effectiveness at providing any effective cover the first year after a wildfire. In a review of existing studies on post-fire seeding, few studies demonstrate statistically significant decreases in sediment movement (Beyer 2004, MacDonald and Larsen 2009). However, seeding is effective at preventing or reducing the spread of noxious weeds (Johnston 2008). Species were chosen to provide quick cover to compete with aggressive weeds, particularly cheatgrass. In addition, these species are not expected to persist beyond ten years, allowing native species to establish later without competition from aggressive annual weeds.

Channel Treatments

Purpose: The purpose of channel treatments is to help convey runoff through the drainage system and remove debris that may plug channels and culverts resulting in water being diverted and causing damage outside of the stream channel itself. Implementation will be conducted by the county through public outreach, asking residents to remove debris and keep channels clear. Costs will be covered with the public information treatment.

Channel Debris Clearing: Channel-debris clearing removes debris from the channel and flood-prone areas that could dislodge and plug culverts downstream. High priority areas for treatment would include areas in close proximity to houses and directly upstream from culverts. Debris may include burned wood from trees and debris from burned structures. Generally, this treatment would be done manually with a focus on small debris considered likely to be transported downstream.

Estimated costs for the outreach is **$1,000**

Channel Debris Clearing Effectiveness: The removal of material that could become flotsam during a runoff event greatly reduces the chances of the channel becoming clogged and water being diverted out of the channel.

Roads Treatments:

Purpose: The purpose of road treatments is to reduce the risk of transportation system drainage failure which could compromise access/egress, damage the road surface, increase erosion, sedimentation, and cause downstream damage. Road and trail treatments mitigate the fire's effect on the transportation infrastructure and protect life, safety, property, and critical natural or cultural resources. These treatments work in conjunction with land, channel, and protection/safety.

Storm Inspection and Response: Storm inspection and response keeps culvert and drainage structures functional by cleaning sediment and debris from the inlet between or during storm events on roads where access is required. Typically, crews drive the roads during or immediately after storms, checking sediment and debris accumulations and performing thorough, rapid inspection of road-drainage features, culverts, and other structures. The crew is responsible for maintaining culvert function by opening culvert inlets and removing debris. Within the regular duties of Boulder County road maintenance crews, routine road, culvert and infrastructure inspections are performed. Additional inspections within the burn area will be added to regularly scheduled inspections. Crews will inspect culverts and ditches for debris prior to storm event runoff, and remove any accumulated debris or sedimentation from those locations. Crews will also monitor high risk areas during storm events to immediately identify areas at risk of flooding or debris sedimentation. Following a storm event, crews will identify areas that have been impacted and respond by initiating a cleanup effort to remove accumulated sediment and debris from roadways, or repair damaged infrastructure. Cost for this treatment will vary by storm event and the response required following that event. Total cost for response to a 20 cubic yard event is $1941 per event with an anticipated 10 events per year.

Total Estimated Costs = **$19,410**

Effectiveness of Storm Inspection and Response: No formal effectiveness monitoring data exists on storm inspection and response. Informal observations indicate that the treatment is cost effective because many road problems are avoided with timely clearing and cleaning of road crossings. Effectiveness can be reduced when a dedicated team is not made available to conduct the storm inspection and response. In some cases, the patrol area is too large for the responsible agency to cover effectively and contracting may be a solution. In accessible areas, some agencies have used storm patrols instead of installing trash racks or larger culverts.

Increase culvert diameters at drainage crossings, remove berms, add drainage, and armor drainage outlets: There are approximately 15.8 miles of maintained county roads (2.7 paved, 13.1unpaved) and 15.7 miles of unmaintained county roads within the burned area. Several more miles of private roads exist in the burn area. Ownership of all the roads is unclear at this time, but there are private, county, and National Forest roads within the burn. Culverts that are used for roadway drainage (ditch relief culverts) and channel crossings contribute to the watershed emergency when they are damaged

in a fire or when their hydraulic capacity is marginal. Stream diversion potential may exist along insloped roads with a continuous road grade. Post-fire sediment and debris flow in channels may plug culverts and increase the diversion-potential risk. Increased storm runoff due to the fire's effects can cause the failure of undersized culverts and lead to erosion of the road fill, thereby deteriorating water quality. Boulder County will upgrade or replace culverts located within high-risk areas, or add features to alleviate sediment deposition on the county road, within the culverts, or downstream. Larger culverts, flared end sections, or rip rap aprons will be installed to increase the efficiency of flow through the culverts, prevent overtopping, or reduce erosion and sedimentation at the culvert locations. At this time, the Boulder County Transportation Department will require additional research to identify locations for culvert replacement or other upgrades. Research will include identifying likely areas of high-risk, culverts that are undersized for expected base flow from burn areas, and effects downstream of the upgrades.

Total cost for this treatment is not known at this time, but is estimated at **$20,000**.

Effectiveness: Roads are both values at risk and sources of problems because they collect and concentrate water and then eventually drain it across the road prism where it can erode the road surface and fill slopes as well as cause problems downslope. The proposed treatment is effective at reducing road effects immediately after installation and into the future. Effectiveness will be increased if private, as well as public roads are treated.

Protection and Safety Treatments:

Purpose: Treatments to protect life, safety, and critical natural and cultural resources include flood-warning systems, warning signs, barriers, facility safety work, enforcement protection, and hazard removal. Flood-warning systems are used when there is a direct and substantial threat to life and a high probability of significant storms capable of producing floods or mass failure. Flood-warning treatments include early warning systems that are collaboratively identified with the local jurisdiction responsible for public safety. Warning signs alert drivers and recreational users of existing or potentially hazardous conditions created by wildfire incidents. Warning signs should use universal symbols.

Secure Mine Openings: The Colorado Division of Reclamation, Mining and Safety-Abandoned Mine Lands (AML) Program is initiating a post fire survey in conjunction with the US Forest Service and the BLM to identify open abandoned mine openings to include in upcoming projects. The survey will start the beginning of October 2010. Two options to safe guard a hazardous mine site are:

1. Sites can be included for safe guarding in a grant application prepared by the AML Program, which may take up to two years to process.
2. Colorado statute states the landowner is responsible for adequately safe guarding mine openings. The landowner can pay to have the site safe guarded. The AML Program will provide a list of contractors and technical assistance/oversight.

At this time the inventory of mine sites and how the fire affected them is unknown along with the ownership. Continued surveys will be conducted.

Costs are estimated at **$25,000** for continued mine surveys. Closures are estimated at $4,000 each.

Flood Warning Systems: The Fourmile Creek watershed provides public water supply to Pine Brook Hills and is also tributary to Boulder Creek upstream of multiple irrigation ditches located above and within the City of Boulder. Use of existing flood warning systems provided by the National Weather Service and the Boulder County Office of Emergency Services would notify water providers that sediment laden floodwaters may be approaching. They can then make an informed decision about whether to close intake headgates to avoid taking sediment laden water into their systems.

> **Effectiveness of Flood Warning Systems:** This method has been used with success on the Bobcat and Overland Fires to provide warning to water providers. However, the method is not likely to be effective for people living within or immediately downstream of the burned area. Because of the close proximity to flood generation areas (the burned gulches) and the rapid movement of flood flows, flood warning is unlikely to provide adequate response time so that effective action could be taken.

Warning signs: Warning signs will inform the public of the risks associated with travel within the burn area that include excess stormwater runoff, possible high water or flash floods and debris that may create a hazard along the County road. Warning signs will be installed along major County roads at the edge of the burn area. Additional signs will be installed in high-risk areas. In these areas, access may be cut-off by high water, debris, or other hazards. Warning signs will also be posted in areas of known mine hazard areas. The Colorado Division of Reclamation, Mining and Safety-AML Program can provide mine hazard warning signs.

Total cost for this treatment is **$1,440**.

> **Effectiveness of Warning Signs:** No formal effectiveness information is known for warning signs; however it can be expected that by notifying visitors of dangers created by the fire that people will be aware of the hazards.

Debris Structures: Debris structures, including jersey barriers, will be used to divert flood waters and debris around other values at risk, such as residential structures in critical locations. Debris structures will be installed in areas where culverts are expected to overtop with excessive stormwater runoff and where other values at risk, such as residential structures, are located within the drainage path. Debris structures will divert high water and debris around these structures.

Total cost for this treatment is **$1,500**.

Hazard Tree Identification and Removal: To protect life and safety of residents, visitors, and emergency stabilization implementation workers; identify and remove hazard trees within the burned area.

> **Hazard Tree Removal Effectiveness:** Identification and removal of hazard trees is believed to be a very effective means to provide for public safety. We recognize that it is not feasible to remove all trees that may eventually fall (all of the burned trees). We will remove only those trees that are judged to be high risk and that occur along roads and trails.

Public Information: Public information will be dispersed in many ways, including public meetings, leaflets, and other outlets. Due to the large amount of private land and hundreds of land owners within the burn area, there are limited ways to get work done on large areas of the burn. Public information will attempt to educate property owners on the new environment that can be expected after the fire and things that they can do about it. This includes driveway maintenance, flood danger, debris clearing in channels, mine hazards, seed mixtures, restoration options and procedures, etc. The Colorado Division of Reclamation, Mining and Safety-AML Program can also provide mine hazards education and awareness materials for distribution to the public, and, on request, work with schools to educate children on mine hazards as part of the Mine Safety Awareness Program.

Public information Effectiveness: No formal effectiveness information is known for public information; however it can be expected that notifying and educating residents and visitors of the new environment created by the fire will increase public awareness.

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Four Mile Canyon Fire Recovery Task Force

December 17, 2010
Boulder County Courthouse

Slide presentations covered:

1. Review of funds received/expended so far
2. SBA loan statistics
3. $1.3 million is not new funds

Human Services/Mental Health/Housing WG (Bohannan/Wold)
Need to focus on expectation management.
Robin stated that the meeting was very helpful and new ideas were brought forth.
They are currently conducting a needs assessment with Land Use.
They will get the needs assessments next week.
United Way is looking to spend the $100K still available, there might be potential to use it towards mental health or insurance workshops. Explore using a case management approach to assisting people with mental health services and other needs.
There were issues with utilizing TANF/CDBG funding.

Actions: (brought forward from the conference call and/or determined 12/17/10)Boulder County staff will assess feedback from the needs assessment and determine needs the week of December 27th. CDEM will help Boulder staff facilitate a meeting of COVOAD and other NGO recovery entities soon to identify who can help with what needs.

- Set up a conference call with Dr. Curt Drennen (CDPHE) and others to determine if COCERN is a viable option or if another option exists. State agencies that do crisis counseling regardless of a declaration should be engaged.
- Coordinate with Mike Chard on messaging for future flood risk, particularly with respect to mental health.
- Develop a mental health plan with area providers (Robin will coordinate with Garry and Mike).
- Finish processing grant from DOLA DLG.

Asbestos/Hazardous Materials Debris Removal WG (Zayach/Roitman)
BC legal staff brought up potentially using eminent domain.
BC's consultant has been to every property and done a visual inspection. A report will be available. BC will get the report to Howard.
BC will continue to manage debris issues the same as before; they are requesting no change in the protocols but would like help with compliance.
BC has RFQs for companies with certification capability.

Actions: (brought forward from the conference call and/or determined 12/17/10)

- Howard and CDPHE staff and BC staff will tour the specific high risk properties the week of January 10. Howard will coordinate with Garry. Snow on the ground might be a timing issue but they'll work around it.
- DEM will follow up with DNR and CDPHE water quality staff the week of January 10th for a conference call on potential future mine tailing and asbestos issues. Mine tailings on private property interspersed throughout the area were a preexisting condition. Question: if there is a debris flow and properties with mine tailings or remaining asbestos issues are affected, will there be regulatory impacts with respect to water quality and/or cleanup?
- Hans will convene a meeting with CDPHE leadership on Inspection Guidance/compliance/standards the week of December 20th. The question remains: what do they need to do to check the individual properties off the 'properties of concern' list.
- A meeting needs to be set up before the end of the year to determine and understand the impacts or requirements for reporting conditions, documentation, and disclosure requirements with respect to property and home sales.
- DEM will host a conference call with BC, insurance industry representatives, and CDPHE to determine if there are requirements for compliance.
- BC will continue to reach out to property owners in high risk areas to encourage cleanup by 5/1/10. BC will develop a strategy for debris removal for those that do not comply. Note: If utilizing the Governor's Executive Order (EO) for entering private property without the property owner's permission, the strategy needs to be implemented in January due to expiration of the EO. BC would like an extension of the EO.
- Funding for debris removal and certifications is still on the table.
- X-cel cut trees in easements to work on powerlines. Slash and downed branches remain on private property and outside easements. Some of this is in the debris flow high hazard areas. Doug Dean (PUC) will look into who is legally responsible for this removal.

<u>Flood Preparedness and Response/Wildfire Hazard Mitigation WG</u> (Chard/Gally)
A meeting was hosted by BCOEM concurrent to this meeting with regard to studies and modeling to gain consensus on assumptions. UDFCD suggests three studies: routing of the water; weather data analysis for better prediction; surface flow based on past events. CWCB suggested reviewing flood depths for certain magnitude events.

Actions:

- (From Boulder County Flood Risk Meeting notes and 12/17/10)
- Determine levels for warnings.
- Develop awareness messaging.
- Determine funding for studies. Hire (through UDFCD) consultants. Conduct studies. Develop model and scenarios. Look for recurring themes to set triggers. Train users. Outputs by March and hoping for a useable model earlier than May 2011. There is some concern over dates being too late.

- Determine if mitigation systems such as debris racks are feasible. Determine if there are private property issues with installation.
- Ops is waiting to develop plans based on information that will be forthcoming.
- Include the City of Boulder and those downstream in the preparedness activities when relevant.

Community Outreach WG (Sanfaçon/Gally)
Seven community meetings, including two flood insurance workshops, scheduled for January. Grant for $150,000 from Governor's Disaster Fund awarded to BC to help offset costs of Boulder Recovery Center/Manager.

Actions:

- CWCB, CDEM and FEMA to provide ongoing technical assistance concerning flood insurance and workshops. Seven workshops are scheduled in January.
- CDEM Recovery Manager to attend future community meeting to stay informed on human services/mental health needs.
- DEM will work with BC to convene a meeting with insurance industry representatives (perhaps set up through RMIIA?) and the Colorado Division of Insurance (B. Baca) to discuss issues. Insurance has been an obstacle hindering people from moving on.

Next Meeting

January 14, 2011
9:00 – 11:00
Boulder County Courthouse

List of Community Meetings

Fourmile Fire Survivors Meeting
(Organized by a fire survivor for property owners and renters who lost their home/structure. Topics will include insurance, green building, challenges people are facing and how to hire an architect/contractor.)

- December 22, 5:30 p.m., Chautauqua Community House, 900 Baseline Road, Boulder

Community Meetings for anyone who lives in the Fourmile Fire area
(Topics will include watershed protection/erosion control, revegetation, flood insurance and flood preparedness. 6:30 p.m. is informal time for Q&A with staff, 7:00 p.m. meeting starts.)

- January 11, 6:30 p.m., Fourmile, at Salina School House, 536 Gold Run Road
- January 12, 6:30 p.m., Sugarloaf, at Fire Station #2, 1360 Sugarloaf Road
- January 18, 6:30 p.m., Gold Hill, at Gold Hill Elementary School, 890 Main Street
- January 19, 6:30 p.m., Sunshine, at Fire Station #1, 311 County Road 83
- Back-up date in case of snow: January 25, 6:30 p.m., Sunshine, at Fire Station #1, 311 County Road 83

Meeting for property owners and renters who lost their home/structure

- (Topics will include watershed protection/erosion control, flood preparedness, green building and other issues to be identified)
- January 20, 6:30 p.m., County Courthouse, 3rd Floor, Pearl and 13th Streets
- United Policyholders' Roadmap to Recovery(tm) Insurance Workshops
- January 10, 2011, 6:30 p.m., Boulder County Courthouse, East Wing, 2025 14th Street. Topic: How to "Speak UP" and Communicate Effectively, plus CO Underinsurance Overview and Colorado Claims Handling Rules and Remedies.
- February 10, 6:30 p.m., Boulder County Courthouse, East Wing, 2025 14th Street. Topic: Documenting and recovering insurance benefits for the dwelling, (including an overview of scopes of loss).

FOURMILE CANYON FIRE
RESOURCE GUIDE

Boulder County

For members of our community who have been impacted by the fire, we are deeply saddened by your losses. We know this disaster has affected many residents, both directly and indirectly, and we want you to know our thoughts are with you. Please let us know if there is anything we can do to assist you as you continue to rebuild your homes and lives.

– Boulder County Commissioners

Inside:

Direct Assistance

Fire Victims Assistance Center

The Assistance Center provides counseling and support services to displaced residents. Located in the Sundquist Building at 3482 N. Broadway (@ Iris) in Boulder, the center offers services to residents impacted by the fire, including:

- *Basic needs (short term assistance and referrals for longer term help)*
- *Short term rental assistance*
- *Fire recovery referrals*
- *Medical case management*
- *Mental health counseling - call (720) 209-0597, 8 a.m. – 5 p.m. daily*
- *Senior services for those age 60 and older*
- *Coordination with local nonprofit organizations to provide additional services and resources*

Hours: 8 a.m. - 4:30 p.m., Monday-Friday. Phone: (303) 441-3560.

Fourmile Emergency Stabilization (FES) Team

Objective: Analyze and recommend potential stabilization treatments to help manage unacceptable risks to life, property, and significant natural or cultural resources

The FES team has completed its initial environmental assessment of the burn area. The assessment includes an analysis of post-wildfire threats to soils, vegetation, hydrologic functions such as debris flow in drainages and slopes, trees, transportation infrastructure, abandoned mines, cultural resources, and wildlife. It also provides recommendations for treatments that will reduce these risks or threats.

The Natural Resources Conservation Service (NRCS) is providing information to private landowners about rehabilitation, including seeding recommendations and soil stabilization, and is exploring potential funding sources that could be used for protection measures on private lands. Call (303) 776-4094 x3 for more information.

Additionally, several public meetings are scheduled in the Fourmile Fire burn area to inform landowners of the FES plan and discuss recommendations for fire rehabilitation treatments on private lands.

These meetings are open to all affected property owners and renters who are dealing with issues related to public health and safety, environmental rehabilitation, soil stabilization, and road maintenance.

Visit: www.BoulderCounty.org/fourmilefire for a schedule of meetings.

Direct Assistance (cont.)

Disaster Loan Outreach Center (see more information on p. 6)

Low-interest Federal disaster loans are available to homeowners, renters, businesses of all sizes, and private, non-profit organizations whose property was damaged or destroyed by the fire. Small Business Administration (SBA) customer service representatives are on-site through October at the Disaster Loan Outreach Center to issue loan applications, answer questions about SBA's disaster loan program, explain the application process, help individuals complete an application, and close on approved loans.

Location: Boulder County Public Health, Boulder Auditorium Room, 3450 N. Broadway
Hours of Operation: Monday-Friday, 9 a.m. to 6 p.m., through October. Walk-ins are encouraged. No appointment is necessary. Apply by Nov. 22, 2010.

Distribution Center

Items donated by the community at-large, including clothing, bedding, housewares, household items, personal hygiene items, diapers, and other items are available to residents displaced or affected by the fire.

Location: 5395 Pearl Parkway (next to Sunbelt Rentals) in Boulder
Hours: 10 a.m.-7 p.m. daily until mid-November. No appointment is necessary.

Health & Safety

Ash and Debris Removal

The Colorado Department of Public Health and Environment (CDPHE) has issued new requirements that pertain to the removal of ash, debris, metals, and concrete generated by the fire. Ash and debris must be wetted and hauled to approved landfills in lined and sealed dumpsters. Scrap metal must be rinsed with water before recycling, concrete foundations must be inspected for asbestos before recycling.

We encourage you to contact your waste hauler, and review the guidelines set forth by the state if you are managing debris removal on your own. If you have questions about asbestos, please contact the CDPHE Asbestos Unit at (303) 692-3100, or contact Susan Martino, Boulder County Public Health specialist, at (303) 441-1176.

Most insurance companies help pay for debris removal. For residents who are uninsured or underinsured, Boulder County can assist on a limited basis by providing roll-off containers (dumpsters) and water for wetting down debris. Proof of need is required.

For more information regarding debris removal, contact: Hilary Collins, Resource Conservation Division, at (720) 564-2224, or email: hcollins@bouldercounty.org.
For a list of licensed haulers or water delivery services, send an email request to: fourmilefire@bouldercounty.org or visit: www.BoulderCounty.org/fourmilefire.

Tetanus Risk

Public Health will provide Tdap (tetanus, diphtheria, pertussis) vaccinations free of charge to residents impacted by the fire. Call (303) 413-7500 to make an appointment.

Water Testing/Well and Septic Services

Private water wells should be tested. Free sample bottles and analysis are available by calling (303) 413-7426.

Due to the circumstances, there will be no enforcement action taken on unapproved septic systems or fees levied on those who wish to re-connect their unapproved septic system to a replacement dwelling. However, an application to re-connect will need to be submitted to Boulder County Public Health. In the future, unapproved septic systems will need to be replaced under an approved permit if the house is sold or goes through any future land use review or building permit.

To check for damage to your septic system, look for damage to the pipes or plastic risers (broken, burned, scorched), to the ground around the leach field (smashed, compacted, driven over) and any burned electrical components. If in doubt, check with an Onsite Wastewater System professional. A list of professionals can be found at: www.SepticSmart.org, click on "resources", then "professionals."

Road Maintenance

Boulder County's Road Maintenance Division will be working on several ongoing roadway mitigation and preventative measures in the Fourmile Canyon, Sunshine Canyon and Gold Hill areas, including:

Road Maintenance

- *Grading and dust control, including minimal maintenance on unmaintained public roads in order to facilitate emergency equipment access*

Erosion Control

- *Monitoring by County Road Maintenance crews of likely problem and high-risk areas before, during, and after storms to identify potential problems, floods and areas for cleanup*
- *Additional inspections within the burn area will be added to regularly scheduled inspections. Following a storm event, crews will initiate a cleanup effort to remove accumulated sediment and debris from roadways or repair damaged infrastructures*
- *Rebuilding damaged guard rails on Sunshine Canyon Road*
- *Installing debris structures to divert high water and debris in areas where culverts are expected to flood and where homes are located in the immediate drainage path*
- *Evaluating existing access routes and provision of alternative routes for areas that are at most risk in case of flooding or significant mud slides*
- *Anticipating and addressing roadway erosion concerns*
- *Placing warning signs to inform the public of risks within the burn area, which include excess storm water runoff, possible high water or flash floods and debris*

Hazardous Tree Removal

- *Removing dangerous or threatening trees in road rights of way—however, the most immediate hazardous trees near county-maintained roads have already been cut*

For more information, contact the Road Maintenance Division at (303) 441-3962 or send an email to: transportation@bouldercounty.org.

Utilities

As of Sept. 23, Xcel Energy crews restored power to all customers in the Fourmile Canyon burn area.

Xcel Energy will continue to work in the burn area, removing trees and debris around power lines that could affect service.

- *If electric service is restored to the area surrounding your home, but you are still without power, and for other service and fire-damage related information, call (800) 895-4999.*
- *If you are calling for information about beginning construction for rebuilding a home or other facility in the burn area, please call the Builder's Call Line at (800) 628-2121.*

Consumer Protection

The District Attorney's Consumer Protection Division is committed to making every effort to ensure that victims of the Fourmile Canyon Fire are not re-victimized by unscrupulous contractors trying to take advantage of your vulnerable situation. The DA's staff is available to help research the reputation of any prospective contractor. Recommendations on that research are available online at www.bouldercounty.org/da.

The D.A.'s publication, "Before You Build" is also available online or can be mailed to anyone who calls the office at (303) 441-3700. The D.A.'s Consumer Protection Office recognizes that residents have already been besieged with piles of mail from contractors from all over the nation and wants to make sure residents take the time to fully explore the reputation, licensing, longevity and competency of any prospective contractor.

Permitting and Building
303-441-3930 or www.bouldercounty.org/lu

Rebuilding Your Home

The Board of County Commissioners has authorized the Land Use Department staff to pursue changes to the county's land use and building regulations to help property owners recover from the devastating losses suffered in the Fourmile Canyon Fire.

Overall, the goal of the proposed regulation changes is to provide property owners more time than currently exists under the Land Use Code to rebuild damaged or destroyed structures subject to only a county building permit, and to give more flexibility in the rebuilding of those structures with the hope of improving the impacts of redevelopment over that which preexisted the fire.

Here is what is currently proposed:

Timeline

The Land Use Code currently requires property owners to apply for a building permit and commence reconstruction within six months of the structure being destroyed, in order to rebuild preexisting structures with only a building permit, (and not having to go through Site Plan Review). The draft will propose expanding this timeline to two years.

Temporary Housing

While the county strongly prefers to see property owners living in permanent housing located somewhere other than the subject parcel, staff recognizes that some people will need to live on their property as they rebuild. A variety of temporary housing options may be allowed by the Chief Building Official provided they meet an acceptable standard for temporary occupancy (IRC, HUD, etc.). There must be some means of approved sanitation on the parcel, with the preferred method being hooking in to an existing onsite wastewater system.

Temporary Accessory Structures

Owners proposing to rebuild may want to utilize a temporary accessory structure on their properties for storing tools, building materials, and forestry maintenance equipment while their homes are being restored, and the proposed regulations will provide the ability to do this.

Restoration of a Destroyed Home or Structure

The current regulations require structures to be rebuilt at the same location, same square footage, and same height of the structure that was destroyed. The draft regulations propose allowing property owners to rebuild structures that are slightly larger (such as not more than 10%), in safer or more advantageous locations (take advantage of passive solar, build in a location away from any natural hazard - erosion, rock fall, etc., shorter or less steep access - without otherwise having significant impacts, movement to meet setbacks), and/or build slightly different footprints (e.g., change from a two story structure to one with a building permit review).

Only legally existing structures may be rebuilt under these provisions. Accessory dwelling units, garages, additions, or other structures built without permits cannot be replaced under these provisions (unless a permit was not required at the time it was built). The Site Plan Review process will apply to property owners who intend to make more significant changes when they rebuild on their properties.

BuildSmart

New homes rebuilt as a result of this disaster will likely be more energy efficient than the home it is replacing because of Boulder County BuildSmart. The requirements for deconstruction will likely be removed from houses destroyed and damaged in the fire although recycling of salvageable materials will be encouraged. The draft will suggest options for modifications from BuildSmart, particularly with respect to applicability of hardship waivers being extended to new construction.

Next Steps and Upcoming Meetings

Draft regulations will be posted to the Land Use website by Oct.11 at www.BoulderCounty.org/lu/FourmileRebuild. In addition, the draft regulations will be emailed to the Land Use Code and BuildSmart listservs, contractors licensed in Boulder County, affected property owners, and affected fire protection districts.

There will be three public hearings to review the proposed regulatory changes. All meetings will be held at the Downtown County Courthouse in Boulder: 1325 Pearl St., 3rd Floor.

- *Monday, Oct. 18, 5:30 p.m. – Public meeting with Land Use staff*
- *Wednesday, Oct. 20, 1:30 p.m. – Planning Commission*
- *Thursday, Oct. 21, 4 p.m. – Board of County Commissioners (final adoption expected)*

Public testimony will be taken at all meetings. In addition, interested parties are encouraged to respond to the draft with written comments. Written comments must be received by 10 a.m. on Oct. 13 in order to be incorporated into the staff report. The tight timeline on referral comments is due to the expedited regulatory drafting and hearing process which the Board of County Commissioners has authorized to address the immediate needs of the community rebuilding effort.

For more information about the meetings, or to submit comments, contact: Abby Janusz at ajanusz@bouldercounty.org or (720) 564-2623.

Dealing with Insurance

The Colorado Division of Insurance regulates the insurance industry and assists consumers and other stakeholders with insurance issues. The agency also provides a good resource for questions related to filing claims after a disaster.

Visit: www.dora.state.co.us/insurance for more information or call (303) 894-7490.

Getting disaster help:
A message from the Small Business Administration

Note: The following information is provided by the SBA which remains solely responsible for its content

Application deadline: Nov. 22, 2010

WHAT YOU NEED TO KNOW

- If you are a homeowner or renter, disaster loans are often the primary source of money to pay for repair or replacement costs not fully covered by insurance or other compensation. SBA offers low-interest disaster loans to homeowners, renters, businesses of all sizes and private, non-profit organizations. Homeowners may borrow up to $200,000 at a rate as low as 2.5% to repair or replace their primary residence. Homeowners and renters may borrow up to $40,000 at a rate as low as 2.5% to replace personal property.

- Businesses may borrow up to $2 million at a rate as low as 4% for any combination of property damage or economic injury. SBA offers low-interest working capital loans (called Economic Injury Disaster Loans) to small businesses and most private, non-profit organizations of all sizes having difficulty meeting obligations as a result of the disaster.

Preserve all of your rebuilding options – even if you are insured, you should apply for a disaster loan

- There is no cost to apply for assistance
- There is no need for your insurance claim to have been settled
- There is no need for an appointment to visit the SBA Disaster Loan Outreach Center
- There is no obligation to accept a loan that is approved

Even if you are insured, you may have a funding shortfall due to your insurance deductable, costs of debris removal, costs to comply with current building codes, costs of mitigative measures, costs to repair landscaping, wells, septic systems.

Apply by the Nov. 22, 2010 deadline, and if you need additional time to assemble personal paperwork or decide on your plans, the SBA will give you a 6-month extension period to complete the application process.

WHAT IF I DECIDE TO RELOCATE?

You may use your SBA disaster loan to relocate. If you are interested in relocation, an SBA representative can provide you with more details on your specific situation.

WHAT YOU NEED TO DO

SBA customer service representatives are on-site in Boulder through the month of October. Visit the Disaster Loan Outreach Center to receive a loan application, get answers to questions, and discuss the application process.

No appointment necessary (open through October)

SBA Disaster Loan Outreach Center
Boulder County Public Health
Boulder Auditorium Room | 3450 N. Broadway (@Iris)
Mondays through Fridays | 9 am to 6 pm

After October, SBA disaster help and information is available by calling SBA's Customer Service Center at (800) 659-2955, emailing disastercustomerservice@sba.gov, or visiting SBA's website at www.sba.gov/services/disasterassistance.

- Individuals may also access SBA's online Electronic Loan Application (ELA) at: https://disasterloan.sba.gov/ela/

- Submit your completed application at the SBA Disaster Loan Outreach Center or by mailing it to: SBA, 14925 Kingsport Rd., Ft. Worth, TX 76155.

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Obtaining Copies of Records

Replacing important and vital records after a fire can be tedious and time-consuming. We want to help expedite that process as much as possible by providing the following resources for you when seeking to replace lost documents:

Deeds and Marriage Licenses

Contact the Clerk & Recorder's Recording Division to receive copies of marriage certificates and property deeds. Copies will be provided at no charge.

Visit: *Boulder County Clerk's Office, 1750 33rd St., 2nd Floor, Boulder*
Email: *RecordingSupervisors@bouldercounty.org*
Call: *(303) 413-7770*

Motor Vehicle

The Motor Vehicle Division of the Clerk & Recorder's Office is providing the following services to Boulder County residents whose homes were either destroyed or damaged during the Fourmile Canyon fire:

- *Duplicate copies of motor vehicle registrations*
- *Duplicate titles for vehicles destroyed or damaged in the fire*
- *Assistance with late fees on vehicle registrations renewed after the one-month grace period*

In most cases, the cost for these services is being waived or reduced through Dec. 31, 2010. Contact Norma Trickey, Motor Vehicle Coordinator, at (303) 413-7720.

Birth and Death Certificates

Birth certificates from any county in Colorado and death certificates issued in Boulder County can be obtained through Boulder Public Health at no charge to people who have lost them in the wildfire. Please review the identification requirements outlined on the website (www.BoulderCountyVitalRecords.org) and appear in-person at the Public Health office at 3450 Broadway in Boulder. For more information, call (303) 441-1151.

Voting Information

Ballots will be mailed to voters who requested mail-in ballots beginning Oct. 12. Colorado law does not permit the post office to forward mail-in ballots to new addresses. As a result, registered voters impacted by the fire who are signed up to receive mail-in ballots and whose mailing addresses have changed are encouraged to contact the Elections Division as soon as possible to ensure you receive a ballot at your current mailing address:

- *Call – (303) 413-7740*
- *Email – Vote@VoteBoulder.org*
- *Visit – Clerk & Recorder's Office, 1750 33rd St., 2nd Floor, Boulder*

Voters who plan to vote in person can vote at an early-voting location beginning Oct. 18 or at your assigned polling place on Tuesday, Nov. 2.

Call (303) 413-7740 or visit:
www.VoteBoulder.org
for complete election details.

Property Assessment & Taxes

The Boulder County Assessor's Office is undertaking an ongoing review of structure losses and damage. A list of damaged or destroyed homes and structures is available online at www.BoulderCounty.org/fourmilefire.

Call (303) 441-3530 if you have a question or discrepancy about a property listed on (or missing from) the list.

The Assessor's Office will use the following process for the assessment of property:

- *For 2010 (taxes payable in 2011), a structure will be prorated for the four months it was destroyed (this is what the state statues allow)*
- *In 2011 (taxes payable in 2012), structures will be removed completely and land values will be discounted based on the degree of destruction seen in the surrounding area of the home and how that is determined to affect the market*
- *These discount factors—which can be a significant reduction—will be reviewed every year as the surrounding area recovers and the sales market starts to recover.*
- *For 2011, the land will stay at the improved residential assessment rate. This is currently 7.96 percent, versus the 29 percent that is applied to vacant land.*

Please email specific property assessment questions to Rex Westen at rwesten@bouldercounty.org or call the Assessor's Office at (303) 441-3530. The Treasurer's Office at (303) 441-3520 can also help answer questions about property taxes.

Boulder County Commissioners' Office
Mailing address: P.O. Box 471, Boulder, CO 80306
Phone: 303.441.3500 | Email: fourmilefire@bouldercounty.org
Visit www.BoulderCounty.org/fourmilefire for more information

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Contacts

Asbestos Management
CDPHE Asbestos Unit: 303-692-3100
Boulder County Public Health:
Susan Martino at 303-441-1176 or smartino@bouldercounty.org
website: www.BoulderCountyFire.org

Assistance Center
Call center: 303-441-3560
Mental Health counseling: 720-209-0597

Building and Permitting (Land Use)
303-441-3930 or www.bouldercounty.org/lu

Consumer Protection
District Attorney's Consumer Affairs Division: 303-441-3700
Website: bouldercounty.org/da
Colorado Division of Insurance: (303) 894-7490
Website: www.dora.state.co.us/insurance

Debris Removal and Hauling
Boulder County Resource Conservation Division:
720-564-2224 or hcalfire@bouldercounty.org

Disaster Loans
Small Business Administration Customer Service Center:
(800) 659-2955 or www.sba.gov/services/disasterassistance

Land Stabilization and Rehabilitation
Private landowners concerned about erosion on their properties should contact the Natural Resources Conservation at:
303-776-4034 x3 for more information

Property Assessment & Tax Questions
For property assessment questions, contact the Assessor's Office at 303-441-3530 or rwesten@bouldercounty.org. For questions about property taxes, call: 303-441-3520

Records
Birth & death certificates: 303-441-1151
Deeds and marriage licenses: 303-413-7770
Motor Vehicle: 303-413-7720

Road Maintenance
303-441-3962 or transportation@bouldercounty.org

Utilities
Xcel Energy: 1-800-895-4999 for outage problems
1-800-628-2121 for rebuilding