



**CITY OF BOULDER
CITY COUNCIL AGENDA ITEM
MEETING DATE: October 15, 2013**

To: Members of City Council

From: Jane S. Brautigam, City Manager
Paul J. Fetherston, Deputy City Manager

Date: October 10, 2013

**Subject: Update on Flood Recovery and Disaster Assistance Status
Consideration of Overarching Goals Regarding Cleanup and Flood Recovery
Measures**

EXECUTIVE SUMMARY:

As stated in the Oct. 1, 2013 City Council Memo, Boulder has transitioned into disaster assistance and recovery operations for the flood of Sept. 11 through 15. City staff continues to work with state and federal agencies to connect impacted residents to individual disaster assistance and is working to restore city facilities and streets. This memo provides an update of the progress made since the report to Council on Oct. 1, a revised damage assessment submitted to the Federal Emergency Management Agency (FEMA) on Oct. 8, and the revised “Key Objectives for near-term recovery and long-term resiliency relative to the 2013 Flood” reflecting council’s direction.

On Oct. 8, the city provided the Federal Emergency Management Agency (FEMA) with a revised preliminary damage assessment stemming from the storms and floods of approximately \$43.6 million. This assessment is likely to change as staff and contractors gain access to additional damaged areas and begin restoration of city assets.

COUNCIL ACTION REQUESTED:

In an effort to address the council’s input of Oct. 8, 2013 on the city’s proposed key objectives in response to the flood, the “Key Objectives for near-term recovery and long-term resiliency relative to the 2013 Flood” have been revised. City Council consideration is requested of this matter and action in the form of the following motion:

Motion to approve the Key Objectives for near-term recovery and long-term resiliency relative to the 2013 Flood (stated in **ATTACHMENT A**).

BACKGROUND:

By Sept. 17, most city departments transitioned from emergency response to disaster assistance efforts and have been working cross-functionally to remove debris and restore municipal

government operations, facilities and community infrastructure. A summary of the disaster assistance and recovery status, accomplishments from Sept. 27 through Oct. 10 and near-term priorities are included in **ATTACHMENT B**. Accomplishments that were listed in the Oct. 1, 2013 council memo, while not included in Attachment B, are available through the following link: https://www-static.boulder.colorado.gov/docs/10.01.13_Final_Agenda_Packet_Electronic-1-201309271640.pdf

In addition, staff has revised the preliminary estimates provided to FEMA for the initial assessment of damages caused by the flood. The following table explains these estimates, which are preliminary and will likely change as we are able to more fully assess the extent of infrastructure damage.

PRELIMINARY DAMAGE ASSESSMENT:

FEMA PUBLIC ASSISTANCE DECLARATION - CITY OF BOULDER SUMMARY*	
CATEGORY A - Debris Removal	\$ 4,953,440
CATEGORY B - Emergency Protective Measures	\$ 1,296,685
CATEGORY C - Road & Bridge Systems	\$ 2,380,000
CATEGORY D - Water Control Facilities	\$ 10,850,000
CATEGORY E - Public Buildings & Equipment	\$ 4,170,000
CATEGORY F - Public Utilities	\$ 4,250,000
CATEGORY G - "Other" (Parks and Recreation, Open Space, Multi-Use paths)	\$ 15,704,220
PRELIMINARY RECOVERY ESTIMATE BY CATEGORY	\$ 43,604,345

* Based on revised assessments as of Oct. 8, 2013 and recognizing that some of the infrastructure is still covered by debris and water and therefore unable to be assessed at this time.

NEXT STEPS:

Adopt a motion to approve the revised Key Objectives for the near-term recovery and long-term resiliency.

ATTACHMENT A – Responding to the 2013 Flood: Key Objectives for Near-term Recovery and Long-term Resiliency

ATTACHMENT B -- Department status updates and priorities/goals going forward

**Responding to the 2013 Flood:
Key Objectives for Near-term Recovery and Long-term Resiliency**

September 2013 brought unprecedented rainfall to our region, causing significant flooding, loss of life, and widespread damage. The Boulder community is quickly getting back on its feet. But while many are back to normal routines, others will be dealing with the floods' impacts for months and years to come. As a community, adequate care and support should be ensured for those most affected, in Boulder and surrounding areas, while focusing on the important work of reconstruction and other priorities. The flood has caused harm, but has also created an opportunity: to think critically about our future, and to work together like never before in support of long-term community sustainability and resiliency.

Our key objectives for the near-term recovery and long-term resiliency are:

1. **Help people get assistance.** Facilitate access to individual assistance for affected homeowners, renters and businesses to support their recovery from flood impacts and strengthen long-term resilience.
2. **Restore and enhance our infrastructure.** Invest in projects to restore services and to rebuild and enhance infrastructure, as appropriate, in the interests of public health and safety, community quality of life, and long-term resilience.
3. **Assist business recovery.** Work with the Boulder business community and key partners to connect affected businesses with resources, recover quickly from flood impacts, and support long-term economic vitality.
4. **Pursue and focus resources to support recovery efforts.** Work in partnership with volunteers, governmental and other agencies to maximize financial resources and efficiencies for recovery.
5. **Learn together and plan for the future.** Engage the Boulder community in assessing neighborhood impacts, refining and rethinking community design options, prioritizing actions and opportunities that mitigate hazards before rebuilding and support long-term community resilience and sustainability. In doing so, we build a city both greater and more beautiful than we were before.

This Page Intentionally Left Blank

Department Status Updates And Priorities/Goals Going Forward

Across the city organization, the focus has been on continuing to assess the flood-related damage, coordinating with FEMA and providing initial cost estimate information, and drafting scope of work related to recovery projects. Information related to specific status updates and accomplishments towards recovery goals for Public Works is listed below. Accomplishments that were listed in the Oct. 1, 2013 council memo, while not included below, are available through the following link. https://www-static.bouldercolorado.gov/docs/10.01.13_Final_Agenda_Packet_Electronic-1-201309271640.pdf.

PUBLIC WORKS DEPARTMENT:
UTILITIES:

Source Water System

Recovery Goal:

Restore and stabilize all critical elements of the water system before the onset of winter or approximately Nov. 1, 2013 in mountainous areas.

Status:

Dams, diversion and source water pipelines were inspected for damage and confirmed safe and operable. Hydroelectric facilities were inspected for damage and are back online with the exception of the Orodell facility which is offline due to non flood related issues.

Water Treatment and Distribution

Recovery Goal:

Restore and stabilize all critical elements of the water system by Nov. 1, 2013.

Status:

The city's two treated water pipelines in Boulder Canyon were impacted by flood erosion and unstable slopes, and one of these pipes is currently offline pending the completion of stabilization work.

The Betasso Water Treatment Facility suffered minimal damage but had to operate on the emergency generator until power was restored by Xcel Energy. The back-up generator fuel tanks are being topped off in the event that there are further outages. The Boulder Canyon roadway was restored on Oct. 7 and so fuel and chemical deliveries will no longer need to be coordinated with CDOT.

The Boulder Reservoir Water Treatment Facility lost power during the flood and remained offline due to high turbidities in Boulder Reservoir and damage to the Boulder Feeder Canal that delivers water from Carter Lake. The treatment facility was put back into operation on Oct. 10, 2013 using water pumped from Boulder Reservoir since the Boulder Feeder Canal is not capable of delivering water at this time. In addition, it has been determined that the influent pipe from the

canal has been plugged due to sediment carried by the canal. Bids are being solicited to remove this sediment.

A temporary water interconnect to the Spring Valley Water District is still in place and probably will be for another two weeks while repairs continue to be made on the water line.

Several access roads suffered damage from erosion, the most serious being the road leading up to the Booten (Fourmile Canyon Creek crossing) water storage tank. Boulder County restored Wagon Wheel Gap Road (access to Booten). Now that this roadway has been restored, work will be initiated to restore the access road to the Booten water storage tank.

Accomplishments:

- Completed restoration work on the Devil's Thumb and Chautauqua water storage tank access roads.

Wastewater Collection System

Recovery Goal:

Restore or stabilize all critical elements of the wastewater collection system by Nov. 1, 2013. This date has been changed from Oct. 1 due to the newly identified issue related to the interceptor sewer, as mentioned below.

Status:

Floodwater in Two-mile Canyon Creek destroyed a section of sewer serving about 50 homes along Spring Valley Road and West Linden Drive. Reconstruction of the destroyed section of line has been completed.

It was determined that Boulder Creek breached its north bank just upstream of the confluence with South Boulder Creek. The creek is now flowing through Pit D and across the interceptor sewer at the northeast corner of Pit D. The reinforcement of the interceptor sewer needs to be more fully assessed and will be completed by Nov. 1.

Wastewater Treatment Facility (WWTF)

Recovery Goal:

Restore all critical elements of the wastewater treatment facility by Nov. 1, 2013, including the influent bar screens in the "headworks" portion of the facility.

Status:

The influent 24-hour flow totals have reduced to 21 million gallons per day (Mg/D). It is anticipated that there will be a slow and steady return to pre-flood flows (normal, pre-flood was 13 Mg/D on average) over the next month. Damaged headworks screens were shipped for repairs at the manufacturer's facility. One is back in service and the other screen remains with the manufacturer, with an unknown return date. On Sept. 30, 2013, city staff and a contractor began debris removal work from the headworks process and primary clarifiers. So far, they have removed enough sand/grit/rocks to fill two roll-off dumpsters. This work is planned to continue through Friday, Oct. 11.

Accomplishments:

- The one repaired headworks screen was put back into operation on Sept. 26, 2013 and it continues to operate well.

Storm water collection system

Recovery Goal:

By April 1, 2014, restore the capacity of the storm sewer and local drainage systems. This will require removal of significant debris and sediment lodged in pipes, catch basins and inlets.

Status:

Continuing to work to remove debris and sediment lodged in pipes, catch basins and inlets. It is anticipated this work will continue through the winter and be completed by April 1, 2014.

Major Drainageway System

Recovery Goal:

By April 1, 2014, restore the capacity of the major drainageway system, with the exception of Fourmile Canyon Creek. Restore the capacity of the Fourmile Canyon Creek drainageway by Oct. 1, 2014. This will require removal of significant debris and sediment as well as the restoration or reconstruction of improved drainageway features such as drop structures, retaining walls and eroded channel bottoms.

Status:

A plan is being developed for long-term reconstruction, sediment and debris removal for heavily impacted drainageways including Bluebell Creek, Gregory Canyon Creek, Two-mile Canyon Creek and Fourmile Canyon Creek.

Continue to clear sediment and debris and restore drainageway features along Two-mile Canyon and Fourmile Canyon creeks in cooperation with the Urban Drainage and Flood Control District. Work to clear sediment and debris and restore drainageway features along Gregory Canyon has been initiated.

Accomplishments:

- An information open house for residents of the Fourmile Canyon Creek area west of 26th Street was hosted on Oct. 3, 2013.

TRANSPORTATION:

Street Damage

Recovery Goal:

Reconstruct and open residential streets (i.e., Willow Brook) impacted by flooding by December 2013. Clear and/or reconstruct culverts and adjacent impacted roadways (i.e. 47th north of Independence, Pennsylvania west of 7th, and 55th and Cypress) by the end of October 2013.

Status:

A few residential roadways remain closed and/or will need to be reconstructed because of flood damage. A list of current closures can be found at www.BoulderFloodinfo.net.

Numerous storm water channels through bridges and culverts need to be cleared of sediment and debris.

Accomplishments:

- Reopened Table Mesa Drive (Gillaspie to Lehigh) to traffic – an exposed gas and communication line were supported and undermining on this major arterial was repaired to open all lanes to traffic including the Skip transit route and damaged sidewalk was repaired;
- Opened access to high priority residential streets - Asphalt has been removed and a temporary gravel surface has been placed on streets that had significant damage and homes could not be accessed. The streets will be paved after underground utilities are evaluated. Example Streets include King Avenue from 17th to 18th Streets; Willowbrook Drive north of Cascade and 7th Street from Pennsylvania to University. Some pavement has been placed on 7th Street to minimize on-going erosion from minor storms; and
- Inspected vehicular bridges - To date, all major structures (more than 20 feet in length) have been evaluated and confirmed to be safe and operable. Most minor structures (less than 20 feet in length) have been evaluated and many need debris removal and have scouring around the foundation.

Debris on streets

Recovery Goal:

Clear majority of the debris from streets and sidewalks deposited by the flooding by Nov. 1, 2013. Debris removal is expected to continue throughout the end of the year.

Status:

Work to clear sediment and debris on roadways and street sweeping was initiated to follow up debris removal. The city's debris removal contractor will continue with debris removal throughout the city.

Street Sweeping

Continue to sweep the street system concentrating on hardest hit areas first. Sweep and clear debris from all roadways with bike lanes, making them useable by the middle of October 2013. Sweeping will be on-going with a big focus on this effort the next two weeks and continuing with fewer sweepers into November and later, as needed.

Status:

Currently using the two city sweepers and two sweepers on loan by City of Lakewood. Crews have concentrated on the hardest hit areas first. Sweeping and debris removal in certain areas need to be coordinated and posted for "No Parking" in order to access the parking areas.

Bike/Multi-Use path system and Underpasses

Recovery Goal:

Clear debris from paths and underpasses; remove trees that were undermined; reconstruct damaged path sections and open all of the greenways system to public use by the end of the year. Some of the system is still underwater, mostly at underpasses, and if significant damage is uncovered repairs could extend into spring 2014. Coordination will be required for most damaged sections with channel debris removal and reconstruction.

Status:

Much of the flood impacted path system is open, crews continue to pick up debris and sweep sand from paths. Several underpasses are still filled with debris. The Transportation Division has identified segments that have major damage and require capital reconstruction (unless they are still filled with debris and is working on contracting processes to address many of the repairs). Up-to-date path and underpass closure can be found at www.BoulderFloodinfo.net. The areas that have the most damage and high water include Boulder Creek and sections of Fourmile Canyon Creek.

FACILITIES AND ASSET MANAGEMENT (FAM)

Recovery Goals: [Goals are listed in Oct. 1 council memo. New or revised goals are listed below]

- Complete all facility assessments and damage costs estimates by mid-November [*revised from completion date of October*];
- Open all community use facilities for full use by the end of October (Reynolds Library, West Senior Center, parts of North Boulder Recreation Center);
- Identify all latent flood damages to electrical, lighting and HVAC systems by the end of October; and
- Incorporate flood mitigation work with damage repairs, especially at the recreation centers, Reynolds Library and fire stations. [*new goal*]

Status:

Of the 373 city buildings and structures, 352 (94 percent) have been assessed. Utility structures, mostly dams, still require full assessments. Of the 352 that have been assessed, 46, or 12 percent, are estimated to have damage. Four facilities remain closed (West Senior Center, Reynolds Library, Wildland Fire Cache and the FlatIrons Event Center) with immediate restoration actions completed:

- Fire Station #4 was one of the facilities that was closed and re-opened on Sept. 30 with permanent repairs still to be completed;
- West Senior Center and Reynolds Library are anticipated to be re-opened by the end of October 2013; and
- Assessments continue for the Wildland Fire Cache and FlatIrons Event Center, with the Spice of Life kitchen continuing to operate in safe areas of the FlatIrons Event Center. Staff is working to ensure repairs and flood mitigation are completed in accordance with FEMA requirements

Accomplishments:

- 94 percent of buildings and structures have been assessed for flood damage;

- Flood damage to 46 facilities had air, water and materials tested to varying degrees;
- North Boulder Recreation Center gymnasium room has been restored and is back in use;
- New South Boulder Recreation Center gym floor was successfully air-dried with a large tent system and blowers; and
- Roof repair estimates have been completed.

PARKS AND RECREATION DEPARTMENT:

Accomplishments:

1. South Boulder Recreation Center gymnasium has reopened.
2. North Boulder Recreation Gymnastics program restarted with some facility adjustments.
3. On Oct. 5 and 6, 300 volunteers performed volunteer work at Boulder Reservoir, Coot Lake, and Tom Watson Park. Tasks included removing debris, trail and path restoration, spreading sand, reseeding, and much more.
4. Nearly all of the Boulder Creek Bike Path has been opened in part to a very collaborative effort with city departments.
5. Conducted six volunteer clean ups with over 500 volunteers removing flood debris and repairing parks and recreation facilities.
6. Held the Emma Gomez Martinez renaming ceremony on Oct. 12th.

Priorities:

Unchanged

Goals:

1. Open all parks by the end of October with the exception of severely damaged areas such as the Evert Pierson Kids Fishing Ponds, E.G. Fine Park, Elk's Park, Elmer's Two Mile Park, and Knollwood Tennis Courts.
2. Develop and execute community-building volunteer events in the parks, facilities and Boulder Reservoir for the fall of 2013. Coordinate volunteer and other events across the city.
3. Coordinate with FAM to assess the opening all of the North Boulder Recreation Center by early spring 2014.
4. Continue volunteer projects for neighborhood parks as well as larger restoration projects in the spring.

OPEN SPACE AND MOUNTAIN PARKS DEPARTMENT:

Immediately following the September 2013 Colorado Northern Front Range Flood, Open Space and Mountain Parks lands were closed to public access to protect the health and safety of community members and to reduce the likelihood that strained emergency response services would be called to a rescue on city open space lands. Since then, the priorities for the Open Space and Mountain Parks Department have been to restore safe access to OSMP lands for community enjoyment, to support agricultural operations, and take actions to protect ecological systems. This recovery work includes providing community members opportunities to participate

as volunteers, join naturalist led hikes, and find regular and accurate updates about the status and condition of OSMP lands through a variety of media.

Flood recovery work is occurring throughout the OSMP land system to repair trails and trailheads. Flooding had significant or severe effects to over half, or nearly 80 miles of trail spread across the system. Many of the severely affected trails will need to be reconstructed. While the about 46 percent of the trails were assessed at having minimal impact, even these sections need some level of repair. Agricultural operations have been disrupted as well. There is damage to or destruction of almost 80,000 feet of fencing, and many of the more than 40 ditches that serve OSMP ranchers and farmers are inoperable. Most of the stream channels have been filled in with an incredible amount of sediment – from fine sand to cobble. There are also many areas with stream banks vulnerable to further erosion, and debris in the channel that have dramatically changed habitat for aquatic plants and animals.

Visitor Access: Trailheads

Recovery Goal:

Restore 80 percent (=28) of OSMP trailheads by Nov. 1, 2013 so they can be used for visitor access or for staging of reconstruction materials and equipment for flood recovery.

Status:

As of Oct. 9, approximately 50 percent (17) of the 35 OSMP trailheads are open to the public. OSMP has progressed 63 percent of the way to achieving this flood recovery goal, and is on a trajectory to meet this goal on time (see Figure 1).

Accomplishments:

- Eight (8) OSMP trailheads have been opened in the period between the drafting of City Council updates (Sept.26-Oct. 9.).
- The city website is updated daily showing each trailhead that opened. A map showing all opened and closed trailheads is updated daily when there is a change.

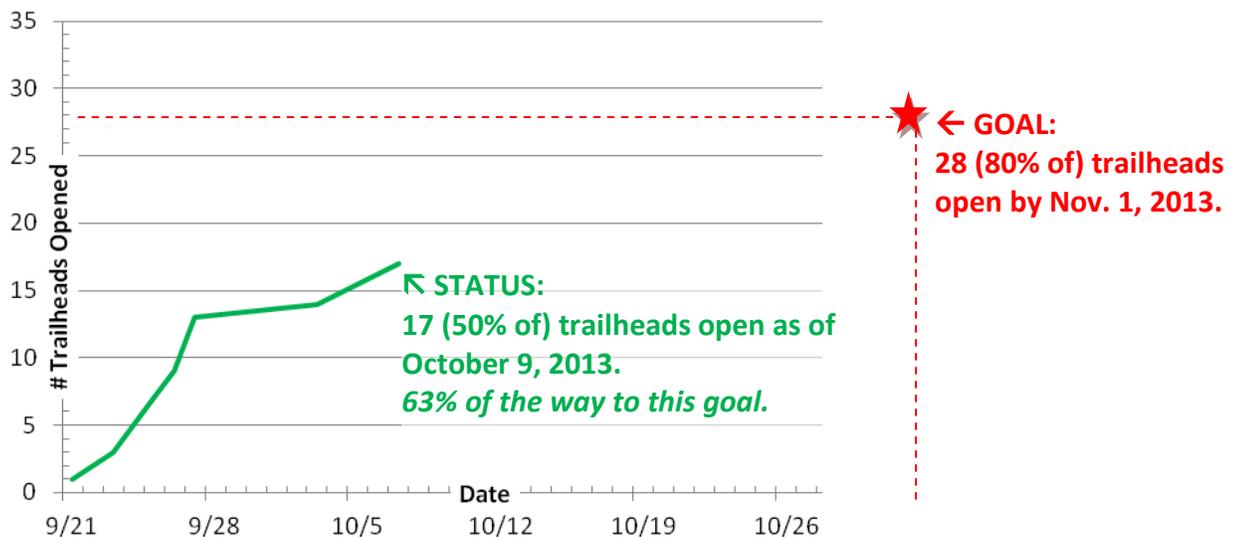


Figure 1: Post Flood OSMP Trailhead Openings (Total number of trailheads= 35)

Long-term Trail Recovery Project Timeline

Recovery Goal:

By Nov. 1, 2013, complete a trail recovery project timeline describing the anticipated duration of trail projects to address reconstruction, rerouting or resource/hazard mitigation efforts.

Status:

Trails greatly affected by flooding are in the steep terrain of Boulder's mountain backdrop or along drainages anywhere on the OSMP system. The most severely affected trails are where these settings intersect—alongside steep mountain drainages in the mountain backdrop. In some cases, the land where a trail had been located for decades was washed away by floodwaters. Some severely affected trails doubled as emergency access roads which are wider than other trails, and often surfaced with gravel or other materials brought from outside OSMP lands. The flood also created new hazards and challenges to the protection of sensitive resources. Severely affected trails and roads—especially those newly positioned near hazards or sensitive resources will require special design, equipment and materials to repair, reroute or replace. This process is likely to take time to provide safe and sustainable access. OSMP intends to address on-trail hazards before the end of the year and open trails as those issues are addressed. However, some trails and roads will remain closed beyond the start of 2014 because of the complexity and scale of the reconstruction work that will need to be done and difficulties and unpredictability associated with winter access and construction in the mountain backdrop.

The preliminary assessment information has been to identify the most severely affected trails and trail segments, examining the distribution of these by assessment zone and is on target for meeting this goal.

Accomplishments:

- Trained and deployed volunteers from the Front Range Climbing Council and Rocky Mountain Rescue to conduct trail assessments for trails not visited during staff's initial assessments.
- Started detailed evaluation and categorization of significantly and severely impacted trails in preparation of recovery work and compliance with Federal Emergency Management Agency (FEMA) documentation requirements.

Trail Access: Commercial/Special Use Permitting

Recovery Goals:

Restore access to 50 percent (=70 miles) of OSMP trails by Jan. 1, 2014. Guarantee up to date information about OSMP trail and trailhead openings will be posted to the city website daily.

Status:

As of Oct. 9, 63 miles, or 43 percent of OSMP's trails have been open to visitor access. The rate of trail openings has slowed as staff encounters trails with more severe flood impacts and greater potential hazards (see Figure 2). However, OSMP has completed 90 percent of this recovery goal and is on track to fully meet this goal.

Accomplishments:

- Thirteen (13) miles of OSMP trails have been opened in the period between the drafting of City Council flood updates (Sept.26-Oct. 9.).
- Each trail opening includes the following actions:
 - Evaluate site specific conditions;
 - Repair trails to a standard adequate for public access by identifying and addressing critical hazards;
 - Place signs and barricades restricting access to closed areas and
 - Remove/change signs allowing access to newly opened areas.
- Updating the city website daily to list each trail/trail segment opened that day. A map showing the all opened (and closed) trails is also updated daily when there is a change.

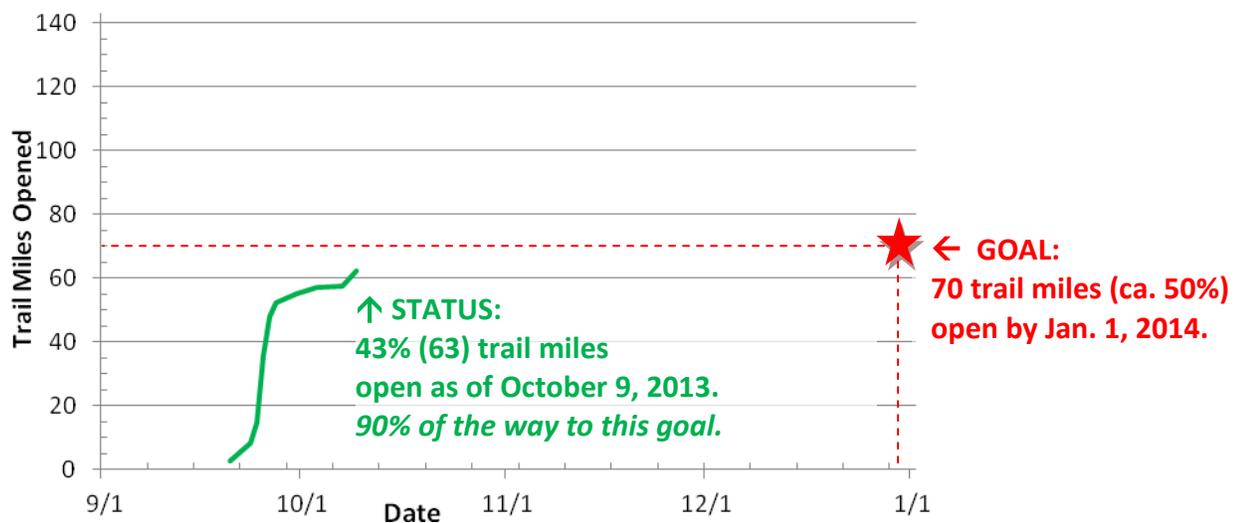


Figure 2: Post flood OSMP trail openings (Total trail mileage = 145)

Visitor and Infrastructure Protection

Recovery Goal:

Complete a geotechnical analysis of those areas of the existing trail system where slope failure and related threats have affected OSMP infrastructure.

Status:

Achieving this goal requires working with experts in the fields of geology, geomorphology and geotechnical engineering—areas of expertise outside of what OSMP staff can provide. For the past two weeks, city staff has been working with disaster recovery consultants (Adjusters International or “AI”) to identify the purchasing and procurement practices likely to result in reimbursement by FEMA.

Accomplishments:

- Developed a scope of work for external consultants
 - Created a draft scope of work including desired deliverables, timeline, and available funding/anticipated costs.
 - Submitted draft scope of work to the Office of the City Attorney for review.

Community Outreach: Media Relations

Recovery Goal:

By the first week in October conduct media tours of damaged and restored OSMP resources to tell stories about why some open space areas are closed to visitors and how the city has successfully and promptly provided visitor access to OSMP lands.

Status:

On Sept. 27, OSMP hosted a media tour .

Community Outreach: Volunteer Programming

Recovery Goal:

Starting the week of Sept. 23 offer at least four volunteer flood restoration projects weekly. Volunteer opportunities will include chances for community members, employee groups, AmeriCorps and others to: 1) Improve the condition of OSMP trails, 2) Repair or restore agricultural operations, 2) Control the spread of weeds and other threats to ecological sustainability.

Status:

During the week of Sept. 23, six projects were offered that involved 109 volunteers including an AmeriCorps team, the Boulder Mountain Bike Alliance/Boulder Bike Patrol, individuals working off community service requirements and members of the general public.

During the week of Sept. 30, five projects were offered that involved 120 volunteers. Along with unaffiliated members of the public and community service volunteers, groups included GoLite employees.

Six projects are planned for the week of Oct. 7.

Accomplishments:

Volunteer Projects Completed

- Tuesday, Sept. 24: 5 volunteers. Clearing Bluebell road of “ankle twisters.”
- Wednesday, Sept. 25: 10 volunteers. Clearing debris and moving rocks around a washed out drainage at the Royal Arch Trail.
- Friday, Sept. 27: 18 AmeriCorps volunteers. Digging out Silver Lake Ditch at the Mount Sanitas area.
- Friday, Sept. 27: 10 volunteers. Small restoration project shoveled gravel from an OSMP wetland near the South Boulder Creek West Trailhead.

- Saturday, Sept. 28 (National Public Lands Day): 36 volunteers including Boulder Mountain Bike Alliance and the Boulder Mountain Bike Patrol. Setting 31 below grade checks and spreading 20 tons of roadbase to surface the rutted sections of the High Plains trail.
- Saturday, Sept. 28: 10 community service volunteers. Tamping and smoothing accessible trails at Sombrero Marsh.
- Wednesday, Oct 2: 20 volunteers from GoLite. Cattle fence cleanup on the Weiser property.
- Thursday, Oct. 3: 15 volunteers. Spreading 30 tons of crusher fines to fill trail gullies, and smoothed 500 feet of trail at Boulder Valley Ranch's Sage Trail.
- Saturday, Oct. 5: 40 volunteers with three REI staff. Joint project with the Silver Lake Ditch Company, digging over 100 cubic yards of sediment from the ditch and assisting in restoring trail access as well.
- Saturday, Oct. 5: 35 volunteers . Working with Western Resource Volunteers (WRV) to collect native seed near the Greenbelt Plateau Trailhead .
- Saturday, Oct. 5: 10 community service volunteers. Repairing the Cherryvale ADA trail and cleaning up at Settler's Park.
- Tuesday, Oct. 8: 22 volunteers from Boulder Mountain Bike Alliance and Boulder Trail Runners. Clearing out a landslide/slump & working on a fence/gate repair at Flatirons Vista.

Volunteer Projects Planned

- Wednesday, Oct. 9: Volunteers from White Wave Food & Deuter –Fence repairs on along Coal Creek before Bald Eagle Closure (Nov. 1).
- Wednesday, Oct. 9: Training for trail assessment volunteers from the Flatirons Climbing Council and Rocky Mountain Rescue.
- Thursday, Oct. 10: 15 volunteers. Tallgrass Species Seed Collection in the vicinity of the Cherryvale Trailhead.
- Saturday, Oct. 12: AmeriCorps crew. Fence repair along Coal Creek.
- Saturday, Oct. 19: 15-20 members of CU Alpha Sigma Phi Fraternity repairing fencing along Coal Creek.
- Tuesday, Oct. 22: 10 volunteers. Small restoration project shoveling gravel out of a wetland near the South Boulder Creek West Trailhead.
- Saturday, Oct. 26: 50 volunteers through WRV. Repairing fencing along Coal Creek.
- Saturday, Nov. 2: 20 volunteers from CU 's "Give A Day" project for students.

In addition to volunteer programs, Open Space and Mountain Parks has developed an innovative public program called *Changing Landscapes - OSMP after the Floods*. The program is centered on a two-hour hike guided by OSMP interpretive naturalists. Visitors are taken into flood-damaged areas where they are offered time to contemplate and absorb changes on the land, as well as a brief overview of these events from the perspective of natural geologic change.

Ecological Systems:

The flooding had a mixed effect on OSMP resources and not all impacts can be characterized as negative. Many of the changes that result from flooding are ecological desirable as they result in the mosaic of ecological conditions and microhabitats that support a wide range of species. For example, interesting wetlands have developed in clay lined depression resulting from past

slumps; and the typical natural process for the establishment of riparian and floodplain vegetation is the deposition of sands and silts by floodwaters.

Flooding has had the most dramatic effect on OSMP streams and riparian areas where the depth and velocity of water was greatest. Some of these impacts have or will have a positive effect on the natural system. Erosion of stream banks and deposition of sediment have created point bars where cottonwood trees and willows will establish. Overbank flooding cycle's nutrients through terrestrial, riparian and wetland systems by depositing nutrient rich sediments and organic matter across the floodplain. Some stream channels have changed course, leaving behind oxbows or river bends filled with water. These abandoned river channels provide diverse habitat no longer widespread in highly modified floodplains of Boulder Creek and its tributaries.

Recovery Goals:

Develop and prioritize at least three distinct post-flood ecological management projects.

Status:

One project class under development is preempting weed establishment by planting and seeding native species in areas disturbed by the flood. For example, where saturated hillsides became unstable and created a slide, areas of bare soil have been exposed. Vegetation development on many of these sites will be monitored to ensure noxious weeds do not invade. Where appropriate, staff anticipates that seeding or planting native species will reduce weed establishment and spread. No earthmoving is anticipated to "restore" these areas as there is considerable value in habitats resulting from disturbance. Similar native planting projects may also be used in and around riparian areas where flood waters deposited seeds for noxious weeds such as salt cedar; and where crack willow and other species are likely to become established through rapid and pervasive sprouting from the fragments left behind by the floodwaters.

Another class of projects in development will address restoration of restoration structures damaged or destroyed by the floodwaters. OSMP, working with partners such as Trout Unlimited and the Colorado Division of Parks and Wildlife, made considerable investments in aquatic habitat improvements over the past 15 years. Projects include in stream structural improvements as well as fish passage structures at ditch headgates. While creek flows remain too high in some places to assess the condition of some in-channel features, others are known to have suffered significant or severe impact. The condition of these structures will continue to be assessed and plans developed to rebuild or replace them.

Many stream channels are now filled with sediment – from fine sand to large cobble – destroying, at least temporarily, habitat for some aquatic plants and animals. There are also many highly erosive stream banks which continue to contribute large amounts of sediment to the creeks. There is also a large amount of human-made debris in the creek channels. As part of a third class of ecological restoration activities, OSMP will determine where, and under what conditions it is appropriate to restore areas of aquatic habitat. Such actions may provide temporary refuge for species that might otherwise become locally extirpated (die out), and be unable to recolonize local streams when conditions improve.

In several locations along Boulder Creek and South Boulder Creek low-lying gravel pits have captured the majority of the flows after the creeks eroded through their banks into the adjacent ponds. The new flow channels are flooding roads, threatening utilities and impacting water delivery associated with irrigation ditches. OSMP staff is working with other city departments and outside agencies to address these situations to avoid unnecessary additional impacts to already stressed aquatic systems, and where possible leverage compensatory mitigation to restore or improve creek function consistent with the management of public facilities.

Accomplishments:

- Ecological Systems staff has participated in over 50 small-scale trail project reviews to ensure work being conducted to open trails to public access is consistent with environmental protection practices and regulations
- Staff ecologists continue their work assessing impacts to ecological systems across the system as floodwater recede.

Ecological Systems & Resource Operations:

The two classes of impacts to OSMP for which recovery costs may not be considered reimbursable by FEMA are 1) management of unimproved natural systems, and 2) impacts to water delivery infrastructure. The first of these is described in the status section of the previous goal. Impacts to water delivery infrastructure include, but are not limited to, damage or destruction of the headgates that divert creek flows into irrigation ditches, as well as sedimentation and erosion of irrigation ditches.

Recovery Goal:

Identify at least two sources of funding for emergency projects which are unlikely to be reimbursed by FEMA.

Status:

Staff has estimated the costs of restoration to unimproved natural systems at approximately \$2 million, and the department's share of impacts to water delivery infrastructure (largely ditches, headgates and reservoir dams/berms) at over \$1.5 million. Alternatives to FEMA reimbursement are being explored in case, the flood impacts to these are determined by FEMA to be ineligible for FEMA public assistance program.,.

Flood recovery efforts by federal agencies other than FEMA have been stalled by the federal government shutdown. Most state, regional and watershed agencies are still in the process of identifying funds for grants, loans and other assistance. As they attend meetings staff members are tracking and sharing information about the availability of funding or services sources other than FEMA.

Accomplishments:

- Staff is in the process of identifying funding opportunities as they become available.

COMMUNITY SERVICES FUNCTIONS:

Human Services:

Accomplishments

- City and county services for individual assistance returned to their home sites effective Oct 1. FEMA, Red Cross, Salvation Army, Southern Baptist Disaster Relief, and several other nonprofit organizations continue to provide services at the Disaster Assistance Center (DAC). The DAC is now the FEMA Disaster Recovery Center (DRC). FEMA will remain on site indefinitely and will refer residents who come to the site for other community assistance, as needed.
- As of Oct 1, over 3,848 individuals and 1,687 households had been served at the DAC.

Priorities

1. Continue to provide auxiliary support for FEMA DRC until closing.
2. Serve with Boulder County, City of Longmont, Community Foundation Serving Boulder County, Foothills United Way and Town of Lyons and others on committee to allocate Foothills United Way Flood Relief Fund for immediate, short and long term community needs.
3. Coordinate with committee and Boulder County development of longer term recovery plan and human services recovery structure.

Recovery Goal:

1. To support displaced residents in stabilizing living situations and meeting basic health and human services needs.
2. To support community non-profits and organizations in providing services assisting residents in regaining stability.

Housing:

Accomplishments

- Organized partnership to provide short-term rental housing for displaced households. Participants: Housing Helpers (recruit units, provide leasing service for households, partial fee reduction), Foothills United Way through Flood Relief Fund (payment of reduced leasing service fee), property owners (increased flexibility in lease terms), and Boulder, Longmont and Boulder County (information and referral, program monitoring and administration). More than 30 households matched with housing. More than 70 units identified.
- Collaborating with Habitat for Humanity on housing clean-up and rehabilitation assistance for low-income homeowners and community agencies serving low-income people.
- Provided information to private non-profits about potential FEMA public assistance.
- Identified 3-5 units available for short-term housing.
- Met with CU housing staff to understand the impact to students.
- Met with state about coordinating Community Development Block Grant – Disaster Relief (CDBG-DR) funding and other possible recovery resources (LIHTC, PABs, regulatory waivers, etc.)

Priorities

- Ensuring the city is positioned to receive and administer any CDBG-DR funding.
- Supporting community partners, both housing and service providers, and the owners of permanently affordable homes with their recovery efforts.
- Supporting county-led housing recovery efforts.
- Getting data on displaced households and their housing needs from the county and/or FEMA.

Recovery Goal:

- Secure CDBG-DR funding for city recovery efforts.
- Support displaced city residents with short-term housing options that minimize household and community disruption and facilitate access to information and resources to restore damaged housing.
- Coordinate and collaborate on housing recovery efforts with the county.
- Develop a housing recovery plan for future use.
- Update city's emergency response plan to include formal role for Housing Division.

Community Planning And Sustainability:

Accomplishments:

- Three neighborhood flood recovery open houses scheduled as follows:
 - Oct. 17** – Twomile Canyon and Upper Goose Creek at Municipal Building, 4:30–6 p.m.
 - Oct. 23** – Gregory Canyon Creek at Flatirons Elementary, 4:30 – 6 p.m.
 - Either Oct. 24** – Skunk Creek, Bluebell Canyon, Kings Gulch Open House at New Vista High School, 4:30 – 6 p.m.
- Sending out 5,000 postcards to properties within the flood drainages and within 500 feet of them
- Coordinating interdepartmental team from Utilities, Transportation, Planning and Development Services, and Open Space to provide information or attend these open houses.

Priorities:

- Support appropriate mitigation of flood damaged properties by providing accurate information and access to resources on web site, through outreach and through coordination with our partner agencies (Boulder County, University of Colorado, BARHA, etc.)
- Inspection of work being done in flood damaged properties
- Develop a public engagement strategy to

Recovery Goal:

- Protect health and safety of residents and businesses by encouraging appropriate repair of flood damaged properties.

Debris & Pest Management:

Accomplishments

- Continued residential debris collection; completing first pass through all of town on Friday, Oct. 4; began second pass, including any missed debris piles on Saturday, Oct. 5.
- The last day of curbside debris collection is Monday, Oct. 14.
- On Monday, Oct. 7 began residential collection of mud, silt and dirt that resulted from flood activities.
- Enlisted the help of debris collection crews and FEMA debris monitors for mud, silt and dirt that accumulated in city properties including bike paths, parks, streets, sidewalks and landscaping strips where appropriate; and for removal of the large pile of dirt that had been collected from public streets and rights-of-ways and was consolidated at the City Yards.
- As of Monday, Oct. 7, 1,067 tons of debris has been removed through the residential curbside collection program.
- It is estimated that an additional ~6,000 tons of dirt and silt will be collected over the coming week. Of this, approximately 5,500 tons is estimated to be from city owned property and ~500 tons from residents.

Priorities:

- Make final determination on authority to clear debris from city easements where property is not owned in fee
- Investigate federal jurisdiction issues with silt and sediment in stream beds, channels, wetlands, and wetland buffers.

Recovery Goal:

- Assist residents with flood-related debris removal to protect public health and safety.
- Clear all public streets and rights of ways of flood-related debris in a timely manner to protect public health and safety.
- Ensure debris removal activities comply with all FEMA regulations and guidelines to allow for appropriate reimbursement from FEMA for flood debris removal activities

Business:

Accomplishments:

1. Over 100 businesses have been contacted by the city and the Boulder Economic Council
2. Continue to work with city Parks and Recreation staff and Spice of Life owners (tenants and potential business retention clients) to discuss next steps after flood damage to the city-owned Flatirons Events Center building, including evaluating site options for community events and meetings, and Spice of Life events and catering
3. Prepared presentation and resources and participated at the Sept. 24 business flood information workshops at the Boulder Chamber, attended by over 50 people
4. Posted Business FAQs on boulderfloodinfo.net with detailed information and links for FEMA and SBA disaster assistance

Priorities:

1. Assess flood impacts to Boulder businesses and offer support through proactive outreach
2. Provide immediate assistance to businesses that sustained flood damage

3. Create business flood resources/info. on the city's web site
4. Work closely with the businesses that sustained substantial damage through the recovery period

Recovery Goal:

1. To partner with local, state, and federal agencies to provide flood recovery services to Boulder businesses including outreach and education, business assistance, and financial assistance
2. To directly connect Boulder businesses and business partners with the appropriate city and federal agency contacts for flood recovery

This Page Intentionally Left Blank