

Answers to Frequently Asked Questions about the Colorado 2013 Flood Event

Following the recent flooding events for Front Range communities in Colorado, property owners, communities, and the National Flood Insurance Program are being presented with some new challenges in the areas of floodplain administration and potential flood insurance impacts. In many areas, the location and other characteristics of channels and streams have been altered significantly.

As communities and property owners rebuild, they are presented with a unique opportunity to build structures that are better, stronger, and more resilient. With the devastating impacts of the recent floods fresh in our minds, we are poised to use the lessons we have learned to minimize the damages from future events that, as history has shown us, will take place.

The answers to some of the following questions are separated into two major categories:

- a. What can be done in the short-term to get our communities operational?
- b. How can we rebuild with long-term impacts in mind, such as building requirements, flood maps, and insurance?

Q1: How does a town regulate fill and construction in and adjacent to waterways? Are floodplain permits needed only for work in the mapped Special Flood Hazard Areas (SFHAs), and not near new channels and streams created by the flood?

A1a (short-term or “emergency” recovery): FEMA defines emergency protective measures as “actions taken by the community ... before, during, and after a disaster to save lives, protect public health and safety, and prevent damage to improved public and private property.” Many communities are currently working to ensure that their communities are safe and functional. FEMA considers such activities, including the “restoration of access” (i.e., the reconstruction of damaged roads), as emergency protective measures. For such work, floodplain permits are indeed required, but the community is not required to obtain an approved Conditional Letter of Map Revision (CLOMR) before performing the work. The community should certainly be aware of and take into consideration the impacts, both upstream and downstream, of the emergency measures that they are proposing. A CLOMR is encouraged but is not required.

A U.S. Army Corps of Engineers (USACE) Section 404 Clean Water Act permit is required for dredging or placing fill in waters of the United States, including rivers, lakes, streams, creeks, and wetlands (contact the USACE Denver Regulatory office at 303-979-4120). However, division engineers are authorized to approve special processing procedures in emergency situations. An emergency is defined a situation that would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures.

For any activities that are not emergency protective measures (i.e., permanent work or final reconstruction), all regular permitting and regulatory processes apply, as outlined below.

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Therefore, communities should keep the long-term recovery requirements in mind as they move through the initial construction stages of emergency protective measures.

A1b (long-term recovery): If a “waterway” has an identified SFHA on an effective FEMA Flood Insurance Rate Map (FIRM) and the community participates in the National Flood Insurance Program, then a floodplain development permit must be obtained for any proposed manmade activity in the SFHA before work begins. This applies even if the proposed work is funded by FEMA or completed by the community (or its contractor), with or without a loan requiring the mandatory purchase of flood insurance.

Due to the recent flood events, new channels and streams may or may not be delineated on the FIRM. If the community is able to obtain and use better data that displays a higher or changed risk profile for a certain area, it is in the community’s best interest to regulate construction in that area to the more conservative risk profile or larger floodplain. Any changes in floodplain development requirements (such as using better data) must be approved and adopted by the community.

As always, residents should contact their local floodplain administrator for specific rules and locally adopted ordinances pertaining to fill and construction in the floodplain. A community may be regulating construction in additional areas not shown as SFHAs on the effective FIRM.

Q2: How should a community regulate floodplain development now? Should it be based on the high-water marks from this event, the mapped Special Flood Hazard Areas (SFHAs) shown on the effective Flood Insurance Rate MAP (FIRM), or the new stream and river channels?

A2: Communities are required to use the information shown on the effective FIRM for floodplain management purposes, or to use State and local regulations if they are more restrictive. However, the effective FIRMs will not reflect recently realigned stream and river channels. If the high-water mark is greater or more conservative than the Base (1-percent-annual-chance) Flood Elevation (BFE) on the effective FIRM, it is advised and would be beneficial for a community to use this information as a point for consideration in regulating rebuilding efforts. Thus, communities are advised to use all available risk information for redevelopment purposes. This risk information could include high-water marks, new topography/LiDAR, Advisory Base Flood Elevations, and local information and knowledge, and it can be used to regulate construction until the FIRMs are updated.

New topographic data and risk assessment calculations (hydrology and hydraulics) can be used to update community’s FIRM, although the information being used by a community during the rebuilding process (such as high-water marks) may or may not be incorporated into an updated study produced by FEMA. Note that FEMA’s process to produce a new Flood Insurance Study and FIRM takes, on average, 3 to 5 years from start to finish. Interim advisory maps, whether they are produced by the community, the State, FEMA, or other Federal agencies, are just that – advisory. However, until FEMA can produce updated flood maps that formally identify new or modified SFHAs, advisory maps allow the community to

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rebuild structures that are stronger and more flood-resilient by referencing the local information and knowledge.

Q3: Can fill be used to return streams/ivers to their pre-flood boundaries?

A3a (short-term or “emergency” recovery): Yes. However, communities should be cautious to minimize the use of fill in the floodplain and should consider the impacts that the placement of fill will have on properties upstream and downstream, as noted in answer A1a. We understand that severe road erosion in several areas across the State has resulted in the relocation of streams to the positions where the roads once stood. In many of these cases, the placement of fill is the only alternative for restoring access . This is permissible with the caveats outlined in answer A1a, and it is again recommended that communities keep in mind the long-term recovery requirements outlined in answers A1b and A3b while implementing their emergency protective measures.

A3b (long-term recovery): Yes. Fill material must be obtained from an existing stockpile or permitted commercial operation. Any new or expanded sources of fill material must be approved by the State Historic Preservation Officer (720-544-2810). Sediments deposited in the channel may be used, provided the project sponsor obtains and complies with the appropriate Federal, State, and local laws or ordinance and obtains the appropriate permits.

We recommend that local governments submit a Conditional Letter of Map Revision (CLOMR) application, followed by a Letter of Map Revision (LOMR) request to update the Flood Insurance Rate Map (FIRM). A CLOMR provides FEMA’s comments on a proposed project that will, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus modify existing regulatory floodways, Base Flood Elevations (BFEs), or Special Flood Hazard Areas (SFHAs). It documents FEMA’s assessment that a proposed project complies with the minimum criteria for National Flood Insurance Program (NFIP) floodplain management. FEMA charges a fee for processing a CLOMR, and Endangered Species Act documentation may be needed.

NFIP regulations do not require a CLOMR for all projects in the regulatory floodway or base floodplain. However, a CLOMR is required for projects that will cause any BFE increase within a regulatory floodway or that will cause the BFE to increase more than 0.5 foot (State requirement) along streams with specified BFEs but no designated floodway. More information about CLOMRs is available on the FEMA website at www.fema.gov/national-flood-insurance-program-2/conditional-letter-map-revision.

Once a project has been completed, a community must request a revision to the FIRM to reflect the project. “As-built” certification and other data will be needed to support the revision request. All requests for map revisions should be submitted through the Chief Executive Officer of the community, because the community must adopt any changes to the FIRM. To help communities compile the data required to support map revision requests, FEMA has developed a package of step-by-step instructions and forms. These forms and cost

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information for map revisions are available on the FEMA website at www.fema.gov/mt-2-application-forms-and-instructions.

Following a review of the community's map revision request and supporting data, FEMA will revise the FIRM and Flood Insurance Study report, if appropriate, by issuing a LOMR or by republishing the mapping products through the Physical Map Revision process. FEMA uses the shorter and more cost-effective LOMR process as much as possible. Both processes effect official changes to BFEs, base flood depths, floodplain boundaries, regulatory floodways, and other mapping features. All affected communities are provided with copies of the revised information and given a review period. If appropriate, a statutory 90-day appeal period will take place prior to the revisions becoming effective.

Q4: Does the local floodplain manager review and issue permits for channel modifications?

A4: Yes. A community that participates in the National Flood Insurance Program (NFIP) requires permits for all development in Special Flood Hazard Areas (SFHAs) and ensures that construction materials and methods will minimize future flood damage. Permits ensure that proposed projects meet both the requirements of the NFIP and the community's floodplain management ordinance. This is true for both emergency protective measures and permanent work, even if the work is performed by the community and funded by FEMA (through the Public Assistance Program, for instance).

For situations where the watercourse alignment has been significantly altered and the FEMA-identified SFHA no longer reflects the area's flood risk, the community may choose to use better data to administer the floodprone areas, even if they are not identified on the Flood Insurance Rate Map (FIRM). In such instances, the community would have to identify and adopt (by resolution) the new data for the floodplain administrator to have authority to regulate areas not shown on the FIRM and/or described in the community floodplain ordinance.

Please note that a community must also review proposed development projects to assure that all necessary permits have been received from governmental agencies from which approval is required by Federal or State law. These permits and/or requirements may include, but are not limited to, those from the following entities:

- FEMA: CLOMRs;
- State of Colorado: floodplain regulations;ⁱ and
- U.S. Army Corps of Engineers (USACE): a Section 404 Clean Water Act permit is required to dredge or place fill in waters of the United States, including rivers, lakes, streams, creeks, and wetlands (contact the USACE Denver Regulatory office at 303-979-4120).

Q5: What entity can provide advice on stream/river restoration or modification?

A5: The Colorado Water Conservation Board (CWCB) supports watershed planning as well as projects designed to restore and protect watersheds. The CWCB partners with numerous

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organizations to plan and undertake multi-objective projects designed to reduce flood hazards, stabilize and restore stream channels, provide habitat, reduce erosion, and increase the capacity to utilize water. Inter- and intra-agency coordination, communication, and prioritization are essential components of the CWCB's efforts. Specifically, the CWCB supports watershed protection and restoration efforts through the administration of the Colorado Watershed Restoration Program, Colorado Healthy Rivers Fund, and Fish and Wildlife Resources Fund. If FEMA funding is requested to help with a floodplain restoration project, the National Environmental Policy Act requires an Environmental Impact Statement.

Q6: What entity can assist with identifying areas where additional destabilization and erosion could occur during the spring run-off, and what can be done now to eliminate/minimize additional damage?

A6: The United States Army Corps of Engineers or the Natural Resources Conservation Service "Stream Teams" can provide technical assistance related to identifying and controlling stream bank erosion and destabilization. Please visit www.cwcb.state.co.us/environment/watershed-protection-restoration/ for more information on accessing the Stream Team resources.

Q7: In general, what post-flood recommendations do you have for local floodplain managers?

A7: As floodplain managers, stormwater managers, scientists, engineers, and planners, it is incumbent on us to work tirelessly to help our neighbors, friends, families, and visitors get back on their feet. Floodplain professionals also have the obligation to provide future generations with more resilient communities than the recent past or the present provided against the floods that will visit Colorado and other States again.

Consider making detailed flood hazard assessments before issuing building permits, to provide time for collecting post-flood information and creating community reconstruction plans from that information.

Support the public safety intent behind the State Floodplain Regulations by instituting them immediately for all rebuilding efforts. These regulations are available on the Colorado Water Conservation Board website (<http://cwcb.state.co.us/legal/Pages/CWCBFloodplainRulesandRegulationsProcess.aspx>) The CWCB, in a special meeting on Oct. 21st, 2013, in Denver, issued a policy statement indicating that because state funds are being offered for flood recovery, the processes associated with the use of these state funds shall follow the established State Floodplain Regulations, regardless of the status of local adoption. This policy statement may be found at <http://cwcb.state.co.us/legal/Documents/Policies/21FloodplainStandards.pdf>

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Develop Advisory Base Flood Elevations for rebuilding structures in and around flooded areas. This analysis should include high-water marks from the 2013 flooding, historic flood records, and FEMA Flood Insurance Study data.

Whenever possible, rebuild outside the floodplain to reduce the potential for future damage. One of the most effective ways to mitigate future losses is to relocate structures and infrastructure outside known hazard areas.

Support the implementation of master plans, locally and regionally, by executing them during flood recovery rebuilding efforts, rather than replacing old plans in-kind.

Consider FEMA's repetitive flood loss clauses that affect the cost of flood insurance in areas most frequently affected by flooding. Local governmental entities should consider available flood evidence and history before issuing permits in Special Flood Hazard Areas, especially in the Front Range canyon watersheds and along the South Platte River.

Q8: Can a community realign a section of stream to its previous channel?

A8: This type of work is typically undertaken as permanent work. As such, the project sponsor must obtain the appropriate Federal, State and local permits, including those issued by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Streams should not be altered unless the project proponent demonstrates through a floodway analysis and report, sealed by a Colorado Registered Professional Engineer, that the project will not have any adverse impact on the floodway. This requirement only applies to stream reaches where Base (1-percent-annual-chance) Flood Elevations (BFEs) have been established.

A Conditional Letter of Map Revision (CLOMR) provides comments on a proposed project that will, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus modify existing regulatory floodways, BFEs, or Special Flood Hazard Areas (SFHAs). It documents FEMA's assessment that a proposed project complies with the minimum criteria for National Flood Insurance Program floodplain management. FEMA charges a fee for processing a CLOMR, and Endangered Species Act documentation may be needed. More information about CLOMRs is available on the FEMA website at www.fema.gov/national-flood-insurance-program-2/conditional-letter-map-revision.

A Letter of Map Revision (LOMR) is used to modify the BFEs, base flood depths, floodplain boundaries, regulatory floodways, and other mapping features shown on a Flood Insurance Rate Map (FIRM). "As-built" certification and other data will be needed to support a LOMR request that follows a CLOMR. All requests for map revisions should be submitted through the Chief Executive Officer of the community, because the community must adopt any changes to the FIRM. LOMR forms and cost information are available on the FEMA website at www.fema.gov/mt-2-application-forms-and-instructions.

Q9: If communities upstream or downstream from me realign their stream, how will this affect my community's effective Flood Insurance Rate Map (FIRM)?

A9: If the realignment is reported to FEMA through a Letter of Map Revision (LOMR) request, the requirements of the LOMR process state that the model must extend upstream and downstream far enough to match the previously published flood hazard information. Also, Federal regulations – 44 CFR 60.3 (b)(6) and (7) – require that the adjacent communities are notified and that the streams' carrying capacity is maintained.

If multiple communities are affected by a new stream alignment (whether caused by a flood event or a manmade effort), the LOMR process may not be appropriate and a larger study (i.e., a Physical Map Revision) may be necessary.

Q10: Are there efforts or resources in place to remap and/or assess new floodplains caused by channel migrations?

A10: At this time, the resources to update, assess, or remap changed floodplains are limited.

To identify and record an altered watercourse and its floodplain that fall outside the Special Flood Hazard Area (SFHA) shown on an effective Flood Insurance Rate Map (FIRM) requires a new flood hazard study. Completing a new study or restudying a stream affecting one or more FIRM panels takes a considerable amount of time – the process includes identifying the scope of the study, funding, and following the study processes and methodology that have been established to ensure consistent application and regulatory compliance. On average, a flood hazard study takes 3 to 5 years to complete after the scope has been established and funding secured. In some cases, a Letter of Map Revision (LOMR) may be the best approach for a community to report the altered watercourse and have the information reflected on the FIRM. Under certain circumstances (with proper justification and documentation to support the request), the LOMR application fee may be waived. For mapped watercourses with Base Flood Elevations/floodways, a Conditional Letter of Map Revision may also be required.

In accordance with Section 72.5 of the NFIP regulations, review and processing fees are not required for the following types of map change requests:

- Map changes based on mapping or study analysis errors;
- Map changes based on the effects of natural changes within the SFHA;
- Requests for Letters of Map Amendments;
- Federally sponsored flood-control projects where 50 percent or more of the project's costs are federally funded;
- Map changes based on detailed hydrologic and hydraulic studies conducted by Federal, State, or local agencies to replace approximate studies conducted by FEMA and shown on the effective FIRM; and
- Map changes based on flood hazard information meant to improve upon that shown on the flood map or within the flood study. *NOTE: Improvements to flood maps or studies that partially or wholly incorporate manmade modifications within the SFHA are not exempt from fees.*

Q11: How have communities in other disaster areas regulated development to their locally adopted floodplain management ordinances in areas where the stream channel has shifted both horizontally and vertically?

A11: Communities may use the “best available data” that is at their disposal for floodplain management purposes. In this process, the community would identify areas that they want to manage as a FEMA floodplain, although those areas are not included as a floodplain on the Flood Insurance Rate Maps. The community must identify and include these areas in its ordinance in order to have regulating authority. The Federal flood insurance requirement does not apply to structures in these more conservative areas.

Q12: If community officials are interested in remapping their floodplains, what process do they need to follow, and what resources are available to them?

A12: Through the Letter of Map Revision (LOMR) process, a community can submit scientific or technical data to FEMA to improve the flood hazard information shown on an effective Flood Insurance Rate Map (FIRM). A LOMR is one way FEMA modifies Base (1-percent-annual-chance) Flood Elevations (BFEs), base flood depths, floodplain boundaries, regulatory floodways, and other mapping features. All LOMR requests should be submitted through the Chief Executive Officer of the community, because the community must adopt any changes to the FIRM. Following a review of the community’s map revision request and the supporting data, FEMA will revise the mapping and the Flood Insurance Study report, if appropriate, by issuing a LOMR or by republishing these mapping products through the Physical Map Revision process. The LOMR application forms and cost information are available on the FEMA website at www.fema.gov/mt-2-application-forms-and-instructions.

Because a LOMR officially revises the effective FIRM, it is a public record that the community must maintain. Any LOMR should be noted on the community’s master flood map and filed by panel number in an accessible location.

For available resources, contact the Colorado Water Conservation Board to express interest in potential technical and financial resources.

Q13: Can the temporary construction of bridges, utilities, bank stabilization, and shoring up buildings be exempted from local floodplain management requirements?

A13: A community that participates in the National Flood Insurance Program (NFIP) requires permits for all development in Special Flood Hazard Areas (SFHAs) and ensures that construction materials and methods will minimize future flood damage. This is true for both emergency protective measures and permanent work, even if the work is performed by the community and funded by FEMA (through the Public Assistance Program, for instance). Permits ensure that proposed projects meet both the requirements of the NFIP and the community’s floodplain management ordinance.

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The CWCB encourages communities to develop procedures for issuing temporary floodplain development permits for emergency work. Temporary permits for emergency work must be limited to repairs necessary to restore access and vital services and to prevent further damages caused by erosion and bank failure. A temporary floodplain development permit must be valid for a limited period of time, i.e., 180 days. The permit may be renewed upon the condition that the applicant is working to meet the conditions of the local floodplain ordinance. Any work permitted under a temporary, emergency permit must use methods and practices that minimize flood damage. Any permanent repairs must meet the local floodplain regulations and adhere to all map change requirements, including the requirement to obtain necessary CLOMRs and LOMRs. The community should develop policies and procedures for issuing temporary, emergency permits that stipulate requirements for the information to be submitted and all permit conditions.

Recommended Best Practices:

Communities are encouraged to use the best practices for stream crossings and temporary crossings in the FEMA booklet *Private Water Crossings*, P-778, June 2009, available from FEMA at <http://www.fema.gov/media-library/assets/documents/17542?id=3896>

Emergency and temporary stream crossings should be sized and armored for the types of flood flows to be encountered during the life of the project, e.g., spring snowmelt runoff season, flash flood season, post-wildfire increased risk, etc.

For situations where the watercourse alignment has been significantly altered and the FEMA-identified SFHA no longer reflects the area's flood risk, the community may choose to use better data to administer the floodprone areas, even if they are not identified on the Flood Insurance Rate Map (FIRM). In such instances, the community would have to identify and adopt (by resolution) the new data for the floodplain administrator to have authority to regulate areas not shown on the FIRM and/or described in the community floodplain ordinance.

A community must also review proposed development projects to assure that all necessary permits have been received from governmental agencies from which approval is required by Federal or State law, including those issued by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Q14: Can the owners of extremely eroded properties rebuild using the effective Flood Insurance Rate Map?

A14: FEMA recommends that these owners consult their local building department to determine the requirements, elevations, and any construction requirements that apply to the property.

Q15: If a new river channel crosses a property so that a damaged structure is either impossible to repair or rebuild, or the rebuilding or repair would create a high risk of flooding in the future, what should a community do?

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A15: Community officials are required to regulate based on their effective Flood Insurance Rate Map; however, they should give additional consideration in situations such as this to the dynamic nature of the stream channel. Those developing or redeveloping in the floodplain are required to obtain a floodplain development permit from their local floodplain manager in order to determine whether a building is substantially damaged. Substantially damaged flood-insured structures could be eligible for Increased Cost of Compliance coverage, which would help the owners rebuild in compliance with the current flood damage prevention standards. FEMA is coordinating with State and local governments to understand the extent of the stream migrations and to propose solutions, if required, for select areas. If the community would like to acquire or relocate such structures, the community and State can apply for funding from various Federal grant programs. For additional information on FEMA Mitigation Grant programs, contact the State of Colorado Hazard Mitigation Officer.

ⁱ In order to assist the CWCB in carrying out its mission to protect the health, safety, welfare and property of the public, through the prevention of floods in Colorado, the CWCB requires the following:

- A. Detention/flood control storage and LID should be considered, when practicable, as part of a basinwide program for the watershed.
- B. Flood control channels shall include a low-flow channel with a capacity to convey the average annual flow rate, or other appropriate flow rate as determined through a hydro-geomorphological analysis, without excessive erosion or channel migration, with an adjacent overbank floodplain to convey the remainder of the 100-year flow. The channel improvement shall not cause increased velocities or erosive forces upstream or downstream of the improvement.
- C. Channelization and flow diversion projects shall appropriately consider issues of sediment transport, erosion, deposition, and channel migration and properly mitigate potential problems through the project as well as upstream and downstream of any improvement activity. A detailed geomorphological analysis should be considered, when appropriate, to assist in determining the most appropriate design.
- D. Project proponents for a mitigation activity must evaluate the residual 100-year floodplain. Proponents are also encouraged to map the 500-year residual floodplain.
- E. All public and private flood control structures shall be maintained to ensure that they retain their structural and hydraulic integrity. Annual inspections including, as appropriate, field surveys of stream cross-sections, shall demonstrate to the appropriate regulatory jurisdictions that the project features are in satisfactory structural condition, that adequate flow capacity remains available for conveying flood flows, and that no encroachment by vegetation, animals, geological processes such as erosion, deposition, or migration, or by human activity, endanger the proper function of the project. If any significant problems, as identified within annual inspection reports, the facility or project owner shall notify the CWCB within 60 days of the inspection. The inspections shall be conducted by the local

- jurisdiction for all publicly owned or publicly maintained facilities, and shall be conducted by the property owner or facility owner for all privately owned and maintained facilities.
- F. Any stream alteration activity proposed by a project proponent must be evaluated for its impact on the regulatory floodplain and be in compliance with all applicable federal, state and local floodplain rules, regulations and ordinances.
 - G. Any stream alteration activity shall be designed and sealed by a Colorado Registered Professional Engineer or Certified Professional Hydrologist.
 - H. All activities within the regulatory floodplain performed by federal agencies using local or state funds, or by private, local or state entities shall meet all applicable federal, state and local floodplain requirements.
 - I. Stream alteration activities shall not be constructed unless the project proponent demonstrates through a floodway analysis and report, sealed by a Colorado Registered Professional Engineer, that there are no adverse floodway impacts resulting from the project. This requirement only applies on stream reaches with Base Flood Elevations established.
 - J. No adverse floodway impact means that there is a 0.00-foot rise in the proposed conditions compared to existing conditions floodway.
 - K. Whenever a Stream Alteration activity is known or suspected to increase or decrease the established Base Flood Elevation in excess of 0.3 vertical feet (or a more stringent standard adopted by the local government authority), a Letter of Map Revision showing such changes shall be obtained in order to accurately reflect the proposed changes on FEMA's regulatory floodplain map for the stream reach. The local community is responsible for ensuring that this process is pursued. This section herein does not require a Conditional Letter of Map Revision to be applied for, unless mandated by the local government having land use authority.