Guidance for Flood Risk Analysis and Mapping

MT-2 Requests

November 2021

FEMA

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Requirements for the Federal Emergency Management Agency (FEMA) Risk Mapping, Assessment, and Planning (Risk MAP) Program are specified separately by statute, regulation or FEMA policy (primarily the "Standards for Flood Risk Analysis and Mapping"). This document provides guidance to support the requirements and recommends approaches for effective and efficient implementation. Alternate approaches that comply with all requirements are acceptable.

For more information, please visit the "FEMA Guidelines and Standards for Flood Risk Analysis and Mapping" webpage (https://www.fema.gov/flood-maps/guidance-reports/guidelines-standards?web=1&wdLOR=c98BE0C98-3A3B-46B9-9634-98F4BE7EE29C). Copies of the "Standards for Flood Risk Analysis and Mapping" policy, related guidance, technical references and other information about the guidelines and standards development process are all available here. You can also search directly by document title at www.fema.gov/multimedia-library.

Table of Revisions

Affected Section or Subsection	Date	Description
Section 1; Sub-section 1.3.1	November 2021	Updated to align with program applied approaches document and correct broken hyperlinks.

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1. Introduction

The purpose of this document is to explain how the Department of Homeland Security, Federal Emergency Management Agency (FEMA) implements the review and processing of requests to revise Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) reports (collectively referred to as MT-2 requests). The regulations related to these requests are in Title 44, Chapter 1 of the Code of Federal Regulations (CFR), Parts 60, 65 and 72, available online at www.ecfr.gov/cgi-bin/text-idx?SID=3f8e734915da4dcb349e90ecd70e5931&mc=true&tpl=/ecfrbrowse/Title44/44CIsubchapB.tpl.

This guidance document is intended to supplement the information presented in the MT-2 Instructions which accompany the MT-2 Application Forms. These instructions are referenced at various locations within this document and can be accessed via https://www.fema.gov/flood-maps/change-your-flood-zone/paper-application-forms/mt-2.

1.1. Letter of Map Change Products

This section contains a brief description of FEMA's Letter of Map Change (LOMC) products. The National Flood Insurance Program (NFIP) adopted a baseline probability flood, the base flood, as a standard for flood insurance and floodplain management regulations. The base flood is the flood that has a 1-percent probability of being equaled or exceeded in any given year (also referred to as the 100-year flood or the 1-percent-annual-chance flood). The Base Flood Elevation (BFE) refers to the height of the base flood, usually in feet in relation to the datum used, or the depth of the base flood, usually in feet above the ground surface. An area subject to inundation by the base flood is identified as a Special Flood Hazard Area (SFHA) on FIRMs.

The BFEs and boundaries of the SFHAs on the FIRMs are determined using the best topographic data available, in combination with hydrologic and hydraulic analyses. Because of limitations of scale or the topographic definition of the source maps used to prepare a community's FIRM, a property may be shown within the SFHA, but be on ground that is above the BFE at the site. In addition, development within a community often occurs that may affect the flood hazard information shown on the FIRM.

The LOMC process was developed to amend or revise the published flood hazard information by letter. The process can be used as frequently as needed to keep the FIRMs up-to-date. FEMA has several types of LOMCs:

- MT-1 (Amendments): Letter of Map Amendment (LOMA), Letter of Map Revision based on Fill (LOMR-F), and Conditional LOMA/LOMR-F.
- MT-2 (Revisions): Letter of Map Revision (LOMR), Conditional LOMR (CLOMR), and Physical Map Revision (PMR).

This guidance document applies specifically to MT-2 requests and the required data necessary for processing them. For information on MT-1 requests, refer to "FEMA Guidance Document 65, MT-1 Technical Guidance."

MT-2 revision types are generally described as:

- CLOMR: A letter from FEMA commenting on whether a proposed project, if built as proposed, would meet the minimum NFIP requirements (see 44 CFR Parts 60, 65 and 72). Additionally, a CLOMR may be issued for proposed hydrology-only changes compared to the effective hydrology.

- LOMR: A letter from FEMA officially revising a portion of the effective FIRM to show changes to floodplains, regulatory floodways and/or flood elevations (see 44 CFR Parts 60, 65 and 72). A FIRM is not republished.

- PMR: A republished FIRM panel, with updated FIRM Panel No. and FIRM effective date, incorporating changes to floodplains, regulatory floodways, and/or flood elevations. Because of the increased time and cost involved to change, reprint, and redistribute an NFIP map, compared to a LOMR, a PMR is usually processed when a revision reflects large-scope changes. The republished FIRM will also reflect any effective LOMRs issued within the footprint of the PMR since the FIRM was last published.

1.2. Regulations Applicable to LOMC Processing

The NFIP requires participating communities to adopt floodplain management ordinances containing certain minimum requirements intended to reduce future flood losses. This is a condition of the agreement for making flood insurance available in a community. The NFIP regulations for floodplain management are the minimum criteria a community must adopt for participation in the NFIP. This section describes the portions of Title 44 of the CFR – Emergency Management and Assistance – which are applicable to the LOMC process.

Part 60 of the NFIP regulations provides the floodplain management criteria for floodprone areas. It lays out specific requirements for floodplain management regulations, which are legally enforceable and applied uniformly across the community. These regulations take precedence over any less restrictive conflicting local laws, ordinances or codes. Section 60.3 applies specifically to a community's level of ordinances for floodprone areas. Some states and communities have more restrictive regulations that take precedence over the minimum NFIP requirements of 44 CFR 60.3. These are referred to as higher standards.

Part 65 of the NFIP regulations relates directly to identifying and mapping SFHAs. It outlines the steps a community needs to take to assist in FEMA's effort to identify and publish up-to-date SFHAs. More specifically, 44 CFR 65 provides the procedures and engineering data requirements for identifying and revising flood hazard mapping information. In general, two types of approaches (detailed and approximate) have been used to prepare the FIRM. Approximate methods are typically used to delineate a community's Zone A boundaries (where no BFEs are shown) for participation in

the NFIP. FISs are subsequently prepared for most communities that participate in the regular phase of the NFIP. FISs are based on detailed hydrologic and hydraulic analyses to develop BFEs, flood hazard areas, and floodways for developed communities.

At any time, communities and property owners have the right to request revisions to the flood hazard areas and other flood information shown on a FIRM and in an FIS report. The data requirements and procedures for revising effective FIRMs and flood hazard information vary according to the community's level of ordinance and the type of effective study performed for the affected flooding source. For example, the requirements to revise the FIRM for a community with the ordinance level described in 44 CFR 60.3(d) are more complex than those for a community with the ordinance level described in 44 CFR 60.3(b). The requirements for revising effective FIRMs and flood hazard information are discussed in 44 CFR 65. Application of relevant regulations are described in detail in Chapter 3 of this document.

Procedures for hearings and appeals to protest BFEs are described in 44 CFR 67 and 68. To offset the cost of revising FIRMs and reviewing proposed projects, FEMA established a standard review and processing fee schedule. The specific requirements related to fees are described in detail in 44 CFR 72, and a summary can be found in Chapter 4 of this document.

1.3. MT-2 Requests Based on Scientific and Technical Data

As part of the agreement for making flood insurance available in a community, the NFIP requires the participating community to adopt floodplain management ordinances containing certain requirements intended to reduce future flood losses. These are the minimum criteria a community must adopt for participation in the NFIP. A community is responsible for approving all proposed floodplain development and for ensuring any permits required by federal or state law have been received. State and community officials, based on their knowledge of local conditions and in the interest of public safety, may set higher standards for construction or may limit development in floodplain areas. If the state or community has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

The community is responsible for ensuring updated flood hazard information is submitted, so FEMA can revise the FIRM as appropriate. This will allow risk premium rates and floodplain management requirements to be based on current flood hazard information. Some communities use the floodplain permitting process to determine if a CLOMR and/or LOMR is required for a project.

1.3.1. REQUIREMENTS TO SUBMIT TECHNICAL OR SCIENTIFIC DATA (44 CFR 65.3)

The requirement to submit new technical data to FEMA is specified in 44 CFR 65.3:

> *A community's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, a community shall notify the Administrator of the changes by submitting technical or scientific data in accordance with this part. Such a submission is*

> *necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and flood plain management requirements will be based upon current data.*

This regulation requires communities to submit data to FEMA within six months of completing a project that affects the BFEs, but it does not require a community request a LOMR. FEMA can use this data to either physically update the FIRM or issue a LOMR. Communities must submit this data in accordance with their adopted floodplain management ordinances. FEMA will review the data and will either initiate a revision or save the data for a future FIRM update. To help ensure flood insurance rates and local floodplain management ordinances are based on existing conditions, FEMA recommends communities submit LOMR requests for all projects within the SFHA that affect the effective BFEs, SFHA and/or floodways. Because BFEs may be published to the tenth of a foot, LOMR requests are recommended for projects resulting in a BFE increase or decrease of 0.1 foot or greater. Generally, for multi-phased projects, FEMA recommends a community require a LOMR request for any phase completed more than six months before the next phase begins. If a CLOMR was issued for an entire project (all phases), LOMRs for each phase should not show an increase in BFE greater than what was previously proposed in the issued CLOMR.

Projects crossing or within the channel of a watercourse are assumed to cause an increase or decrease in BFE unless a hydraulic analysis is performed to demonstrate the project does not result in a change to the BFE. These types of projects include, but are not limited to, bridges, culverts, dams, weirs and channel modifications. LOMR requests should be submitted when these types of projects are within an effective SFHA. This includes when they are along tributaries that may not have an effective hydraulic model but are within the floodplain/backwater of a stream with a detailed study. Because they are based on the effective FIRM, MT-1 (LOMA/CLOMA/LOMR-F/CLOMR-F) requests may not be processed if such projects have occurred, because a LOMR has not revised the effective flood hazard information to reflect existing conditions.

While floodplain encroachment within an SFHA overbank area may not significantly increase the BFE, an effective regulatory floodway encroachment should be submitted as a LOMR request, so BFE impacts can be evaluated through hydrologic and hydraulic analyses. The requirement for hydrologic and hydraulic analyses of any encroachment within the regulatory floodway is described in 44 CFR 60.3(d)(3):

> *When the Federal Insurance Administrator has provided a notice of final base flood elevations within Zones A1-30 and/or AE on the community's FIRM and, if appropriate, has designated AO zones, AH zones, A99 zones, and A zones on the community's FIRM, and has provided data from which the community shall designate its regulatory floodway, the community shall… Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.*

Per 44 CFR 65.6(a)(3), revisions cannot be based on the effects of proposed projects or future conditions. LOMRs must be based on existing conditions. FEMA reviews proposed projects through the CLOMR process.

1.3.2. REQUIREMENTS TO SUBMIT A CLOMR (44CFR 65.12)

The NFIP requirement to submit a CLOMR request to FEMA for a proposed project is 44 CFR 65.12(a):

> *When a community proposes to permit encroachments upon the flood plain when a regulatory floodway has not been adopted or to permit encroachments upon an adopted regulatory floodway which will cause base flood elevation increases in excess of those permitted under paragraphs (c)(10) or (d)(3) of §60.3 of this subchapter, the community shall apply to the Federal Insurance Administrator for conditional approval of such action prior to permitting the encroachments to occur…*

Therefore, unless a community has higher standards than the minimum required under 44 CFR 60.3, a CLOMR is required before a community issues a permit for a project if it meets one of the two criteria listed below.

- A project within a Zone AE floodplain without an effective floodway, which would result in a BFE increase of greater than 1.00 foot, compared to the existing (pre-project) conditions, when considering the cumulative impacts of all other existing and proposed encroachments.
- A project within an effective regulatory floodway that would result in any (0.00 foot) BFE increase.

An issued CLOMR by FEMA does not replace a floodplain development permit. A community is not obligated to approve a floodplain development permit because FEMA has issued a CLOMR. A CLOMR is a letter from FEMA commenting on whether a proposed project, if built as proposed, would meet minimum NFIP standards. The community has a choice to approve or disapprove a project's floodplain permit after receiving an issued CLOMR. A CLOMR request must have all the applicable permits, as required for a LOMR request, verified by the participating NFIP community.

1.3.3. HIGHER STANDARDS

Many communities have higher standards of floodplain management ordinances, which exceed the minimum NFIP requirements of 44 CFR 60.3. Therefore, some communities may require LOMRs or CLOMRs for projects that do not trigger the requirement per the criteria described above. Before a revision is submitted to FEMA for review, all other federal, state and local permits must be obtained. FEMA's review would also default to a state's or a community's minimum standards, and FEMA would use that same criteria in CLOMR/LOMR processing.

1.4. Right to Submit an MT-2 Request

1.4.1. RIGHT TO SUBMIT A LOMR (44 CFR 65.4(A))

Per 44 CFR 65.4(a). the community has the right to submit new non-regulatory technical data:

> *A community has a right to request changes to any of the information shown on an effective map that does not impact flood plain or floodway delineations or base flood elevations, such as community boundary changes, labeling, or planimetric details. Such a submission shall include appropriate supporting documentation in accordance with this part and may be submitted at any time.*

FEMA accepts community-submitted data related to changes in non-regulatory information (information other than floodplain/floodway delineations or BFEs) such as annexations, de-annexations, or incorporation of new communities. FEMA will typically keep these data on file for incorporation into the next map update for the community, but it occasionally may process a LOMR to incorporate the new data. Also, LOMR requests may include a submittal of non-regulatory data, along with changes to regulatory flood hazard information. In these cases, the non-regulatory data may be incorporated into the revised FIRM panels and FIS attachments.

The community's right to submit new technical data is described in 44 CFR 65.4(b):

> *All requests for changes to effective maps, other than those initiated by FEMA, must be made in writing by the Chief Executive Officer of the community (CEO) or an official designated by the CEO. Should the CEO refuse to submit such a request on behalf of another party, FEMA will agree to review it only if written evidence is provided indicating the CEO or designee has been requested to do so.*

This requirement is typically fulfilled by submitting MT-2 Form 1, signed by an appropriate official from the community (e.g., floodplain administrator) where the changes are occurring. If the revision affects the regulatory flood hazard information for multiple communities, concurrence is required from each community. Affected communities are determined based on the corporate limits shown on the effective FIRM, unless official documentation from the community is provided to demonstrate that the corporate limits on the FIRM are not accurate. Such documentation should include annexation agreements and/or updated corporate limits maps.

If a community chooses not to concur on an MT-2 request, the requester must provide documentation to FEMA to show the request was submitted to the community for review and approval. A written response from the community should be obtained to explain why they do not concur with the MT-2 request. FEMA will consider the response from the community when processing the MT-2 request.

1.4.2. RIGHT TO SUBMIT A CLOMR (44 CFR 65.8)

The right to request FEMA's review of a proposed project is specified under 44 CFR 65.8:

A community, or an individual through the community, may request FEMA's comments on whether a proposed project, if built as proposed, would justify a map revision. FEMA's comments will be issued in the form of a letter, termed a Conditional Letter of Map Revision, in accordance with 44 CFR part 72. The data required to support such requests are the same as those required for final revisions under §§65.5, 65.6, and 65.7, except as-built certification is not required. All such requests shall be submitted to the FEMA Headquarters Office in Washington, DC, and shall be accompanied by the appropriate payment, in accordance with 44 CFR part 72.

CLOMR requests may also be submitted to obtain FEMA's comment on proposed new hydrology. This allows communities conducting floodplain studies to receive FEMA's comments on the hydrology before proceeding with the hydraulic analysis phase of the study.

1.5. How to Apply

There are two options for submitting an MT-2 request to FEMA.

1. Submit a request online via the Online LOMC Tool at https://hazards.fema.gov/femaportal/onlinelomc/signin. An actual MT-2 Form 1 is not required when applying online, but all other required forms must be submitted. In addition, the signature page for community concurrence and Professional Engineer certification must be printed, signed and submitted with the application. A signature page must be included for each community impacted by the revision request.
2. Submit a request to the LOMC Clearinghouse or any of the applicable addresses listed on the MT-2 Instructions.

1.6. Review and Processing Fee

Some MT-2 requests meant to improve the flood hazard information shown on the effective FIRM and in the FIS report may be exempt from the review and processing fee, per 44 CFR 72.5, which states the following:

Requesters are exempt from submitting review and processing fees for:

a) Requests for map changes based on mapping or study analysis errors;

b) Requests for map changes based on the effects of natural changes within SFHAs;

c) Requests for a Letter of Map Amendment (LOMA);

d) Requests for map changes based on federally sponsored flood-control projects where 50 percent or more of the project's costs are federally funded;

e) Requests for 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

f) Requests for map changes based on flood hazard information meant to improve upon that shown on the flood map or within the flood study will be exempt from review and processing

fees. Improvements to flood maps or studies that partially or wholly incorporate man-made modifications within the special flood hazard area will not be exempt from review and processing fees.

Per these regulations, requests meant to improve the flood hazard information shown on the effective FIRM and FIS report are fee exempt. This includes correcting errors, reflecting natural changes, and incorporating more detailed data (i.e., updated topography) and/or better modeling/analysis methods. However, improvements that partially or wholly incorporate manmade modifications within the SFHA will not be exempt from review and processing fees, unless they fall into one of the two categories below.

1. Per 44 CFR 72.5(d), there is a fee exemption for manmade modifications that are federally sponsored flood-control projects where 50 percent or more of the project's costs are federally funded. To be eligible for this fee exemption, projects must meet the flood protection system definition per 44 CFR 59.1, which is shown below.

    a. Flood protection system means those physical structural works for which funds have been authorized, appropriated and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the area within a community subject to a "special flood hazard" and the extent of the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized flood modifying works are those constructed in conformance with sound engineering standards.

2. In accordance with the Homeowner Flood Insurance Affordability Act of 2014 (Public Law 113-89, section 22), a requester is exempt from submitting a review or processing fee for a request for a FIRM change based on a project where: (1) the primary purpose is habitat restoration; and (2) the project is funded in whole or in part with federal or state funds. This exemption includes projects to remove a dam, redesign or install a culvert, or install fish passage. For the purposes of this exemption, the meaning of "habitat restoration" is the same as defined in the Partners for Fish and Wildlife Act, 16 USC § 3772 (5):

    The term "habitat restoration" includes:

    (1) an activity conducted to return a project site, to the maximum extent practicable, to the ecological condition that existed prior to the loss or degradation, including—

    (a) removing tile drains or plugging drainage ditches in former or degraded wetland;

    (b) returning meanders and sustainable profiles to straightened streams;

    (c) burning grass communities heavily invaded by exotic species to reestablish native grass and plant communities; and

    (d) planting plant communities that are native to the project site;

    (2) if restoration of a project site to its original ecological condition is not practicable, an activity that repairs 1 or more of the original habitat functions and that involves the use of native vegetation, including—

(a) the installation of a water control structure in a swale on land isolated from overbank flooding by a major levee to simulate natural hydrological processes; and

(b) the placement of streambank or instream habitat diversity structures in streams that cannot be restored to original conditions or profile; and

(3) removal of a disturbing or degrading element to enable the native habitat to reestablish or become fully functional.

Requests that incorporate manmade modifications and are not eligible for either of these two fee exemptions shall require the review and processing fee, regardless of project ownership or completion date.

If requesters believe their online case submittals are fee exempt and the system will not set up cases without fees, the requester may choose any fee exemption type and it may be corrected later. However, any required fees not submitted with the initial application must be submitted through the LOMC Clearinghouse and cannot be paid online.

2. MT-2 Supporting Data Requirements

The MT-2 instructions offer a "MT-2 Revision Request Submittal Checklist," which is an overview of the required items. Requesters can use that checklist as a reference, but this section provides additional details on the requirements for these items. Generally, MT-2 submittals must be based on the best available data, such as the latest topography and land use information, so the revised flood hazard information reflects existing conditions.

2.1. Narrative

A written description should be submitted describing the request (i.e., the basis of the map change), the scope of the proposed/as-built project, and the method used to analyze the project's effects, as required per 44 CFR 65.6. A narrative is helpful to give FEMA an overall understanding of the submittal and is encouraged in the MT-2 Instructions.

2.2. MT-2 Application Forms

All forms applicable to the request must be completed and submitted with the application package. This package, which covers various types of revisions, includes six forms, a payment form, plus information about Endangered Species Act of 1973 (ESA) compliance documentation. Only the forms applicable to the request need to be submitted. To access the forms and detailed instructions on selecting and completing the appropriate forms, please refer to https://www.fema.gov/flood-maps/change-your-flood-zone/lomr-clomr?web=1&wdLOR=c4A5173B9-A6F9-4885-8A38-168CC3DFBCFE:

- Form 1, entitled "Overview & Concurrence Form:" Ensure this form is signed by the requester, the certifying engineer, and each community affected by the revision. For online applications, the signature page for community concurrence may be submitted in place of Form 1 (see 1.5.1)

  Community Concurrence:

  - It is common for MT-2 requests to affect multiple communities. Any community that would receive changes to the delineations of the effective floodway or floodplain, or changes to the effective BFEs as a result of the revision, is considered an affected community.

  - Affected communities are identified based on the corporate limits shown on the effective FIRM panel(s), unless the requester demonstrates that these are not accurate. This can be demonstrated by submitting an official corporate limits map from the community.

  - MT-2 applicants must provide all impacted communities with a copy of the MT-2 application package for their review and signature of concurrence. Ideally, this should be done before submitting the request to FEMA. Per 44 CFR 65.4(b), if a community refuses to provide concurrence by signing the MT-2 form, FEMA will still review the request if written evidence indicates that the community's Chief Executive Official (CEO) or designee was asked to do so. The community should provide a written explanation for why they chose not to sign the form. If, in this explanation, a community expresses that they have no objection to the CLOMR or LOMR, this will suffice for community concurrence. If a community voices concerns with the CLOMR or LOMR, FEMA will consider those comments during processing.

  - Flood hazard information for communities not participating in the NFIP may be revised by a LOMR. However, non-participating communities are not required to provide concurrence. LOMRs impacting non-participating communities will become effective 6 months after issuance, to give the non-participating community time to join the NFIP and adopt the new FIRMs.

- Form 2, entitled "Riverine Hydrology and Hydraulics Form"
- Form 3, entitled "Riverine Structures Form"
- Form 4, entitled "Coastal Analysis Form"
- Form 5, entitled "Coastal Structures Form"
- Form 6, entitled "Alluvial Fan Flooding Form"

2.3. State Approval

Some states must approve an MT-2 request before FEMA issues a determination. If an MT-2 request is received without state approval in a state that requires it, FEMA will request the state approval

along with any other necessary data/documentation needed for MT-2 processing. At this time, approval is required for MT-2 processing from the following states:

- Illinois – Approval is required for a LOMR that will add a floodway, with no previously issued CLOMR. Approval is required for a CLOMR in which a floodway is added. Notification is required for a LOMR involving only Zone A or a CLOMR without an effective floodway. Refer to Figure 1 for additional information on approvals in Illinois.

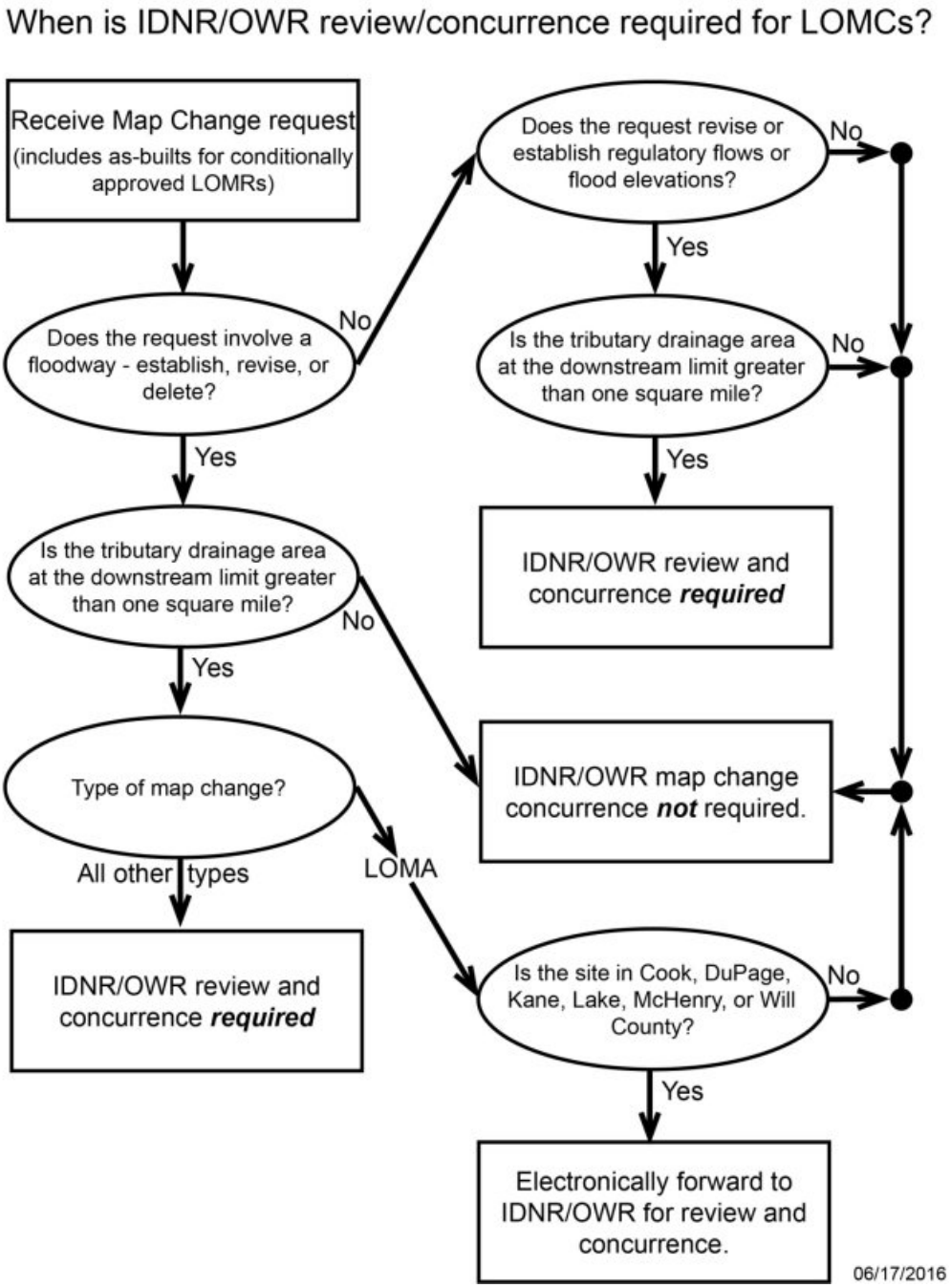

Figure 1. Information on MT-2 State Approval (Illinois)

- Indiana – Approval by the state's Department of Natural Resources (DNR) is required for all LOMRs and CLOMRs. If a project scope changes during the processing of the request, the requester will need to have the state re-approve the project. Any hydrologic and/or hydraulic revision due to a FEMA review requires an amended DNR approval.

- Michigan – Approval is required for a LOMR or CLOMR with a drainage area greater than 2 square miles. Approval can be in the form of a permit or letter from Michigan's Department of Environment, Great Lakes, and Energy.

- Minnesota – Approval is required for a LOMR or CLOMR revising the floodway and/or effective hydrology, and for any request involving any part of 44 CFR Part 65 of the NFIP regulations. Approval is not required for any LOMR following a CLOMR where the project was built as proposed, as long as the state approved the CLOMR. Projects revising the hydrology in a detailed study area will be subject to review by Minnesota's Interagency Hydrology Review Committee, which consists of the following members: MNDNR; U.S. Army Corps of Engineers; U.S. Geological Survey (USGS); Natural Resources Conservation Service; and National Weather Service.

- Wisconsin – Approval is required for all LOMRs and CLOMRs. If a project scope changes during the processing of the request, the requester must ask the state to re-approve the project. Any hydrologic and/or hydraulic revision due to a FEMA review requires an amended DNR approval.

2.4. Hydrologic Analysis

Generally, hydrologic models were not available for many effective Zone As. However, more recent Zone A floodplains are based on models, which can be obtained from FEMA and should be used as the starting point for CLOMRs and LOMRs.

MT-2 requests require a new hydrologic analysis if there are no effective flows available for the flooding source(s) being revised or if the effective flows are no longer reasonable. It is generally up to the certifying engineer to determine if the effective flows are sufficiently accurate or if the effective hydrology must be revised. In general, a revised (or new) hydrologic analysis for a revision request may be conducted for any of the following reasons:

- To reflect longer periods of gaging records of hydrologic data.

- To reflect changed (natural or manmade) physical conditions of the watershed and/or the stream.

- To use improved hydrologic methods.

- To correct an error in the hydrologic analysis performed for the effective study.

- To revise an effective Zone A SFHA where no hydrologic analysis is available.

The following items should be considered when determining if revised hydrology is warranted and which hydrologic method to use.

a. The hydrology should be revised using a method that is at least as detailed as the method used for the effective hydrologic analysis. For example, rainfall runoff modeling is considered to be more detailed than regression equations. Therefore, if the effective hydrology is based on a rainfall runoff model, the revised flows should not be based solely on the results of regression equations.

b. If a revision uses a hydrologic model or method different from that used for the effective study, the discharges resulting from the new or revised analysis should show a statistically significant difference from the effective discharges. Statistical significance is defined in Section 6.0 of the February 2019 version of "Guidance for Flood Risk Analysis and Mapping: General Hydrologic Considerations," which may be downloaded from the "Guidance" page on the FEMA website at https://www.fema.gov/sites/default/files/2020-02/General_Hydrologic_Considerations_Guidance_Feb_2019.pdf. Generally, if the revised hydrology does not change the computed BFEs by at least 0.5 foot, then the effective flows should be used.

c. Submittals involving revised hydrology must include back-up documentation to support all of the analysis input parameters including, but not necessarily limited to, a drainage area map. Supporting GIS files and a Digital Elevation Model should be submitted when available. Drainage area maps should include the following information:

    - Topographic contours (with elevation labels) covering the entire watershed being studied.
    - Delineation of all the sub-basins included in the hydrologic analysis, with the sub-basin labels using the same nomenclature as the model.
    - Flow paths used for time of concentration calculations (if applicable).
    - Locations of discharge calculation points.
    - Scale of the map, north arrow, author and date.
    - Certification by a Professional Engineer or Surveyor.

d. If a revision affects only a portion of a detailed-study stream, a logical transition between the revised and unrevised flows is preferred. Generally, the revised discharges should not result in lower flow rates for downstream areas than the upstream effective flows or higher flow rates for upstream areas than the downstream effective flows. MT-2 requesters are expected to make a reasonable effort to achieve this logical transition, which may require extending the revised reach significantly upstream or downstream. However, it may not be feasible to achieve this logical transition in some situations. FEMA may accept a discontinuity on a case-by-case basis.

e. Use the flows computed in the hydrologic analysis as inputs to the revised hydraulic model. Generally, the flow rates computed at the basin outlets are used in the hydraulic model for the entire reach flowing through that basin. It may be reasonable to interpolate flows between nodes of the hydrologic model if the sub-basins have a uniform land use and slope. Interpolation should be based on drainage area, with the areas delineated on the drainage area map.

The following methods may be used for the new hydrologic analysis:

- Statistical Analysis of Gage Records.
- Precipitation/Runoff Model.
- Regional Regression Equations.

The requirements for each of these methods are briefly described in the following sections. Please refer to "FEMA Guidance Document 71, General Hydrologic Considerations" for more information on hydrologic analysis requirements.

2.4.1. STATISTICAL ANALYSES OF GAGE RECORDS

Bulletin 17C, "Guidelines for Determining Flood Frequency," is the recommended approach for analyzing gage records. Bulletin 17C can be downloaded from the Subcommittee on Hydrology of the Advisory Committee on Water Information website at https://acwi.gov/hydrology/Frequency/b17c/.

2.4.2. PRECIPITATION / RUNOFF MODEL

A FEMA-acceptable hydrologic analysis must be submitted in digital format. A list of FEMA-acceptable models can be accessed at http://www.fema.gov/flood-maps/products-tools/numerical-models/hydrologic.

The submittal must also include back-up documentation, including the following, to support all model input parameters:

- Drainage area maps.
- Land use and soils maps.
- Calculations used to determine parameters such as lag time, curve number and loss values.
- Source of rainfall data, including temporal distributions, areal reduction factors, etc.
- Unit hydrograph method and associated documentation.
- Survey or as-built documentation for controls of stormwater storage facilities included in the analysis.

- Routing method and associated documentation.

Where possible, the model must be calibrated, and the process fully documented. The procedure should be clearly described in the CLOMR/LOMR narrative. This should include dates, measurements and locations of measurements of historic storms; the parameters revised and the rationale for revising; and input and output data for the calibrated model.

For areas with an effective hydrologic analysis, a revised hydrologic analysis must include an evaluation of the same recurrence interval(s) studied in the effective FIS, such as the base (1-percent-annual-chance) flood and the 10-percent (10-year), 2-percent (50-year), and 0.2-percent (500-year) floods.

If the revision is based on revised hydrology, hydrologic analyses for both pre-project and post-project conditions should be submitted.

For additional guidance related to precipitation/runoff modeling, please refer to "FEMA Guidance Document 91, Hydrology: Rainfall-Runoff Analysis."

2.4.3. REGIONAL REGRESSION EQUATIONS

USGS regression equations are available nationwide and recommended for use. A summary of regional regression equation publications for each state can be found at https://water.usgs.gov/osw/programs/nss/pubs.html. If the most recent USGS regression equations were not used, explain why these equations do not apply. Include documentation to support all the input parameters for the regression equations. This typically includes at least a drainage area map.

2.5. Hydraulic Analysis

2.5.1. REQUIREMENTS TO SUBMIT A HYDRAULIC ANALYSIS

Most LOMR and CLOMR requests require a revised hydraulic analysis. However, an MT-2 request may be processed without a new hydraulic analysis in the following situations.

1. The published regulatory flood hazard information (BFEs, SFHA, floodway) does not accurately reflect the results of the effective hydraulic model. In this situation, the FIRM and or FIS report may be updated to match the effective modeling without a new hydraulic analysis.
2. If a LOMR is requested to redelineate the SFHA based on better topographic data than that used to delineate the effective SFHA, FEMA will process the request if it meets both of the following conditions.
    a. No manmade modification within the vicinity of the project may change the BFEs, including fill, excavation, channel modification, or a new or replaced bridge/culvert, dams, weirs, basins or levees. Any of these modifications within the SFHA may affect the BFEs, unless they occur entirely within an area with clearly ineffective flow that is not used for flood storage.

   b. The area being redelineated is relatively small and site specific or, if a significant reach is to be redelineated, the reach is currently categorized as "Valid" under FEMA's Coordinated Needs Management Strategy (CNMS). For additional information on CNMS, refer to FEMA's "Coordinated Needs Management Strategy (CNMS) Technical Reference CNMS Database User's Guide," dated November 2019.

3. The area being revised is a stillwater area where a hydrologic analysis accounting for the storage and routing of the full hydrograph is used to determine the BFE(s), such as the analysis of reservoirs and stormwater storage facilities.
4. A hydrology-only CLOMR request may be submitted if a community would like FEMA to review and comment on the new hydrology compared to the effective before they proceed with the hydraulic analysis. Hydrology-only CLOMRs are typically submitted for larger revisions, such as new watershed studies conducted by a community.

A watercourse may have an effective SFHA due to backwater from a downstream flooding source. Although there may not be an effective model for the tributary, a hydraulic model is required to revise the SFHA for the tributary if any manmade modifications have occurred within the SFHA that cross or are within the channel of the tributary. This includes, but is not necessarily limited to, new or replaced bridges/culverts, dams, weirs and channel modifications.

2.5.2. HYDRAULIC CONDITIONS TO BE ANALYZED

Per 44 CFR 65.6(a)(8), unless the basis of the request is using an alternative hydraulic method, or unless the requester can demonstrate that the data of the original hydraulic computer model is unavailable or its use is inappropriate, the analysis must use the same hydraulic computer model used to develop the BFEs shown on the effective FIRM. The model must be updated to show present conditions in the floodplain. Therefore, it is best to request approval from FEMA before submitting an MT-2 request that is not based on the effective hydraulic model.

When a request involves a hydraulic analysis for riverine flooding that differs from the one used to develop the effective FIRM, submit a FEMA-acceptable hydraulic analysis in digital format. Information on FEMA-acceptable models can be accessed at https://www.fema.gov/flood-maps/products-tools/numerical-models/hydraulic.

The following conditions models, as applicable, must be submitted, as explained on Page 16 of the MT-2 Instructions.

- **Duplicate Effective Model:** The duplicate effective model is a copy of the hydraulic analysis used in the effective FIS, referred to as the effective model. The effective model should be reproduced on the requester's equipment to produce the duplicate effective model. This is required to ensure the effective model's input data have been transferred correctly to the requester's equipment. It also ensures the revised data will be integrated into the effective data to provide a continuous FIS model, upstream and downstream of the revised reach. For information on how to obtain copies of the effective FIS models, please visit the FEMA website at https://www.fema.gov/sites/default/files/documents/fema_flood-insurance-study-data-request-form.pdf.

A duplicate effective model is required for all LOMRs where there is an effective model, even if it is not being used as a basis for the revised modeling, but so it can be compared to the revised modeling. If the effective model is being updated to produce the revised conditions modeling, run the revised conditions modeling using the same model version as the effective, unless the entire modeled reach is being revised. This is to avoid discrepancies outside of the revised reach that may result from running the model in a different version.

If an effective HEC-2 model is converted to HEC-RAS, this is considered a duplicate effective model.

If the effective model is not available from FEMA, the requester should check to see if it is available from the community or any other agency involved with floodplain management in the area of interest. If the effective model is not available, or is available only in PDF format, then a duplicate effective model may not be required. Refer to the flow chart in Figure 2 to determine if a duplicate effective model is required and if the modeling should be truncated. If the entire reach is being revised, it is not necessary to use the duplicate effective model as a base model, but it should be used as a reference for cross section placement and BFE comparisons. Communication from the FEMA Engineering Library should be included with the MT-2 submittal to document that the effective model was requested, but is not available.

- **Corrected Effective Model:** The corrected effective model is the model that corrects any errors in the duplicate effective model, adds any additional cross sections to the duplicate effective model, or incorporates more detailed topographic information used in the effective model. The corrected effective model must not reflect any manmade physical changes that have occurred since the date of the effective published study. Generally, the updated topography should reflect the physical conditions of the area on the date of the FIRM that incorporated the effective modeling. Physical changes in the hydraulic condition of the stream may have occurred after the date of the effective published study. Sometimes the changes result from natural changes, such as a channel “cut-off” at a bend, which may be included in the corrected effective model. Sometimes these are the result of manmade changes, which should not be included in the corrected effective model. An error could be a technical error in the modeling procedures, or it could be any construction in the floodplain that occurred before the date of the effective model but was not incorporated into it.

- **Pre-Project (Existing) Conditions Model:** The duplicate effective model or corrected effective model is modified to produce the pre-project conditions model. The pre-project model reflects any physical modifications that have occurred within the floodplain since the date of the effective model, but prior to the construction of the project for which the revision is being requested. If no modification has occurred since the date of the effective model, this model would be identical to the corrected effective model or duplicate effective model. The pre-project conditions model may be required to support conclusions about the actual impacts of the project associated with the revised or post-project conditions model or to establish more up-to-date models on which to base the revised or post-project conditions model.

- **Revised or Post-Project Conditions Model:** The pre-project conditions model (or duplicate effective model or corrected effective model, as appropriate) is modified to reflect revised or post-project conditions. This model must incorporate any physical changes to the floodplain that have occurred since the effective model was produced, as well as the effects of the project. For CLOMR requests, this model must reflect proposed conditions.

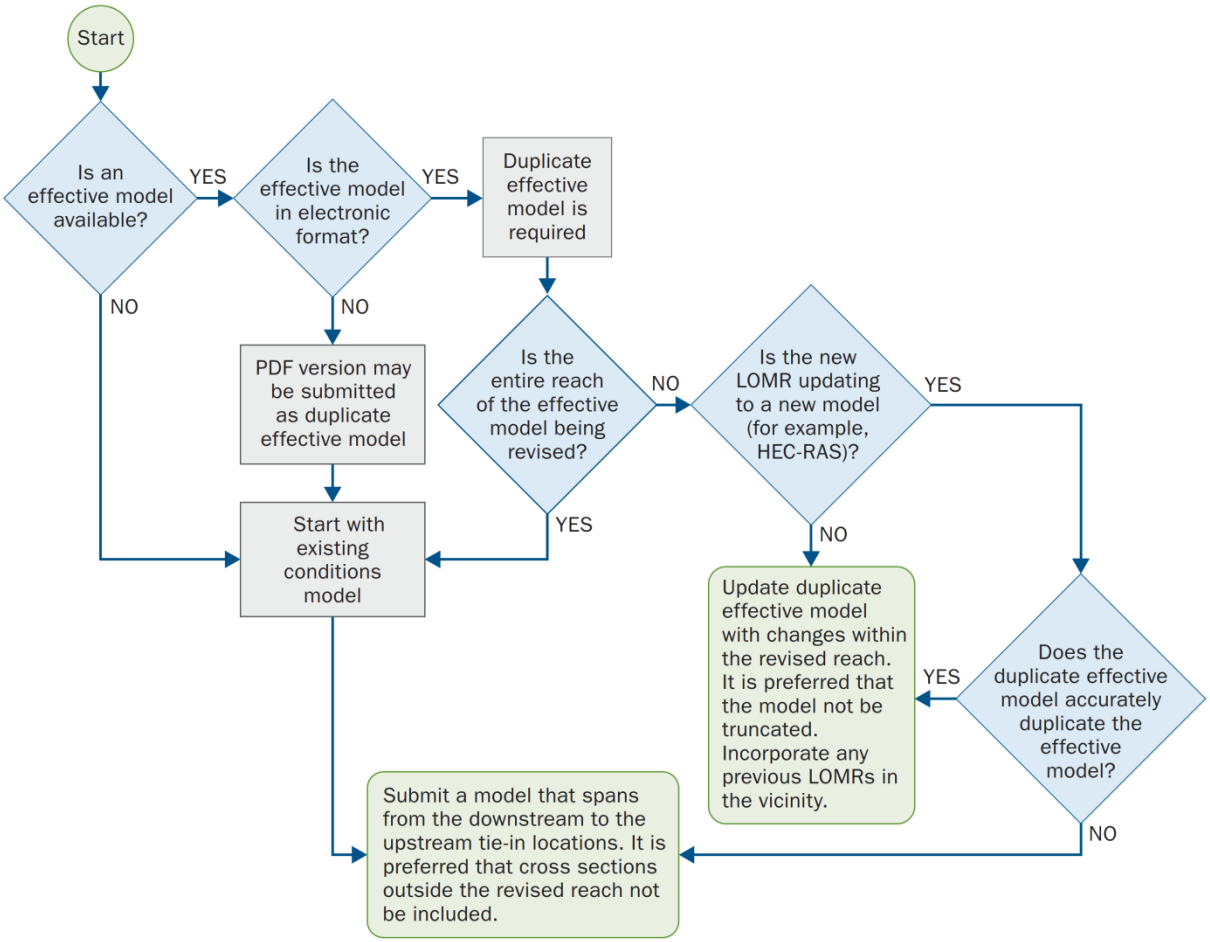

Figure 2. Flow Chart for Determining the Need for a Duplicate Effective Model

The guidelines below should also be followed:

- All submitted models should be clearly named using the nomenclature described above.
- Each model should be described, preferably in the MT-2 report narrative.
- Extraneous models should be omitted from the submission.

2.6. Hydraulic Analysis Criteria

2.6.1. REQUIRED FLOOD FREQUENCIES (44 CFR 65.6(A)(8))

A revised hydraulic analysis for a flooding source with established BFEs must include evaluation of the same recurrence interval(s) studied in the effective model, such as 10-, 50-, 100, and 500-year elevations, and of the floodway.

Boundary Conditions: Typically slope area/normal depth should be used at a confluence for tributaries unless it is demonstrated that the tributary and main stream have coincident peaks. The normal depth method should also be used anywhere a known water-surface elevation is not available. Known water-surface elevations are to be used as the downstream boundary conditions for models starting in the middle of a reach, whenever a reliable source is available. If the reach has effective BFEs, those must be the source of the known water-surface elevation.

BFE "Tie-In" (44 CFR 65.6(a)(2)): Per 65.6(a)(2), unless it is demonstrated that it would not be appropriate, the revised and unrevised BFEs must match within 0.5 foot where such transitions occur within the revision reach. This is determined by comparing the revised or post-project conditions model BFEs to the BFEs from the effective FIS report. Also, post-project BFEs must match pre-project BFEs within 0.1 foot at the limits of revision to ensure that all project impacts are reflected in the revision. Note: the area of revision and the project area may not be the same. If a revised model does not meet tie-in criteria at the project limits, the model must be extended until a tie-in is achieved.

Floodway Analysis: If there is an effective regulatory floodway, the model submitted for each condition listed in Section 2.5.2 should include a baseline conditions model run and a separate floodway model run. Per 44 CFR 65.7(b)(4)(i), the floodway analysis must be performed using the hydraulic computer model used to determine the proposed BFEs.

FEMA recommends using Methods 4 and 1 for modeling the floodway. The floodway surcharge values should be between 0.0 and 1.0. However, some states or communities have maximum surcharge values that are lower than 1.0. For rivers or streams that border two states, one of which has a more restrictive floodway standard, the 1.0 foot surcharge is used unless the states have mutually agreed on a lesser criterion.

In addition, if the modeling is using an effective model and attempting to tie the revised model into the effective model, the model should be run far enough upstream to determine that the surcharge values do not exceed the allowable limit. This can be accomplished by continuing to add effective model cross sections far enough upstream to balance the energy grades in the model between the effective model and the revised model to 0.00-foot tolerance. Once that is achieved, then it is unlikely a surcharge value upstream of this area would exceed the allowable limit.

Refer to FEMA Guidance Document 79, *Floodway Analysis and Mapping*, for more information on floodways.

Additional Model Parameters: Generally, the factors listed below should be considered when developing the hydraulic models to support a CLOMR and/or LOMR, but this list is not exhaustive.

- Whenever feasible, the revised hydraulic model includes cross sections cut/placed at the same profile baseline locations as the cross sections in the effective model to facilitate a comparison of the results.
- Flood discharges used as inputs in the revised hydraulic models correlate with the revised (or effective) hydrologic analysis.
- Roughness Coefficient. The Manning's "n" value is reasonable for the channel and overbank areas in the horizontal and vertical directions.
- Cross sections for bridge/culvert/drop structure modeling are sufficient, reasonably located and consistent with the user's manual recommendations for the software being used.
- Transition Coefficient. Appropriate values are used for the contraction and expansion coefficients along the stream lengths, near structures.
- The loss parameters for the structures are reasonable and consistent with the recommended values for the types of structures in the users' manual for the software being used.
- Bridge modeling approaches and corresponding values are reasonable and consistent with those recommended for the types of structures in the users' manual for the software being used.
- The specifications of the structure in the hydraulic models are verified from as-built plans or a survey for the project.
- The ineffective flow areas are appropriately defined near structures and other applicable locations.
- The selected model satisfies the requirements in the users' manual and the standards of the selected methods.
- The cross sections in the model extend across the entire floodplain to contain the base floodplain and 0.2-percent-annual-chance floodplain, if appropriate.
- The BFEs computed in the baseline conditions model run and the BFEs computed for the floodway model run are consistent.
- The water-surface profiles of different flood frequencies do not cross one another.
- The water-surface profiles do not show drawdowns (i.e., the water-surface elevation at an upstream cross section must be higher than a water-surface elevation at a downstream cross section). However, drawdowns in the vicinity of bridges/culverts may indicate errors in the

hydraulic modeling of the structure; the modeling errors should be corrected or verified as reasonable before profiles are revised.

- Any notes, warnings or errors provided by the modeling program have been examined and addressed where appropriate.

2.7. Coastal Analysis

Flood hazard studies are considered coastal studies when the flooding being evaluated is a combination of elevated water levels, typically due to storm surge, and wave action. Coastal study methodologies are used to evaluate flood hazards along the shorelines of the Atlantic Ocean, Gulf of Mexico, Pacific Ocean and Great Lakes. Bays, tributaries and other lakes are also considered to have coastal floodplains when they are subject to water level and wave hazard processes similar to those on the open coasts. Map revisions may be requested for one or more of the following reasons (note: the list below is not exhaustive):

- To rectify an error in the flood hazard analysis conducted in the effective study or an error in the mapping of the results of the effective study.
- To reflect changes, natural or manmade, in the physical conditions of the coastal transect.
    - "Guidance for Flood Risk Analysis and Mapping: Coastal Structures" outlines procedures for the treatment of structures and obstacles that are present on the transect but may or may not be engineered to provide flood protection.
    - Any case submitted in an area affected by beach nourishment must appropriately account for the nourishment, according to "Guidance for Flood Risk Analysis and Mapping: General Study Considerations."
- To reflect more accurate topographic data: the new topographic data must be certified by a licensed surveyor or registered professional engineer.
- To reflect a different period of record of wave or tide gauge data: frequency analysis of wave heights or storm surge elevations based on a small sample may have a wide variance; requests may seek to update old frequency analyses with new data. The new analysis must be statistically adequate to support the calculation of the base flood.
- To incorporate improved engineering methods: requesters may choose to use more detailed or computationally involved engineering analyses in support of map revision requests. For example, a revision request may be based on wave transformation using two-dimensional spectral wave models instead of the standard parametric fetch-limited wave transformation approaches. Any models used in the engineering analyses must be included in the list of numerical models meeting the minimum requirements of the NFIP. This list may be found at https://www.fema.gov/flood-maps/products-tools/numerical-models/coastal. The use of more advanced models does not guarantee an improvement in the quality or accuracy of the

engineering analysis; the engineer should ascertain the appropriateness of the model chosen for the specific analysis.

- To reflect site-specific analyses and information: on a coastline with complex geometry, the flood hazards at certain locations may not have been precisely represented under the broad brush of a large-scale study. For example, the starting wave heights used in the effective WHAFIS model may not represent the local wave climate due to wave sheltering. The requester should provide detailed engineering analyses and should meet the standards for coastal engineering practice and the requirements set forth in the various FEMA guidance documents related to coastal analysis and mapping.

FEMA guidance documents related to coastal analysis and mapping include:

- Coastal General Study Considerations
- Coastal Wave Setup
- Determination of Wave Characteristics
- Overland Wave Propagation
- Coastal Erosion
- Coastal Structures
- Coastal Water Levels
- Coastal Floodplain Mapping
- Coastal Statistical Simulation Methods
- Coastal Flood Frequency and Extreme Value Analysis
- Coastal Notation, Acronyms and Glossary of Terms
- Combined Coastal and Riverine Floodplain
- Guidelines for Coastal Flood Hazard Analysis and Mapping for the Pacific Coast of the United States

2.8. Alluvial Fan Flooding Analysis

Alluvial fans are gently sloping, fan-shaped landforms created over time by the deposition of eroded sediment. They are common at the base of mountain ranges in arid and semi-arid regions such as southwestern North America. Alluvial fans, and flooding on alluvial fans, show great diversity because of variations in climate, fan history, rates and styles of tectonism, source area lithology,

vegetation and land use. Acknowledging this diversity, FEMA developed an approach that considers site-specific conditions to identify and map flood hazards on alluvial fans. This approach can be found in FEMA's "Guidance for Flood Risk Analysis and Mapping, Alluvial Fans, November 2016." Figure 3 shows an example of an alluvial fan.

Figure 3. Photograph of Alluvial Fan

This section defines and discusses the submittal and processing of alluvial fan cases. MT-2 requests for alluvial fan cases require the following:

- Alluvial fan flooding and how to analyze it and determine the SFHA associated with it.
- Knowledge of the applicable NFIP regulations.

Submittal and processing of MT-2 alluvial fan cases requires knowledge of the science of alluvial fans, sediment transport analysis, scour analysis, the use of the Fan program, and two-dimensional hydraulic models.

2.8.1. DEFINITIONS AND GENERAL TERMINOLOGY FOR ALLUVIAL FANS

An alluvial fan is a sedimentary deposit at a topographic break, such as the base of a mountain front, escarpment, or valley side, that is composed of stream flow and/or debris flow/sediments and has the shape of a fan, either fully or partially extended. Section 59.1 of the NFIP regulations defines "Alluvial Fan Flooding" as "flooding occurring on the surface of an alluvial fan or similar landform

which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport and deposition; and unpredictable flow paths."

Alluvial fan flooding encompasses what is described as active and inactive flooding. Active alluvial fan flooding is characterized by flow path uncertainty, abrupt erosion and deposition, and ultra-hazardous conditions. Inactive alluvial fan flooding is similar in nature to traditional riverine flooding, probably subject to erosion and sediment deposition, but characterized by a relatively stable flow path. An alluvial fan may exhibit both active and inactive fan flooding. Examples and more detailed definitions of active and inactive fan flooding hazards can be found in the previously referenced FEMA guidance document.

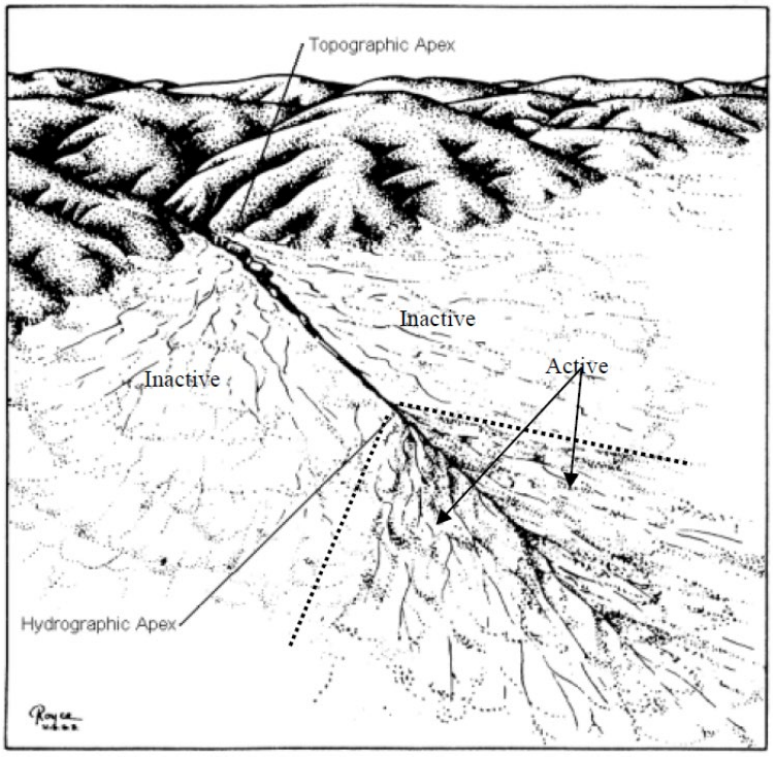

Figure 4. Active and Inactive Alluvial Fan Flow Paths

The approach to follow for identifying and mapping alluvial fan flood hazards is discussed in FEMA's "Guidance for Flood Risk Analysis and Mapping, Alluvial Fans, November 2016." This approach divides the analysis into three stages, summarized below.

Stage 1: Recognizing and Characterizing Alluvial Fan Landforms.

> At this stage, the scientist or engineer should be able to recognize whether or not a landform is an alluvial fan. This stage will require review of surficial geologic maps, soil maps, topographic maps and aerial photographs. The use of these items will help to identify the type of sedimentary

deposit (alluvium or debris-flow deposits), the shape of the fan, the lateral boundary of the fan and whether the landform is located at a topographic break.

Stage 2: Defining the nature of the alluvial fan environment and identifying active and inactive areas of the fan.

At this stage, the scientist or engineer should be able to identify the active and inactive parts of the fan. This stage will require the use of aerial photographs, topographic and soils maps, surficial geologic maps, historical records and a detailed field investigation.

Stage 3: Defining and Characterizing the Base Flood Within the Defined Areas.

This stage determines the severity and delineates the extent of the base flood within any floodprone area identified in Stage 2 as an active alluvial fan area. Several methods are appropriate for quantifying the base flood; however, not all methods are appropriate for all situations. The methods below are the most commonly used.

Probabilistic Method: This method entails the use of the Fan Program, which is based on the assumption of critical depth and equal probability along contour arcs (random flow paths). Some experts think this method overpredicts the extent of the SFHA.

Geomorphic Method: This method is based on qualitative information such as surficial geologic maps, soil maps, topographic maps, aerial photographs, historical data, post-flood verification, interpretive studies and extensive field surveys. It is frequently used for younger, less-developed soils with deeply incised channels. This method is mainly used for Zone A delineations because it does not involve any computations.

Deterministic Method: This method entails the use of two-dimensional hydraulic models such as HEC-RAS v5.0 or higher. By simulating two dimensional overland flow, the model is able to calculate the flow rate, depth, and velocity in each node of the alluvial fan. In addition, sediment transport analyses are generally required for alluvial fan analysis. Because of the extreme uncertainty associated with the science of sediment transport, it is subject to the reviewer's own judgment. Sediment transport formulas and classifications are shown in Table 2 in FEMA's "Guidance for Flood Risk Analysis and Mapping, Alluvial Fans, November 2016."

Note: When using the Probabilistic or Deterministic Method, the Geomorphic method should always be the basis on which to build the models for both methods.

2.8.3. INITIAL REVIEW AND GENERAL REQUIREMENT

The general CLOMR/LOMR submittal requirements for alluvial fan cases are similar to the riverine submittal requirements. The following additional items are required:

- MT-2 Application/Certification Form 6: Alluvial Fan Flooding.

- MT-2 Application/Certification Form 3: Riverine Structures. This form is required if the request is based on structural control measures such as channelization, levee, floodwall, dams and sedimentation basins.

2.8.4. REVIEW OF ALLUVIAL FAN CLOMR/LOMR SUBMITTALS

The most common type of LOMR/CLOMR request involves revising an effective alluvial fan SFHA depicted on the FIRM as Zone AO, with flood depths and velocities, or Zone A. This type of request nearly always involves structural measures, such as levees, floodwalls, detention/retention basins or channelization. MT-2 requests may also establish a new SFHA along an alluvial fan or revise an effective SFHA along an alluvial fan based on better data. The effective zone designation should be verified by the applicant to confirm whether or not the flooding source is an alluvial fan.

2.8.5. SUBMITTAL FOR AN ESTABLISHED ALLUVIAL FAN SFHA

Most alluvial fan MT-2 requests involve an established alluvial fan SFHA shown on the FIRM. Those cases are based on structural control measures such as channelization, levees, floodwalls, dams and sedimentation basins. Therefore, there is no need for a Stage 1 or 2 analysis; only a Stage 3 analysis, as described in Section 2.7.7, is required.

2.8.6. REQUESTS FOR A SUBMITTAL IN A NEWLY ESTABLISHED ALLUVIAL FAN SFHA OR BETTER DATA

When requests involve newly identified (or suspected) alluvial fan areas, the submittal must include all three stages of analysis. A request to revise an established SFHA based on better data will also require the submittal of all three stages of analysis.

Additional information regarding the three-stage analysis and required documentation can be found in FEMA's "Guidance for Flood Risk Analysis and Mapping, Alluvial Fans, November 2016."

2.8.7. STAGE 3 ANALYSIS

Information regarding the Stage 3 process and requirements can be found in FEMA's "Guidance for Flood Risk Analysis and Mapping, Alluvial Fans, November 2016." At minimum, this analysis should demonstrate the flood control measures will effectively eliminate alluvial fan hazards from the area they protect. The analysis must include the following:

- Assessment of discharge, debris and sediment movement in the entire drainage basin (not only the fan area).

- Engineering analysis showing that the measures will accommodate the peak discharge volumes of water debris and sediment, and will withstand the hydrodynamic and hydrostatic forces.

- Engineering analysis showing potential scour and erosion, and measures for protection against them.

- Engineering analysis showing the measures will provide protection from hazards associated with the possible relocation of flow paths from other parts of the fan.
- Engineering analysis that assesses the effects of the project on flood hazards, including the depth and velocity of floodwaters and scour and sediment deposition, on other areas of the fan.
- An accounting for local drainage (if any).

In addition, the following items must be submitted:

- Certification by a registered professional engineer.
- An operations and maintenance plan (reviewed and accepted by community, state and local agencies that have jurisdiction) for any structure within the alluvial fan.
- Certified as-built plans.

The applicable provisions of Sections 65.2, 65.4, 65.6, 65.8 and 65.10 of the NFIP regulations also apply to MT-2 requests involving alluvial fan flooding, and the appropriate supporting data must be submitted.

2.8.8. MAPPING OF ALLUVIAL FAN SFHA

Where possible, the SFHA for an alluvial fan will be mapped as Zone AO, with a listed depth and velocity. Alluvial fan flood hazard zones with a depth greater than 3 feet should be mapped as Zone AE or Zone A on the FIRM, with a note indicating that the flood zone is an alluvial fan flood zone.

NOTE: Refer to the "Regulations for Mapping and Map Revisions for Areas Subject to Alluvial Fan Flooding" (44 CFR 65.13)

2.9. Topographic Workmap

A certified topographic workmap of suitable scale, contour interval, and planimetric definition, which is extensive enough to show the entire area covered by the revised or post-project conditions model, must be submitted. The workmap must be submitted in PDF format and certified (sealed, signed and dated) by a registered professional engineer. The scale of the map must be sufficient to confirm the accurate delineation of the floodway and floodplain boundaries, and all features must be clearly shown and described via a legend or labels.

The submitted topographic workmap should include the following:

- Boundary delineations of the revised conditions base floodplain and, if applicable, the floodway and 0.2-perecent annual-chance floodplain.
- Boundary delineations of the effective base floodplain and, if applicable, the floodway and 0.2-percent annual-chance floodplain.

- Graphical tie-in between the revised and effective boundary delineations.
- Topographic contour information used for the floodplain boundary delineations, with elevation labels.
- Vertical datum used on the map (must match the vertical datum of the hydraulic analysis).
- Locations and alignment of all cross sections in the hydraulic modeling within the revised reach.
- Flow line used in the revised hydraulic model.

The floodplain and floodway delineations on the workmap must be consistent with the output from the hydraulic analysis. Therefore, the cross section topwidths and reach lengths shown on the submitted mapping must match the modeling. There may be situations where a discrepancy between the map and model topwidths is warranted (e.g., intermediate high ground and ineffective flow areas), but adequate justification must be provided.

It is strongly recommended that requesters submit workmap source files, such as GIS or CAD, along with the PDF. If the effective FIRM for the area of revisions is modernized and includes a FIRM database, then digital (GIS or CAD) data are required. The vertical datum used to reference the topographic elevations must be specified and should be consistent with the datum used to reference the elevations in the hydraulic analysis. The digital data provided should be spatially referenced and cite the projection used (coordinate system, example: UTM/State Plane) to produce the most accurate mapping possible. If this spatial reference data is not submitted, the workmap will need to be manually georeferenced.

2.10. Annotated FIRM

An annotated FIRM panel (and Flood Boundary and Floodway Map panel, if applicable) must be submitted that shows the revised delineations of the floodplain(s) (and regulatory floodway, if applicable) as delineated on the submitted workmap. The revised boundaries must tie into the effective flood hazard boundaries at the upstream and downstream limits of the area of revision.

2.11. Proposed/As-built Plans

Certified as-built drawings are required for all existing/as-built hydraulic structures that are not included in the effective analysis or are modeled with different geometry than in the effective model. The plans must contain all the details needed to verify the geometry used in the modeling, and the vertical datum must be referenced on all plans. The plans must be certified by a registered professional engineer or surveyor (plans for structures proposed in a CLOMR do not need to be certified, but they must be submitted by a professional engineer). As-built or proposed grading for fill and/or excavation projects must be reflected in the topography shown on the submitted topographic workmap.

2.12. Operation and Maintenance (O&M) Plans

Per 65.6(a)(12), if a community or other party seeks recognition from FEMA on its Flood Hazard Boundary Map or FIRM that an altered or relocated portion of a watercourse provides protection from, or mitigates potential hazards of, the base flood, the Federal Insurance Administrator may request specific documentation from the community describing how and certifying that the flood control structure will be maintained. This documentation, which may be in the form of a written statement from the community CEO, an ordinance, or other legislative action, shall describe the nature of the maintenance activities to be performed, the frequency with which they will be performed, and the title of the local community official responsible for ensuring that the maintenance activities are accomplished.

This documentation is required for LOMRs involving the following structures.

- Accredited levee systems.
- Dams/basins/ponds that are being used to reduce the peak downstream discharges and/or may pose a potential flood risk to adjacent properties.
- Coastal structures being used to reduce the mapped flood hazard.

A draft version of the O&M Plan should be submitted for CLOMRs that are proposing such structures. A final copy will be required after the structure is constructed and a revision to the FIRM is requested.

All maintenance activities must be under the jurisdiction of a federal or state agency, an agency created by federal or state law, or an agency of a community participating in the NFIP that assumes the ultimate responsibility for maintenance. A community may enter into an agreement whereby a private property owner is responsible for the maintenance, but that must be done as part of their own officially adopted maintenance plan. Under the NFIP, FEMA will hold the community responsible for monitoring the maintenance and taking over any maintenance responsibilities that were delegated to a private entity if the entity should default on their agreement with the community. In addition, FEMA will not review the covenant for correctness or liability for the community, only see that the overall O&M plan is sufficient to meet FEMA's requirement.

Per 44 CFR 65.6(a)(13), a community may submit, in lieu of a maintenance plan, certification by a registered professional engineer that the project has been designed to retain its flood-carrying capacity without periodic maintenance.

2.13. Levee-Based MT-2 Requests

Per 44 CFR 59.1, a levee is a manmade structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control or divert the flow of water to reduce flood hazards posed by temporary flooding. A floodwall is a designed structural wall constructed adjacent to shorelines or stream banks for the purpose of reducing flooding of property

on the landward side of the wall. Floodwalls are normally constructed in lieu of or to supplement levees where the land required for levee construction is too expensive or not available. In this document, the term "levee" is used to refer to both earthen embankments and floodwalls.

For the purpose of accrediting levee systems that provide base flood hazard reduction, regulatory and engineering data requirements for processing MT-2 requests through the NFIP have been defined in 44 CFR 65.10. Additional information can be found in "FEMA Guidance Document 95: Levees."

Section E of MT-2 Form 3, entitled "Riverine Structures Form," pertains to levees and should be completed in its entirety, in addition to Forms 1 and 2. Section E is comprehensive, and, if filled out properly, will provide an initial overview of the levee system and data requirements.

To facilitate a compliance review, the initial submittal should include, but may not be limited to:

- Hydraulic analyses for both the with-levee and without-levee (natural valley) scenarios.
- Certified topographic work map.
- Levee profile.
- Closure structure Information.
- Certified as-built engineering plans and specifications for the levee system.
- Geotechnical report.
- O&M plan, including emergency preparedness information.
- Hydrologic and hydraulic analysis of the interior drainage, if applicable.

2.13.1. LEVEE SYSTEM ACCREDITATION

Regardless of the map change vehicle, LOMR or PMR, all accredited levee systems must comply with 44 CFR 65.10. Generally, the submitted data/documentation must include the following items as applicable but may not be limited to these items. For additional guidance, refer to Chapter 4 of FEMA's "Levees Guidance" document.

- Design Criteria
    - Freeboard
    - Closures
    - Embankment Protection
    - Embankment and Foundation Stability

- Settlement
- Interior Drainage

- Operation Plans
- Maintenance Plans
- Certification Requirements

Furthermore, LOMRs including all, or a portion of, accredited levee systems must include documentation of continued compliance with 44 CFR 65.10.

2.13.2. NON-ACCREDITED LEVEE SYSTEMS

Levee systems not mapped as accredited on the effective FIRM must be evaluated "with levee" and using the "natural valley" procedure for the entire system. The landward side of the structure may be mapped based on the results of the natural valley analysis. If desired by the requester, a more refined approach to mapping the flood hazards landward of a levee system, the Levee Analysis and Mapping Process, may be used. As shown in Figure 5, this process should be completed before submitting a CLOMR or LOMR request to FEMA. For more information on non-accredited levee systems and the Levee Analysis and Mapping Process, refer to Chapter 6 of FEMA's "Levees Guidance" document.

Per "Levees Guidance," if a levee system is accredited on the effective FIRM but has insufficient data/documentation to comply with 44 CFR 65.10, then the levee system must be remapped following the analysis and mapping procedures for non-accredited levee systems.

For more guidance on non-accredited levee systems, including non-levee features/reaches, refer to FEMA's "Levees Guidance" document.

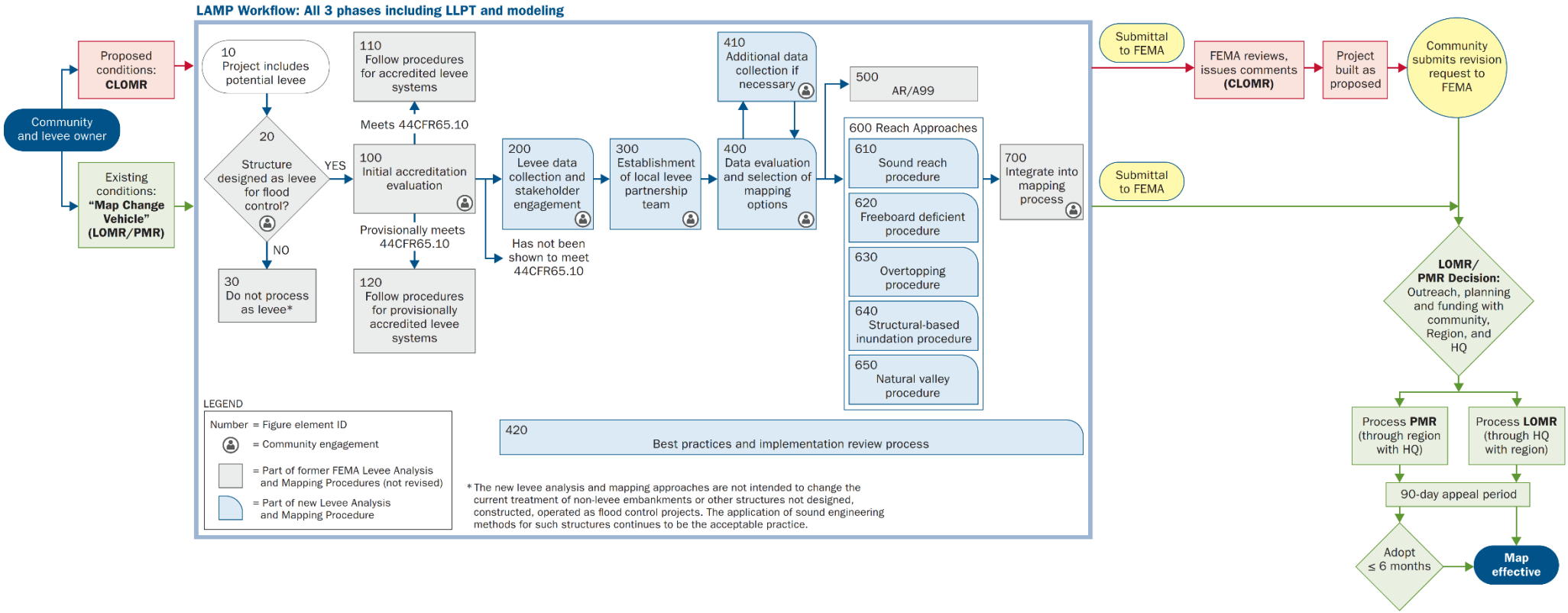

Figure 5. Levee Analysis and Mapping Procedures Workflow

2.14. Property Owner Notification

Notification of the revision is required for a CLOMR and LOMR if any of the following changes will occur as a result of the LOMR.

- Widening/shifting/establishing of the base floodplain such that any property is being added to the SFHA.
- Increases and/or establishment of BFEs.
- Any change in the floodway delineation.

Notification may be achieved either through individual legal notices to affected property owners or via a legal notice published in the local newspaper. Notices must include the extent of revision and contact information for any interested parties.

- Individual Legal Notices: These may take the form of a signed copy of the letter sent along with either a mailing list or certified mailing receipts.
- Newspaper Notice: The newspaper notice should be published in the legal notices section of a prominent local newspaper with circulation throughout the impacted communities. Only one publication date is needed.

According to 44 CFR 65.7, floodway revisions require submitting a copy of the public notice distributed by the community stating its intent to revise the regulatory floodway, or a statement by the community that it has notified all affected property owners and affected adjacent jurisdictions. Therefore, a newspaper notice for a floodway revision must be coordinated by or on behalf of the community. Individual property owner notifications for floodway revisions must either be on community letterhead or the community must provide a written statement to confirm "all affected property owners have been notified of the floodway revision."

When the floodway is not being revised and all BFE and/or SFHA increases are on property owned by the requester, property owner notification is not required if:

1. The property owner has signed MT-2 Form 1.
2. The certifying engineer confirms in writing all adversely impacted property is owned by the requester.

If the regulatory floodway is being revised, the community must confirm all impacted property owners have been notified of the floodway revision (per 44 CFR 65.7), even if the floodway revision is entirely contained within the requester's property.

Sample notification templates for various changes to SFHAs, BFEs and regulatory floodways are shown in the MT-2 Forms Instructions (Figures 3 and 4 for LOMRs, and Figures 5 and 6 for CLOMRs).

CLOMRs require notifications if the follow-up LOMR would result in the changes described in this section.

2.15. CLOMR-Only Requirements

2.15.1. 65.12 REGULATORY REQUIREMENTS

If the BFE increases more than 0.00 feet as a result of encroachment within an effective floodway, or more than 1.0 foot within Zone AE in an area without a floodway, between the pre-project (existing) conditions and the proposed conditions as a result of the proposed project, the following must be submitted.

a. Certification no structures are in areas that would be affected by the BFE increase.
    - Structures that are already in the effective floodplain are affected if the BFE at the structure would increase as a result of the proposed project.
    - Structures are affected if their lowest adjacent grade is below the proposed conditions BFE, even if the first-floor elevation is above the BFE.
    - This refers to any BFE increase greater than 0.00 feet. It may be possible for a project to result in small BFE increases in areas outside the revised reach. Therefore, this certification is not limited to areas within the revised reach.
b. Documentation of the individual legal notice sent to all affected property owners, explaining the impact of the proposed action on their property.
c. An evaluation of alternatives that would not result in an increase in BFE.
d. Concurrence of the CEO of any communities affected by the proposed actions.

According to FEMA's policy, a CLOMR for a project in Zone A is subject to meeting the same standards of 65.12 as a project in Zone AE with BFEs and no floodway.

2.15.2. ENDANGERED SPECIES ACT COMPLIANCE

CLOMR applicants are responsible for providing FEMA with documentation that the project has complied with the Endangered Species Act of 1973 (ESA). This must occur before FEMA reviews the CLOMR application.

While FEMA does not play a role in ESA compliance for proposed private development, these projects are required to comply with the ESA independently of FEMA's CLOMR process. For non-federal projects, the requester must document:

1. No potential for "take" exists, meaning the project has no potential to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect (or to attempt to engage in any such conduct) threatened and endangered species. The requester will be responsible for determining the potential for "take." The evaluation must be performed by a qualified professional well-versed in

such assessments. The no potential for "take" determination is not required to come from, or be concurred by, the Services.

2. If the requester determines a "take" will or has a potential to occur, they can consider contacting the Services to discuss potential project revisions to eliminate the "take."

If neither option 1 nor 2 is possible, and the project has the potential to "take" listed species, an Incidental Take Permit may be submitted showing the project is the subject, or is covered by the subject, of the permit.

If federal construction, funding or permitting is involved in a project for which a CLOMR or CLOMR-F has been requested, then the applicant may use that agency's Section 7 consultation to document to FEMA that ESA compliance has been achieved. The ESA documentation may be:

1. A "No Effect" determination made by, or concurred by, the federal agency.
2. A "Not Likely to Adversely Affect" determination with concurrence from the Services.
3. A biological opinion with a "no jeopardy" determination or with accepted reasonable and prudent alternatives.
4. A copy of a federally issued permit with justification the proposed development for which a CLOMR or CLOMR-F is sought is covered by the permit.

For LOMR requests involving floodplain activities that have occurred already, private individuals and local and state jurisdictions are required to comply with the ESA independently of FEMA's process. The community needs to ensure any permits are obtained per the NFIP regulations at 44 CFR 60.3(a)(2).

Additional information about the ESA and these requirements is available in the May 2016 version of "Guidance for Flood Risk Analysis and Mapping: Documentation of Endangered Species Act Compliance for Conditional Letters of Map Change."

2.16. Other Considerations

2.16.1. PRELIMINARY STUDIES

Revision requesters should check with the community to see if an ongoing study will result in a new FIRM and FIS report for the area to be revised. They should also check the FEMA Map Service Center to see if FEMA has issued preliminary or pending data.

If FEMA has issued preliminary products for an ongoing study, the requester should obtain copies of the new FIRM and FIS report and determine if the flooding source to be revised in the MT-2 request was restudied for the new FIRM and FIS. If the flooding source was not restudied, the effective model will remain effective and can be used for the MT-2 modeling. If the flooding source was restudied during the new FIS, it may be necessary to prepare the MT-2 request using both the preliminary and effective models. While there are advantages to using preliminary data, it must be done with the understanding the data is subject to change or may be delayed in becoming effective.

LOMRs are not issued to revise preliminary FIRMs. LOMRs must be issued for the effective FIRM panel.

CLOMRs may be based on the effective data, preliminary data, or both. However, even if the modeling for a CLOMR is based on the preliminary study, the effective model must be submitted for comparison purposes. In addition, the effective delineations should be shown on the topographic workmap and the annotated FIRM should be based on the effective FIRM.

2.16.2. PHYSICAL MAP REVISIONS

A PMR occurs when FEMA republishes one or more FIRM panels. This is different from a LOMR, which revises a portion of one or more FIRM panels but does not republish the panel(s). PMRs require a more extensive due process, so the revised FIRM panels and FIS report take longer to become effective. In coordination with the community(-ies), FEMA evaluates LOMR submittals to determine whether a LOMR or a PMR is the best map change vehicle for the specific revision on a case-by-case basis. PMRs are typically more appropriate for revisions that are large, will result in increased flood hazards for many properties, and/or are contentious and have a high risk of being appealed. If a PMR is determined to be the appropriate map change vehicle, FEMA will send a letter to the community and the requester, notifying them that the revision has been converted to a PMR. This letter is sent after FEMA completes the technical review. LOMR requests that are converted to PMRs have the same data requirements as a regular LOMR, except that property owner notifications are not required for the PMR. The time frame for FEMA to process the PMR depends on available funding from the FEMA regional office. Alternatively, the LOMR requester may pay the per-panel PMR processing fee to avoid potential delays from waiting for FEMA funding.

2.16.3. UNSTEADY FLOW AND TWO-DIMENSIONAL MODELING

FEMA flood studies have historically been performed using one-dimensional (1D) hydraulic modeling techniques. Therefore, most effective models are 1D. The effective model must be used as the base model for CLOMRs and LOMRs unless it is not available, or its use is demonstrated to be inappropriate. There are some situations where 1D modeling alone is not capable of accurately representing flood conditions. These include flat terrain with very wide, shallow floodplains; flow through highly urbanized areas; and breakout flow that is hydraulically independent from a main channel/watercourse. In these situations, it may be necessary to employ two-dimensional (2D) modeling, or 2D-informed 1D modeling. If conditions such as these do not exist, then a 1D analysis should be used if it can produce reasonably accurate results. In addition, some software has the functionality to couple 1D and 2D analyses. This should be done if a riverine channel/floodway can be modeled in 1D and overbank areas are more appropriately analyzed in 2D. In highly developed areas with wide overbanks that have an effective detailed 1D model with floodway, there may still be the need for some 2D-informed 1D modeling until adequate resources are available to allow transition to either a 2D, or 1D/2D coupled model.

Floodway regulations are based on the concept of 1D steady-state hydraulic modeling and are difficult to apply to unsteady flow. The floodway analysis must be performed using the same

hydraulic computer model used to determine the proposed BFEs. Therefore, if the BFEs are based on an unsteady hydraulic analysis, the floodway must be run on the same unsteady model. The HEC-RAS user manual has guidance for developing 1D unsteady floodway models. Guidance for developing floodways using 2D models is limited. Therefore, 1D methods are recommended when dealing with floodways, and CLOMR/LOMR applicants must receive prior approval from FEMA before requesting a floodway revision using 2D modeling methods.

Advanced modeling methods are capable of more accurately simulating complex flooding conditions, but they also come with challenges. MT-2 requests are often intended to revise a small portion of an effective flooding source. When a different model/method is used to analyze the area of interest, there can be difficulties creating a logical transition to the effective flood hazard data at the limits of revision. This may require revising the entire effective reach of the stream. Also, models submitted in support of LOMR requests will become the effective model and must be used for future CLOMR and LOMRs, as well as evaluating the impacts of future development (for example, no-rise analyses). Therefore, when deciding to use a more complex model in support of a CLOMR or LOMR, it is important for communities and requesters to understand the implications it will have on the processing of the individual MT-2 request, data storage and accessibility, future model maintenance and floodplain management activities.

2.16.4. NON-PARTICIPATING COMMUNITIES

FEMA will process CLOMR and/or LOMR requests submitted for areas within the jurisdiction of a community that is not participating in the NFIP. If a community does not participate in the NFIP, it is technically not able to provide the assurances or concurrences required when signing Form 1 of the MT-2 application. However, as explained in Section 1.4.1, FEMA will process a request without the community signature on the application forms, as long as the requester provides documentation to show the request was submitted to the community for review and concurrence. LOMRs impacting non-participating communities will generally become effective 6 months from the issue date, to give the community an opportunity to join the NFIP and adopt the LOMR.

2.16.5. REVISIONS AFFECTING FEDERAL LAND

Projects entirely on federal property or entirely funded and permitted through the federal government are subject to Executive Order (EO) 11988, rather than the regulations of 44 CFR. The federal agency must review their implementation of the EO and act based on their own procedures. However, requests for CLOMRs or LOMRs impacting federal land may be submitted and will be processed based on the criteria described in this Guidance Document. Federal land, such as military bases, may not be within the jurisdiction of an incorporated community or county. Therefore, community concurrence for revisions within these areas is not required.

3. MT-2 Request Processing Overview

As explained is Section 1.5, an MT-2 request may be submitted to FEMA either through the Online LOMC Tool or by mailing it to the applicable address. Once a request is received, a case number is

assigned, and an automatically generated email is sent to the applicant. Shortly after receipt, the case reviewer will send another acknowledgement email to establish a point of contact for the requester and community.

Per 44 CFR 65.9, within 90 days of receiving an MT-2 request, FEMA will provide the requester and the community either a LOMR, a CLOMR, review comments, or notification that additional time is needed for reviewing/processing the request. Review comments may pertain to any of the MT-2 data requirements described in Section 2.0 of this document. When FEMA provides review comments, the applicant must adequately address all of the comments within 90 days. If they do not, the case will be suspended. Therefore, MT-2 requesters are highly encouraged to discuss the comments with the reviewer prior to submitting the official response to ensure mutual agreement on how to adequately address the comments. Data submittals after a case has been suspended will be treated as original submissions and are subject to all submittal/payment procedures. This also applies if, at any time after the initial request is submitted, the project on which the request is based is altered significantly in design or scope (other than what is needed to respond to comments, concerns or other findings made by FEMA regarding the original submission).

Once FEMA's review is complete and all review comments have been adequately addressed, FEMA will issue a CLOMR or LOMR to the affected communities and provide copies to the requester. The CLOMR/LOMR will generally be issued within 90 days after all review comments have been adequately addressed.

CLOMRs are effective upon issuance and are valid indefinitely. However, if the design of a proposed project changes from what was submitted in an issued CLOMR, it may be necessary to submit an updated CLOMR, particularly if the changes may result in BFE increases greater than the increases proposed in the issued CLOMR. While CLOMRs do not "expire," the follow-up LOMR request may need to update the hydrologic and/or hydraulic analyses submitted with the CLOMR. This would be necessary, for example, if a new flood study becomes effective and the study on which the CLOMR was based is superseded. Another example is the occurrence of significant changes within the floodplain or watershed, where the analysis submitted with the CLOMR no longer represents existing conditions.

LOMRs which result in changes to regulatory flood hazard information (SFHAs, BFEs, and/or floodways) are subject to a statutory 90-day appeal period. FEMA publishes a notice of the appeal period in the local newspaper. This notice is published twice, shortly after the LOMR is issued. The 90-appeal period commences on the date of the second newspaper publication. The notice of appeal period is also published in the Federal Register and on FEMA's Flood Hazard Determination website (https://www.floodmaps.fema.gov/fhm/bfe_status/bfe_main.asp). LOMRs receiving no valid appeals will typically become effective approximately 4.5 months after issuance (120 days after the second newspaper publication). Valid appeals must be based on scientific and technical data, as explained in "FEMA Guidance Document 26, Appeal and Comment Processing," and will be reviewed according to the procedures described in the guidance document. If no valid appeals are received, FEMA will send a notice of final flood hazard determination to the community to confirm the LOMR has become effective as of the effective date on the determination document. If one or more valid

appeals are received, the LOMR may be suspended. If appropriate, a revised LOMR incorporating the submitted scientific/technical data will be issued under a new case number.

Figure 6. General Example LOMR Timeline (One Additional Data Submittal)

While reviewing and processing a CLOMR or LOMR request, FEMA may identify that a community is potentially in violation of NFIP floodplain management regulations as codified in 44 CFR 60.3. If a potential violation is identified, FEMA may suspend its processing of the CLOMR or LOMR until the community remedies all potential violations to the maximum extent possible through coordination with FEMA.