

STATE OF TENNESSEE

H&H Study Overview



Presentation Overview

- Key NFIP regulations review
- Study Types and community/engineer's responsibility
- Tennessee H&H review process and requirements



What makes up a Floodplain?





NFIP Definitions

- Base Flood: 1% annual-chance flood event
- BFE: Base Flood Elevation
- FIS: Flood Insurance Study
- FIRM: Flood Insurance Rate Map
- CLOMR Conditional Letter of Map Revision
- LOMR-Letter of Map Revision
- SFHA: Special Flood Hazard Area



NATIONAL FLOOD INSURANCE PROGRAM



Special Flood Hazard Areas (SFHA)

- The area inundated by floodwaters of the Base Flood
- Flood regulations must be enforced and where mandatory purchase of flood insurance applies

Risk Zone	Description
А	Approximate methods, No BFEs or flood depths are shown
AE	Detailed methods, with BFEs
AH	Shallow Flooding (ponding), 1-3' depths with BFEs and detailed methods
AO	Shallow Flooding (sheet flow), 1-3' depths, detailed methods, designated 1', 2', 3' depth



What makes up a Special Flood Hazard Area?



Figure 2-3. Typical riverine floodplain cross section



Types of Floodplain Studies

- **Detailed Study (AE):** the SFHA and 500-yr floodplains are defined and BFEs are published. The 10, 2-, 1- and 0.2% annual-chance of flood discharges are estimated, and profiles are provided in the FIS. Structure geometry from detailed field surveys. Floodway analysis typically performed.
- <u>Limited Detailed Study (AE)</u>: SFHA defined and may have BFEs. Profiles and BFEs published in the FIS. Study parameters may vary based on available data, budget, etc.
- <u>Approximate Study (Approximate Zone A)</u>: the SFHA is defined by no BFEs or flood profiles.



Detailed and Approximate Study Areas

- Communities adopt Floodways and must regulate development there to ensure flood hazards are not increased on other properties.
- Communities without floodways must have a hydraulic model created to ensure flood hazards aren't above the 1' surcharge.





What is a Regulatory Floodway?

- 44 CFR §59.1 defines a "Regulatory Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.
- The floodway is the stream channel and that portion of the adjacent floodplain that must remain open to permit passage of the base flood. The floodway is a regulatory measure to assist communities with protecting the river corridor where flows are most sensitive to encroachment.



What is a floodway?



LINE CO IS THE FLOOD ELEVATION AFTER ENCROACHMENT.

"SURCHARGE IS NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.



Perform Floodway Encroachment Analysis

• 44 CFR Section 60.3(d)(3) states that a 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."



Performing an engineering analysis: Zone A and unmapped areas

• 44 CFR 60.3 (c)(10)

Require until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.



<u>Standards for SFHA w/BFE and With</u> <u>Floodways Designated</u>

- Encroachments are prohibited, including fill, new construction, substantial improvements or other development within the adopted regulatory floodway unless
- Demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice
- The encroachment shall not result in any increase in flood levels or floodway widths during a base flood discharge.
- Result: 0.00' = No-Rise



Changes in BFE, floodway width or base flood discharge

 Increase in base flood elevation(s), change in floodway shape, or change in hydrology, provided that the applicant first applies for a conditional letter of map revision (CLOMR) and floodway revision, fulfills the requirements for such revisions as established under the provisions of § 65.12, and receives the approval of FEMA;



44 CFR 65.12

- § 65.12 Revision of flood insurance rate maps to reflect base flood elevations caused by proposed encroachments.
- (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 and shall submit the following as part of its application:



Engineer Responsibilities: No Rise/MT-2

- Need to prove the case is No-Rise through the engineering analysis
- Submit No-Rise case to TEMA for the review
- If the case is not a No-Rise case, then submit CLOMR to FEMA. Once the CLOMR is approved by FEMA, then LOMR is required to be followed using As-Built within 6 months of project completion date
- If there is significant changes in effective model in order to achieve No-Rise, then it could be an option to submit LOMR to FEMA to correct those issues first, then submit No-Rise case to TEMA



Zones AE with BFEs but Without Floodways Designated

Require until a regulatory floodway is designated, that no new construction, substantial, or other development, including fill shall be permitted within Zone AE on the community's FIRM, unless it is demonstrated through hydrologic and hydraulic analyses performed that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one (1) foot at any point within the community.



Community/Engineer Responsibility

- A community may permit encroachments within Zones AE on the community's FIRM, that would result in an increase in the water surface elevation of the base flood,
- Any projects that the water surface elevation(s) increase(s) more than a foot due to the proposed development require a conditional letter of map revision (CLOMR), fulfills the requirements for such revisions as established under the provisions of § 65.12, and receives the approval of FEMA



<u>Standards for Streams w/o BFEs and</u> <u>Floodways (A Zones)</u>

- No encroachments, including structures or fill material, shall be located within an area equal to the width of the stream or twenty feet (20), whichever is greater, measured from the top of the stream bank
- Engineer demonstrates that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one (1) foot at any point within the community.
- The engineering certification should be supported by technical data that conforms to standard hydraulic engineering principles.



Community/Engineer Responsibility

- A community may permit encroachments within Zones A on the community's FIRM, that would result in an increase in the water surface elevation,
- Any projects that the water surface elevation(s) increase(s) more than a foot due to the proposed development require a conditional letter of map revision (CLOMR), fulfills the requirements for such revisions as established under the provisions of § 65.12, and receives the approval of FEMA;



Standards for Unmapped Streams

- No encroachments including fill material or other development including structures shall be located within an area of at least equal to twice the width of the stream, measured from the top of each stream bank,
- Engineer demonstrates that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one (1) foot at any point within the locality.



Community/Engineer Responsibility

- A community may permit encroachments within the unmapped stream boundaries within the community, that would result in an increase in the water surface elevation,
- A community may update the FEMA flood map using the engineering models and may ask engineer to submit the LOMR after the project completion;



Submittal Requirements

- Electronic hydraulic models
- Project Narrative
- Topographic Work Map
- Cross-section plots
- Property Survey / Proposed Plans
- No-Rise Certification (if applicable)





Submittal Requirements: 101

- Be organized
- Properly label hydraulic models
- Write a project narrative so that anyone reading it can understand what is being proposed at the site
- Topographic work map should show the vertical tie-ins, floodplain, floodway and other natural features of the site
- Cross-Section plots for the existing and propose changes
- Property survey: done by a licensed TN surveyor if applicable
- Determination if a rise occurs or no-rise happens





Ex. No-Rise requirements

- Project Narrative/Report
- No-Rise Certification
- Certified Topographic work map w/ vertical datum
- Certified Cross section plots
- Design/Proposed Plan
- Certified Property Survey if applicable
- Hydraulic models (effective, duplicate effective, corrective effective, existing, and proposed)
 - Engineer will need to create an effective model that duplicates the results in the Flood Insurance Study

Projects affecting streams modeled using limited detailed methods shall meet the same criteria as detailed streams.





Hydraulic Models

- Effective Model (From FEMA);
- Duplicate Effective Model (Model you run in your computer);
 - Ex. HEC-2 to HEC-RAS
- Corrected Effective Model (Non-man-made changes);
 - Ex. Correcting errors in the model
- Existing Conditions Model (All man-made changes);
 - Ex. Incorporate new structures, bridges
- Proposed Conditions Model (Based on the proposed/design plan);





Ordering the Effective Model

- Obtain Hydraulic model for Zone A/AE/AE w floodway from FEMA
- Complete the Flood Insurance Data Request Form

https://www.fema.gov/medialibrary-data/1575383122073-5a247c055cafe7048dd26431cb39 9594/Flood Insurance Study (FI S) Data Request Form 2019.pdf

- Pay fee
- Wait 6-8 weeks



Federal Emergency Management Agency Washington, D.C. 20472

Flood Insurance Study (FIS) Data Requests

The Federal Emergency Management Agency (FEMA) has identified seven categories into which requests for Flood Insurance Study (FIS) backup (i.e., technical and administrative support) are separated. These categories and their associated fees are below:

Requests for Flood Insurance Backup	
Data	l'ee
1. Portable Document Format (PDF) or	An initial, non-refundable \$300, plus a \$93 per-case
Diskettes of hydrologic and hydraulic	surcharge fee to recover the cost of library maintenance and
backup data for current or historical	archiving. For larger requests that require more than 4 hours
FISs	of research, additional hours will be charged at \$40 per hour.
2. PDF or Mylar copies of topographic	An initial, non-refundable \$300, plus a \$93 per-case
mapping developed during FIS process	surcharge fee to recover the cost of library maintenance and
	archiving. For larger requests that require more than 4 hours
	of research, additional hours will be charged at \$40 per hour.
3. PDF of survey notes developed during	An initial, non-refundable \$300, plus a \$93 per-case
FIS process	surcharge fee to recover the cost of library maintenance and
	archiving. For larger requests that require more than 4 hours
	of research, additional hours will be charged at \$40 per hour.
4. PDF of individual Letters of Map	\$40 for first letter; \$10 for each additional letter in the same
Change (LOMCs)	request. Requesters will be notified about availability of the
	data and the fees associated with the requested data.
5. PDF of preliminary map panels	\$35 for first panel; \$2 for each additional panel in the same
	request. Requesters will be notified about availability of the
	data and the fees associated with the requested data.
6. DVDs of Digital Line Graph files,	\$150 per county or Digital LOMR attachment shape file.
FIRM files or Digital LOMR	Requesters will be notified about availability of the data and
attachment files	the fees associated with the requested data.
7. Computer diskettes and user manuals	\$25 per copy. Requesters will be notified about availability of
for FEMA computer programs	the data and the fees associated with the requested data.



Topographic Work Map

- Certification
- Vertical Datum
- Cross-Sections
- Effective Delineations
- Revised Delineations
- Tie-Ins
- Stream Centerline
- Clearly Labeled Topo
- Scale and north arrow





Cross-Section Plots

- Existing and Proposed cross-section plots for the project site.
- Features, structures, and changes should be labeled.
- Grid squares or elevations should also be noted on the cross-sections.
- Certification





Additional Consideration

- FLOOD LEVELS as contained in 44 CFR 60.3(d)(3) refers to both base flood elevations and the surcharge elevations associated with the base flood discharge.
- No-Rise submissions should not increase floodway and non- encroachment widths.





Projects not requiring a hydraulic analysis

- Permanent removal of an existing structure;
- Replacement of a structure within the same footprint, as long as there is no new vertical obstruction; (not applicable for substantially damaged structure)
- Projects that do not increase existing grade, such as driveways;
- Small, isolated obstructions, such as a mailbox, a park bench set parallel to flow, or single utility pole;





Projects not requiring a hydraulic analysis, cont'd

- Light-duty fences that will likely collapse or not provide obstruction in a flood event;
- Development in the conveyance shadow of an existing structure;
- Greenway trails placed at grade with minimal clearing (not including structures).
- Maintenance of existing uses, such as bridges, rights-of-way, and easements.





How to review an H&H study

- Completeness of the submittal
- Check the project scope on the project narrative and cross check against proposed plan, topographic workmap, cross-section plots, and the models (Ex. Do model geometries match as it is shown on topographic workmap?)
- Model Check
 - Executable for all submitted models?
 - Duplicate effective model result match with effective?
 - Any hydraulic model issues (hydrology change, drawdown, floodway run existence, surcharge issues, any other major modeling errors (ex. Overtopping)
- Check No-Rise Certification
- Check PE license against the TN license database
- Provide comments or issue an approval letter



Completeness of the submittal

- Project Narrative
- Topographic WorkMap
- Executable Hydraulic models
- Proposed Plan/Survey data
- Cross-section Plans
- No-Rise Certification
 - Example are shown on the left

	No-Rise Review Checklist							
Flooding Source:	Donoho Branch							
Effective Information:	Zone AE/Zone A, Floodway							
Location:	Portland, TN							
Project Name/Description:	SCI Towers Portland							
Model Version:	HEC-RAS v. 5							
Initial Inventory:	Sub Catergories	Received?						
Report/Narrative		Y						
Topographic Work Map/Survey		N						
	Work Map - Certification							
	Work Map - Vertical Datum							
	Work Map - Cross-Sections							
	Work Map - Effective Delineations							
	Work Map - Revised Delineations							
	Work Map - Tie-Ins							
	Work Map - Stream Centerline							
	Work Map - Clearly Labeled Topo							
	Work Map - Scale and north arrow							
Executable Hydraulic Models		Y, but not the floodway plan						
	Duplicate Effective	Not executable						
	Corrected Effective	N						
	Existing	Y						
	Proposed	Y						
Statement on source of								
topographic data		No topographic data submitted						
Proposed Plans		N						
	Certified/Stamped	N/A						
Cross-Section Plots		N						
No-Rise Certification Form		N						
	Certified/Stamped							
Effective Information								
	FIS	Y						
	FIRM	47165C0134G						
Annotated FIRM (not required)	N							



Common Non-Model related problems

- Each Document needs to be certified by Professional Engineer/Surveyor
 - Ex. Topographic Work Map, Cross section Plot, Design/Proposed Plan
- Topographic Work Map needs to show proposed floodway
- Topographic Work Map need to show proposed layers tie into the effective SFHA layers at the downstream and upstream limit
- Missing Vertical Datum Reference



Initial Model Checks

- Make sure that the scope of work are correctly captured on the submittal.
- Ex. Check model crosssection geometries outside of the project site.
- Ex. Proposed XS geometry is not captured in the hydraulic model.
- Ex. Is floodway run included?

Technical Review:		Yes/No	
Duplicate Effective Mode	2	γ	
	Model Runs?	N	
	Output Matches Effective?		
Corrected Effective Mod	el	N/A	
	Model Runs?		
	No man-made changes?		
	No increases from effective?		
	No changed hydrology?		
	No drawdowns?		
	Floodway and 100-year plans?		
	No floodway surcharges > 1.0 foot?		
	No other major modeling errors?		
Existing Conditions Mode	el		
	Model Runs?	Y	
	Only man-made changes from corrected effective model?	N/A	
	No increases from effective or corrected effective?	N/A	
	No changed hydrology?	N	
	No drawdowns?	N	
	Floodway and 100-year plans?	Y	Floodway Plan not executable
	No floodway surcharges > 1.0 foot?	N/A	
	No other major modeling errors?	N/A	
Proposed Conditions Mo	del		
	Model Runs?	Y	
	No increases from effective, corrected effective, or existing?	N	
	No changed hydrology?	N	
	No drawdowns?	Y	
	Cross sections match work map?	N	
	Floodway and 100-year plans?	Y	
	Proposed Project matches proposed plans?	N/A	Proposed Plans not submitted
	No floodway surcharges > 1.0 foot?	N/A	No executable FW plan
	No other major modeling errors?	N	



No-Rise Engineering Model requirements

- Use the entire effective model (if the model is executable) and no truncated model is allowed to be used
- If the effective model is not executable, then a truncated model is allowed but need to duplicate the effective water surface elevations
- When the truncated model is used, the model should be extended far enough toward the downstream (at least half a mile or more) so the boundary condition don't affect the water surface elevations on the project site.
- No-Rise should be obtained not just on the project site but on the entire length of the model
- No discharge flow change is allowed from the effective.
- No profile baseline changes is allowed





No-Rise review steps

	TN N	o-Rise Decision Tree													
Models															
Obtain Effective Model (FEMA Library)	Create Duplicate Mode	del No duplicate model No No-Rise case!		If you can't	If you can't create the duplicate effective, then consider submiting the model to FEMA to undate the FEMA man first.									
		÷.													
		Compare Result	Change in elevation (increase?)	Stop No-Rise	Submit CLOMR										
		against Effective		submittal	to FEMA										
		same													
		Elevation													
		Is there any error or													
		non man-made change													
		such as geometry													
		update based on new													
No		topo?													
		Yes 🚽													
		Create Corrective													
		Effective model													
		+													
		Compare Result				1. If your ca	se is truly No-Rise	Case, then s	submit Corre	ctive Effectiv	e to FEMA as L	OMR to update the	e FEMA map b	ased on yo	ur corrective effective
		against Effective	Change in elevation (increase?)	Stop No-Rise	Two Optional	model (Fee s	hould be free if th	nere is no ma	an-made cha	nge to effecti	ve model). Afte	er LOMR is issued,	you can re-si	ubmit the ca	ase for No-Rise
		Model		submittal	Routes	2. Otherwise	e, submit CLOMR t	o FEMA							
		same													
		🚽 Elevation													
		Create Existing model													
		create Existing moder													
		Compare Result				1. If your ca	se is truly No-Rise	Case, then	submit Existi	ng model to	EMA as LOMR	to update the FEN	1A map based	l on your	
		against Effective	Change in elevation (increase?)	Stop No-Rise	Two Optional	existing model (Fee is required). After LOMR is issued, you can re-submit the case for No-Rise									
		Model		submittal	Routes	2. Otherwise	e, submit CLOMR t	o FEMA							
		same													
		Elevation													
		Create Proposed		1 -											
		condition model		-											
		•													
		Compare Result	Change in elevation (increase?)	Stop No-Rise	Submit CLOMR										
		against Effective		submittal	to FEMA										
		same													
			1												
		Sucessful No-Rise Case													





Determine No-Rise

- No elevation increase (0.00ft) across all of the submitted models (duplicate effective, corrective effective, existing, and proposed condition model)
- No floodway increase





FEMA LOMR Additional Info request



NATIONAL FLOOD INSURANCE PROGRAM

FEMA PRODUCTION AND TECHNICAL SERVICES CONTRACTOR

Summary of Additional Data Required to Support a Letter of Map Revision (LOMR)

Case No.: 1

Requester:

Community: TN Community No.:

The issues listed below must be addressed before we can continue the review of your request.

- Our review of MT-2 Application/Certification Form 1, entitled "Overview and Concurrence Form," revealed that the requester or requester's representative did not sign the top block of Section D. Please submit a copy of Form 1 where all there signature blocks have been signed.
- Our review revealed that Madison County is affected by this revision. Please submit a copy of MT-2 Form 1, satisfied "Overview and Concurrence Form," that has been signed by an official of Madison County, preferably the Floodplain Administrator. All forms and instructions are available for your information on the FEMA website at <u>https://www.fema.gov/ibrary/viewRecord.do?id=1493</u>.
- 3. Our review has revealed that only the submitted post-project conditions model contained a floodway run. Please include a floodway run for the pre-project and existing (as-built) conditions modeling. Please ensure that each plan has a distinct rund separate floodway and multi-profile plan.
- 4. Our review revealed that the submitted floodway hydraulic model uses Method 1 as the sucreachment method. We recommend that you begin with encreachment Method 4 and then use Method 1 to refine the placement of sucreachment stations to define a floodway that is hydraulically unooth and has surcharges between 0.00 feet and 1.00 foot. If necessary, the cross sections can then be refined using Method 1. Also, from the hydraulic model we could see that all the cross sections have not been encreached. Please show encreachment to all the cross sections in the revised reach.
- 5. Please revise the submitted pre-project conditions model to include all cross sections included in the post project conditions model. In addition if there are published effective cross sections in the revised reach please include them in the pre-project model for comparison. While the model may be truncated to only includes the extents of the revised area all effective cross sections in the revised reach should be included in the pre-project and post-project modeling for comparison.
- 6. Our review has revealed that several cross sections in the submitted modeling do not fully encompass the extents of the floodplain. Please update these sections to show the full delineation of the floodplain at these sections. The calculated water surface elevation should be lower than the height of the ends of the cross sections.

- Please ensure that the most upstream and downstream cross sections tie-in to the effective base flood elevation (BFE) within +/- 0.5 feet and also tie-in graphically to the effective mapping.
- 8. Our detailed review of the project along DeLosch Creak revealed increases in BFEs between the pro-project conditions and post-project conditions HEC-RAS hydranic models at Cross Sections 4138, 3138, 2701, 2609, 2515, 2421, 2325, 2223, 2111, 2012, 1911, 1811, 1712, 1612, 1512, 1411, 1309, & 1207. Paragraph 60.3 (d)(3) of the National Flood Inwrance Program (NFIP) regulations prohibits encroachments within the adopted regulatory floodway, including fill, new construction, substantial improvement, and other development, unless it has been demonstrated that the proposed encroachment would not result in any increases in flood levels within the community during the base flood. Please review these cross sections carefully. If your analysis reveals that increase do not occur, please submit a revised post-project conditions hydrallic model demonstrating that no increases occur.
- 9. Please provide a topographic work map, certified by a registered Professional Engineer (PE), for the entire requested area of revision that reflects all applicable items listed on page 2, Section C, of Application/Certif
 - a. Please show the boundary delineations of the post-project conditions base (1-percent-annual-chance) floodplain, 0.2-percent-annual-chance floodplain, and regulatory floodway. The floodplain boundaries should generally follow the proposed contours and should be delineated to the elevations calculated in the post-project conditions hydraulic model. It is helpful to use different colored lines as well as line types to distinguish the boundary delineations.
 - b. Please show the boundaries of the currently effective conditions base floodplain, 0.2-percent-annual-chance floodplain, and regulatory floodway as they are shown on the Flood Insurance Rate Map (FIRM) panels 47113C0135E and 47113C0151E. For clarity, please show the effective and post-project delimentions in different line types and color.
 - c. Please show smooth graphical tie-im between the post-project and effective flood hazard boundary delineations at the upstream and downstream ends of the revised reach. Please ensure that the post-project delineations tie-im directly to the effective delineations and that the tie-ins occur a short distance upstream of the upstream most cross section in the post-project conditions hydraulic model and a short distance downstream field of the downstream most cross section.
 - d. Please show and label the topographic contour information used for the boundary delineations of the base floodplain and 0.2-percent-annual-based foodplain. Please ensure that enough contours are labeled to that the floodplain delineations can be verified.
 - Please show and label the locations and alignments of all cross sections used in the hydraulic model that are within the revised area.
 - f. Please show the stream contestines. If the post-project stream contestine is different from the effective stream contestine, please easure that the post project stream contestine iss-in to the effective contestine at the spatterm and downstream eads of the serviced reach.
 - g. Please show and label the locations of all structures included in the submitted hydraulic model that are within the revised area.
 - h. Please show the north arrow, scale and scale bar.
- i. Please provide certification (signed, sealed and dated) by a registered P.E.; and
- j. Please reference the vertical datum.



FEMA LOMR Potential Violation Letter

- 10. To assist our review and to expedite processing of this request, please provide digital Computer-Aided Design (CAD) or Geographic Information System (GES) data that reflect the revised forographic work map. Please ensure the digital data are spatially referenced and cite what projection (coordinate system, example: UTM/State Plane) was used, so that the data may be used for accurate mapping. The important data to show on the digital work map are the contour information, the stream centerline, the cross section lines, the rossing and hydraulic structures, the preliminary and proposed flood hazard delimeations and the tie-in locations. Everything should be clearly labeled and all information should be contained within the drawing and not externally referenced.
- 11. Please submit an annotated FIRM that shows the revised boundary delineations of the 1-percent-annual-chance (base) floodplain, 0.2-percent-annual-chance floodplain, and regulatory floodway as shown on the updated work map and how they tie-in to the boundary delineations shown on the effective FIRM at the downstream and upstream each of the revised reach. Please use different colors to differentiate the proposed and effective boundary delineations. Also, please show the title block of the effective FIRM on the annotated FIRM.
- 12. The topwidths of the base floodplain and floodway computed in the post-project conditions hydraulic model do not match the floodplain and floodway topwidths shown on the topographic work map at the cross sections shown on the submitted work map. Please revise the work map or hydraulic model as appropriate to resolve these discrepancies. The geometry of the cross sections in the proposed conditions hydraulic model should reflect the topography shown on the work map.

Please revise all submitted work items (modeling, maps, AFIRM, etc.) to reflect the changes requested above. All submitted items should be in agreement. On February 20, 2015, the Federal Emergency Management Agency (FEMA) revised the fee schedule for reviewing and processing requests for conditional and final modifications to published flood information and maps. The current fee schedule is available for your information on the FEMA website at

https://www.fema.gov/flood-map-related-fees. In accordance with this schedule, the fee for your request is \$8,000 and must be submitted before we can continue processing your request. The amount you submitted, \$325, is not sufficient. The balance, \$7,675, must be submitted before we can continue processing your request. Payment of this fee must be made in the form of a check or money order, payable in U.S. funds to the <u>National Flood Insurance Program</u>, or a credit card payment (Visa or MasterCard only). For identification purposes, the case number referenced above must be included on the check or money order. We will not perform a detailed technical review of your request until we receive this payment.

Please upload the required data/fee using the Online LOMC website at https://hazards.fema.gov/femaportal/onlinelomc/signin.

For identification purposes, please include the case number referenced above on all correspondence.

TN



Contact Info





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THANK YOU