September 13, 2024

Improving LOMRs

How to get Approval on the First Submittal

Indiana Department of Natural Resources

Danielle Bowman, Paul Brayton
Hydraulic Engineer
Division of Water

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Indiana DNR LOMR Review Partners Team

Paul Brayton - Hydraulic Engineer
Danielle Bowman – Hydraulic Engineer
Morgan Lucas – Hydraulic Engineer
Aung Htut – Hydraulic Engineer

Adam Bales – Program Manager
Deidre Hansen – Project Manager

DNR Indiana Department of Natural Resources | DIVISION OF WATER

MT-2 Requirements

- Narrative
- MT-2 Forms
- Hydrology Analysis
- Hydraulic Analysis
- Certified Work Map
- Annotated FIRM
- Fee
- Proposed & As Built Plans
- Floodway Notice
- Property Owner Notification
- Endangered Species Compliance
- CLOMR Regulatory Requirements
- Submittal Artifacts
- General Timeline
- Q/A

DNR Indiana Department of Natural Resources | DIVISION OF WATER

MT-2 Requirements

- In 2019, FEMA opened the LOMR Review Partners Program to new partners.
- In 2022, DNR began processing LOMRs and CLOMRs as part of this program.

We do not review:

- LOMAs/MT-1 Requests
- MT-2 Requests with levees, floodwalls, or multi-state cases.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Narrative

- Methods used to analyze project's impact.
  - Hydrologic Modeling
    - For each stream reach being studied, the Applicant must document the model to be applied and the source and method of determining model parameters.
    - As part of the analysis submission, the Applicant performing hydrologic analyses must document the development of the parameters used.
    - Before the Applicant applies the new hydrologic analysis, a determination of the significance of the proposed discharges should be made.
    - The Reviewer must evaluate the reasonableness of the proposed base flood discharges to develop quality control of the modeling.
  - Hydraulic Modeling
    - Supporting data includes, but is not limited to, source of input data, datum, model version, and changes made from plan to plan.

- Describe the reason for the request.
  - Changes in area since effective date.
  - Whether project(s) associated with request are completed or proposed.

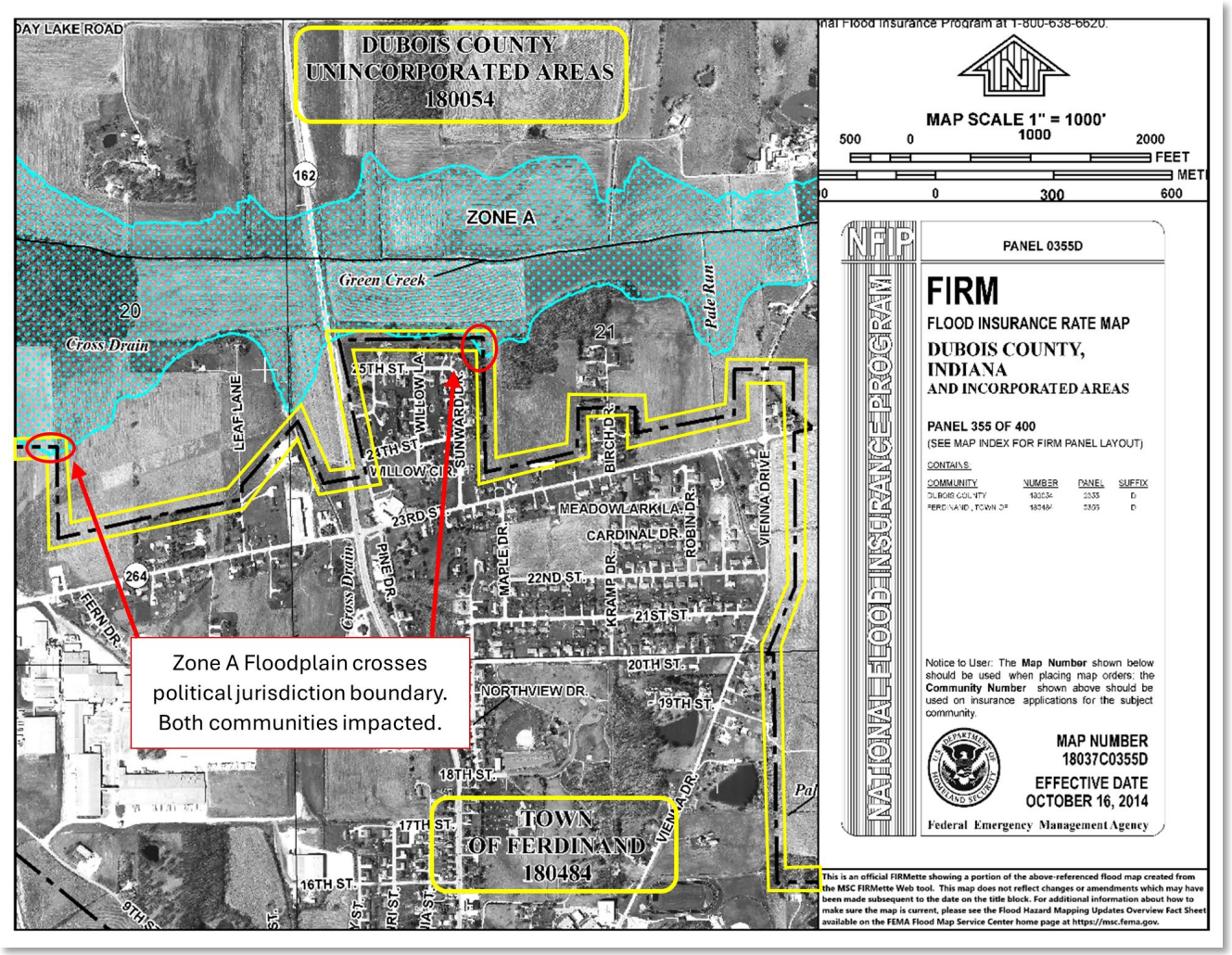
- The scope of the proposed or as-built project(s).

DNR Indiana Department of Natural Resources | DIVISION OF WATER

MT-2 Forms 1

Form 1 – Overview & Concurrence Form required for any MT-2 requests.

- Community concurrence by the Chief Executive Officer (CEO) or the legally designated CEO active at the time of the request of all affected communities must be received, per 44 CFR 65.4.
  - Can be Board of Commissioners President, Mayor, FPA
  - Not City Planner, County Surveyor, City Engineer
- Impacted communities determined by the corporate limits shown on the effected FIRM panel(s), unless those boundaries are determined to be incorrect.
  - An official corporate limits map and annexation agreement and/or map must be submitted with request.

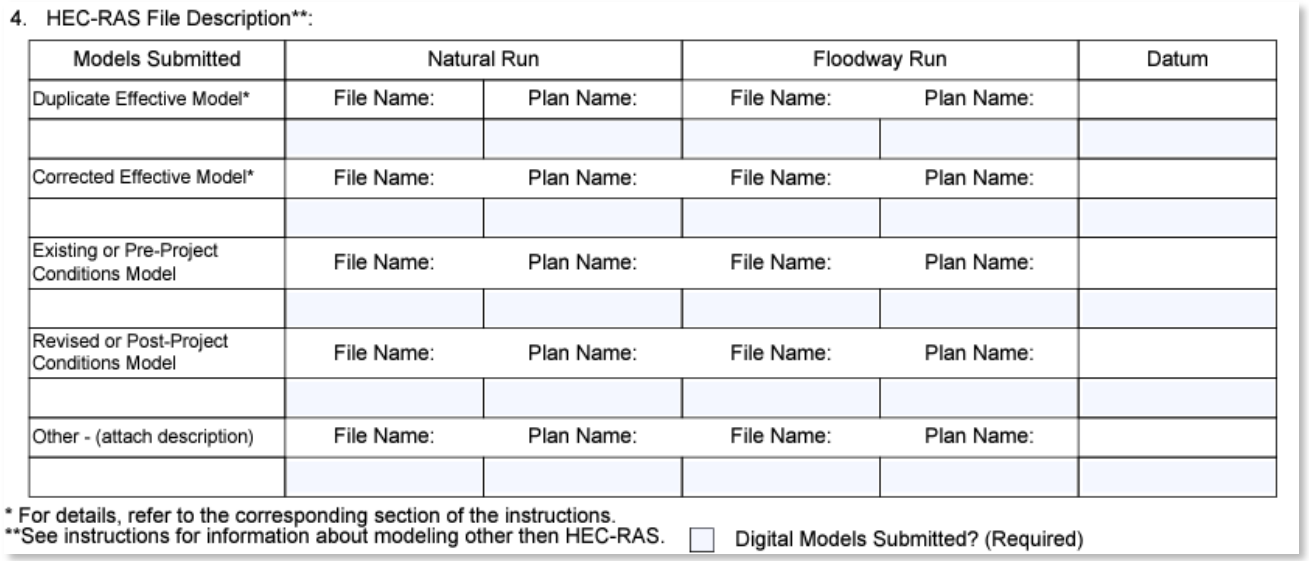


DNR Indiana Department of Natural Resources | DIVISION OF WATER

MT-2 Forms 2 & 3

Form 2 – Riverine Hydrology and Hydraulics Form required for requests with new or revised hydrology and/or hydraulic analysis.

- Verify all hydraulic model plans are listed with the correct file and plan names as represented in the submitted model.



4. HEC-RAS File Description**:

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Existing or Pre-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
Other - (attach description)	File Name:	Plan Name:	File Name:	Plan Name:	

* For details, refer to the corresponding section of the instructions.
**See instructions for information about modeling other then HEC-RAS. ☐ Digital Models Submitted? (Required)

Form 3 – Riverine Structures Form required for requests that involve new or proposed bridges or culverts not in the effective FIRM and/or FIS.

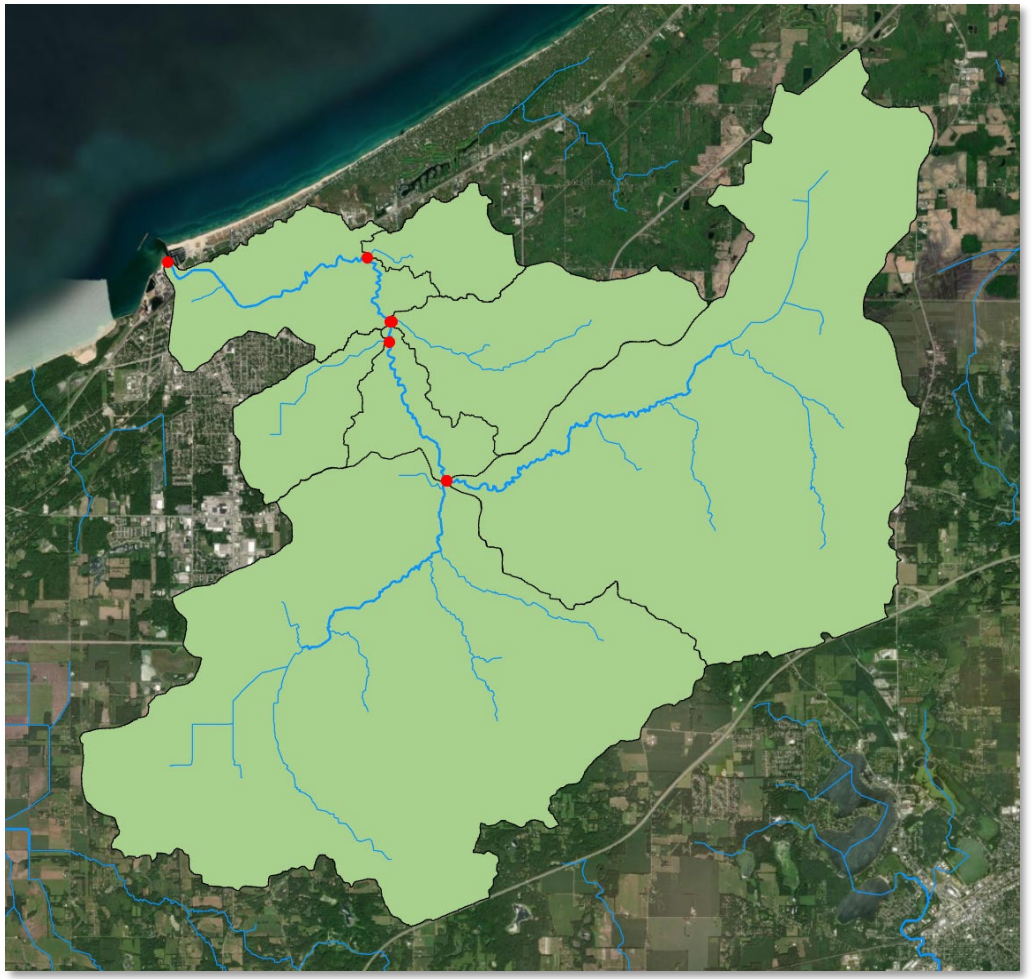
- Existing structures in the FIRM and/or FIS should only be listed if they are being updated.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydrologic Analysis

New hydrology can be proposed when no effective hydrology is available, or the engineer believes the effective flows are not reasonable.

- To reflect longer periods of gauging records.
- To reflect the changed physical conditions of the watershed.
- To use improved methods.
- To correct errors in the effective study analysis.
- To revise an Effective Zone A SFHA where no analysis is available.

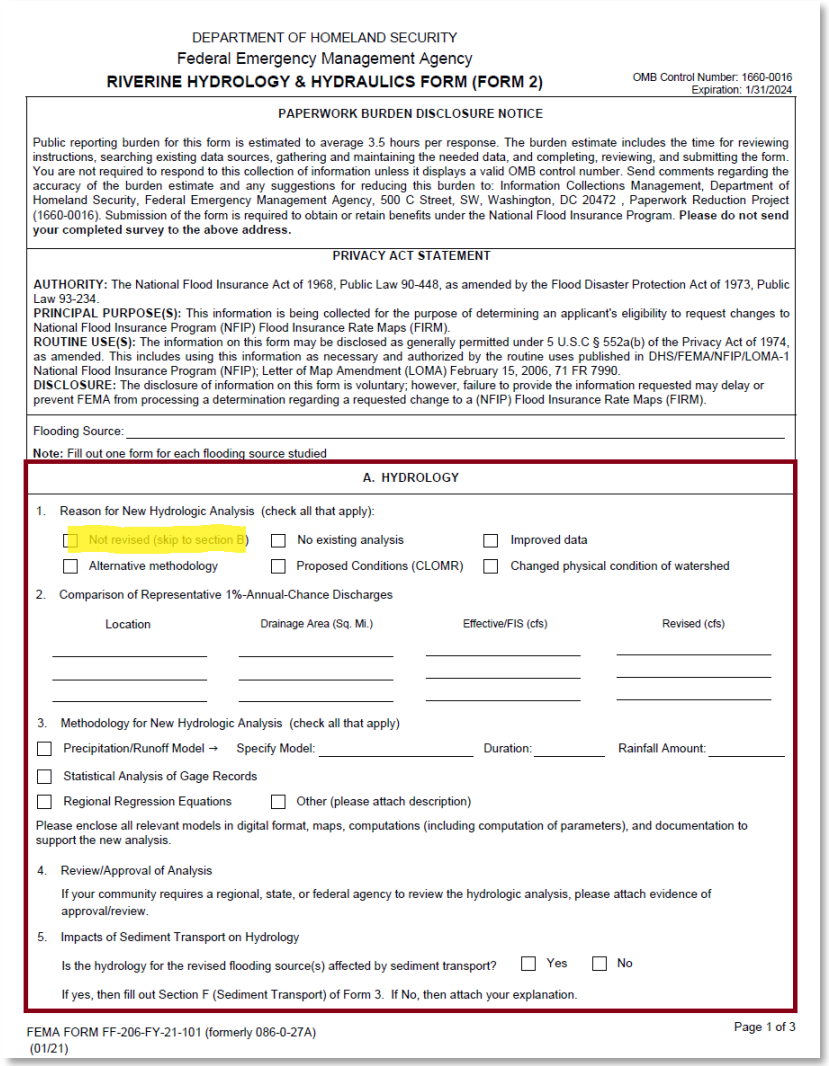


DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydrologic Analysis

MT-2 Form 2, Section A

- Performing a new hydrology impacts the entire modeling and mapping data and review.
  - Marking the box for New Hydrology is being used when the analysis is not being performed will cause the hydraulic model to be marked as deficient due to the Effective discharges being used.



DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
RIVERINE HYDROLOGY & HYDRAULICS FORM (FORM 2)
OMB Control Number: 1660-0016
Expiration: 1/31/2024

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472 , Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.
PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).
ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.
DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

Flooding Source: _____

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply):
   - ☐ Not revised (skip to section B)
   - ☐ No existing analysis
   - ☐ Improved data
   - ☐ Alternative methodology
   - ☐ Proposed Conditions (CLOMR)
   - ☐ Changed physical condition of watershed
2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)
   - ☐ Precipitation/Runoff Model → Specify Model: _____ Duration: _____ Rainfall Amount: _____
   - ☐ Statistical Analysis of Gage Records
   - ☐ Regional Regression Equations
   - ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☐ No

   If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation.

FEMA FORM FF-206-FY-21-101 (formerly 086-0-27A)
(01/21)

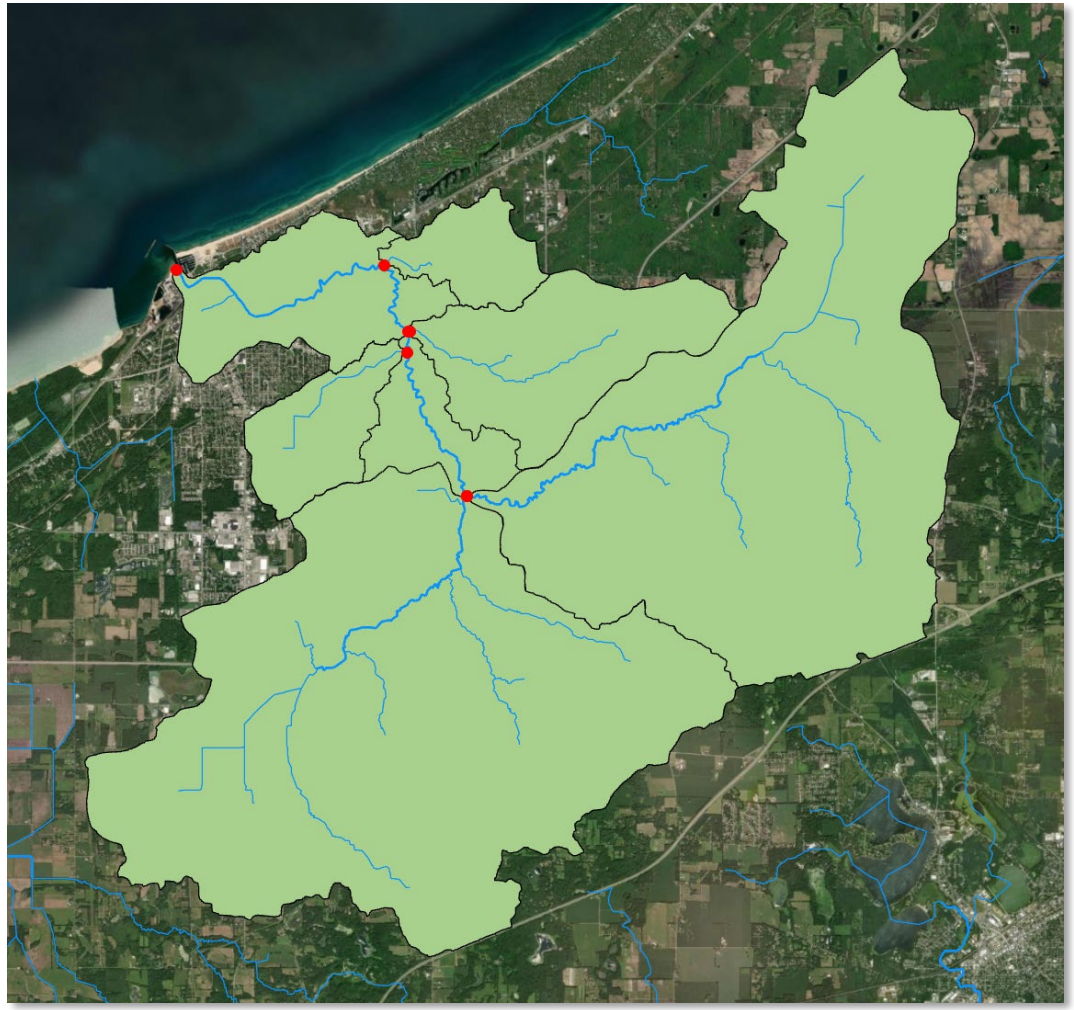
Page 1 of 3

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydrologic Analysis

Digital Supporting Files

- Performing a new hydrology study impacts the entire effective dataset.
  - Basin mapping and drainage points are widely understood part of modeling watersheds.

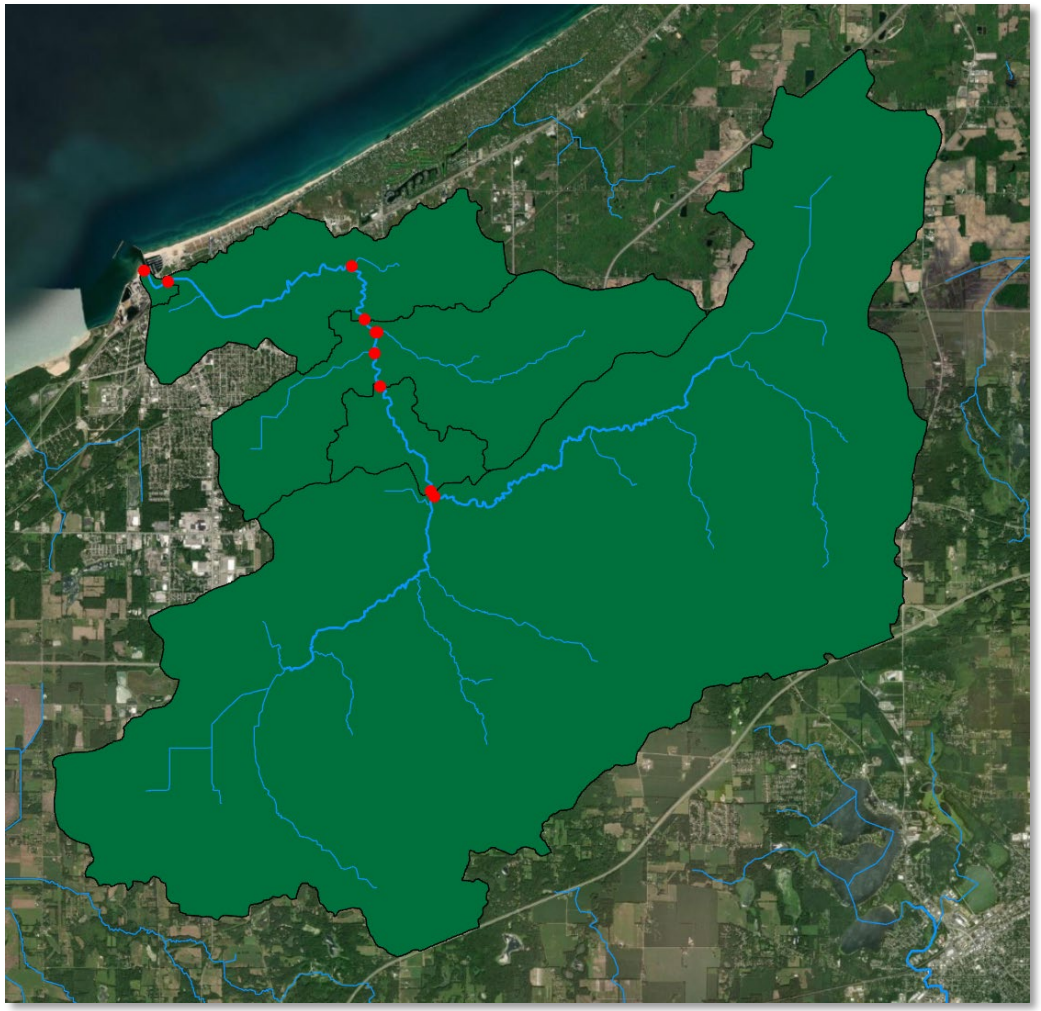


DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydrologic Analysis

Digital Supporting Files

- A new coordinated discharge curve must be developed for the watershed.
  - Steady flow data points must be submitted to support the new curve.



Hydrologic Analysis

Digital Supporting Files

- The steady flow data points are recorded in the Summary of Discharges Table.
  - The points are collated into the official peak discharge values for the effective recurrence storms.

Table 9: Summary of Discharges

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Trail Creek	Mouth of stream	59.25					*	
Trail Creek	USGS Harbor Gage	59.19					*	
Trail Creek	Confluence with Otter Creek	56.22					*	
Trail Creek	USGS Michigan City Gage	54.25					*	
Trail Creek	Confluence with UNT Trail Creek #1	54.1					*	
Trail Creek	Confluence with Freyer Ditch	47.31					*	
Trail Creek	Just upstream of US35	47.29					*	
Trail Creek	Just upstream of US20	45.91					*	

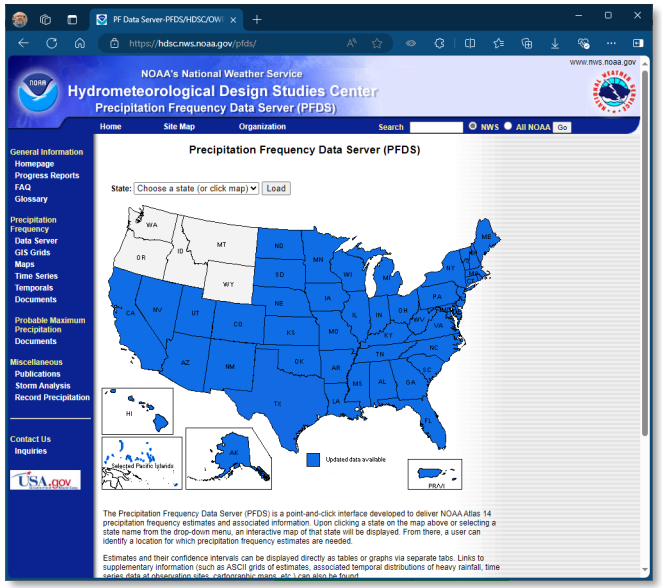
*Not calculated for this Flood Risk Project

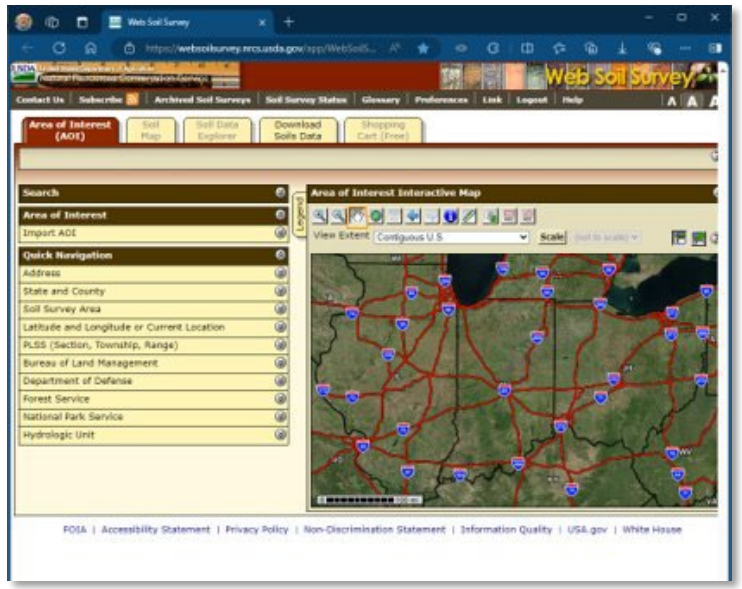
DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydrologic Analysis

Rainfall-Runoff Model Components

- The analysis must be based on existing ground conditions in the watershed and floodplain.
  - NOAA's National Weather Service keeps the Precipitation Frequency Data Server constantly updated and is the preferred precipitation depth values.
  - Guidance on estimating the NRCS runoff curve number is provided in the NRCS Engineering Handbook (USDA 2004)
  - Land use data needed is provided by the USGS NCLD.
  - The soils data needed is provided by the NRCS WSS.



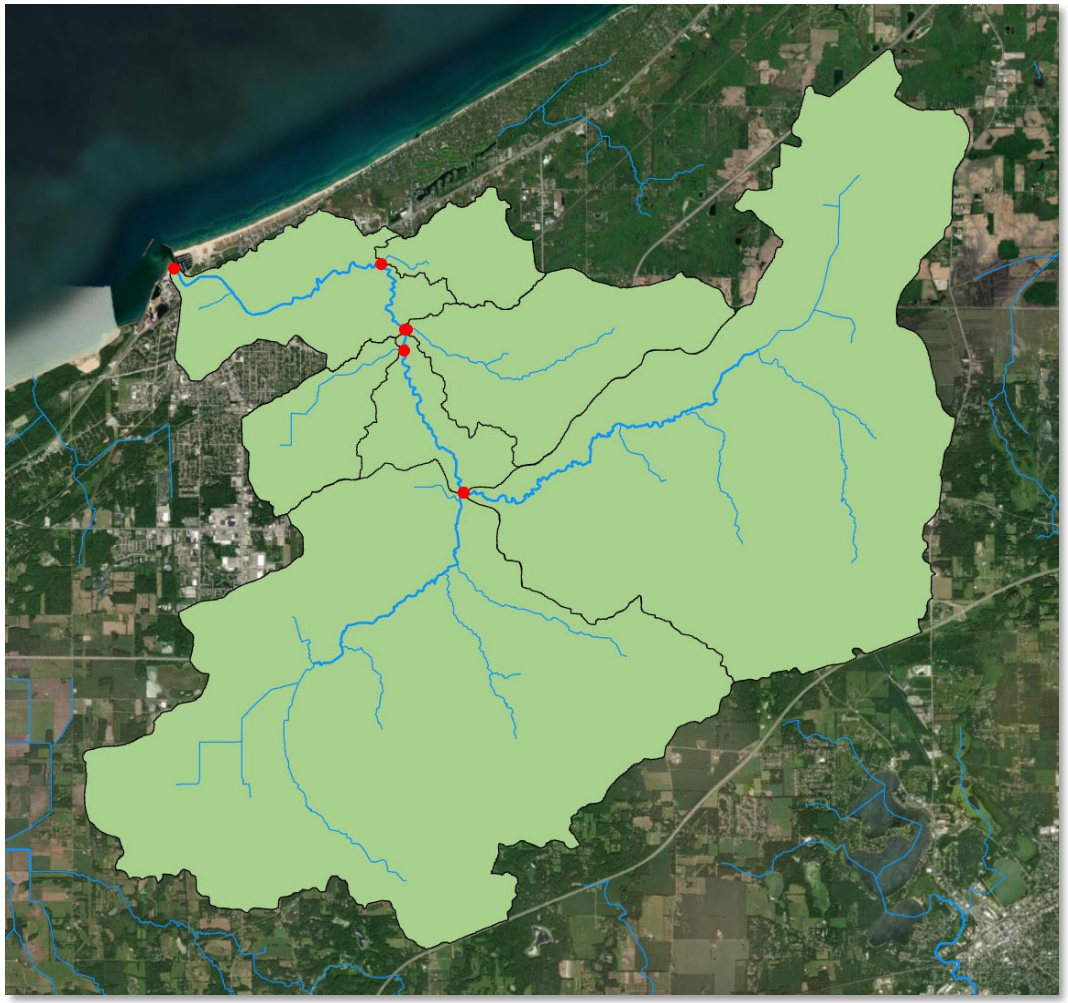


DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydrologic Analysis

Limits of Hydrologic Study Area

- Watersheds are based upon a geographic footprint and the Applicant's Delineation must be provided.

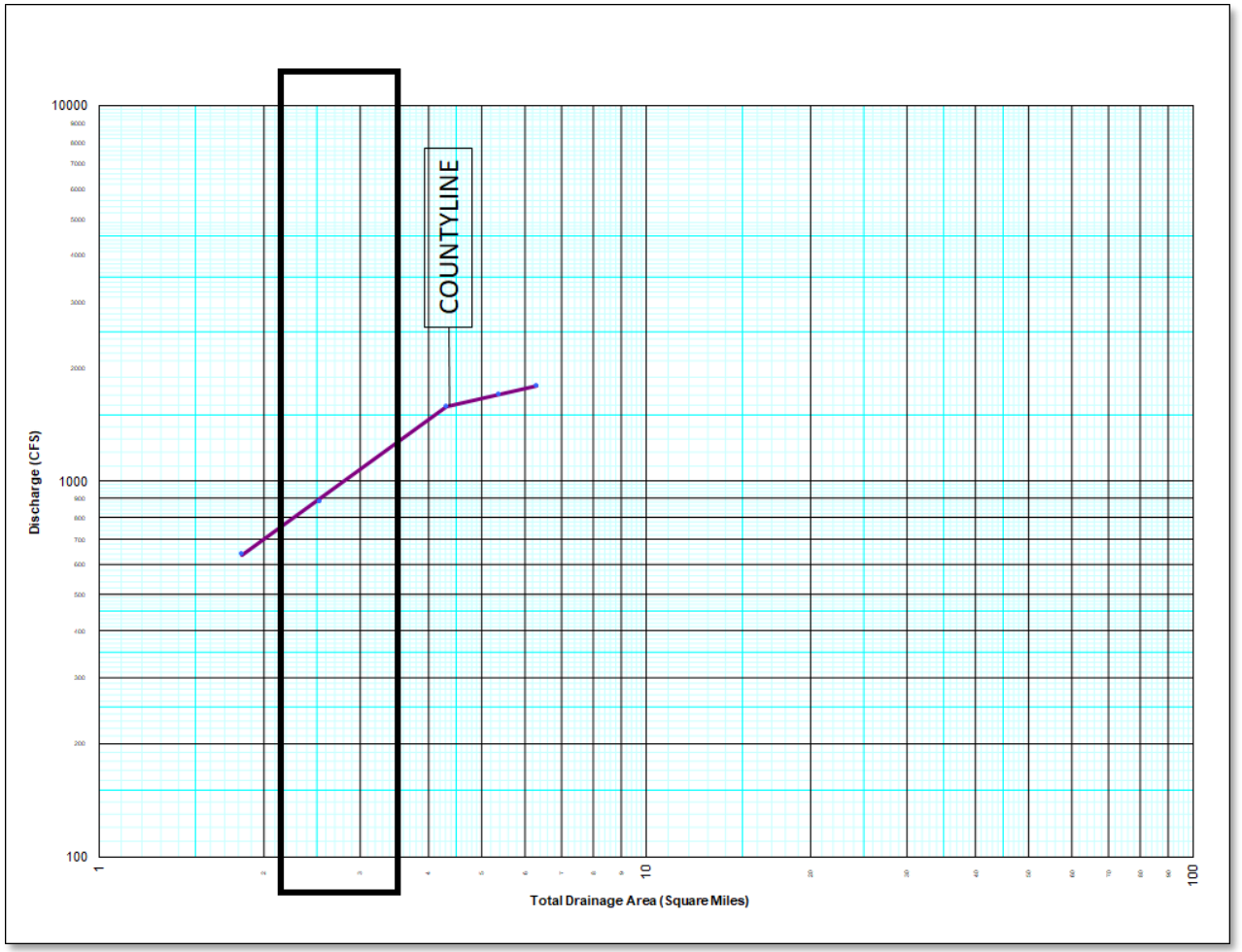


DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydrologic Analysis

Limits of Hydrologic Study Area

- The hydrologic analysis should start at the most downstream point in the watershed.
- Hydrology will be performed for an entire stream segment.
- Consistency must be maintained for contiguous community matching.

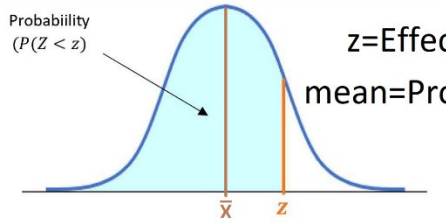


DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydrologic Analysis

Results are Statistically Significant

- The Applicant should consider revisions to the effective hydrologic analysis when a more recent hydrologic analysis yields flood discharges that are statistically different from the effective discharges.



z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5754
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7258	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7518	0.7549
0.7	0.7580	0.7612	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7996	0.8023	0.8051	0.8079	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9430	0.9441
1.6	0.9452	0.9463	0.9474	0.9485	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9700	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9762	0.9767
2.0	0.9773	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9865	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9980	0.9980	0.9981
2.9	0.9981	0.9982	0.9983	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998	0.9998

Hydrologic Analysis

Hydrology Analysis Report

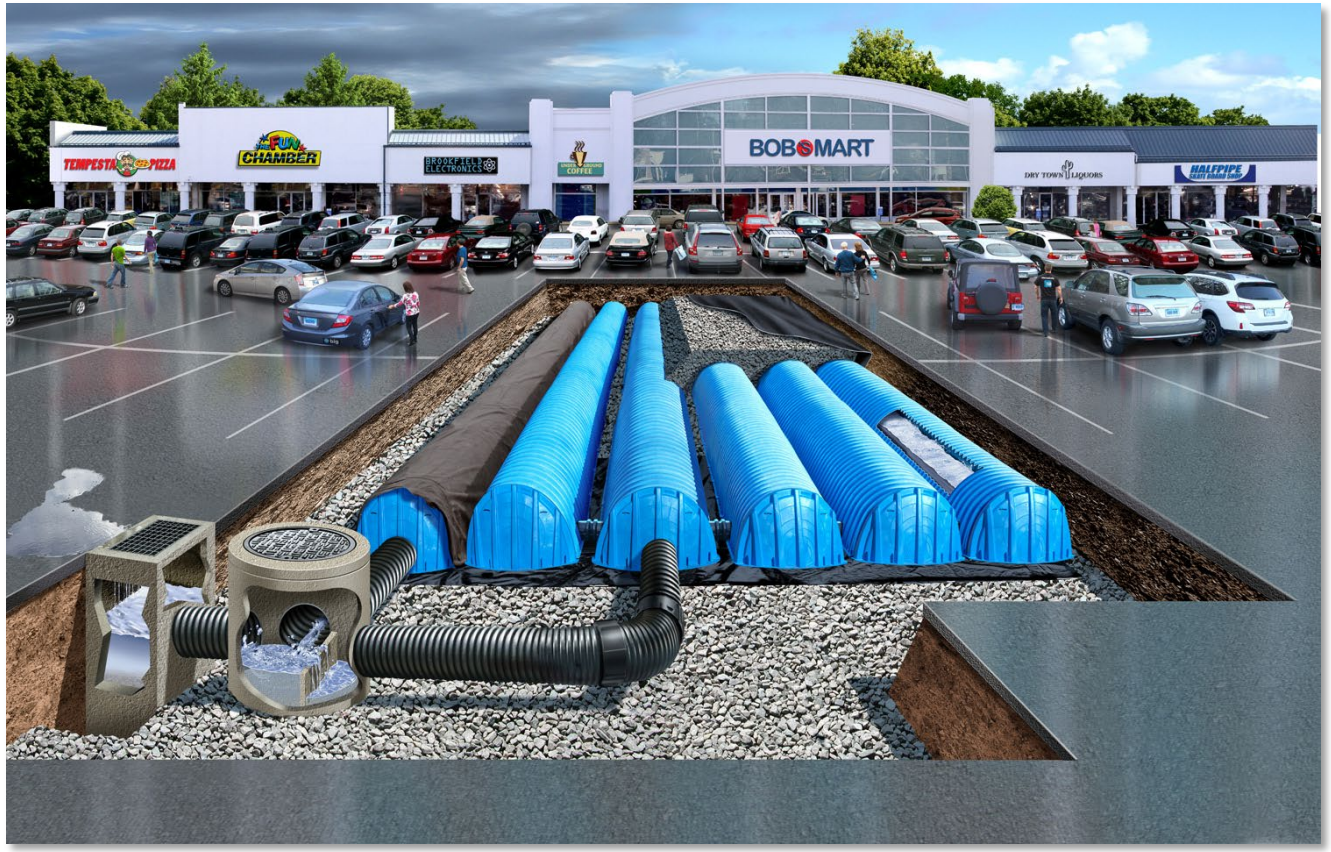
- All assumptions for the data and their reasoning should be documented.
  - Any guesses on the CN for Deerfield Square, Illinois? CN 92?

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydrologic Analysis

Hydrology Analysis Report

- All assumptions for the data and their reasoning should be documented.
  - Probably CN 79



Cultec, Inc. Commercial Cistern Installation

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydraulic Analysis

- Duplicate Effective (DE) plan required if the effective model is available. Must be used as a baseline model, even if rest of plans not built on it, for comparison to revised BFEs.
  - If effective is a HEC-2 model, when converted to HEC-RAS (and edited minimally to run) is considered the Duplicate Effective.
  - Otherwise, effective model should be run on requestors equipment and calibrated to within +/-0.5' of the effective BFEs.
  - Include effective LOMRs within revised reach.
  - If no/unavailable effective model, may not be required. Refer to flowchart for guidance on this and if it should be truncated to revised reach.
  - Per 44 CFR 65.6(a)(8),
    - must use the same hydraulic modeling method unless the original model is unavailable, or its use is inappropriate.
    - a revised analysis for established BFEs must include the same recurrence intervals as the effective FIS.
  - Per 44 CFR 65.6(a)(9), if no established BFEs, only the 1% flood interval is required.

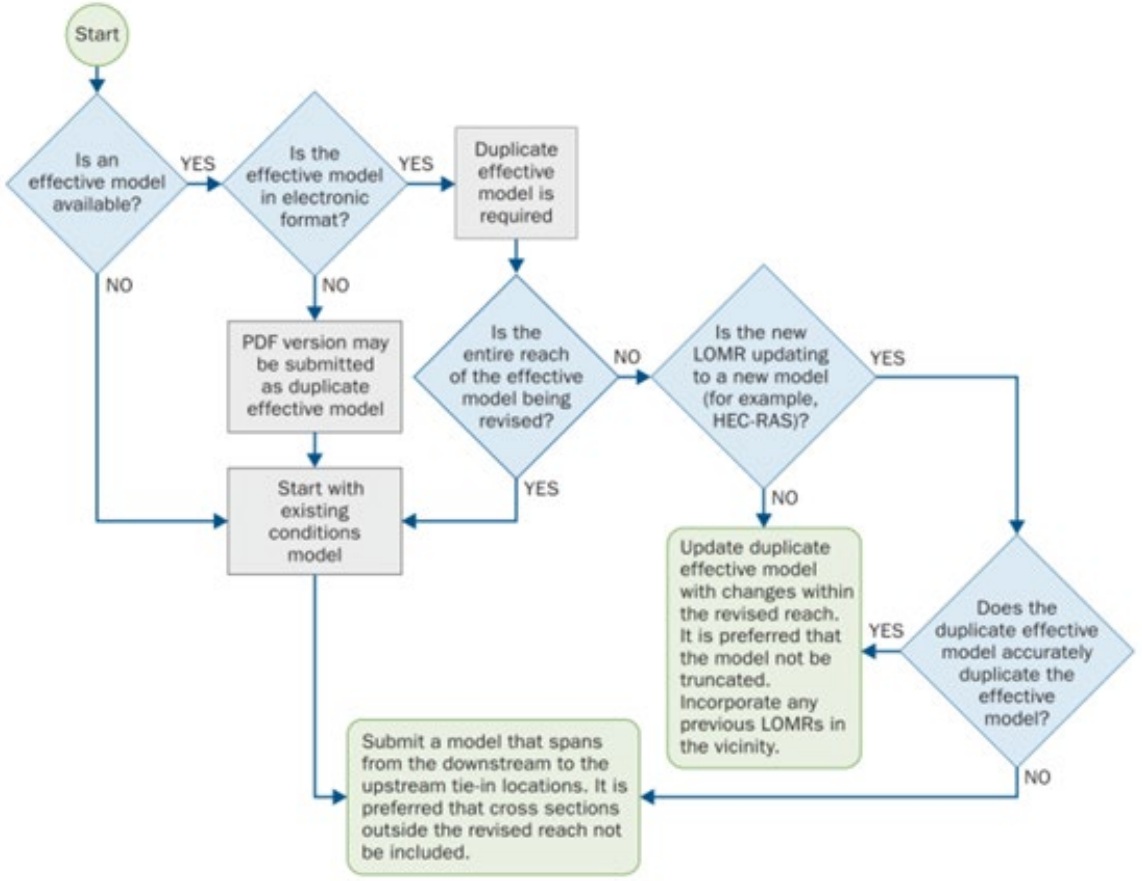


Figure 2. Flow Chart for Determining the Need for a Duplicate Effective Model

MT-2 Requests, Guidance Document No. 106

Hydraulic Analysis

Corrected Effective (CE) plan corrects errors, adds cross sections, and/or incorporates more detailed topographic information.

- No man-made changes unless done prior to effective date.

Existing Conditions (Pre-Project) plan incorporates changes within the revised reach since the effective date and prior to any proposed projects.

- If no changes, will be the same as the CE.

Revised Conditions (Post-Project) plan reflects the man-made changes to the revised reach on which the revised BFEs are based on.

- For CLOMRs, Proposed (Post-Project) plan incorporates any proposed projects in the revised reach.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydraulic Analysis

Technical Modeling Requirements

- Boundary Condition (BC) is typically slope area/normal depth at confluences or where known WSELs are not available.
  - Known WSELs used for revised reaches that start in the middle of reaches that have effective BFEs for best tie-in.
    - Should follow effective model cross section cut or where crossed profile baseline.
  - Backwater elevations from main streams are used when there is a demonstrated coincident peak at the confluence.
    - Model revised reach independent of backwater effects. If BFE at confluence is higher than the backwater WSEL, you will use the backwater WSEL for BC. If revised reach BFE is lower, use slope area/normal depth BC.
- BFE Tie-in at the point where unrevised reaches met revised reaches should be within 0.5', per 44 CFR 65.6(a)(2). This is determined by comparing the Revised (Post-Project) plan BFEs to the effective FIS BFEs at the transition area.
  - Additionally, Post-Project BFEs must be +/-0.1' to the Pre-Project BFEs to verify that all impacts of projects are properly reflected in revised reach.
  - Extend reach limit upstream or downstream.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydraulic Analysis

Floodway Analysis is required if there is an effective floodway.

- FEMA suggests Methods 4 and 1.
- Surcharge should be between 0.0’ and 0.14’.
- If effective floodway present, top-widths from the revised to unrevised reaches must match to meet tie-in requirements.
- If reach begins at the mouth, start encroachments at a width that yields the maximum allowable surcharge or by using the maximum allowable surcharge as BC.
- Use same normal depth BC.

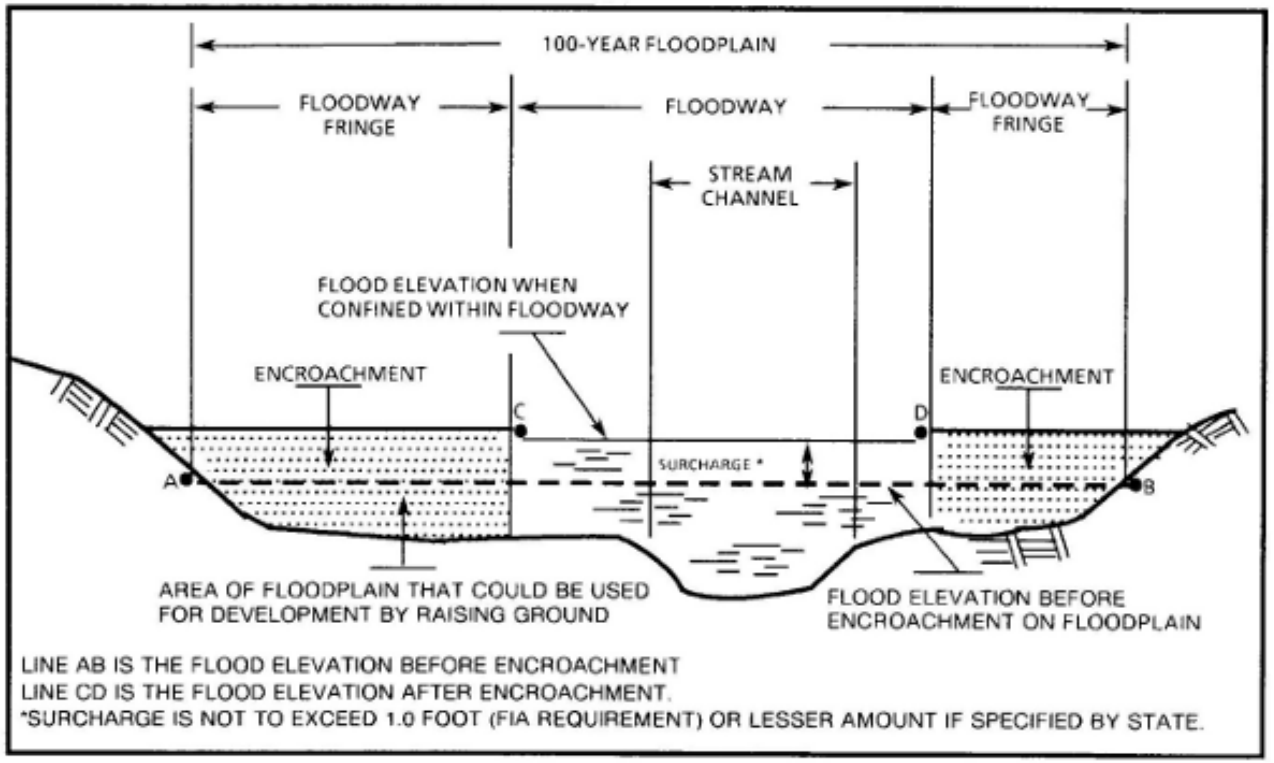


Figure 7. Cross section of the floodplain showing the floodway, floodway fringe and surcharge. The model assumes that the entire floodplain outside of the floodway is filled or otherwise obstructed.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydraulic Analysis

Additional technical modeling factors to consider

- Effective flood discharges or revised hydrology values are at proper locations.
- Manning's "n", structure cross section locations, contraction and expansion coefficients, bridge modeling methods, bridge geometry, and ineffective flows are reasonable and consistent with hydraulic software user manual.
- All cHECk-RAS and HEC-RAS errors are addressed.

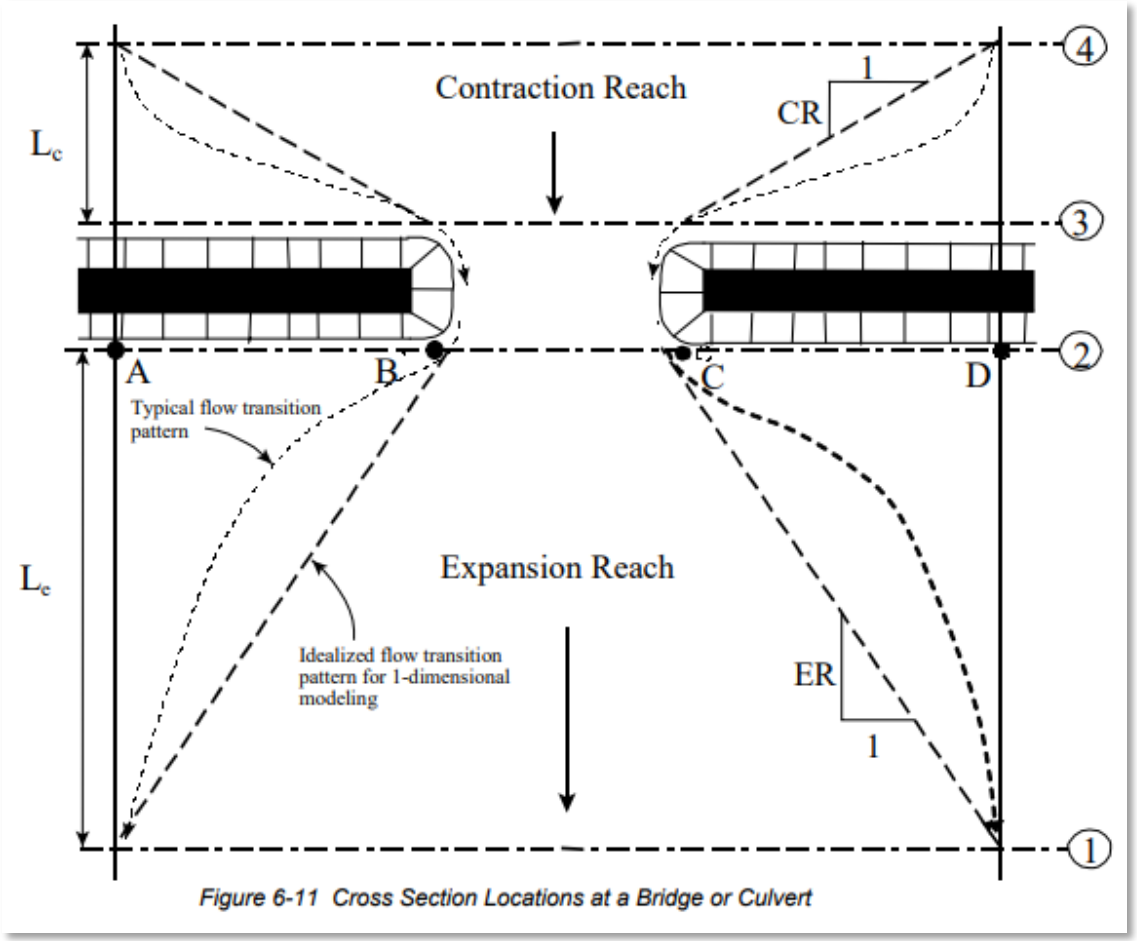


Figure 6-11 Cross Section Locations at a Bridge or Culvert

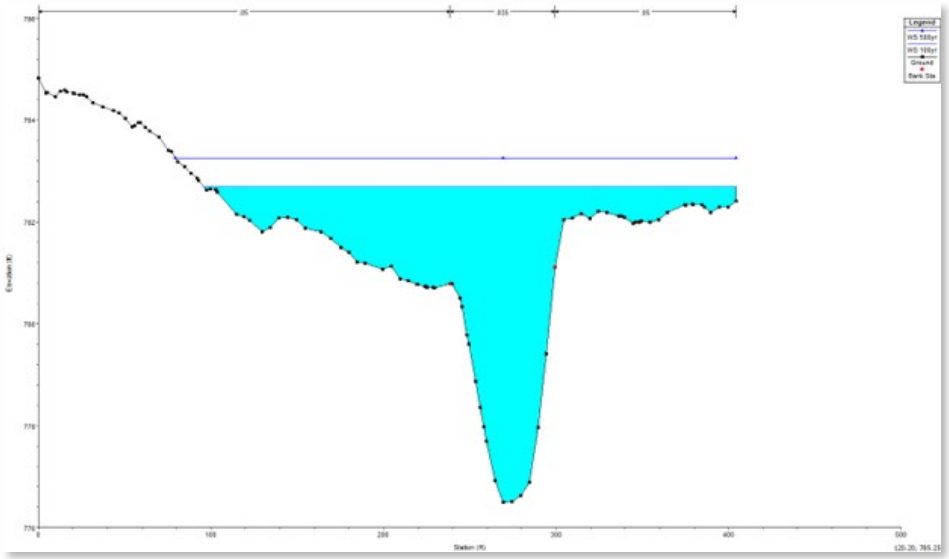
HEC-RAS User Manual

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Hydraulic Analysis

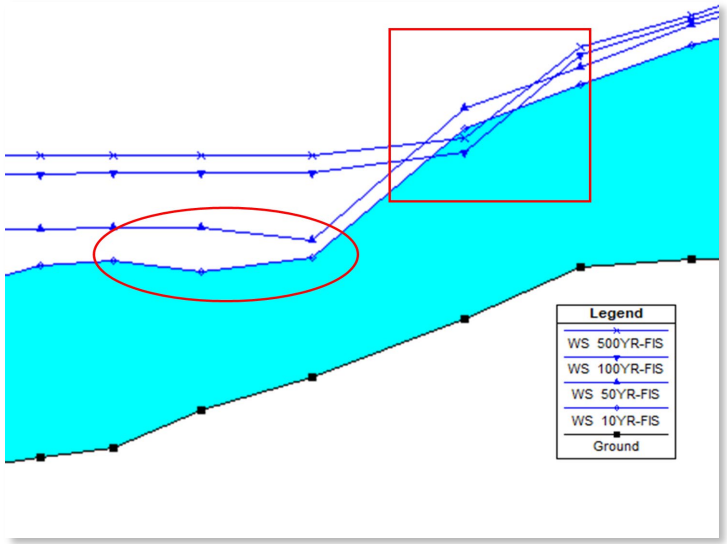
Common Modeling Errors to Avoid

- Negative or excessive surcharges.



- Cross sections not full valley

- Extraneous plans not pertinent to the revision request.



- Drawdowns and crossing profiles

Location:	River: RS: 18713.14 Profile: 50YR-FIS Downstream
Warning:	The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning:	During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note:	Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

- “Default to critical depth" errors

DNR Indiana Department of Natural Resources | DIVISION OF WATER

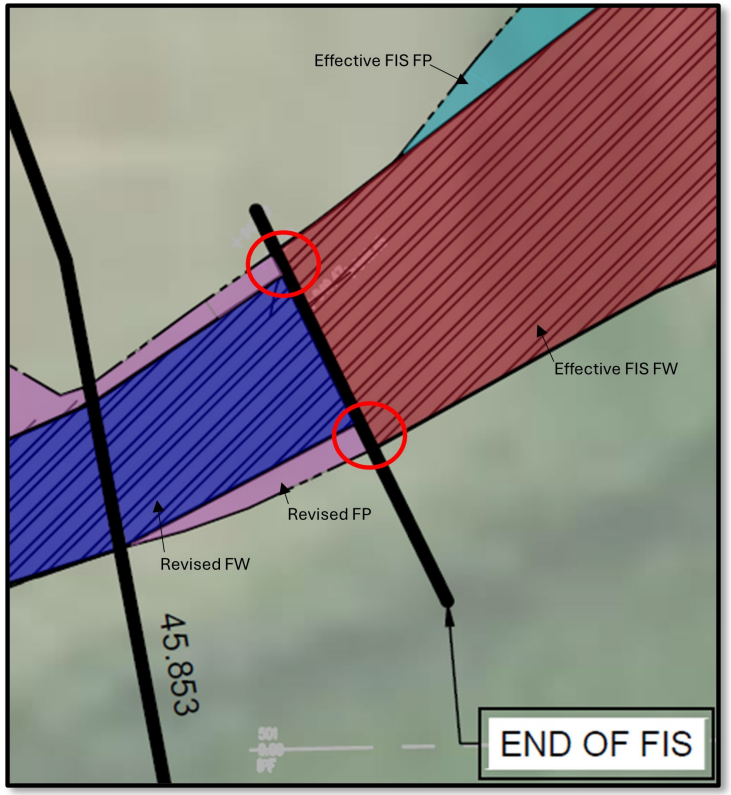
Certified Work Map

- Must be of suitable scale and topographic definition to provide reasonable accuracy of boundaries.
- Must include:
  - all flood frequencies effective boundary delineations,
  - all revised boundary delineations related to the requests,
  - a visual tie-in (of all boundaries) that is consistent with the output from the hydraulic analysis,
  - topographic contour information including reasonable elevation labeling,
  - vertical datum,
  - all cross sections of the revised reach used in the revised modeling,
  - flowline used in the revised modeling,
  - legend or clearly labeled features,
  - and certified (sealed, signed, dated) by a registered PE.
- Spatially referenced GIS shapefiles of all revised boundaries, flow line(s), and cross sections is extremely helpful.

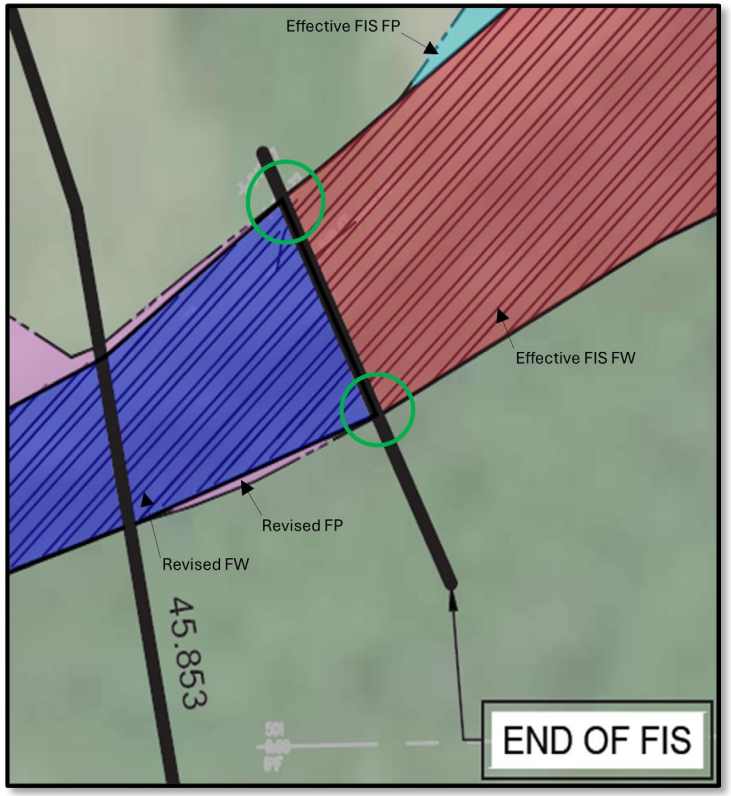
DNR Indiana Department of Natural Resources | DIVISION OF WATER

Certified Work Map

- Commonly seen mapping errors to avoid
  - Missing the effective boundaries of some or all effective flood frequencies.
  - Bad tie-ins from revised to effective boundaries.
  - Top-width of floodplain(s) and floodway, revision limits, and stream reach lengths shown on map not consistent with submitted model.
  - No PE stamp.



Bad Tie In



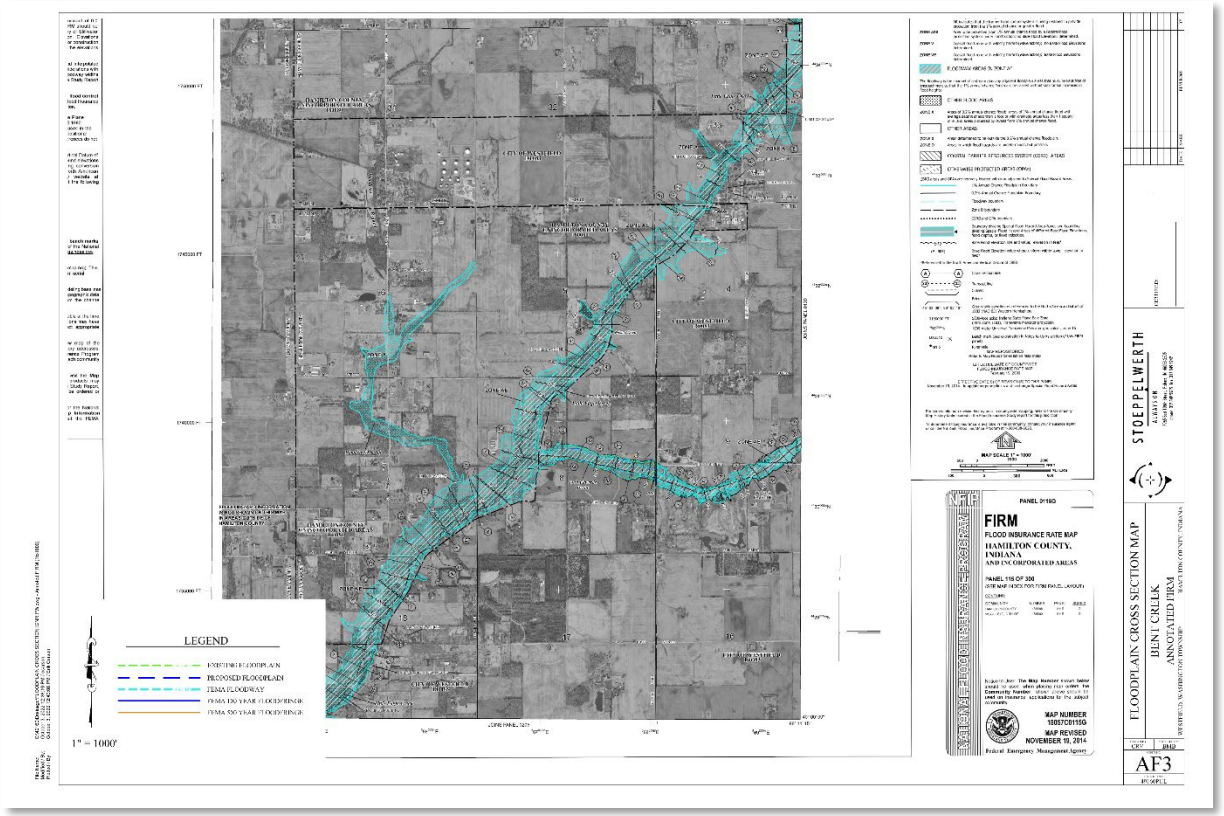
Good Tie In

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Annotated FIRM

- Must show the revised boundaries (as shown on the topographic workmap) at the scale of the effective FIRM.
  - Tie-ins from revised to effective boundaries.
  - Include revised cross sections and flow line.
  - Clearly label features.

- Make sure to include <u>all</u> impacted FIRM panels.



Fee

Checks are to be sent to FEMA.

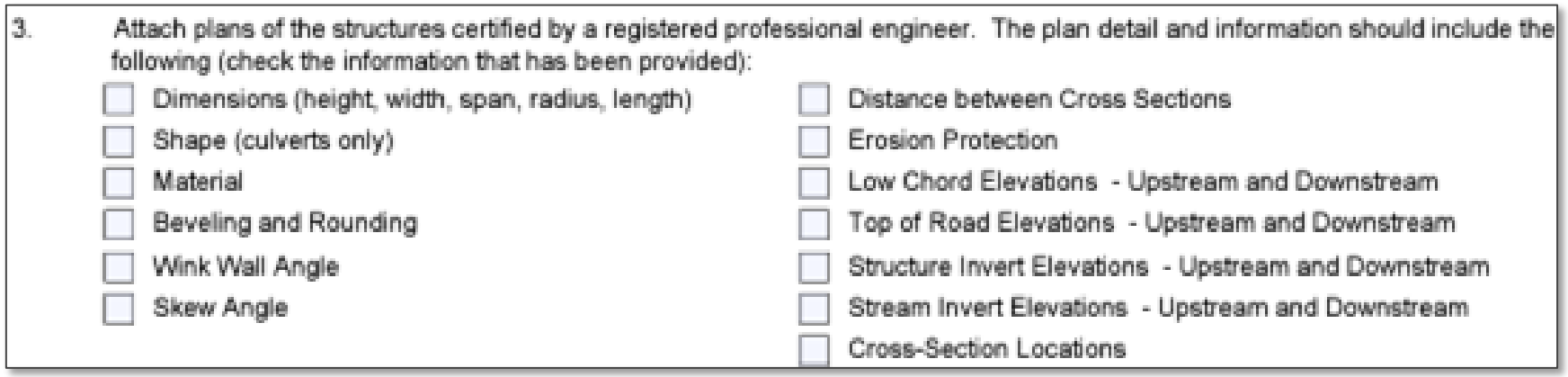
LOMC Clearinghouse
3601 Eisenhower Ave, Ste 500
Alexandria, VA 22304-6426

If INDNR receives the check, we will forward it on to the LOMC Clearinghouse however, this will delay the process.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Proposed & As-Built Plans

- Required for all existing (as-built) structures that are not in the effective FIS or are being updated from the effective model geometry.
  - Must be signed, sealed, and dated by a registered PE or surveyor.
  - Must include details to verify geometry used in the modeling including vertical datum.



3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):

- ☐ Dimensions (height, width, span, radius, length)
- ☐ Shape (culverts only)
- ☐ Material
- ☐ Beveling and Rounding
- ☐ Wink Wall Angle
- ☐ Skew Angle
- ☐ Distance between Cross Sections
- ☐ Erosion Protection
- ☐ Low Chord Elevations - Upstream and Downstream
- ☐ Top of Road Elevations - Upstream and Downstream
- ☐ Structure Invert Elevations - Upstream and Downstream
- ☐ Stream Invert Elevations - Upstream and Downstream
- ☐ Cross-Section Locations

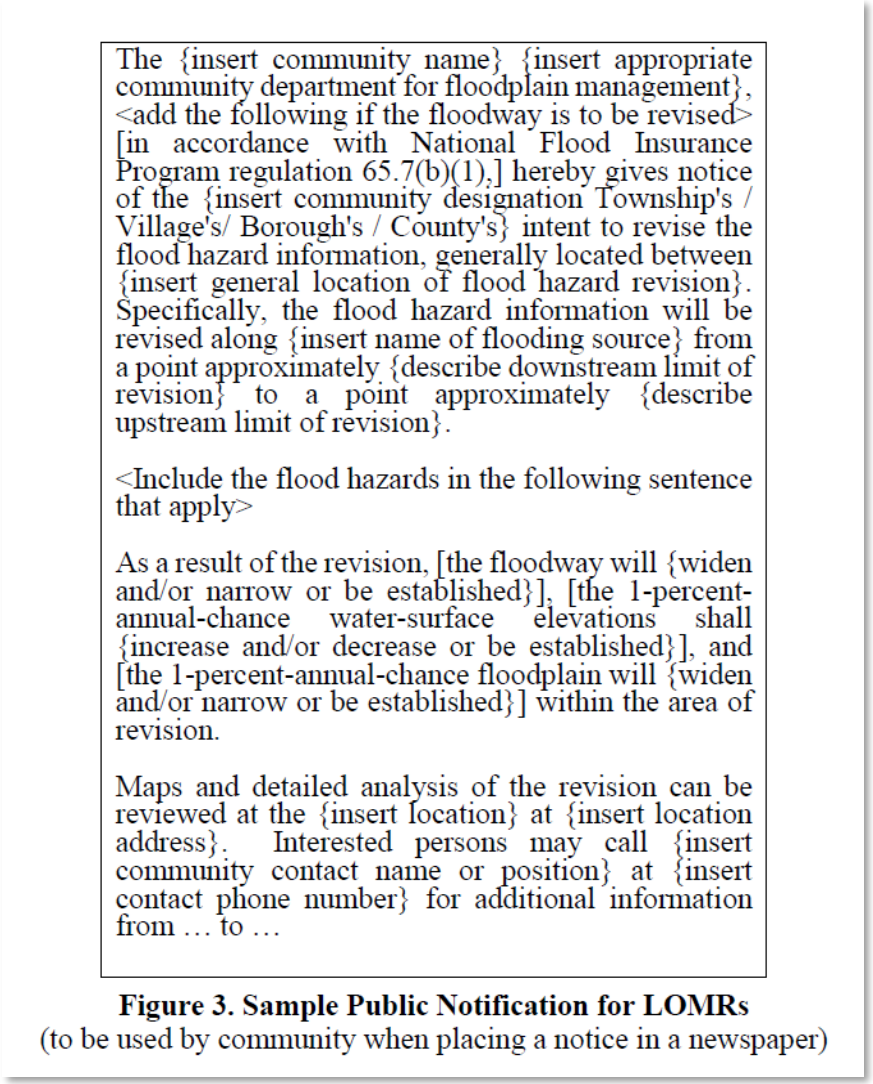
MT-2 Form 3, Section C. Bridge/Culvert

- CLOMR proposed plans don't need certified but must be submitted by a PE.
- As-built or proposed fill and/or excavation must be reflected in the submitted topographic mapping.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Floodway Notice

- Common Regulatory Requirements
  - 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.
    - Any Change in the floodway delineation.
    - This helps reduce the occurrence of Appeals.
- Notification Publication
  - All LOMRs that result in changes to the regulatory floodway require public notice.
    - Instruction document has template for applicants.
    - Must be from the Community maintaining the maps.



The {insert community name} {insert appropriate community department for floodplain management}, <add the following if the floodway is to be revised> [in accordance with National Flood Insurance Program regulation 65.7(b)(1),] hereby gives notice of the {insert community designation Township's / Village's/ Borough's / County's} intent to revise the flood hazard information, generally located between {insert general location of flood hazard revision}. Specifically, the flood hazard information will be revised along {insert name of flooding source} from a point approximately {describe downstream limit of revision} to a point approximately {describe upstream limit of revision}.

<Include the flood hazards in the following sentence that apply>

As a result of the revision, [the floodway will {widen and/or narrow or be established}], [the 1-percent-annual-chance water-surface elevations shall {increase and/or decrease or be established}], and [the 1-percent-annual-chance floodplain will {widen and/or narrow or be established}] within the area of revision.

Maps and detailed analysis of the revision can be reviewed at the {insert location} at {insert location address}. Interested persons may call {insert community contact name or position} at {insert contact phone number} for additional information from … to …

Figure 3. Sample Public Notification for LOMRs
(to be used by community when placing a notice in a newspaper)

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Floodway Notice

State Concurrence

- 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.
  - DNR will provide concurrence once the analysis and mapping is acceptable.
  - Many Communities rely upon DNR for expert review.
  - Notices are costly so the reviewer will wait until the end of the review.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Property Owner Notification

- Common Regulatory Requirements
  - 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.
    - Changing the base floodplain such that any property is being added to the SFHA.
    - Increase or establishment of BFE.
    - Any Change in the floodway delineation.

- Notification Letters
  - All LOMRs that result in in a BFE and/or SFHA increase and/or that will result in a revision to the regulatory floodway require individual legal notices to affected property owners.
    - Instruction document has template for applicants.
    - Must be on Community Letterhead.

DNR Indiana Department of Natural Resources

DIVISION OF WATER

Property Owner Notification

[Date]
[Affected property owner name]
[Affected property owner mailing address]

Re: Notification of Flood Hazard Revisions

Dear Mr. Ms. Mr. and Mrs. [Affected property owner]:

The Flood Insurance Rate Map (FIRM) for a community depicts the floodplain, the area that has been determined to be subject to a 1-percent or greater chance of flooding in any given year. The regulatory floodway is the portion of the floodplain that includes the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base (1-percent-annual-chance) flood without cumulatively increasing the water-surface elevation by more than a designated height. The FIRM is used to determine flood insurance rates and to help the community with floodplain management.

[Revision Requester] is applying for a Letter of Map Revision (LOMR) from the Federal Emergency Management Agency (FEMA) on behalf of [Revision requester's client] to revise FIRM [insert FIRM #, panel #, suffix] for [insert community name, state] along [insert name of flooding source]. [Revision requester] is proposing to revise the FIRM to reflect [describe project or updated information].

"If the revision results in a floodway change, please include the following paragraph:"

The [insert community name] [insert appropriate community department for floodplain management], in accordance with National Flood Insurance Program regulations at 44 CFR §60.3(d)(3), hereby gives notice of the [insert community designation: Township's, Village's, Borough's, County's] intent to [revise/establish/revise and establish] the 1-percent-annual-chance floodway, generally located between [insert general location of floodway revision]. Specifically, the floodway shall be

"[please choose the following that apply]"

1. revised from a point [describe downstream limit of regulatory floodway revision] to a point [describe upstream limit of regulatory floodway revision]
2. [and] established from a point [describe downstream limit of regulatory floodway establishment] to a point [describe upstream limit of regulatory floodway establishment].

As a result of the LOMR, the regulatory floodway will [widen/narrow/be established] within the area of revision.

"Please choose the following that apply"

The LOMR will [also] result in:

1. [Establishment of Base (1-percent-annual-chance) Flood Elevations (BFEs)]
2. [Establishment of the 1-percent-annual-chance floodplain]
3. [Increases, [and decreases,] in the 1-percent-annual-chance water-surface elevations]
4. [Widening [and narrowing] of the 1-percent-annual-chance floodplain]

This letter is to inform you of flood hazard revisions on your property at [insert physical address].

Maps and a detailed analysis of the flood hazard revision can be reviewed at the [insert location] at [insert location address]. If you have any questions or concerns about the proposed project or its effect on your property, you may contact [name of appropriate community official] of [name of community] at [community official contact information] from ... to ... [insert dates during which community contact person can be contacted].

Sincerely,

[Revision requester or community representative name]
[Revision requester or community representative position]
[Revision requester or community representative contact information]

Figure 4. Sample Notification Letter for LOMRs
(to be used when sending individual legal notices to affected property owners)

Note: If individual letters are used to notify property owners of the revision to the regulatory floodway, they must either be sent on community letterhead or the community must certify to FEMA that all affected property owners have been notified of the floodway revision.

MICHIGAN CITY, INDIANA
DEPARTMENT OF PLANNING & REDEVELOPMENT
Phone: 219.873.1419 - Fax: 219.873.1580 | Director: Skyler York - Syork@emichigancity.com

PUBLIC NOTICE
MICHIGAN CITY PLAN COMMISSION

Notice is hereby given that the July 23, 2024 Plan Commission meeting has been canceled due to a lack of business.

The next regular meeting is scheduled for August 27, 2024.

Skyler York
Planning Director
City of Michigan City

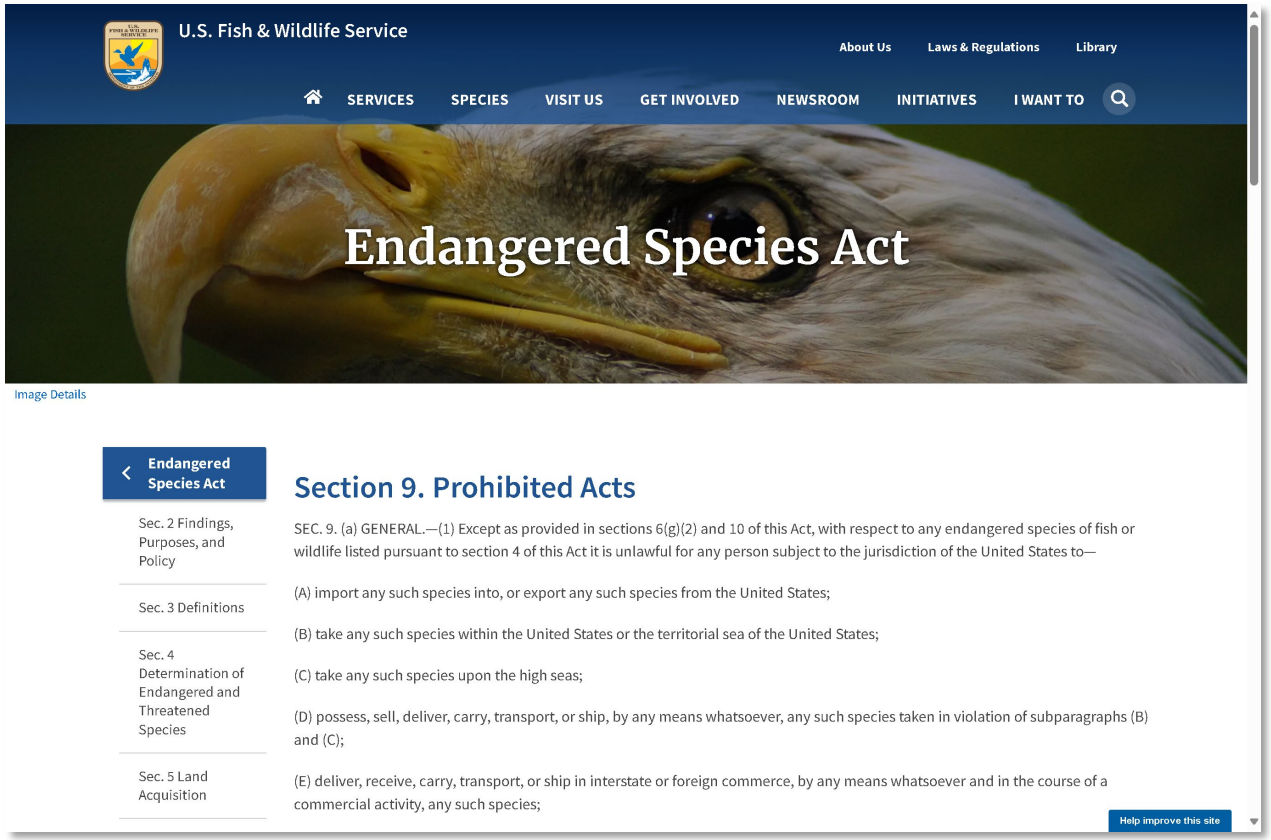
Dated and posted: 07/17/2024

Mayor: Angie Nelson - Deutsch
City Hall - 100 East Michigan Boulevard, Michigan City, IN 46360
www.emichigancity.com

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Endangered Species Act

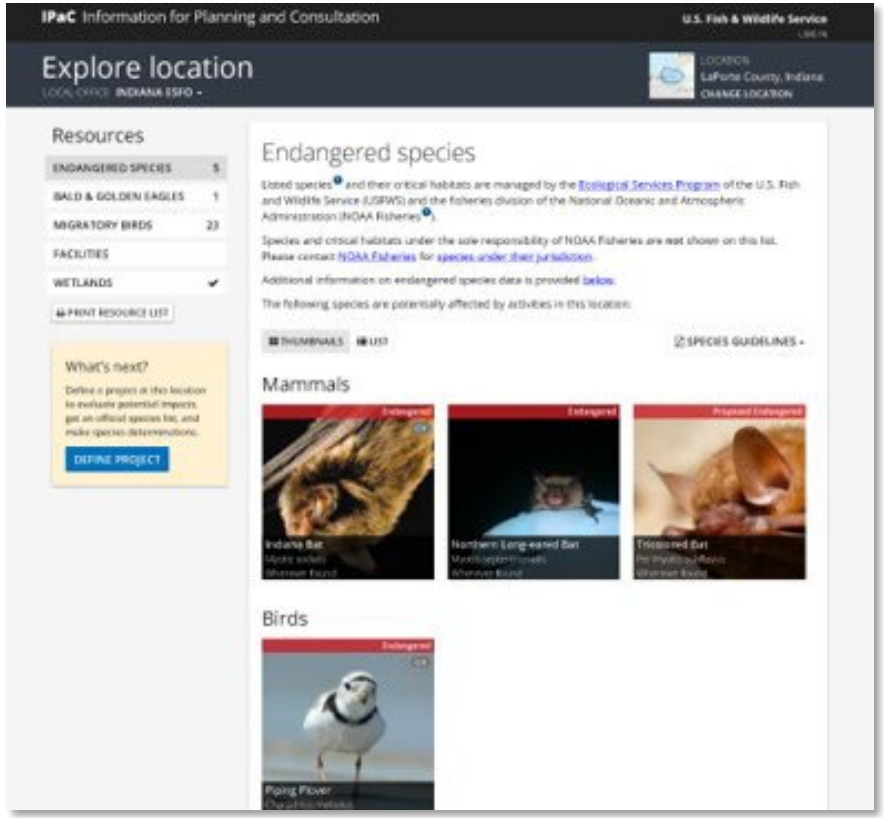
- U.S. Department of Interior
  - CLOMR applicants are responsible for providing FEMA with documentation that the project has complied with the Endangered Species Act of 1973 (ESA). This must occur before FEMA reviews the CLOMR application.
    - While FEMA doesn't play a role in ESA compliance, projects are required to comply independently.



DNR Indiana Department of Natural Resources | DIVISION OF WATER

Endangered Species Act

- Non-Federal Projects
  - The requester must document the “Take” that exists in the project area.
    - No potential for “Take” exists to threatened and endangered species.
    - 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, the species or its habitat.
    - The requester will be responsible for the potential for “Take” determination.
      - ❑ Not the Services
      - ❑ Not DNR
    - 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 1 or 2 are possible and the project has the potential to “Take” listed species, an Incidental Take Permit may be submitted showing that the project is the subject, or is covered by the subject, of the permit.
- A biological opinion with a “no jeopardy” determination or with accepted reasonable and prudent alternatives.
  - Further clarification of the project will help determine compliance.



CLOMR Regulatory Requirements

- Other Projects in the Area
  - Applicants are not aware of other activities in the area.
  - Usually shows up in the existing conditions model.
  - DNR calls these cumulative effects. FEMA calls these effects a rise in Effective BFE.
  - This includes “No-Rise” Projects.

- CLOMRs are for Proposals
  - FEMA will review the proposed conditions for minimum compliance to the NFIP regulations.
    - 44 CFR 60.3(d)(3) “…prohibit encroachments unless it has been demonstrated that the proposed will not increase flood levels…”
    - Existing conditions violation occurs when there is an indication that there was an encroachment since the effective model was developed.

CLOMR Regulatory Requirements

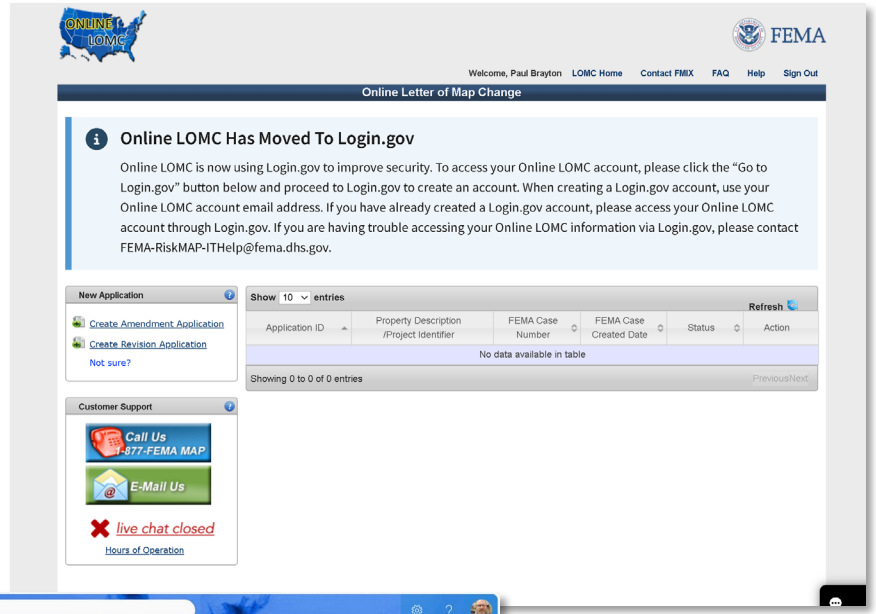
44 CFR 65.12 Not Being Met

- 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 effective conditions and the proposed conditions as a result of the proposed project, the following must be submitted.
  - 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.
  - Documentation of the individual legal notice sent to all affected property owners, explaining the impact of the proposed action on their property.
  - An evaluation of alternatives that would not result in an increase in BFE.
  - Concurrence of the CEO, or their designated representative, of any communities affected by the proposed actions.
  - DNR still requires less than 0.14 foot rise in the area without a floodway.

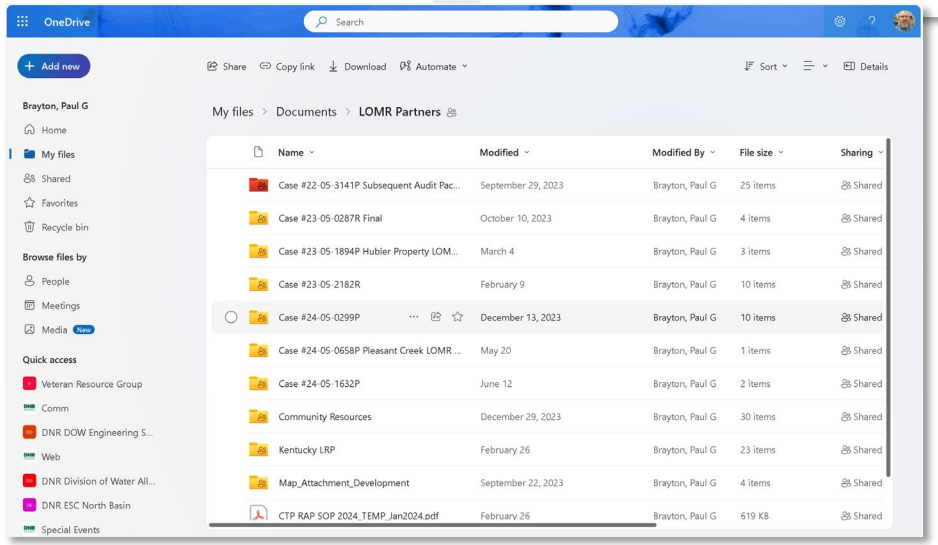
DNR Indiana Department of Natural Resources | DIVISION OF WATER

Submittal of Artifacts

- Submitting
  - Applicants are encouraged to submit their revision request using the Online LOMC tool.
    - Using the eLOMC Portal is best.
    - Follow up with reviewer.
    - Easy to make LOGIN.GOV and ONLINE LOMC accounts.



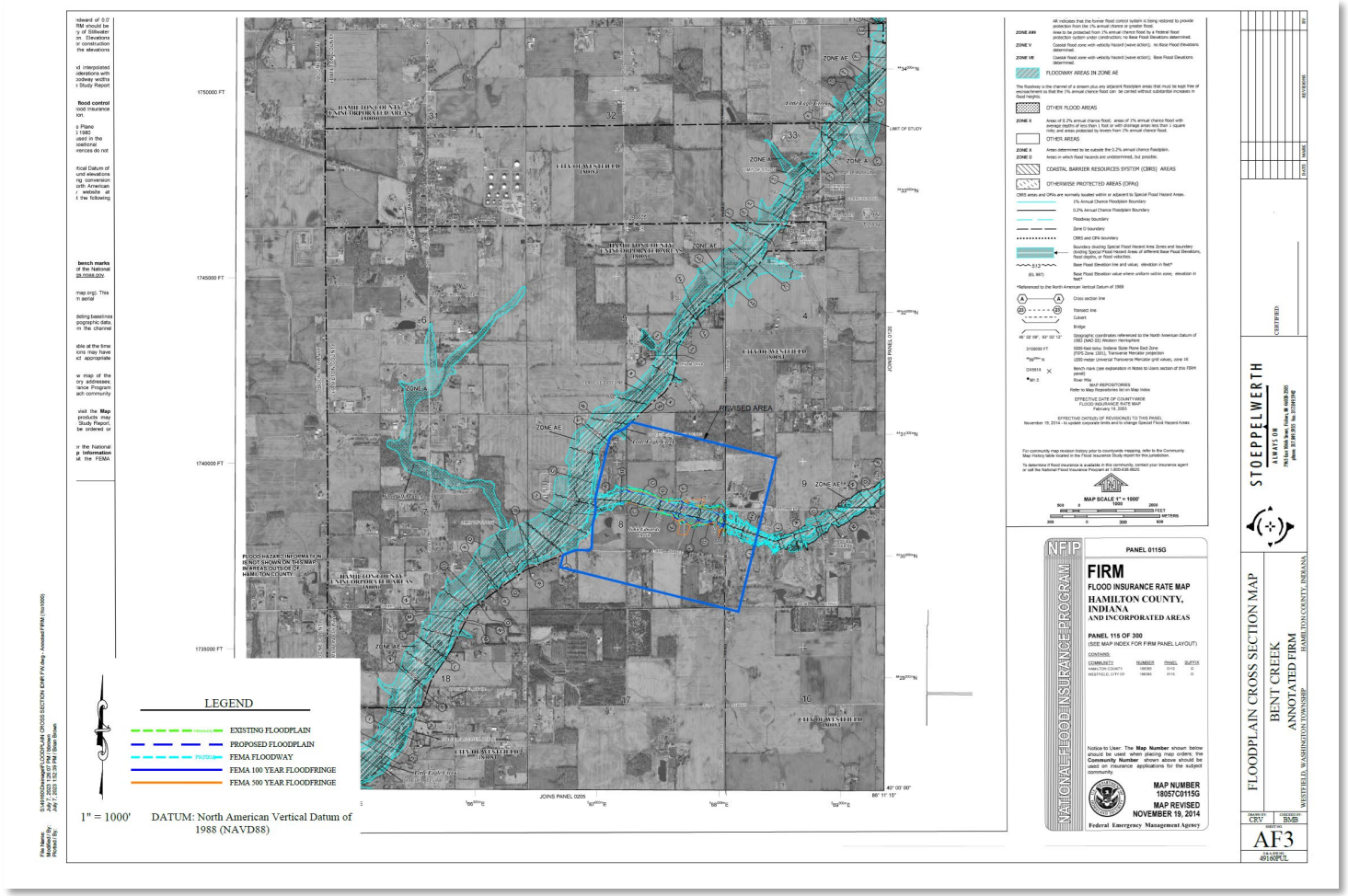
- Limited Technology
  - Indiana Office of Technology has limited State access to OneDrive or SharePoint for data transfer repositories.
    - The state uses Microsoft firewalls.
    - Web hosting is possible.
    - Using the eLOMC Portal is best.



DNR Indiana Department of Natural Resources | DIVISION OF WATER

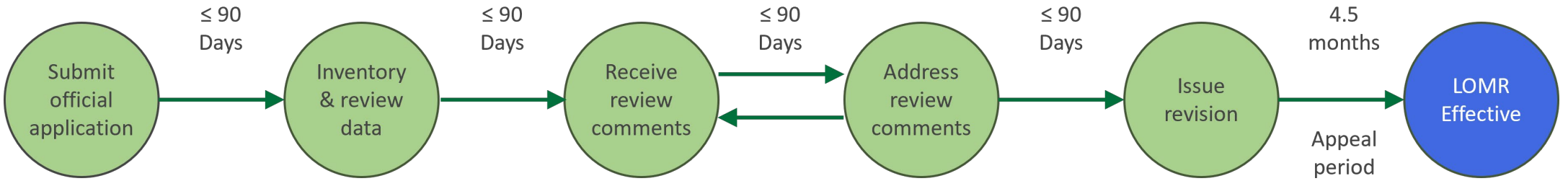
Submittal of Artifacts

- Incomplete Re-submissions
  - If the data changes because of the additional data requested, please provide updated items as necessary
    - Narrative
    - Certified Workmap
    - Annotated FIRM



General Timeline

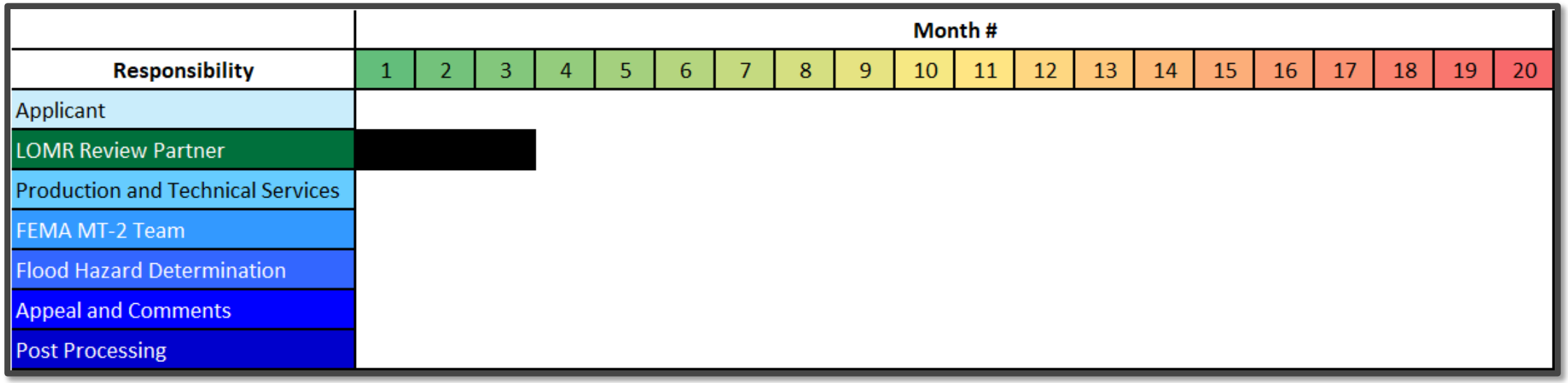
Overview of MT-2 Processing



- Two additional data requests. (Target)
- Applicant receives an automatically generated email from FEMA.
- The case reviewer will send another acknowledgement to establish a point of contact.

Overview of MT-2 Processing

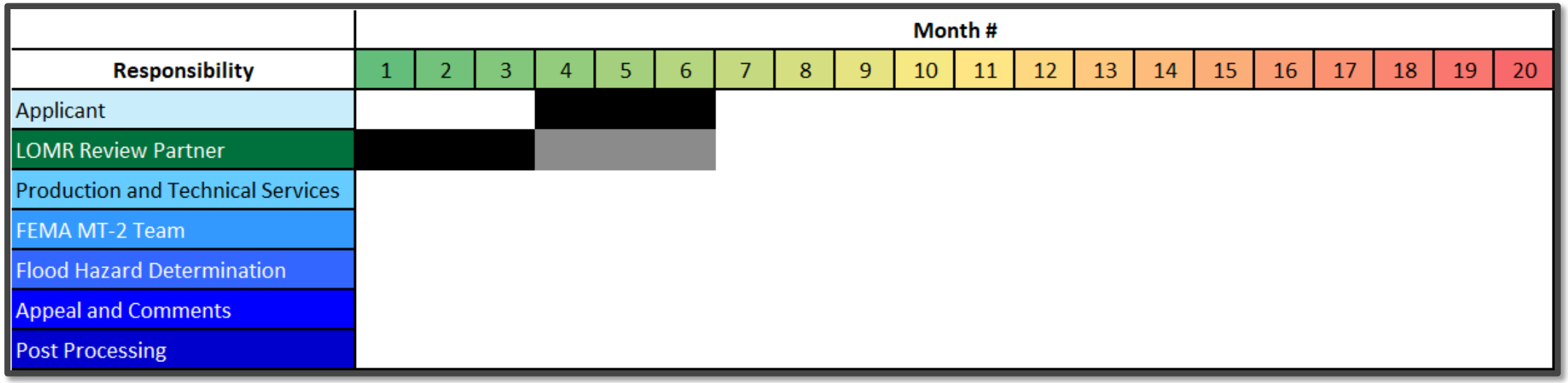
Inventory and Review Data Received



- 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.
  - Inventory the submission for completeness.
  - Gain understanding of the requestor's intent.
  - Gather information about the effective flood hazards

Overview of MT-2 Processing

Receive Additional Data

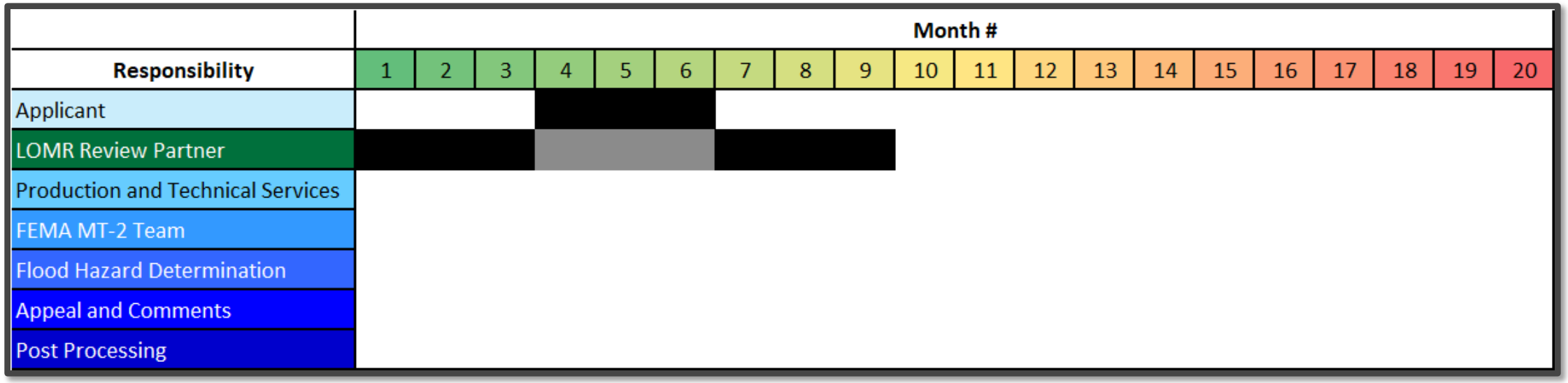


- When FEMA provides review comments, the applicant must adequately address all the comments within 90 days.
- Highly encouraged to discuss the 316-AD comments with the reviewer.
- The case can be suspended.
  - 316-INC letter.
- Late replies should be treated as original submissions.
  - Initial submittal procedures.
  - Initial payment fees.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Overview of MT-2 Processing

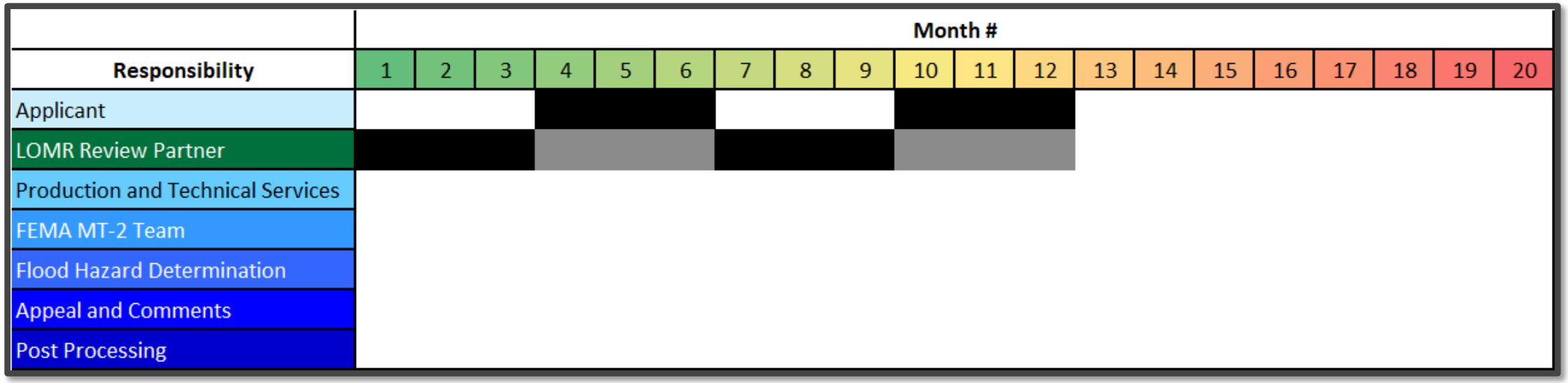
Review Data Received



- 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.

Overview of MT-2 Processing

Receive Additional Data

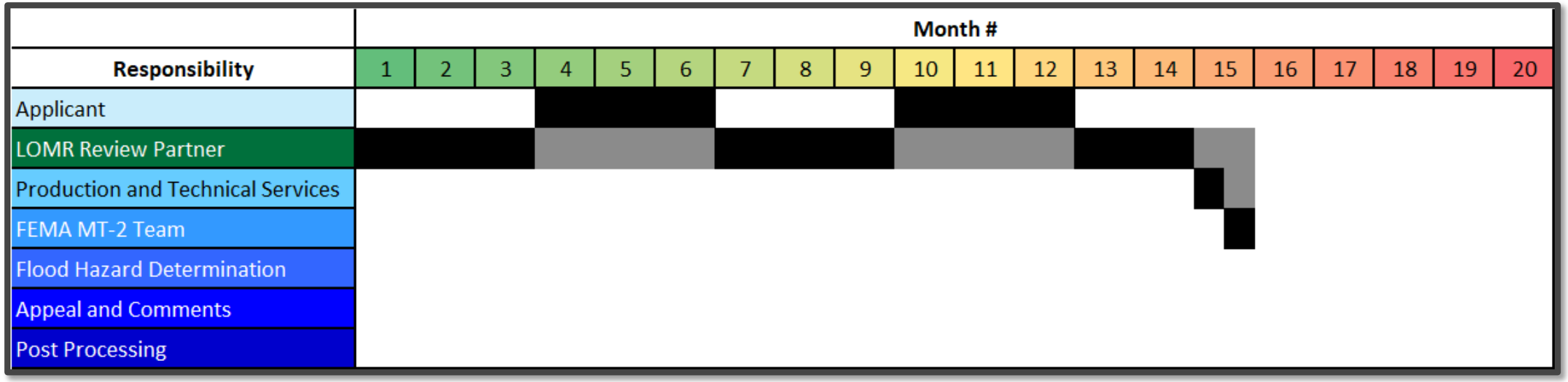


- When FEMA provides review comments, the applicant must adequately address all the comments within 90 days.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Overview of MT-2 Processing

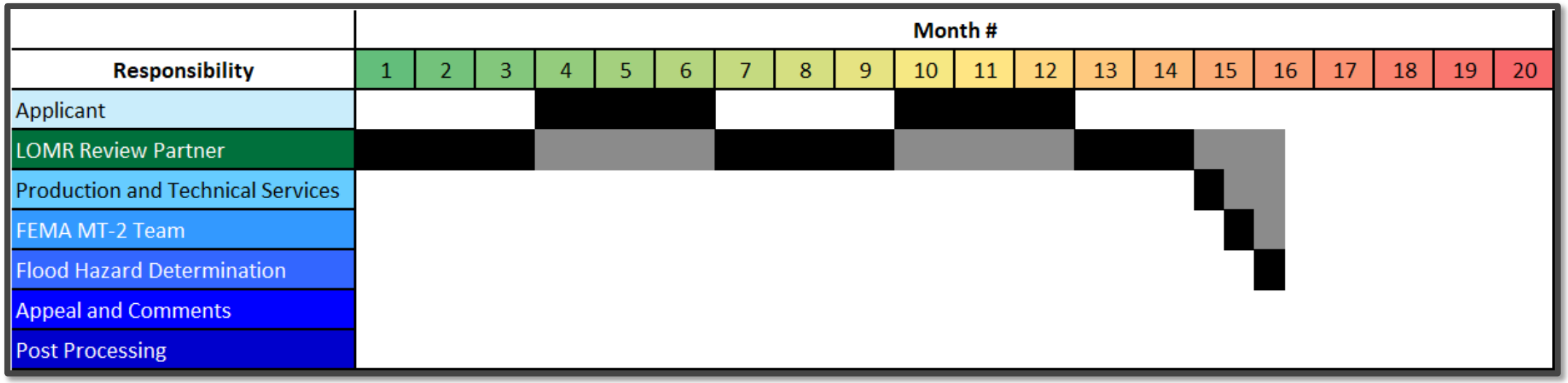
Review Data Received and Process the Request



- Reviewer closes review.
- Reviewer drafts determination.
  - Cover/Determination Letter.
  - Map Attachment/FIRMette.
  - Annotated FIS Documents.
  - Draft Flood Hazard Determination Notice.
- 3 tier audit.
  - Internal Peer Audit
  - External Production and Technical Service Contractor Audit
  - FEMA Audit
- FEMA issues the determination.
- CLOMR is effective at this point.

Overview of MT-2 Processing

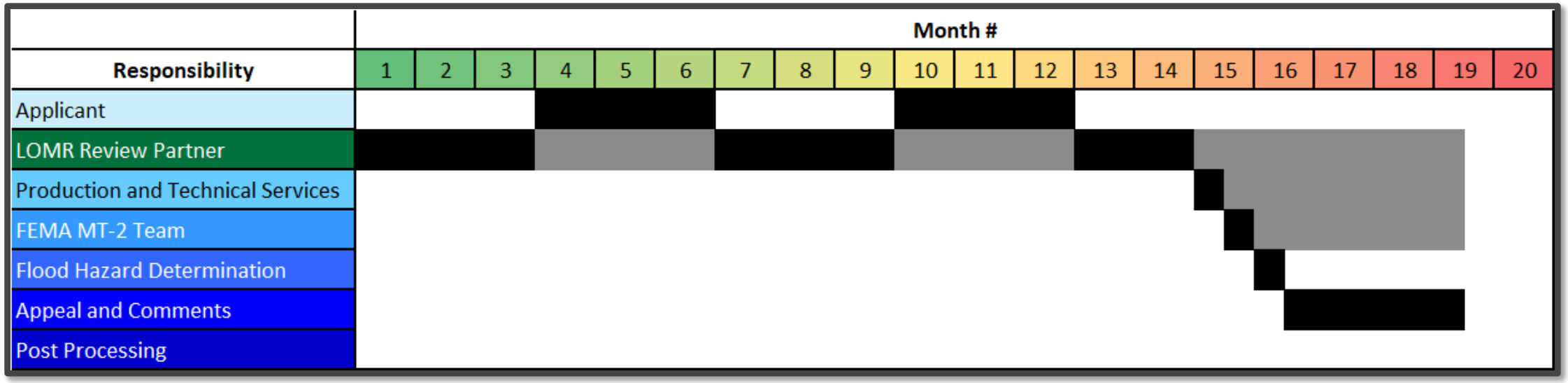
Review Data Received and Process the Request



- FHD Publication must be done twice
- Performed after the determination is issued.
- Must be done 14 days apart or less.
- Appeal period begins on the date of the 2nd publication.

Overview of MT-2 Processing

Appeals and Comments

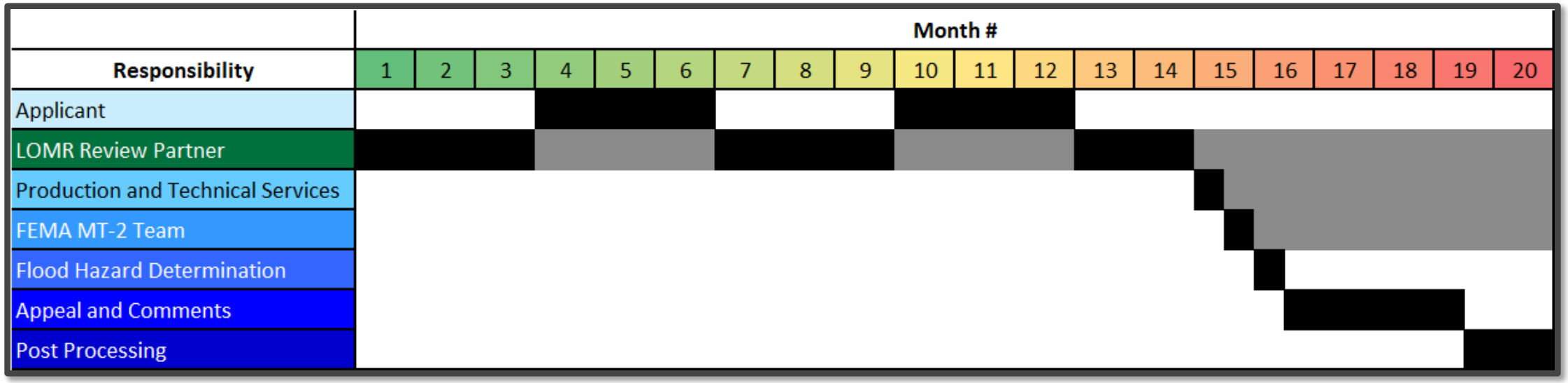


- Reviewer will help coordinate appeals.
- Appeals must be based on scientific and technical data.
- Community involvement by the applicant can resolve friction before this point.
- If the appeal is valid, the LOMR may be suspended.
- A revised LOMR incorporating the appeal data will be issued under a new case number.

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Overview of MT-2 Processing

Post Processing



- No valid appeals.
- Ready the GIS data for incorporation into the NFHL.
- Archive the file data.
- Prepare for the effective date.
- LOMR becomes effective on the Effective Date

DNR Indiana Department of Natural Resources | DIVISION OF WATER

References

- MT-2 Application Forms and Instructions
- MT-2 Requests, Guidance Document No. 106
- General Hydrologic Considerations, Guidance Document No. 71
- General Hydraulics Considerations, Guidance Document No. 52
- Floodway Analysis and Mapping, Guidance Document No. 79
- FEMA Flood Map Service Center (MSC)
- Guidance for FEMA's Risk Mapping, Assessment and Planning

DNR Indiana Department of Natural Resources

DIVISION OF WATER

MT-2 Revision Checklist

MT-2 REVISION REQUEST SUBMITTAL CHECKLIST

PART A: GENERAL REQUIREMENTS

ELEMENTS	Yes	N/A
NARRATIVE: Please provide a written description of the purpose of the request, the scope of the proposed/as-built project, and the methodology used to analyze the project effects.		
MT-2 APPLICATION FORMS: Please provide completed forms applicable to your request. Ensure that MT-2 Form 1 was signed by the requester, certifying engineer, and each community affected by the revision.		
HYDROLOGIC ANALYSIS: If applicable, please provide a FEMA-acceptable hydrologic analysis in digital format, a drainage area map, and associated backup information (e.g., calculations used to determine lag time, CN, and loss values, as well as land use and soil maps). FEMA-acceptable models can be accessed on their website.		
HYDRAULIC ANALYSIS: Please provide a FEMA-acceptable hydraulic analysis in digital format. Information on FEMA-acceptable models can be accessed on their website.		
CERTIFIED TOPOGRAPHIC WORK MAP: Please provide a certified topographic work map that meets the mapping requirements outlined in MT-2 Form 2. If available, please provide spatially referenced Geographic Information System (GIS) data. If GIS data is not available, you may submit digital Computer-Aided Design (CAD) data.		
ANNOTATED FIRM: Please submit a revised Flood Insurance Rate Map (FIRM), at the scale of the effective FIRM, which shows the revised boundary delineation of the base (1-percent-annual-chance) floodplain, 0.2-percent-annual-chance floodplain, and regulatory floodway and how it ties into the boundary delineation shown on the effective FIRM at the downstream and upstream ends of the revised reach.		
REVIEW FEE PAYMENT: Please include the appropriate review fee payment. The current fee schedule is available on the FEMA website at https://www.fema.gov/flood-maps/change-your-flood-zone/status/flood-map-related-fees.		
MEET 65.10 REQUIREMENT: If you intend to show that a berm/levee/floodwall reduces the flood hazard, please submit all the NFIP data requirements outlined in Title 44, Chapter 1, Section 65.10 of the Code of Federal Regulations (44 CFR §65.10).		
OPERATION AND MAINTENANCE PLAN: If the request involves a berm, levee, floodwall, dam, and/or detention basin project, please submit an officially adopted operation and maintenance plan.		
PROPOSED/AS-BUILT PLANS: Please submit proposed/as-built plans, certified by a registered Professional Engineer, for all project elements for which this applies.		
FLOODWAY NOTICE: If the revision results in changing or establishing regulatory floodway boundaries, please provide a floodway public notice or a statement by your community that it has notified all affected property owners, in compliance with the National Flood Insurance Program (NFIP) regulations at 44 CFR §65.7(b)(1).		
PROPERTY OWNER NOTIFICATION: If the revision results in any widening/shifting/establishing of a base floodplain and/or any increasing/establishing of Base Flood Elevations (BFEs), please provide copies of the individual legal notices sent to all property owners affected by increased flood hazards.		

PART B: CONDITIONAL LETTER OF MAP REVISION (CLOMR) - SPECIFIC REQUIREMENTS

ENDANGERED SPECIES ACT (ESA) COMPLIANCE: Please submit documentation of compliance with the ESA requirements. To learn more about ESA compliance, please see page 28 of the MT-2 instructions.		
REGULATORY REQUIREMENTS OF 44 CFR §65.12: If the proposed project results in BFE increases between the pre-project (existing) conditions and the proposed conditions, and they are more than 0.00 foot as a result of encroachment within a regulatory floodway, or more than 1.0 foot in a Zone AE area that has no regulatory floodway, please submit: (a) certification that no structures are affected by the increased BFE; (b) documentation of individual legal notices sent to all affected property owners, explaining the impact of the proposed action on their property; and (c) an evaluation of alternatives that would not result in a BFE increase.		

2023

MT-2 REVISION REQUEST SUBMITTAL CHECKLIST

Notes:

- Applicants are encouraged to submit their Letter of Map Change (LOMC) revision request using the Online LOMC tool. To learn more about the Online LOMC tool, please visit the FEMA website at https://hazards.fema.gov/femaportal/onlinelomc/signin.
- The MT-2 Guidance Document has been developed to supplement the information provided in these instructions. The MT-2 Guidance Document explains how the Department of Homeland Security (DHS), 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 (MT-2 requests).

2023

DNR Indiana Department of Natural Resources | DIVISION OF WATER

Contact Information

For questions about open LOMR/CLOMR cases, contact the specific case engineer

For additional questions about the presentation or general MT-2 requirements contact:

Deidre Hansen, Project Manager

Dahansen@dnr.in.gov