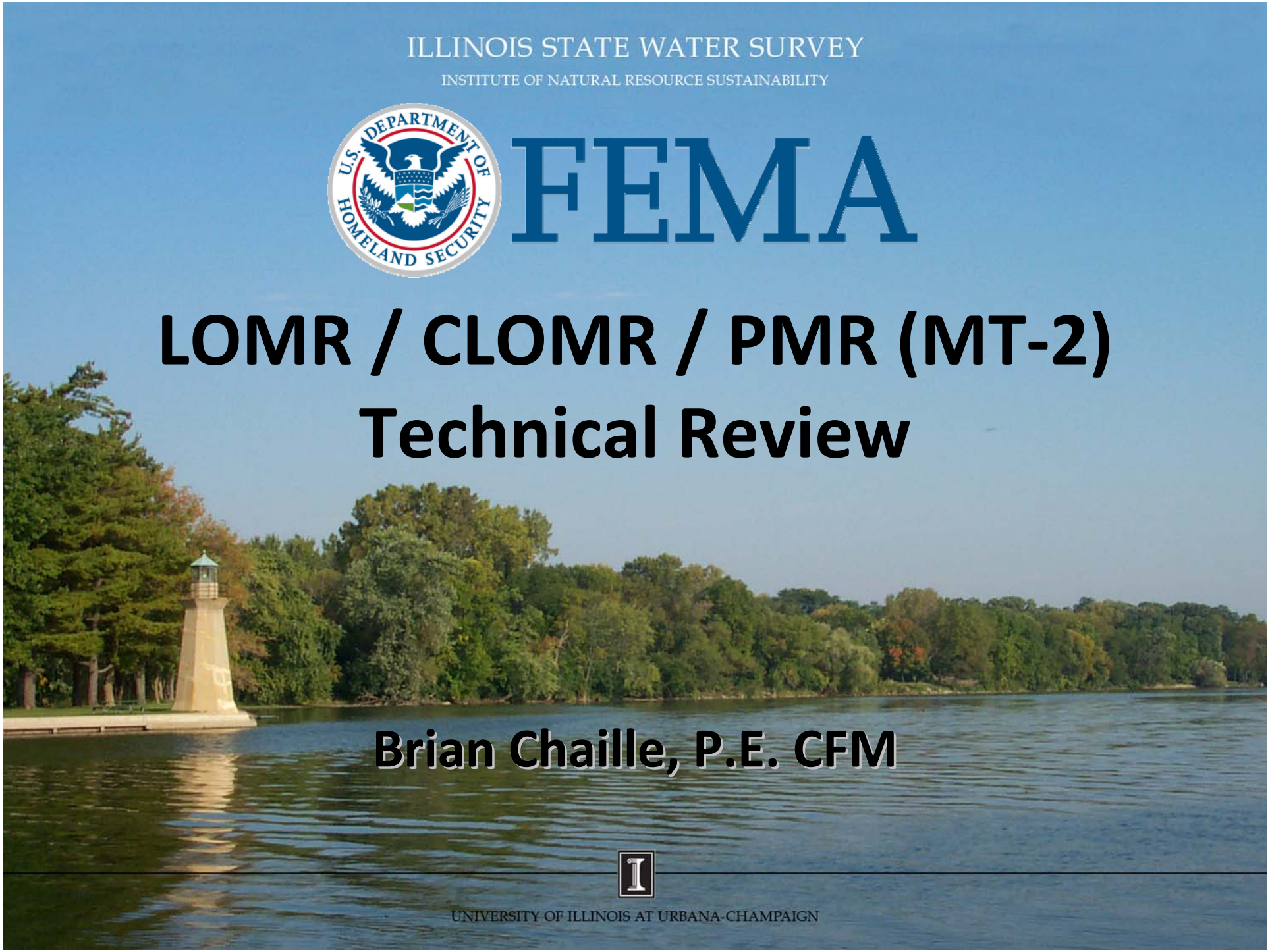


ILLINOIS STATE WATER SURVEY

INSTITUTE OF NATURAL RESOURCE SUSTAINABILITY

FEMA

LOMR / CLOMR / PMR (MT-2) Technical Review

Brian Chaille, P.E. CFM

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

We will cover …

- Some personal introduction
- Where to go to find and teach yourself what you need to know
- Where to find tools that may help
- An outline of a very complicated process

We will not cover …

- H & H 101 through graduate school
- Every FEMA regulation and requirement

Introduction

- Illinois State Water Survey – 2010
- Berns, Clancy and Associates – 1997
- US Geological Survey – 1995
- ISWS – 1994
- MSCE Hydro-Systems Engineering, University of Illinois – 1994
- IDOT District 5 – 1986

The Rules: Title 44 of The Code of Federal Regulations (CFR)

- **PART 59 — GENERAL PROVISIONS**
- **PART 60 — CRITERIA FOR LAND MANAGEMENT AND USE**
- **PART 65 — IDENTIFICATION AND MAPPING OF SPECIAL HAZARD AREAS**
- **PART 70 — PROCEDURE FOR MAP CORRECTION**
- **PART 72 — PROCEDURES AND FEES FOR PROCESSING MAP CHANGES**

The Rules: Title 44 of The Code of Federal Regulations (CFR)

- http://www.access.gpo.gov/nara/cfr/waisidx_02/44cfrv1_02.html
- e-CFR *Disclaimer: "*It is not an official legal edition of the CFR. The e-CFR is an editorial compilation of CFR material and Federal Register amendments produced by the National Archives and Records Administration's Office of the Federal Register (OFR) and the Government Printing Office. The OFR updates the material in the e-CFR on a daily basis."
- http://ecfr.gpoaccess.gov/cgi/t/text/textidx?c=ecfr&tpl=%2Findex.tpl

Review Goals & Approach

1. Comply with 44CFR.
2. Facilitate the MT-2 revision process.
3. Ensure consistent and reliable mapping data.
4. Focus on significant issues as much as possible, while Achieving Number 1.

Hydrologic & Hydraulic Analysis Basic Sources of Guidance

- MT-2 Forms and Instructions
  - http://www.fema.gov/plan/prevent/fhm/frm_form.shtm
- Guidelines and Specifications (G&S) for Flood Hazard Mapping Partners
  - Appendix C: Guidance for Riverine Flooding Analyses and Mapping (Note: Revision Pending)
  - http://www.fema.gov/library/viewRecord.do?id=2206
  - Procedure Memorandums (supersede G&S)
  - http://www.fema.gov/plan/prevent/fhm/gs_memos.shtm

Review Process

- CLOMR / LOMR Review is a two stage process
  - Initial Review
  - Detailed Review

Initial Review
(Inventory of submitted data)

- See Initial Inventory Checklist (Guide not Rule)
- Maybe less than 5% of Applications include everything in the first submittal
- Most Common Omissions:
  - All Forms Required
  - Fee
  - Community Acknowledgement
  - Public Notice of Floodway and BFE Changes
  - IDNR-OWR Concurrence
  - Compliance with Section 7 of Endangered Species Act
  - All models in an executable digital file format
  - Topo Work Maps and Watershed Boundary Maps
- Typically we will request additional data in the form of a 316-AD letter. This officially puts the “ball in your court”.

Initial Review
(Develop Grasp of Project)

- Project Narrative
- Explicit statement of the goal of the revision (e.g. revise the map from Zone A to Zone AE with floodway)
- Topo Workmaps
- Watershed Maps
- Latitude and Longitude
- Engineer's e-mail address
- Summary Tables

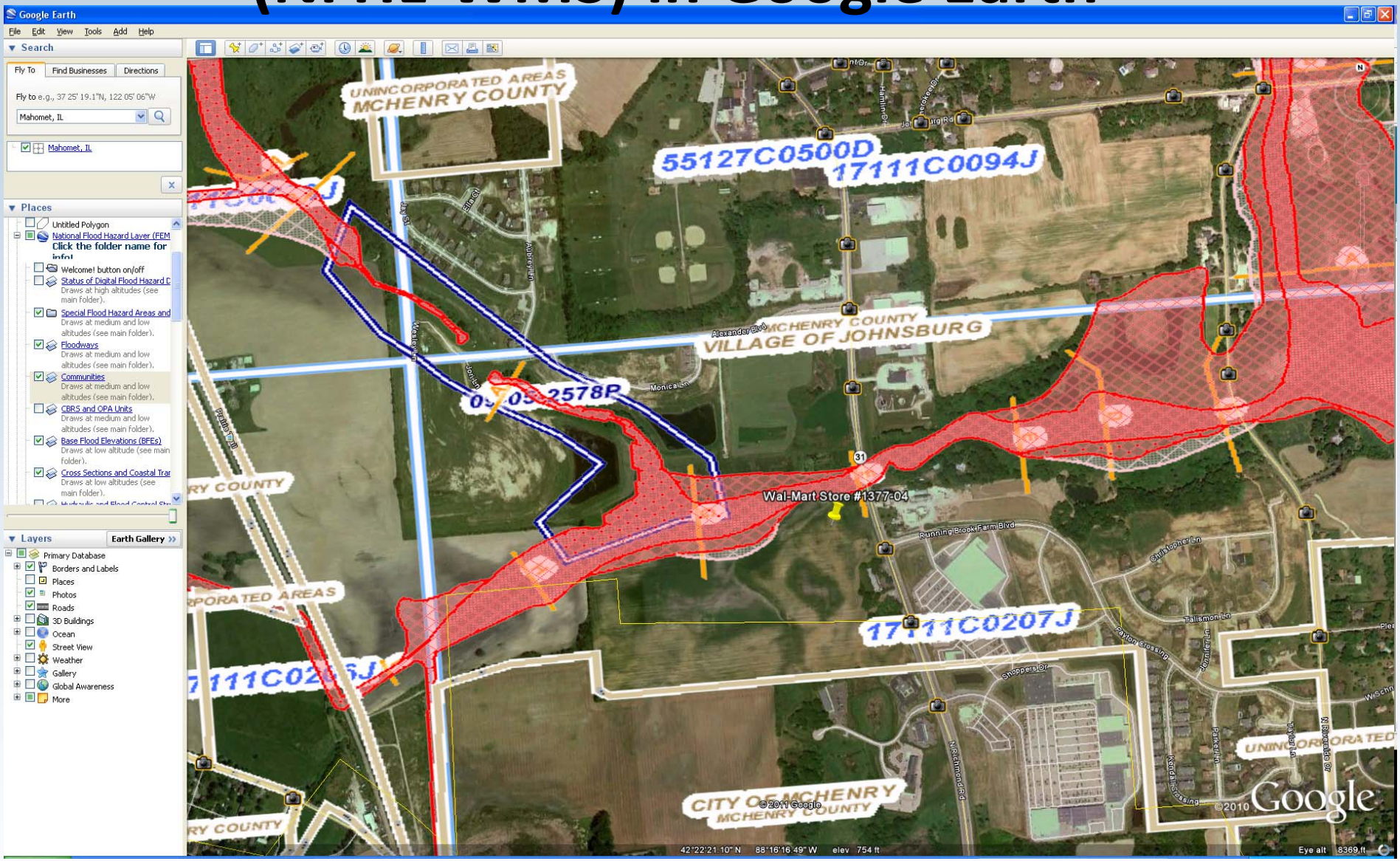
Detailed Review

- **Effective Condition and Models**
- Hydrology (if revised)
- Hydraulics
- Section 7 Compliance Endangered Species Act

Effective Condition and Models

- Useful tools to research the effective maps and models (how to find LOMC's)
- **National Flood Hazard Layer Web Map Service (NFHL-WMS) in Google Earth™**
  - **https://hazards.fema.gov/femaportal/wps/portal/NFHLWMSkmzdownload**
- The National Flood Hazard Layer (NFHL) contains information used to make flood hazard maps and allows you to view data from the National Flood Hazard Layer as an overlay in Google Earth. NFHL is available only as D-FIRMS go effective.

(NFHL-WMS) in Google Earth™



FEMA
Mapping Information Platform (MIP)

- https://hazards.fema.gov/femaportal/wps/portal/
- Map Viewer (similar results as Google Earth)
- Web Map Service (WMS) for the FEMA National Flood Hazard Layer (NFHL) for GIS Software
- Engineers, Surveyors, and Architects
  - http://www.fema.gov/plan/prevent/fhm/en_main.shtm
- LOMC Clearinghouse
  - (Please don't send your applications here! Requests take an extra 2-weeks to arrive and come unbound)

Obtaining Effective Models

- FEMA Engineering Library
  - http://www.fema.gov/plan/prevent/fhm/st_order.shtm
- Illinois State Water Survey
  - Bill Saylor: (217) 333-0447 wsaylor@illinois.edu
  - Bill often has the original documents and a thorough understanding of the history of effective studies
- Original study contractor or LOMC engineer

Detailed Review

- Effective Condition and Models
- **Hydrology (if revised)**
- Hydraulics
- Section 7 Compliance Endangered Species Act

Hydrologic Review

- Hydrologic Revision has a Big Impact on the scope of a mapping revision request
- Only significant increases are considered
  - Change greater than 1 standard deviation
  - Change greater than 0.5 ft. in water surface due to change in hydrology
- Expect to carry hydrologic and hydraulic modeling to a point where effective and proposed discharges and water surfaces can tie in smoothly (and < 0.5 ft of effective)

Hydrologic Review

To avoid discontinuities between the revised and unrevised flood data, the necessary hydrologic and hydraulic analyses submitted by the map revision requestor must be extensive enough to ensure that a logical transition can be shown between the revised flood elevations, flood plain boundaries, and floodways and those developed previously for areas not affected by the revision.

44 CFR 65.6(a)(2)

- For Hydrologic increases a downstream confluence with a larger river or lake may be the only logical transition

Hydrologic Review

However legitimate reasons may require hydrologic revision; such as:

- Availability of better rainfall data
  - ISWS Bulletin 70
  - NOAA Atlas 14

  Rather than:
  - NWS TP-40
  - NOAA Atlas-2
- Watershed Landuse Change
- Improved Methods (e.g. new regression equations)
- Corrections to Effective Studies
- CNMS 4:00 pm Wed. Session 3B – Invalid Studies Identified

Hydrologic Review

- USGS StreamStats
  - http://water.usgs.gov/osw/streamstats/illinois.html
  - Quick alternate “ball park” approach
  - Currently Approved Regression Equations for Rural Watersheds in Illinois
  - Also provides a quick check of watershed parameters such as area and slope
  - If your watershed is appreciably different from the StreamStats (autodeliniated to the 2005 10m DEM) you may want to ask yourself “Why?”

Hydrologic Review

- See Hydrology Checklist
- Approved Models
  - http://www.fema.gov/plan/prevent/fhm/en_hydro.shtm
- Watershed Maps
  - Scale, North Arrow, Boundaries, Drainage Network, Ponds, Landuse, Labels, CAD or GIS?
- USGS U.S. Board on Geographic Names
  - http://geonames.usgs.gov/redirect.html
  - If a name is not available use Trib 1.a.i … outline form

Hydrologic Review

- Focus on control structures and general storage volumes
- Written Commitment to Dedication of Reservoir Storage and Operating Plan
- Model Calibration
- Reasonableness

Hydrologic Review

- Basic Information
  - Reason for new hydrology
  - Methodology
  - Existing/future conditions
  - Comparison to existing studies, regression analysis, and or similar basins
- Detailed Information
  - Methodology appropriate
  - Methodology correctly applied
  - Source of input parameters
  - Input parameters correct

Hydrologic Review

- Required Data
  - Digital rainfall-runoff model
  - Drainage area map
  - Rainfall duration
  - Time of concentration calculation
  - Runoff curve number calculation sheet
  - Runoff coefficient acceptable (if rational equation is used)
  - Peaking Factor Adjustment

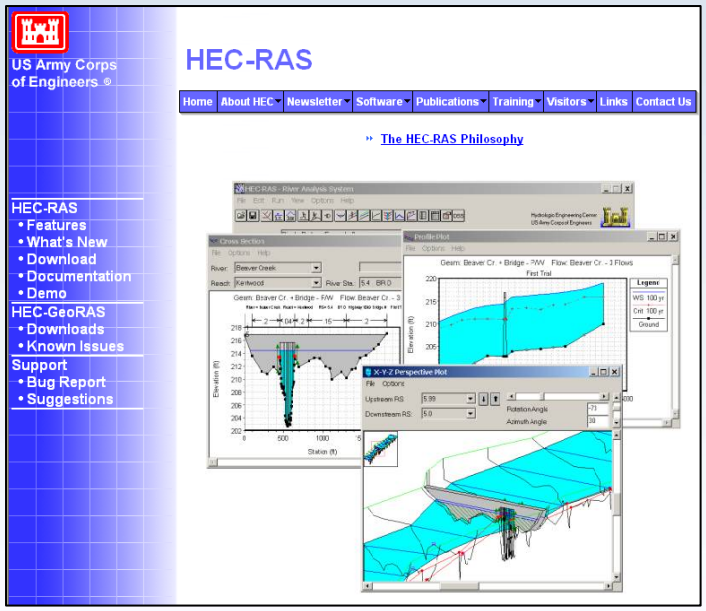
Detailed Review

- Effective Condition and Models
- Hydrology (if revised)
- **Hydraulics**
- Section 7 Compliance Endangered Species Act

FEMA Acceptable Hydraulic Model

Hydraulic Models Meeting the Minimum Requirement of NFIP

http://www.fema.gov/plan/prevent/fhm/en_hydra.shtm



Hydraulic Review

- All applicable models submitted? (Nearly all requests include Hydraulic Models, not all include hydrologic models)
- Hydraulic Models Required
  - Duplicate Effective
  - Corrected Effective
  - Existing / Pre-project
  - Post-project / Proposed
- Digital format: Executable (Make Sure They Run!)

Hydraulic Review

- Effective Hydraulic Model
  - The hydraulic analysis used in the effective FIS
- Duplicate Effective Hydraulic Model
  - A copy of the effective model reproduced on the requestors computer (Use Effective Discharges)
  - Should not be modified – unless required to allow model to run
    - E.g. adding distance from upstream XS to bridge
  - If the effective model is available:
    - Should match within 0.1 foot at all locations
  - If the effective model is not available:
    - New model calibrated to reproduce the FIS profile within 0.5 ft

Hydraulic Review

- Corrected Effective Model
  - Corrects errors in the duplicate effective
  - Adds cross sections
  - More detailed topography
  - May include new hydrology
  - Must NOT reflect man-made changes since the date of the effective model

- Existing Conditions Model (Pre-Project Conditions)
  - Modified version of the Duplicate or Corrected Effective model
  - Includes any modifications since the date of the Effective
  - New hydrology if revised
  - If no modifications since the effective:
    - The Duplicate Effective or Corrected Effective becomes the Existing Conditions

Hydraulic Review

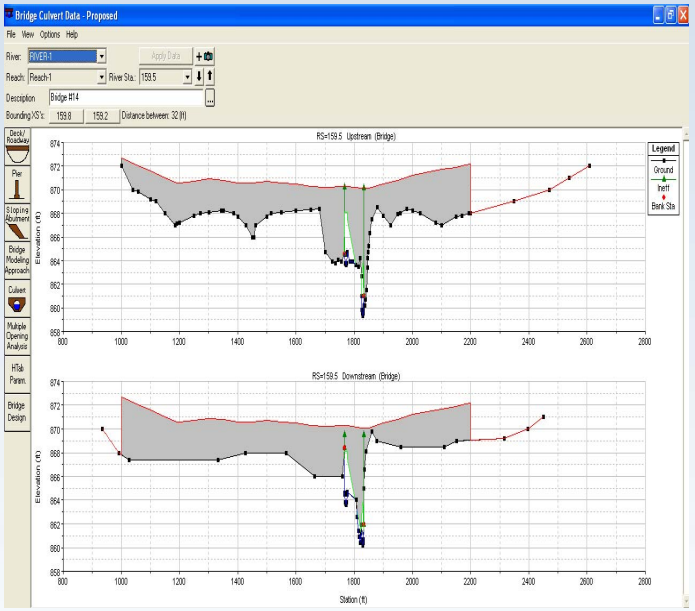
- Proposed or Post-Project Conditions Model
  - Modified version of the Existing Conditions model
  - Includes modifications to reflect the project
- Why all the models?
  - Isolate Changes
  - Identify Corrections
  - Evaluate Comparisons
  - Potential Violations
- No “Without Bridge” Model

Hydraulic Review

- Effective FIS data vs. Duplicate Effective
  - Should match within 0.1 foot at all locations
    - 0.5 ft if effective model is not available
  - Ensures:
    - The correct model is being used
    - The data was transferred correctly to the requestor's equipment
    - Revised data integrated into effective

Hydraulic Review

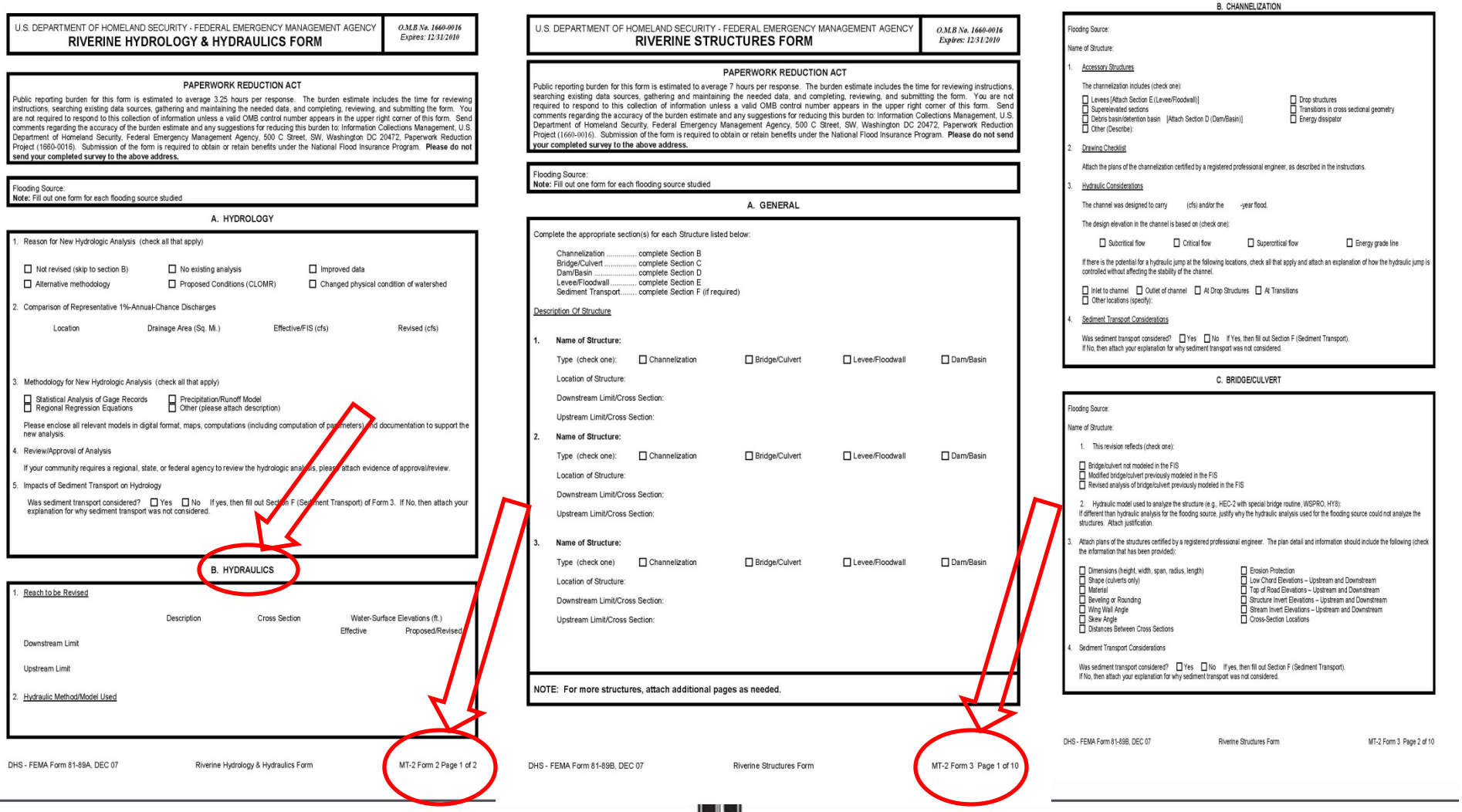
- Duplicate Effective/Corrected Effective vs. Existing
  - How do they compare?
  - Are there any potential violations
- Existing vs. Post Project
  - What are the true impacts of the project
- Effective vs. Post Project
  - Impact on the FIRM and FIS
  - Adverse impact notification



FEMA Software and Forms

- cHECk-RAS (You gotta do it!)
  - http://www.fema.gov/plan/prevent/fhm/frm_soft.shtm
  - http://www.bossintl.com/forums/hec-ras/16212-check-ras-error.html
  - a tool that identifies areas (or is the source) of potential error or concern
  - Good News! A new version of cHECk-RAS is due around the end of 2011
  - Contact John Magnotti, DHS/FEMA (FIMA) with questions, bugs and ideas to improve both cHECk-RAS and RAS-Plot: john.magnotti@dhs.gov
- MT-2 Form 2, entitled "Riverine Hydrology and Hydraulics Form" required for each flooding source
- MT-2 Form 3, entitled "Riverine Structures Form" required for any structures or channelization added or replaced since the effective model was developed

MT-2 Form 2 and Form 3



U.S. DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY
RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 1660-0016
Expires: 12/31/2010

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 3.25 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 a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, U.S. 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.**

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)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model
☐ 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

Was sediment transport considered? ☐ Yes ☐ No If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit				
Upstream Limit				

2. Hydraulic Method/Model Used

DHS - FEMA Form 81-89A, DEC 07 Riverine Hydrology & Hydraulics Form MT-2 Form 2 Page 1 of 2

U.S. DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY
RIVERINE STRUCTURES FORM

O.M.B No. 1660-0016
Expires: 12/31/2010

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 7 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 a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, U.S. 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.**

Flooding Source:
Note: Fill out one form for each flooding source studied

A. GENERAL

Complete the appropriate section(s) for each Structure listed below:

Channelization ..... complete Section B
Bridge/Culvert ..... complete Section C
Dam/Basin ..... complete Section D
Levee/Floodwall ..... complete Section E
Sediment Transport..... complete Section F (if required)

Description Of Structure

1. **Name of Structure:**
Type (check one): ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam/Basin
Location of Structure:
Downstream Limit/Cross Section:
Upstream Limit/Cross Section:

2. **Name of Structure:**
Type (check one): ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam/Basin
Location of Structure:
Downstream Limit/Cross Section:
Upstream Limit/Cross Section:

3. **Name of Structure:**
Type (check one) ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam/Basin
Location of Structure:
Downstream Limit/Cross Section:
Upstream Limit/Cross Section:

NOTE: For more structures, attach additional pages as needed.

DHS - FEMA Form 81-89B, DEC 07 Riverine Structures Form MT-2 Form 3 Page 1 of 10

B. CHANNELIZATION

Flooding Source:

Name of Structure:

1. Accessory Structures

The channelization includes (check one):

☐ Levees [Attach Section E (Levee/Floodwall)] ☐ Drop structures
☐ Superelevated sections ☐ Transitions in cross sectional geometry
☐ Debris basin/detention basin [Attach Section D (Dam/Basin)] ☐ Energy dissipator
☐ Other (Describe):

2. Drawing Checklist

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Hydraulic Considerations

The channel was designed to carry (cfs) and/or the -year flood.

The design elevation in the channel is based on (check one):

☐ Subcritical flow ☐ Critical flow ☐ Supercritical flow ☐ Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

☐ Inlet to channel ☐ Outlet of channel ☐ At Drop Structures ☐ At Transitions
☐ Other locations (specify):

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source:

Name of Structure:

1. This revision reflects (check one):

☐ Bridge/culvert not modeled in the FIS
☐ Modified bridge/culvert previously modeled in the FIS
☐ Revised analysis of bridge/culvert previously modeled in the FIS

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8):
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

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) ☐ Erosion Protection
☐ Shape (culverts only) ☐ Low Chord Elevations – Upstream and Downstream
☐ Material ☐ Top of Road Elevations – Upstream and Downstream
☐ Beveling or Rounding ☐ Structure Invert Elevations – Upstream and Downstream
☐ Wing Wall Angle ☐ Stream Invert Elevations – Upstream and Downstream
☐ Skew Angle ☐ Cross-Section Locations
☐ Distances Between Cross Sections

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☐ No If yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

DHS - FEMA Form 81-89B, DEC 07 Riverine Structures Form MT-2 Form 3 Page 2 of 10

MT-2 Form 2 Common Problems

- **Form 2: Riverine Hydrology & Hydraulics Form**

  - Duplicate, Corrected, Pre-Project, or Post-Project models not submitted or inconsistent
  - Floodway not analyzed where needed
  - All FIS recurrence intervals not analyzed
  - Revised analysis does not tie in upstream or downstream

MT-2 Form 3 Common Problems

- **Form 3: Riverine Structures Form**

  - Form not submitted
  - Topographic work map with contours not submitted
  - All information not shown on map
  - Annotated FIRM not submitted
  - Datum inconsistent
  - Revised boundaries do not tie into effective floodplain/floodway boundaries

MT-2 Form 3 Common Problems

- **Form 3: (cont.)-Channelization**
  - Form not submitted
  - Adequate channel description not provided
  - Adequate channel lining not provided
  - Hydraulic jump not checked

- **Form 3: (cont.)-Bridge and Culvert**
  - Form not submitted for each new or altered bridge or culvert
  - Inadequate data on structure provided
  - Wrong method used to model structure (e.g. Special Bridge, Normal Bridge)

Dam!

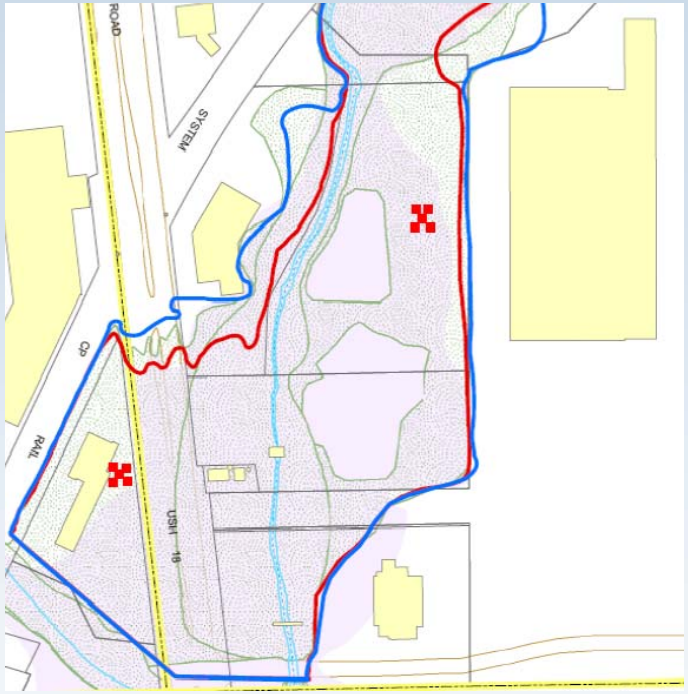
For regulatory purposes the Illinois Department of Natural Resources Office of Water Resources (IDNR-OWR) defines a dam as:

"All obstructions, walls, embankments or barriers, together with their abutments and appurtenant works, if any, constructed for the purpose of storing or diverting water or creating a pool."

IDNR-OWR has regulatory authority over dams in the state, independent of contributory drainage area, normal pool elevation, height, class or impoundment. Some small Class III dams do not require a permit. If a permit is required, (either formal or general permits) Section D of Form 3 is required in full. At a minimum a Jurisdictional Determination is required from the IDNR-OWR Dam Safety Permit Program.

Detailed Technical Review Hydraulics

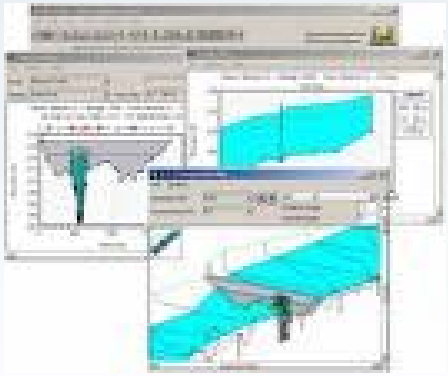
- Basic Information
  - Methodology
  - Are the discharge rates correct?
  - Is flow regime subcritical
  - Starting water surface method



- Cross Sections
  - Source of geometry data and datum
  - Is the datum the same as the effective FIS
  - Channel lengths
  - XS spacing and alignments reasonable
  - XS geometry matches work map
  - Coefficients reasonable (Manning's “n”, Exp/Cont)
  - Ineffective flow areas/blocked obstructions used appropriately

Detailed Technical Review Hydraulics

- Bridges and Culverts
  - Source of geometry data and datum
  - Is the datum the same as the effective FIS
  - Does structure geometry match survey or as-built info
  - XS spacing correct
  - Ineffective flow areas/blocked obstructions used appropriately
  - Modeling approach and coefficients reasonable
- Other Hydraulic Structures
  - Modeling method. Reasonable?

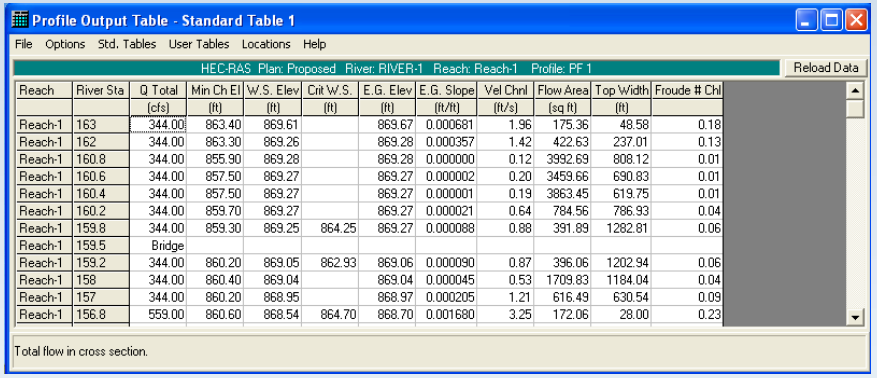


Model Comparison

- Effective vs. Existing/Pre-project vs. Proposed/Post-Project
  - Prepare comparison Excel spreadsheet
    - BFEs
    - Floodplain top-widths
    - Floodway top-widths
  - BFEs must tie-in within 0.5 feet (effective vs. proposed)
  - Top-widths must agree within 5% of the effective map scale
- Include preliminary FIS data in comparison, if necessary

Detailed Technical Review Hydraulics

- Results
  - Floodway
    - Equal encroachments
    - Acceptable surcharges
    - Delineation makes sense
  - Profiles reasonable
  - XS results reasonable
  - Unusual error messages
  - Defaults to critical
  - Any calibration data used (not necessary)



Profile Output Table - Standard Table 1

File Options Std. Tables User Tables Locations Help

HEC-RAS Plan: Proposed River: RIVER-1 Reach: Reach-1 Profile: PF 1 — Reload Data

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	163	344.00	863.40	869.61		869.67	0.000681	1.96	175.36	48.58	0.18
Reach-1	162	344.00	863.30	869.26		869.28	0.000357	1.42	422.63	237.01	0.13
Reach-1	160.8	344.00	855.90	869.28		869.28	0.000000	0.12	3992.69	808.12	0.01
Reach-1	160.6	344.00	857.50	869.27		869.27	0.000002	0.20	3459.66	690.83	0.01
Reach-1	160.4	344.00	857.50	869.27		869.27	0.000001	0.19	3863.45	619.75	0.01
Reach-1	160.2	344.00	859.70	869.27		869.27	0.000021	0.64	784.56	786.93	0.04
Reach-1	159.8	344.00	859.30	869.25	864.25	869.27	0.000088	0.88	391.89	1282.81	0.06
Reach-1	159.5	Bridge									
Reach-1	159.2	344.00	860.20	869.05	862.93	869.06	0.000090	0.87	396.06	1202.94	0.06
Reach-1	158	344.00	860.40	869.04		869.04	0.000045	0.53	1709.83	1184.04	0.04
Reach-1	157	344.00	860.20	868.95		868.97	0.000205	1.21	616.49	630.54	0.09
Reach-1	156.8	559.00	860.60	868.54	864.70	868.70	0.001680	3.25	172.06	28.00	0.23

Total flow in cross section.

Detailed Review

- Effective Condition and Models
- Hydrology (if revised)
- Hydraulics
- **Section 7 Compliance Endangered Species Act**

Endangered Species Act (ESA) and CLOMCs (CLOMR & CLOMR-F)

Background

- Congress passed the Endangered Species Act (ESA) in 1973
- The Services implement ESA
  - The U.S. Department of Interior's **Fish and Wildlife Service** and the U.S. Department of Commerce's **National Marine Fisheries Service** (collectively known as "the Services")
- Differs from the Illinois State Endangered Species Act and List. EcoCAT does not suffice, but may be useful documentation.

Section 7

- Under Section 7 of the ESA, Federal agencies are required to ensure their discretionary programs and actions do not jeopardize continued existence of listed species or adversely modify designated critical habitat
  - For mapping issues, FEMA only has discretion over CLOMRs and CLOMR-Fs

Section 9

- Section 9 of the ESA prohibits anyone from "taking" or "harming" a threatened or endangered species
  - "Take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct and may include habitat modification or degradation.
  - "Harm" can arise from significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

Section 10

- If an action might harm a threatened or endangered species, a permit is required from the Services under Section 10 of the ESA.

Issue

- Conditional Letters of Map Change (CLOMCs) are issued before a physical action occurs in the floodplain and represent FEMA's comments on proposed changes to National Flood Insurance Program maps.

- Because CLOMR-Fs and CLOMRs are submitted to FEMA prior to construction, FEMA has an opportunity to identify that threatened and endangered species may be affected by a potential project.

Summary of ESA Requirements and Map Changes

Request	ESA-related Action	ESA Requirement Related to FEMA Process
Conditional LOMC Requests		
CLOMA	No physical modification to floodplain is proposed.	ESA compliance is required independently of FEMA's process. The community needs to ensure that permits are obtained per requirement under Section 60.3(a)(2) of FEMA's regulations.
CLOMR-F	Proposed placement of fill in the floodplain.	ESA compliance must be documented to FEMA prior to issuance of CLOMR-F. FEMA must receive confirmation of ESA compliance from the Services.
CLOMR	Proposed modifications of floodplains, floodways, or flood elevations based on physical and/or structural changes.	ESA compliance must be documented to FEMA prior to issuance of CLOMR. FEMA must receive confirmation of ESA compliance from the Services.
LOMC Requests		
LOMA	No physical modification to floodplain has occurred.	ESA compliance is required independently of FEMA's process. The community needs to ensure that permits are obtained per requirement under Section 60.3(a)(2) of FEMA's regulations.
LOMR-F	Placement of fill in floodplain has occurred.	ESA compliance is required independently of FEMA's process. The community needs to ensure that permits are obtained per requirement under Section 60.3(a)(2) of FEMA's regulations.
LOMR	Modifications of floodplains, floodways, or flood elevations have occurred based on physical and/or structural changes.	ESA compliance is required independently of FEMA's process. The community needs to ensure that permits are obtained per requirement under Section 60.3(a)(2) of FEMA's regulations.

Action

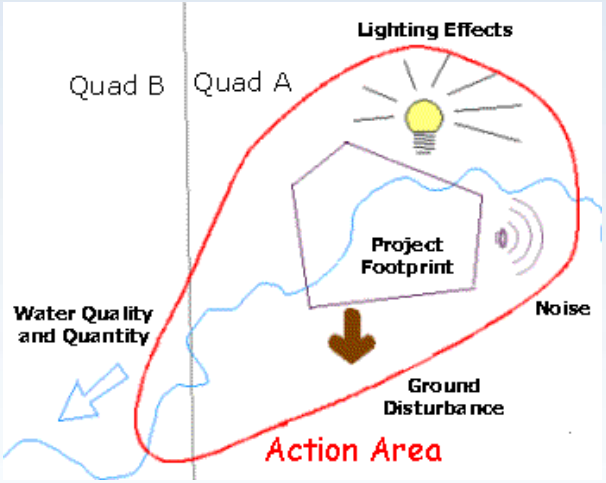
- For CLOMR-F and CLOMR applications, the submittal will be reviewed based on:
  - Required data elements cited in the NFIP regulations
  - Required data elements cited in the MT-1 and MT-2 Application/Certification Form instructions
  - Demonstrated compliance with the ESA
    - **The CLOMR-F or CLOMR request will be processed by FEMA only after FEMA receives documentation from the requestor that demonstrates compliance with the ESA.**

Demonstration of Compliance

- Incidental Take Permit
- Incidental Take Statement
- “Not Likely to Adversely Affect” determination from the Services
- An official letter from the Services concurring that the project has “No Effect” on listed species or critical habitat
- BUT…USFWS Midwest Region is prohibited from providing an official letter concurring with a determination of “No Effect”

So …

http://www.fws.gov/midwest/Endangered/section7/s7process/Index.html



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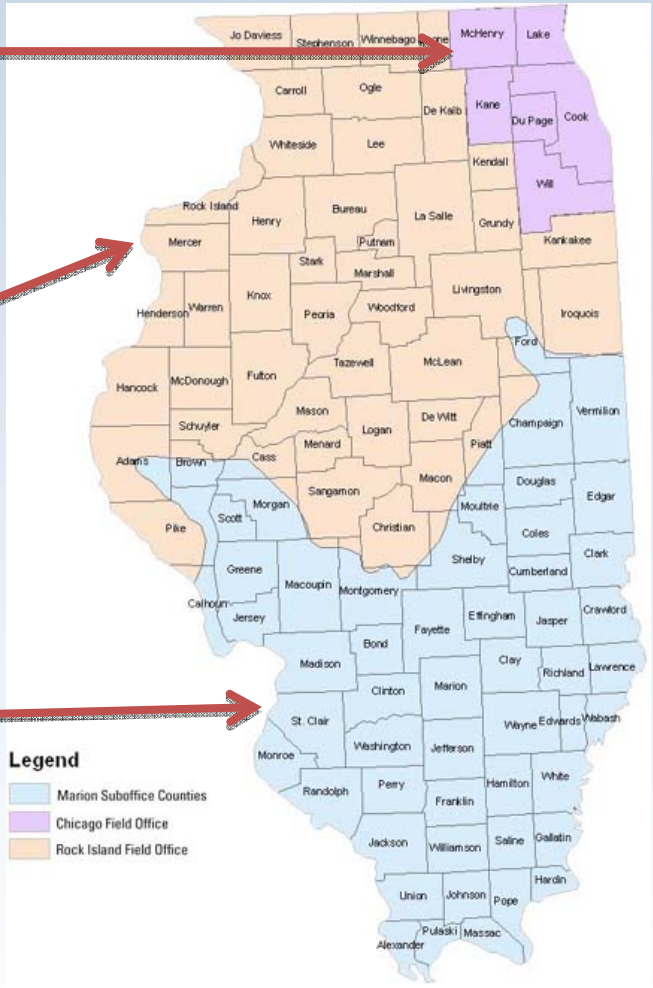
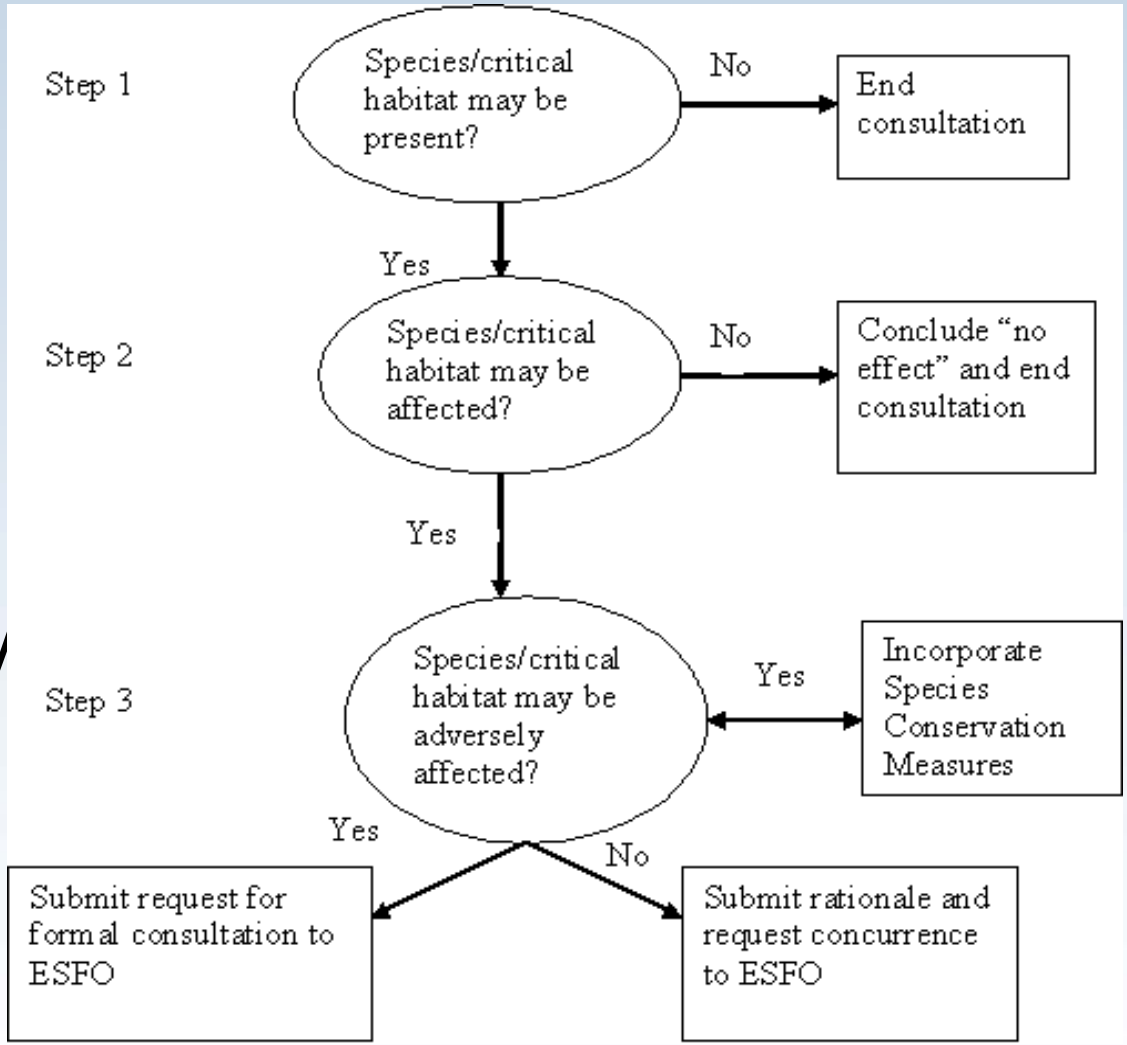


Section 7 ESA Flow Chart

- "No Effect"
- "May Effect"
- "Not Likely to Adversely Affect"
- "May Adversely Effect"



No Effect (NE)

- "Action won't pose any effects to listed species or designated critical habitat."
  - Effects are measured at the individual scale not population scale
  - Consider effects through indirect means e.g. changes in habitat or hydrology
- Provide documented rationale for findings
- Floristic Quality Assessment

May Effect – Not Likely to Adversely Affect (NLAA)

- "Effects on listed species are expected to be discountable, insignificant or beneficial."
  - Discountable: extremely unlikely to occur
  - Insignificant: not able to meaningfully measure, no "Take" will ever occur
  - Beneficial: positive effects without even short term adverse effects
- Informal Service consultation, prepare biological assessment on impacts to the species, request concurrence letter from the Service

May Effect – Likely to Adversely Affect (LAA)

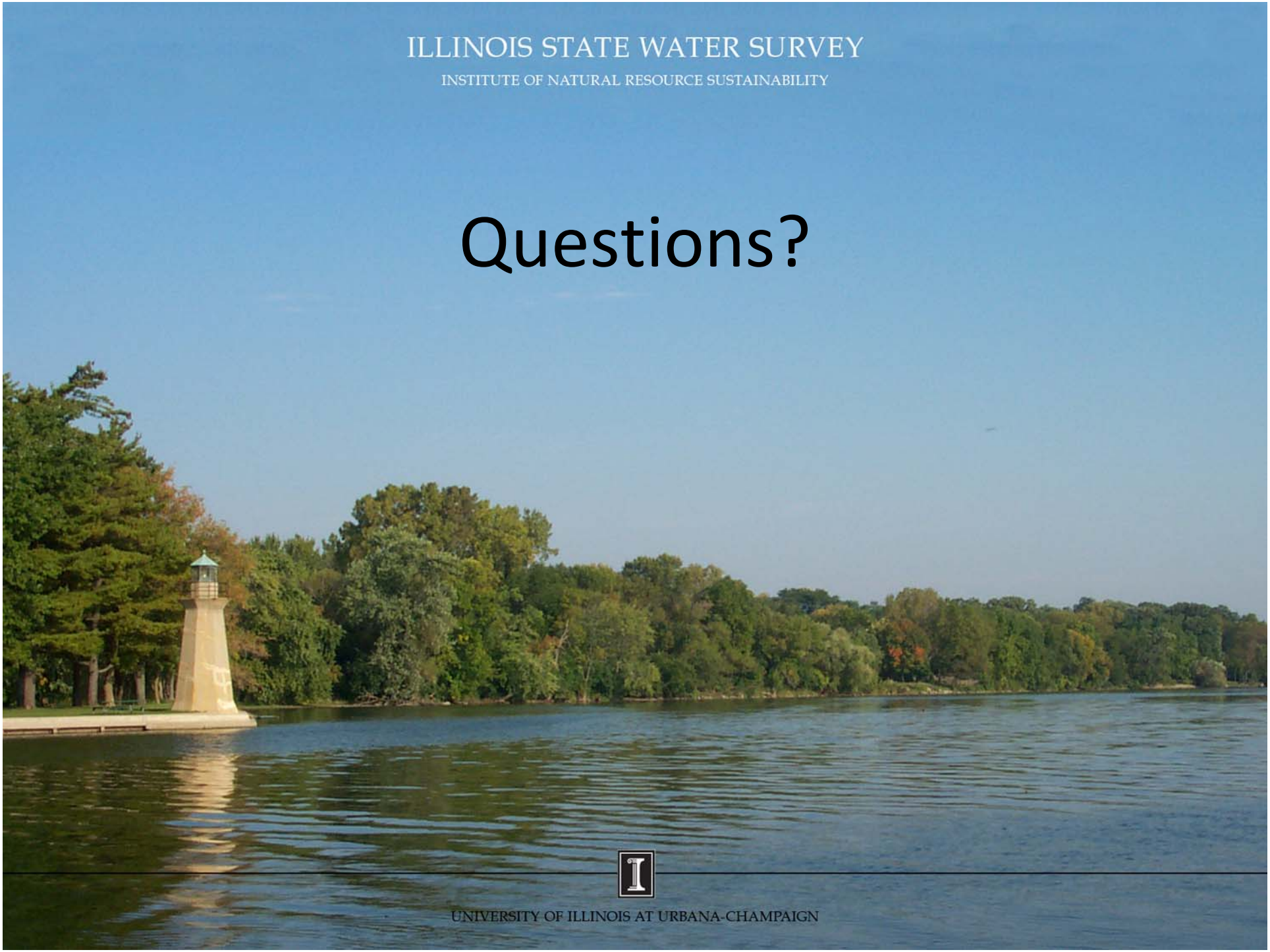
- Any adverse effect that is not insignificant or discountable
- Submit biological assessment, request formal consultation from the Service
- Service will develop a Biological Opinion
  - No Jeopardy/ No Adverse Modification
  - Jeopardy/Adverse Modification with Reasonable and Prudent Alternatives

ESA Summary

- ESA documentation is a CLOMR requirement
- Cases are suspended if not received in 90 days
- Applies only to CLOMRs and CLOMR-Fs
  - Other LOMCs either do not change the floodplain (CLOMA, LOMA) or are already on the ground
- Individual compliance is already required; FEMA now requires proof
- FEMA/contractor staff will not assist in the compliance process – applicant must work with Service
- MT-1 and MT-2 forms are being updated
- In effect 10/1/2010

What We Covered …

- Introductions
- Rules
- Guidance & Resources
- Tools & Checklists
- Effective Condition and Models
- Hydrology (if revised)
- Hydraulics
- Section 7 Compliance Endangered Species Act


ILLINOIS STATE WATER SURVEY
INSTITUTE OF NATURAL RESOURCE SUSTAINABILITY
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