



Curriculum Vitae
Christopher R. Hanstad, P.E., CFM, MSCE

Contact Information

Chris Hanstad

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Areas of Expertise – Civil Engineering

- FEMA Floodway Violations
- Flood Loss Avoidance Studies
- Drainage Issues
- Flood Damage Assessment Modeling
- Letters of Map Revisions (LOMRs)
- Hydrologic and Hydraulic Analysis
- Floodplain Modeling

Qualifications

Education

University of Illinois at Urbana Champaign

Bachelor of Science in General Engineering, 2008

Master of Science in Civil Engineering, 2016

Emergency Management Institute

Managing Floodplain Development Through the NFIP, August 2010

Active Registrations

Illinois Licensed Professional Engineer, License No. 062065692

Indiana Licensed Professional Engineer, License No. PE11800582

Wisconsin Licensed Professional Engineer, License No. 46881-6

Certified Floodplain Manager, IL-10-00536

Professional Memberships

Illinois Association for Floodplain and Stormwater Management

Champaign Urbana Hydraulic Engineers Luncheon

Professional Experience Summary

Employment History

Illinois State Water Survey

2008 to Present

As a project engineer I've managed and led the Illinois LOMR Review Partners program from its inception to review and make determination decisions for floodplain revision applications. I've also led a variety of

floodplain modeling projects to update floodplain maps, evaluate flood mitigation alternatives, and conduct loss avoidance studies.

Hanstad Engineering Services, LLC

2018 to Present

As Founder and President of this engineering firm, I've taken on projects ranging from watershed hydrologic analysis to floodplain violation modeling. I have also provided litigation expert witness consulting services for floodplain violations as well as drainage disputes.

Presentations

"LOMR/CLOMR Process" Pre-conference workshop 2011 IAFSM Annual Conference.

"LOMR/CLOMR Process" Illinois Society of Professional Engineers Bootcamp, October 5, 2011, Springfield, Illinois.

"LOMR/CLOMR Process" IAFSM Floodplain Management Workshop October 11, 2011, Wheaton, Illinois.

"Changing Your Floodplain Maps" February 15, 2012, Champaign, Illinois

"Flood Insurance Map Revisions" 2013 IAFSM Annual Conference

"Revising Your Maps: Insights for Communities on the CLOMR/LOMR Process" March 9, 2016 IAFSM Annual Conference

"Floodplain 101" March 12, 2019 East Peoria, Illinois

"Community Rights and Responsibilities for Floodplain Mapping" March 14, 2019 IAFSM Conference, East Peoria, Illinois

"Floodplain 101" September 18, 2019, Wheaton, Illinois

"Floodplain Mapping for County Engineers" Illinois Association of County Engineers, October 10, 2019, East Peoria, Illinois

"LOMRs and RAS Mapper" IAFSM Young Professionals Webinar, June 24, 2020

"Cache River Valley 2D Floodplain Analysis" Association of State Floodplain Managers National Conference, May 13, 2021

Expert Witness Qualifications

As the leader for LOMR Review Partner program in Illinois for 10 years, I have personally made determination decisions for hundreds of LOMR applications. These applications were approved or denied based on whether or not they met rigorous floodplain modeling technical standards and whether or not floodplain projects comply with National Flood Insurance Program (NFIP) regulations. My approval of a LOMR application would result in a revision to FEMA floodplain maps.

My strength as an investigator is my ability to critique floodplain analyses from a wide array of engineers and formally communicate technical deficiencies in a clear and professional manner.

I have in-depth knowledge of the NFIP regulations that pertain to non-compliant development or construction in the floodway and have practical experience evaluating the flood risk impacts of non-compliant floodway construction. I have personally made 7 floodway violation recommendations to FEMA.

In addition to making LOMR application determinations, I regularly perform floodplain modeling analysis, often recreating observed flood conditions to validate an analysis or estimate flood losses.

Expert Witness Experience

Flooding Due to Private Floodway Violation, Salem, IN – 2018

Private Property Drainage Issue in Cary, IL – 2019

Floodway Permitting Dispute in Goshen, IN – 2020

Jordan Lake Flooding for Bagurdes v. Town of Jackson, WI - 2021

Floodplain Analysis Qualifications

My primary technical experience is in floodplain modeling and analysis with over 10 years of focused experience in evaluating and performing floodplain analysis to update FEMA floodplain maps.

As the lead LOMR investigator for the State of Illinois for over 8 years, I have reviewed and approved a wide variety of floodplain models and analyses and am highly skilled at evaluating the critical details that affect the results of an analysis.

In addition to evaluating floodplain analyses, I also have performed numerous floodplain modeling projects ranging from small neighborhood drainages to 3,000 sq. miles watersheds using a variety of techniques and methodologies. The vast majority of floodplain modeling projects I have performed have been used to update FEMA floodplain maps which must meet rigorous technical standards.

The unique aspect of my qualifications that sets me apart is the merging of my in-depth knowledge of the NFIP regulations with my technical skills as a floodplain modeler. This specialized combination of regulatory and technical expertise qualify me to provide independent floodplain analysis review and provide detailed hydrologic and hydraulic analysis to support floodplain revisions.

I also have GIS skills which I have regularly used for geospatial processing and analysis to interpret floodplain modeling results into actionable information. These spatial skills along with my technical writing ability allow me to clearly communicate complex information to a wide variety of audiences.

Floodplain Analysis Experience

Below is a sampling of the representative floodplain analysis projects that I have performed:

Hydrology Modeling

HEC-HMS model development for 3 stream miles in Clay County, IL for floodplain remapping.

HEC-HMS model development for 35 stream miles and verification with high water marks in Effingham County, IL for floodplain remapping.

HEC-HMS model development for 7 stream miles in Crossville, IL for floodplain remapping.

HEC-HMS model development and verification for Fulton, IL 6th Avenue Basin and evaluation of flood mitigation alternatives.

Neu Creek HEC-HMS model development and Coordinated Discharges development in Posey County, IN.

Little Wabash River HEC-HMS model development and calibration with verification for floodplain remapping.

HEC-HMS model development and calibration for Kickapoo Creek watershed in Peoria, IL.

Hydraulic Modeling

Mill Creek and Tinley Creek HEC-RAS model updates and comparison for floodplain remapping in Cook County, IL.

West Fork Blue River HEC-RAS model review and enhancements.

Des Plaines River and Tributaries unsteady HEC-RAS modeling review and enhancements to determine Watershed Specific Release Rates for Cook County, IL.

HEC-RAS modeling for Fargo Run in Peoria County to update the floodplain maps.

HEC-RAS modeling and floodway analysis for Beaver Creek and Tributaries in Greenville, IL.

Two-Dimensional HEC-RAS model for Cache River Valley

Stream Gage Analysis

Performed stream gage analysis for flood frequencies on 4 gages for the Little Wabash River for floodplain remapping.

Performed stream gage analysis for flood frequencies on 2 gages for Kickapoo Creek floodplain modeling in Peoria County, IL.

Performed stream gage analysis for flood frequencies on Shoal Creek in Bond County, IL

Loss Avoidance Studies

HEC-RAS modeling of historic flood events on the Illinois and Fox River to assess the flood losses avoided through property buyouts in Ottawa, IL.

Stream gage record analysis to map historic flood events on the Mississippi River to assess the flood losses avoided through property buyouts in Keithsburg, IL.

HEC-RAS modeling of historic flood events on the DuPage River to assess the flood losses avoided through property buyouts in Shorewood, IL.

Updated: June 26, 2021