

Stillwater Sciences

FLOODPLAIN PERMITTING

Process-based
Stream
Restoration
Workshop
June 17-18, 2024

NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

- Makes federally-backed flood insurance available
- Helps reduce the socio-economic impact of floods
- States/communities agree to adopt and enforce floodplain management ordinances
- Administered under the Act and applicable federal regulations promulgated in Title 44 of the Code of Federal Regulations, Subchapter B

**NFIP is
administered by
FEMA**

**Federal
Emergency
Management
Agency**

EVERYONE HAS A ROLE IN REDUCING RISK

Nationwide:

- FEMA maps our country's flood risk
- Works with federal, state, tribal and local partners
- FEMA provides technology
- Relies on community leaders

Share local knowledge & keep flood maps accurate

- Local Floodplain Administrators:

Work with local engineers and surveyors on map updates

Keep their community in good standing in NFIP

EVERYONE HAS A ROLE IN REDUCING RISK

Project/Location-specific:

- Planners implement hazard mitigation plans
- Homeowners purchase flood insurance
- Restoration project proponents hire Professional Engineers (PE)
- Engineers conduct hydraulic modeling to assess flood risk

Industry regulatory standard is 1-Dimensional (1D) HEC-RAS

Other acceptable models

$$R = P \times C$$

Risk = Probability x Consequence

COMMUNITY RATING SYSTEM (CRS)

- Voluntary incentive program
- Community floodplain management that exceeds minimum NFIP requirements
- Flood insurance premium rates get discounted
- Over 1500 communities in CRS nationwide

Important for communities to maintain good NFIP standing

FEMA FLOOD MAPS

- FEMA Flood Map Service Center (MSC)

msc.fema.gov

- Online location of flood hazard mapping products
- Find your community's flood mapping
- Risk Mapping, Assessment and Planning (Risk MAP)



Online
National Flood Hazard Layer (NFHL)
“old-school” paper maps
Flood Insurance Rate Maps (FIRMs)

DEFINING RISK:

- 100-year flood or Q100 is a 1% flood
- 1% chance of occurrence in any given year
- Identified as “high risk” by FEMA
- No such thing as “no-risk zone”
- Meaningful statistic on 1% flood:

1-in-4 chance of flooding during 30-year mortgage

FEMA FLOODPLAIN PERMITS

(COMMON TO RESTORATION)

Floodplain Development Permit (FDP):

- Doesn't change FEMA floodplain maps
- Documentation of “no-rise” required
- No change in planform
- Proxy for no adverse impact
- No or small fee

Conditional Letter of Map Revision (CLOMR)

- FEMA's opinion on whether proposed changes will be approved via LOMR
- If constructed consistent with hydraulic modeling
- \$6750 (paper)/\$6500 (online) initial FEMA fee

Letter of Map Revision (LOMR)

- This process revises FEMA floodmaps
- \$8250 (paper)/\$8000 (online) initial FEMA fee when based on a CLOMR

FEMA FLOODPLAIN PERMITS (OTHER)

Other Mapping less common in restoration

Letters of Map Change (LOMC)

- Based on incorrect data
- Flood insurance may no longer be required
- Letter of Map Amendment (LOMA) - naturally high ground
- Letter of Map Revision Based on Fill (LOMR-F) - elevated by fill

WHEN DO I NEED A FLOODPLAIN PERMIT?

ANSWER:

When you propose work in an area mapped by FEMA

- Check National Flood Hazard Layer (NFHL) online for your project area
- Special Flood Hazard Areas (SFHAs)
 - Zone A: No Base Flood Elevations (BFEs) determined
 - Zone AE: BFEs determined
 - Zone AH; AO; AR; A99
 - Zone V & VE (coastal)
 - Zone X: 0.2% annual chance flood (500-year)
 - Zone D: flood hazards undetermined, but possible
- Contact your local Floodplain (FP) Administrator:
 - Acceptable method for no-rise determination
 - Status of any map updates in process
 - Which model data to use

Online:

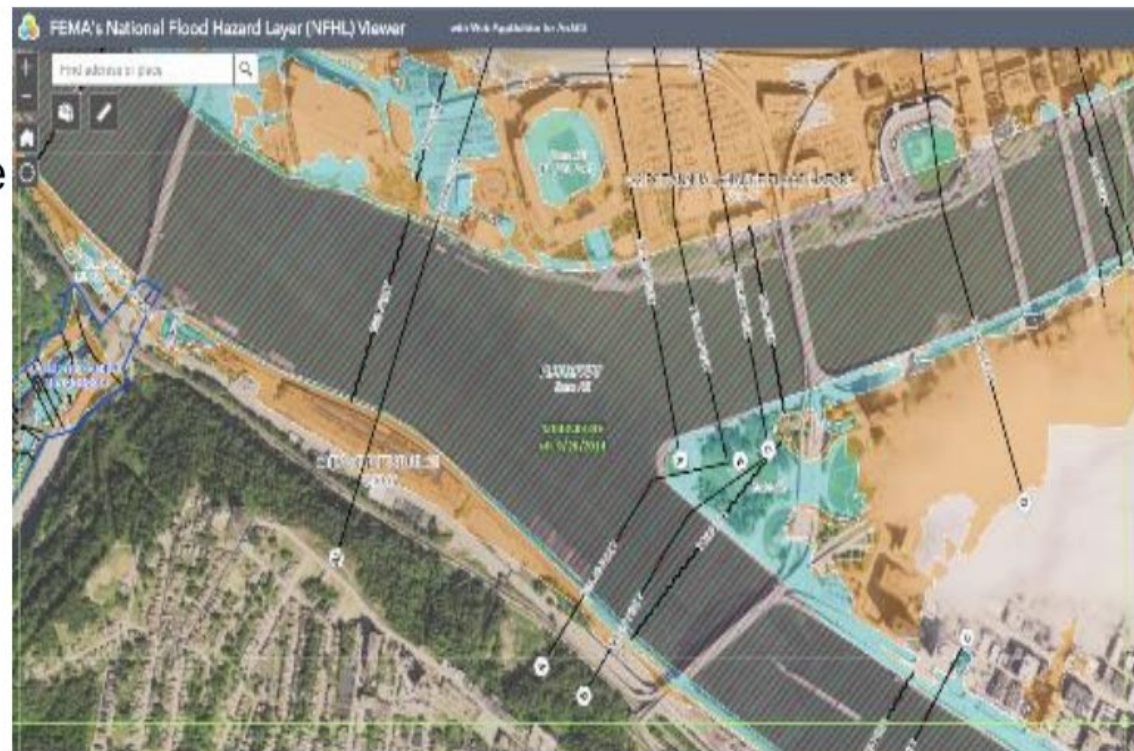
FEMA Flood Map
Service Center

msc.fema.gov

Using the National Flood Hazard Layer (NFHL) Viewer

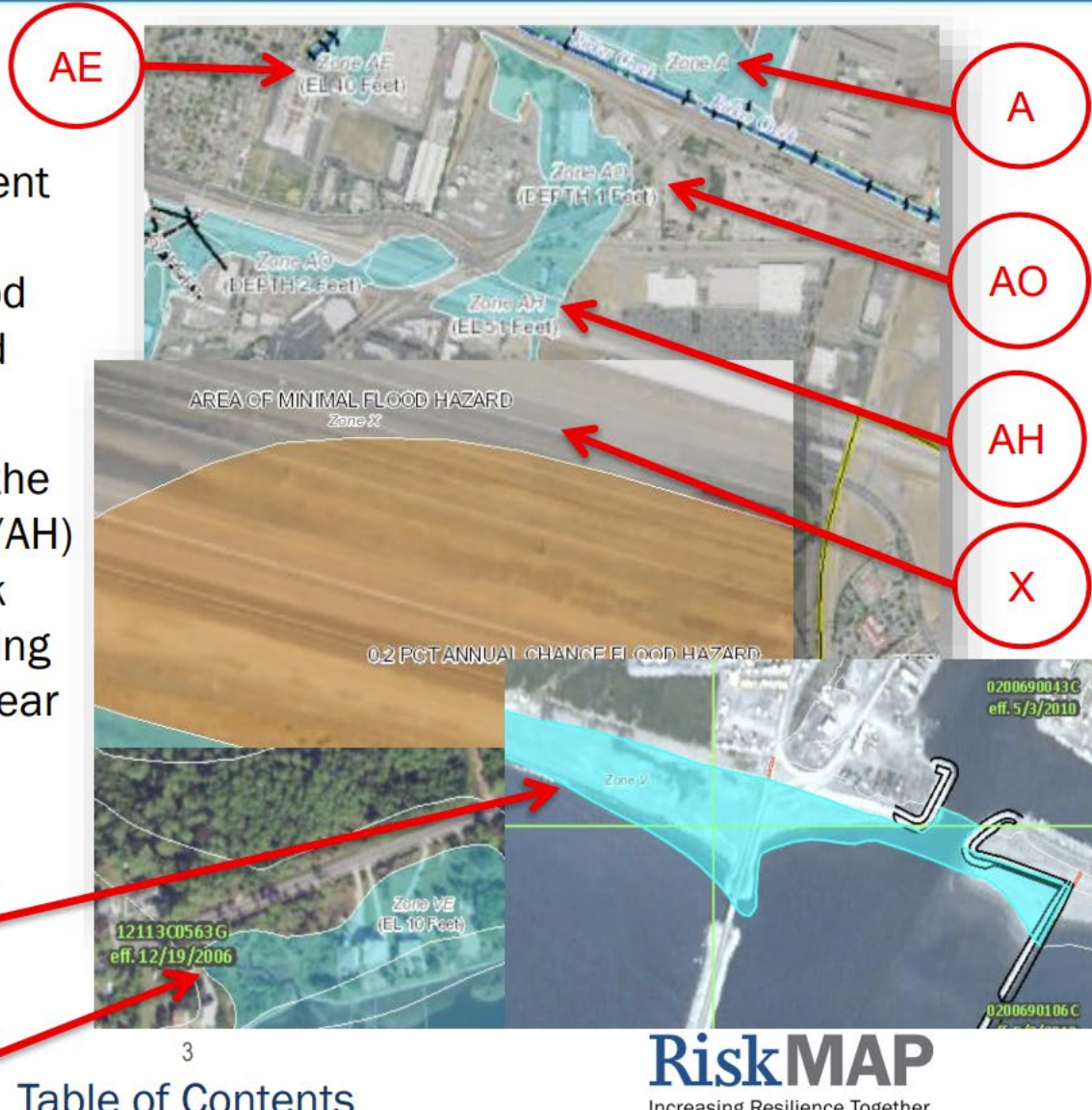
Navigate to:

1. The middle right corner of the MSC results page (above the locator map) and click [“Go to NFHL Viewer”](#).
2. The map will open in new browser tab/window using the NFHL Viewer



Flood Zone Designations are geographic areas as having different levels of flood risk. Each zone is represented differently on the flood map to convey low, moderate, and high-risk flood zones.

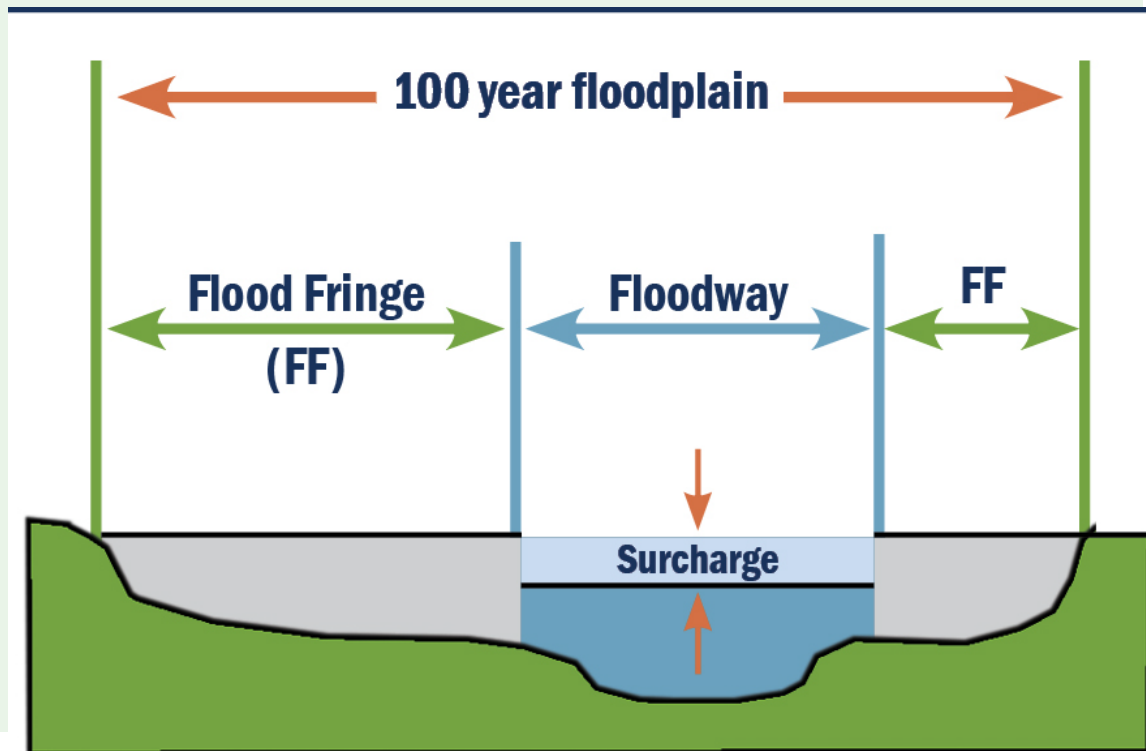
The images on the right highlight the high-risk flood zones (ZONE A/AO/AH) in a blue shade; the moderate-risk areas (ZONE X) have orange shading and low risk areas (ZONE X) are clear or unshaded.



FLOODWAY + FLOOD FRINGE

- Floodplain management codes are most strict within the regulatory floodway
- Allowable activities increase in flood fringe, but still restricted

Floodway is area that must be kept free of encroachment to carry the 100-year flood without increasing BFEs



FLOODPLAIN PERMIT EVEN FOR LTPBR?

- This is new territory
- Assume the answer is yes on FDP with no-rise determination
- No planform change - no realignment
- Remember importance to community to keep NFIP standing
- You keep more risk on you/your project without floodplain permit
- Contact your FP Administrator to discuss

YES FOR LTPBR

- Approaches for LTPBR seen so far:
 - Letter from PE stating determination of no adverse effect with supporting rationale (qualitative)
 - Existing Conditions (EC) vs Proposed Conditions (PC) hydraulics:
 - ✓ 1D hydraulic modeling to demonstrate proposed beaver mimicry features will be “washed out” before/by the 100-year regulatory flood
 - ✓ 1D hydraulic modeling using modified Manning’s roughness (n) values
- FDP applications are PE prepared and stamped

TIMELINES

- FDP application & approval:

- Lead time varies but shorter than map revision

- Reasonable to assume month or months

- Often \$10k or less

- C / LOMR

- Plan for 6 months minimum for very simple - 9 months safer

- Complex projects can be 12 months or longer

- Plan for \$40k minimum

- Complex projects can be \$100k+

- FEMA initial fees total ~\$15k