Best Available Information

A Tool for Your Community to Reduce Flood Risk

FEMA and the State of Colorado

What is best available information?

The Federal Emergency Management Agency (FEMA) defines Best Available Information (BAI) as either:

- The existing flood hazard information adopted by a community and reflected on an effective Flood Insurance Rate Map (FIRM), Flood Boundary and Floodway Map and/or within a Flood Insurance Study report; or
- Draft or preliminary flood hazard information supplied by FEMA or from another source and reasonably used by the community.

In general, when draft or preliminary information is available, only that information which consists of more restrictive 1% annual-chance (100-year) flood discharges, flood hazard zone boundaries (including floodways), and water-surface elevations shall be considered BAI, so long as it meets FEMA's technical and accuracy standards.

Why is best available information important for Colorado communities?

BAI is an important component of local floodplain management because it represents the most suitable flood hazard information for performing community planning, engineering, development review, permitting, and emergency management functions, and helps communities become more hazard-resilient by working towards the following floodplain management goals:

- protection of life, health, and property
- protection of public and private infrastructure
- improving public flood risk awareness
- reduction in rescue and relief efforts
- reduction of economic and social hardships
- compliance with minimum National Flood Insurance Program (NFIP) Standards
- lower flood insurance premiums

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How can my community use this data?

First, check the local codes and ordinances. Your community may have to go through a local adoption process before the data can be used to make planning, permitting, and development review decisions. Otherwise, you can use the new data starting immediately. The ways in which this data can be applied are almost limitless. We encourage you to think of unique ways your community can put this data to work, and have provided a few examples below.

- Zoning district updates
- Land use code/ordinance updates
- Permitting
- Community Rating System points
- Mitigation project planning
- Grant applications
- Stormwater management and design
- Flood evacuation route planning
- Reverse 911 system updates
- Emergency shelter planning
- Capital Improvement Project planning
- Outreach applications
- Social Vulnerability analyses

For an example of how adopting higher regulatory standards can benefit your community, check out the case study that was conducted after the 2013 flood event in Colorado.

For more information on how your community can use BAI to guide development in potential and established flood areas, please visit the FEMA website at https://www.fema.gov/use-flood-insurance-study-data-available-data.

What qualifies as "reasonable" use of draft or preliminary flood hazard information?

The concept of 'reasonable' ensures that use of the data would not be detrimental to a proposed development or to the community's standing within the NFIP. FEMA specifies that draft or preliminary information should be used in cases where it is more restrictive [i.e., where there are discharges, floodplain boundaries, or increasing Base Flood Elevations (BFEs)] when compared to the current effective information. FEMA prohibits its use when discharges or BFEs are decreasing when compared to the current effective information. This is because draft or preliminary information has not been through a formal appeal period and is subject to change. After draft or preliminary information proceeds through a formalized appeal process, any appeals have been resolved, and a final notice has been provided to the community through issuance of a Letter of Final Determination (LFD), the information is required to be used for floodplain management decisions, not for 'reasonable' use.

In Zones B, C, or X:
There is no requirement for a community to use the draft or preliminary flood risk data in these zones. FEMA does, however, encourage communities to reasonably use this information to help meet the floodplain management goals outlined on Page 1.

In Zone A:
Local officials are required by the NFIP regulations to reasonably utilize draft or preliminary flood risk data as BAI to manage development in Zone A areas. Examples of ways BAI must be used in Zone A areas are:

1) Use BAI to determine the required minimum elevation of the first floor, HVAC, electric, and plumbing fixtures for new residential construction/substantial improvements.
2) Use BAI to identify floodway boundaries, which can impact permitting submittal requirements for proposed development projects (proposed projects in the floodway must, at a minimum, demonstrate through hydraulic modeling that they will not result in any increase greater than 0.00 feet in 1-percent-annual-chance (100-year) water-surface elevations.

In Zone AE, A1-30, AH, and AO:
FEMA encourages communities to reasonably utilize draft or preliminary flood risk data in instances where it provides more restrictive 100-year flood discharges, flood hazard zone boundaries (including floodways), and water-surface elevations to ensure the floodplain management goals outlined on page 1 are met. The community cannot use the less restrictive data to regulate development until a LFD has been issued. Use of less-restrictive draft or preliminary flood hazard information prior to the issuance of a LFD may result in significantly higher flood risk to people and property if the data changes before it is finalized. Additionally, it may result in higher flood insurance premiums, and the community may be in violation of their locally-adopted Flood Damage Prevention Ordinance.

Using factors such as years of gage record, amount of development, and presence of new hydraulic structures, FEMA has inventoried many of the effective detailed study areas (Zone AE, A1-30, AH, AO, VE, and V1-30) to determine if the study information presented on the current effective FIRM is still a reasonable representation of flood risk. In areas where validated studies exist, these studies should take precedent over Large-Scale Automated Engineering or Base-Level Engineering studies.

For more on the application of BAI in different flood risk zones, refer to FEMA Policy #104-008-2 https://www.fema.gov/use-flood-insurance-study-data-available-data.

How does this data help me with disaster response and recovery activities?

BAI should be used to help plan and implement response activities such as creating evacuation zones, evacuation routes, emergency shelters, and emergency notification systems like Reverse-911.

Flood recovery projects funded by all Federal and most state grant programs must use BAI as the basis for design, unless a local design standard is more restrictive. An example of this is FEMA Public Assistance. The following is an example scenario which demonstrates how this data can be used:

- A public vehicular bridge on a county road is destroyed during a large flood event. Once the bridge is replaced, the county intends to apply for reimbursement through the Community Development Block Grant- Disaster Recovery program.
- Following the flood event, a state agency developed an updated 100-year flood discharge at the bridge (2,400 cfs), which turned out to be lower than the current effective flood discharge (3,100 cfs).
- The county's bridge design consultant must use the BAI to design the replacement bridge. In this case, the BAI is the higher of the 2 discharges; therefore, the bridge must be designed using the higher discharge of 3,100 cfs.

Additionally, much like its application to new construction and substantial improvements, BAI can be used to regulate repair of substantial damage. For example:

- A home has been determined to be 60 percent damaged (when compared to current market value) by a recent flood event. The current effective flood risk zone for the home is Zone AE and the current effective BFE is 1,110.0 feet NAVD88.
- Following the flood event, a draft Base-Level Engineering study completed by FEMA shows that the 100-year water-surface elevation at the home is approximately 1,112.0 feet NAVD88. This study should be considered the BAI for this specific home.
- Because the home was substantially damaged, during repair the first floor should be elevated to the higher of the two available BFEs, which is 1,112.0 feet NAVD88, plus any additional freeboard regulated by the local community.

What about other grant programs that are not related to flood recovery?

The requirement to use BAI applies to any Federal or state grant program.

How can I leverage this data to update my mitigation plan and/or apply for a mitigation project?

Mitigation planning relies on having quality data available to prioritize, design, and implement mitigation projects. In most cases, the highest-quality data will be synonymous with BAI. Good hazard mitigation plans will have procedures built in to account for updates to flood risk information. If BAI is available, local planners should use this information in conjunction with projects identified in the plan to determine if the project priority and design is still appropriate considering the hazard and risk identified with the BAI. In addition, as mitigation projects are funded, their designs should consider the best flood hazard information available at the time of design.

Furthermore, incorporating BAI into risk assessment tools or computer programs, such as Hazus, can produce more-refined flood loss information. These results can be directly incorporated into the local hazard mitigation plan or used for operational and response planning.

Can Best Available Information be used to submit a Letter of Map Change (LOMC)?

For Letters of Map Amendment (LOMAs)/Letters of Map Revision based on Fill (LOMR-Fs): In Zone A areas, BAI can, in some cases, be used to support a request to remove a structure, property, or portion of property from the Special Flood Hazard Area. The BAI study information should be submitted to FEMA with the LOMA/LOMR-F application, where it will be reviewed to determine whether it meets certain technical and accuracy standards in order to be used to process the LOMA/LOMR-F. In detailed flood risk zones such as Zone AE areas, however, FEMA must use the current effective BFEs compared to structure and/or property elevations to determine if that structure and/or property is eligible for a LOMA or LOMR-F.

For Letters of Map Revision (LOMRs): In certain instances, a draft study can be submitted to FEMA with a LOMR application. If the data is obtained from a source other than FEMA, FEMA will review the draft study information to determine whether it meets certain technical and accuracy standards in order to be published as effective information. Should FEMA determine that additional data is necessary, it may be up to the community to submit the additional data.

Can Best Available Information be downloaded and incorporated it into my local GIS software?

Yes. These days, most draft or preliminary study information is provided in digital/GIS format. FEMA encourages the use of BAI in-conjunction with other digital datasets to enhance floodplain management decision making. Examples of other digital datasets to pair with BAI include:

- Aerial imagery
- Local transportation data
- Zoning/land use information
- Building footprints
- Parcel boundaries
- Critical facility locations
- U.S. census bureau information

Who can I contact for more information?

For questions about specific applications of this data in your community, contact your State NFIP Coordinator, Stephanie DiBetitto at stephanie.dibetitto@state.co.us, 303-866-3441, ext. 3221 or Matt Buddie, the NFIP Specialist for FEMA Region VIII at matthew.buddie@fema.dhs.gov, 303-235-4730.