



Enhancing Emergency Management Services with Base Level Engineering Data

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FEMA

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1. How can Base Level Engineering (BLE) data help emergency managers?

BLE data give emergency personnel easy-to-use information to support emergency planning, preparedness, response and recovery. Emergency managers can use BLE data to apply their local response and recovery activities efficiently. They can also use the data to boost risk communication with the public and keep operational continuity across community departments.

2. What are some specific uses of BLE data?

BLE data give emergency managers the latest community flood hazard information. This supports how they plan and respond to emergencies. For example:

- **Floodplain Extents** help develop evacuation plans, reverse-911 services, and other flood warning systems. They can also help place emergency shelter locations. They are used with Flood Insurance Rate Map (FIRM) boundaries.
- **Flood Depth Grids** help emergency preparedness and response, as well as other local functions. They help map evacuation routes, prepare travel routes for first responders, identify areas that may isolate homeowners or trigger air rescue and evacuations, and determine flood-fighting techniques and locations. Flood depth grids can be used in FEMA's Hazus-MH software to determine costs from potential flood losses and service interruption. They can also assess flood debris estimates for recovery planning.
- **Hydraulic Models** help develop real-time estimates of flood heights and flooded areas when paired with flood forecast information like rainfall and streamflow.

3. What are related uses for BLE data?

BLE data help prepare communities and emergency managers for when flooding occurs. Other uses of BLE data include:

- **Community Awareness:** Emergency managers increase disaster preparedness. Making BLE data publicly available boosts flood risk awareness. It encourages stakeholders to understand their risk, act to reduce that risk, and stay safe during a flood.
- **Threat and Hazard Identification and Risk Assessment (THIRA):** BLE data can help communities assess and manage threats and hazards by quantifying risk and losses associated with flooding.
- **Grant Applications:** Some applicants to FEMA's Hazard Mitigation Grant Program must identify a Base Flood Elevation (BFE) for their projects. Water surface elevations from a BLE analysis can help if there is no FIRM data.

- **Social Vulnerability Analyses:** Flood depth grids and/or Hazus results can help locate areas with vulnerable populations (e.g., elderly, non-English speakers, disabled). These groups may require more preparedness outreach, special response, or rescue during a disaster.
- **Hazard Mitigation:** BLE data can help identify and assess mitigation actions.
- **Disaster Recovery:** BLE data can help rebuilding efforts after a disaster; they can provide Advisory Base Flood Elevations (ABFEs) for areas not at risk on an effective FIRM. ABFEs may be more restrictive for areas where BFEs are shown on a FIRM.