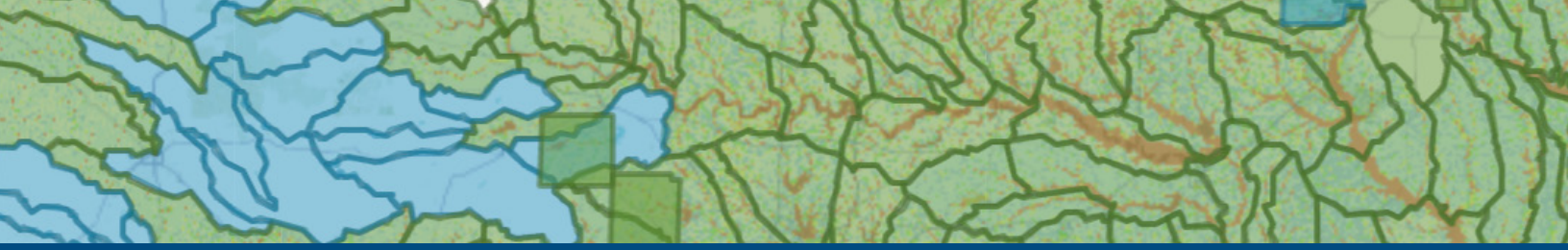

# **HOW2** Find the Right BLE Spatial Files

Base Level Engineering (BLE) modeling produces spatial files that include mapping information about flood extents and depths. These data can help community officials (e.g., floodplain managers, city planners, building officials) and industry professionals (e.g., developers, contractors, engineers) assess the potential flood risk of a proposed development project. You can access spatial files using the Estimated Base Flood Elevation Viewer (estBFE Viewer). This free online mapping tool offers different ways to view and download BLE data, datasets and reports. Please note that while you can view and download the BLE results without any additional software, you will need a GIS reader to open and view the data files.

### How to Use BLE Spatial Files from the estBFE Viewer to Assess and Mitigate Local Flood Risk

The spatial datasets from the estBFE Viewer can inform local flood risk assessments. These assessments are critical inputs for local hazard mitigation plans. Communities can update their flood risk profile, perform risk assessments, and use the results to identify mitigation projects. BLE spatial data can also help inform emergency management plans, such as by identifying evacuation routes and where flooding may disrupt first responders.

Additionally, combining these data with other datasets, such as local flood risk data and construction project designs, can help make sure development projects are reasonably safe from flooding and will not increase local flooding hazards.

## BEFORE YOU BEGIN: CHECK THE REGULATORY MAP

Always check the effective Flood Insurance Rate Map (FIRM) in a proposed project area to see if your project falls within the 1%-annual-chance floodplain. If the project area intersects the 1%-annual-chance floodplain (Zones A, AE, AO, AH, V, VE), you may need to provide a review comparing current and post-project conditions. **As a general rule, you should use the regulatory mapping and modeling information in the detailed study areas over the BLE data.** However, BLE data can be used in Zone A areas that are similar in shape and width.

- To access FIRMs, visit FEMA's Map Service Center at https://msc.fema.gov, or the National Flood Hazard Layer Viewer at https://msc.fema.gov/nfhl.
- To download the effective FIRM model for a proposed project area, visit FEMA's Flood Risk Study Engineering Library at https://hazards.fema.gov/wps/portal/frisel. There may be a fee to download the FIRM model.

# HOW TO LOCATE AND DOWNLOAD BLE SPATIAL FILES USING THE ESTBFE VIEWER

**1**

Go to the estBFE Viewer Welcome page at https://webapps.usgs.gov/infrm/estbfe/. Once you have reviewed the disclaimer and selected an area of interest, you will see the Quick Start screen. Select **I Want to Explore** below View Base Level Engineering Data (center option in Fig. 1). Click the **Report** icon in the top-left corner (Fig. 2) and enter the project site address or latitude/longitude coordinates.

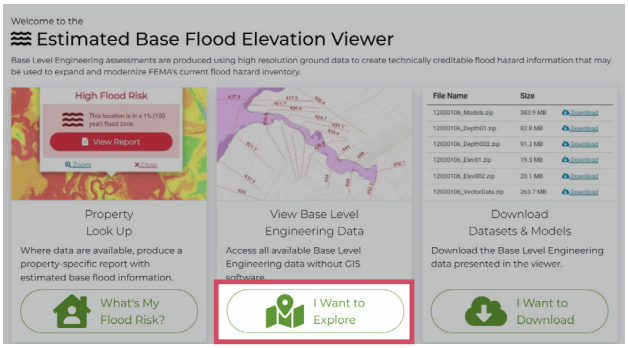


*Fig. 1*

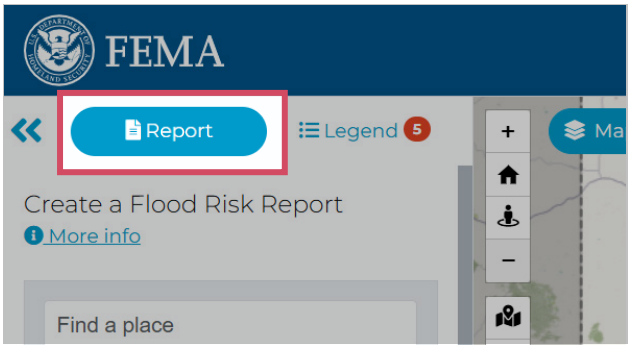


*Fig. 2*

**2**

Click the **Map Layers** icon at the top left of the map (Fig. 3). Under the **Data Availability (BLE)** tab, turn on the **Status & Data Download** option (Fig. 4). This will allow you to download files to your computer.

A shaded green map means BLE data exist for a project location. Blue shading means the data development is in progress, but the data are not yet available.

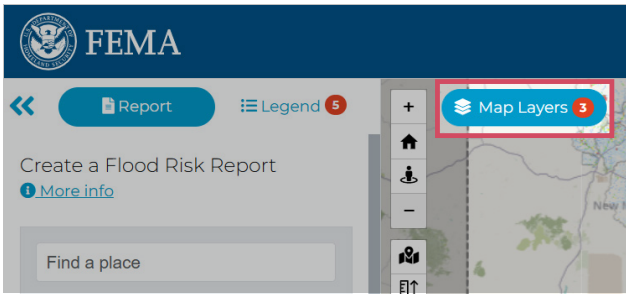


*Fig. 3*

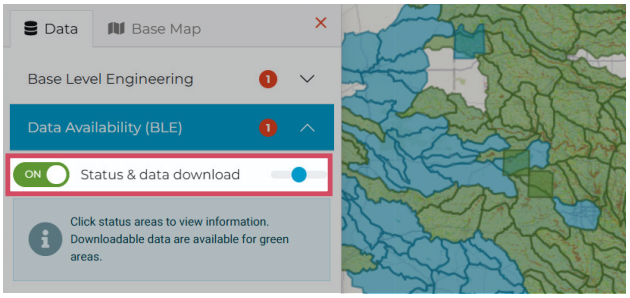


*Fig. 4*

**3**

To download the spatial files, hover your cursor over your project area's watershed and click the **DATA AVAILABLE** pop-up box (Fig. 5). This will open a **Study Area Information** pop-up screen. Click **Download Datasets & Models** (Fig. 6).

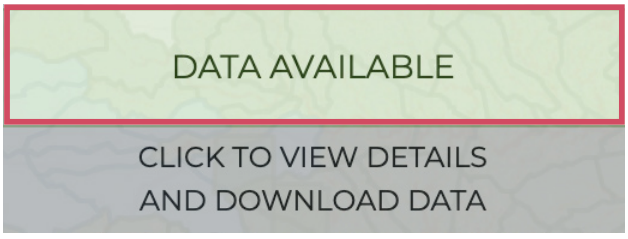


*Fig. 5*

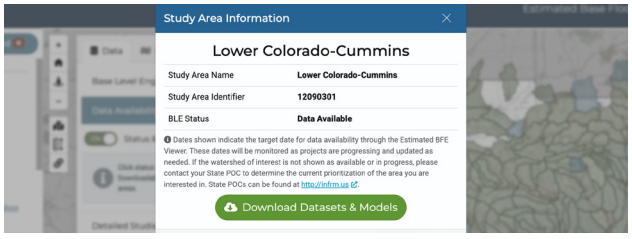


*Fig. 6*

This leads to a pop-up screen that lets you select and download the Vector and raster GIS data (file geodatabase) spatial files (Fig. 7; this example uses the Lower Colorado-Cummins watershed).

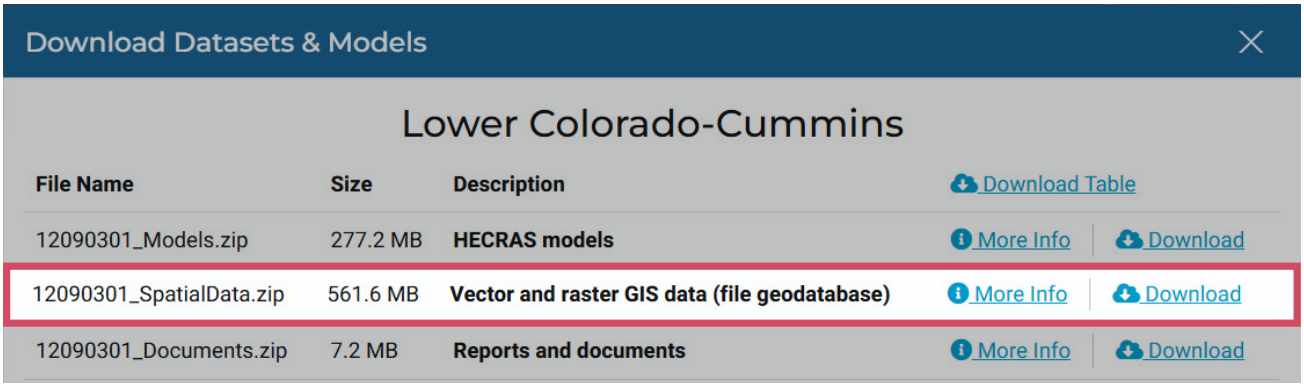


*Fig. 7*

**4**

After downloading, unzip the saved **SPATIAL** folder so you can view the contents in any GIS reader. See Table 1 for a detailed description of file contents.

If you do not have access to GIS software, look for open source (free) GIS software viewers. You can use these to view spatial files downloaded from the estBFE Viewer. Please note that you will not be able to edit the spatial files in the open-source GIS viewers.

| Spatial File Download | Contents |
|---|---|
| **1% event depths, raster*** | Estimates flood depth for areas that are flood-prone during a 1%-annual-chance flood event (has a 1-in-100 chance of occurrence each year). |
| **0.2% event depths, raster*** | Estimates flood depth for areas that are flood-prone during a 0.2%-annual-chance flood event (has a 1-in-500 chance of occurrence each year). |
| **1% event elevations, raster*** | Converts thousands of model results into a grid defining the calculated water surface elevation during the 1%-annual-chance flood event. |
| **0.2% event elevations, raster*** | Converts thousands of model results into a grid defining the calculated water surface elevation during a 0.2%-annual-chance flood event. |
| **Vector Spatial Data, file geodatabase** | Provides point, line and polygon files, including model inputs and results.<br>• **Model input files include:** HUC8 watershed boundaries; hydrologic sub-basins; stream centerlines; water areas; current detailed study areas/lines; and analysis cross-sections (1D).<br>• **Model output files include:** 1% and 0.2% flood extents; point files showing areas where a model may need updates; and a Hazus flood risk assessment by census block, calculated with BLE results. |

*A raster dataset is gridded data coverage that generalizes larger, more precise datasets. Raster coverage includes a value in each cell generated by a relational computation of other data. LiDAR datasets include millions of ground points converted into Digital Elevation Models, which approximate hundreds of values into an average grid cell.

*Table 1*