



FEMA

## NEW GEOSPATIAL FILE ELIGIBILITY CRITERIA IN FLOOD MITIGATION GRANT APPLICATIONS

The Flood Mitigation Assistance (FMA) program makes federal funds available to state, local, tribal, and territorial governments to strengthen national preparedness by reducing or eliminating the risk of repetitive flood damage to structures insured under the National Flood Insurance Program (NFIP).

To facilitate and aid this objective, the program has updated its eligibility criteria to include a geospatial file/map requirement. This job aid explains acceptable file types and software that can be used, as well as the creation and preparation of a geospatial file.

Applicants must submit a map and associated geospatial file(s) highlighting the proposed project’s *benefitting area* and *footprint*. Geospatial files enable FEMA to quickly assess a project’s precise location and evaluate the potential benefit to flood insurance policy holders. Only geospatial files that identify the benefitting area and footprint are required; no other geospatial information should be included in order to limit the file size.

### Geospatial File Requirements

**The proposed benefitting area** is defined by the project application and incorporates properties that might reasonably benefit from the proposed flood mitigation activities.

**The project footprint** is the physical area in which mitigation work will be conducted.

### ACCEPTABLE GEOSPATIAL FILE TYPES

The file types listed here represent some of the acceptable geospatial file types that can be submitted to fulfill the new eligibility criteria. Many are commonly used and accessible through free opensource software.

FILE TYPE ABBREVIATION	FILE TYPE NAME	PRODUCER
MPX	Microsoft Project Exchange	Microsoft
SHP	Shapefile	ESRI
GeoDB/GDB	Geodatabase file	ESRI
KMZ/KML	Keyhole Markup Language	Google
GeoJSON	Geographic JavaScript Object Notation	Opensource
DGN	Design	AutoDesk/Bentley
MPK	Map Package	ESRI
Geospatial PDF	Portable Document Format	See instructions on page 3

## COMMON GEOSPATIAL SOFTWARE PROGRAMS

The representative software programs listed in the following table are a mixture of both free and paid products that enable geospatial file creation.

SOFTWARE PROGRAM	PRODUCER	PROGRAM DESCRIPTION
ArcGIS Desktop	ESRI	“ArcGIS Desktop is the foundational piece of the ArcGIS platform for GIS professionals to create, analyze, manage and share geographic information so decision-makers can make intelligent, informed decisions. It allows you to create maps, perform spatial analysis, and manage data.” —ESRI, <a href="http://www.esri.com">www.esri.com</a>
ArcGIS Pro	ESRI	“ArcGIS Pro is the latest professional desktop GIS application from ESRI. With ArcGIS Pro, you can explore, visualize, and analyze data; create 2D maps and 3D scenes.” —ESRI, <a href="http://www.esri.com">www.esri.com</a>
QGIS	Opensource	“QGIS is a free and open-source cross-platform desktop geographic information system application that supports viewing, editing, and analysis of geospatial data.” —QGIS, <a href="http://www.qgis.org">www.qgis.org</a>
Google Earth Pro	Google	“A free geospatial software application that displays a virtual globe, which offers the ability to analyze and capture geographical data.” —Google, <a href="http://www.google.com/earth">www.google.com/earth</a>

## FILE PREPARATION AND SUBMISSION INSTRUCTIONS

While many of the file types can be submitted as is (e.g., KMZ/KML files), the best practices below should be kept in mind when preparing and submitting certain file types. Further information is provided about file creation and preparation in the links under the “Additional Information” column from each respective producer. An example process for creating a geospatial file, with step-by-step instructions, using Google Earth Pro is in the following section.

FILE TYPE	ADDITIONAL INFORMATION	FEMA PREPARATION INSTRUCTIONS
SHP	<a href="#">Link</a>	When preparing a SHP file for the eGrants portal, FEMA recommends packaging it as a zip file because it reduces the file size.
MPK	<a href="#">Link</a>	For MPK files, FEMA recommends that the file be converted to a PDF before submitting it to the eGrants portal to reduce overall file size.
Geospatial PDF	<a href="#">Link</a>	A range of file types can be converted to a Geospatial PDF, which is an easy-to-use format.



## EXAMPLE PROCESS FOR CREATING A GEOSPATIAL FILE

The following section demonstrates the file creation process and provides step-by-step instructions for FMA Applicants on how to submit a geospatial file. The example shown utilizes Google Earth Pro to produce a KML file for a proposed project. This example is not the only process for creating an eligible geospatial file; other software alternatives are provided in the sections above.

### STEP 1:

Download and open **Google Earth Pro**.

To start Google Earth Pro, click its icon on your desktop.

For more information, click this link.

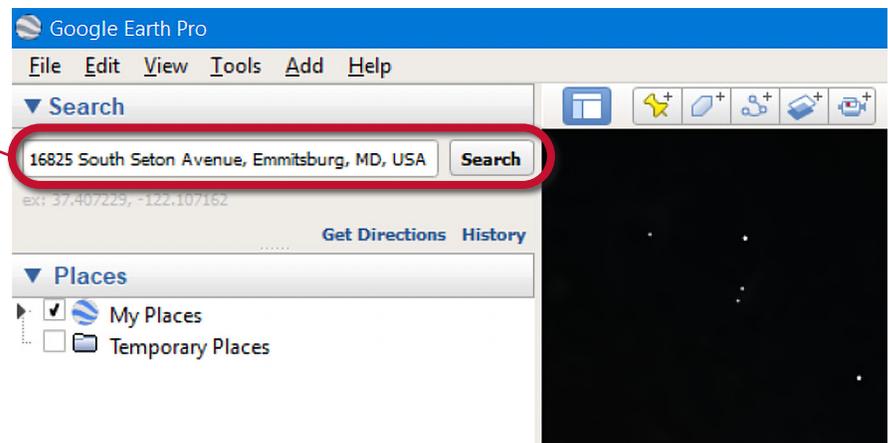


### STEP 2:

Enter your address and click **Search** to zoom in.

Click within the search bar and enter the address of interest, then click search to zoom in to the location.

For more information, click this link.

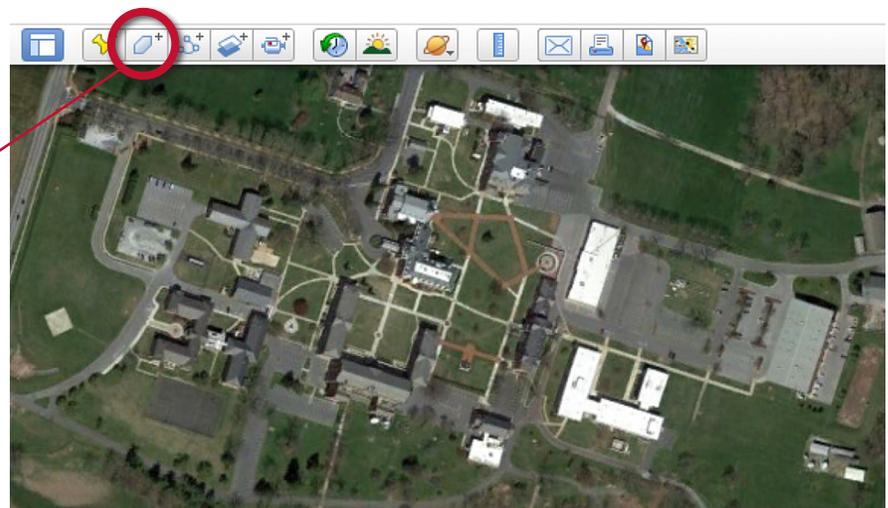


### STEP 3:

Above the map, click the **Add Polygon** icon  to open the polygon dialogue box.

Click on the polygon tool to open the menu.

For more information, click this link.

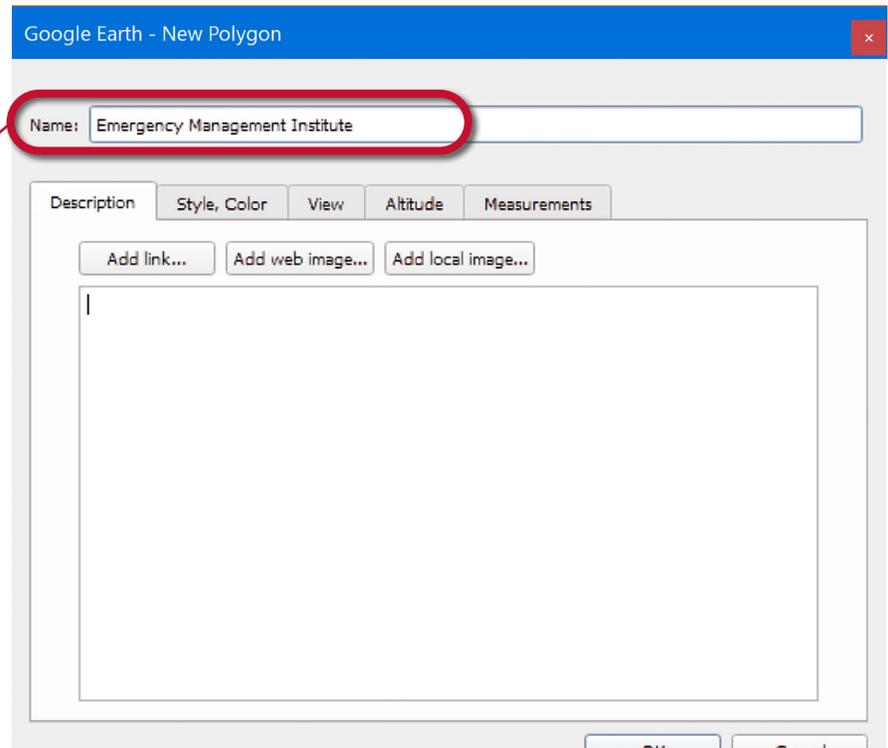


## STEP 4:

A **New Polygon** dialogue box will open. Move it out of the way before proceeding to the next step.

Here you can name your polygon and add a description (see Step 6).

Drag this dialogue box out of the way to begin drawing your polygon.

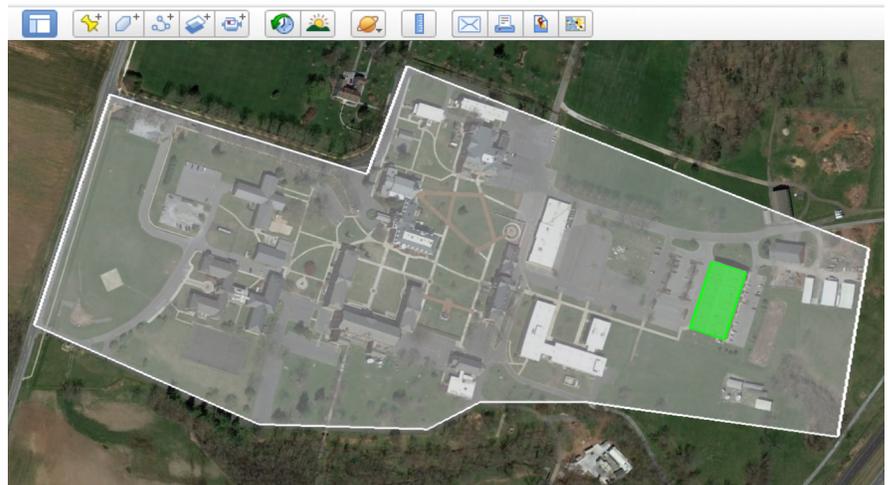


## STEP 5:

To draw the shape you want, click a start point on the map and click again to complete a line. Drag the cursor to create curves. Repeat as needed to form a closed polygon.

It is important to try to make this area accurate and representative of the project area you are mapping.

Be sure to create one polygon for the project footprint (shown here in green) and one polygon for the benefiting area (shown here in white).

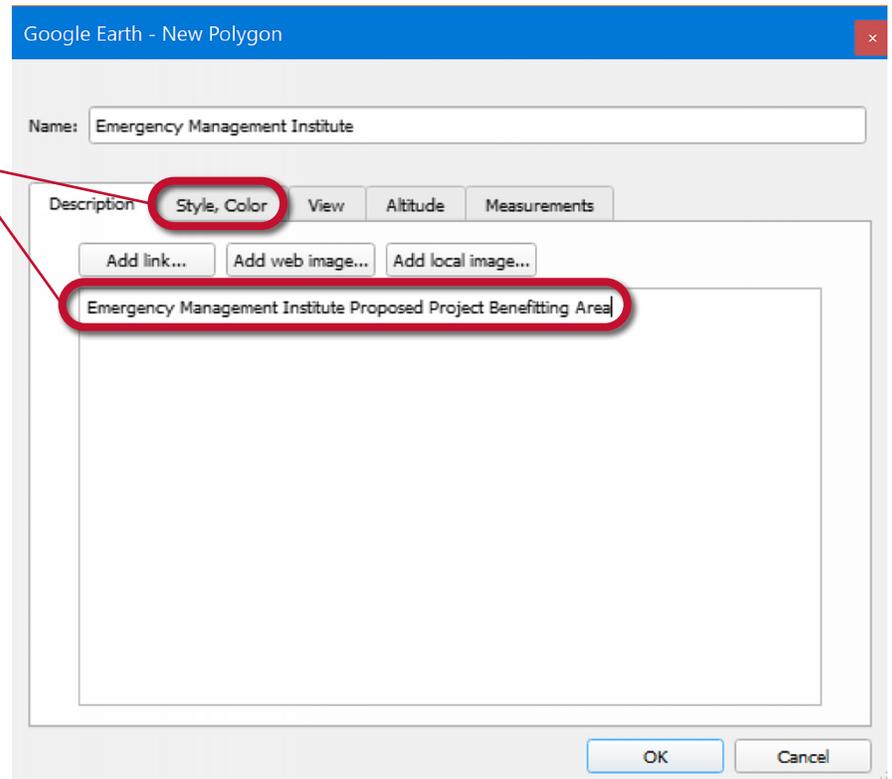


## STEP 6:

Drag up the dialogue box and enter a description and properties. Click **OK** to complete the drawing.

After you pick your end point, you can enter a **Description**, and click the **Style, Color** tab to change the polygon's appearance.

Once you are finished, click **OK** to complete the drawing.

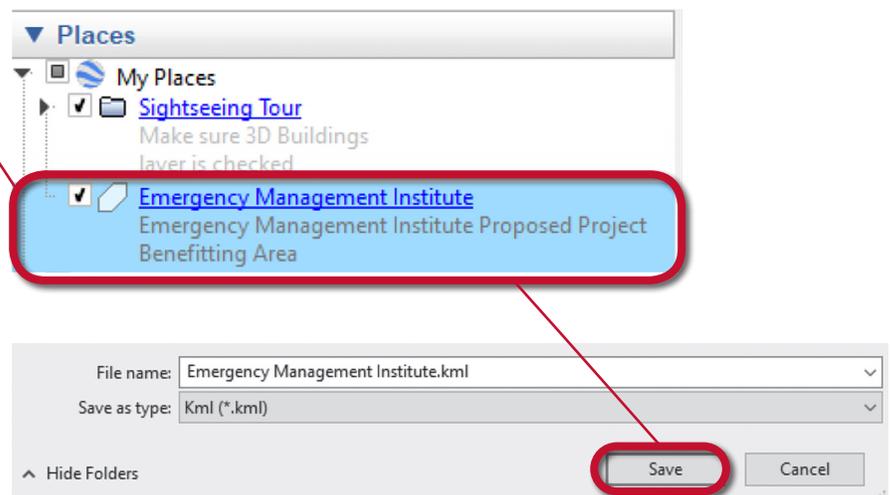


## STEP 7:

Save the polygon as a KML/KMZ file.

To save the polygon as a KML/KMZ file, right click the polygon name under the Places module on the left-hand side of your screen. Then click on **Save Place As**. Enter your desired File name and click **Save**.

You can repeat this process for multiple geospatial files as needed.



### **ADDITIONAL RESOURCES**

If you have any other questions or comments, please contact the Hazard Mitigation Assistance Helpline at 1-866-222-3580 or email [HMAGrantsHelpline@fema.dhs.gov](mailto:HMAGrantsHelpline@fema.dhs.gov) to speak to someone from FEMA. Callers can leave a message which will be returned during business hours Monday–Friday, 9AM–5PM ET.

Additionally, please reference the latest Notice of Funding Opportunity and the HMA Job Aids website for more information:

- For the annual Notice of Funding Opportunity and additional program resources for the Flood Mitigation Assistance program, visit <https://www.fema.gov/flood-mitigation-assistance-grant-program>
- HMA Job Aids: <https://www.fema.gov/media-library/assets/documents/102051>

