







Identifying Flood Risk “Hot Spots” for Mitigation Action

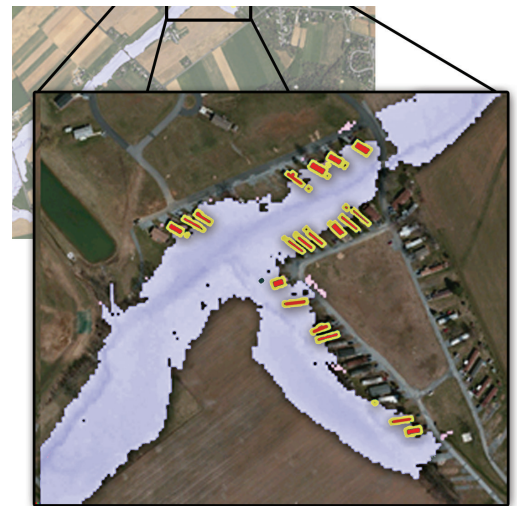


The objective of this analysis is to identify areas where clusters of buildings are at the greatest risk of flood damage based on their location and the depth of flooding from the 10-percent-annual-chance flood. A similar analysis can also be performed using the flood depth grids for other flood frequencies.

The outcomes of this analysis can help local officials identify cost-effective mitigation projects and complete applications for Hazard Mitigation Grant Program (HMGP) funding. FEMA requires a Benefit-Cost Analysis (BCA) to evaluate proposed hazard mitigation projects prior to funding.

INSTRUCTIONS

-  **Identify GIS data**, including building footprints, parcel attributes, and FEMA Depth and Analysis Grids.
-  **Analyze the extent and depth of building inundation** by using the “Zonal Statistics as Table” tool with the 10-percent depth grid and the building footprints, and selecting “ALL” for Statistics type.
-  **Join the output table to the building footprint layer** by using the “Join attributes from a table” function and selecting FID as the join field.
-  **Perform a spatial join** to attach the building footprints to the information in the parcel layer. This will combine the parcel information and building information in one attribute table.
-  Use the “Optimized Hotspot Analysis” tool to perform a statistical analysis of **the spatial distribution of potential flood damage**. Perform this analysis once on the **mean building flood depth**, and a second time on the **net building value**.
-  Use the “Select by Attributes” function to **identify the hot spots that are statistically significant at the highest confidence level**. Select all buildings with a Gi_Bin value of +3 to identify hot spots at the 99 percent confidence level.
-  **Analyze the findings to identify areas where clusters of buildings are at risk of flood damage**. These areas may be good candidates for hazard mitigation funding through FEMA’s HMGP.



Note: Knowledge of local conditions should also be used to determine where floodplain managers focus their mitigation efforts. The results of this exercise can be compared to the location of repetitive loss properties to further refine the best areas for mitigation.