Prioritizing Mitigation Actions for Critical Facilities

The objective of this analysis is to identify critical facilities that are at the greatest risk of damage from flooding events based on the location of facilities and depth of flooding from 1%-annual-chance flooding events, also referred to as the base flood or 100-year flood. Critical facilities are the facilities that must remain functional and accessible in order to protect life-saving and life-sustaining activities after a disaster, including emergency medical service stations, fire stations, police stations, and hospitals.

The outcomes of this analysis can be used to prioritize mitigation actions for local, state, or federal funding to reduce risk. By identifying critical facilities that are at the greatest risk of damage from flooding events based on location of facilities and depth of flooding from 1%-annual-chance flooding events, communities can take the appropriate steps to protect themselves from loss of service.

Using the 1% depth grid in this analysis will ensure accurate identification of flooding risk and severity within the commonly understood and used Special Flood Hazard Area. Other flooding event analyses can be used to demonstrate the impact on critical facilities. The 10%-annual-chance flooding event is more likely to occur, but the flooding may be more catastrophic in a 0.2%-annual-chance flooding event.

INSTRUCTIONS

1 *Identify GIS data*, including community Critical Facilities and FEMA Depth and Analysis Grids. Use the 1%-annual-chance depth grid, or another flood event frequency grid of your choice.

2 Use ArcMap "Extract Values to Points" tool to *identify the flood depth* for the 1%-annual-chance flooding event *to each Critical Facility*.

Note: You can perform an analysis of multiple frequency depth grids by using the "Extract Multi Values to Points" tool to identify the flood depth for multiple flooding event probabilities to each Critical Facility. Under Input point features, select "Critical Facilities" and for input raster, select the all of the flooding event depth grids.

3 Under output point features, *select the Feature Dataset* inside your Geodatabase.

4 *The output will be the Critical Facilities point layer* with the 1% depth grid values appended in the attribute table.

5 Analyze the findings to *determine the location of the Critical Facilities at greatest risk of flooding* and possible loss of service due to flooding. Prioritize mitigation actions to reduce the loss of service at these Critical Facilities.

Note: When identifying and prioritizing Critical Facilities at risk of flooding, there are multiple factors to consider. A structure may be shown as prone to flooding but may already be sufficiently prepared for the potential flooding. Areas that flood less frequently but will be substantially damaged or non-operational in the event of a flood should be considered priorities when considering mitigation actions.