

# **Abstract**

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## **A GIS-Based DSS for Evacuation Planning**

The most accurate evacuation plan should be developed based on those areas which are not affected by the damage gained by an emergency event. In this paper, three emergency models are provided: fire danger rating, hurricane index, and earthquake's affected area estimation. The system conducts a spatial overlay and proximity analysis resulting in a buffer zone shown on map around any emergency event according to its type. The system displays an evacuation path as well. Evacuation path is generated in response to two inputs marked on the study area map: the current location of the public and the location of the nearest health care facility to that evacuation area. As a result, the system draws the shortest path to that facility. Test and evaluation of the system are carried out by applying the model on various study areas to assure the resulted evacuation path accuracy and system functionality.