

Risk Analysis and Damage Assessment for Flood Prone Areas in Washington DC

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Abstract

This paper presents a loss estimation method regarding areas of District of Columbia susceptible to flooding, specifically the Southwest quadrant, the National Mall, and Federal Triangle. This research develops data for input to a flood model that considers parameters such as detailed digital elevation map, global warming potential, and storm surge due to a category IV hurricane. The main goal of this study is to employ a standard method for estimating flooding hazards in Washington. The aim of this study is to supply additional input data to the HAZUS-MH 2.0 program to get more practical information through Geographic Information System (GIS) functions for the study region. The results of this research is useful for planning purposes, such as reducing natural hazard losses and preparing emergency response and recovery. It is predicted that in the projected storm surge flood more than 1500 buildings would be damaged and about ten thousand people would seek temporary refuge in public shelters. The estimate of total loss for flooding is approximately \$1,300 million dollars.

Key Words: Risk Analysis, Loss estimation, Potential Flood Risk in Washington DC