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## Automated Flood Risk Communication

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## Automated Flood Risk Communication

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**Abstract:** Unlike traditional hydrodynamic models, FLDPLN has no dynamic, or time dependence. It is a static model driven purely by topographic data. A static floodplain characterized by a floodwater depth is similar to a sustained flood inundation extent. It is made dynamic in execution. FLDPLN computes a range of flood depths from a base flood elevation for one or more stream segments in a floodplain. The results are stored for quick access to estimate flood inundation. Currently, six FLDPLN models for riverine urban drainages have been developed and integrated into a mapping system. The system creates and displays flood inundation maps for historical events, simulations and near real-time conditions based on USGS and NWS river gage stage heights. This study specifically seeks to automate a process to determine a range of flood stage heights for a given structure in a floodplain, relate the stage heights to flood frequency and damage and output a customized flood risk report. The goal of the report is to help home owners and home buyers better understand flood risk and feel more informed and confident about flood insurance decisions. The long-term goal of the study is a quick and affordable methodology to enhance and supplement existing flood risk communications for citizens, home owners, home buyers, realtors, insurance companies and governmental agencies around the world.

**Keywords:** Hydrodynamic model; flood inundation maps; flood damage; flood frequency; flood insurance