DEVELOPING OF FLOOD LEVEL MODEL FOR AN INUNDATION AREA:
WITH SPECIAL REFERENCE TO LOWER RIVER BASIN OF KELANI RIVER

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Abstract

Flood is submerged dry lands being overflowed by water. It is one of the major disasters in the world. The flood can occur mostly due to heavy rainfall in the upper part of a river basin. Flood effect to people, animals, and valuable property. Kelani river can be seen as one of the major rivers in Sri Lanka. The lower part of the Kelani river lay around a highly-populated area. Kelani river flood affects not only the people but also their property. It positively affects the economy of the country, causing several damages. The Flood model tool helps people identify how much area inundate from flood and how many buildings, roads, and land uses exist in the inundation area with the river gauge reading help. Inundation maps are generated using this tool, and it helps to get an idea of how the inundation area is spared when the river water level rises. This flood model tool is suitable for any flood situation in Sri Lanka, and it is mainly focused on the LIDAR data and 1:10000 data issued by the Survey Department. As a result of the study, seven inundation maps were created when the Kelani river Nagalagam street water level increases. With the prediction of river gauge reading, this tool can be used to generate flood prone areas. This system will allow the authorities to act fast and prepare citizens and emergency response units to face a flood situation. In that way, a greater chance of managing the disaster will be generated.

Keywords - ArcGIS Tool, Flood, Inundation Map, Kelani River