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Flooding in Rathnapura is a frequent occurrence. In order to mitigate the flood in Rathnapura town, there is a proposal to construct a reservoir in the upstream of Rathnapura. According to the proposal one option is a reservoir of flood control storage

162 MCM and safety discharge of $400 \text{ m}^3 / \text{s}$ without a dyke. The second option is a reservoir of storage 59 MCM and a dyke around Rathnapura town to achieve a safety discharge of $900 \text{ m}^3 / \text{s}$.

To compare the reservoir storage and flood control conditions in Rathnapura, a hydrological model for Kalu Ganga up to Ellagawa was developed using HEC-1 model. The model was calibrated with observed flood in September 1996. Here the observed hydrographa at Malwala, Dela, Nambapana, Rathnapura, Ellagawa and sub catchment rainfalls were used to find out corresponding Muskingum and Synders coefficients. Then the water surface elevation, storage capacity of the proposed reservoir was introduced to the calibrated model and routing through the reservoir was done.