

# THE ANALYSIS OF FLOOD PHENOMENON IN URBANIZED CATCHMENT – SLUZEW CREEK CASE STUDY (SUBURB OF WARSAW)

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The Sluzew Creek, which was former natural stream, drains clean water from the catchment to outlet of the stream, i.e. Wilanow Lake, located on area of Royal Palace in Wilanow district. Since the fifties of the previous century, when urbanization of the catchment area has been started, the creek became a receiver of sewer storm waters. The continues urbanization of catchment has made a contribution to faster and larger flooding effects, which appears a few times a year.

A conceptual rainfall-runoff model of Nash has been accepted to predict runoff hydrographs for chosen gauge station – Rosoła (closing catchment area of 39.5 km<sup>2</sup>), with return period of 10-years and various duration, both at current stage of urbanization (in 2005 year) and perspective one (2020). Model parameters have been estimated from recorded events. The impact of difference of land use for current and further situation has been considered in value of CN parameter of SCS method. The simulation results have shown that increase of urbanization has caused an increase of 42% in peak flow (25.0 m<sup>3</sup>/s vs. 17.6 m<sup>3</sup>/s) and of 105% of required detention volume (207 · 10<sup>3</sup> m<sup>3</sup> vs. 101 · 10<sup>3</sup> m<sup>3</sup>).