



The Effects of Future Increases in Heavy Rain on Measure for the Prevention of Inundation in Urban Areas

Tsubasa Hashimoto^{1*}, Hiroyuki Shigemura¹, Toshihiro Yokota¹

¹ Wastewater System Division, Water Quality Control Department,
National Institute for Land and Infrastructure Management (NILIM),
Ministry of Land, Infrastructure, Transport and Tourism (MLIT),
Asahi 1, Tsukuba City, 305-0804, Japan

* e-mail: hashimoto-t92tc@nilim.go.jp

ABSTRACT

In recent years, heavy rain of 50mm/hr or more has fallen frequently in various parts of Japan. This survey used rainfall data of the Japan Meteorological Agency to predict future trends in the increase or decrease of the annual maximum 10-minute rainfall intensity and the annual maximum 60-minute rainfall intensity. And to study what impact the future increase of heavy rain will have on existing inundation countermeasures, inundation simulations were performed to evaluate this impact. Specifically, the simulations clarified the inundation levels in three hypothetical scenarios: an increase of 10-minute rainfall intensity, an increase of 60-minute rainfall intensity and increase of both 10-minute rainfall intensity and 60-minute rainfall intensity. The study also surveyed the state of provision in Japan of stormwater storage systems, which are expected to be promoted in the future as inundation countermeasures, and of the effective use of the stormwater.

KEYWORDS

heavy rain, inundation simulation, stormwater storage system, rainfall intensity