

## EVALUATION OF THE INTERCEPTED VOLUME OF COMBINED SEWER OVERFLOWS AND STORMWATER SEWER DISCHARGE CONSIDERING THE RECEIVED WATER QUALITY

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The sewer system is the fundamental facility of the city and it is composed of a combined sewer system and a separate sanitary sewer system. During wet weather, when the volume of sanitary sewage and storm water entering the combined sewers exceeds the system capacity, the system is designed to overflow at several designated CSOs. Also the stormwater sewer discharge (SSD) occurs from the separate sanitary sewage system.

Number of sewer overflows that happen at rain event causes serious effect in received water including much pollutants, after evaluate if cause some effect in received waters according to occurrence characteristics quality for received waters quality of water protection, must calculate intercepted volume.

The objective of this research is to have grasped of characteristics of sewer runoff and to evaluate the intercepted volume of CSOs and SSD considering the received water quality during rain events. During wet weather, BOD Event Mean Concentrations (EMCs) at each site CSOs and SSD were 60.11mg/L~259.24mg/L, 52.74mg/L~219.82mg/L respectively, SS EMCs were 162.86mg/L~1,479.61mg/L, 127.67mg/L~821.31mg/L respectively.

The CSOs EMCs are generally higher than SSD. BOD unit loads at each site CSOs and SSD were 100.4g/ha-mm, 119.8g/ha-mm respectively and SS unit load were 169.6g/ha-mm, 226.1g/ha-mm respectively. Because CSOs does not occur because it is flowed in sewer when flux passes by regulation low, SSD unit load appeared higher.

Fig. 1 shows BOD change of the received water by intercepted volume utilizing QUAL2E model. It was shown that the BOD concentration of the received water shown the increase of 37.45 times and 13.60 times respectively compares upper streams.

The reduce 20% for total pollutant mass of CSOs and SSD at each site were intercepted volume respectively 12%, 11% of total flows, and reduce 80% for total pollutant mass at each site were intercept volume respectively 63%, 61% of total flows.

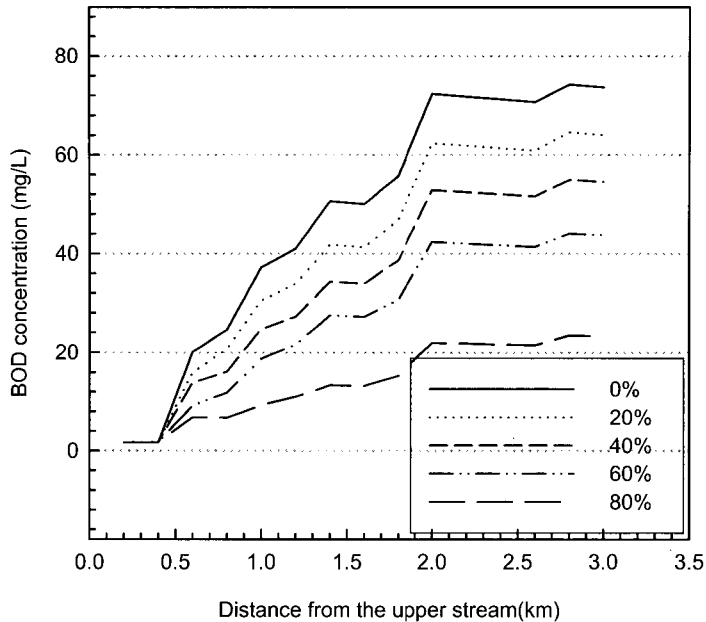


Fig. 1 BOD change of rivers by Intercepted volume

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