

STUDY ON SUSTAINABILITY OF REMOVAL FACILITY BY SOIL FOR POLLUTANTS FROM ROAD SURFACE DURING STORM EVENTS

Kiyoshi Yamada, Koichi Nishikawa and Daiki Ujiie

*Ritsumeikan University***ABSTRACT**

Recently, it has been cleared that it is very difficult to meet with water quality criteria for Lake Biwa in 2020 even if the planned policies are carried out as scheduled. One of reasons is that there is not any program for reducing the pollutants discharged from urban area during storm event. Some BMPs have been proposed by the specialist group on non-point pollution in IWA-Japan including the authors. Among them, the onsite pollutant removal by soil is one of effective programs because of easy maintenance and low cost. Series penetrate experiment were carried out at the experimental field located in Kusatsu City for the past two years. The field is divided to two part of areas and each is filled up by different type of soils. The polluted water discharged from the road surface was supplied to the field at every storm event. Effluent from the field was composed in surface flow and infiltration flow. As time goes on, the infiltration velocity is going down while surface flow is increasing depending to rainfall by stopping up. At the three points, intake, surface flow and infiltrated flow, water volume was gauged and water was sampled for water quality analysis. As a result, the series data in flow rate for all of storm events over two years and the serious data in water quality for 7 storm events were obtained. Flow balance has been cleared and the change of filtration rate has been cleared for the both each event and accumulated events. At the same time, behavior of pollutants in soil was cleared and a flow and mass balance model for sustainability of soil has been established.