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MIKE SHE MODELING OF SURFACE WATER AND GROUNDWATER INTERACTION

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ABSTRACT

Paya Indah wetland (PIW) is a designated wetland sanctuary covering a gross area of 260 km^2. The sustainability of peat swamp forest is very dependent on the presence of a shallow groundwater table and thus any impact on the groundwater regime is a potential threat to the peat swamp. The area has undergone some dry-up recently caused by the

surrounding swamp forest to burn periodically. Past peat forest fires occurred in the area clearly show the relationship between dry peat and fires, which in turn may highlight the possibility of dramatically lowering of the regional shallow groundwater level. To help quantify existing and future water quantity and quality conditions associated with development and other land-use change, attempt is made by employing the use of distributed, integrated surface water and groundwater hydrologic models. As an on-going wetland modeling project, further required data preparation and collection are in progress to support the numerical model. However, integrated surface-water and groundwater models were constructed using a detailed channel network and a fully-distributed approach to simulate groundwater flow. The model will, then, be calibrated to measured discharges and water level to the extent permitted by the available data to simulate two different scenarios including the impact of development of Cyberjaya city Flagship zone phase II and fully development of Cyberjaya and E-Village north-west and west to the PIW respectively.