

DASHBOARD EVALUASI SISTEM DRAINASE DALAM OPTIMALISASI SUMUR RESAPAN PERKOTAAN (KELURAHAN TERBAN, KOTA YOGYAKARTA)

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INTISARI

Sistem drainase yang tidak bekerja secara tepat akan memunculkan potensi masalah di perkotaan meliputi kejadian genangan air hingga banjir saat musim hujan. Penanda sistem drainase tidak bekerja maksimal muncul adanya genangan air di perkotaan. Faktor penyebab permasalahan kinerja sistem drainase disebabkan oleh permasalahan perubahan lahan, kontur wilayah kajian, curah hujan, dan aktivitas manusia. Hal tersebut karena kondisi kepadatan penduduk, permukiman yang tinggi, kemacetan, gedung-gedung, daerah resapan atau taman hijau yang kurang. Oleh sebab itu, melalui penelitian ini dilakukan analisis dan penyajian informasi *dashboard* terkait karakteristik drainase dan visualisasi informasi berbasis spasial. Tujuan dari penelitian yaitu mengkaji karakteristik drainase melalui pemetaan drainase dan parameter terkait kejadian genangan air dan Menyajikan informasi tentang evaluasi sistem drainase perkotaan dalam bentuk *dashboard*.

Penelitian ini menggunakan metode visualisasi dan analisis. Proses pengerjaan terdiri atas analisis data spasial sistem drainase, inventarisasi data genangan dan penanganan, perubahan penggunaan lahan, perhitungan curah hujan, dan penyusunan *dashboard*. Hasil penyusunan *dashboard* melalui *Looker Studio* dilakukan publikasi dalam bentuk *website* dengan terhubung oleh *GitHub*.

Evaluasi sistem drainase memvisualisasikan bentuk *dashboard* dengan berbagai informasi terkait pemetaan, kejadian dan penanganan genangan pada masing-masing titik lokasi selama 5 tahun 2018 sampai 2022 di Kelurahan Terban Kota Yogyakarta. Hasil informasi evaluasi akan menghasilkan kesimpulan apabila sistem drainase telah dilakukan penanganan melalui status selesai, berlanjut, dan gagal. Informasi parameter pada perubahan lahan, kemiringan lereng, curah hujan dengan hasil klasifikasi kelas berbasis spasial. Hasil pengujian usability *dashboard* kepada responden bahwa pengguna mencapai tingkat kepuasan bernilai 90,72% atau sangat baik.

Kata Kunci : *Dashboard, Looker Studio, Sistem Drainase, Genangan Air, Perkotaan*

DRAINAGE SYSTEM EVALUATION DASHBOARD IN OPTIMIZATION OF URBAN ABSORPTION WELLS (TERBAN DISTRICT, YOGYAKARTA CITY)

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ABTRACT

A drainage system that does not work properly will create potential problems in urban areas, including waterlogging and flooding during the rainy season. Signs that the drainage system is not working optimally are puddles of water in urban areas. Factors causing drainage system performance problems are caused by land change problems, the contour of the study area, rainfall and human activities. This is due to population density, high residential areas, traffic jams, lack of buildings, catchment areas or green parks. Therefore, through this research, analysis and presentation of dashboard information related to drainage characteristics and spatial-based information visualization were carried out. The aim of the research is to examine drainage characteristics through drainage mapping and parameters related to waterlogging events and present information about the evaluation of urban drainage systems in the form of a dashboard.

This research uses visualization and analysis methods. The work process consists of analysis of drainage system spatial data, inventory of inundation and treatment data, changes in land use, rainfall calculations, and preparation of dashboards. The results of preparing the dashboard through Looker Studio are published in the form of a website connected by GitHub.

Evaluation of the drainage system visualizes the form of a dashboard with various information related to mapping, occurrence and handling of inundation at each location point for 5 years 2018 to 2022 in Terban Village, Yogyakarta City. The results of the evaluation information will produce conclusions if the drainage system has been handled through the statuses complete, continuing, and failed. Parameter information on land change, slope, rainfall with spatial-based class classification results. The results of dashboard usability testing for respondents showed that users achieved a satisfaction level of 90.72% or very good.

Keywords: Dashboard, Looker Studio, Drainage System, Waterlogging, Urban