ABSTRACT

EVALUATION OF PHASE SETTINGS AND PLANNING ON SYNTHESE SIGNALS USING THE 2014 PEDOMAN KAPASITAS JALAN INDONESIA (PKJI) METHOD

(CASE STUDY OF SIMPANG EMPAT LEGUNDI, GRESIK DISTRICT)

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Legundi intersection in Gresik district is precisely located in Driyorejo sub-district. This Legundi intersection is access to Gresik, Surabaya, Mojokerto and Sidoarjo. This intersection often occurs in traffic, especially at 8:00 to 16:00, it is possible that one of the reasons is the management of the APILL arrangement that is not in accordance with the demand for the road, so it is necessary to evaluate the APILL arrangement for further re-planning.

This evaluation is based on the Indonesian Road Capacity Guidelines (PKJI 2014). The results of the evaluation of the existing conditions obtained the degree of saturation (D_J) North approach 0.43, South approach 0.93, East approach 0.50, West approach 0.98. Queue length (P_A) North approach 100 m, South approach 192 m, East approach 97 m, West approach 310 m. And tunda (T) North approach 22545.49 dek.skr, South approach 102577.32 det.skr, East approach 32585.02 det.skr and West approach 183744.4 det.skr.

Furthermore, re-planning with a 4 phase signal adjustment results in the degree of saturation (D_J) greater than 0.80 for all approaches except North approach 0.76, Eastern approach 0.75 and Eastern approach (BK_a) 0.30.

Based on the evaluation results and subsequent planning is done by geometric engineering. From the results of planning with 4-phase signal regulation, the degree of saturation (D_J) is greater than 0.80 for North, South and West approaches.

With geometry engineering and 3-phase signal regulation, it is obtained the degree of saturation (D_J) of North approach 0.43, South approach 0.66, East approach 0.50, West approach 0.77. Queue length (P_A) North approach 112 m, South approach 120 m, East approach 80 m, West approach 200 m. And delay (T) North approach 20276.96 det.skr, South approach 42890.04 det.skr, East approach 32585.02 det.skr and West approach 57012.55 det.skr.

Keywords : APILL, phase adjustment, degree of saturation, queue length