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Transportation is an instrument that is difficult to eliminate and also has a strategic development to launch all activities. types of existing transportation groups include road and rail transportation. The impact of the meeting of these two types of transportation infrastructure is that it causes the performance of the road section to be disrupted coupled with the closure of the railroad crossing. Queues and delays that occur at railroad crossings occur due to differences between volume, speed and density, as well as geometric conditions, road section capacity plus the closure of railroad crossings.

The research method used in this study is to obtain data using primary and secondary data. Then the relationship value of the three variables is calculated using the Greenshield method and the determination of queue length and delay using Shockwave.

Based on the results of the analysis and discussion, it is obtained for the relationship between volume, speed and density with the Greenshield method which produces a coefficient of determination (R^2) = 0.9449 for the relationship between volume and speed, (R^2) = 0.9186 for the relationship between volume and density, (R^2) = 0.9983 for the relationship between volume and density. Maximum traffic volume on Sunday (V_{mak}) = 4227.61 smp/hour. And the capacity value of the road section (C) with a 2/2-TT road type of 3758.40 smp / hour. The resulting degree of saturation is 1.124 smp / hour level of service E. The length of the queue and the biggest delay with the shock wave gives a value of 119.40 meters which occurs when the train passes at 16.15.25 - 16.19.16 WIB on Sunday with the volume of vehicles when the crossing door is opened (V_a) = 102.54 smp / hour. The density that occurs in vehicles when the crossing gate is opened (D_a) = 5.09 smp/km. The door crossing is closed for 231 seconds and the delay (stopped delay) for 278.50 seconds, the normalization time is 236.59 seconds.

Keywords : Traffic Volume, Speed, Density, Saturation Degree, Greenshield, Shockwave