I. INTRODUCTION

Traffic jams is a major problem in Indonesia, especially for Bandung, as a one of large city in Indonesia [18]. Such as increased transportation services online, causing traffic jams to occur. On jalan Asia Afrika, and jalan Merdeka in Bandung, traffic jams often occur. Because both of these roads are protocol roads in Bandung [15]. For the road conditions in Bandung, can be seen in Figure 1. Given this problem, a traffic flow simulation is needed to get a model of traffic flow that matches the problem occurring [1]. To make a simulation of traffic flow model, observation data is needed.

In general, there are two types of traffic flow models, namely microscopic and macroscopic. Microscopic is a model of traffic flow when the vehicle is not affected by interactions that interfere with the vehicle. While macroscopic is a model of traffic flow that considers interactions related to the vehicle. Such as driver behavior, vehicle position, road conditions, etc.
[12] [7]. This model is also known as the Lightill, Whitham and Richards (LWR) model [11] [17]. This model is also developed by the mathematical formula partial differential equations, and can be written as the transport equation. The velocity function will be defined according to the observation data. The velocity variable in transport equation is represented as the velocity-density function.

The aim of this paper is to investigate and simulate the traffic flow model with approximation of velocity-density function, generated by observation data

Fig. 1. Traffic Flow Situation in Bandung, West Java, Indonesia

As elaborated in [4] [5] [6], velocity and density are important roles to simulate traffic flow model. The velocity function will be obtained from approximating the observation data by the least square method, multiple linear regression method. It is caused by there are two additional variables used in this research, i.e, width of the road, and day. Only in this research, multiple variables used to obtain velocity-density function. The data, obtained directly by observing on Jalan Asia Afrika and Jalan Merdeka in Bandung, West Java, Indonesia. In this paper, the Lax-Wendroff method used to descretize model.

This paper is constructed as follows in Section 2, the numerical model and scheme given. Numerical approaches and results are shown in Section 3. Finally, the conclusion is drawn in Section 4.