

Study on Vehicle Flow at Maraimalai Nagar Industrial Estate

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Abstract - The project "STUDY ON VEHICLE FLOW AT MARAIMALAI NAGAR INDUSTRIAL ESTATE" deals with the establishment of an effectively designed intersection at the Maraimalai Nagar Junction to regulate the voluminous traffic during the peak hours of the day and allowing hazard free movement of the traffic at the junction. Maraimalai Nagar is amongst the fast developing urban areas in Kanchipuram. Maraimalai Nagar is one of the biggest industrial area of Kanchipuram. A traffic signal is required at the Maraimalai Nagar junction because of the traffic jams caused by the voluminous traffic carried by the Periyar Road towards the junction, which is met by traffic from Anna Road West and Anna Road East. As a result of the high intensity of the traffic and physical constraints, a Rotary is considered as the best suited intersection design for the Maraimalai Nagar junction as per the IRC considerations. A rotary intersection is more effective than a traffic signal because of formation of long queues and low intensity of clearance of traffic in a signal, whereas a rotary will ensure rapid exit from the junction hence assuring hazard free movement of traffic. The arising of conflicts from movements of traffic in various directions is solved in time sharing of the principle. The main advantages of traffic intersection includes a order movement of traffic a maximized capacity of intersection, It requires a simple geometric design. The main disadvantages of the signaled intersection are affects higher stopped delays. The design requires complex considerations. The overall delay are lesser than a rotary for an high volume of traffic, an user is more concerned about the delayed in stop.

Key Words: Signal, Rotary Intersection, Traffic Signal, Survey.

1. INTRODUCTION

The transportation are consisting of the facilities to entities of flow, and control system of traffic for permit people and goods to overcome the geographical space demand in order to participate in a time manner in some desired activity. Traffic flow is the number of vehicles crossing a section of road per unit time at any selected period. Traffic flow is used as a quantity measure of flow, the commonly used units are vehicles per day and per hour. Traffic is generally defined as the movement of people, goods or vehicles between spatially separated points, and thus includes pedestrians and all types of vehicles mechanized, motorised on non-motorised. The traffic surveys are the means of obtaining information about traffic. Traffic surveys are carried out the assess the traffic and socioeconomic characteristics of study area and hinterland. The traffic survey analysis identifies the constraints in the transport system and provides planners to find alternative solutions to solve the quick bottlenecks through traffic Management Measures. Traffic surveys aim the capturing the data that accurate reflect on the traffic situation of the area. The number of counting vehicles using a road and journey time collected information, there are many other types data that traffic surveys collect. Surveyors standing from the beside of roads and recording their observations on record. In this approach has been higher replaced by the recording traffic on a road is the volume of traffic using the road in a given interval of time. It is also termed as the flow and it exposes in vehicles per hour and vehicle per day. The traffic is composed of a number of vehicles, it is the normal practice to convert the flow into equivalent Passenger-Car U(PCU), by using certain equivalency factors. The flow is then expressed as PCUs per hour or PCUs per day. Knowing the flow characteristics one can easily determine whether a particular section of the road is handling traffic much above or below its capacity. Lower the speeds causes economic loss to the community due to time lost by the occupants of the vehicles and the higher operational cost of vehicles. Congestion also lead to traffic hazards. There for traffic volume data are require to draw up schemes for improvement of road network and also to allocate the scare economic resources most advantageously. If a traffic flow data are available over the past number of years, the rate at which traffic flow has increased in the past can be easily determined. Extrapolating the past trend into the future, a reasonable indication of the future rate of growth of traffic is made possible. If a average annual flow and the length of the highway vehicles using a road. The maintenance needs of a highway is often based on the traffic using the road. Traffic regulatory and control systems are designed on the basis of accurate vehicle flow data. The design signal and road junction are possible only if, among other things, the vehicle flow data are available using video cameras, and then analyzing the video footage later in the office.

2. OBJECTIVES

To Reduce the overall delays through improved planning techniques.

- To produce the free flow of traffic.
- To increase overall transport capacity.
- To increase the traffic safety.

3. TRAFFIC SURVEY

Traffic surveys aim capture data that reflect accurate the traffic situation in the selected area. Counting the number of vehicles using a road and collecting time information.

3.1 Manual Method

In manual method a team of field recorders the record the traffic volume on the prescribed record sheets. In this method it is possible to obtain to data which can not be obtained by mechanical counter. In this method it is impossible to the have manual counts for all the 24 hours. Manual Count classification Manual traffic flow count is categorised by a visual assessment of the vehicle size and configuration of axles.

3.2 Automated Method

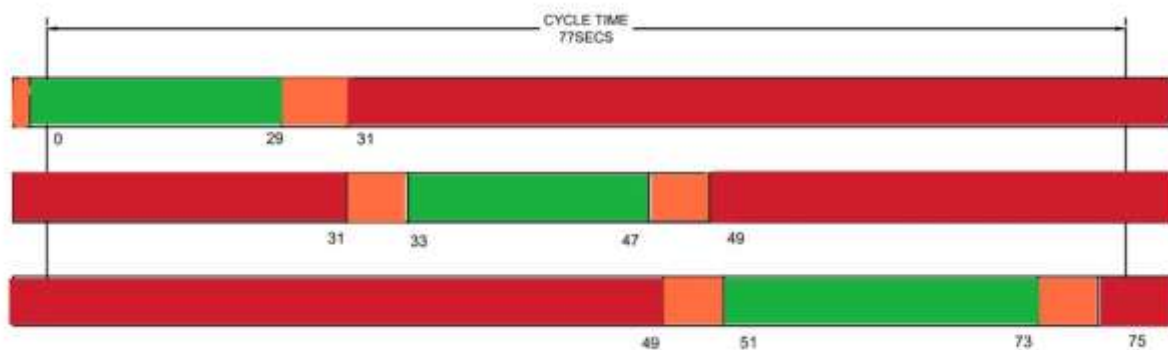
In this method, the counter may be either fixed or portable type. These counter automatically record the total number of vehicles crossing a section of the road in a desired period

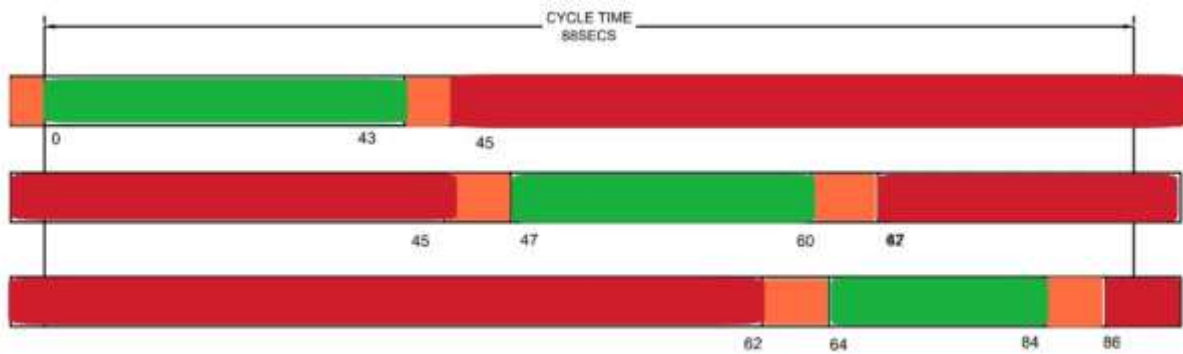
3.3 Geometry of Corridor

The list of intersections which are considered for coordination.

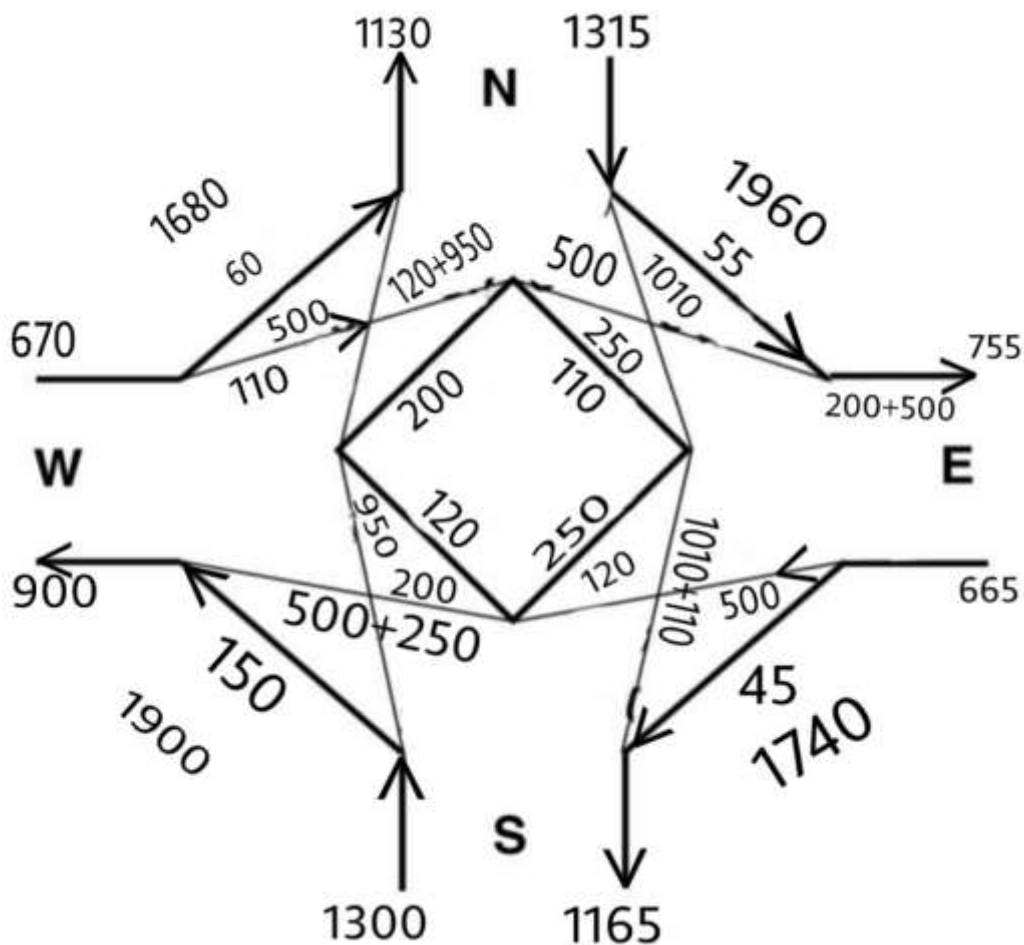
1. Anna road west
2. Anna road east
3. Periyar road north
4. Periyar road south

4. PHASE DIAGRAM





4. WEAVING DIAGRAM



4. CONCLUSIONS

The vehicle distribution at the two sides of Anna Road and Periyar Road was calculated. The proper measure for the intersection road at maraimalai nagar industrial estate are provided. The signal coordination for the intersection and the cycle time is calculated. The phase diagram of the signal coordination is in above. The signal coordination is enough for the current flow of vehicle in the intersection.

For the future, the signal coordination is not enough, rotary intersection is the proper way to control the flow fluctuation in maraimalai nagar industrial estate. Larger engine vehicles dominate the vehicle fleet in this

intersection, due to the industrial area. Single and multi axle trucks are the dominant vehicle type in the peak hour in the intersection. This class is associated with servicing activities.

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