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Traffic Survey and Design Effective Signal System in Undri Chowk

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Abstract: The increase in traffic volume at Khadi Machine Chowk intersection has arisen several problems like road accidents, conflicts, congestions etc. These problems can be solved by providing an efficient traffic signal control system for continuous and efficient movement of vehicles through the intersection. According to traffic signals, signal timing is the most important part which is used to decide the various timings with reference to stoppage of vehicles, pedestrian walks etc.

I. INTRODUCTION

As traffic control has become worldwide problem and has caused worry to administrators, researchers and local peoples. For a country like India an efficient road network is necessary for national, industrial development an as well as socio-economic development. Due to improvement in living standards of the people. Day by day with the increase in number of traffic problems in India during recent years the demand of traffic control equipment and has replacement also increased. As every new traffic control is designed to go safety and smooth regulation of traffic in khadi machine chowkh.

Road traffic control in khadi machine chowk involves directing vehicular and pedestrian traffic around a construction zone, accident or other road disruption, thus ensuring the safety of emergency response teams, construction workers and the general public.

II. OBJECTIVES

A. Develop a strategic maintenance plan for facilitating traffic for Undri chowk intersection.
B. Defining work area and related problems and providing remedies for the same.
C. Identifying suitable traffic control devices
D. Minimize network and end system complexity while maximizing network utilization.

III. NECESSITY

Traffic is the movement of people and goods from one location to another. The movement typically occurs along a specific facility or pathway that can be called a guide way. Movement- excepting pedestrian movement, which only requires human power—involves a vehicle of some type that can serve for people, goods, or both. Vehicle types, often referred to as modes of transportation. Traffic evolves because of a need to move people and goods from one location to another. As such, the movement is initiated because of decisions made by people to transport themselves or others from one location to another to participate in activities at that second location or to move goods to a location where they have higher value. Traffic flows thus differ fundamentally from other areas of engineering and the physical sciences (such as the movement of electrons in a wire), because they are primarily governed and determined by laws of human behaviour. While physical attributes are critical in the operation of all modes (e.g., to keep airplanes in the air), the demand or need to travel that gives rise to traffic is derived from the desire to change locations.

IV. METHODOLOGY

A. *Some Basic Aspects to be Considered while Proceeding*
1) *Daylight Saving Time:* For each zone, so that the same Canadian setting reliably supports only post-2006 time stamps. These limitations have caused problems.
2) *Road:* Stabilized base other than rails or air strips open to public traffic, primarily for the use of road motor vehicles running on their own wheels,
3) *Traffic Congestion:* Known as a traffic jam or traffic snarl-up. Traffic congestion can lead to drivers becoming frustrated and engaging in road rage. Traffic congestion
4) *Road Surface:* Road surfaces are frequently marked to guide traffic. Today, permeable paving methods are beginning to be used for low-impact roadways and walkways
5) *Roundabout (redirect from Traffic Roundabout):* To try to increase speeds, and thus have roads that enters the traffic circle tangentially. Because of the requirement for low speeds, roundabouts usually
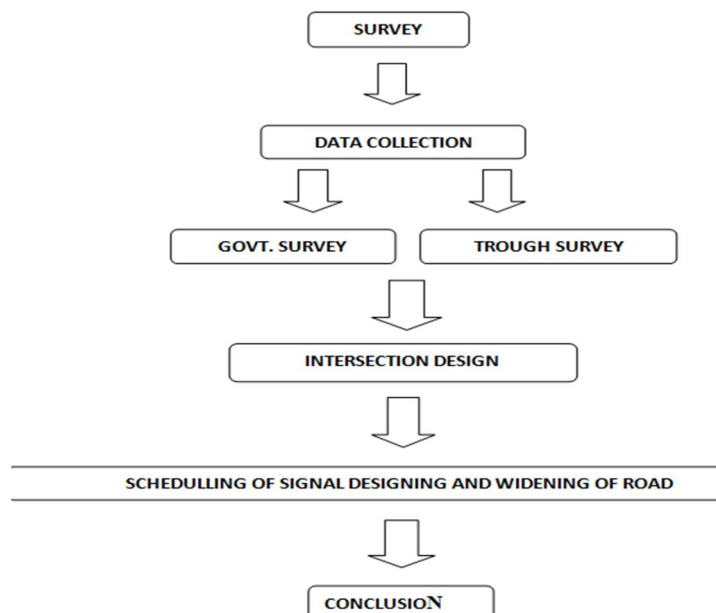
B. Survey

Types of Traffic Survey the following traffic surveys can be conducted for appreciating the existing traffic and travel demand characteristics and to prepare the transport infrastructure improvement plans. 1. Road inventory survey, 2.Classified traffic volume count survey, 3. Origin and destination survey, 4. Household interview survey,5. Speed and delay,6. Parking survey,7.Pedestrian survey 8.Intermediate public transport operator survey, 9. Intermediate public transport user survey
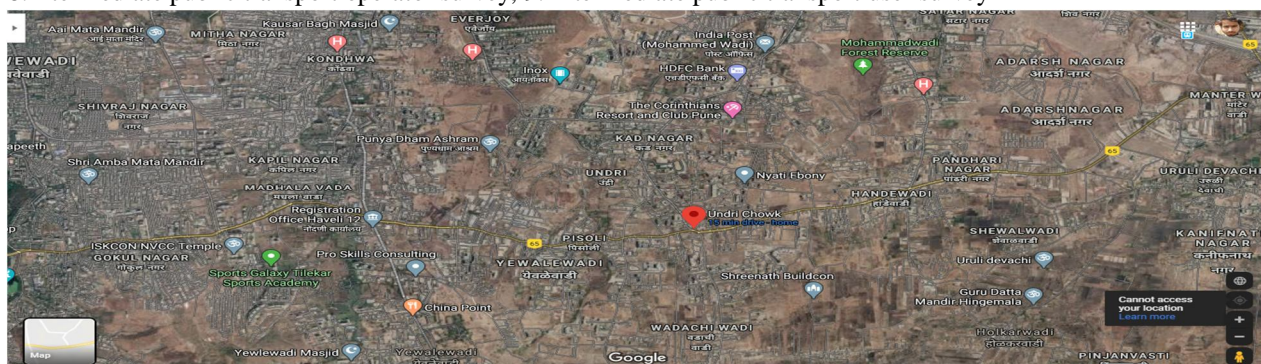
V. DATA COLLECTION

Site Selection Routes of Study Main Road; 1.Katraj-Bypass, 2.Wadachi Wadi. The Katraj-Bypass road is basically a narrow road which has got a heavy traffic flow due to prominent commercial establishment. Apart from this the road is a connecting road of the Katraj to South direction and Saswad to East direction has major establishment like government offices, collages, schools, commercial markets and industrial area . So this route is taken under the case study and the traffic flow was observed to estimate the traffic density. 1. Katraj Road 2. Wadachi Wadi road is one the busiest routes for pedestrians as well as vehicular movement. As there are numerous prime commercial establishments on this road, parking is another major concern apart from the heavy traffic flow. Many a times a wrong parking also disrupts the traffic movement along the way. Also, there are a few points on this route on which the road bottlenecks and thereby slowing down the traffic flow. This route also covers a major market, (Kondhwa) on the way where the traffic passes majorly.

A. Government Survey

Comprehensive measurements of headway, flow and speed can be recorded automatically by a data-logger connected to vehicle detectors. The logger should record the arrival time and speed of each vehicle in each direction for a period during a typical weekday. The recorded data file can then be analysed to provide the following information:

1) A table of the mean time for a gap to occur between vehicles greater than a specified range of values;

2) A count profile of the vehicle flow throughout the day;

3) A distribution of vehicle speeds throughout the day.

Important factors may then be extracted from the table for recording in the SITE ASSESSMENT RECORD and use in the Assessment Framework.

B. Trough Survey (Manual Method)

The manual method for estimating the difficulty of crossing at a site relies on judgement by an experienced traffic engineer. The factor should be assessed on a descriptive scale from, say, 'Impossible to cross safely at all times' to 'No difficulty in crossing within a second or two' for the period of greatest concern.

C. Equipments Used

1) Sony Handy Cam (32x zoom): A high definition Sony handy cam was extensively used over various locations to record and demarcate the number of vehicles plying on that particular road over on a particular time of the day/night. The camera was placed on such an elevation and place that the whole square (and particularly one direction of inflow and outflow) of the traffic movement was recorded. The zoom was set in such a manner that all the vehicles were easily distinguished. 2) Sony tripod : A light and sturdy Sony tripod was used to fix the handy cam at various angles and elevations. The height was adjusted in such a manner that the camera covered the whole movement of the traffic below. 3) Sony mini DV cassettes: These types of cassettes with recording length 1 hour were extensively used to record the traffic flow over different locations. Each cassette was marked separately according to their respective locations. 4) Picture motion browser software: This software was essentially required to convert the recorded video into computer playable format for a more convenient view and re-usage of the cassettes. 5) Measuring tape: A measuring tape was used to measure the road breadth over various locations.

D. Intersection Design

The design of intersection procedure involves Phase design,

1) The objective of phase design is to separate the conflicting movements in an intersection into various phases, so that movements in a phase should have no conflicts. If all the movements are to be separated with no conflicts, then a large number of phases are required.

2) To illustrate various phase plan options, consider a four legged intersection with through traffic and right turns. Left turn is ignored

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