To Study and Expected Solution over Traffic flow Management and Parking system at Kasarwadi Metro Station Area

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Abstract

With the expanding population and the improvement being done in urban communities of India, the blockage is another issue emerging before the transportation division. In thought with the Pune city, because of its beautiful excellence, rich normal assets and its strict and chronicled spots and its instructive, innovative work organizations, the population is consistently expanding. So there is a prerequisite of legitimate transportation framework. So it gets important to examine and evaluate the effect of mass quick travel framework development work zones on traffic condition which will additionally help in evaluating the economic adversity because of the metro rail development work zone. This examination meant to consider the effect of metro rail development work zones on traffic conditions and subsequently measure these effects for present circumstance at Kasarwadi metro station which is in under construction. Initially, this paper analyse the impact of occasions on traffic outside the station and presents normal methods of traffic management. At that point, this paper thinks about incorporated modernization strategy and picks key assessment markers, accordingly utilize the request for inclination by comparability to perfect answer for assessing the traffic the board plan dependent on recreation. This paper studies the simulation method and chooses key evaluation indicators, thus use the order of preference by similarity to the ideal solution to evaluate the traffic management plan based on simulation. Finally by using these methods efficiently proper traffic flow and parking system can be managed.

KEYWORDS: *Key evaluation indicators, Metro, Transportation framework, Traffic Management.*

I. Introduction:

Pune City is well known as the 'Queen of Deccan'' because of its grand excellence and rich normal assets. Pune city is known on the planet map as a result of its instructive, examine and improvement organizations. The region likewise has significance as a significant army installation. Pune is the most industrialized locale in western Maharashtra and a well known IT center point in the nation. Pune is the social capital of Maharashtra. It is the origination of the artist holy person Tukaram.

Open Transport System is a proficient client of room and with decreased degree of air and clamor contamination. As the populace of a city grows, share of public transport, whether road or rail-based, should increase. Experience has appeared

that, in urban communities like Pune where streets don't have sufficient width and which take into account blended traffic conditions containing moderate and quick moving vehicles, street transport can ideally convey 8,000 people for every hour per bearing. When traffic density increases beyond this level, normal speed of vehicles descends, venture time expands, air Population gets increases and commuters are put to increased level, of inconvenience. Consequently when on a passageway, traffic density during top hours crosses this figure, arrangement of rail-based mass vehicle is requires, i.e. Metro system should be considered [2].

1.1 Location-

Pune district is located between $17^o54'$ and $10^o24'$ North Latitude and $73^o19'$ and $75^o10'$ East Longitude. The district is bound by Ahmadnagar district on the north-east, Solapur district on the south-east, Satara district on south, Raigad district on the west and Thane district on the north-west[2].

The study area has been taken as Kasarwadi metro station area is selected which is at Old Mumbai-Pune highway NH 48, the area under the, Pimpri Chinchwad Municipal Corporation (PCMC).

1.2 Need of Study-

Public Transport System is a well-organized user of space and with reduced level of air and noise pollution. As the population of a city increases, share of public transport, whether road or rail-based, should increase. Experience has exposed that, in cities like Pune where roads do not have adequate width and which cater to mixed traffic conditions comprising slow and fast moving vehicles, road transport can optimally carry 8,000 persons per hour per direction. When traffic density increases beyond this level, average speed of vehicles comes down, journey time increases, air population goes up and commuters are put to increased level, of inconvenience. Thus when on a corridor, traffic density during peak hours crosses this figure, provision of rail-based mass transport [2], i.e. Metro system should be considered. So, while constructing the Metro, their should should be a proper Traffic management plan. For avoiding traffic problem, this study will be carried out.

1.3 Objectives

1. To study the map of Kasarwadi station area.
2. To study and the flow of traffic near Kasarwadi station.
3. To provide safe & efficient movement of pedestrian at metro station.
4. To disperse efficient & safe traffic in metro station area.
5. To manage space below metro station efficiently.
6. To provide Parking Provision near Metro Station areas.

1.4 Scope of the Work

1. To ensure 2+2 lanes and Widening of Footpaths
2. Efficient traffic dispersal
3. Parking Provision near Metro Station areas.
4. Integration with Other Transport Modes
5. Station Influence Zone for restricting on-street parking, hawking &providing encroachment free footpaths.
6. Footpath Railings

II. METHODOLOGY

Initially, to understand the problems being faced by the Kasarwadi area, visits will be made to the assigned offices and will discuss the problem facings. Proposed development plan of the Pune Metro will be studied. The problems faced during the construction will be discussed. Map study of Kasarwadi area will used for reference and the geological problems concerning the strata. Based on the study, the construction problems will be sought after and the proposed solutions will be given. For the traffic problems, traffic department of Pune will be visited and the details regarding the Pune metro and the problems it will pose on the traffic will be discussed. PCMC department will also visit regarding the surveys for the metro and the approach to this methodology will be discussed with the executive engineer. The cost proposed for the Pune Metro is close to 10,000 crores and for this amount, central government, state government and the municipal corporation along with the World Bank are expected to contribute [2]. After all study, the solution over traffic management and parking problems will be presented.
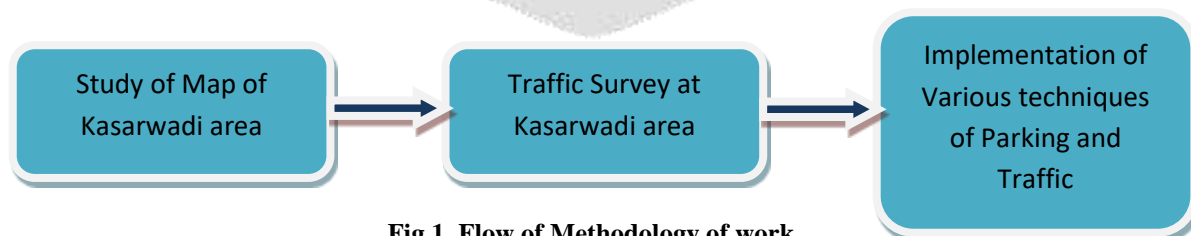
Study of Map of Kasarwadi area → Traffic Survey at Kasarwadi area → Implementation of Various techniques of Parking and Traffic

Fig 1. Flow of Methodology of work

Case Study-

For the study and analysis Kasarwadi metro area is selected which at following metro corridor 1,
Pune Metro routes – Phase I [8]
• **Corridor 1** – PimpriChinchwad to Swargate

• Length - 16.589 km
- Elevated 11.570km – PC to Shivajinagar
- Underground 5.019km – Shivajinagar to Swargate
• **Corridor 2** – Vanaz to Ramwadi
• Length - 14.925 km – Fully ELEVATED

Stations at PCMC- Swargate Route-[8]
PCMC to Agriculture College – Elevated
Agriculture College to Swargate – Underground
PCMC (START) – Old Pune Mumbai highway(service road) –
(2) Tukaramnagar – (3) Bhosari – **(4) Kasarwadi** –
(5) Fugewadi – (6) Dapodi – River crossing – (7) Bopodi –
(8) Khadki – (9) Range hill – Agriculture college*****–
(10) Shivajinagar – Police ground – Shivaji road –
(11) Pataleshwar – (12) PMC – River crossing –
(13) Budhwarpeth – (14) Mandai – (15) Swargate (END)
Numbered locations are 15 metro stations (1 to 9 Elevated and 10 to 15 Underground)
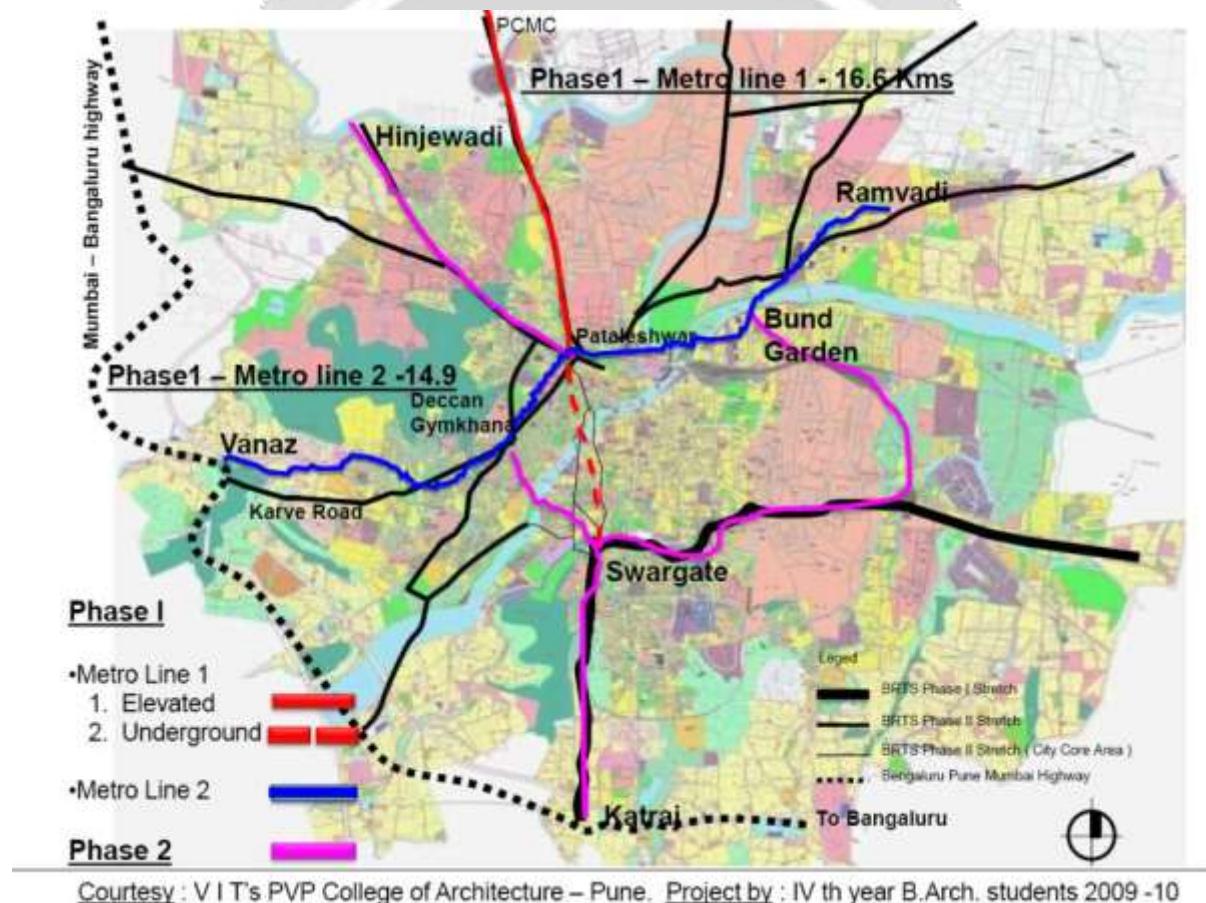*****Metro passes through the Agriculture college campus.

Fig.2- Pune Metro routes – Phase I and II

III. Expected Solution-

From the consideration of methodologies of traffic management and parking management, the expected solution will be as follows, The Kasarwadi metro station area traffic management and dispersal solution can be achieve through this project-

1. Efficient and safe traffic dispersal near metro station
2. Efficient traffic and commuters dispersal
3. Efficient management of road space below metro station

4. Parking Provision near Metro Station area
5. To ensure uniform 2+2 lanes for traffic – Widening of Footpaths
6. Efficient and safe movement of pedestrians at metro stations
7. Station Influence Zone for restricting on-street parking, hawking &providing encroachment free footpaths.
8. Well planned Footpath way with Railings.

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