# Performance Comparison and Analysis of a Designed Temperature Controller for a CSTR model

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***Abstract-*** *In Pune core areas is very much popular for economical and religious activities, this activities reflects floating and fix population with increase traffic. Increase Traffic in Core area causes Lack of parking space, traffic congestion, and increase accident rate. In past Pune Municipal Corporation has implement various parking management strategies for the same area but increase in population and traffic in every day it is mandatory to make provision for extra parking space with the help of Various Parking Management Strategies .In this study we survey particular area and analysis with standards requirement of parking space for existing and forecasted population. After getting demand we suggested various policy and Strategies for tackle such parking Problem facing by population lives in core area*

***Keywords***- Traffic, Parking, Core area, Strategies

## I. INTRODUCTION

Parking is to bring a vehicle to a halt and leave it temporarily, typically enough car park by the side of the road .Parking is an essential element and a major factor which is plays a key role in development of any City. Vehicle is to be parked at various destinations which include spot tourist was spot educational halos, chemical Shopping Complexes etc. Parking provided and easy access to various destinations with safe and assured parking facility. The increase in heavy concentration in population has increased the number of vehicles. As the numbers of ACL have increased the problem of parking spaces has raised. It is well now that the initiated availability of parking in huge cities lives traffic conjunctions. Parking management implements the idea related to policies and programmers that result in efficient use of parking resources some of the causes of construction of roads are stage rooted in growing cities owing to policies overlaps and list all policy implementation. Lack of connectivity in the road lack of use of public transport create problem in construction as the vehicles are parked beside the roads the carriage width is reduced causing traffic jams.

**Strategy for Parking Management**
Strategic planning objectives:

- With increase in affordability the cost of development should be reduce.
- Smart growth in community planning with more compaction..
- Avoiding traffic congestion, accident pollution with the help alternative modes of transfer.
- To give quality service to non drivers.
- For community it is necessary to improve design flexibility.
- To get aesthetic benefits to reduced impervious surface and its surrounding environment.
- To give the new platform to new users.

## II. LITRETURE REVIEW

In various study carried out for parking management, author defined various strategies through various method, for Kolkata city one research is carried out for on street marking demand in this research author said that the parking management is important need for any urban area. Parking system on street is greatly affected on overall transit system in urban area. Study includes modification of parking demand, model Estimation and calculation of the parking services. In case study area chosen are likely to be Dalhousie (office area) and Gariahat (shopping area). In this area the field work are conducted on actually survey and this field work are analyzed and then finally results are created in this field survey .Different surveys are adopted likewise parking in-out survey, inventory survey, questionnaire survey, license plate survey etc are carried out effectively and efficiently by using different instrument. i.e instrumented Big Kare carried out in period of 9 hours to 18 hours in office Area on weekday and for shopping area from 10 hours to 21 hours on the week end respectively.

In Indian context there is various issues related to traffic like traffic congestion, lack of Parking space, increase rate of accident in one of study carried out for overall Indian cities author said traffic congestion which is an issue of public policy and social policy which can affect on total balance between overall developments of the particular City. In this studies the overall traffic system in mainly Indian cities and

their respective policies undertaken by government of their particular City. And suggest various policy of parking system in urban area to improve parking system in core city. For completion of study related to Indian cities it concluded that traffic congestion does not only occur due to the increasing level of vehicle but also by the flow of the traffic flow and it causes heavy congestion.

Parking management strategies, evolution and planning studies the principle of parking management system for the purpose of continuous improvement of parking system in urban areas. Through various pie diagram and new parking systems which shows the various new idea about oral improvement of parking system in urban areas. Study reflects various alternative ways to find out capacity of parking area. This various way at the time of parking daily or weekend outlook parking information is automatically sent to the nearby motorist information centre, so that the public is allowed to use the alternative parking space which help to reduce the congestion by avoiding chaos. Through the various ways defined by this studied The author has concluded that use of improved parking management system by adopting different advanced methods of parking management which will be beneficial for the overall development of urban areas and not harmful for environment for pollution point of view.
With one of the popular strategies related to parking i.e on street parking. In one of research related to same strategies the author carry out cost benefit analysis, through this analysis author gives an brief introduction about the personal vehicles and their use creates huge parking demand in urban area or Metropolitan cities. It creates a lot of problem in transit system in overall City so the author adopted different methods to improve parking management system like voice policies and programs are carried out to the effective and efficient use of parking space. The study is carried out with the help of existing space condition and current parking accumulation to be managed and improved overall parking management system in metropolitan city. Various Field surveys are adopted with the help of plans, survey data, parking codes for analysis which was analyzed to get results. With the help of this result the effective parking management system is developed, and concluded that there are mainly two methods which are adopted like LOS (line of balance) and (WTP) Willinglen traffic parking for the continuous improvement of traffic management system. Analysis of parking as per requirement gives the parking space over flow and their capacity are analyzed. Provide correct information on parking capacity and parking cost with the help of sign, map and other electronics devices which helps the traffic control and parking management system at the peak hours.

Generally in recent year one of the concept which is introduce for planning of major cities i.e. Smart city concept. Planning of city is carried out with help of various aspects, in this aspect of major which is affect on social and economical development of city i.e Transportation. In the above discussion transportation study included traffic, parking, and Design aspects. In one of the study which related to Smart city , Smart Parking's introduce for planning of city under major aspect the paper named 'Smart parking' In this study author explained first problem arises on parking system in congested area in metropolitan city. The proper solution to be adapted for efficient and effective parking system like parking price and information solution of information include that total capacity of each parking and the president on current status of parking and this information is sent to the motorist car user to the know about the current status so the reason other parking areas this parking management system studied by the city of San Francisco.

The method adopted in this paper which method are divided into 4 parts likewise stakeholder assessment, impact information, impact pricing, crowd sourced parking information system all points are means to study total space available and to provide information to the motorist or any car users, to provide price for parking area where price meters are installed.

## III. METHODOLOGY

Data needed and available data sources for this study are collect from two type of Survey as follows:

1. Primary Survey : Primary survey contains data collection through interview , Questioner or visually
2. Secondary Survey : It contains data source of collection is various Government ,Semi government or Private organization

In primary survey mode of data collection is Questioner which details is given in Appendix, In this questioner there is question related to transportation mode , Facility , Parking spaces and the questioner is fill up from stake holders those which use the transportation mode for traveling from core are or towards core area frequently or daily . The next mode of data collection through primary survey is to carry of PCU count in some of junction which is act as critical junction.

The mode of Data collection through secondary survey is to collect the data from concern Local Authority office related to Existing Spaces available for Parking and its location. After collection of data, data is to be analyze and

compare with standers require for parking facility in core areas. Comparing the data with standard one some of inferences is to be drawn out. Inferences is in the form of Demand, Require time and problem related to existing situation. For prevention for of common problem and fulfill the demand suggest the policy and recommendation related to Parking.

## IV. CASE STUDY

Pune is located on Mula Mutha river bank which area spread over 243.84 sq.km . With population over 3 million. Pune has emerged prominent location for manufacturing industries, and has now been recognized as IT hub and educational hub in India. The rapid growth of city changes the characteristics from pensioner city to educational – administrative center. The city is famous for Oxford of east and cultural capital.

### Existing Status for Parking in city

Under pressure to resolve traffic-related issues in the city, the Pune Municipal Corporation (PMC) administration has proposed pay-and-park for two-wheelers on 15 major roads. The system was in existence in the past. This proposal comes after the elected representatives rejected a similar proposal on 45 city roads. The representatives have been urging civic administration to first provide efficient public transport system and then push for pay-and -park system. However, the Union government has been asking the state governments and local civic bodies to discourage private vehicles from coming on roads by introducing this system. In the proposal, the civic administration has proposed Rs 3 for two-wheeler parking for the first hour and Rs 5 for every subsequent hour. For four-wheelers, the rate has been fixed at Rs 10 per hour. Earlier, the civic administration had proposed free parking for the first hour but it removed the provision in the new proposal. To resolve the issue of local residents, the administration has proposed monthly passes with electronic marking for easy identification.

Other than on street parking on major 15 roads, PMC has provision of parking space in core city for floating and permanent population, this provision of space in terms of vacant plot or structure at 10 different locations. This parking space is maintained in terms of PPP form or Private form is as follows.

| Sr. No. | Name of parking | Distance from Core area in Km | Location |
|---|---|---|---|
| 1. | Parking | 0.01 | Budhwar Peth |
| 2 | Mandai | 0.05 | Tulsi baug |
| 3 | Dagdusheth Parking lot | 0.13 | Budhwar Peth |
| 4 | Minarava | 0.14 | Shukrawar Peth |
| 5 | Mandai Parking | 0.23 | Shukrawar Peth |
| 6 | Prashat Garage | 0.41 | R. Kelkar Road |
| 7 | ABC Chowk | 0.46 | Narayan Peth |
| 8 | Parking | 0.50 | Narayan Peth |
| 9 | Parking | 0.50 | Rashtrabhasha Bhawan |
| 10 | New Peter Autmobile | 0.67 | Shukrawar Peth |

## V. CONCLUSION

The parking demand is rising day by day as the city is extending its boundaries rapidly. one of the major problem arising in the city is increase in the motorists versus availability of spaces. Based on the primary survey the parking spaces should be increased in the areas like Deccan, Bajirao road, Laxmi road. The open spaces should be utilized for parking purpose. The high demand for parking can be surely meet the development of automated parking system. Peak hours can be managed with proper supervision and management.

## APPENDIX

### Questioner with Its Result

**Q 1.** How often do you visit BAJIRAO Road?

Daily - 6.6%
Twice in a week - 18.7%
Weekly - 74.7%

**Q.2** how often do you face problem while parking your vehicle on Bajirao Road?

Ans- Lowest -2%
Average-6.15%
Highest- 10%

**Q.3** For how long do you park your vehicle?

Ans: - 1 hours - 50.5%
2-3 hours- 38.5%

More than 3 hours - 11%

**Q.4** How you been in a possible because of lack of parking?
Ans: - Yes - 59.6%
No. - 8.5%
Many times - 31.9%

**Q.5** Whenever you go for shopping or go to need your place where you need to park your vehicle do you know which side of the road is safe and legal for parking?
Ans: - Yes - 54 %
No. - 45.9%

**Q.6** How will you rate the available parking space?
Ans:- Lowest- 1%
Average. - 3.28%
Highest. - 10%

**Q.7** Should the shopkeeper provided you you parking slots ?
Ans: - Yes - 48.4%
No - 51.6%

**Q.8** Do you agree with the term pay and park?
Ans: - very disagree - 12.2%
Disagree - 12.2%
Somewhat disagree- 34.7%
Agree - 21.4%
Very agree - 7.1%

**Q.9** it is necessary to create additional parking spaces according to vehicle?
Ans: - Yes - 93.8%
No. - 6.2%

**Q.10** will parking problem after the Smart City project?
Ans: - Ye - 91.8%
No - 8.2%

## REFRENCES

[1] Debasish Das, Dr. M Ali Ahmed, Saptarshi Sen, 2016, On-street parking demand estimation model: A case study of Kolkata
[2] M. Absar Alam and Faisal Ahmed, 2013, Urban Transport Systems And Congestion: A Case Study Of Indian Cities
[3] Todd Litman, 2016, Parking Management Strategies, Evaluation and Planning
[4] Priyanka Kolhar, 2012, On street parking management plan and cost benefit analysis for Dharwad City, Karnataka, India, Volume: Vol. 2, Issue 3, May-Jun 2012, pp.1654-1665
[5] Rohini O. Mogarkar, Mohini T. Gulhane, 2016, Smart City Based Smart Parking System in Metropolitan Area Using R.F.I.D, Volume 11, Issue 3 Ver. IV (May. – Jun. 2016), PP 71-73