

An Analysis into the Parking Policy of Faridabad, India: Planning Recommendations and PPP Model

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Abstract The city of Faridabad is one of the fastest growing towns in the National Capital Region (NCR) which consists three important urban agglomerations namely Old Faridabad, Ballabgarh and New Industrial Town (NIT). At present there is approximately 1.7 Million populations in Municipal Corporation of Faridabad (MCF). There is a loss of nearly One million man-hour every month while commuting between home and work which is due to the traffic congestion and increasing jams in the city and if this loss is calculated @ Rs.20/- per hour it would result in loss of Rs.20 Million per month and which cumulates to Rs.240 Million per annum. In this paper, a study of effective adoption of viable and sustainable traffic management and parking policy has been done. Also in this paper and an appropriate methodological approach for proper assessment, analysis and framing of policy aimed at reduction of congestion especially at junctions, waiting points and nodes, to avoid the diversion of open, public utilitarian spaces for parking and regulating the growth of vehicle numbers has also been studied.

Keywords Parking policy, PPP Model, Faridabad

1. Introduction

The town of Faridabad was founded in 1607 AD by Sheikh Farid, who was a treasurer in the cabinet of Mughal emperor, Jahangir. It is one of the fastest growing town in NCR which consists three important urban agglomeration namely Old Faridabad, Ballabgarh and New Industrial Town (NIT) Faridabad with approximate area of 204 square metre is one of the prestigious industrial metropolitan town on the southern fringe of Delhi having its esteemed presence as the major centroid of the industrial maps of this country. Faridabad has emerged as one of the most populated industrialized cities of Haryana which is famous for its Mehndi Production in agriculture sector while, tractors, motor-cycles, switch gears, refrigerator, shoes, tires and apart from this now has also important node for the educational institutional. Apart from this recently keeping into consideration its emphasis and importance on the diversion of economic structure and strata of the social economic web recently Faridabad has been also nominated and is front runner in the identified and proposed to be a

smart city which would the nation shall be cherished to have the same [1].

Several city governments are framing parking policy and rules to reduce parking pressure and congestion on roads and public places to make cities more livable [2]. Faridabad is a buzzing town with various kaleidoscopic economic activities, but it is confronted with a problem of geometric increase in the population of MCF area. With the sprawling city has created a lot of pressure on the road infrastructure, circulation pattern as well as safety hazards which poses hindrance for safe transport system particularly posing constraint on parking issues. This is not only a problem faced in this town but also a menace throughout all the developing countries in the world. At present in Faridabad Corporation area the pattern of population growth is as follows:

Table 1. Pattern of Population growth in Faridabad

Year	Population	Population Growth Rate (%)
1961	59,039/-	-
1971	1,22,817/-	108.03%
1981	3,30,864/-	169.40%
1991	6,17,717/-	86.70%
2001	10,55,938/-	70.94%
2011	14,38,855/-	36.94
2021	24,38,000/-	69.44
2031	38,86,40/-	59.41

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2. The Problem of Traffic Congestion in Faridabad

The population in MCF area is approximately 17 lakh and there is a loss of nearly 1 million man-hour every month while commuting between home and office which is due to the traffic congestion and increasing jams in the city and if this loss is calculated @ Rs.20/- per hour it would result in loss of Rs.2/- crore per month and which cumulates to Rs.24 Crore per annum. It results in various types of delays i.e. late arrival for employment, meetings, and education etc. It also results into wasted fuel, increasing air pollution and carbon dioxide emissions (which may contribute to global warming) owing to increased idling, acceleration and braking. Increased fuel use may also in theory cause a rise in fuel costs. The wear and tear on vehicles is also faced due to the result of idling traffic. The other problems which are faced in such situations may be termed as follows:

- Stress and frustrated motorists road rage.
- Late response in Emergencies.
- Spillover effect from congested main arteries to secondary roads and side streets.

In MCF area, the traffic is predominantly mixed motorized vehicles and the road space is shared on an average by at least 30 different types of vehicles, each with different static & dynamic characteristics. The share of non-motorized modes of transport ranged between 5-8% and MCF also has the highest number of vehicles in any city of Haryana it adds at least above 200 vehicles on its roads daily resulting in over 73000 vehicles being added annually. The above problem also poses various associated issues like Dependence for Connecting the shadow zones and dark linkages like Lack of Accessibility of Public Transport, lack of synchronization or facilities using non mortised transport, para-transit systems, battery operated vehicles. This leads to handicaps at interchange points of the public transport networks and commercial hubs which do not have adequate parking and pick-drop facilities forcing people to opt for personalized vehicle usage. It is also a fact that the personal vehicles in the city cater to only 30% of the travel demand whereas the buses only constitute 1.2% of population which is quite low as compared to the total demand for the public transport. This also is specific to be mentioned that 95% of the time private vehicles are immobile while in congested traffic.

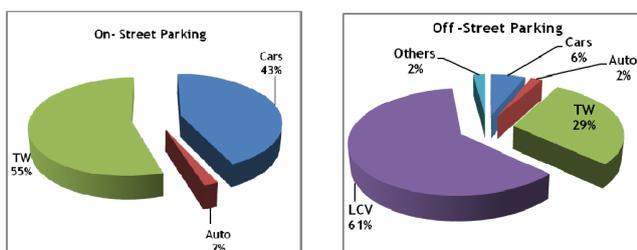


Figure 1. The percentage of different types of vehicles for On-Street and Off-Street parking in Faridabad

3. Parking Problems in Faridabad

The above poses a challenge to solve the issues related to Carriage way, unregulated road side parking which is being resorted to by the vehicle users as the owners and visitors prefer to park their vehicles close to the work place for the purpose of easy access and safety of the vehicle which is not only hindrance in free flow of traffic circulation but also it must be prohibited. Followings are the parking problems which have observed:

- The Parking on foot path by house dwellers: This limits the foot path space for pedestrians and is wide spread in both residential and commercial areas of the city.
- Parking in front of the shops: Basements which are meant for parking are put to commercial use and the shops/commercial establishments are forced to park their vehicles on roads.
- Parking by automobile dealers and repair units: repair vehicles and goods are parked on road and sidewalks.
- Parking of vehicles around schools and colleges: School buses and auto rickshaws used to transport the school children are indiscriminately parked on adjoining spaces including roads around the schools creating utter chaos and confusion. Also the parking around Business establishments: have very little parking space within their property, a majority of the users park their vehicles on the adjacent sites, roads and foot paths.
- Visitor parking for apartments and multi dwelling units are not available and visitor's park indiscriminately on adjacent areas, foot paths and on the roads.
- Parking lots are required to be defined and needs to be effectively utilized as on today nearly all the places there is unauthorized fee collection is carried out resulting into loss to MCF. The creation of parking lots and efforts for traffic regulation measures conceptually envisaged are need of hour and overall demand.
- Commercial vehicles such as the Lorries, mud tippers and others have no space for the parking in the city. The transport Lorries are parked alongside the highways.
- The lack of truck terminals and associated facilities allows the vehicles to enter the city, adding congestion.
- Small & non-motorized vehicles such as push carts, hand carts have no space reserved close to the communities. The EWS and informal sector are forced to park their vehicles on the road, sidewalks. The private bus parking is unregulated and the space requirement for buses is inadequate. The "spillover of the bus" leads to crowding and is not convenient to the user or to the vehicles passing on the road.
- The taxis, private mini bus which operate on contract are found to be parked at places convenient to the owners, often on civic amenity sites, park areas or any disused private land. These will need to be regulated. Also Individual taxi owners, etc. park their vehicles on the road/sidewalks at night [3].

4. Need and Objectives of Parking Policy

There is a need for an effective adoption of viable and sustainable traffic management and parking policy with appropriate methodological approach for proper assessment, analysis and framing of policy aimed at reduction of congestion especially at junctions, waiting points and nodes, to avoid the diversion of open (Public) utilitarian spaces for parking vis-à-vis regulating the growth of vehicle numbers (by framing appropriate rules). Figure 1 shows the road side parking of vehicles in Faridabad. The Parking policy attempts to cover some basic objectives. They are summarized in Table 2.



Figure 2. The roadside parking of vehicles in Faridabad

5. Planning Recommendations for Parking in Faridabad

1) Integration of land use and transportation directly influencing transport demand

- The zoning and land use such as commercial business areas, mixed land use developments, high intensity land uses are to be centred on the transportation hubs with adequate parking.
- The Land use primarily depends on the management of the Floor Area Ratio. Transportation hubs such as Metro stations, railway stations, transit centres must be accorded with higher FAR within specified guidelines.
- Areas with high density of population must be serviced with public transportation.
- Projects taken up by MCF or any other agency (private or public) that induces a large vehicular traffic needs to include transportation needs (To make reservations of space for parking, commuter facilities etc.
- Periodic reviews of plans and projects are required to ensure proper compliance of parking norms is met.

Emphasis multi-level and multi-use parking lots at various transit points, commercial centers, such as railway stations, metro, etc.

- The key transportation hubs with interchange facilities between transportation systems need strengthening at the plan and implementation. The air space and the below grade area should be promoted effectively for

parking facilities, for commuter facilities.

- For instance- Bus station over rail station with public parking facility above can be designed.
 - Parking facility may be provided at transit management centers Local Bus Terminus, Interstate Bus terminus and Metro stations.
- ### 2) Mitigate the effects of the newly introduced High Intensity/ Higher FAR land uses
- It is recommended for implementing the parking policy higher authorities has to provide assistance to the executors during the course of design, engineering so as to comply with the regulations.
 - The approvals for such projects should be delegated to the local level so as it may be carried out through a consultative approach.
 - High density land uses have to be provided which mandatory accommodate additional parking facilities either at basements, multi-level or through sharing of facilities (both Govt. and Private).
 - In case of non-provision, the developers/ owners of the said facilities shall pay an impact fee to MCF. In such cases, MCF and Police may facilitate parking for the users through a coordinated plan.
- ### 3) Devise progressive Building byelaws by adapting regulations to meet the ground realities – Old city areas, urban villages, commercial centers, etc.
- Many of the Building renewal projects cannot accommodate parking in their plans due to the constraints of space within the site. In such cases, equivalent parking impact fee based on the FAR have to be levied and authorities will facilitate common parking infrastructure. The old areas of the city do not have enough open spaces for accommodating parking.
 - Vehicle free zones may be planned in consultation with different stakeholders. Wherever feasible multi-level parking /underground parking can be created.
 - In case of old city areas – disused government facilities such as civic amenities may be used for parking.
- ### 4) Accommodate the Mixed Land use regulations and mitigate the “negative externalities” by area level planning and introducing tax for impact of mixed land use.
- ### 5) Implementing planning tools to effectively respond to area level requirements.
- ### 6) Insist on Safety and protection of Residential neighborhood character whenever community or private parking is provided in these areas.
- ### 7) Identification of the zones in the city to be carried out to meet transportation demand, supply and parking infrastructure in a scientific manner.
- ### 8) Differential treatment of identified zones in the city. Traffic restraining measures.
- ### 9) Identification, mobilization of land for Parking.
- ### 10) Designating parking lots – for auto rickshaws, Lorries, public/private transport based on actual studies and in discussion with stakeholders - Large

campus form of developments.

11) Creation of Special Purpose Vehicle (SPV) for funding key parking and associated infrastructure.

Table 2. Basic Objectives of Parking policy

Aim	Objectives
To relieve congestion on roads	Banning of parking on the roads Promotion of public transport Live work Play concept, integrated model. Regulated Mixed land use philosophy
To ensure the safety of the pedestrians	Preventing the misuse of footpath for parking. Ensuring that places for parking are used for purpose. Clear demarcation between parking and pedestrian facilities through use of temp. & permanent structures.
Safety & utilization	Create organized and regulated parking services to defined parking lots Use appropriate engineering standards. Lighting, security, shelter.
To prevent misuse of parking space	Licensing of the Parking lots Release the parking spaces which are being diverted for other uses. Promote parking for short duration. Permit only authorized vehicle parking certificate holders to park in designated lots.
Parking facilities to help in mobility & transit.	Parking lot at every intermodal transport point and at every metro station Bus services need to be extended to all localities such that people are required to walk less than 250 m to access the transport.
To promote private participation in establishment of public parking facility	Modify building byelaws to promote private and public parking lots Promote establishment of private parking lots, both on grade as well as at multilevel Encourage land owners to for facilities through tax, transfer of development right for viability. Private land owners can be involved in development of Transport hubs, Bus stands and truck terminals.
To use parking management as a tool to reduce the demand for private mode of Transport	Device suitable policies to promote the use of public transport facilities. Promote use of shared vehicles.
Awareness & Education	To identify “zero tolerance zones” for creating sensitization. Gradually this can be scaled to the entire city.

6. Project Implementation under Public Private Partnership in Municipal Corporation, Faridabad

Public-Private Partnership (PPP) is a long-term cooperation agreement between a public authority and the private sector to provide public services, have become a popular approach to infrastructure development. Despite the controversies over PPP, the United Nations and the European Commission have promoted and fostered it as an instrument for urban development, especially in countries whose public budgets cannot support substantial expenditures. Using this as a flagship under PPP program project have been undertaken in the cities like Warsaw, which offers a pragmatic view of the critical stages of PPP planning about PPPs’ prerequisites for success.

Therefore it is suggested that for the accurate, appropriate and authoritative implementation of PPP parking project at various identified sites by the Municipal Corporation, Faridabad a special nodal officer should be designated for the same so as it be given due imputes at the implementation

stage. After selecting the appropriate viable and sustainable parking project the Municipal Corporation may put forward the steps towards performing the preliminary feasibility study, put out a tender for advisory services from consortia of financial, legal and engineering firms, the winners/bidders/PPP firms/partners would be responsible for advising the city on the process for undertaking certain parking projects. A initiative may also be taken up through PPP mode which at present is not fully effective: Under PPP initiative development of commercial use may be allowed as a concession for improving the viability reaching a concept traffic regulation and space utilization.

The Proposed parking price in the PPP mode:-

Truck/Bus/Trolla/HMV etc.	Rs.100/-
LMV	Rs.50/-
Car	Rs.20/-
Scooter/Two wheeler	Rs.10/-
Cycle	Rs.5/-

The above rates will be enhanced exponentially after certain hours as may be decided by the competent authority in the financial interest of this Corporation.

7. Policy Recommendations

After a detailed study regarding the Parking problems and reducing the traffic congestion in Municipal Corporation of Faridabad (MCB), the following Policy recommendations may be considerations:

- Private sector participation is to be encouraged and this should be regulated. Individual plot owners must be allowed to develop parking for 2, 3 and four wheelers subject to conditions.
- Clarity on PPP projects for creating facilities is required for overcoming difficulties while according sanctions and clearances.
- Creation of Central regulatory authority for co-ordination and management including enforcement and monitoring.
- Creating a common implementation and roll out plan to enable phase wise activity and effective co-ordination (release of road space from parking in a progressive way). The authority should tackle the multiplicity of agencies and programs.
- Create a few zero tolerance zones with all infrastructures such that no violations in terms of pedestrian, parking and traffic occur. Such zones will serve as “model”. These zones can be expanded to the entire city in the due course.
- Advocacy and awareness building: should cover the education aspects, training and influencing user behavior, inform the rights and duties of the users.
- Conducting awareness programs to spread the benefits of organized parking and avoiding road space for parking (resultant increased speed of vehicles and increase in productivity) [4].

8. Conclusions

In this paper, a study of effective adoption of viable and sustainable traffic management and parking policy has been done. Also an appropriate methodological approach for proper assessment, analysis and framing of policy aimed at reduction of congestion especially at junctions, waiting points and nodes, to avoid the diversion of open, public utilitarian spaces for parking and regulating the growth of vehicle numbers has also been studied. Finally the Parking policies of Municipal Corporation of Faridabad have been recommended and a viable and sustainable solution through PPP Model has been proposed.

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