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# Parking Policy as a Travel Demand Management Strategy

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## 1. UTTIPEC's Mandate

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As per The Gazette Notification of India under the Delhi Development Act (page 4), one of the main Aims and Objectives accorded to UTTIPEC is “(v) To evolve a parking policy and evolve parking solutions”.

A detailed analysis of the current parking challenge, environmental ramifications of current parking policies, challenges faced by civic agencies, study of best practices around the world as well as recent policy recommendations made by various ministries and judicial bodies was compiled, analyzed and presented to Working Group 3-B of UTTIPEC by the Centre for Science and Environment (CSE) and finally to the Governing Body Meeting held under the Chairmanship of Hon'ble Lt. Governor of Delhi.

The same was fully accepted and further work on development of the detailed parking policy was initiated.

The above Report submitted by CSE to UTTIPEC is attached to this Policy Document at Appendix-I.

## 2. Need for Parking Policy

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Delhi is one of the few Metropolitan cities in the world where Parking in public spaces is permitted - almost for “free”. This is virtually undemocratic since one sector of society is subsidized to occupy public land for a private use, without providing any benefits to the larger public.

### Facts First:

#### i. Land Consumption<sup>1</sup>

- *A typical vehicle stays parked 95 per cent of the time. A 2006 study by the Central Road Research Institute in New Delhi estimated that of the 8,760 hours in a year, an average car's steering time is only 400 hours. This means it is driven for only about an hour a day.*
- *Each car needs/ occupies an average of three different parking locations in the city every day. The land required to park a car is approx. 23 sq m, which includes the space occupied by the vehicle as well as the minimum space needed to move it into and out of the space. This is called equivalent car space, or ECS.*
- *Therefore, each car effectively consumes 69 sq.m. of land every day, most of which is public land.*
- *On the other hand, a very poor family (EWS) in Delhi gets a plot or apartment of 25 sq.m.*
- ***Delhi, in other words, allots more public land per day for parking cars than it does to house its poor. And all this for only 20 per cent of city's population which have a family car, based on figures of the 2008 Household Survey by the Department of Transport, GNCTD.***

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<sup>1</sup> Source: Centre for Science and Environment courtesy India Environmental Portal

## ii. Land Cost<sup>2</sup>

*In August 2005, the Municipal Corporation of Delhi brought in a one-time charge of Rs 4,000 on all new cars being registered in Delhi as a "misuse" of parking charge—commercial vehicles have to pay this amount every year. Considering that the duration of a private car's registration is 15 years, this amounts to a charge of Rs 22 per month—or Re 0.74 per day or Re 0.03 per hour. Since most commercial parking lots in Delhi charge Rs 10 for 12 hours, a vehicle can be left there for a monthly charge of Rs 600.*

*But what are market rents like? In Delhi's posh Greater Kailash locality, the rent for 23 sq m in a residential area works out to Rs 6,900 per month, given the rent of a ground floor house. In the same locality, the rent for a commercial space of 23 sq m works out to above Rs 25,000 per month. In Connaught Place, the same amount of commercial space could cost a rent of above Rs 36,000 per month.*

***So, cars get a humongous hidden subsidy in the form of cheap parking land. It is this subsidy that allows more and more people to buy more and more cars.***

## iii. Induced Demand

More Parking Provision for private modes creates more parking Demand and induces people away from use of public transport, para-transport and non-motorized modes. In addition, increased flow of cars to parking areas induces more traffic on feeding roads and more congestion.

As summarized in the February 2010 Report on 'An Overview of Management Strategies' by the Institute for Transportation & Development Policy – "More parking reduces the cost of car use, which leads to more car use and more demand for parking. The walking environment is undermined and the distance between destinations increases. Ultimately, this leads to lowered densities within cities to a point where transit becomes inefficient. Street life and public spaces cease to function."

## 3. Environment Pollution Control Authority (EPCA) recommended the following to the Hon'ble Supreme Court in July 2006:

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*"Land is limited and there is a limit to the additional parking space that can be created in the city. Therefore, the available parking space will have to be managed efficiently to meet the parking demand. This will also require demand side management through a well thought out pricing policy to control the demand for parking.*

The provision of parking for personal motorised vehicles cannot be considered as a matter of public good. Individual user of personal vehicle should pay for the use of the space for parking. Parking facilities – underground, surface, and multilevel parking – are provided at an enormous cost. This uses up a lot of public money and cheap/free lands. According to one estimate available from NDMC shows that if only the capital cost of providing multilevel parking is considered then to recover it each car would have to be charged Rs 100 per hour. This means any rate below that would amount to a subsidy.

If the public agencies are responsible for funding these structures or providing land as part of their share in a public-private partnership, this will amount to subsidy for the rich car users. This is against the principle of equity. Therefore, *the 'user pays' principle should govern the pricing of parking.*

All civic agencies have proposed increasing the rate for parking but they have not established the principle for rationalisation. The full cost of providing parking in public places that includes the land cost, capital cost, and the O&M costs – *should be recovered from the user of the parking. Government should not subsidise this cost.*

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<sup>2</sup> Source: Centre for Science and Environment courtesy India Environmental Portal

The space that a car occupies for parking has to be considered in terms of the real estate price of land in a commercial area like Connaught Place which is Rs 1,50,000 per sq m.

This will require rationalising of parking rates across the board for all kinds of parking – surface parking, underground parking and multilevel parking, to reduce distortions and ensure full utilisation. *The surface parking is seen as the cheapest form of parking as the opportunity cost of the land is not reflected in the parking rates.*

The civic bodies can have the opportunity to use a wide variety of tools for pricing parking. *They can use time variable rates – higher rates during peak hour, progressive increase in rates per hour. Differentiation in parking fees can be done according to zone, peak hour demand, weekdays and weekends, etc. Even market based instruments can be used to reduce the impact of high parking rates like mall and shop owners paying for parking and transferring the benefit to their customers etc.* The civic bodies should therefore frame innovative approaches. *A city wide approach is needed for successful implementation.*

On the basis of these principles MCD, DDA, NDMC should frame the rationalised pricing policy for all types of parking facilities – surface, underground, and multilevel parking -- and submit that to EPCA. *Public support can be mobilised if people are also made aware of the actual cost of providing parking and it is demonstrated that the revenue from parking is reinvested in other public facilities. Simultaneously, strict enforcement of municipal laws and penalty for parking violations can improve the overall management of parking in the city.*

#### **4. The National Urban Transport Policy (NUTP) 2006 states:**

- High parking fee should be charged in order to make the use of public transport attractive.
- The parking fee should reflect the *value of the land that is occupied.*
- Public transport vehicles and non-motorised modes of transport should be given preference in the parking space allocation. This along with easier access of work places to and from such parking spaces can encourage the use of sustainable transport systems.
- Park and ride facilities for bicycle users with convenient interchange are a useful measure.
- Adopt graded scale of parking fee that recovers the economic cost of the land used in such parking with the objective of persuading people to use public transport to reach city centers.
- The policy suggests that multilevel parking complexes should be made a mandatory requirement in city centres that have several high-rise commercial complexes and these can come up through public-private partnerships. These would be encouraged to go in for electronic metering so that there is better realization of parking fees to make the investments viable and also a better recovery of the cost of using valuable urban space in the parking of personal motor vehicles.
- In residential areas also, the policy suggests changes in byelaws to free the public carriageway from parked vehicles impeding the smooth flow of traffic. It suggests making provisions in the appropriate legislation to *prevent* the use of right of way on road systems for parking purposes.

## 5. Principles of UTTIPEC Parking Management Policy:

- i) Private Vehicle must be parked on 'a fully-paid rented or owned' Private Space.
- ii) Parking Management is to be used as a demand management tool – to decrease use of private vehicles and thus reduce overall demand of parking, and shift travel to public transport, para-transport & non-motorized modes. 60% of all trips made in Delhi are short trips which can easily be made on these alternate modes.
- iii) Parking is a consumer commodity, not a legal right. No subsidized parking is to be provided in public spaces. User must pay full cost of parking facility based on land opportunity cost, capital cost, O&M costs and temporal demand.
- iv) Spaces already designated for parking must be utilized to highest efficiency and financial viability.
- v) To ensure accessibility to maximum number of people, parking for para-transport / feeder modes is to be prioritized and subsidized. In areas designated for private parking, short term parkers must be prioritized over long-term parkers, in order to maximize turnover and enable economic vibrancy.

Although the above principles are in keeping with successful, well established and widely accepted best practices around the world, the proposed Parking Management Policy is a paradigm shift for Delhi where people are used to “almost free” parking. **Therefore a three-phase implementation strategy requiring coordination with various stakeholder departments is proposed.**

Combinations of policies/strategies would eventually need to be implemented, in order to achieve the desired travel demand reduction goals.

## 6. Parking Management Policies for Travel Demand Management

Parking Management strategies are aimed at encouraging more efficient use of existing parking facilities, reduce parking demand and shift travel to HOV modes. Smart management of parking helps to ensure access to local businesses, and provides access for visitors to regional and neighbourhood attractions without encroachment on valuable public spaces.

**ENFORCEMENT – through technological and manual means - is the key to the success of any Parking Strategy.**

**A THREE-TIER Parking Management Framework is proposed for Delhi:**

### **TIER-I: Design-based Parking Management Strategies:**

**A: Enforcement Aided by Design and Technology** – Traffic Police and MCD are to be consulted on the design features required to ensure good enforcement. The following are suggested:

- Parking space markings, numbering and signage-plan to be approved and implemented as part of a comprehensive “Parking Management Plan”.
- Authorized parking spaces in public areas must be marked physically on ground as well as through display of signages. The overall Parking Management Plan of the area should also be displayed near entry/exit locations.
- Provision of parking meters is desirable.

- Parking lots, garages and on-street lots (with meters) to display total and real-time available parking spaces.
- CCTV cameras can be installed to make parking lots safe for women/ users.
- Parking help-booths to have monitoring personnel 24-hours.

**B: Reclaim street space from car parking** for other needed public uses such as cycling lanes, cycle-rickshaw stands, para-transport/TSR stands, widened sidewalks, hawker zones or multi-utility zones. Provide designated **short-term parking** locations for shoppers in commercial areas, wherever essential, but priced so as to ensure 85% occupancy during peak hours and exponential increase in price with time. Shopkeeper parking may be consolidated in park-and-walk locations within walking or cycle-rickshaw distance from destinations, as per point C.

**C: “Park Once-and-Walk” / “Park Once” / Shared Parking locations** – As per market demands, common shared parking facilities may be provided in dense, mixed landuse areas. Feeder modes like vans, circulators or NMV services can be provided from these facilities to all nearby destinations. Street improvements must be implemented to make it convenient for commuters/shoppers to Park-and-Walk to their destinations.

**Tasks:**

- Estimation of common parking requirements and proposed centralized locations to be proposed. There should be a shared parking lot within 10 minute walk of homes/shops/other uses.
- On-street parking regulations to be strictly enforced in these areas as per point A.
- A Shared Park-and-Walk Parking Plan for the entire Project Area is to be submitted including the following drawings:
  - A: Data and Drawings showing basis for Shared Parking calculations.
  - B: Site plan of parking spaces intended for shared parking and their proximity to land uses that they will serve.
  - C: A signage plan that directs drivers to the most convenient parking areas for each particular use or group of uses.
  - D: A pedestrian circulation plan that shows connections and walkways between parking areas and land uses. These paths should be as direct and short as possible.
  - E: A safety and security plan that addresses lighting and maintenance of the parking areas.

**D: Curb Spillover Parking Impact in Residential areas** – Spillover parking must be prevented (through pricing and enforcement) as it may cause excessive congestion within neighbourhood streets making access difficult for emergency vehicles.

**Tasks:**

- To avoid spillover parking into residential streets (from market-priced spaces), potentially affected zones must be identified and demarcated on spatial plan, and market-rate parking pricing is to be applied to this entire zone, not just a few streets.

**E: Unbundling Parking Costs** from New properties and provision of consolidated parking locations – Requires that parking spaces be leased or sold separately (“unbundled”) from the rent or sale price, giving a financial incentive to individuals to drive less or own fewer cars, or encourages companies to increase transit commute rates among their employees.

Including the price of parking in an overall lease may normally increase costs of housing/commercial properties by as much as 25% – whether or not the tenant has a car – therefore it is often an “invisible” cost to the customer.

Common paid parking facilities may be provided for visitors, overflow parking, irregular users, etc. in neighbourhoods as per point C.

**F: Park-and-Ride Facilities ONLY at terminal MRTS Stations or major Multimodal Interchanges** – Park and Ride areas to be provided only at terminal MRTS/RRTS/BRTS Stations, so as to reduce the number of commuters driving into central congested areas along high-demand corridors.

**Tasks:**

- For the TOD<sup>3</sup> site under study, calculations and design options to be made to demonstrate the density, type and mix of uses required to offset use of the same land for a park-and-ride facility.
- Comparisons to be made between mixed-use housing development vs. parking lot or garage in terms of cost, investment recovery and ridership generated throughout the day and week.

**TIER-II: Pricing-based Parking Management Strategies:**

- G: True Pricing of Parking** - The supply of free or inexpensive parking at the final destination is a key decision factor for people choosing to drive a personal vehicle, rather than taking a bus, cycle-rickshaw, walk or carpool.

*“All public parking locations must be priced by directly linking parking rates to temporal demands, and providing financial incentives and prime parking spaces only to preferred markets such as carpools, vanpools and short-term parkers.*

*Surface parking rates must reflect the opportunity cost of the land.*

*The full cost of providing structured parking in public places including the land-opportunity cost, capital cost, and O&M costs – should be recovered from the user of the parking. Government should not subsidize this cost.”<sup>4</sup>*

Free or very low cost on-street parking benefits only a few commuters and is extremely inefficient. Employees and shopkeepers who arrive first in the morning occupy the most convenient spaces, forcing customers arriving later to waste time and money looking for an available space farther away. Flexible parking meters, which set fees at levels that ensure an 85 percent occupancy rate throughout the day, optimize the use of scarce parking resources. Pricing should be done in a way so as to make it more financially feasible to parkers to use off-street facilities but making on-street parking exponentially expensive with time. This will encourage short-term parkers to use the on-street locations, thus enabling faster turnover of the limited number of available parking spaces.

Minimum prices should be fixed by Govt. but maximum left to the Market to decide. Under no circumstances should the price of parking be subsidized by the Government. Provision of Government-funded or cross-subsidized multilevel garages can only be justified if it provides a major larger public benefit, for example, pedestrianization of commercial streets or making all roads within 500-1000m influence zone of the parking facility free from on-street parking.

- H: Variable Time-based Pricing** – Differentiation in parking fees can be done according to zone, peak hour demand, weekdays and weekends, etc. by charging higher rates during peak hour, progressive increase in rates per hour. Market based instruments can be used to reduce the impact of high parking rates like mall and shop owners paying for parking and transferring the benefit to their customers etc.
- I: Coordinated Off-Street and On-Street Pricing (customized to commercial and residential areas)** – As seen in almost all locations in Delhi where Parking garages exist, the low pricing of on-street parking facilities leads to overcrowding at the curbside and underutilization of off-street parking garages.

**Therefore, in locations where off-street parking facilities exist, on-street parking should either be priced exponentially high with time, or prohibited altogether for ease of enforcement.**

**Tasks:** Calculate “true cost” of Surface Parking and Off-street parking for the Study Area based on available market data and standard costs of structured parking construction and O&M (both permanent and hydraulic parking structures to be considered).

<sup>3</sup> TOD = Transit Oriented Development

<sup>4</sup> Recommendations of the Environment Pollution Control Authority (EPCA) to the Hon’ble Supreme Court, July 2006

- Adopting market rate parking could entail charging for on-street parking on days and times that it is currently free. Minimum parking rates during such off-peak hours are to be proposed for the Study area.
- Price for on-street parking must ensure performance standards mentioned above, including the desirable occupancy rate of 85%.
- Local market rates may need to be estimated in order to set a “minimum parking fee” during off-peak hours. **Maximum may be left to local parking operators/managers. On-street parking-price caps to be abolished.**
- On-street and off-street parking areas are to be designated through design and signage.
- Implementation of this strategy is most critical and it must be enforceable. Strategies for implementation are to be proposed in close consultation with MCD and Traffic Police.
- All current policy or implementation hurdles for this Strategy must be identified and taken up immediately for modification.
- In areas where an off-street parking lot or garage is available within 500 m (6 min walking distance), on-street parking would be prohibited or exponentially priced, as per discussion with Traffic Police.

### **TIER-III: TOD-based Parking Management Strategies:**

**J: Provide parking caps in TOD Zones based on PTAL<sup>5</sup> and/or distance from MRTS Stations.**

This is in addition to the overall pricing criteria to be implemented as part of Tier-II Strategies.

**K: Substantially replace ECS with cycle, para-transport and HOV parking in high PTAL zones**

**L: Cycle and HOV Parking to be mandated as part of ECS requirements.**

**M: Enlist non-permissible uses within the TOD zones.**

**Car-dependent and non-ridership generating uses to be prohibited within the 500m influence zone:**

These uses can be problematic in that they may consume large amounts of land, result in extremely low density development, or create environments that are “unfriendly” to pedestrians, and yet, do not generate much ridership.

- ☞ Uses like car-sales showrooms, banquet halls, large foot-print high quality hotels, large single commodity showrooms, high-end Malls, automobile-repair shops, warehouses, large format religious facilities, low intensity industrial uses, etc. should be prohibited.

**Encourage transit supportive uses near stations, which are high pedestrian generators** that directly promote greater transit ridership and opportunities for multi-purpose trips.

- ☞ Residential uses like affordable/ low-income housing, youth hostels, homes for the aged, high-quality serviced apartments for young professionals, Govt. housing for low-income employees, working women’s hostels, small unit rental housing, etc. would be preferable.
- ☞ Amongst Commercial and Civic uses – daily-need stores like department stores, cultural institutions, health clubs, day-care facilities, clinics, entertainment facilities, dry-cleaners, small coffee shops, small restaurants, transit-hotels, budget hotels, neighborhood oriented retail, etc. could be prioritized.

**N: All TIER-I and TIER-II Strategies continue to apply in TOD Zones**

**O: Incentivize Employer Based TDM Strategies**

The TIER-III Strategies are to be developed further in coming months, based on PTAL (Public Transport Accessibility Levels) developed for the TOD influence zones.

<sup>5</sup> PTAL = Public Transport Accessibility Level