

# PRINCIPLES OF PARKING POLICY IN BIG CITIES

## ПРИНЦИПЫ ПОЛИТИКИ ПАРКОВКИ В КРУПНЫХ ГОРОДАХ

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**Abstract:** Increased problems in dynamic and static transportation in large urban centres are forcing us to evaluate and change basic principles which are in place today to address this issue. This document lists primary causes of the negative trend in the static transportation in cities. It characterizes types of commuters, who are representing potential demand for this type of transportation. It also outlines several principles of regulating parking policy by introducing parking fees.

**KEYWORDS:** STATIC TRANSPORTATION, PARKING LOT, PARKING POLICY REGULATION, PASSENGER

### 1. Introduction

Long term neglect of the issues of dynamic and static transportation in many large urban centres has brought with it a number of major problems, which are weighing down on citizens and visitors alike. Some of these issues are:

- minimal transportation capacity load of passenger cars (often times there is only one or two passengers per vehicle),
- clogging of city centres by passenger cars,
- reduced speed of dynamic transportation in cities,
- traffic jams during morning and afternoon rush hours,
- insufficient parking capacity in city centres,
- overcrowded parking lots in city centres,
- car parking on pedestrian sidewalks,
- increased number of car accidents, noise pollution, air pollution caused by cars in city centres,
- reduced speed, insufficient preference and reduced reliability of public transportation makes it less attractive for potential passengers,
- elimination of pedestrian and bicycle transportation,
- parking capacity in suburban areas cannot fully satisfy demands of all residents, due to the fact that there usually households have more than one passenger car,
- critical situation in city centres as a result of cars “circling” narrow streets in order to find parking space,
- rapidly deteriorating situation in the areas of new business centres, lack of short term parking, limited long term capacity, congested traffic at adjacent intersections and roadways,
- insufficient parking enforcement by municipal or state police authorities,
- short term parking problems in the areas of train stations and bus stations,
- long term parking issues at airports,
- poor accessibility of large parking lots by public transportation.

To improve the situation it is necessary to change basic principles which are practiced in dynamic as well as static transportation in large urban areas. It is necessary to shift from “offer” approach towards differentiating potential candidates for public transportation as well as parking.

And so by regulating static transportation it is possible to solve problems of dynamic transportation to a certain extent.

### 2. Segmentation of residents (passengers)

Residents or passengers who utilize parking within city limits fall into following categories:

- city residents with permanent or temporary address,
- residents commuting from other cities,
  - o regular commuters,
    - employees,
      - commuting daily,

- commuting weekly,
- commuting for a period of time longer than one week,
- students,
  - commuting daily,
  - commuting weekly,
  - commuting for a period of time longer than one week,
- o irregular commuters,
  - business,
  - health care,
  - shopping,
  - cultural, social and sporting events,
  - visiting family and friends,
  - tourists,
    - for a period of one day,
    - for multiple days.

Individual approach should be exercised towards residents with physical disabilities.

#### 2.1. City residents with permanent and temporary address

One of the main requests of city residents from the static transportation point of view is to have closest possible access to parking from their permanent or temporary address. It should be available for every unit of the apartment building for at least one vehicle throughout the day.

In case of multiple vehicles per household, it is acceptable to park the second vehicle on remote parking lot or in public garage, in case there is not sufficient parking capacity in close proximity.

Secondary need for parking spaces comes from city residents at the location of their employment (school). It is usually long term parking during office hours (school hours). In case that employer (school) doesn't provide sufficient parking capacity for its employees (students); these residents should use public transportation for their commute to work (school); especially to city centres. Elimination of these vehicles brings with it following positive effects:

- reduced number of long term parked vehicles, which releases parking capacity for short term parking in city centres,
- reduced intensity of dynamic transportation during morning and afternoon rush hours. This may result in elimination of traffic congestions.

In case of city commuting for cultural, social and sporting events, health care providers or shopping, some principles should be applied to city residents as well as irregular commuters.

Another alternative for city residents is the use of bicycle transportation, which has significantly smaller requirement for parking spaces.

## 2.2. Residents commuting from other cities

This category of residents consists primarily of employees and students. It can be further subdivided into residents who commute daily, weekly or for an extended period of time.

### 2.2.1. Employees or students commuting daily

The need for parking for employees commuting daily is regular and usually represents a long term parking in close proximity to their workplace (school) during office hours (school hours).

If employer is not able to provide sufficient parking capacity for its employees (students), then these residents should park their vehicles at car pooling lots on the outskirts of the city; and continue to their destination by taking public transportation. Application of this principle leads to reduction of the number of long term parked vehicles in city centres. This increases parking capacity for short term parking and at the same time reduces the intensity of the dynamic transportation during morning or afternoon rush hours, i.e. possibility to eliminate traffic congestion.

### 2.2.2. Employees and students commuting weekly or for an extended period of time

The same principles apply for this group of passengers as for the city residents with the exception of the need for one parking space in the close proximity of their place of stay – dormitory, etc. – unless these locations have sufficient parking capacity for guests. In this case it is sufficient if the passenger is able to park his vehicle at a remote long term parking lot or public garage.

### 2.2.3. Non residents irregularly commuting to the city

In spite of the fact that this is a group of irregularly commuting passengers, its overall number is very large. It is mainly due to the fact that in large urban centres are concentrated government offices, municipal offices, cultural, social and sporting events, health care facilities.

Significant role is attributed to the fact that large shopping and entertainment centres are also located in large urban areas.

However this group of passengers has very different requirements on static transportation based on the purpose of their travel to the city.

#### Business Commuters

Non residents commuting to the city for business purposes have usually need for short term parking in the close proximity of office buildings. Due to the need for great flexibility and rapid transportation between different areas of the city, it is necessary to allow this group of passengers to use their vehicles to get to their travel destination and provide them with sufficient short term parking capacity in close proximity of office buildings.

In case of a long term parking it would be advisable to implement certain parking regulations, which would favor parking of a vehicle on the outskirts of the city and use public transportation to city centres. It is also possible to apply this principle to employees working in city centres who use company vehicles for a rapid and flexible transportation within the city.

#### Commuters to health care facilities

This specific segment of residents should have access to short term parking facilities in close proximity of health care facilities with their vehicles, based on their health related issues as well as their overall health status.

In certain cases (lengthy medical examinations) it is possible to allow for long term parking. Providing that the medical condition of the patient permits, it is possible to park their vehicles at large

parking lots on the outskirts of the city and use public transportation to hospitals or health care facilities.

#### Commuters for shopping

Due to the requirements of transporting large amounts of merchandise, residents should have access to shopping centres with their own vehicles. Shopping centres should provide their customers with sufficient parking capacity. At the same time these parking lots should not be substituted for large public parking lots at the outskirts of the city, unless the shopping centre has been purposely constructed in close proximity of large public parking lots.

When shopping in small stores in city centres, passengers should park their vehicles at large parking lots on the outskirts of the city and use public transportation to get to city centre.

#### Commuters for cultural, social and sporting events

Design and construction of new cultural, social and sporting facilities should also consider needs of static transportation according to current standards and regulations.

In case that existing cultural, social or sporting facility doesn't have sufficient parking capacity, it is necessary to regulate parking policy by motivating passengers to use public transportation from their homes or large public parking lots located on the outskirts of the city.

#### Commuters visiting family and friends

This segment of passengers should be governed by similar principals as the non residents regularly commuting for the purpose of business or education. It is important to differentiate one day (short term) visits which be governed by the guidelines applicable for regular daily commuters, and long term visits which should use guidelines for regular non residents commuting for extended period of time.

#### Tourists

This segment of passengers should also be governed by similar guidelines as the non residents commuting regularly for work or school. Even in this case we have to differentiate between tourists who are visiting only for one day (parking guidelines that govern non residents commuting daily) and tourists which are visiting for multiple days (parking guidelines which apply to non residents commuting for extended period of time).

A separate sub segment of this group of passengers is represented by organized tours, which travel to the city by bus. For this group of tourists it is required to provide sufficient short term parking capacity in city centre for 10 to 15 minutes time period, which should provide enough time for their safe boarding and disembarking of the bus.

As soon as tourists leave the bus, it has to leave the parking space and park at large public parking lots on the outskirts of the city.

## 2.3. City residents and non residents with disabilities

It is required to have sufficient parking capacity for this group of passengers, in close proximity of government offices, hospitals and other health care facilities, schools, shopping centres, cultural, social and sporting facilities.

When employer has employees with disabilities, he is required to provide these employees with parking space in close proximity of their workplace. For residents with disabilities it is also possible to use special public transportation provided by municipalities from their homes or large public parking lots. It is also important to consider requirements for wheelchair access on public bus stops.

### 3. *Tariff policy for parking*

Entire territory of the city should be divided into individual parking zones based on the:

- distance to the city centre,
- demand for static transportation,
- parking capacity.

Following is an example of five basic parking zones:

1. Pedestrian zone in the city centre or in the specific area of the city with no access to motor vehicles as well as no parking lot availability.
2. City centre or centre of a particular area of the city with parking regulations, where parking fees are highest. Here we would also include highly frequented areas with high demand for static transportation and insufficient parking capacity.
3. Extended city centre or centre of a particular area of the city with parking regulations, where parking fees will be lower. Here we would also include suburbs with insufficient parking capacity.
4. Outskirts of the city or areas of the city with parking regulations, where parking fees will be lowest.
5. Outskirts of the city with no parking fees.

Parking tariffs should help achieve goals of municipal parking policy. Its main role is to motivate drivers to use public transportation to get to parts of the city with limited parking capacity, and to discourage them from using motor vehicles for this purpose.

At the same time, parking policy should guarantee acceptable parking fees for city residents in the close proximity of their residences, and in case of sufficient parking capacity also a parking space close to their residence for at least one vehicle during evening hours and weekends.

Secondary benefit of introducing parking fees is the acquisition of financial resources to cover the investment as well as maintenance costs associated with the long term sustainability of static and public transportation.

In essence, parking fees are highest in city centres and with increasing distance from city centre they decrease. Lowest parking fees are expected to be on the outskirts of the city and on large public parking lots in these areas. Use of public transportation from these parking facilities should allow passengers to park vehicles for free for certain period of time.

Parking in public parking garages should favor parking fees by 30% to 50% to parking on city streets in the same parking zone.

In order to provide parking capacity for city residents in close proximity of their residences, as well as better utilization of parking facilities during the day, parking fees should be organized by:

- work days during business hours
- work days outside business hours, as well as Saturdays, Sundays and public holidays

In all parts of the city, with the exception of the pedestrian zone, all drivers could use all available parking spaces during business hours. This type of parking is basically charged on an hourly basis. City residents should be able to purchase parking passes. These passes should allow them to park in any part of the city without time limitation, within or outside of business hours.

Also non residents should be able to purchase such parking passes, however it shouldn't guarantee them a parking space.

Outside of business hours on weekdays, as well as on Saturdays, Sundays and public holidays, there will be sufficient parking capacity available for all parking pass holders. If there is sufficient parking capacity available, one parking space should be guaranteed per household. Non residents should be able to park for free or for applicable parking fee in public parking garages or designated parking lots, outside of parking facilities designated for city residents.

Residential parking pass should be valid within individual parking zone.

Parking fees and residential parking pass prices should be based on public transportation fees.

One of the examples is to base the hourly parking rate on the price of a daily public transportation ticket. The price for the residential parking pass for the first vehicle should be low and should only represent the administration and processing costs to issue the parking pass. The price for the residential parking pass for additional vehicle should be based on the price of the yearly pass for the public transportation.

The price for the parking pass for non residents should be four times the price of a yearly public transportation pass.

Base parking tariff is applied in city centre. With the increasing distance from the city centre the parking tariffs should decrease.

Second example assumes increased fee for residential parking pass even for the first vehicle. This fee should be based on the sum of the monthly public transportation pass and the appropriate multiple of the quarterly public transportation pass. This would allow the pass holder to use public transportation for free for the period of one year. The price for the residential parking pass for every additional vehicle should be three times the price of the yearly public transportation pass. The price for the parking pass for non residents should be six times the price of the yearly public transportation pass.

Also in this example, the base parking tariff is applied to city centres. With the increased distance from the city centre parking fees should decrease.

Hourly rate for parking is based on the price of the daily public transportation ticket. Parking pass prices are automatically adjusted according to change of the public transportation prices.

### 4. *Conclusion*

When problems in static and dynamic transportation in large urban areas are neglected, they can ultimately paralyze the living in the cities. These will become less attractive to their residents as well as tourists.

Application of new standards in static and dynamic transportation is only possible when passengers are offered equivalent transportation alternatives in the form of public transportation.

Global approach to solve these issues can also lower costs related to negative effects of transportation on the environment, i.e. lowering levels of noise, harmful emissions, traffic congestions, vibrations, and car accidents as well as protecting public green spaces.

### 5. *References*

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