Transport Demand Management Policies in Beijing

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I. Beijing Basics

II. Transport demand management policies
Beijing is a long-established Eastern capital city with a history of 3060 years.

The city is positioned as:
- A national political center
- A cultural center
- An international communication center
- A technology innovation center
In 2014, the city had a permanent population of 21m, which grew by 700,000 annually.
I. Beijing Basics

City Scale

• Municipal administrative area: 16,400 km²
• More than 70% of vehicles gathered within central area (1088 km²)
• Construction land area increases 97 km² annually since 2000 (2,483 km²)
Since China embarked on automobile industrialization in 1994, ownership of motor vehicles has soared quickly, it took 48 years to reach the first 1m, but only took 2.4 years to increase from 4m to 5m.
Along with rapid urbanization and motorization, Beijing transportation presents 3 characters.

- **High-speed growth**
- **High-density gathering**
- **High-intensive usage**

Pressures from traffic are becoming overwhelming in Beijing, a series of measures are needed to ease traffic congestion.
I. Beijing Basics

II. Transport demand management policies
Facing to the excessive growth of motor vehicles, Beijing has explored and implemented a series of TDM policies and basically curbed further deterioration of traffic congestion.
II. Transport demand management policies

milestone for Beijing’s main strategic direction in transportation

In 2004, the Beijing Transport Development Outline was released, which prioritized the development of public transport and a massive transit network.

In 2007, bring forward the "two basics and four priorities" principle for public transport.

In 2008, measures were taken to assure smooth traffic for the Olympic Games. The transit network came into shape, and restrictions were imposed on the use of motor vehicles.

In 2009, the public transport goals were presented in the Green Transport Action Plan of Beijing.

In 2010, the "28 congestion relief measures" were released, proposing total ownership of motor vehicles should be controlled.

Two basics:
- Important strategic position
- Non-profit character

Four priorities:
- Priority in land allocation for facilities
- Priority in investment arranging
- Priority in right-of-way on road
- Priority in finance and taxation
Supply
(Urban Rail Transit + buses)
II. Transport demand management policy

Urban Rail Transit

Incentive measures, including

- Speed up construction of urban rail
- Increase train frequency (2 minutes)
- Construct P+R Centers along with new urban rail lines for convenient transferring
- Low Price policy: 2 yuan for any trip (2014)
Urban Rail Transit

- So far, 18 lines are in operation, total mileage reached 552 km, which increased by 308% in less than a decade.
- Annual passenger volume reached 3.2 billion, and the average weekday passenger volume has exceeded 10 million.

Growth of Beijing urban rail transit since 1987
Urban Buses

Incentive measures, including:

- Optimizing and adjusting bus network
- Constructed 4 BRT lines, 61km in total
- Continually expend bus priority lane (355km)
- Low Price: enjoy 60% - 80% discount
- Use clearer buses: electric, LNG, CNG, 26%
II. Transport demand management policies

Urban Buses

1949:  
Lines: 11  
Vehicles: 164  
Passenger volume: 79 thousands/day

1978:  
Lines: 118  
Vehicles: 2627  
Passenger volume: 4.6million/day

2015:  
Lines: 799  
Vehicles: 23856  
Passenger volume: 13.2million/day
II. Transport demand management policies

Bicycle and walking

Up to 35,000 public bicycles for rent

bicycle lanes and sidewalks reconstruction
II. Transport demand management policies

Demand

(ownership + intensity of use)
II. Transport demand management policies

License plate lottery policy

In 2011, Beijing implemented the license plate lottery for private vehicles to control the total ownership of motor vehicles.

- Eligible corporate entities, organizations and individuals compete for an annual quota of 240,000 license plates for free through lottery, only 20,000 license plates will be released each month.
- People who already have a car are not eligible for applying for a second one.
- Official vehicles will not increase any more.

Compared with 2010, vehicles’ monthly growth rate dropped 78%, which was the first slowdown in motor vehicle ownership growth since 1984.
License plate lottery policy

In 2013, set an aim: ownership of private vehicles shall be kept under 6 million by 2017, energy structure should be optimized

- From 2014, began to implement a stricter license plate lottery policy
- Reducing the quota from 240,000 to 150,000, and setting a certain goal for electric vehicles.
- For EVs, no lottery is required if the number of applications is below the quota.
Vehicles restriction policy

In order to control intensity of vehicle usage, Beijing began to implement vehicles restriction measures since 2008.

No driving in peak hour one day per week——It stipulates no driving during specific periods of the day according to the license plates of motor vehicles

- **Control mode**: all license plates are divided into five groups according to last numbers (3 and 8, 4 and 9, 5 and 0, 1 and 6, 2 and 7) and are prohibited from driving on the road one day per week for each group. The shift mode is adjusted per 13 weeks.
- **Scope**: Roads within the Fifth Ring Road (the Fifth Ring Road excluded)
- **Period**: 07:00 am – 20:00 pm, each day (except for legal holidays and public holidays)
Even & odd License Plate Ban Policy

- during Olympic and Paralympics Games in 2008
- During severe air pollution day from 2014
  - **control mode**: vehicles are allowed to drive on road according to license plate last number, restrict drivers to use their vehicles on alternate days.
  - **Scope**: the whole city
  - **Period**: 24 hours
Differential parking fees

From 2011, the daytime (7 AM - 9 PM) parking tariffs for non-residential areas in Beijing are adjusted.

- higher fees in the inner city than in the suburbs
- higher fees on the road than outside of the road;
- higher fees on the ground than underground.

<table>
<thead>
<tr>
<th>RMB/hour</th>
<th>Parking on the road</th>
<th>Parking lot beyond road</th>
<th>Underground parking lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class1 area(within the 3(^{rd}) Ring Road)</td>
<td>10</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Class2 area (between the 3(^{rd}) Ring Road and 5(^{th}) Ring Road)</td>
<td>6</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Class3 area (out of the 5(^{th}) Ring Road)</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
Differential parking fees

3 months after parking fee adjustment:

- The amount of vehicles parked on on-road and off-road parking lots respectively decreased 12% and 19% on an average.
- Citizens are actively changing travel modes.
- Vehicle flow on monitor road in downtown dropped 12%.
The effectiveness of comprehensive measures of easing traffic congestion is obvious.

**II. Transport demand management policies**

**Traffic structure of the downtown**

<table>
<thead>
<tr>
<th>Year</th>
<th>Buses</th>
<th>Railway</th>
<th>Bicycle</th>
<th>Car</th>
<th>Taxi</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>25.4%</td>
<td>20.6%</td>
<td>12.1%</td>
<td>32.7%</td>
<td>6.5%</td>
</tr>
<tr>
<td>2005</td>
<td>24.1%</td>
<td>5.7%</td>
<td>30.3%</td>
<td>29.8%</td>
<td>7.6%</td>
</tr>
</tbody>
</table>

**Ratio of public transportation increase 16% in past 8 years**
II. Transport demand management policies

Monthly change of traffic index (2007 -2013 December, working days)

- **Severe jam**
- **Moderate jam**
- **Mild jam**
- **General fluency**
- **Fluency**

The 28 regulations for reducing traffic jam

From July 20, 2008 to September 20, 2008, odd and even plate number rule and special control during Olympics

From October 11, 2008 to April 10, 2009, suspend one day per week

From April 11, 2009 to April 10, 2010, suspend a day in peak hours per week

April 11, 2009 to present, local traffic control in peak hours in working day
Thank You!

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