Parking Policy as a counter measure to promote public transport
Case Study of Nehru Place, Delhi

Ravi Gadepalli
Shakti Sustainable Energy Foundation

Anusha Vaid
iTrans Pvt. Ltd.

New Delhi, India
India and Cities

- Currently, 31% of Indian population (377 million) resides in cities
- By 2030, 40% (600 million) population will be urban
- Number of million plus cities to go up from 53 currently to 111 by 2031

Decadal growth in urban economy and population

- Increased transport activities will have air quality and climate change implications
- Transport policy and planning choices critical to managing emissions

Source: Census of India (2011), HPEC (2011)
Delhi-Urban Transport Scenario

- Delhi’s mobility trends reflective of all Indian cities
- Public transport mode shares losing rapidly to Cars and Two-wheelers
- Infrastructure investments prioritising private modes aiding this trend
- Commercial areas are a reflection of these trends
- Nehru Place is taken as a case-study to demonstrate the problem and solutions
Planned in 1969, operational in early 1980s as a commercial business district surrounded by residential areas.

38 Hectares of prime real estate in the heart of South Delhi.

Currently a regional commercial centre served by two major roads, 2 Metro lines and 24 bus routes.

Less than 2/3rd developed portion has 5.8 lakh sq.m. built commercial development.
Ideally, the area should have access from all directions. Currently majority of access is from the South and the west.
Public transport is at the periphery while personal vehicles have close access.
PARKING CONSUMES PUBLIC SPACE
DATA COLLECTION

- No standardised data maintenance practices
- Sample surveys to quantify travel and user characteristics
- Multiple surveys combined to derive overall picture

✔ Traffic and pedestrian counts: 6 locations
✔ Parking survey: 25 Sites
✔ Boarding and alighting survey: 4, Bus and Metro Stations
✔ User survey: 2000 commuters and visitors
ISSUES
• Low parking price:
  - Rs 10 (USD 0.15) for 2Wh/4hrs
  - Rs 20 (USD 0.3) for Car/4hrs
• 63% of parking spaces occupied by office employees & 10% by retail visitors

• BAU Scenario parking demand not sustainable and needs to be managed
• A pricing strategy that’ll reduce the overall demand needs to be worked out

HIGHLY SUBSIDIZED LONG TERM PARKING INDUCING CAR AND 2-WHEELER USAGE

BAU Scenario – Hourly Breakup of Parking Demand

Parking Price Vs Demand – Sensitivity Analysis

Trip Purpose of Visitors to Nehru Place

Mode Shares
PARKING SUPPLY SCENARIOS

**Base year Demand (2013)**
- 6600 ECS (Phase 1)
  - 1000 in 1 MLCP – 5000 sqm – 4 floors
  - 5600 at grade – 46000 sq.m.
- 14% of precinct area

**Demand in BAU Scenario (2021)**
- 9500 ECS (Phase 1 & 2)
  - 1000 in 1 MLCP – 5000 sqm – 4 floors
  - 8500 at grade – 68000 sq.m.
  - 20% of precinct area

**Best Case Supply Scenario (2021)**
- MLCP Vs At-grade to be balanced
  - 5500 ECS
    - 3500 in 4 MLCP – 15000 sqm
    - 2000 ECS at grade – 48000 sq.m.
  - 18% of precinct area

**Planned Capacity Phase 1&2 (2021)**
- 12000 ECS
  - 10000 in 5 MLCP – 18000 sq.m
  - 2000 at grade – 48000 sq.m.
  - 20% of precinct area

**As per City Parking Policy (2021)**
- 6600 ECS (Phase 1)
  - 1000 in 1 MLCP – 5000 sqm – 4 floors
  - 5600 at grade – 46000 sq.m.
  - 14% of precinct area
## STRATEGIES

- **High At grade parking rates -** expected to cater short term parking demand

- **Multi level car park to be cheaper than surface parking -** shift medium term parking to MLCP

- **Proposed hourly rates result in high Long term parking cost -** will induce shift from Cars and 2-Wheelers

- **Maintain 85% occupancy in the parking lots so that parking spaces are always available for the visitors.**

- **Parking can be allocated to stakeholder on reduced rates**

### PARKING DESIGN

<table>
<thead>
<tr>
<th>Time Duration</th>
<th>Demand BAU</th>
<th>Existing price (per ECS)</th>
<th>Supply Scenario</th>
<th>Shift from existing parking</th>
<th>Pricing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>On-street</td>
<td>MLCP</td>
<td></td>
</tr>
<tr>
<td>&lt;30 mins</td>
<td>236</td>
<td>Rs 20 (4 hour)</td>
<td>224</td>
<td>5%</td>
<td>Rs 50</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rs 30</td>
</tr>
<tr>
<td>30- 1hr</td>
<td>628</td>
<td>Rs 20 (4 hour)</td>
<td>236</td>
<td>360 5%</td>
<td>Rs 50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rs 30</td>
</tr>
<tr>
<td>1hr - 2 hr</td>
<td>1139</td>
<td>Rs 20 (4 hour)</td>
<td>653</td>
<td>43%</td>
<td>Rs 50 + Rs 75 (next 2 hrs)</td>
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<td></td>
<td></td>
<td>Rs 30 (first hr)+ Rs 15(next every hr)</td>
</tr>
<tr>
<td>2hr-8hr</td>
<td>619</td>
<td>Rs 20 (4 hour)+ 30 (8 hrs)</td>
<td>213</td>
<td>66%</td>
<td>Rs 50 + Rs 75 (next 2 hrs) + Rs 50 (next every hour)</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Rs 30 (first hr)+ Rs 15(next every hr)</td>
</tr>
<tr>
<td>&gt;8 hrs (Office Employees)</td>
<td>5966</td>
<td>Rs 20 (4 hrs)+ 30 (8 hrs)+ 40 (12 hrs )</td>
<td>2081</td>
<td>65%</td>
<td>Rs 50 + Rs 75 (next 2 hrs) + Rs 50 (next every hour)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rs 30 (first hr)+ Rs 15(next every hr)</td>
</tr>
<tr>
<td>&gt;8 hrs (Retail Employees)</td>
<td>943</td>
<td>Rs 20 (4 hrs)+ 30 (8 hrs)+ 40 (12 hrs )</td>
<td>943</td>
<td>100%</td>
<td>Rs 50 + Rs 75 (next 2 hrs) + Rs 50 (next every hour)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rs 30 (first hr)+ Rs 15(next every hr)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9,530</strong></td>
<td></td>
<td><strong>460</strong></td>
<td><strong>4,250</strong></td>
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</tr>
</tbody>
</table>

### PARKING ALLOCATION

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Demand</th>
<th>Supply (layout plan)</th>
<th>Parking allocated (1 ECS per 100 sq mtrs)</th>
<th>Parking supply at new increased price</th>
<th>Shift to PT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Office Employee</strong></td>
<td>5966</td>
<td>2081</td>
<td>1300</td>
<td>781</td>
<td>83%</td>
</tr>
<tr>
<td><strong>Retail Employee</strong></td>
<td>943</td>
<td></td>
<td>413</td>
<td>530</td>
<td></td>
</tr>
</tbody>
</table>
Public transport is at the periphery while personal vehicles have close access. Improved circulation of public transport within the commercial area is recommended.
Circulation of private vehicles needs to be managed better
Parking needs to be concentrated in a few Multi-level car parks
Few off-street parking spaces proposed for short term parking
Vehicular circulation plan for various streets is changed accordingly.
Pedestrian connectivity and internal circulation within the precinct improved.
Proposed designs incorporate the upcoming establishments
Additional links providing non-motorised transport to complete network
Summary

• Moving from parking minimums to parking maximums
• Pricing strategies to achieve the desired mode-shift
• Planning and circulation to prioritize public transport and NMT modes
• Stakeholder consultations to build consensus on designs proposed
• Government involvement to implement the proposed designs
Thank you