Development of parking management plan for the heavy vehicles along the Panvel municipal corporation region
Introduction
Key Highlights of Panvel

- Formed in the year 2016
- First municipal corporation in the Raigad district of Maharashtra.
- Consists Panvel old council area & 29 revenues villages encompassing already developed CIDCO nodes
- Current jurisdiction spans approximately 110 sq. km.
- Current population of PMC area is 1.37 Millions

Key infrastructure projects in and around Panvel

- Navi Mumbai International Airport
- Multi product special economic zone
- Navi Mumbai metro
- Mumbai Trans Harbour link
- Virar- Alibaug multimodal corridor
Freight activity Nodes in PMC

- **Kalamboli truck terminal**: Acts as a cargo transfer station between rail cargo and road cargo, shipments from this terminal spread across Maharashtra and beyond hence high accumulation of heavy vehicles is currently present in PMC.

- **Major industrial area**: Panvel has three industrial area in its vicinity i.e. Taloja MIDC, Panvel MIDC & Jawahar Industrial estate which contributes to more heavy vehicles in the PMC.

- **Jawaharlal Nehru Port Trust**: linkage to Jawaharlal Nehru Port Trust (JNPT), situated about 26 km from Panvel. Most of the road freight movement which originates from JNPT, passes through PMC area.
Problem statement: Current scenario
Heavy vehicle parking on Highways and internal city roads

Heavy vehicle parking in vacant land parcels across PMC for long duration

Adverse effects of these parking's

• Pollutes environment by creating hazardous waste by carry out maintenance repairing work at park site because of unavailability of designated space
• Creates a safety hazard to people residing in nearby area by generating unwanted waste, hindering the road spaces, practicing open defecation
• The areas where these trucks are parked seldom have any basic facilities like hygienic food joints, toilets etc. which increase a load on public & community toilets
Methodology

Stage 1: Assessment of current parking scenario in the PMC both on street and off street heavy vehicle parking

Stage 2: Carry out origin and destination survey along the various roads passing through PMC region

Stage 3: Find out the parking requirements based on the data

Stage 4: Coordinate with various authorities involved

Stage 5: Explore the best model for implementation of the parking plan
Stage 1: Assessment of current parking scenario in the PMC both on street and off street heavy vehicle parking

- There is one regulated truck terminal i.e. Kalamboli truck terminal, of capacity of 350 to 400 trucks
- It is observed that there are four major unregulated parking spaces

- It is observed that the original reservation is different

- Satellite imaginary of all land parcels are obtained with the help of google maps

- Kalamboli marble market, 80 to 150 trucks
- New Panvel node, 200 to 300 trucks
- Kalamboli circle, 100 to 150 trucks
- Across Kalamboli link road, 250 to 350 trucks
Kalamboli node: Kalamboli Marble market
(allotted for Future development); Parking count: 100 to 150 Heavy vehicles

Nodal plan

Satellite imaginary
New Panvel Node: Khanda colony
(allotted for Inter state bus terminal(ISBT), Future development); Parking count: 250 to 300 heavy vehicles

Nodal plan

Satellite imaginary
Kalamboli node: Kalamboli circle
(allotted for Future development); Parking count: 100 to 150 heavy vehicles

Nodal plan

Satellite imaginary
Kalamboli node: Across Kalamboli link road (allotted for commercial, mixed and open spaces, tree belt); Parking count: 250 - 300 heavy vehicles

Nodal plan

Satellite imaginary
**Stage 2: Carry out origin and destination survey along the various roads passing through PMC region**

- Total 200 vehicles are interviewed during the survey i.e. 25 on each route
- Vehicles of category 2, 3, multi axle and tractor is interviewed
- Truck originate from PMC: 22%
- Trucks destination within PMC: 28%
- Daily HV stay for night halt at PMC: 15%

Format of comprehensive mobility plan toolkit is referred for fright survey of PMC

- Total eight routes are selected to cover all the entry and exit points of PMC

Identificatio n of the routes to be surveyed

Data collection for the survey

Key stats from the survey
## Modified freight survey format for Panvel

<table>
<thead>
<tr>
<th>Sl. no.</th>
<th>Type of vehicle</th>
<th>Time</th>
<th>Origin</th>
<th>Destination</th>
<th>Loaded/unloaded status</th>
<th>Trip frequency in week</th>
<th>Parking/Night halt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
<td>25</td>
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</table>

### Trip Frequency

<table>
<thead>
<tr>
<th>Trip Frequency</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily once (one-way)</td>
<td>1</td>
</tr>
<tr>
<td>Daily twice (up &amp; down)</td>
<td>2</td>
</tr>
<tr>
<td>Daily thrice or more</td>
<td>3</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
</tr>
</tbody>
</table>

### Vehicle

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCV</td>
<td>1</td>
</tr>
<tr>
<td>2-Axle truck</td>
<td>2</td>
</tr>
<tr>
<td>3 – Axle truck</td>
<td>3</td>
</tr>
<tr>
<td>Multi axle vehicle</td>
<td>4</td>
</tr>
<tr>
<td>Tractor</td>
<td>5</td>
</tr>
<tr>
<td>Tempo</td>
<td>6</td>
</tr>
<tr>
<td>NMT</td>
<td>7</td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Route name</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Expressway entry point</td>
</tr>
<tr>
<td>2</td>
<td>Expressway exit point</td>
</tr>
<tr>
<td>3</td>
<td>Panvel - Kalamboli circle</td>
</tr>
<tr>
<td>4</td>
<td>NH548 to Kalamboli circle</td>
</tr>
<tr>
<td>5</td>
<td>Kalamboli - NH548</td>
</tr>
<tr>
<td>6</td>
<td>NH48 Taloja - Kalamboli</td>
</tr>
<tr>
<td>7</td>
<td>NH48 Kalamboli - Taloja</td>
</tr>
<tr>
<td>8</td>
<td>Kharghar - Kalamboli</td>
</tr>
</tbody>
</table>
Hourly traffic at selected freight routes

Average frequency = 3.17 trips Per week & 0.45% per day

% of Loaded vehicles = 54%
% of empty vehicles = 46%
Route wise share of vehicles parked in PMC region out of total volume

- Kharghar - Kalamboli: 11%
- NH48 Kalamboli - Taloja: 16%
- NH48 Taloja - Kalamboli: 14%
- Kalamboli - NH548: 13%
- NH548 to Kalamboli circle: 19%
- Panvel - Kalamboli circle: 18%
- Expressway exit point: 17%
- Expressway entry point: 8%
Vehicle type wise share of vehicles parked in PMC region on the daily basis out of total volume

- **Tractor**: 18% of vehicles parked within PMC limits, 53 total vehicles surveyed.
- **Multi axle**: 15% of vehicles parked within PMC limits, 30 total vehicles surveyed.
- **3 axle**: 15% of vehicles parked within PMC limits, 46 total vehicles surveyed.
- **2 axle**: 14% of vehicles parked within PMC limits, 71 total vehicles surveyed.

Out of total parked HV only 16% parked in truck terminals, remaining all 84% HV parked either on open space or on street.
### Stage 3: Demand assessment for Heavy vehicle parking spaces

Heavy Vehicles count in a day = 31,224

Approximate total parking occurs in PMC = 4,642

Parking capacity of current truck terminal and surrounding area = 400 to 700

HV Parking requirement in PMC is at least 3,500

<table>
<thead>
<tr>
<th>Sl.no.</th>
<th>Route</th>
<th>Day count</th>
<th>Daily parking in %</th>
<th>Daily parking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Expressway entry point</td>
<td>3720</td>
<td>8%</td>
<td>298</td>
</tr>
<tr>
<td>2</td>
<td>Expressway exit point</td>
<td>2400</td>
<td>17%</td>
<td>411</td>
</tr>
<tr>
<td>3</td>
<td>Panvel - Kalamboli circle</td>
<td>4368</td>
<td>18%</td>
<td>799</td>
</tr>
<tr>
<td>4</td>
<td>NH548 to Kalamboli circle</td>
<td>4224</td>
<td>19%</td>
<td>821</td>
</tr>
<tr>
<td>5</td>
<td>Kalamboli - NH548</td>
<td>4104</td>
<td>13%</td>
<td>516</td>
</tr>
<tr>
<td>6</td>
<td>NH48 Taloja - Kalamboli</td>
<td>6336</td>
<td>14%</td>
<td>869</td>
</tr>
<tr>
<td>7</td>
<td>NH48 Kalamboli - Taloja</td>
<td>5136</td>
<td>16%</td>
<td>822</td>
</tr>
<tr>
<td>8</td>
<td>Kharghar - Kalamboli</td>
<td>936</td>
<td>11%</td>
<td>107</td>
</tr>
</tbody>
</table>

Total: 31,224

Current truck terminal at Kalamboli
Existing parking space: Kalamboli truck terminal

Kalamboli truck terminal: Satellite imaginary

Source: Google maps
Stage 4: Co-ordinate with various authorities involved

- PMC has initiated a discussion with Navi Mumbai truck terminal association
- New truck terminal is planned in the NAINA area with coordination with CIDCO

- PMC has initiated a dialogue with traffic commissioner, Navi Mumbai regarding on street parking spaces within PMC
- PMC has done stakeholders consultation with RTO, Panvel
- PMC has done stakeholders consultation with Deputy commissioner Police, Panvel

- PMC has initiated dialogue with CIDCO regarding ownership of un-regulated parking spaces
Stage 4: Co-ordinate with various authorities involved

Ashok Dudhe, DCP Panvel

Lakhman Darade, RTO Panvel
Stage 4: Co-ordinate with various authorities involved

Joint meeting with various stakeholders from MMRDA, MSRDC, NAINA, CIDCO, MIDC etc.
Implementation
PMC plan to solve the current issue

Formation of traffic management department
- PMC is planning to form a traffic management team with traffic inspectors & wardens for the city

Provisions in the Development plan
- PMC is in the process of preparing development plan for the whole corporation area
- Corporation will identify and put the Multilevel car park reservation where trucks will be parked on the ground floor

On street parking policy
- PMC is in the plan to regularise a on street parking at expensive rates to discourage on street parking
Traffic management department

Current status:

- PMC in collaboration with traffic police is appointing 50 traffic wardens in the city
- Wardens will ensure a smooth traffic in the city & help in controlling illegal parking on the city roads
- PMC is in the process of getting approval of general body for appointing a traffic inspectors

Responsibilities related management of freight movement and parking

1. Continuously monitor the illegal parking of heavy vehicles
2. Spot the illegally parked heavy vehicles within PMC area including NH & SH going through the city
3. Issue notice to all illegally parked vehicles with coordination with traffic police department
4. Issue the notice to landowners of the open spaces where large number of heavy vehicles are parked without permission of PMC
5. Issue permission to park large vehicles only if owner has fulfilled the basic amenities criteria in the premises such as a) Accommodation, B) Hygienic food C) Clean Restrooms
Provisions in the development plan & implementation process

1. PMC is currently preparing a development plan for the total corporation area.
2. Land use map of PMC is in the final stages now.
3. PMC is floated a tender for preparing Comprehensive mobility plan for the city.
4. PMC will reserve land for integrated car and truck parking in the development plan suggested in the CMP.
5. Acquire the land by way of Transferable development rights, town planning scheme etc.
6. Build a parking facility with PPP model with DBFOT arrangements.
Facilities proposed in integrated car & truck park

- Workshops, Shops, Fuel station
- Canteens, healthcare facilities
- Rest area & lodging facility
- Drinking water, Wash rooms
- Gym, Recreation zone
- Godowns, cold storage
On street parking policy

- PMC is in the process of finalising a temporary parking spots for on street parking
- The parking spots are divided into two types
  1. First type of spots accommodate heavy vehicles which are allowed to parked throughout the day
  2. Second type of spots where heavy vehicles are allowed to parked in the vicinity of the PMC boundary only after 11 PM and before 7 Am
- It is observed in the interactions with the truck drivers is the average time of parking varies from 7 hrs or one night to three nights
- Main reason behind a long halt is the free/cheap parking available within PMC and there are very few drivers who has parked because of the immediate upcoming consignment.
- Hence to discourage this PMC has adopted a variable rate charges for the truck drivers here are the proposed rates

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Timing of parking</th>
<th>Less than 4 hrs</th>
<th>4 Hrs to 10 Hrs</th>
<th>8 hrs to 24 hrs</th>
<th>More than 24 hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From 7 AM to 11 PM</td>
<td>500</td>
<td>1500</td>
<td>3000</td>
<td>3000 + 100 per hour</td>
</tr>
<tr>
<td>2</td>
<td>11 PM to 7 AM</td>
<td>200</td>
<td>500</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: Above rates are for the sub 10 meters vehicles, the rates would be 1.5 times the given rates for vehicles having length more than 10 meters
Outcomes
<table>
<thead>
<tr>
<th>Parking management plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedicated manpower to control irregular and illegal heavy vehicles parking</td>
</tr>
<tr>
<td>Heavy vehicles free city roads reduces accidents and hindrance in the traffic of the city</td>
</tr>
<tr>
<td>Clean and regulated open land parcels which are used for truck parking ensuring safe and secure place to stay for the truck drivers</td>
</tr>
<tr>
<td>The main reason of halt at PMC region is availability of free or low cost parking spaces</td>
</tr>
<tr>
<td>Identification of heavy vehicles parking locations which will be the reference points of planning process of development plan</td>
</tr>
<tr>
<td>Increased awareness of the freight parking subject among all related stakeholders</td>
</tr>
<tr>
<td>Relief from on street parking by temporary arrangements until construction of integrated parking</td>
</tr>
</tbody>
</table>
Important reference docs

Letter from Navi Mumbai police

General body approval for traffic wardens
Important reference docs

Work order DP
Thank you