

MUMBAI DEVELOPMENT PLAN (2014-2034)

Gender and Transport

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Engendering Transport

- Travel patterns are gendered and vary across income, age
- Trip chaining- combining multiple trips
- More walking, cycle less
 - Difference in cycle use largely explained by women's higher concern for safe riding environments and their inferior access to personal means of transport*
 - Women's access to basic non-motorized means of transport such as carts or load-carrying bicycles is often restricted, resulting in frequent strain injuries, neck and back pain due to excessive head loading. Access to carts and bicycles thus becomes the key challenge.**
- More public transport trips, especially buses
- More trips during off-peak hours, more non-work trips (30%)***
- Strong gender dimension to the 'shelter-transport-livelihood link'****

Source: *Srinivasa, 2008

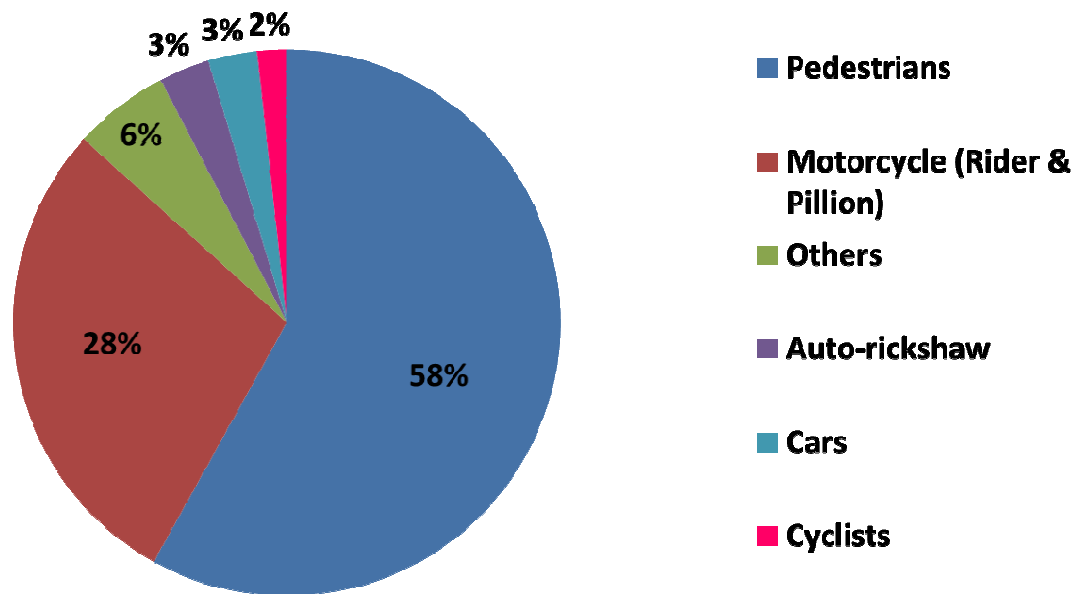
** Deike, Peters

*** World Bank, 2011

****Wilson, 1987

Preparatory Studies

- 51% of all trips are by walking; yet these are the most vulnerable. 58% of all fatalities are pedestrians*
- **Walking + public transport trips = ~88%**
- 60% of last mile connectivity trips are on foot
- 80% of trips are within 15 minutes



Source: *Traffic Police,

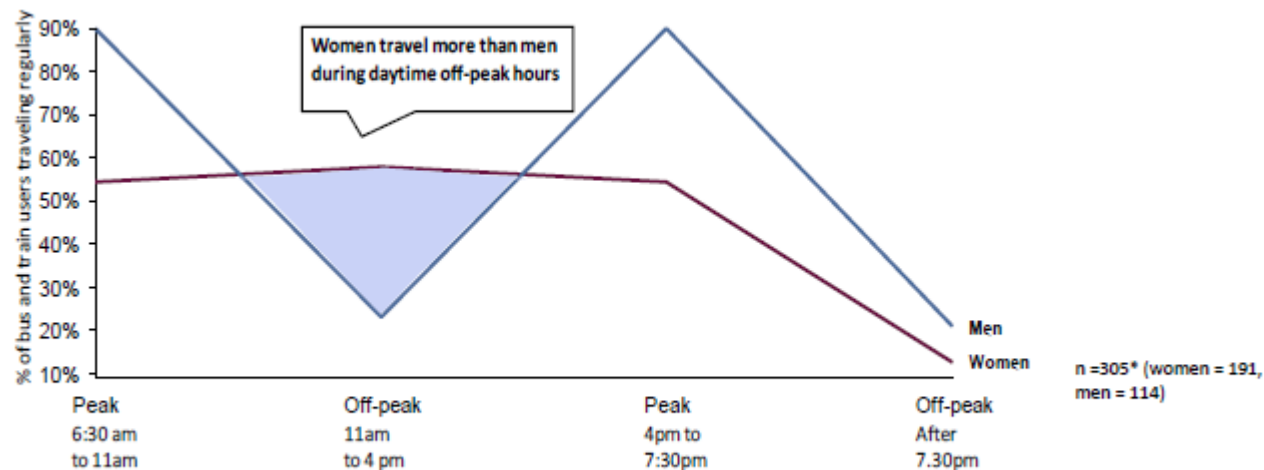
Comments on Preparatory Studies

- Gendered perspective of transport and accessibility is missing
- **Strong focus on vehicular congestion**, no mention of the percentage of NMT infrastructure as part of total road space
- Strategy for improving quality of NMT access at city-level and planning sector level is missing
- **Women are disproportionately affected by poor quality NMT and public transport infrastructure**

Public Transport

Public Transport

- Gender audits of existing and proposed public transport infrastructure and experience
- Re-evaluate fares and operations to make public transport more flexible and affordable for women (especially buses)
- Late evenings: Buses can halt in-between stops to drop women closer to their destination
- Women feel unsafe when boarding / alighting, lack of public toilets

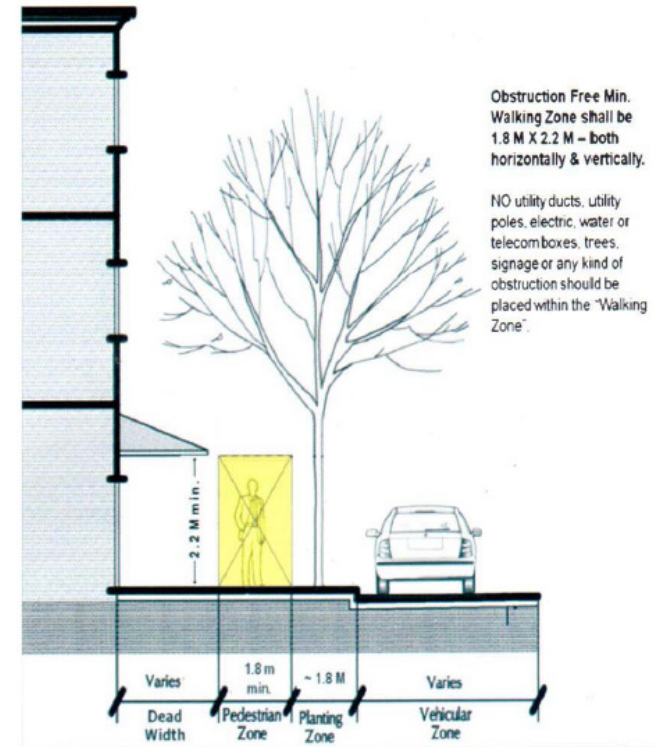


* Note:
1) Omits all surveyed users who did not report traveling aboard either buses or trains.

Walking and Cycling

Walking and Cycling







- Design streets to improve walking and encourage cycling modal shares
- Footpaths to include dead zone, uninterrupted walking zone and multi-utility zone
- Improvement of any street should ensure that minimum footpath widths are as per IRC 103:2012 – Guidelines for Pedestrian Facilities, subject to a level of service approach



Walking and Cycling

- Footpaths to ensure a Level of Service B
- Street Design Guidelines
 - Only street sections are insufficient
 - Include guidelines for supporting walking and cycling infrastructure: Street lighting, vending, seating, garbage bins, bus stops and shelters, signage and pedestrian way-finding, on-street parking
- Improve access to cycles and load carrying NMT for women

Table 1.1: Illustration of Quantitative Level of Service

<p>LOS A Pedestrian Space > 4.9 m²/p. Flow Rate ≤ 12 p/min/m At a walkway LOS A, pedestrian move in desired paths without altering their movements in response to other pedestrian. Walking speeds are freely selected, and conflicts between pedestrian are unlikely.</p>	
<p>LOS B Pedestrian Space > 3.3-4.9 m²/p. Flow Rate ≤ 12-15 p/min/m At LOS B, there is sufficient area for pedestrian to select walking speeds freely, to bypass other pedestrian, and to avoid crossing conflicts. At this level, pedestrian begin to be aware of other pedestrian, and to respond to their presence when selecting a walking path.</p>	
<p>LOS C Pedestrian Space > 1.9-3.3 m²/p. Flow Rate ≤ 15-21 p/min/m At LOS C, space is sufficient for normal walking speeds, and for bypassing other pedestrian in primarily unidirectional streams. Reverse-direction or crossing movements can cause minor conflicts, and speeds and flow rate are somewhat lower.</p>	
<p>LOS D Pedestrian Space > 1.3-1.9 m²/p. Flow Rate ≤ 21-27 p/min/m At LOS D, freedom to select individual walking speed and to bypass other pedestrian is restricted. Crossing or reverse-flow movements face a high probability of conflict, requiring frequent changes in speed and position. The LOS provides reasonably fluid flow, but friction and interaction between pedestrian is likely.</p>	
<p>LOS E Pedestrian Space > 0.6-1.3 m²/p. Flow Rate ≤ 27-45 p/min/m At LOS E, virtually all pedestrian restrict their normal walking speed, frequently adjusting their gait. At the lower range, forward movement is possible only by shuffling. Speed is not sufficient for passing slower pedestrian. Cross- or reverse-flow movements are possible only with extreme difficulties. Design volumes approach the limit of walkway capacity, with stoppages and interruption to flow.</p>	
<p>LOS F Pedestrian Space ≤ 0.6 m²/p. Flow Rate varies At LOS F, all walking speeds are severely restricted, and forward progress is made only by shuffling. There is frequent, unavoidable contact with other pedestrian. Cross- and reverse-flow movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristic of queued pedestrian than of moving pedestrian streams.</p>	

Guidelines

Guidelines

- Spatial maps to audit neighbourhoods, streets and public spaces to evaluate how safe, comfortable and convenient they are for women



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GET INVOLVED

Volunteer with us, or support us in other ways.



REPORT HARASSMENT

Report it to us if it happens to you, or if you witness it.



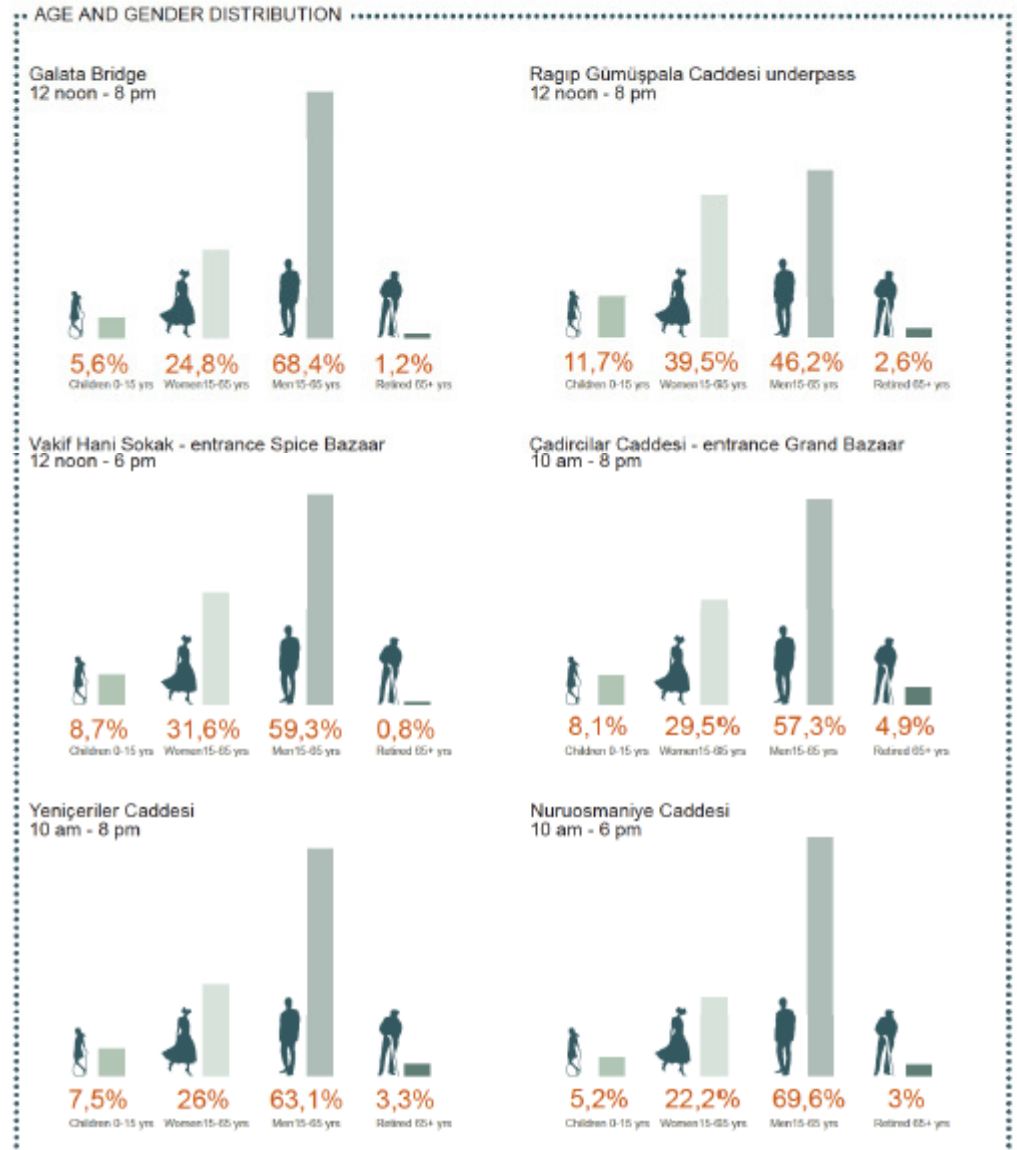
GET HELP

Access free services if you've been sexually harassed.



Source: www.harassmap.org/en

Guidelines



Source: EMBARQ Turkey

Guidelines



Source: EMBARQ Turkey

Regulations

Regulations

- Regulations to embody principles of “Violence Prevention Through Environmental Design”
 - Encourage “street eyes”: Mixed uses, porous building edges and planning for street vendors
 - Promote walkable, cycling friendly neighbourhoods by limiting block sizes, providing direct, shortest NMT routes and reserving land for pedestrian public right of ways
 - Clearly identify DO’s and DONT’s



Regulations

- Land allocation for decentralized amenity clusters within walking distance
 - Public toilets, drinking water, reading rooms, day-care centres
- Land allocation of day-care / creches within 5 minutes walking distance
- Land allocation for pre-primary and primary schools within 15 minutes walking distance
- Primary health care facilities within 15 minutes walking distance

Regulations

➤ Public Toilets

- In bus terminals, public buildings and public open spaces
- Accessible within 15 minutes walking distance
- Special attention to areas along high NMT volumes, especially NMT only and priority streets
- Clearly visible and accessible from public streets of at least 12m width
- Accessible to all
- Sufficient seats for women, include toilet seats for dependents
- Additional space for child-care
- Do community toilets meet household needs like washing areas, if proposed in informal settlements?

Regulations

- **Public Reading Rooms / Vachnalayas**
 - Land allocated within 5 minutes walking distance of informal settlements
 - Special attention to areas along high NMT volumes, especially NMT only and priority streets
 - They should be accessible from public streets and porous to the street
 - **Allocate space for women / girls, directly accessible from public streets**
- **Police Chowkies and field offices**
 - Consultation with Police to identify land allocation and requirements
 - **Estimate space requirements for women constables and provide dedicated area**

Summing up

- Development Plan needs create a set of guidelines under a larger strategy of “Violence Prevention through Environmental Design”
- Disaggregate existing data and information to understand women’s experience and needs
- Conduct spatial gender audits of public transport infrastructure, streets and public open spaces
- Conduct spatial gender audits of planning sectors
- Approvals of public transport improvements/projects, street and public space design improvements subject to implementation of recommendations of spatial gender audits
- Approvals for redevelopment projects subject to implementation of these guidelines

Thank You