MUMBAI DEVELOPMENT PLAN (2014-2034)

Non-motorized Transport

17th December 2013

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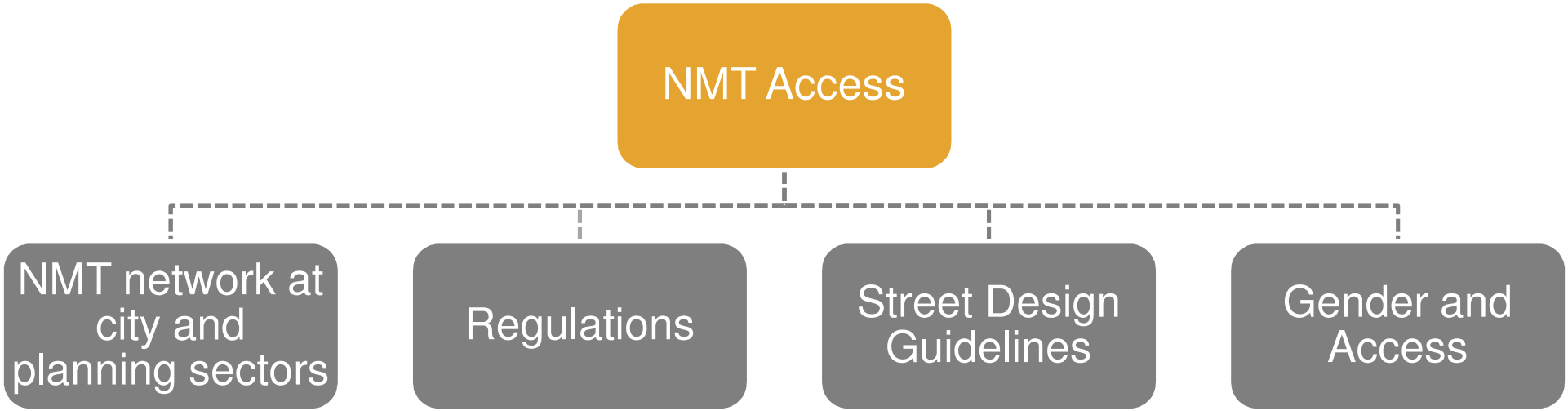
Objective



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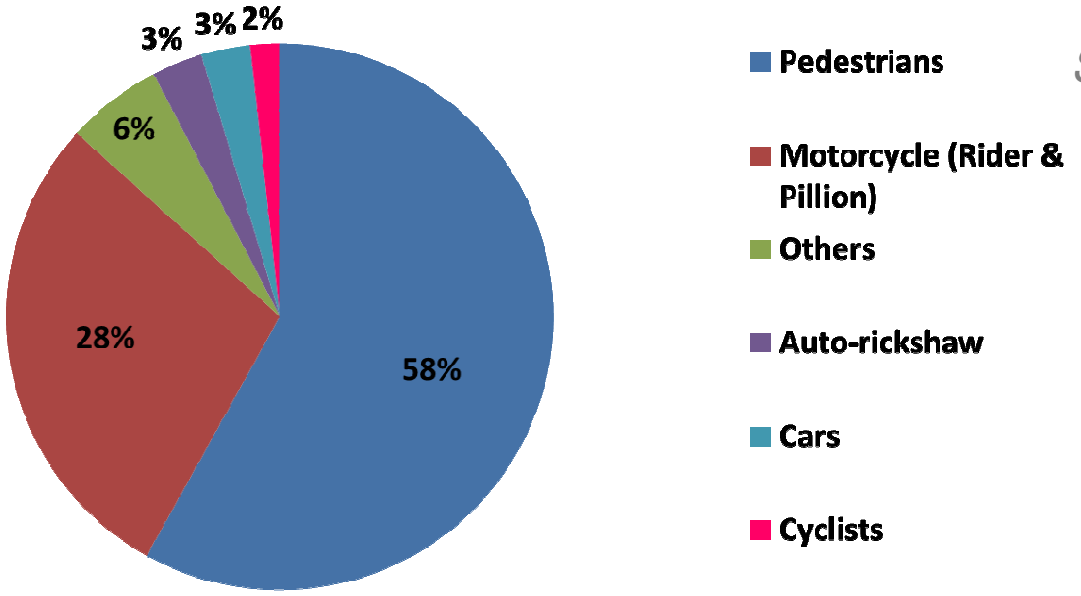
Why look at non-motorized transport?

- 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,*

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Comments on Preparatory Studies

- **Strong focus on vehicular congestion**. How will the proposed road projects or road widening projects benefit / improve existing public transport services or non-motorized transport?
- With 56% of NMT, 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
- No mention of pedestrian fatalities and how they will be addressed
- Gendered perspective of transport and accessibility is missing

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Approach

- Frame a Transport Strategy for Mumbai within the overall framework of the National Urban Transport Policy (2006)

  "People occupy center-stage in our cities and all plans would be for their common benefit and well-being"

  NUTP's objective is to bring about a more equitable allocation of road space with people, rather than vehicles, as its main focus

- Emphasis not on **mobility but accessibility**

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Non-motorized Transport Strategy for Mumbai

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Suggested Strategies for City

- Need for a non-motorized transport strategy for Mumbai
  - Vision, Objectives and Targets
  - City-level NMT network plan
  - Regulations
  - Street Design Guidelines
  - Institutional Structure

  - Targets
    - *Achieving zero fatalities from road accidents*
    - *Increasing pedestrian and bicycle modal shares*
    - *Providing sufficient, safe and comfortable NMT infrastructure (as % increase)*

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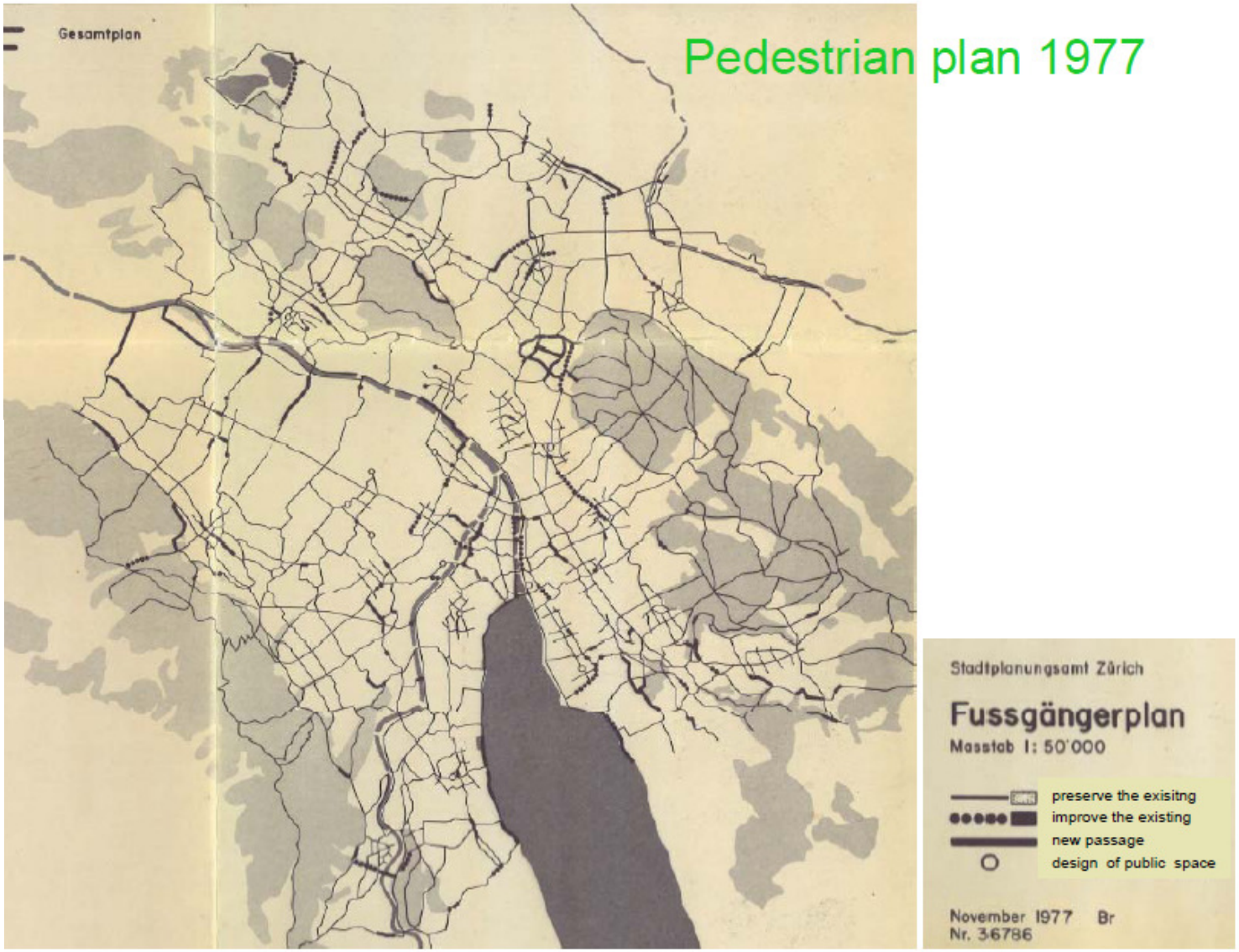
Case Study: Zurich (1977)



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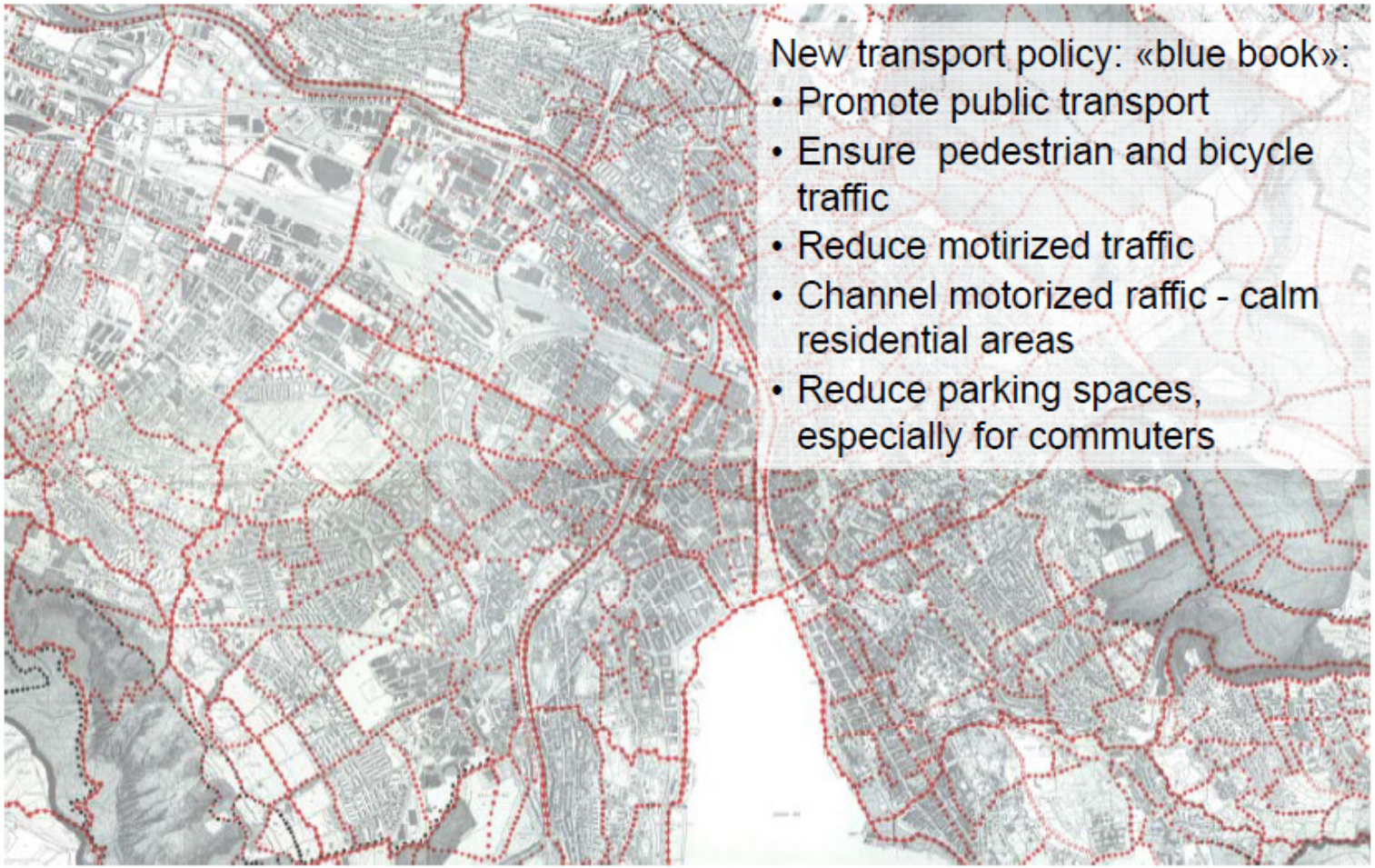
Source: City of Zurich, Department of Civil Engineering

Case Study: Zurich (1990)



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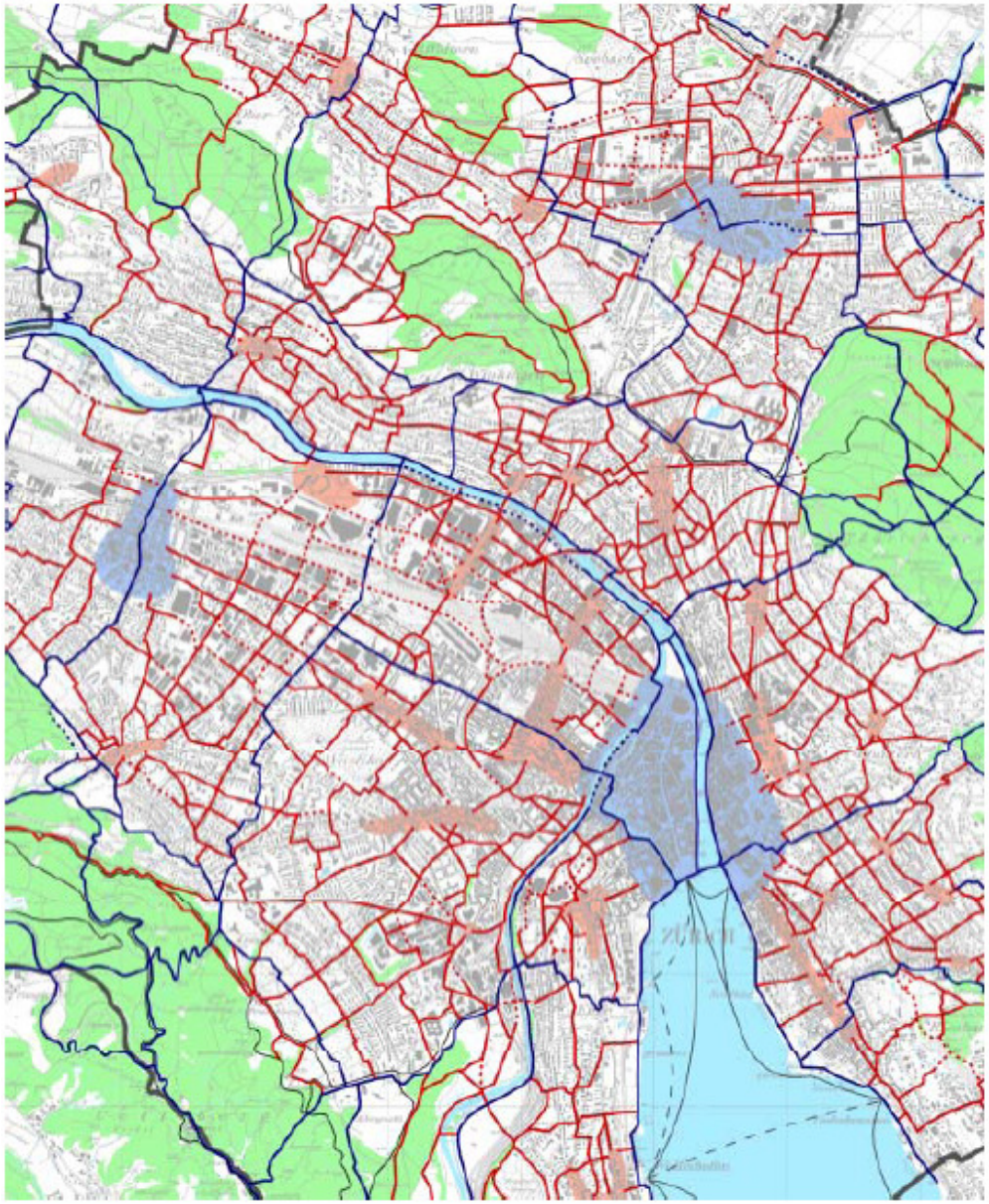
Source: City of Zurich, Department of Civil Engineering

Case Study: Zurich (2004)



Pedestrian Plan (2004)

- City-wide continuous networks
- Pedestrian areas in district centres

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Source: City of Zurich, Department of Civil Engineering

Suggested Strategies at City-level

- NMT priority corridors and zones in the Development Plan
  - Criteria for NMT only streets: Through city-level public open spaces connecting to city roads and “green grid”
  - Criteria for NMT priority streets: Along public transport corridors (metro-rail, monorail and major bus routes)
  - Criteria for NMT priority zones (with 30km/hr speed limits): TOD areas, residential, business and historic neighbourhoods, gaothans / koliwadas, informal settlements, areas around large pedestrian and NMV generators (educational institutions especially pre-and primary schools and amenities etc)

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Proposed Strategies for Planning Sectors

- NMT only / priority streets at Planning Sector Scale
  - Existing NMT-only paths
  - Feeder routes to mass transit stations, market streets and local streets in residential neighbourhoods and business districts

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Regulations

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Regulations

- Land allocation and regulations for amenities which impact access
- Public Toilets
  - Land allocated within 15 minutes walking distance
  - Special attention to areas along high NMT volumes, especially NMT only and priority streets
  - Accessible from public streets of atleast 12m width
  - Clearly visible from the streets
- Community bins
  - Land allocation for community garbage bins

Regulations

- Public Reading Rooms / Vachnalayas
  - Allocation of land for public reading rooms
  - 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
- Traffic Police Chowkies
  - Consultation with Traffic Police to identify land allocation and requirements

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Regulations

- BEST and IPT Chowkies
  - Consultation with BEST, Auto and Taxi unions to identify land allocation and requirements
- Linear Markets and Informal Service Providers
  - Serviced land needs to be allocated for linear markets within proximity of mass transit stations
  - Serviced land allocated for informal service providers along large scale generators (educational institutions, hospitals etc)
  - These need to be accessed from public roads / streets
  - They cannot be allotted a single plot or multistoried structure

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Street Design Guidelines

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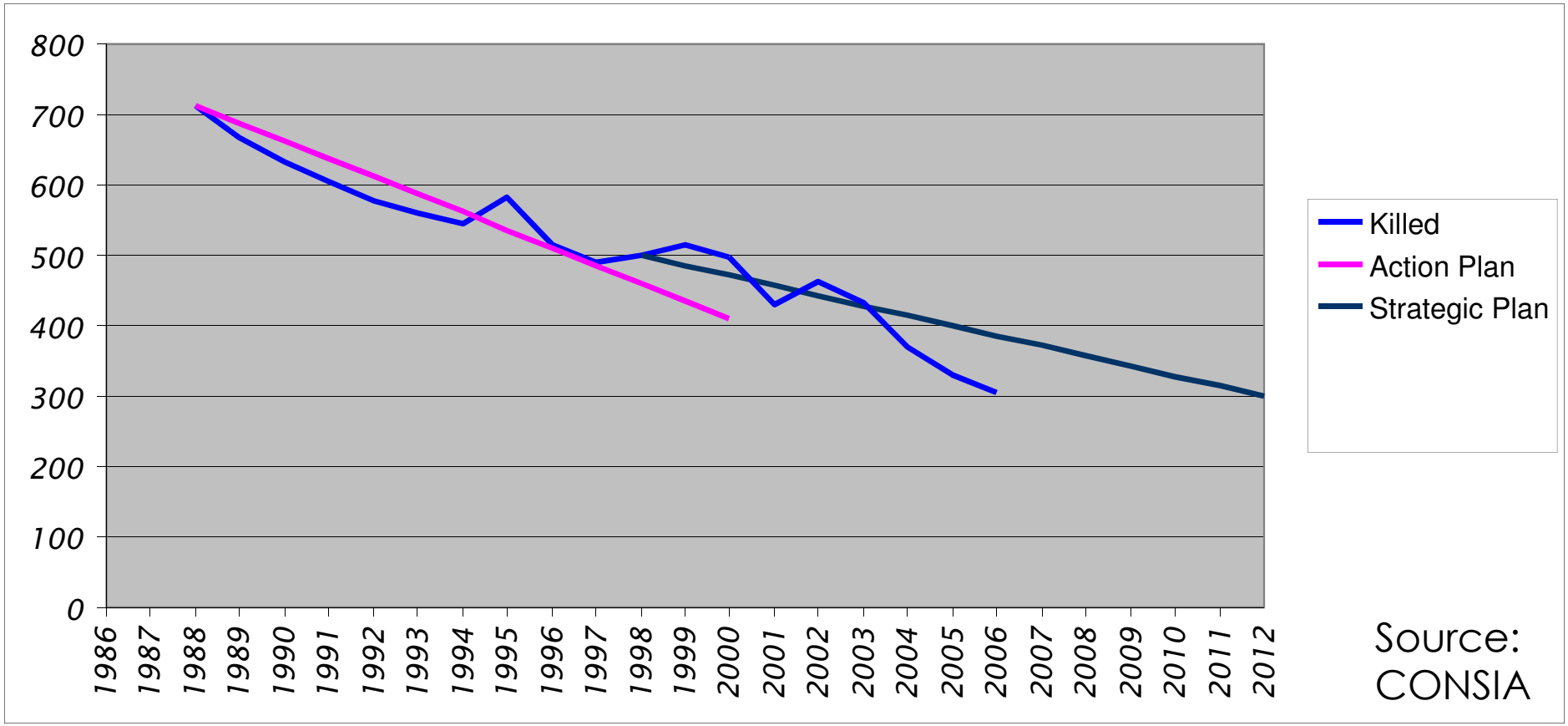
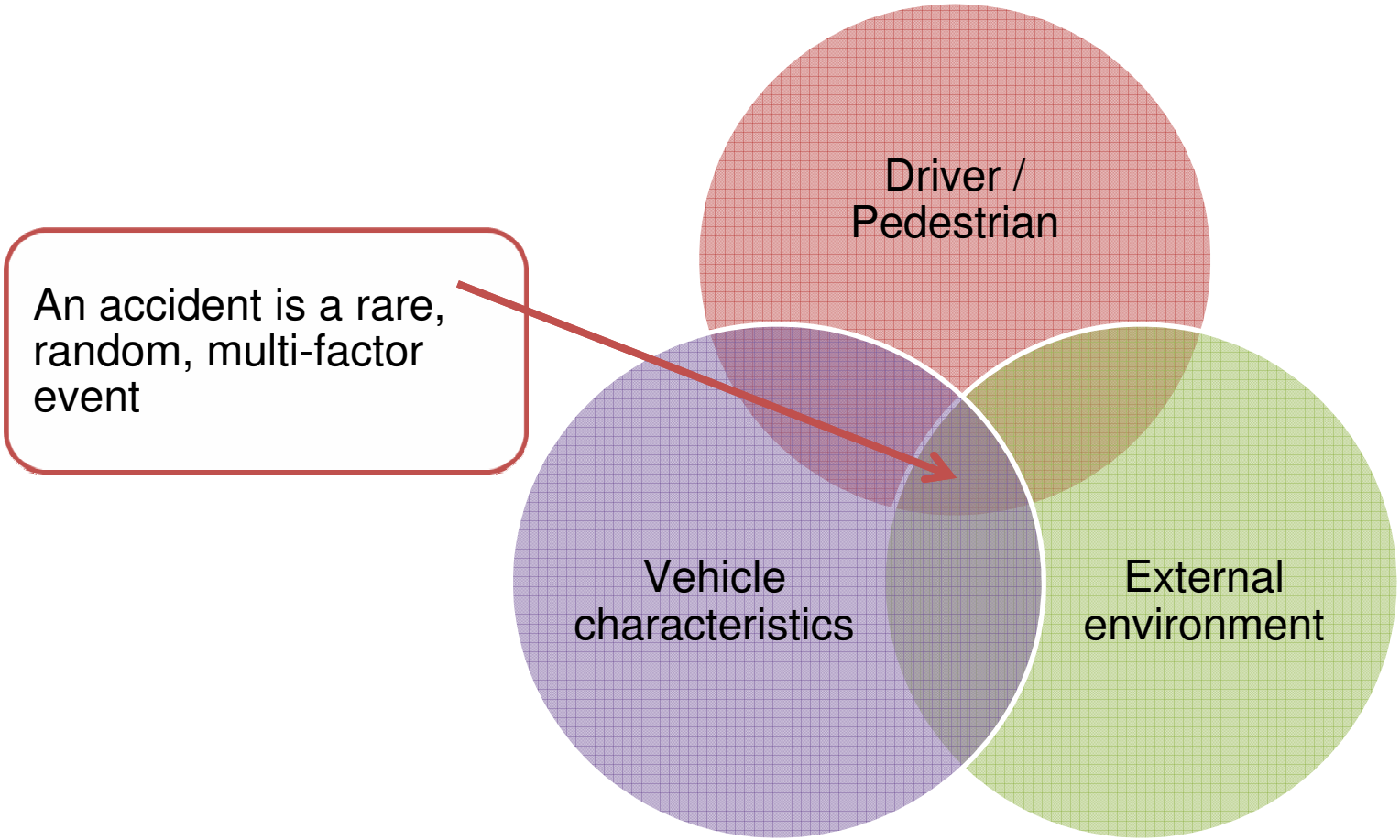
Street Design Guidelines

- A well defined, implemented and enforced strategy can visibility help reduce the number of fatalities as proven by ‘vision zero’ action plans by developed countries
- **Denmark’s vision zero:**



Street Design Guidelines



If one of the factors is corrected, it is likely that the accident would not happen, or at least, its severity would be reduced

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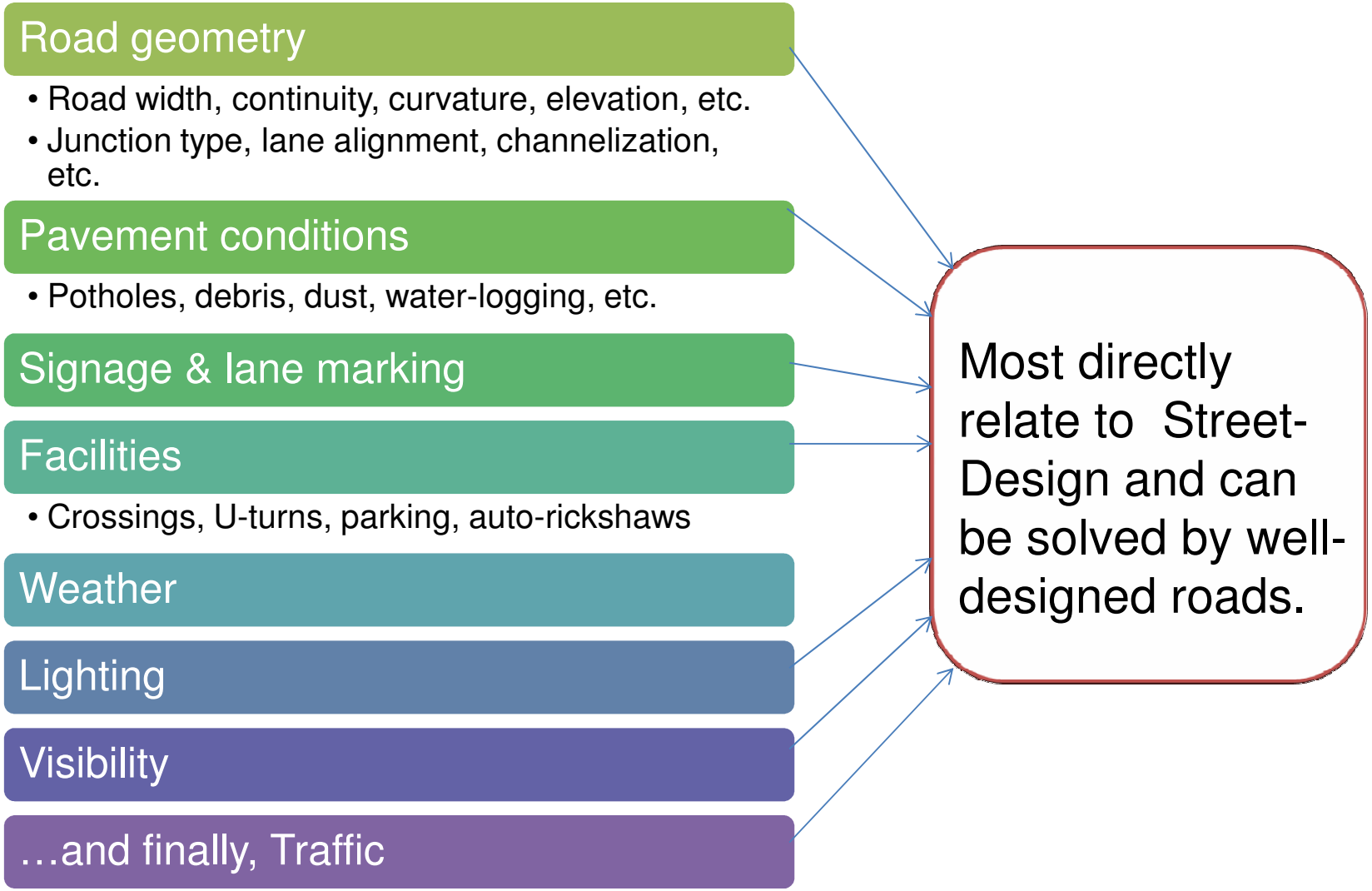
What are these ‘external environment’ factors?



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Street Design Guidelines

Allocates space to ALL road users and uses…democratically

Private vehicles: 2/4 wheelers

Public Transport, IPT & parking

All NMT users

Ancillary street uses, immovable facilities

Street Design Guidelines

Continuous length	• No frequent gaps in footpath, cycle track, etc
Constant width	• No bulges or bottlenecks in traffic lanes
Consistent design	• No “surprises” to the road users / unfamiliar design, in signage, lane markings, signals, etc
Contextual to the local scenario / land use	• Design differently for local roads, arterial road, neighborhood streets, commercial streets, business districts, etc
Control excessive speeding	• Design such that all vehicles are induced to travel at a safe speed

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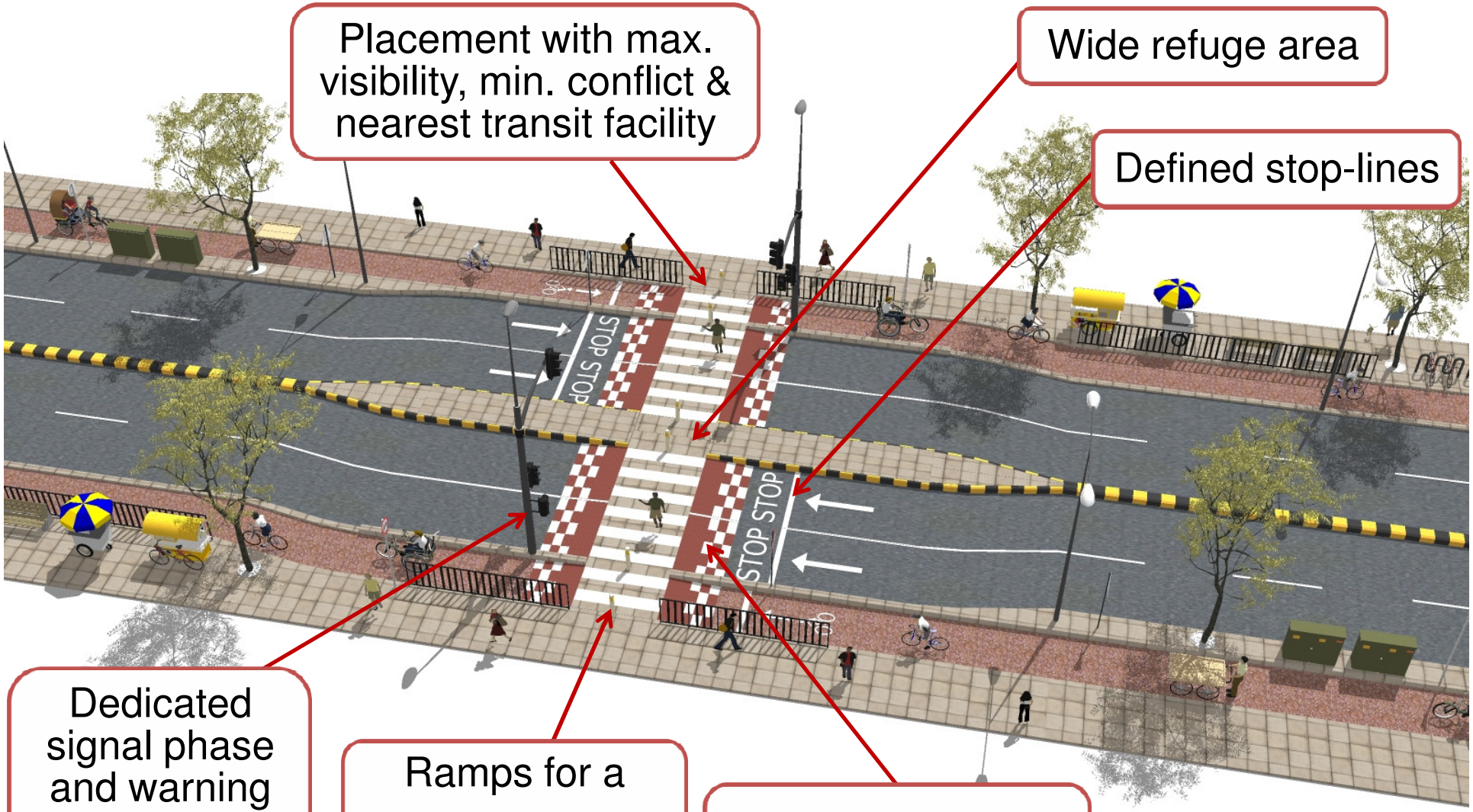
Street Design Guidelines



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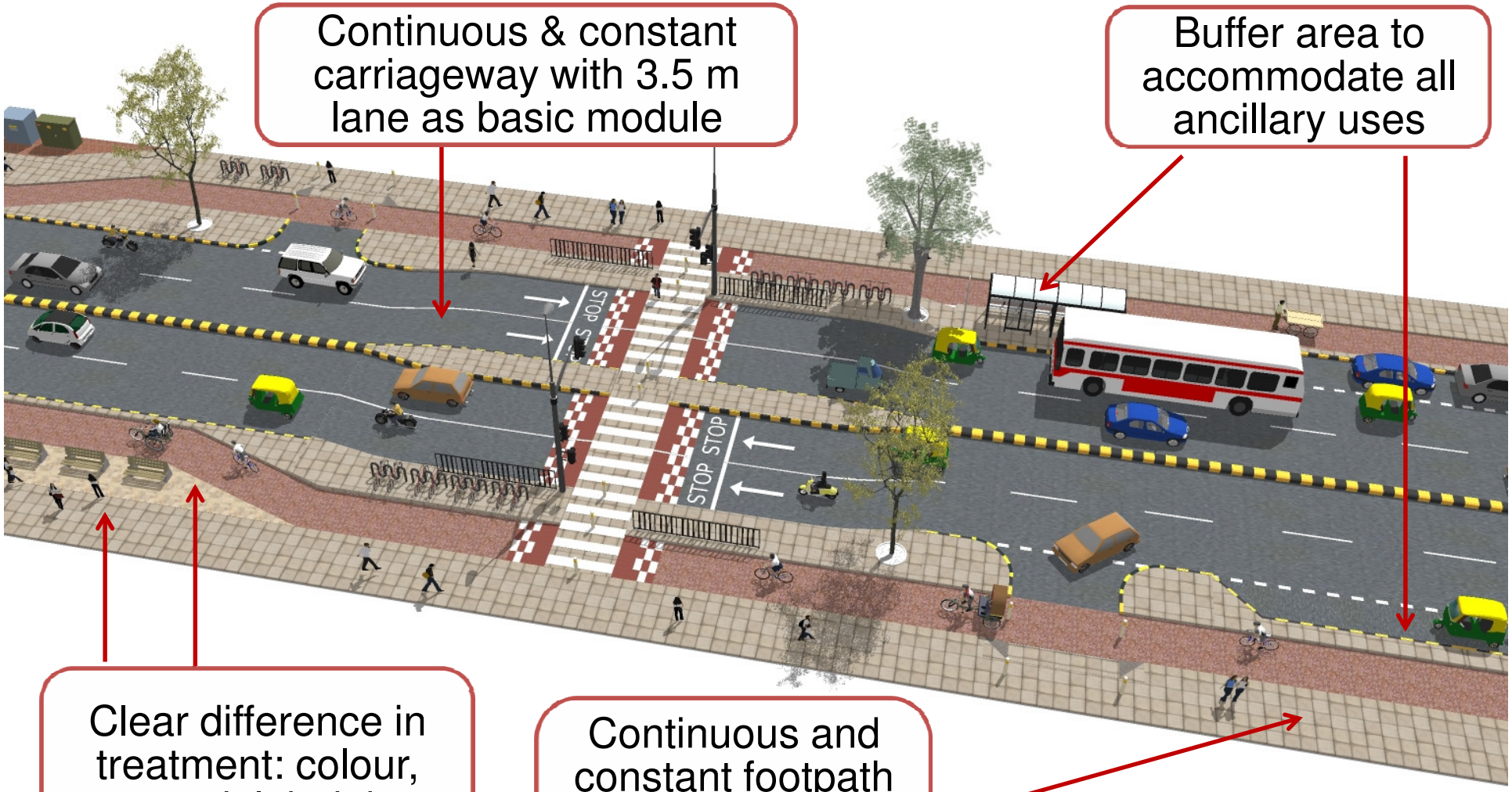
Street Design Guidelines



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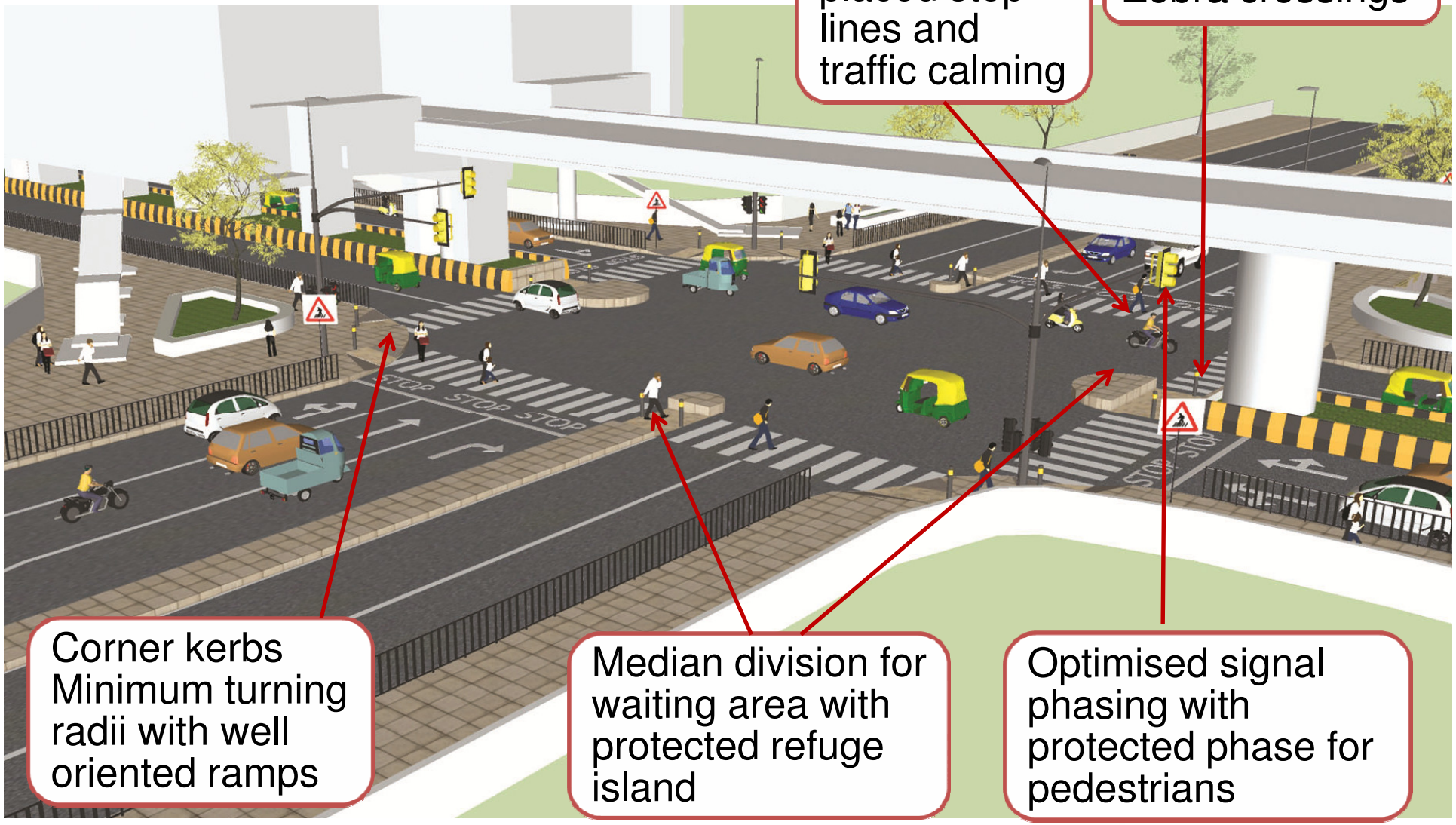
Street Design Guidelines



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Gender and Access

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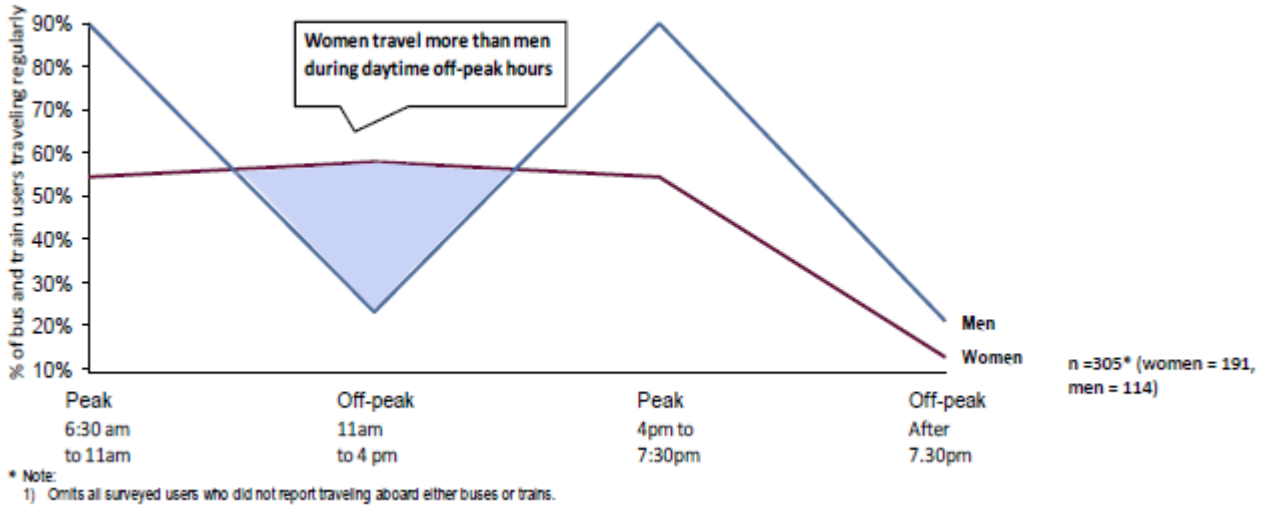
Gender and Access

- Travel patterns are gendered and vary across income, age
- Trip chaining, more walking and public transport trips, more trips during off-peak hours, more non-work trips
- Women travel more by bus
- Women feel unsafe when boarding / alighting
- Lack of or unmaintained public toilets



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Source: World Bank, 2011

Proposed Strategy at the City-level

- Incorporate gender disaggregated data that reveals the travel needs of women
- Holistic approach: *Affordability, Accessibility, Safety & Security, Information and Employment*
- Regulations to encourage “street eyes”: Mixed uses, porous building edges and block sizes, planning for street vendors; and not restricted to TOD areas
- Create a framework to evaluate impact of regulations on women’s experience / access

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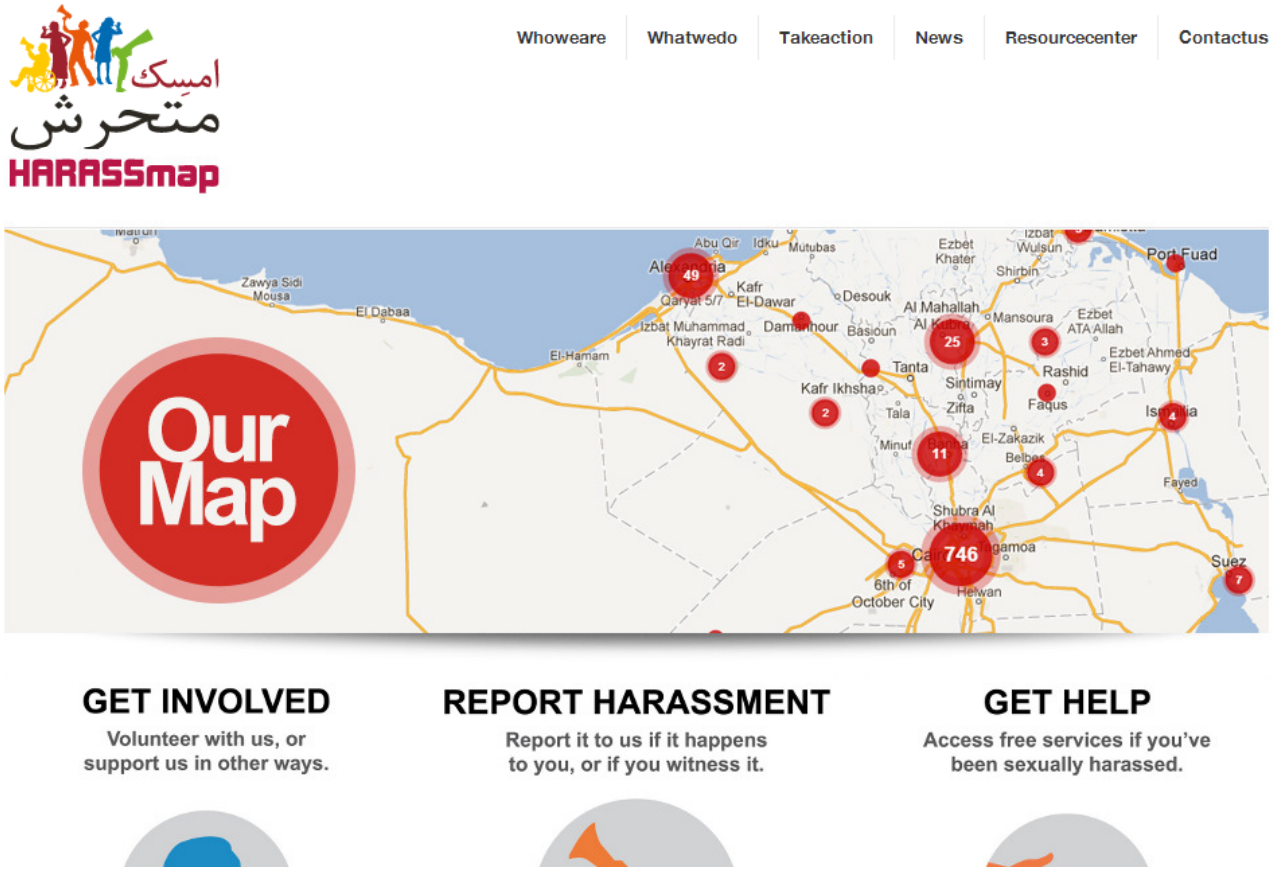
Proposed Strategies at Planning Sector-level

- Spatial maps to audit streets and public spaces based on women's experience of safety, comfort and convenience



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Source: www.harassmap.org/en

Institutional Structure

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Proposed Institutional Structure

- Create a dedicated **city-level NMT Department** or **NMT Cell** within Roads Department at par with Chief Engineer
- Support it with offices at the **ward levels**
- Key Responsibilities
  - To create and implement the NMT Strategy for Mumbai
  - To prepare Street Design Guidelines for Mumbai
  - Undertake capacity building of MCGM engineers
  - Auditing streets based on women's experience of safety, comfort and convenience and undertake improvements
- Key Powers
  - All road projects to have prior approval from NMT Cell

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Summing up

- Frame transport strategy within the framework of the National Urban Transport Policy (2006)
- Create a Non-motorized Transport Strategy for Mumbai
- Regulations to facilitate NMT access
- Street Design Guidelines
- Incorporate gender perspective in urban development regulations, streets and public space design
- Re-evaluate the proposed road projects in who they serve and how will they improve NMT and public transport modal shares?

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Thank You

Questions?

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