

Creating Safer and Inclusive Streets



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World Resources Institute

Mumbai traffic woes! Major roads choke up due to backlog traffic; commuters continue to complain

The local traffic officials say that traffic jams on these roads, especially across South Mumbai occur due to the high number of vehicles and it has little to nothing to do with heavy rains and bad roads including potholes.

Aishwarya Iyer | **Updated:** Wednesday, September 21, 2022, 09:28 PM IST



Massive jams in Jaipur-Delhi carriageway with 5km long queue of vehicles

Gurugram News

Updated on Sep 21, 2022 01:03 PM IST

Traffic police officials advised commuters coming from Jaipur to use the toll bypass road to head towards Delhi until the situation returns to normal



Woman Lawyer Shows Up Late For Court Hearing Due To Traffic Congestion: Allahabad High Court Orders Personal Presence Of SP Traffic

Sparsh Upadhyay 22 Sept 2022 1:15 PM

Mumbai-Nashik highway reports heavy traffic jam; motorists urged to use trains

Mumbai News

Updated on Sep 16, 2022 07:52 PM IST

Traffic jams were reported across Thane city owing to heavy rains that led to major traffic congestion along the Ghodbunder Highway, Eastern Express highway and the Mumbai-Nashik Highway.

AROUND THE WEB

Watch: Seven-kilometre traffic jam on Delhi-Jaipur expressway

Work-in-progress on a flyover near Gurugram led to the snarl after an accident.

Heavy Rains Hit Delhi-NCR; Streets Waterlogged, Schools Remain

Shut

The Indian Meteorological Department (IMD) issued a 'yellow alert', cautioning people about moderate rain at most places in the city on Friday.

UPDATED: 23 SEP 2022 4:57 PM



Weather: Rain in Gurugram | Photo: PTI

KARNATAKA

Heavy rain brings Bengaluru to its knees



Bengaluru Bureau

BENGALURU SEPTEMBER 05, 2022 21:17 IST
UPDATED: SEPTEMBER 06, 2022 11:20 IST





Cyrus Mistry, former Tata Sons chairman, killed in road accident near Mumbai

4th September

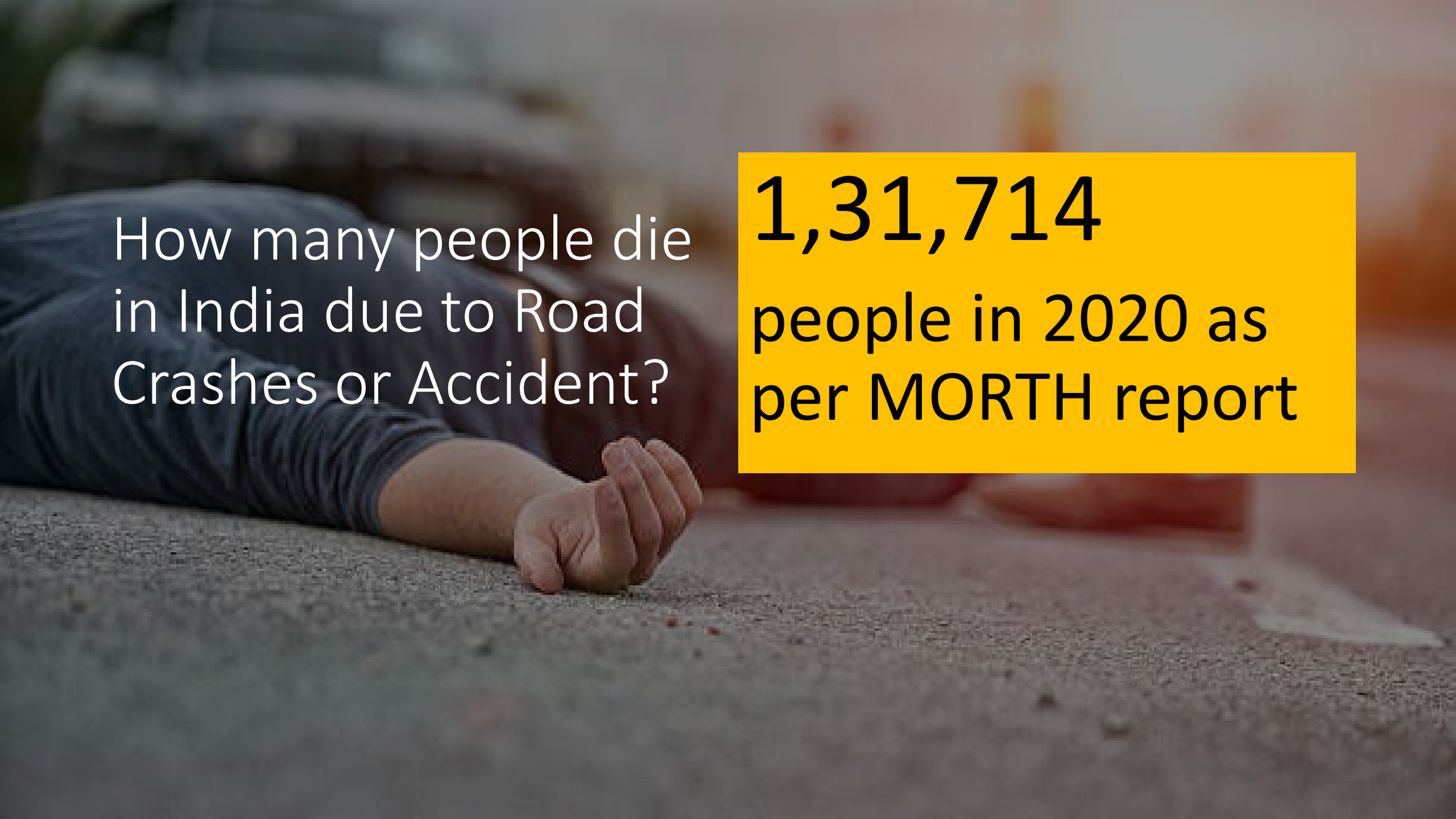
Cyrus Mistry Car Crash: 62 Deaths, 262 Accidents On Mumbai-Ahmedabad Stretch In A Year

The stretch near Charoti, where the Mercedes car in which Mistry was travelling met with an accident on September 4, has seen 26 deaths in 25 serious accidents since the start of this year,

Updated: September 18, 2022 6:32 PM IST

Cyrus Mistry's car was going at 100 kmph, brakes hit 5 secs before crash, finds Mercedes probe

The forensic investigation into the road accident further revealed that overspeeding, wrong overtaking, and not enough signage on the Ahmedabad-Mumbai highway also contributed to this accident. However, the probe has ruled out driver tiredness as one of the potential reasons behind this crash.



How many people die
in India due to Road
Crashes or Accident?

1,31,714

people in 2020 as
per MORTH report

Road Deaths/Fatalities numbers remain **unchanged**, even though the number of crashes reduced.

Number of persons **killed per lakh population** remain almost **same** since a decade.

Chart 2.4: Decadal Trend in the number of Road Accidents, Deaths and Injuries: 1980-2020

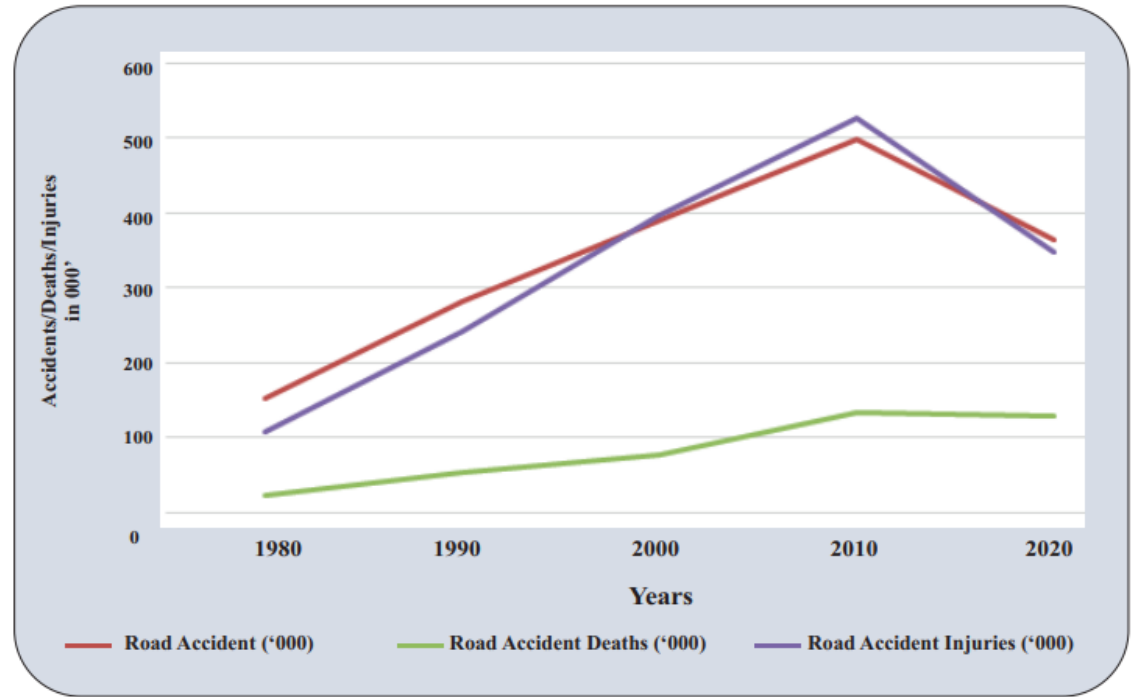
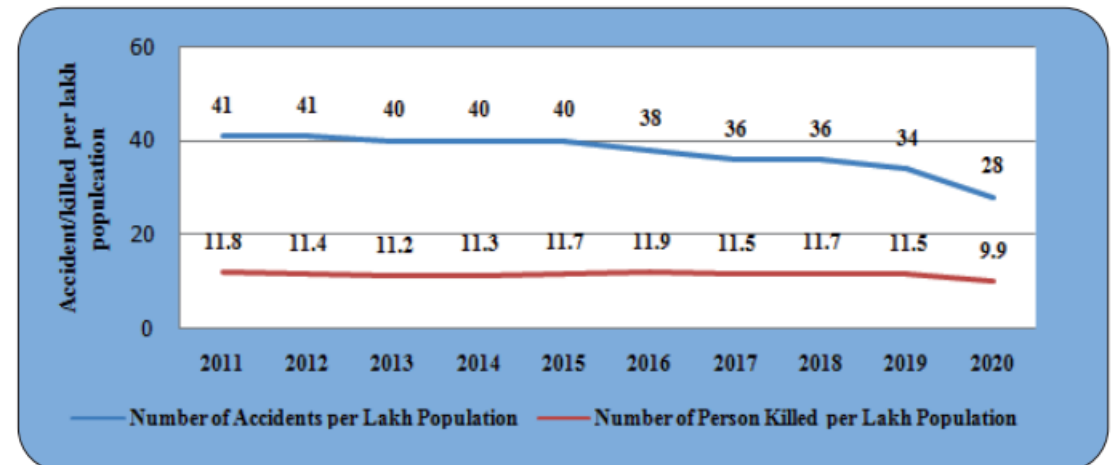


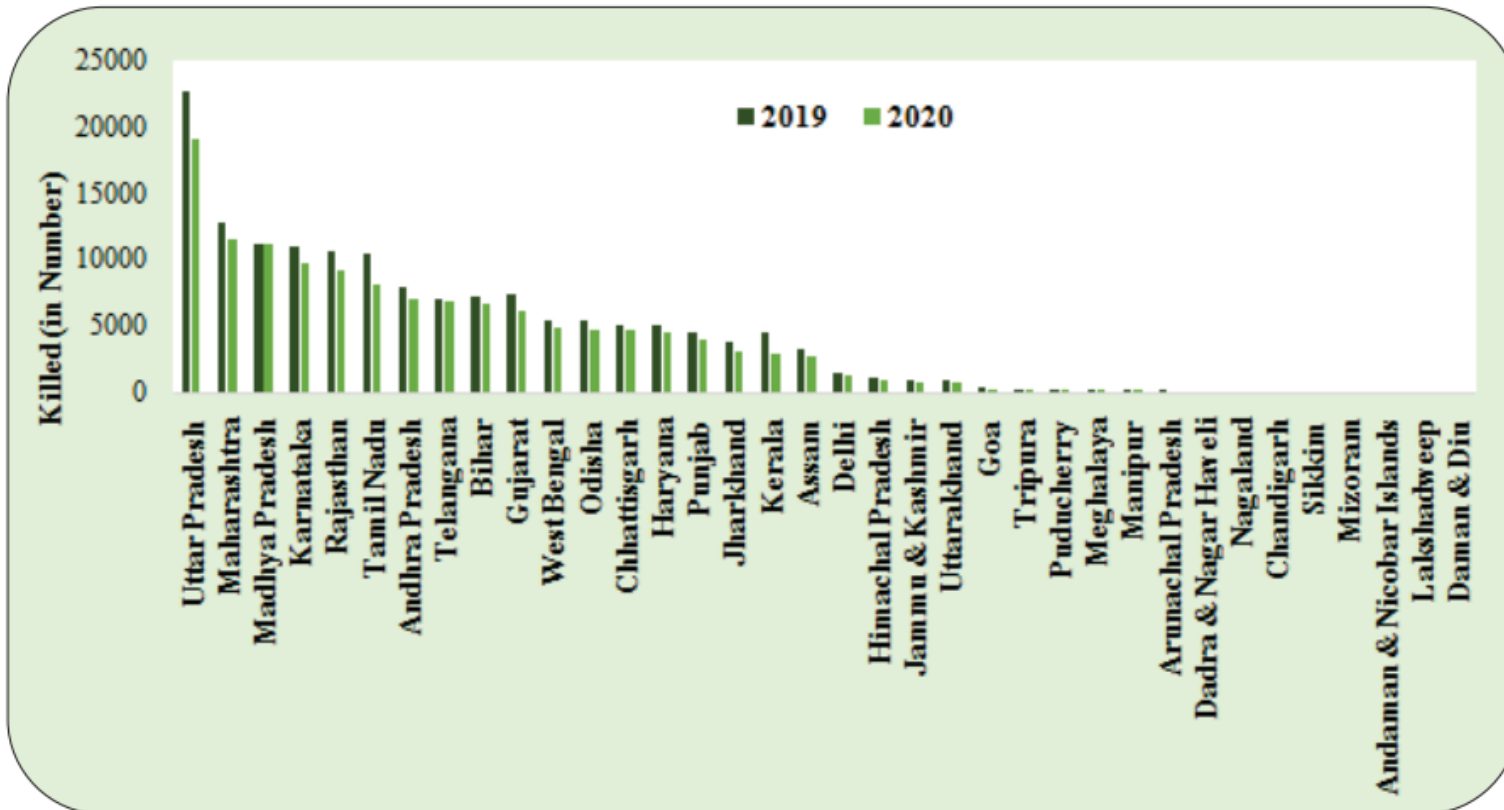
Chart 2.9A: Trend in the number of Accidents and Persons killed per lakh Population : 2011-2020





Uttar Pradesh maintains its **top position** in **road crash fatalities** since **2016** at National level **and** also top in the list of total number of **road accident fatalities on National Highways** in the country by contributing **16.4 per cent**.

Chart: 6.6: State wise distribution of number of accident deaths during 2019 to 2020



Delhi tops list of world's most polluted cities

Delhi has been ranked the most polluted city in the world as per a global analysis of air quality. The report, Air Quality and Health in Cities, released by US-based Health Effects Institute on Wednesday, analyses pollution and global health effects for more than 7,000 cities around the world.

India is home to **21 of the top 30** most **polluted cities** across the globe.

More than **480 million** people in northern India face the "**most extreme levels**" of air pollution in the world



Bengaluru IT Firms Lose ₹225 Crore As Workers Remain Stuck In Traffic For 5 Hours

Bengaluru IT companies suffer a loss of at least Rs 225 crore as workers stay stuck in traffic amidst floods. They have claimed that poor infrastructure of the city is making them s

Updated: September 4, 2022 7:52 PM IST

By [India.com News Desk](#) | Edited by [Shrimansi Kaushik](#)

How air pollution causes the degradation of a nation's GDP

Air pollution costs Indian business about USD **95 billion (7 lakh crores)** every fiscal year, around **3% of India's total GDP**, a major research report shows. The cost is equal to 50% of all tax collected annually, or 150% of India's healthcare budget. The findings in the report, undertaken by **Dalberg Advisors** in

NATION **PEOPLE** September 22, 2022 | Updated: 1 day ago

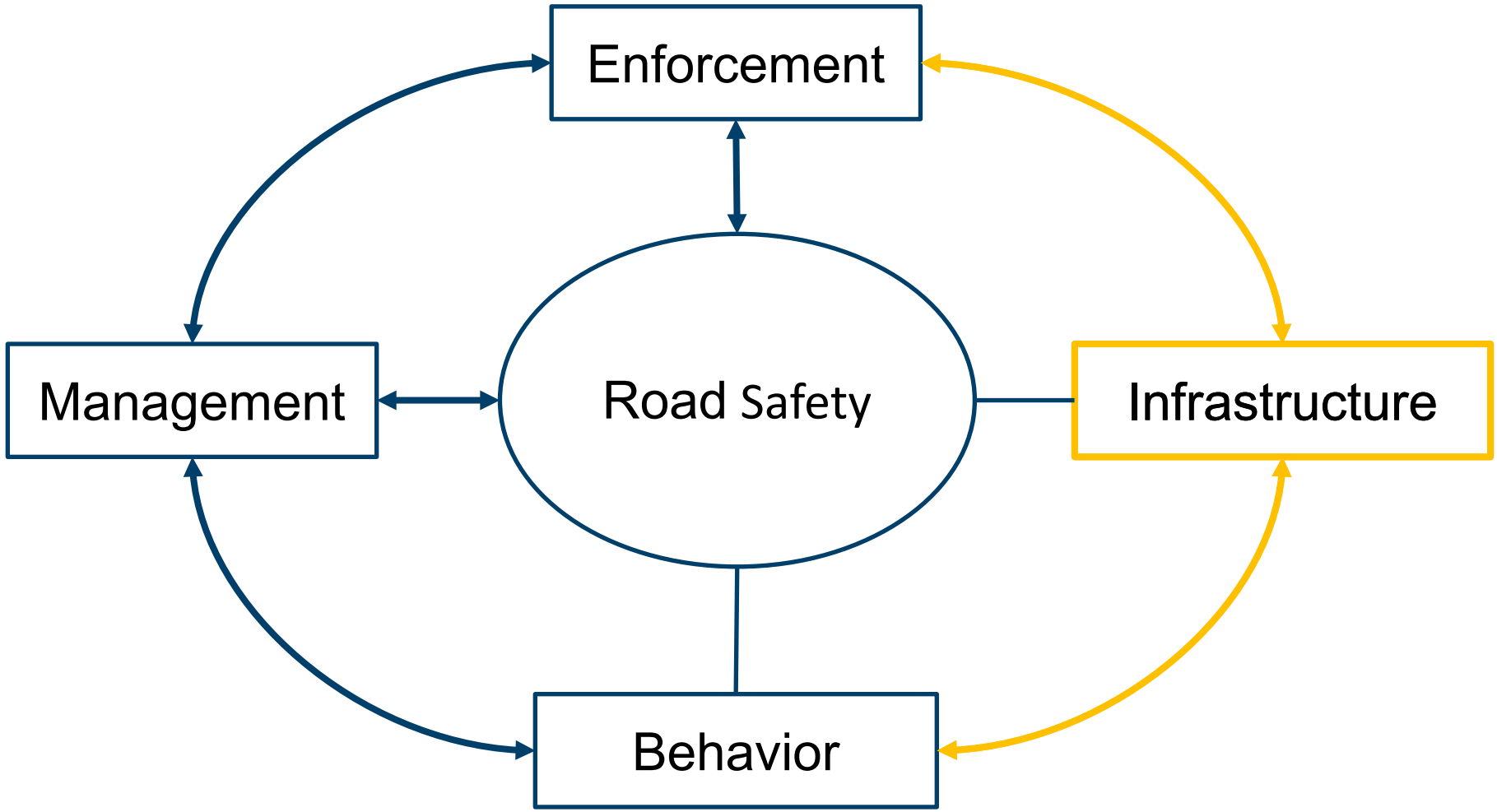
The Indian economy suffers greatly from road accidents; GDP is reduces by 3-5%.

By [Rafia](#)

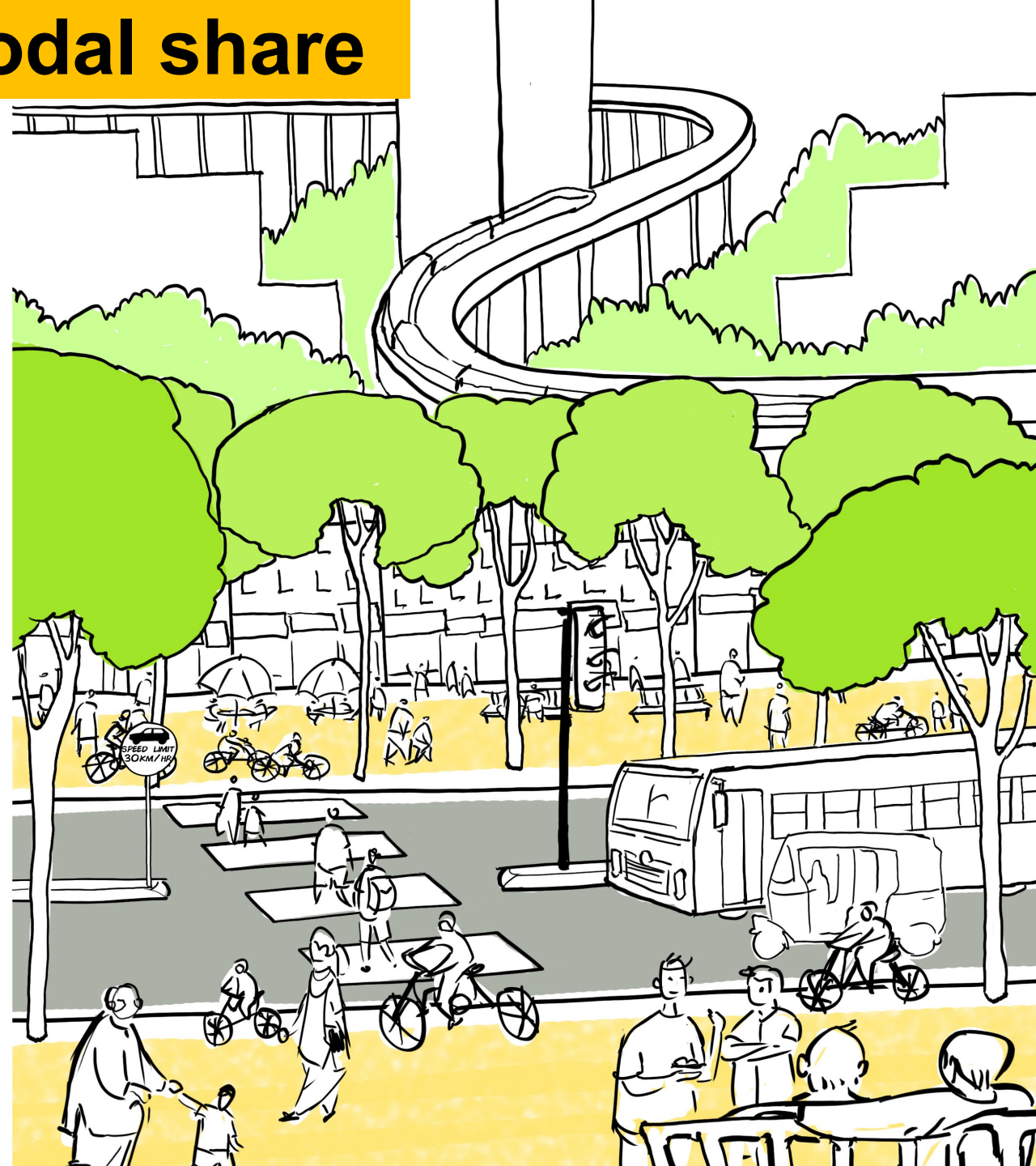
India wastes Rs 1.44 lakh crore due to traffic congestion, says Uber study

The congestion levels in Kolkata and Bangalore stand alarmingly higher at 171 per cent and 162 per cent respectively, while Delhi emerged as the least congested city (129 per cent).

BREAK THE CYCLE



Shift the modal share



To choose one, lets understand what is a street.

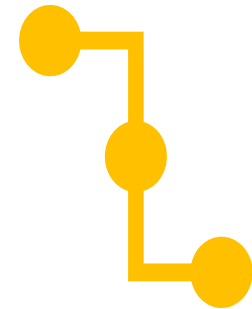
Public Space



Multi dimensional



Linkage

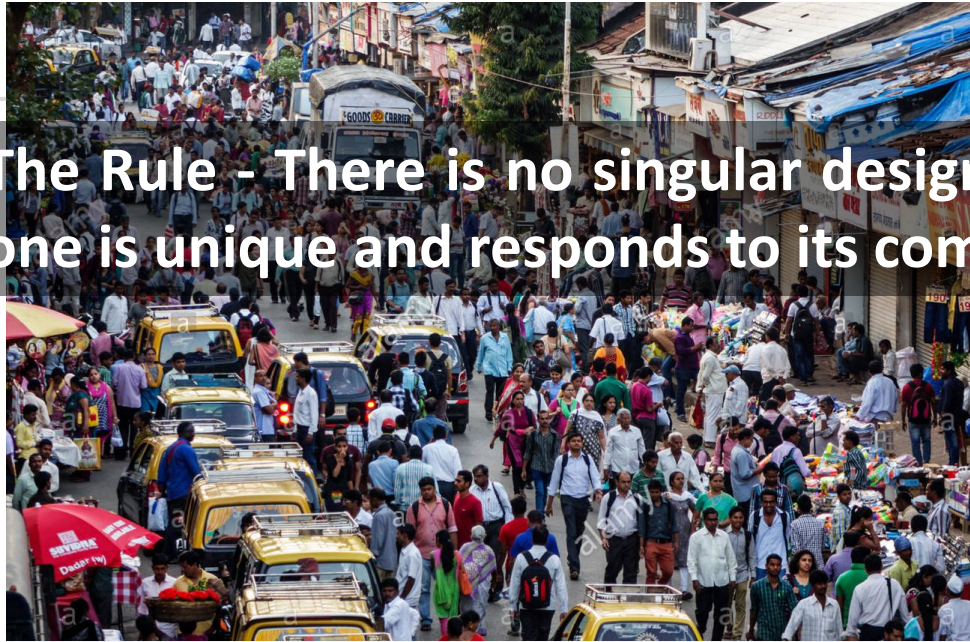


Streets comprise of more than 70% of city's public open spaces and provides firsthand city experience.



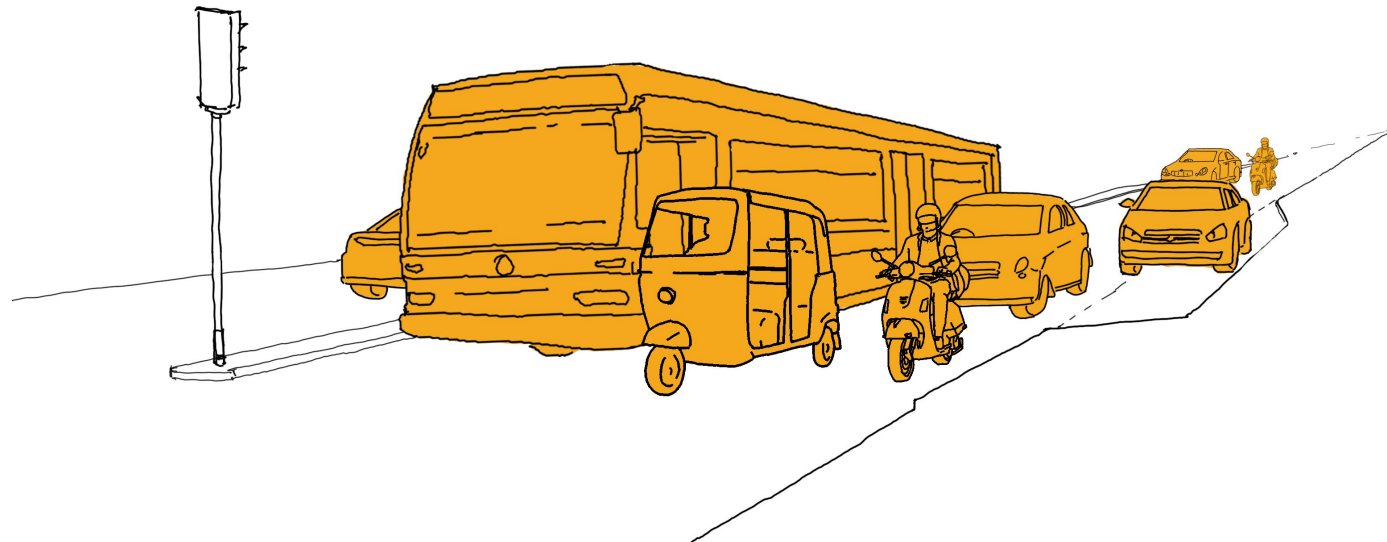
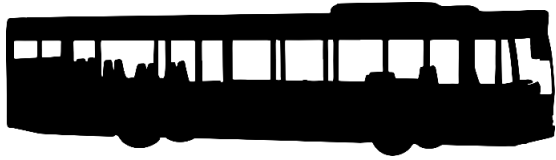
Photo Source: Equal Streets Mumbai

The Rule - There is no singular design prescription for Complete Streets; each one is unique and responds to its community context.

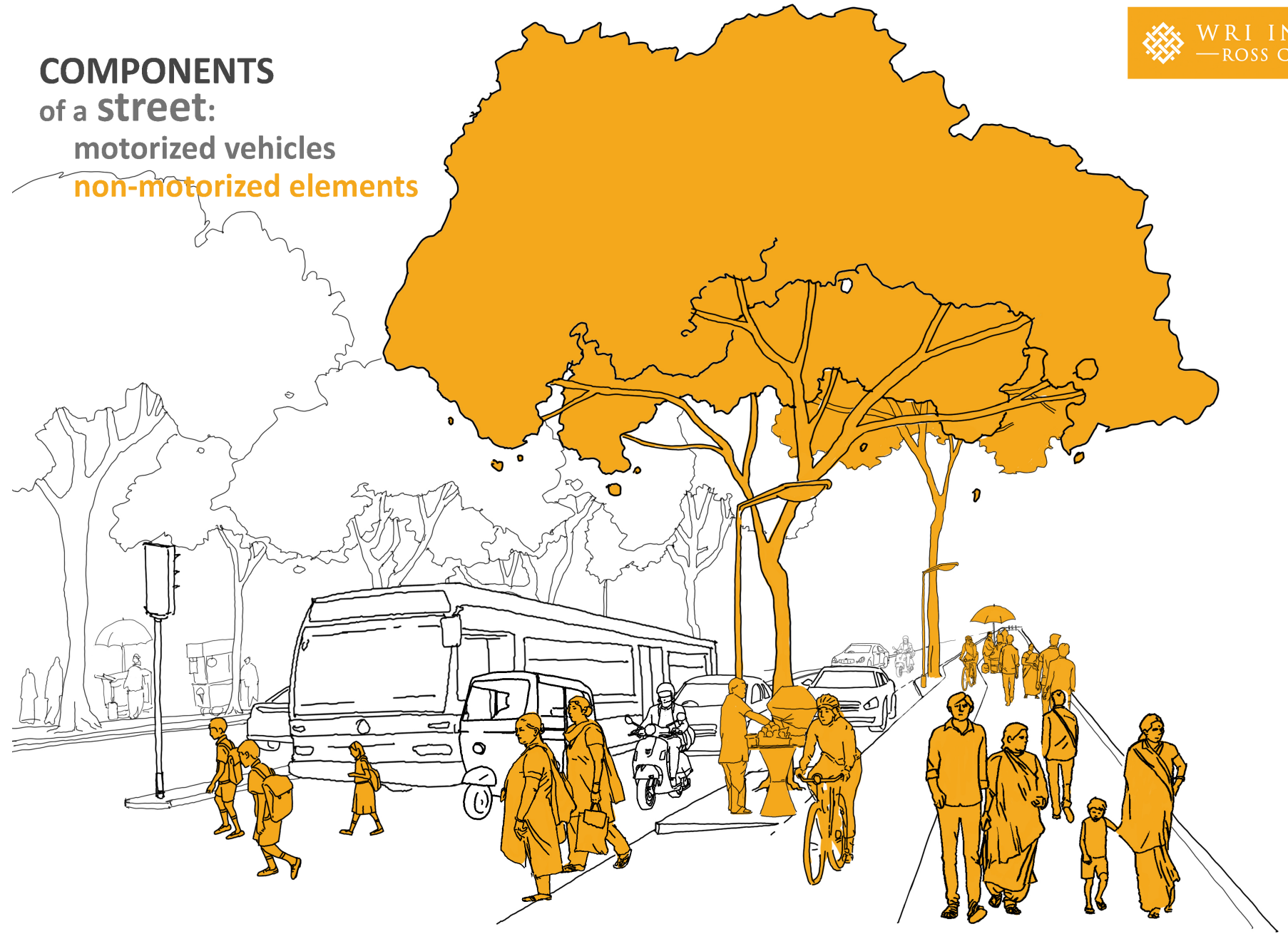


COMPONENTS

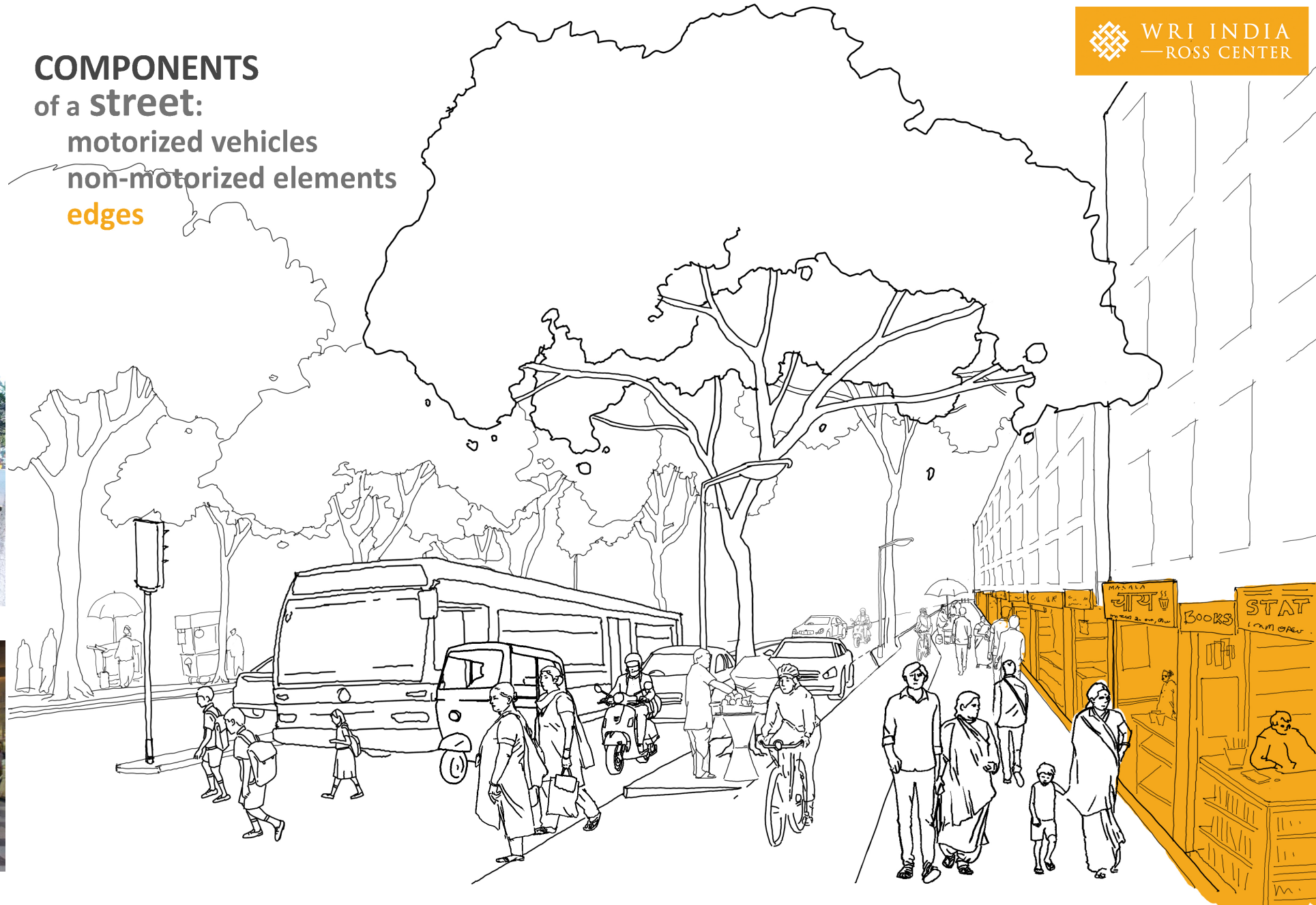
COMPONENTS of a street: motorized vehicles



COMPONENTS
of a **street:**
motorized vehicles
non-motorized elements

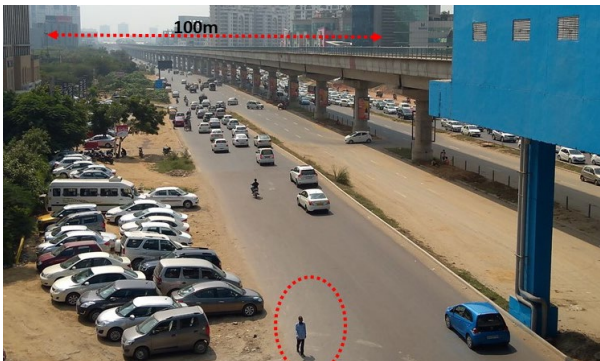
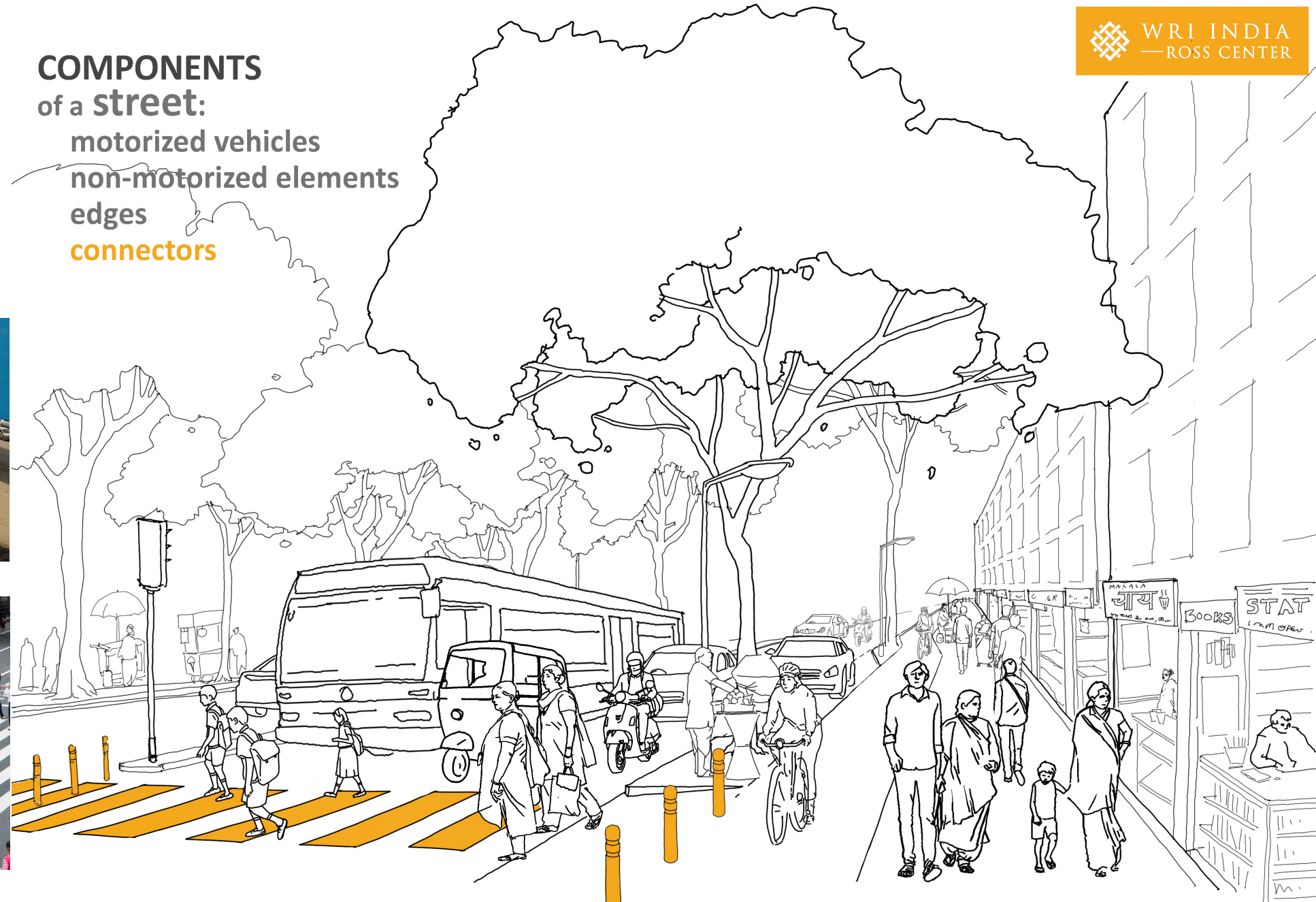


COMPONENTS
of a **street:**
motorized vehicles
non-motorized elements
edges



COMPONENTS of a street:

- motorized vehicles
- non-motorized elements
- edges
- connectors



PRINCIPLES

WHAT IS A COMPLETE STREET?

A street which is **safe, comfortable & convenient** for **all users & activities**



cyclists



freight



private vehicles



vending



pedestrians

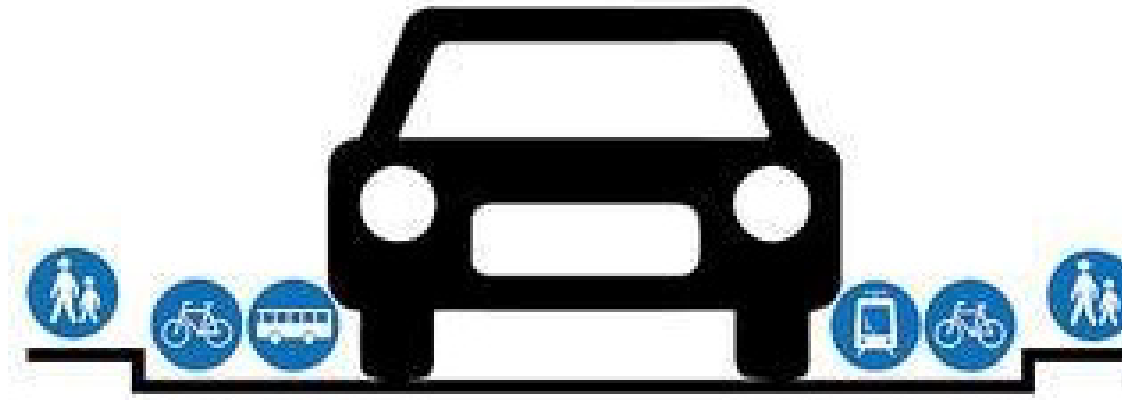


public transport



socializing

EQUITY OF SPACES



How most traffic engineers see your city



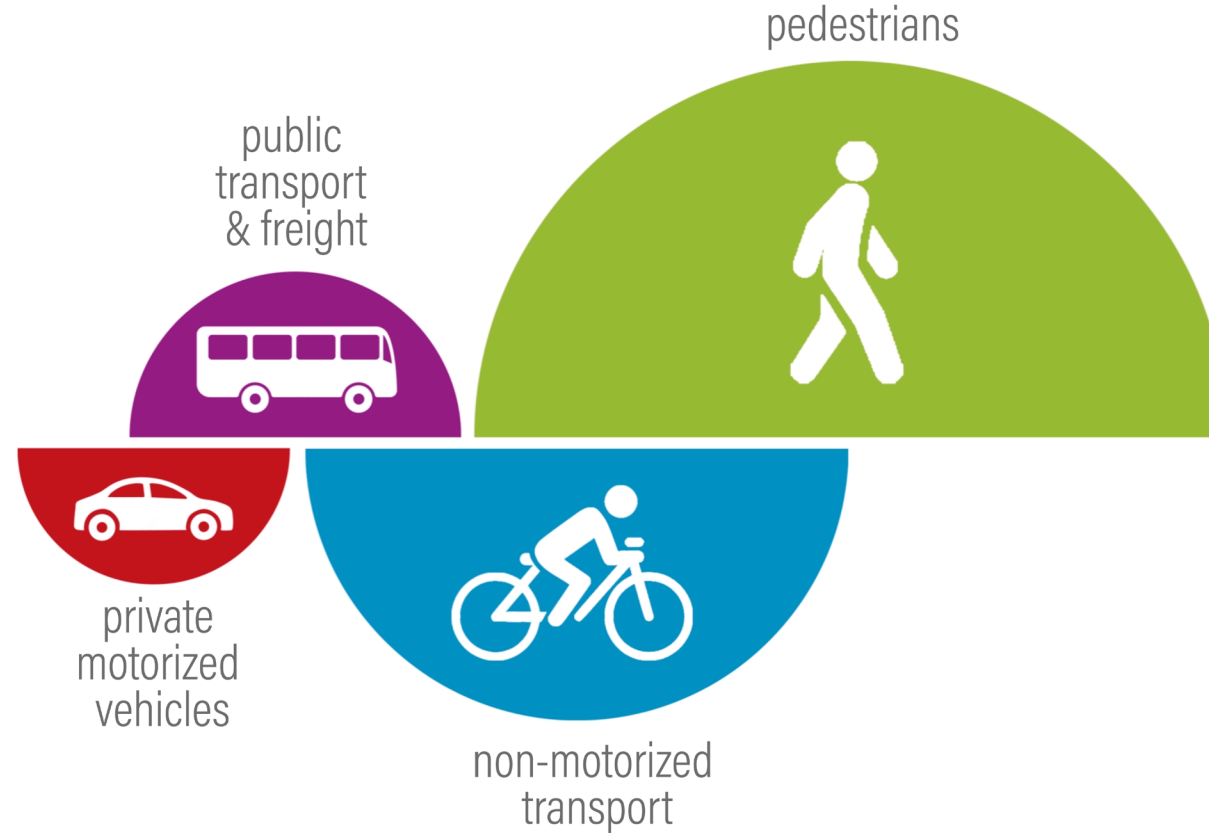
How cities should be designed

1

Streets for All

PRIORITY

WHERE WE SHOULD BE



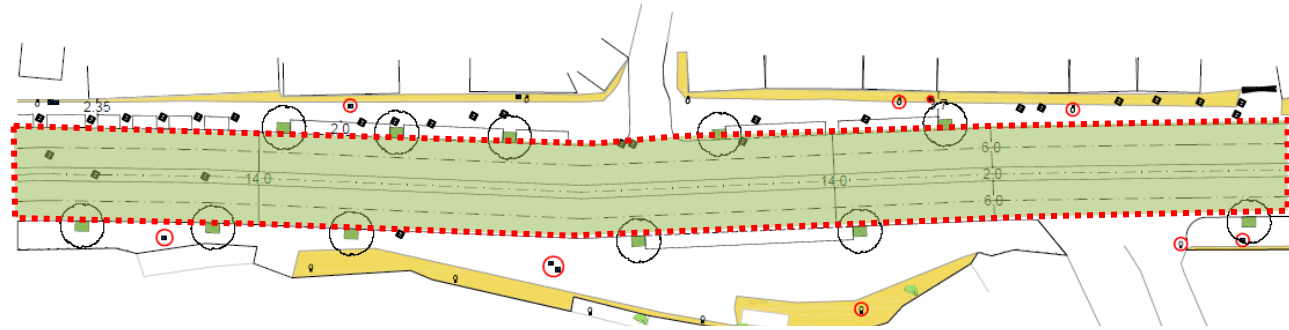
1

Streets for All

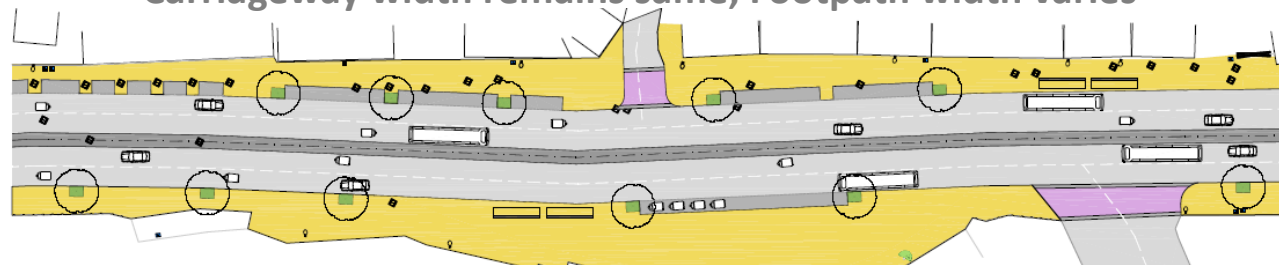
2

Continuity & Alignment

CARRIAGEWAY ALIGNMENT



Carriageway width remains same, Footpath width varies



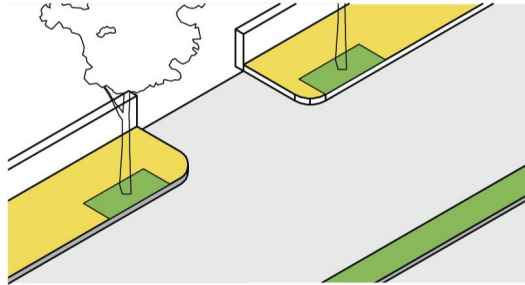
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Streets for All

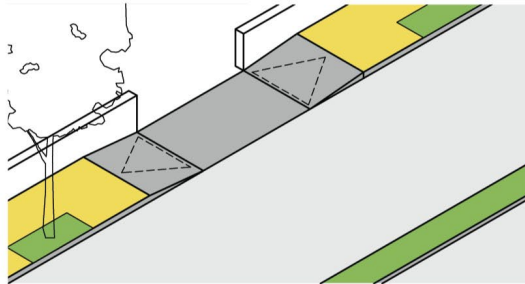
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Continuity & Alignment

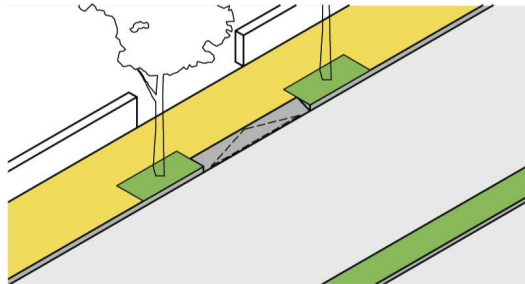
FOOTPATH ALIGNMENT



✗ Ending the footpath with abrupt curbs renders the footpath inaccessible for many pedestrians.

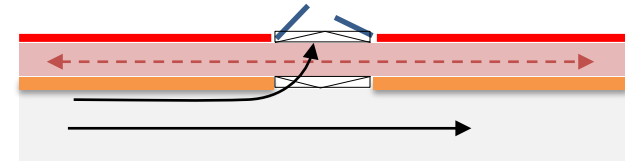


✗ Lowering the entire footpath to the level of the carriageway is unacceptable as property entrances may become waterlogged.

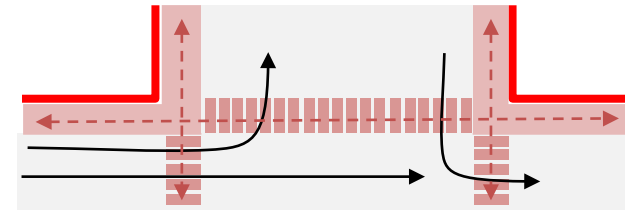


✓ Where required to provide the access to private properties, vehicle ramps should be provided in the furniture zone.

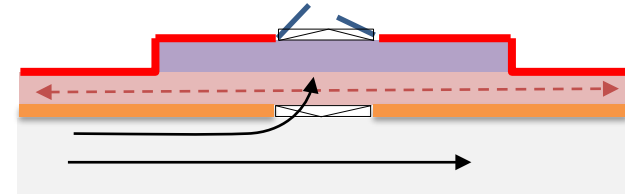
Entrances



Intersections



Plaza



Utilities and landscape



Lucknow

Safer and inclusive Streets



Pick Up Bhawan Street, Lucknow

Design Strategies

- Safer and efficient Mobility for all
- Continuous and aligned
- Place Making
- Utility Integration



1 Streets for All

2 Continuity & Alignment

3 Safety

INTERSECTION-COMPLEX TO COMPACT

Maximum conflicts
Maximum risk
Maximum number of Accidents



Atal Chowk/ Hazrat Ganj Intersection

Issues



Atal Chowk/ Hazrat Ganj Intersection

- Pedestrian and Vehicular Safety
- Channelized traffic flow
- Shorter distances for pedestrians
- Easier to manage by Traffic Police
- Creating iconic Public Space

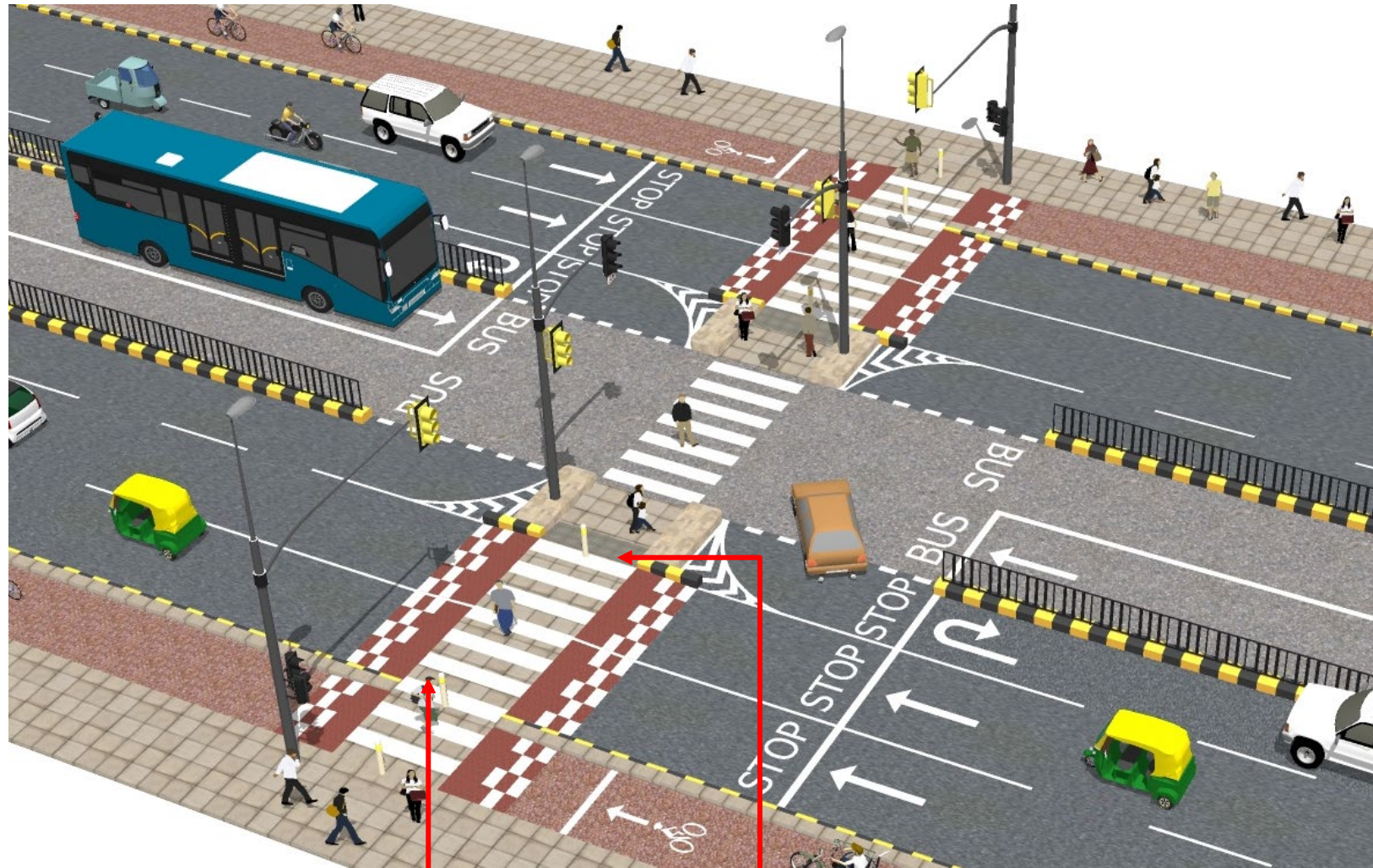


1 Streets for All

2 Continuity & Alignment

3 Safety

ACCESSIBLE ELEMENTS



Same level as footpath

Vehicular Ramp 1:8

1 Streets for All

2 Continuity & Alignment

3 Safety

SPEED \neq **TIME** $=$ **RISK**



Dr. B.R. Ravikanthe Gowda IPS
@jointcpttraffic

...

Stay safe speed kills.

STAY SAFE
SPEED KILLS - IS IT WORTH THE RISK ?

SPEED	TIME TO GO 25 KM's	TIME SAVED	RISK OF DEATH
80 km/h	12 Min	-	x
88 km/h	10:54 Min	1:6 Min	1.5 x
96 km/h	10 Min	2 Min	2 x
105 km/h	9:14 Min	2:46 Min	3.0 x
112 km/h	8:34 Min	3.26 Min	4.0 x
120 km/h	8 Min	4 Min	6.0 x
128 km/h	7:30 Min	4:30 Min	8 x
136 km/h	7:20 Min	4:57 Min	12 x

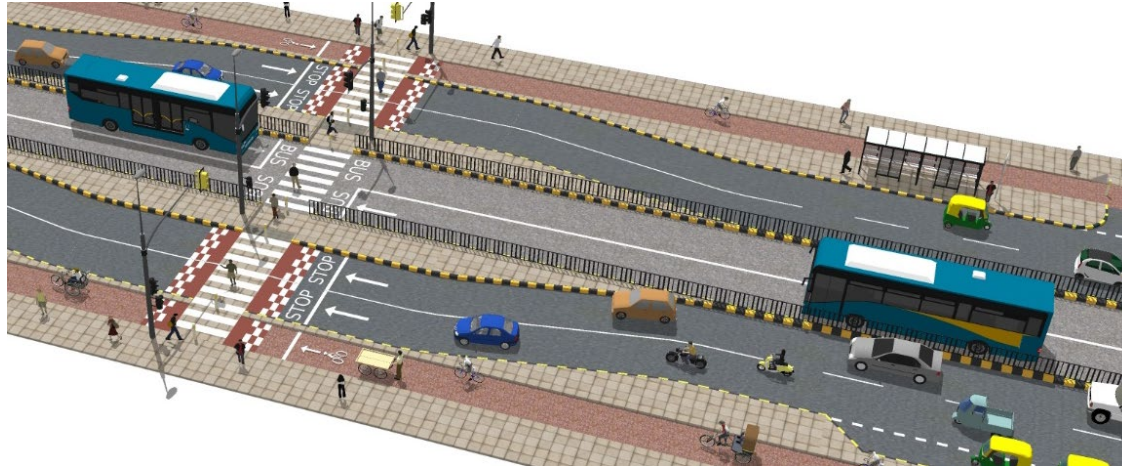
10:21 AM · Sep 14, 2022 · Twitter Web App

1 Streets for All

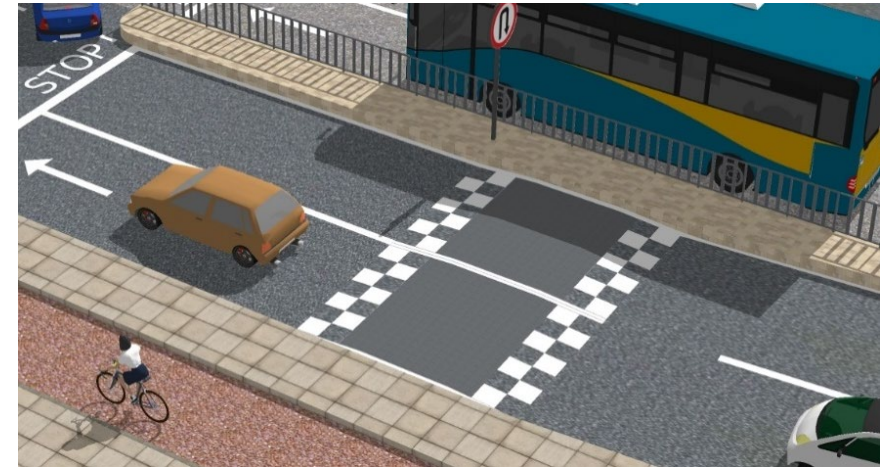
2 Continuity & Alignment

3 Safety

TRAFFIC CALMING MEASURES



Chicanes



Speed humps



Bulb outs

1 Streets for All

2 Continuity & Alignment

3 Safety

4 Consider Stoppage

Sufficient width must be provided behind the bus shelter to allow uninterrupted pedestrian movement



Anna University,
Chennai

1 Streets for All

2 Continuity & Alignment

3 Safety

4 Consider Stoppage

5 Utility Integration



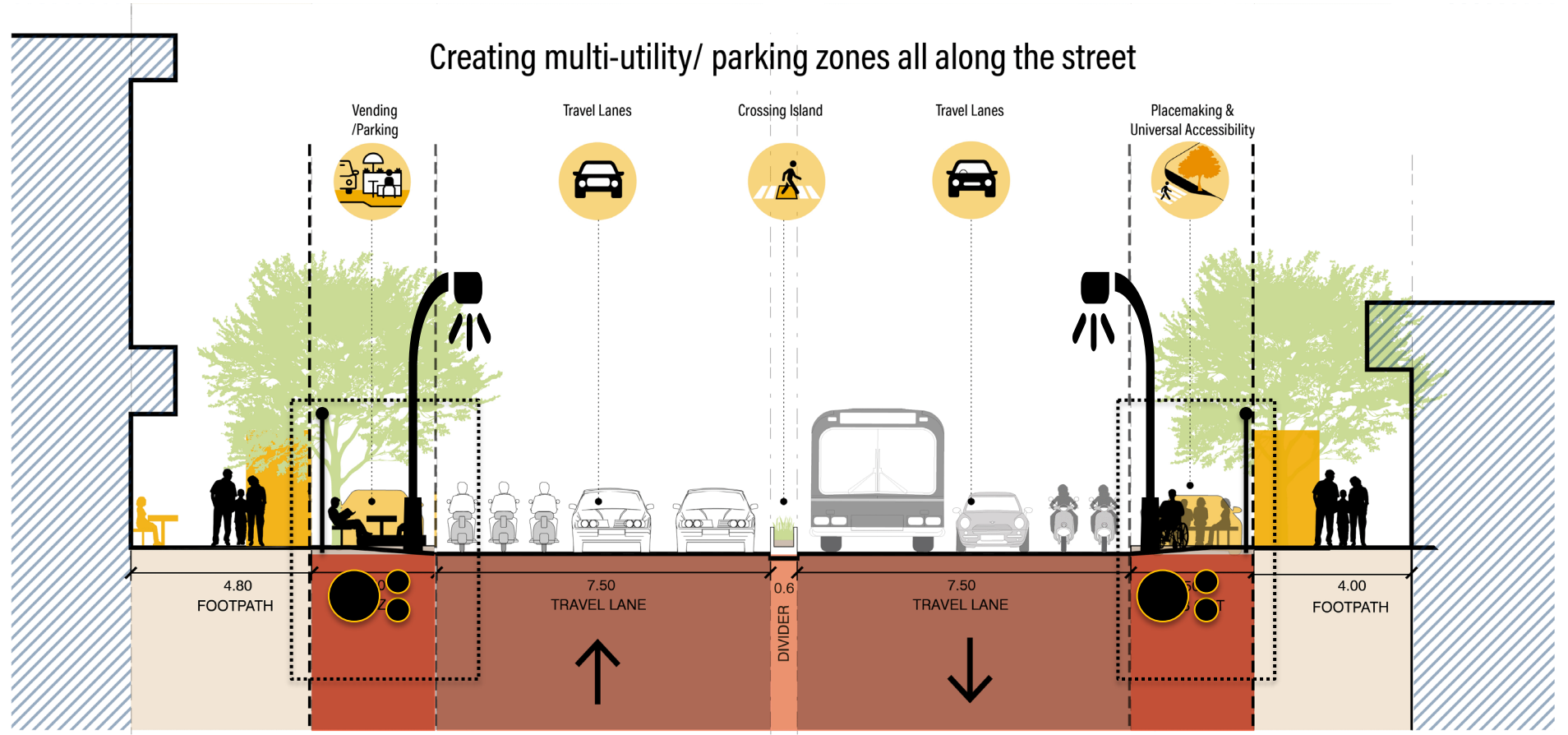
Water Logging

Electric poles displacing pedestrians



Utilize multi utility zone _ Above and below the ground

- 1 Streets for All
- 2 Continuity & Alignment
- 3 Safety
- 4 Consider Stoppage
- 5 Utility Integration



Boundary wall treated, seating spaces, shade & lighting

1 Streets for All

2 Continuity & Alignment

3 Safety

4 Consider Stoppage

5 Utility Integration

6 Place Making





City wide Continuous Networks



Pedestrianization



Streets For all



Safe Intersection Design



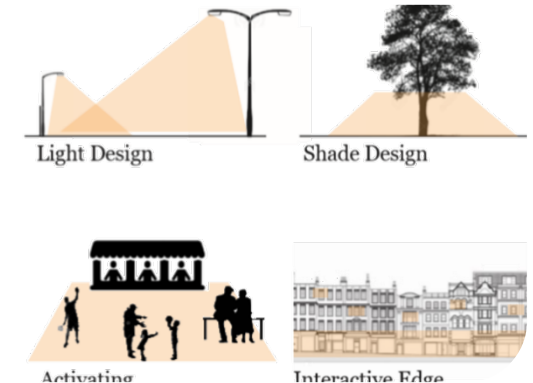
Traffic Calming measures



Safe school zones



Transforming Residual Spaces



Urban Street Programs



Thank You

Priyanka Sulkhlan
Senior Manager, WRI