

FINANCING & IMPLEMENTING ROAD SAFETY IN TOD

Webinar Series. Session 4

Integration of Road Safety Considerations in Transit-Oriented Development Projects

22 October 2020



Supported by:



Conducted by:





Session 1

TOD and Road Safety

October 1, 2020



Session 2

Assessing and Enabling Road Safety within a TOD project cycle

October 8, 2020



Session 3

Planning and Designing Road Safety measures in TOD

October 15, 2020



Session 4

Financing and Implementing Road Safety measures in TOD

October 22, 2020

CHAIR + SPEAKERS



**Felipe
Targa**

*Senior Urban
Transport
Specialist*
The World Bank



**Prerna
Mehta**

*Lead-Urban
Development*
WRI India



**Abhishek
Behera**

*Consultant
Sustainable
Cities & Transport*
WRI India



Vaibhav Kush

*Senior Project
Associate -
Sustainable
Cities & Transport*
The World Bank



**Saurabh
Jain**

*Consultant -
Urban Transport
& Road Safety*
WRI India

FINANCING ROAD SAFETY IN TOD PROJECTS

Webinar Series.
Session 4

**Integration of Road Safety Considerations in Transit-Oriented
Development Projects**

22 October 2020



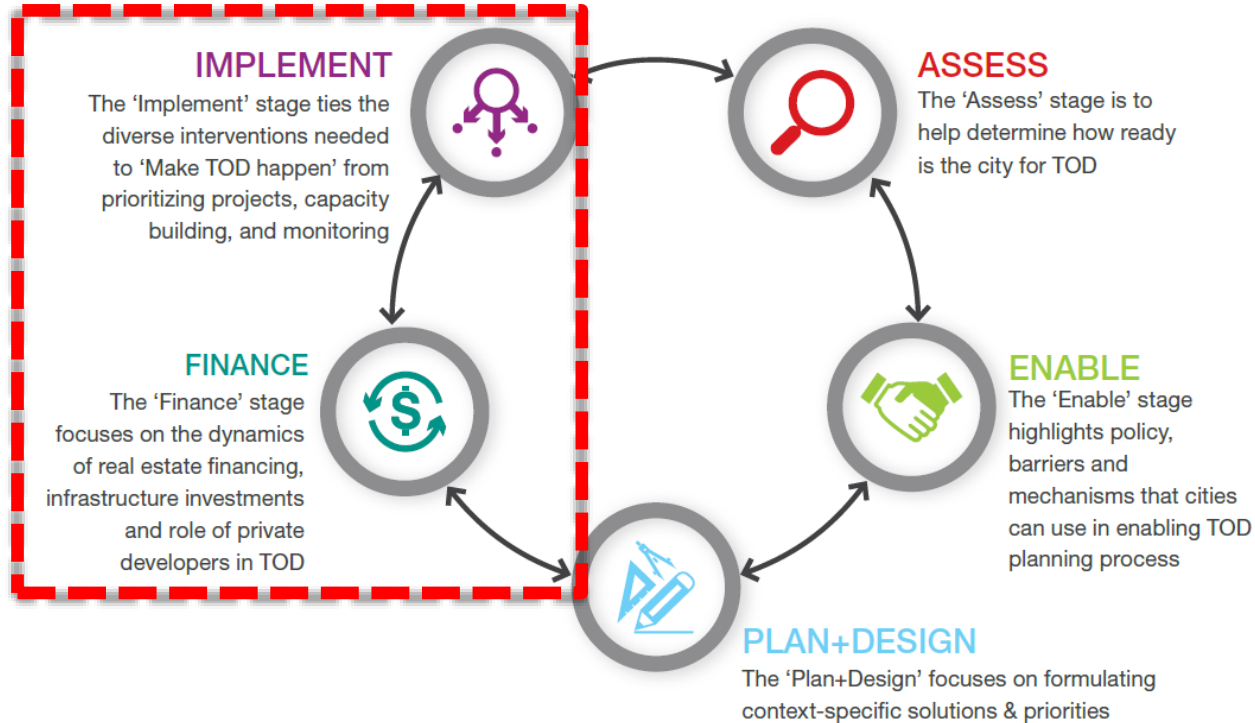
Supported by:



Conducted by:



TOD FRAMEWORK

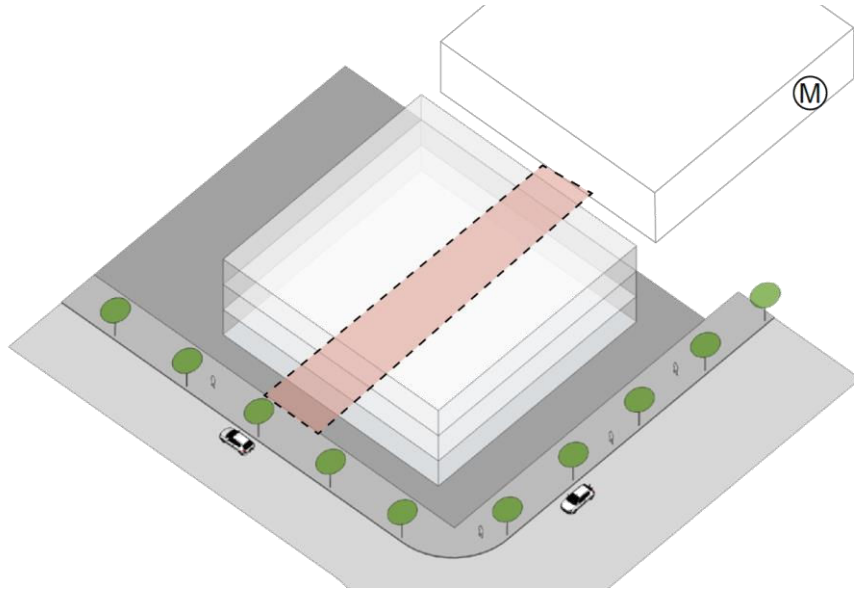


FINANCING ROAD SAFETY IN TOD

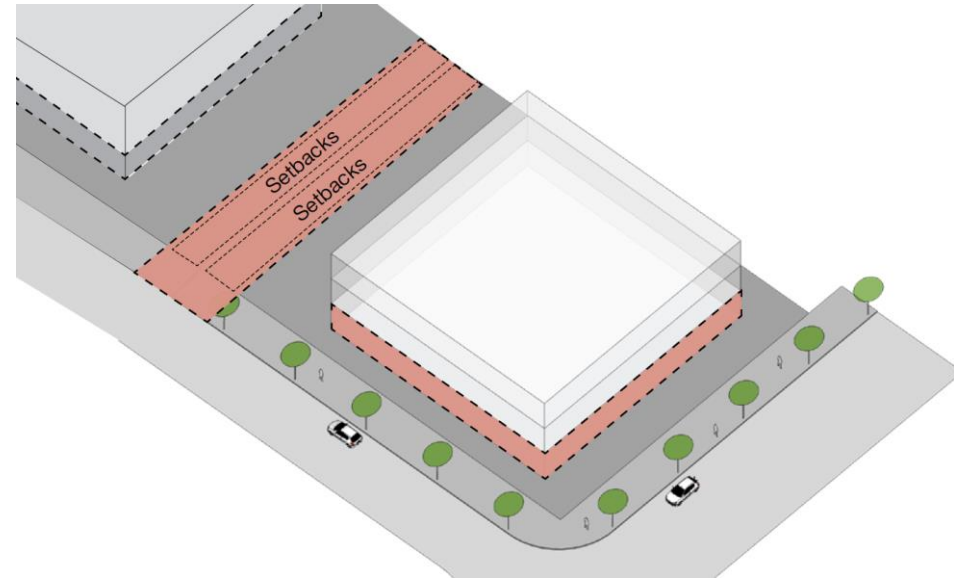


DEVELOPMENT INCENTIVES

ZONING INCENTIVES

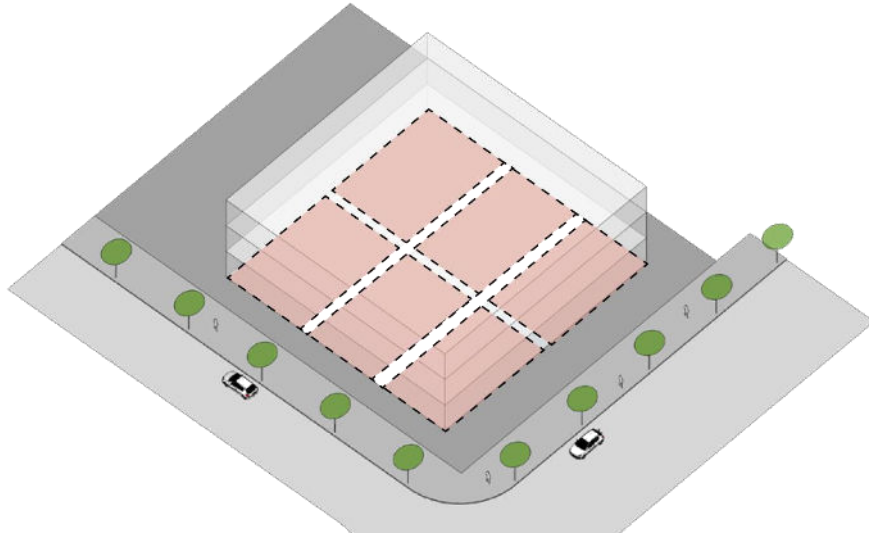


Property easement

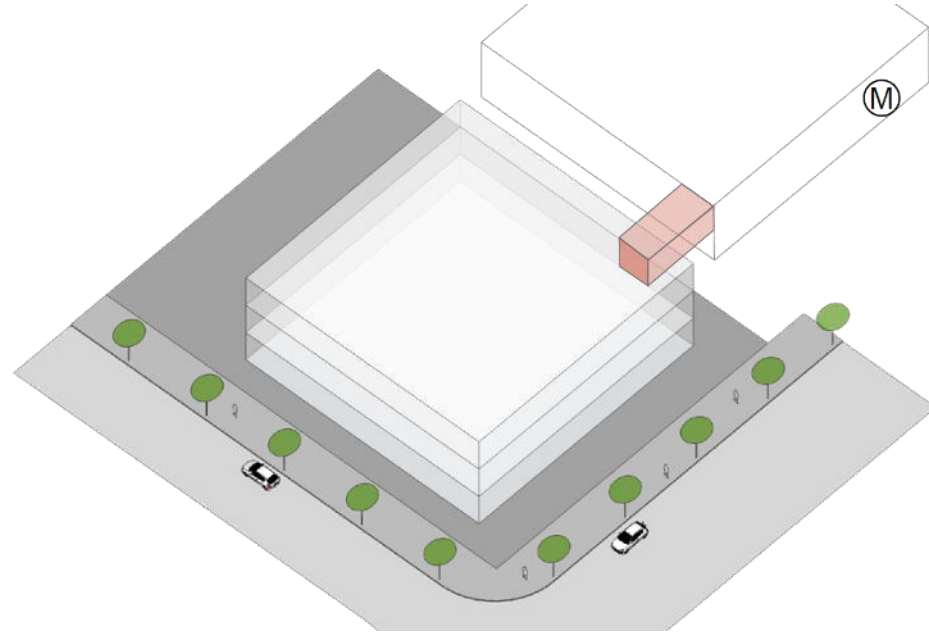


Amalgamation of setbacks

CONTINUED.....

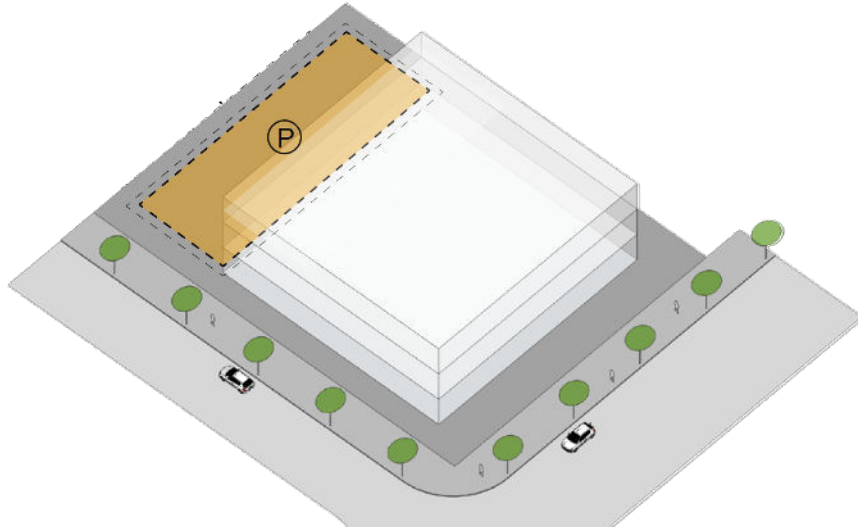


Subdivision of large land parcels

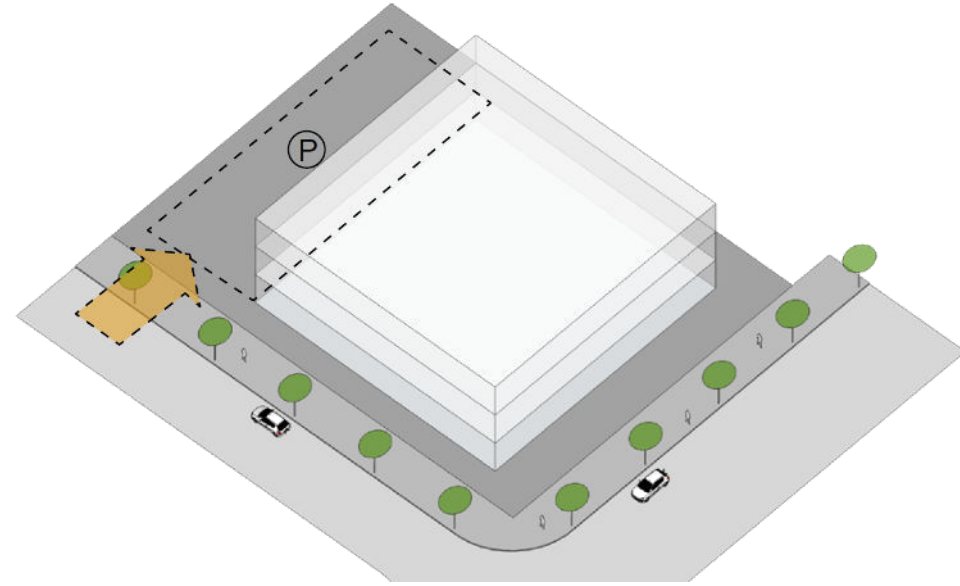


Direct links to stations

PARKING INCENTIVES

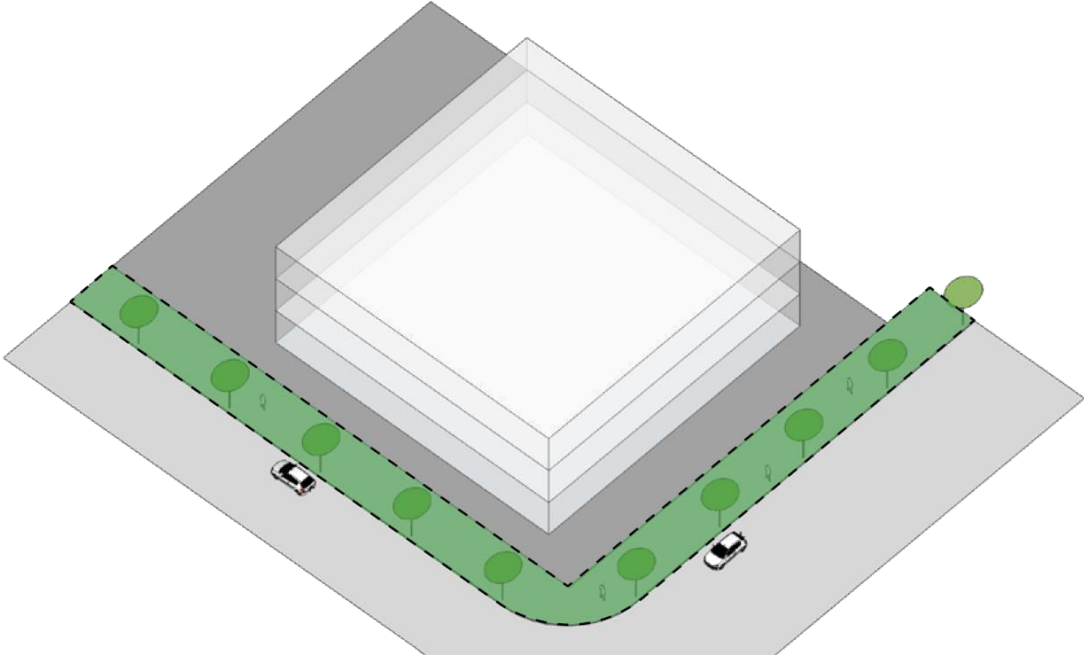


Reduced parking requirement and
establishing parking maximums



Parking access restriction

FINANCIAL INCENTIVES



Infrastructure and streetscape

FINANCE TOOLS



Direct fees through tools like Congestion pricing and Parking fees



Special funds such as Urban Transport Fund (UTF)



Discretionary transportation improvement grants



Road safety funds



Philanthropic/ Corporate Social Responsibility fund

FINANCIAL MODEL OF HARYANA VISION ZERO – CASE STUDY

Webinar Series.
Session 4

**Integration of Road Safety Considerations in Transit-Oriented
Development Projects**

22 October 2020



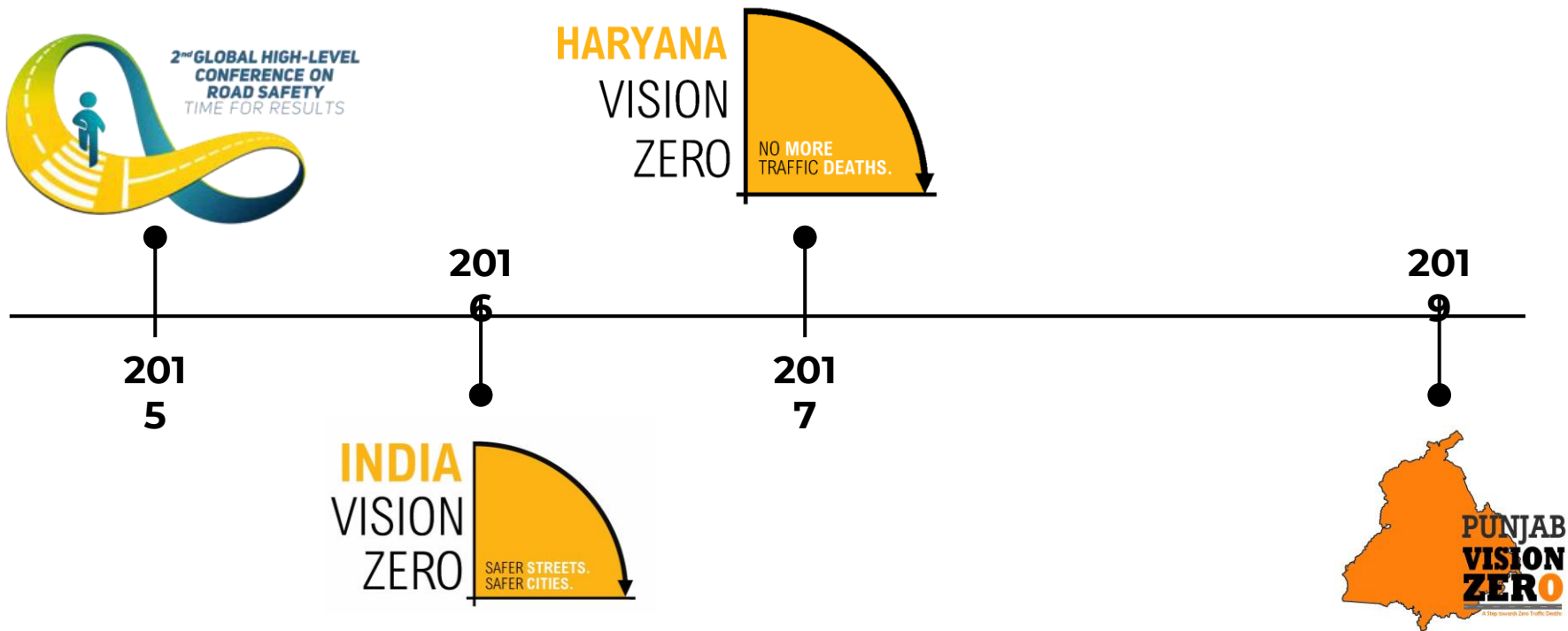
Supported by:



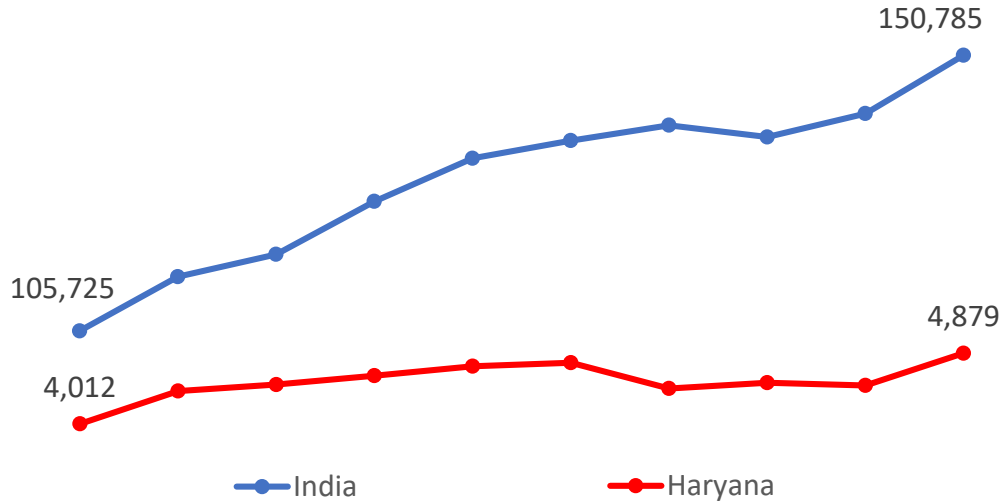
Conducted by:



VISION ZERO IN INDIA

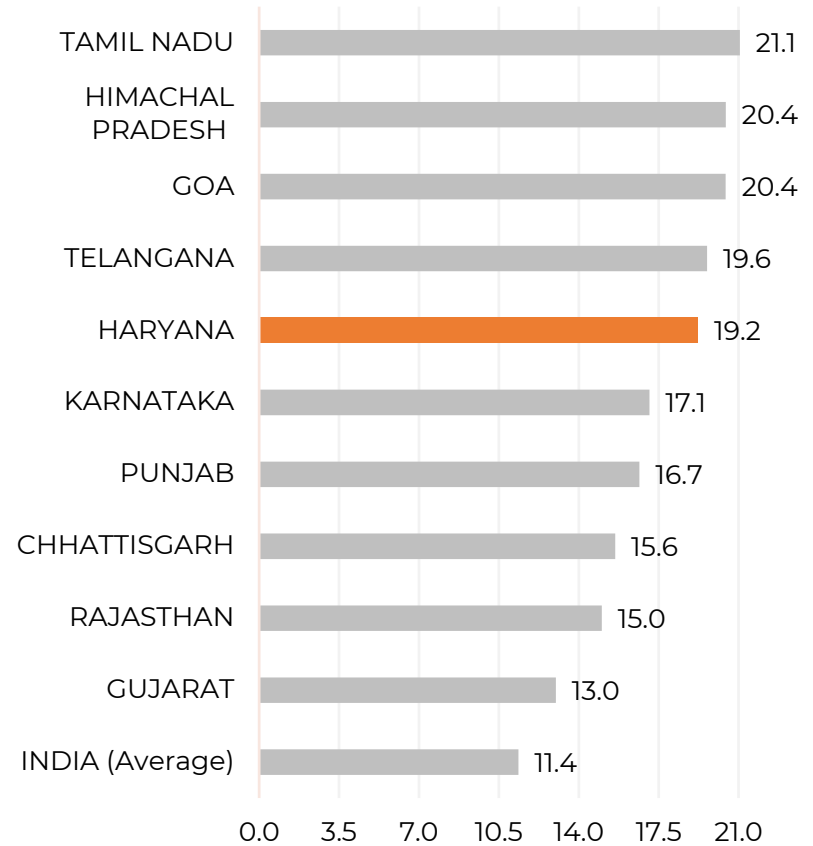


NEED FOR HARYANA VZ



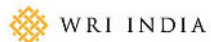
Road Traffic Fatalities 2006 - 2015

Traffic Fatalities in Haryana in 2017 = **5120**

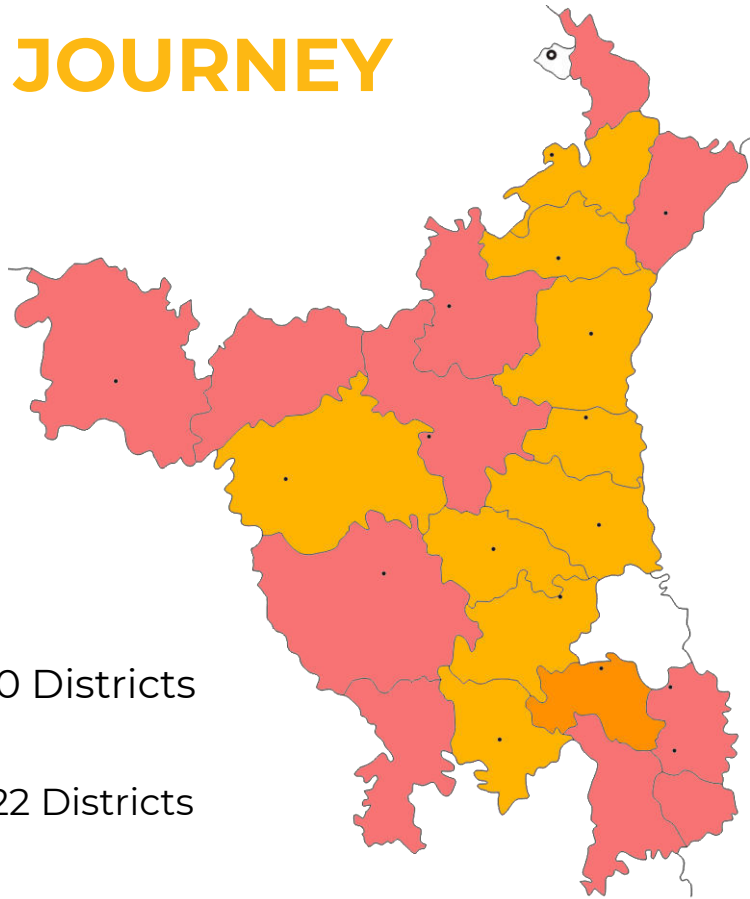


Traffic Fatalities per 100,000 pop. (2015)

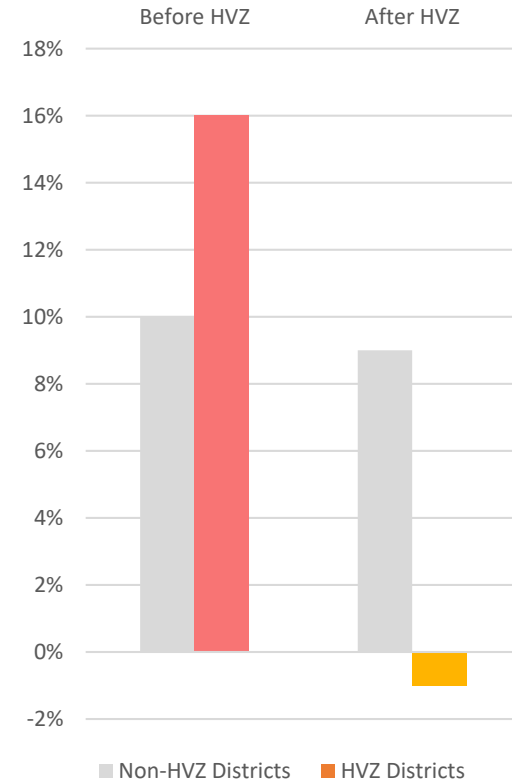
HVZ CONSORTIUM



HVZ JOURNEY

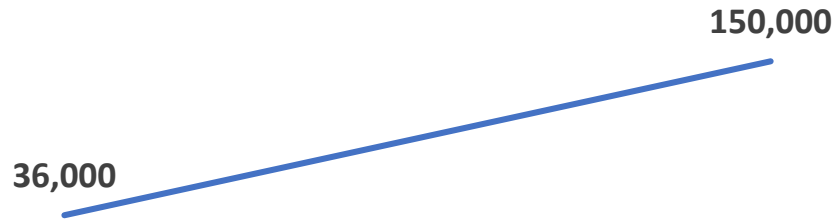


% Change in Fatalities



TRADITIONAL ROAD SAFETY INITIATIVES - GOVT

- Road Safety is a subject under the State List
- India observed its 31st Road Safety Week in January 2020



- Focus only on Education & Awareness

TRADITIONAL ROAD SAFETY INITIATIVES - PRIVATE

- Small scale – standalone interventions



- Focus on Education, Awareness, Traffic Island

FINANCIAL MODEL OF HVZ

Implementation



- Road construction & maintenance
- Enforcement
- Awareness

Knowledge Partner



- Technical validation of proposed interventions
- Data Analysis & Research Support
- Capacity Building

Operations Partner



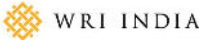
- Hiring of skilled experts
- Program Operations
- Fundraising & Outreach



FINANCIAL MODEL OF HVZ



Monetary + In-kind Contribution of Partners



FINANCIAL MODEL OF HVZ

Government



- Taxes
- Funds from National Govt.
- Inter-governmental Orgs.

Non-governmental Organizations



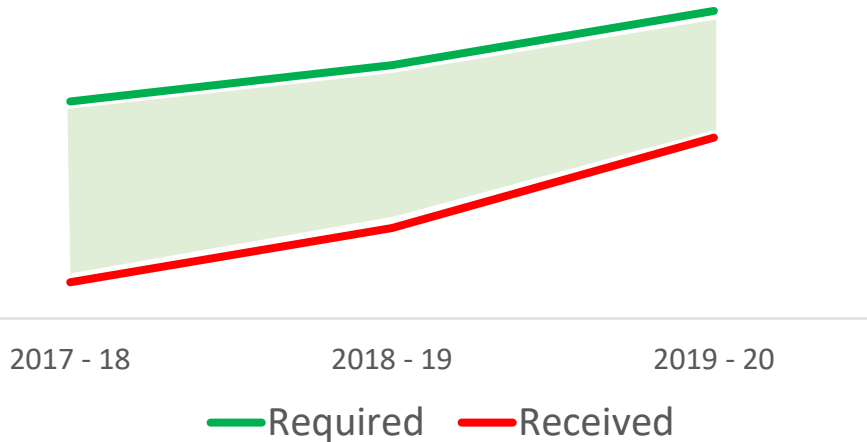
WRI INDIA
— ROSS CENTER



- Program Grants
- Donations
- CSR of Private Sector Companies

FINANCIAL MODEL OF HVZ

Resources Required by NGO Partners



- Includes cost of hiring technical experts, conducting training, etc.
- Monetary support (only) received from donors
- The difference is fulfilled by in-kind support from donors and partners.

FINANCIAL MODEL OF HVZ

Monetary Contribution of Donors



In-Kind Support of Donors

INNOVATION & REPLICABILITY

- What to fund – *comprehensive, impactful, measurable, sustainable*
- Public Private Partnership
- Keeps the structure of the program autonomous
 - Quicker execution
 - Positive change in strategy

INSTITUTIONALISING VISION ZERO

- Supreme Court CoRS mandates creation of 'Road Safety Fund'
- Road Safety is state subject

- ... Road Safety Fund, 2010
- (3) The amount shall be utilized:-
- (a) to make and implement schemes, projects and awareness programmes pertaining to road safety and related activities;

IMPLEMENTING ROAD SAFETY IN TOD

Webinar Series. Session 4

Integration of Road Safety Considerations in Transit-Oriented Development Projects

22 October 2020



Supported by:



Conducted by:



IMPLEMENT



IMPLEMENT

Capacity Building

Phasing Strategy

Monitoring and Evaluation



WORLD BANK GROUP



WRI INDIA

IMPLEMENT – CAPACITY BUILDING

Institutional Gaps

Identify agencies & stakeholders

Inclusion of security agencies

Inclusion of citizen groups and vulnerable members

IMPLEMENT – CAPACITY BUILDING

Institutional Gaps

Part of larger road safety visions

Regulatory Gaps

Zoning and parking requirements

Incentives, tax cuts

IMPLEMENT – CAPACITY BUILDING

Institutional Gaps

Regulatory Gaps

Financial Gaps

Budget allocations

Identify funding sources, grants

Innovative incentives

IMPLEMENT – CAPACITY BUILDING

Institutional Gaps

Enhancing technical capacity

Regulatory Gaps

Knowledge repository

Financial Gaps

Stakeholder engagement

Knowledge Gaps

Public participation

IMPLEMENT – PHASING



IMPLEMENT – PHASING



IMPLEMENT – MONITORING & EVALUATION



TACTICAL URBANISM MEASURES IN MUMBAI – CASE STUDY

Webinar Series.
Session 4

**Integration of Road Safety Considerations in Transit-Oriented
Development Projects**

22 October 2020



Supported by:



Conducted by:



CONTENT

- Mumbai and Road Safety
- Conventional Planning and Implementation Process
- Introduction to Tactical Urbanism
- Tactical Urbanism to Introduce Road Safety
- Measuring and Data Collection
- From Temporary to Permanent
- Scale Up

MUMBAI AND ROAD SAFETY

51%



Pedestrian/cyclists

25%



Trains

12%



Buses

5%



IPT

2%



Cars

5%



Others

Modal Share of total Routes

Where as, over **50%** of total traffic fatalities involve **PEDESTRIANS** and **CYCLISTS!**

Mumbai sees nearly **500 road fatalities** every year in the city

More than **30 %** of these fatalities occur at **JUNCTIONS**

Junctions contribute to a disproportionately **high share of road crashes**, given that they cumulatively take up only a **fraction of total road area**

CONVENTIONAL PLANNING PROCESS

Our designs looks good on paper but...



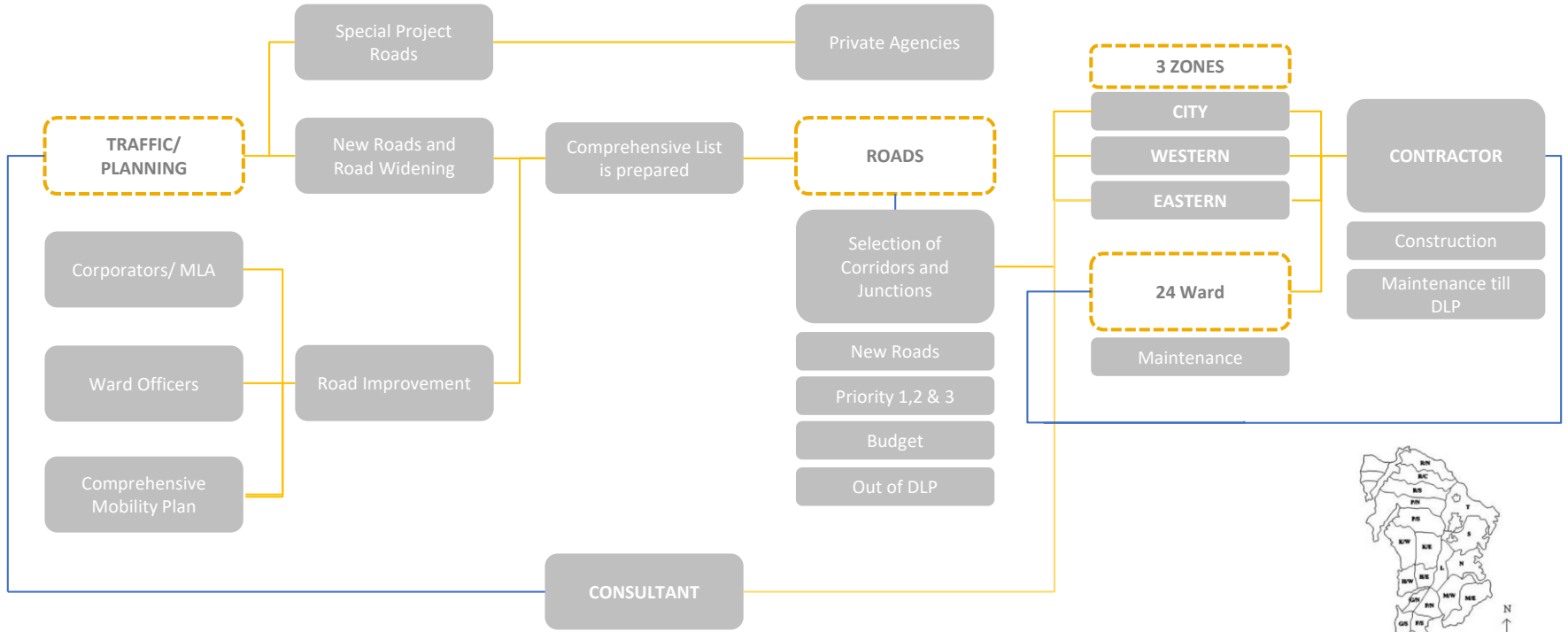
...support to bring transformative change in public projects is CHALLENGING!!!

CONVENTIONAL PLANNING PROCESS

DEPARTMENTS (Related to ROW)	Traffic/ Planning	Roads	Garden	Storm Water Drainage	Swerage Operations	Hydraulic Engineering
SCOPE	Propose new roads and road widening	Construction of New Roads and Road Improvement	Trees, Gardens, Parks, etc	Major and Minor Nullahs, SWD along the roads	Manholes, Sewer lines, Pumping Stations, etc	Water Lines

Municipal Corporation of Greater Mumbai (MCGM)

CONVENTIONAL PLANNING PROCESS



Brief Institutional Framework



Our cities are in constant state of **FLUX!**

“...city can’t address its challenges merely through planning for long term, but through many small term projects involving smaller tactics making long term projects possible...”

- Mike Lydon

HENCE **TACTICAL URBANISM!**

WHAT IS TACTICAL URBANISM

- A city, organizational, or citizen-led approach towards demonstrating sustainable neighborhood building
- These demonstrations are short-term, low cost and scalable in nature which can instigate and facilitate long term change
- Tactical Urbanism is an alternative to judicious planning methods.
- Allows **testing** of different **concepts** before making large permanent investments
- Draws attention to perceived shortcomings and **inspire action**
- Allows larger public engagement and helps build **confidence between different stakeholders**

TACTICAL URBANISM TO INTRODUCE ROAD SAFETY

LET'S HAVE A LOOK AT SOME OF THE INTERSECTIONS IN MUMBAI...

TACTICAL URBANISM TO INTRODUCE ROAD SAFETY



Crawford Market Intersection

TACTICAL URBANISM TO INTRODUCE ROAD SAFETY



Nagpada Intersection

TACTICAL URBANISM TO INTRODUCE ROAD SAFETY



Worli Naka Intersection

TACTICAL URBANISM TO INTRODUCE ROAD

SAFETY



Project:

HP

Intersection,

Mumbai

PROJECT: HP INTERSECTION, MUMBAI



PROJECT: HP INTERSECTION, MUMBAI





Towards Bandra Station

SV Road

Turner Road

PROJECT: HP INTERSECTION, MUMBAI



Large intersection area

PROJECT: HP INTERSECTION, MUMBAI



Undefined/ worn-out
pedestrian crossings

PROJECT: HP INTERSECTION, MUMBAI



Pedestrian crossings run into a dead end

PROJECT: HP INTERSECTION, MUMBAI

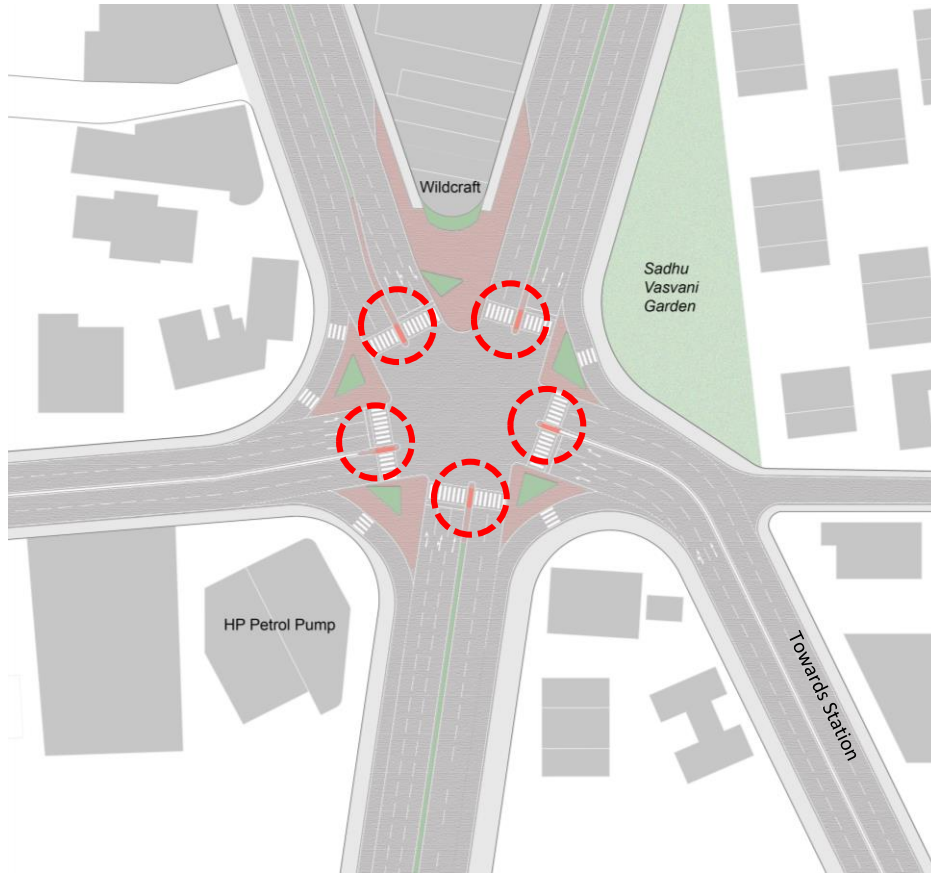


Lack of pedestrian refuge

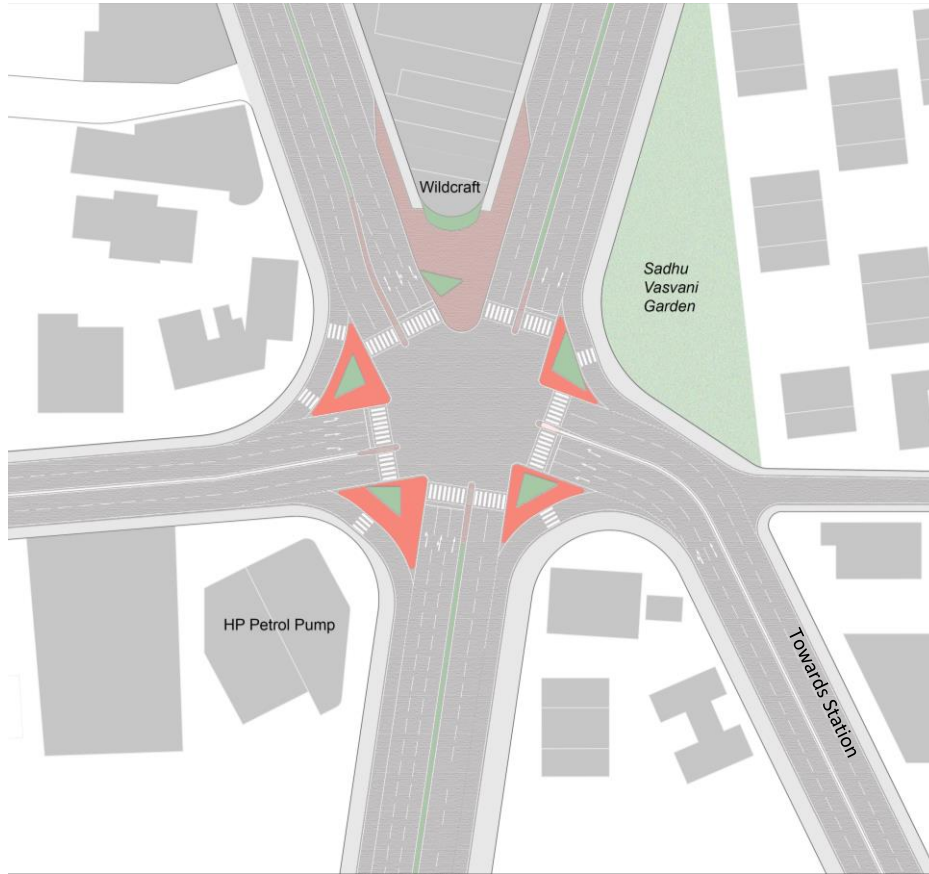
PROJECT: HP INTERSECTION, MUMBAI



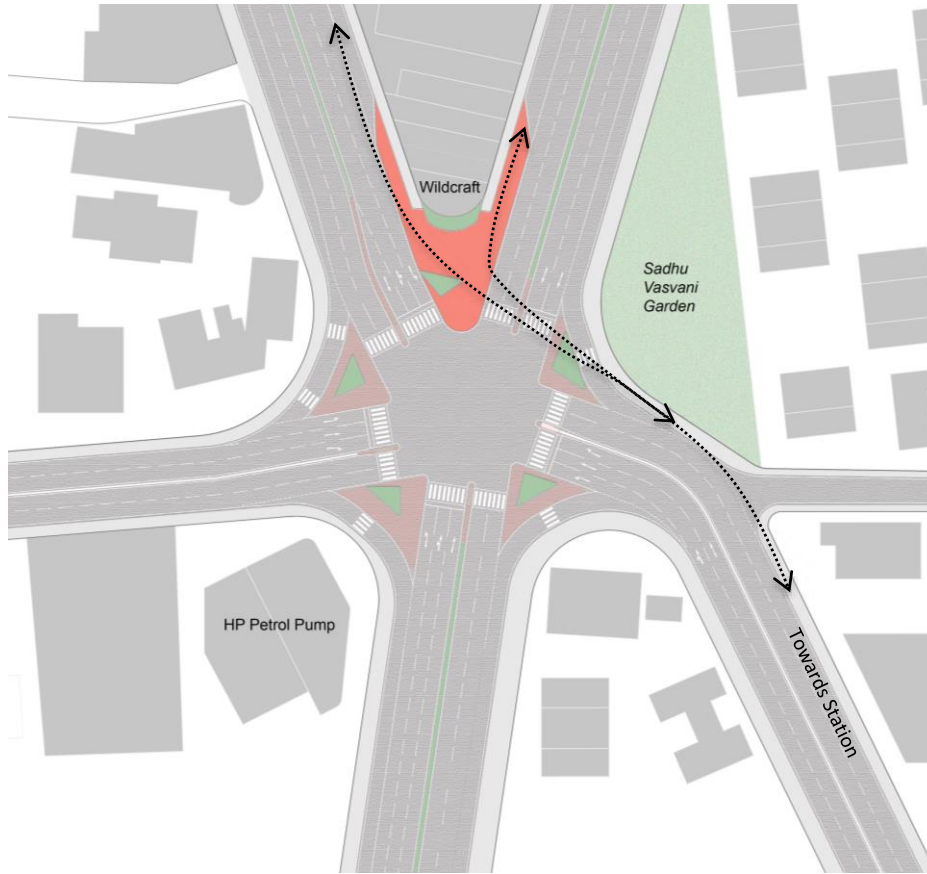
Improper placement of median



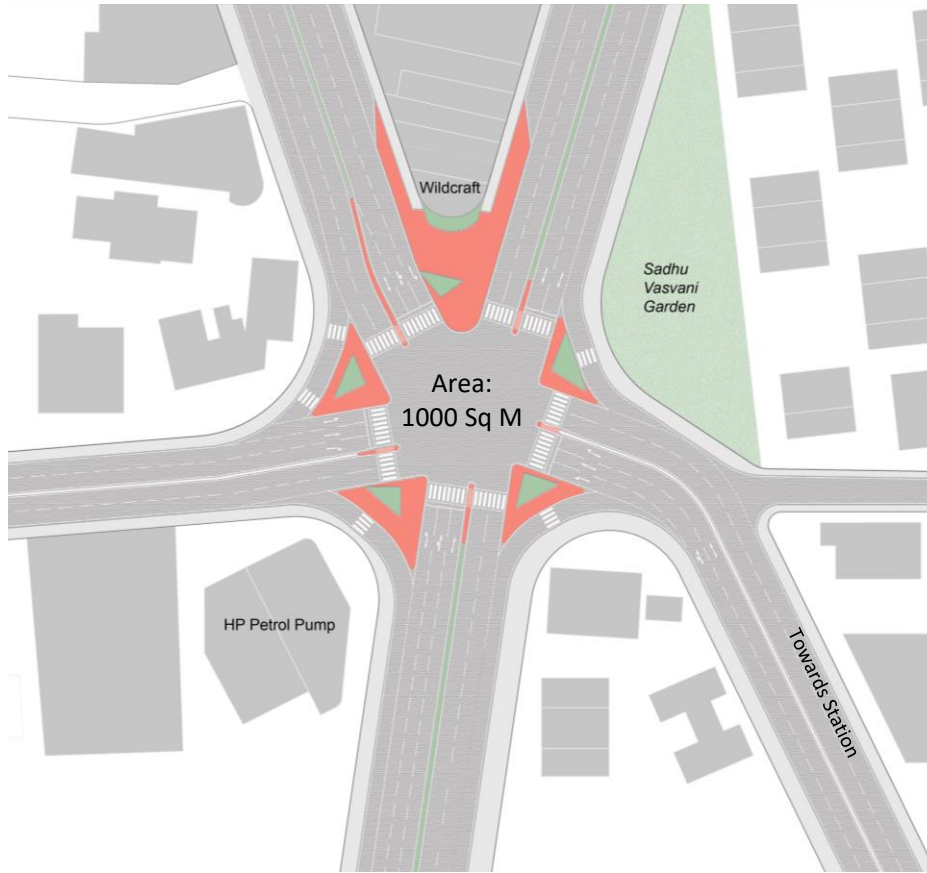
- Extending Medians and creating Pedestrian Refuge Areas



- Extending Medians and creating Pedestrian Refuge Areas
- Reclaiming space from the residual areas at the intersection to create refuge islands



- Extending Medians and creating Pedestrian Refuge Areas
- Reclaiming space from the residual areas at the intersection to create refuge islands
- Reclaiming unnecessary slip lane to create public space and pedestrian refuge



- Extending Medians and creating Pedestrian Refuge Areas
- Reclaiming space from the residual areas at the intersection to create refuge islands
- Reclaiming unnecessary slip lane to create public space and pedestrian refuge
- Correcting Lane Alignment and Street Geometry
- Compacting Intersection Area

Worked out on Paper,

NOW WHAT?

- City Authorities
- Advocacy Groups

PLANNING

- Local Stakeholders
- Politicians
- Citizen Groups
- Local Residents

PROGRAMMING & ACTIVATING

ON ONE FINE NIGHT...

100 BARRICADES

+

PAINT

+

PROPOSED DESIGN DRAWINGS





Extended Medians and corrected Street Geometry

Compact Intersection Area

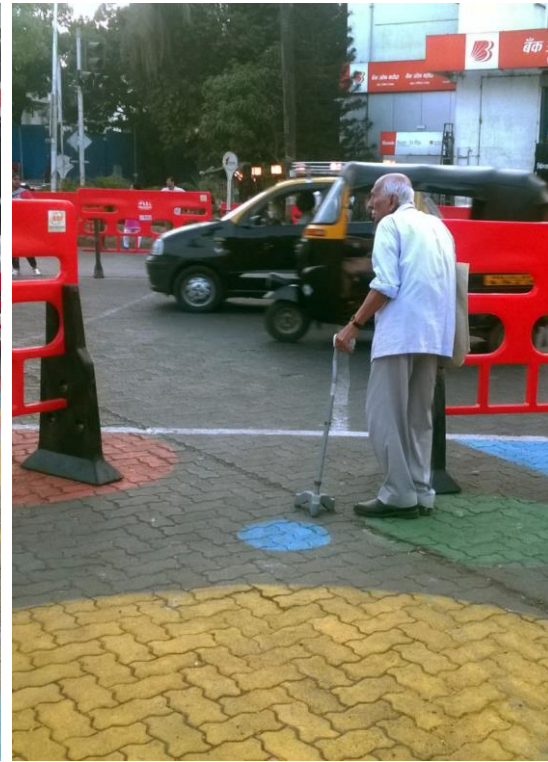


Provision for Pedestrian Crossings

Protected Refuge



Walkable Sidewalks

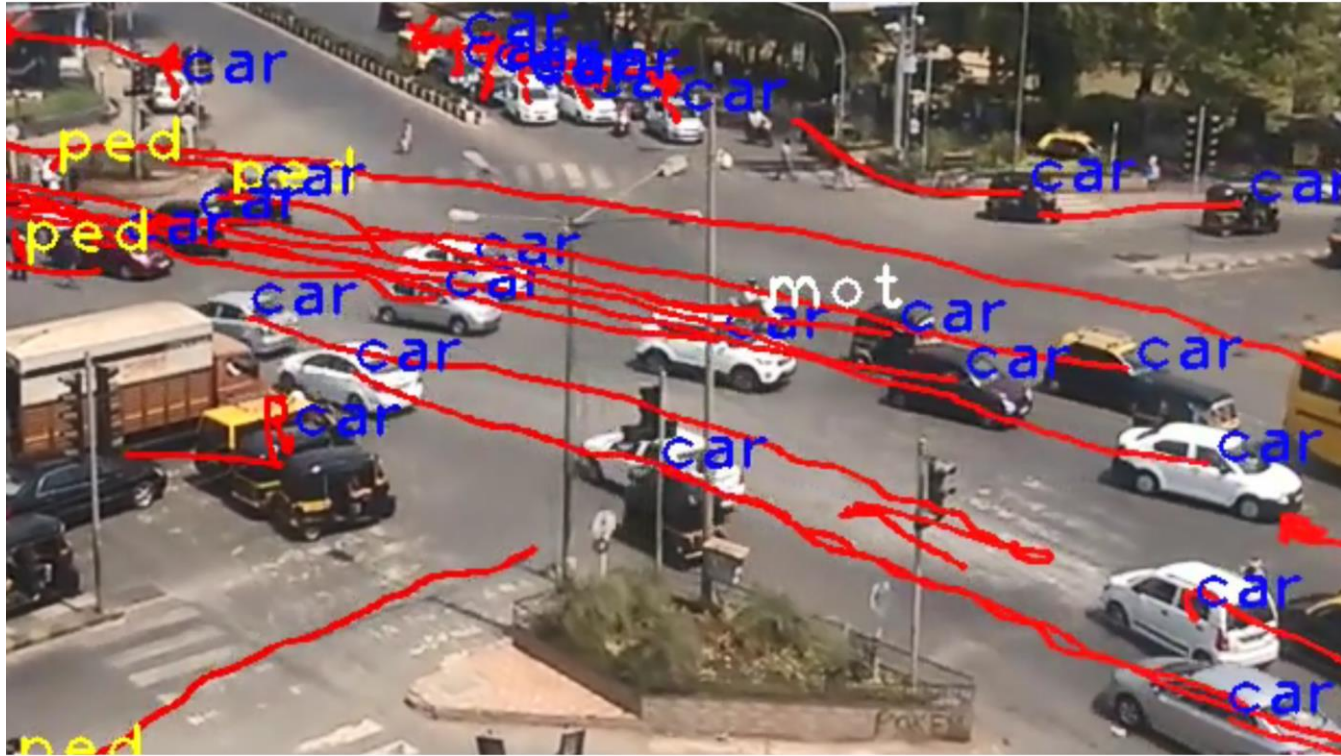


Catering to all Age Groups

MEASURING AND DATA COLLECTION

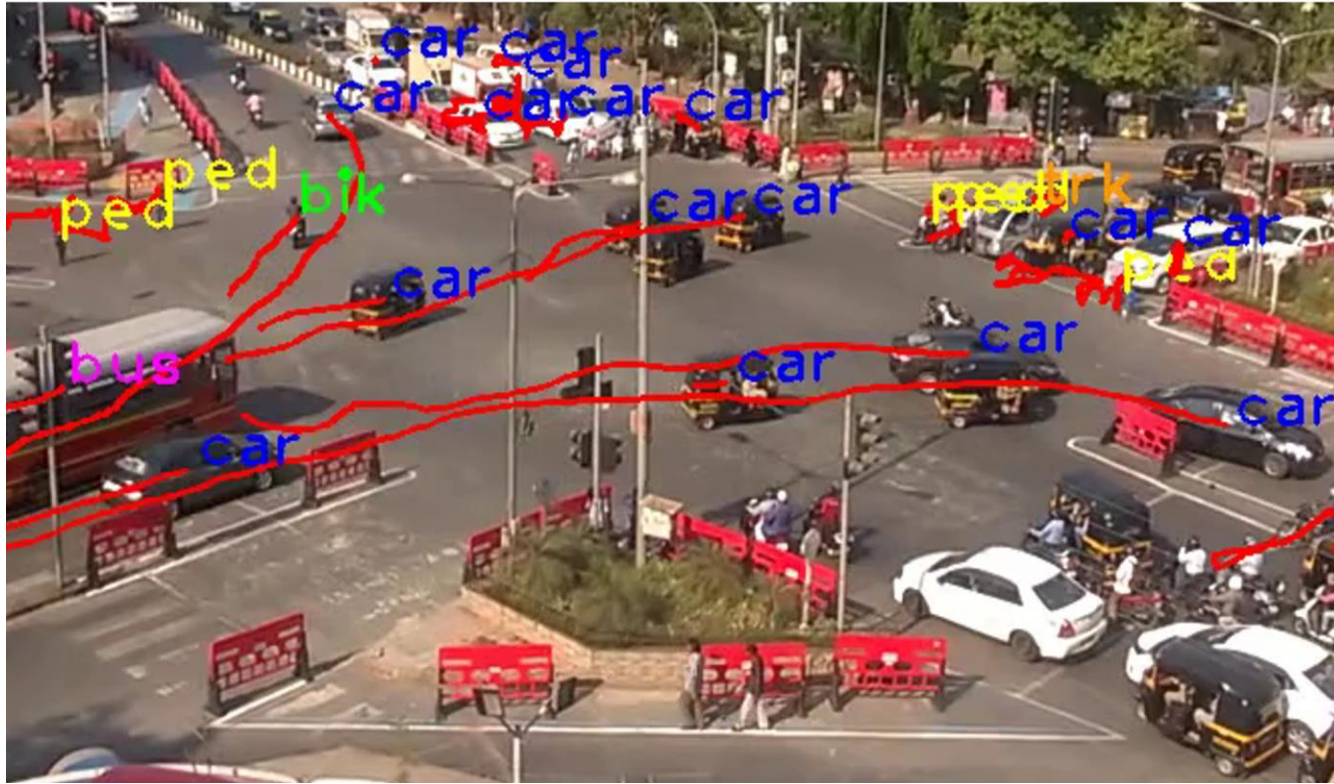


MEASURING AND DATA COLLECTION



PRE - TRIAL

MEASURING AND DATA COLLECTION



DURING TRIAL

FROM TEMPORARY TO PERMANENT



FROM TEMPORARY TO PERMANENT



FROM TEMPORARY TO PERMANENT



FROM TEMPORARY TO PERMANENT



TRIAL for the span of 45 days



Measured BEFORE & AFTER Scenarios



Collected DATA to support design



Revised the design as per LEARNINGS from TRIAL



Got City Authorities on board for IMPLEMENTATION



CAPACITY BUILDING for Engineers and Contractors working on ground



LONG TERM CHANGE

SCALING UP

From 2017 – Present

Total Trials post success of HP
Intersection: **7**

Total intersection designed by
WRI India in Mumbai: **85**

Total intersection construction
completed post HP
Intersection- **7**

Total ongoing permanent
intersection constructions: **5**

2020



SCALING UP

Nagpada Intersection



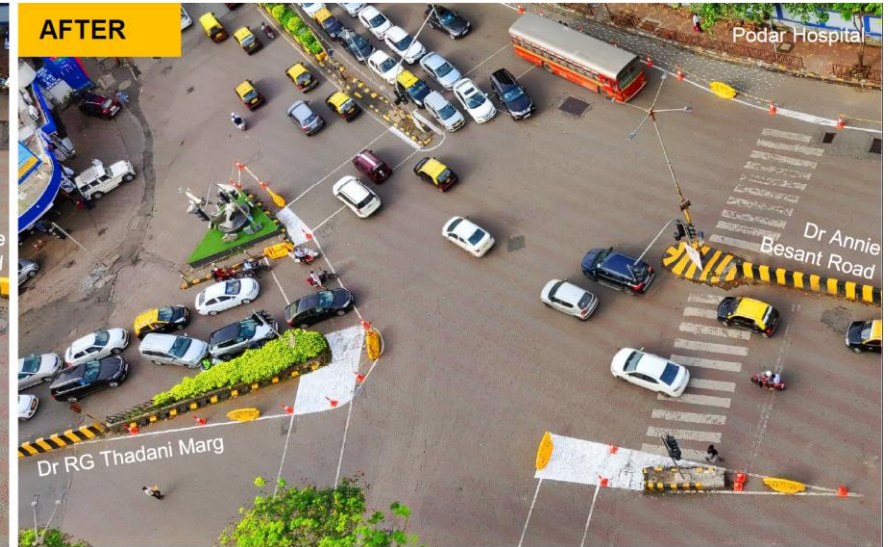
SCALING UP



Bindumadhav
Thackeray Junction

SCALING UP

Alvaris Intersection



THANK YOU



Prerna V. Mehta

Lead - Integrated Urban
Development

prerna.mehta@wri.org



Abhishek Behera

Consultant – Sustainable Cities &
Transport

abhishek.Behera@wri.org



Vaibhav Kush

Senior Project Associate -
Sustainable Cities & Transport

vaibhav.kush@wri.org



Saurabh Jain

Consultant - Urban Transport &
Road Safety

saurabh.jain@wri.org

PANELISTS



**Claudia
Diaz**

*Head of the Road
Safety Office*

Secretary of
Mobility of
Bogota



**Gabriel
Arrisueno**

*Senior Urban
Specialist*

The World Bank



**Madhav
Pai**

*Executive
Director*

WRI India Ross
Center



**Mriganka
Saxena**

*Principal &
Founder,*

Habitat Tectonics
Architecture &
Urbanism (HTAU)



**Radoslaw
Czapski**

*Senior Transport
Specialist*

The World Bank



SESSION 1

TOD and Road Safety



SESSION 2

Assessing and Enabling
Road Safety within a TOD
project cycle



SESSION 3

Planning and Designing
Road Safety measures in
TOD



SESSION 4

Financing and
Implementing Road
Safety measures in TOD

This four-part workshop series has been prepared with funding from UK AID, through the Global Road Safety Facility (GRSF), for the World Bank as part of the assignment: **“Integration of Road Safety Considerations in Transit-Oriented Development Projects”**.

It has been developed by World Resources Institute, India (WRI India)

October 2020