



Centre for Green Mobility
Ahmedabad

19th September 2016
WRI – India Vision Zero, Bhubaneshwar

THE CROSSWALK LAB

Team

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The Crosswalk Lab

Traffic Junction management through improved design

Traffic Police

Traffic Management, Signaling

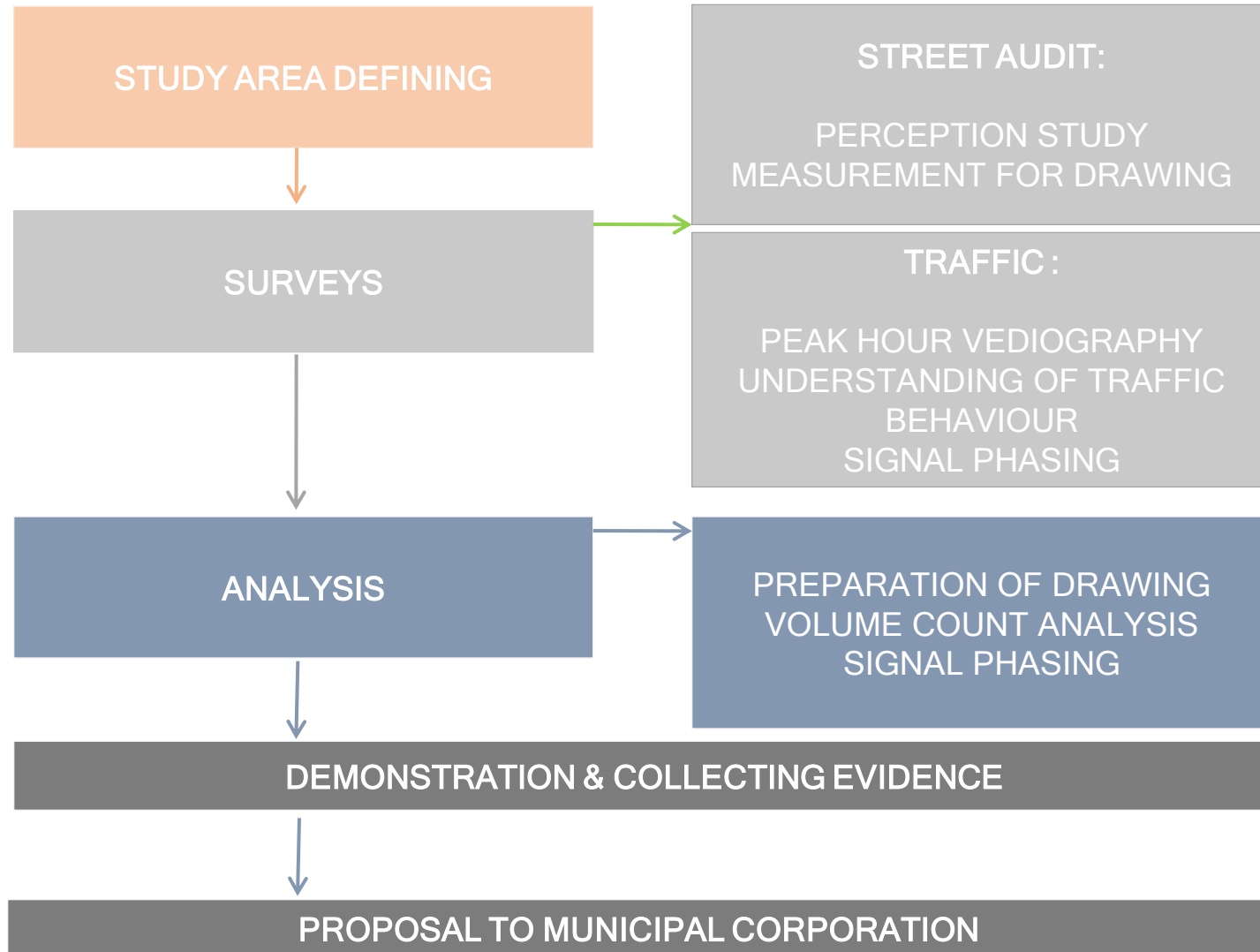
Municipal Corporation

Plan & Design

Vijay Crossing
Narol Crossing

The Crosswalk Lab

Traffic Junction management through improved design



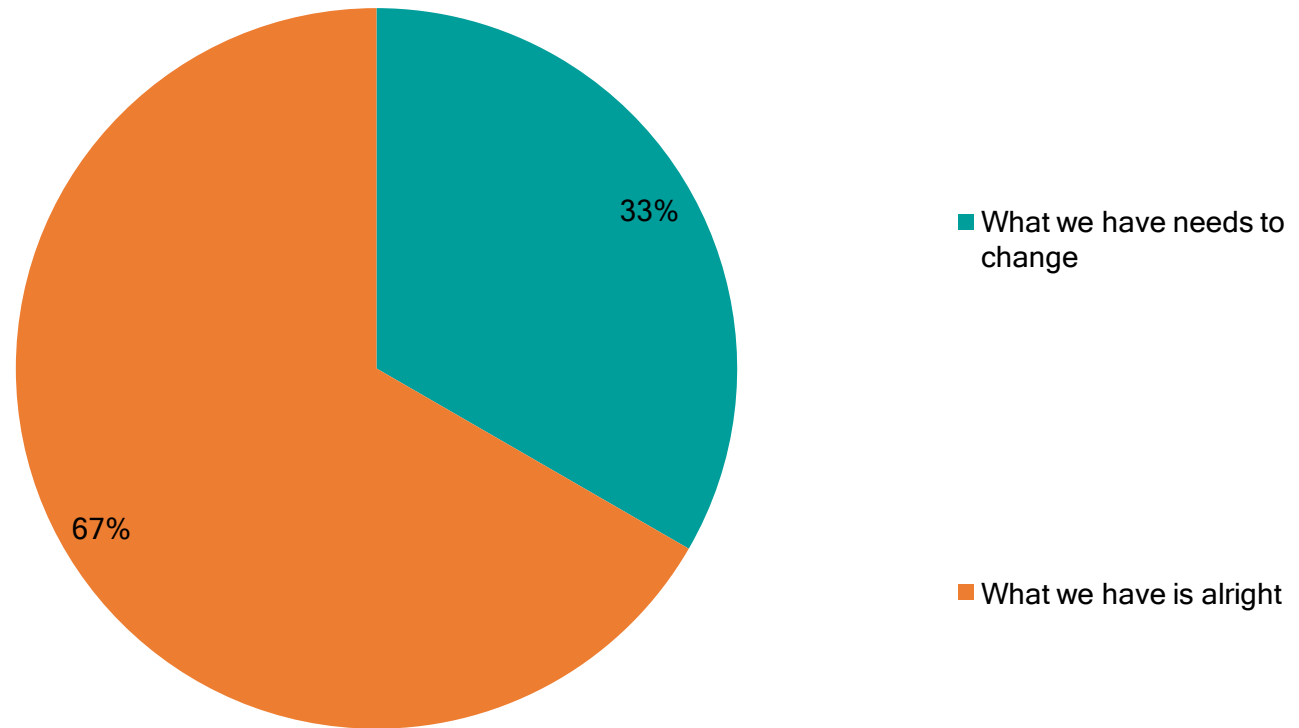
The Crosswalk Lab

Traffic Junction management through improved design

VIJAY CHAR RASTA

Feedback before the experiment

Shopkeepers, Pedestrians and Motorists



High number of pedestrians



Issues

Parking at intersection and footpath

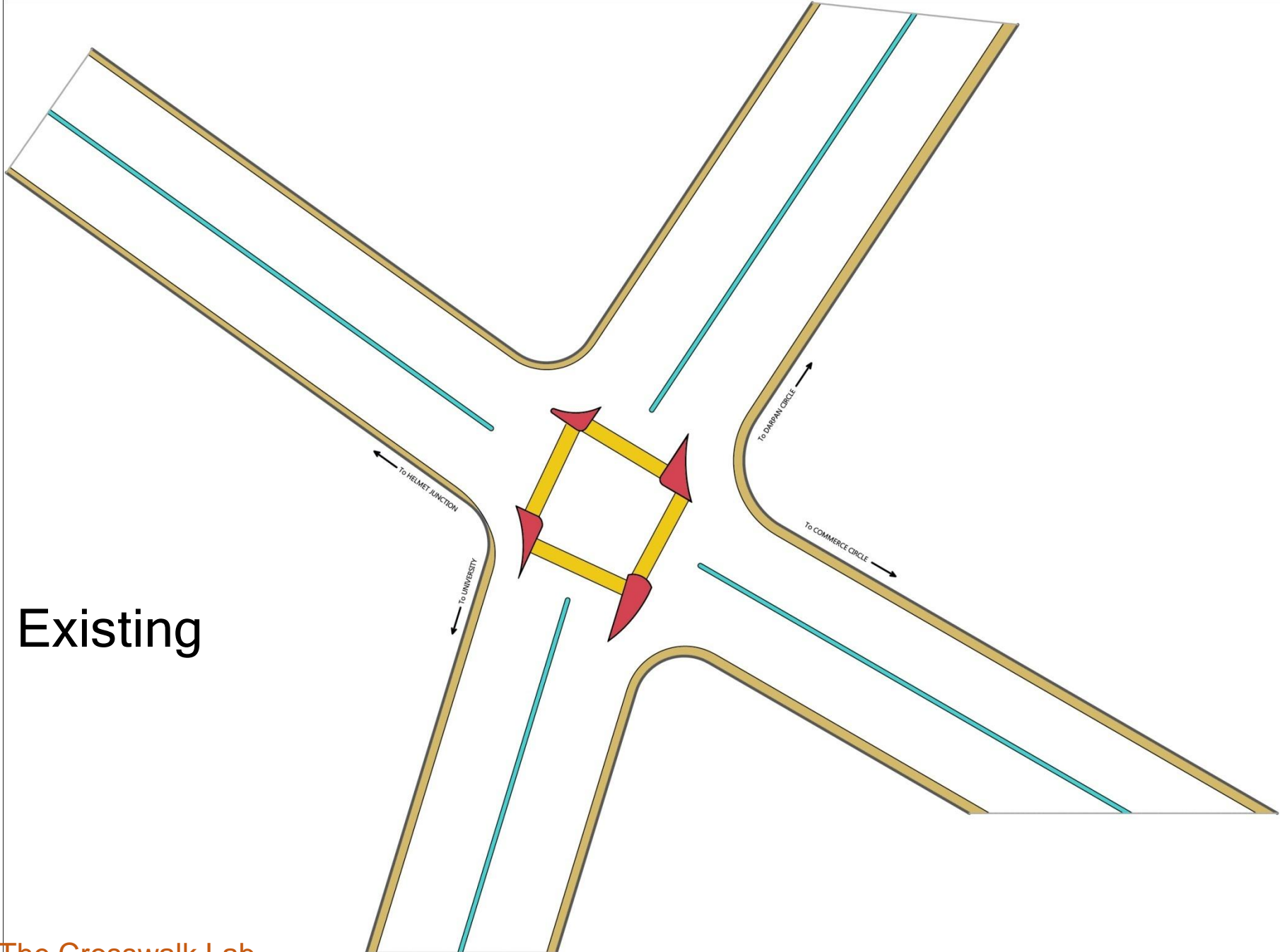
Conflict between traffic, pedestrians and parked vehicles

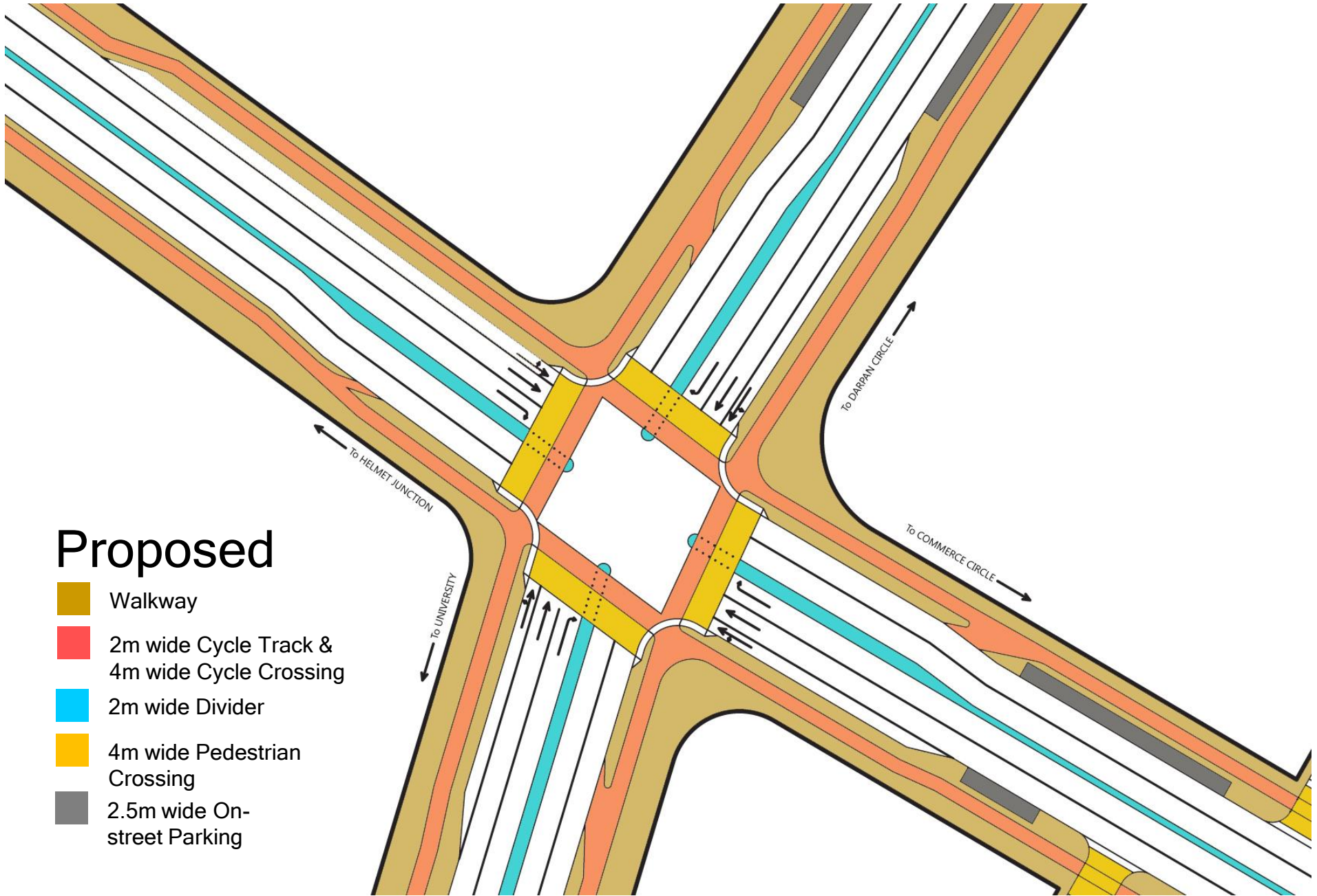
No safe crossing path for pedestrians

High speed of turning vehicles

High incidence of wrong turning vehicles

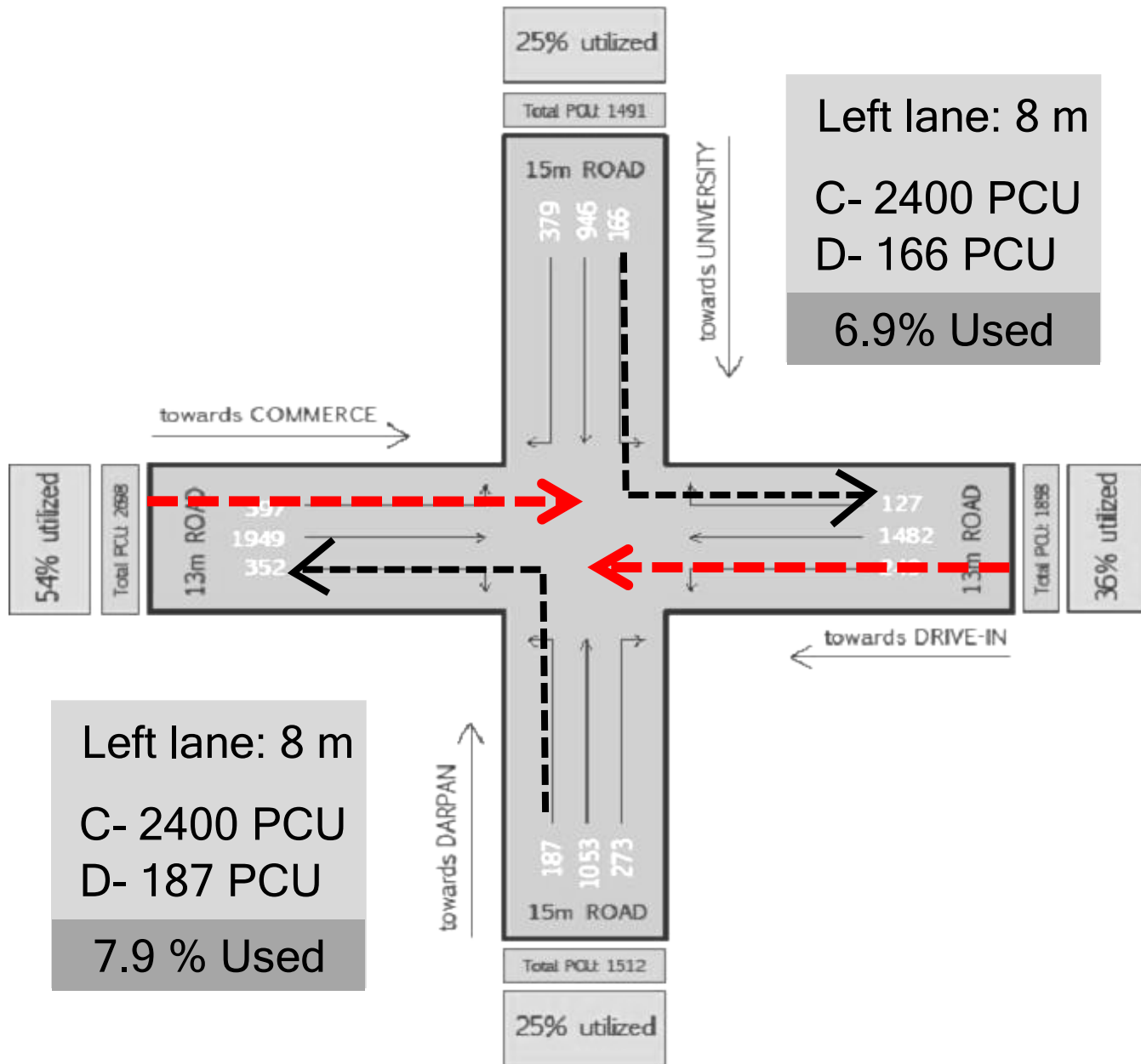
Existing



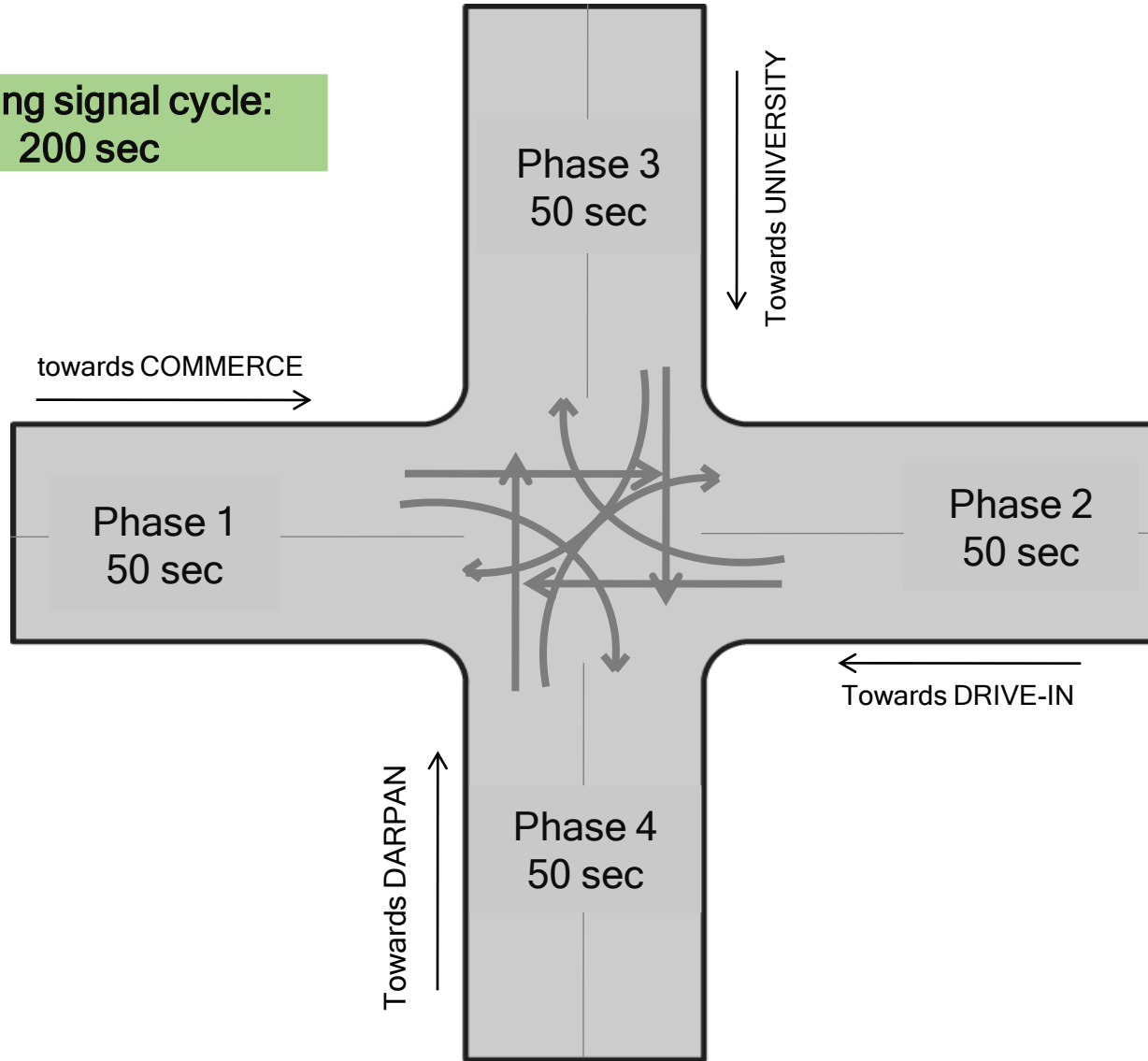


Proposed

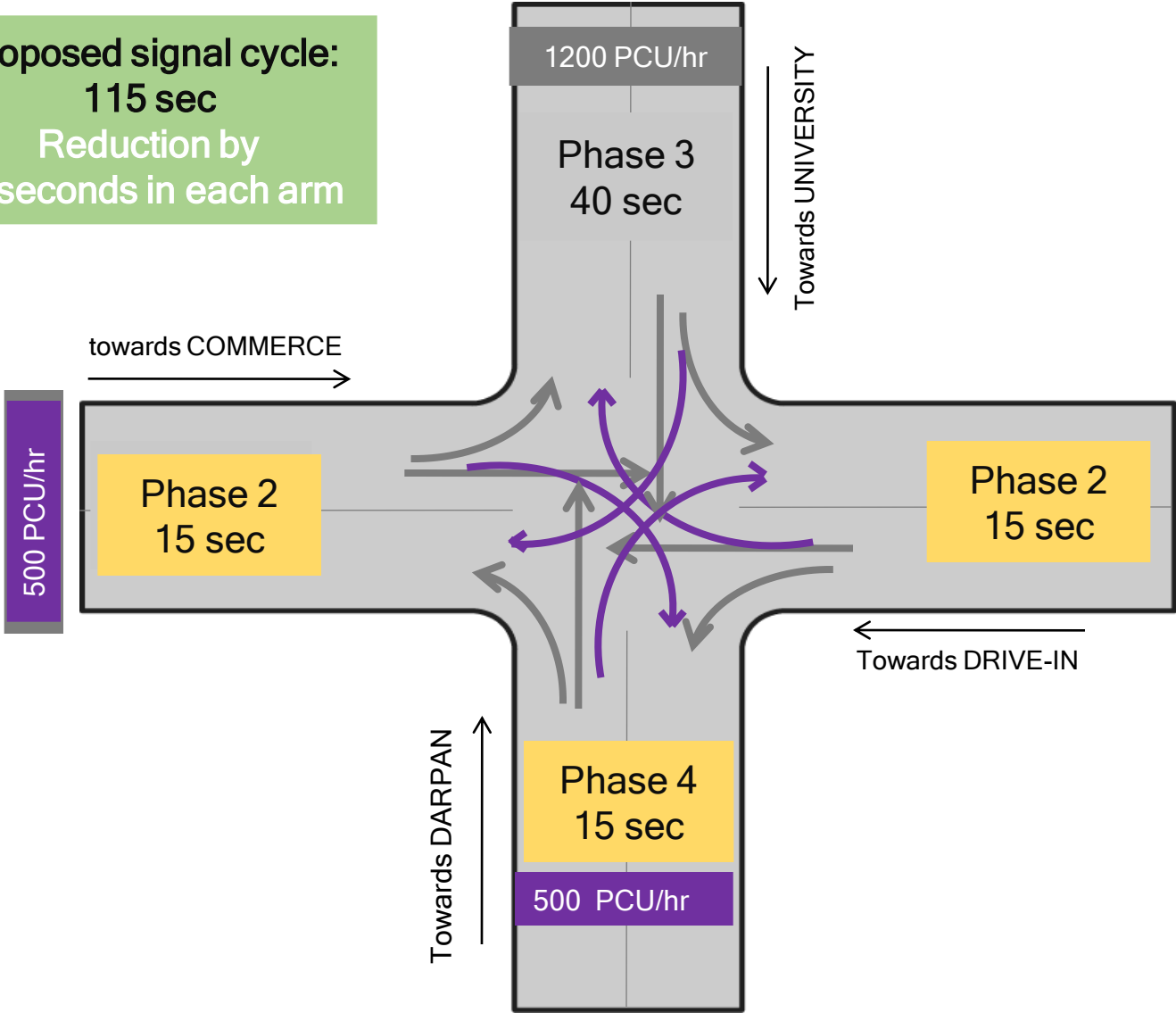
- Walkway
- 2m wide Cycle Track & 4m wide Cycle Crossing
- 2m wide Divider
- 4m wide Pedestrian Crossing
- 2.5m wide On-street Parking



Existing signal cycle:
200 sec



**Proposed signal cycle:
115 sec**
Reduction by
20seconds in each arm

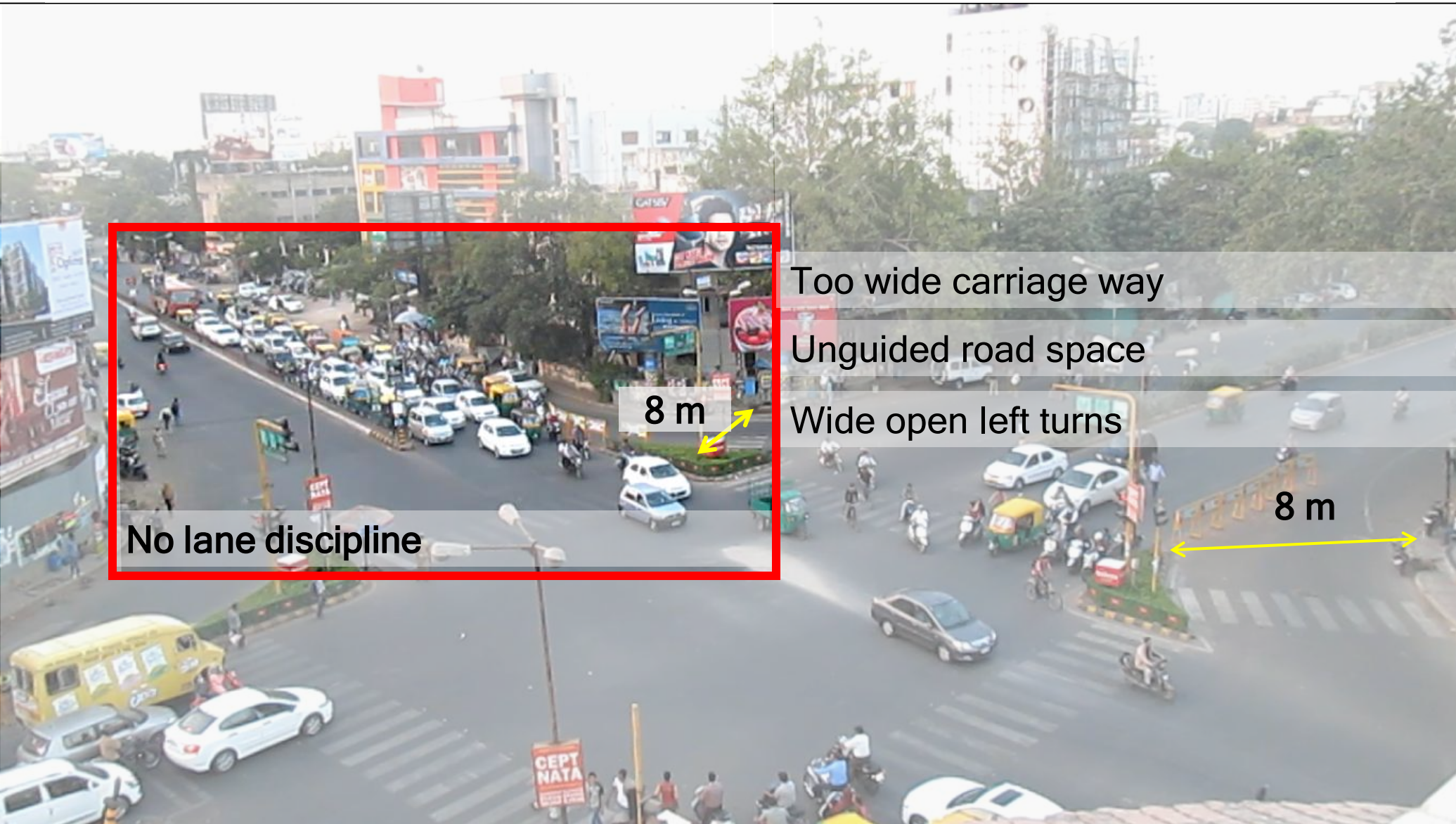


Maximum speed at left turn: 45 kmph

Maximum speed at right turn: 20 kmph

Maximum speed at straight: 40 kmph

Delay in junction clearance



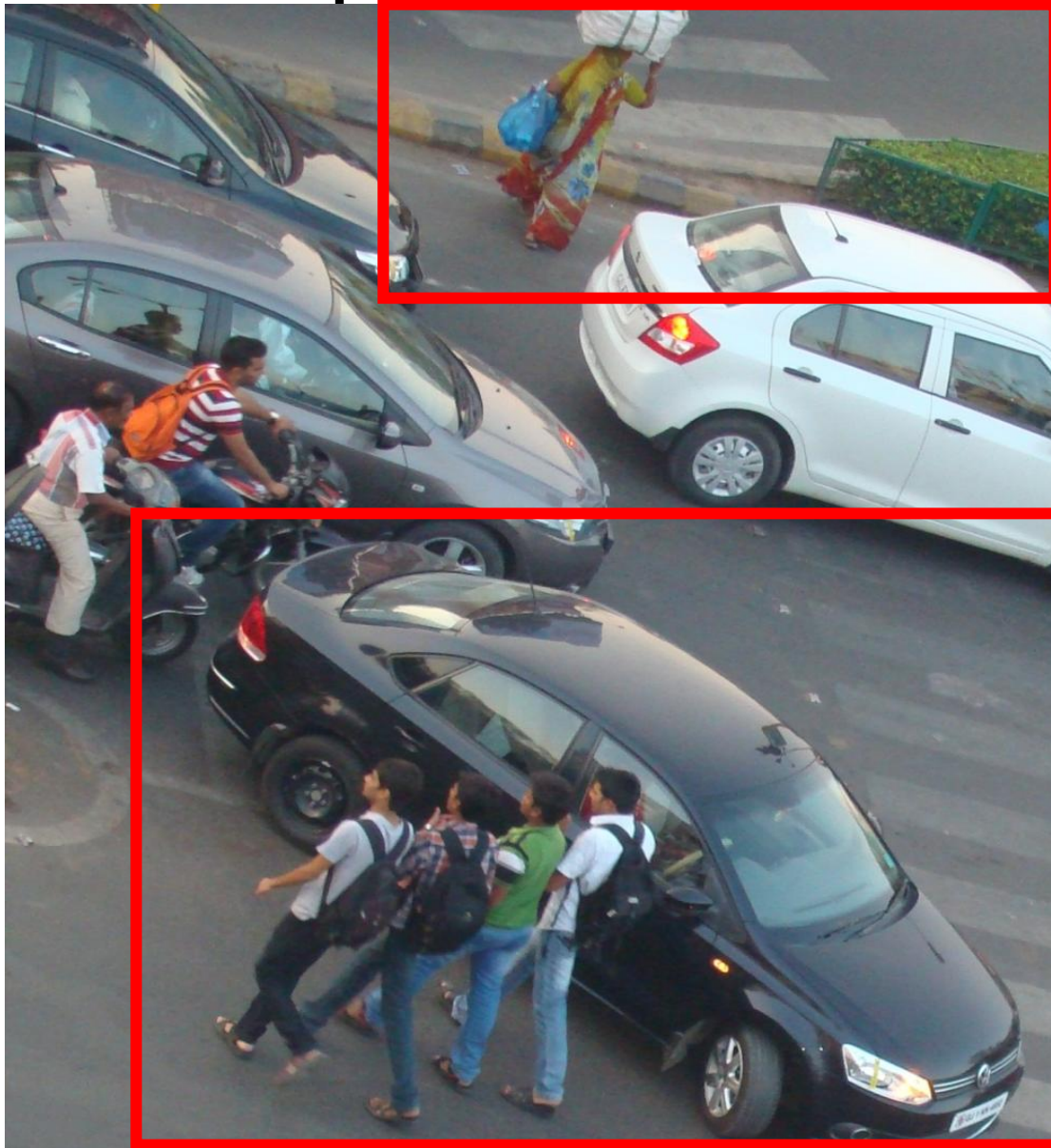
Unsafe pedestrians



No sight distance for pedestrians

Left turn with high speed

Unsafe pedestrians



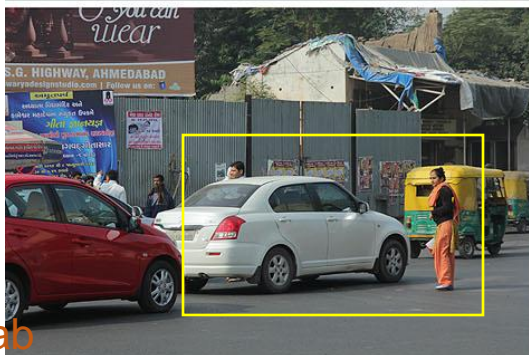
Island covered by greenery



Mix of traffic
Unrestrictive u turn

No refuge while crossing at
junction - median too far - too
narrow

Very unsafe crossing















Safe left turns



Speed reduced by 60%



Improved and constrained turning – notice the police standing in the refuge



Existing Situation – No clear space for cyclists and pedestrians which is blocked by parked vehicles



New Situation – Space created for cyclists and pedestrians by aligning parking away from edge.



New Situation – Space created for cyclists and pedestrians by aligning parking away from edge.



A space to wait while crossing



Improved lane discipline



Reduction in wrong side - No extra space



DAY 0

Implementation



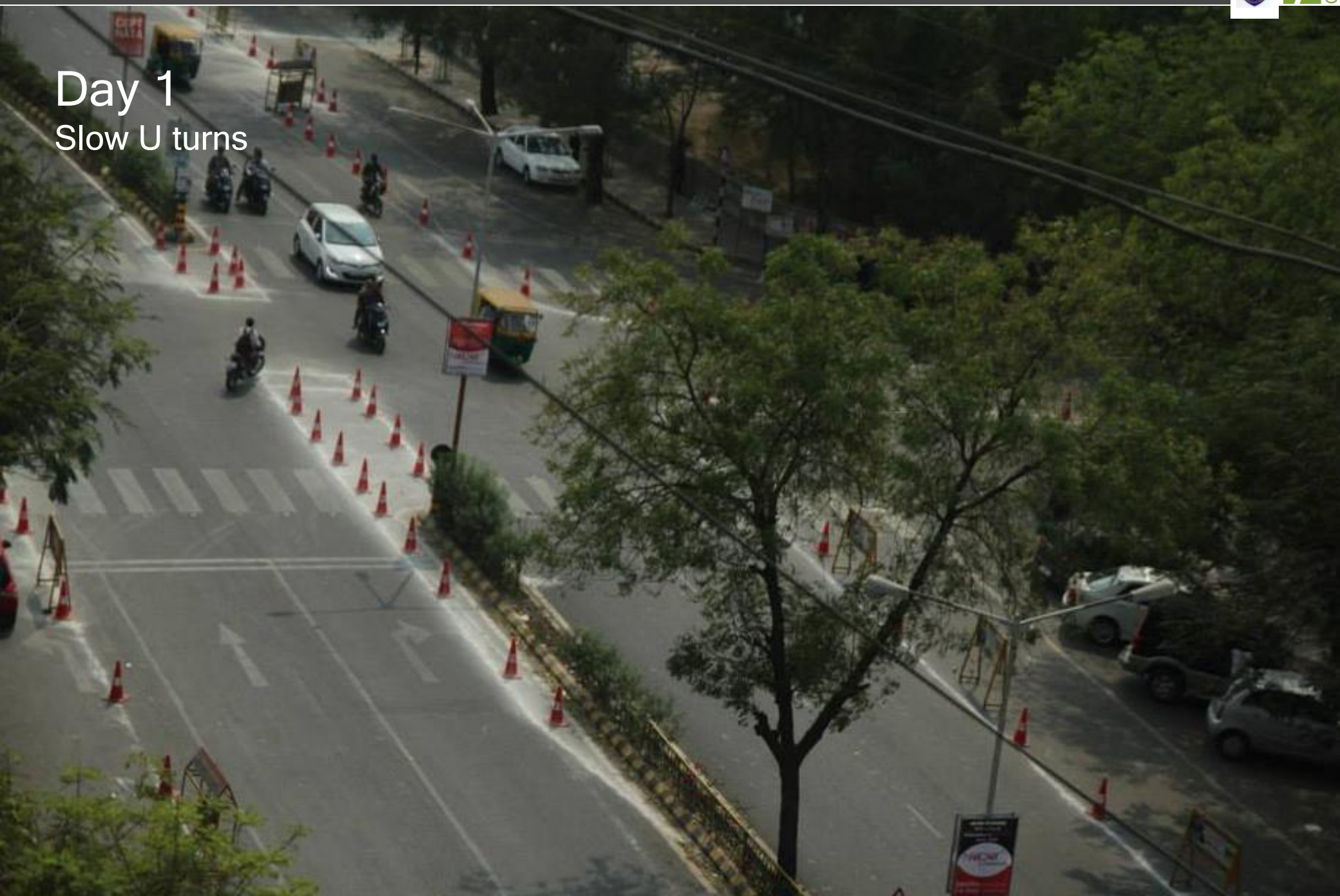
Day 1

Slow left turns



Day 1

Slow U turns



Day 1

Parking getting organized



Day 1

More walking space,
But parking persists

Day 2



Day 2

Refuge helps



Day 3

Parking back to its original position



Day
Much talking to people helps

Day 3



Day 3

Parking getting organized again



Day 4

Talking talking and more talking to people
To get them to understand new parking space



Day 5

Much discipline observed

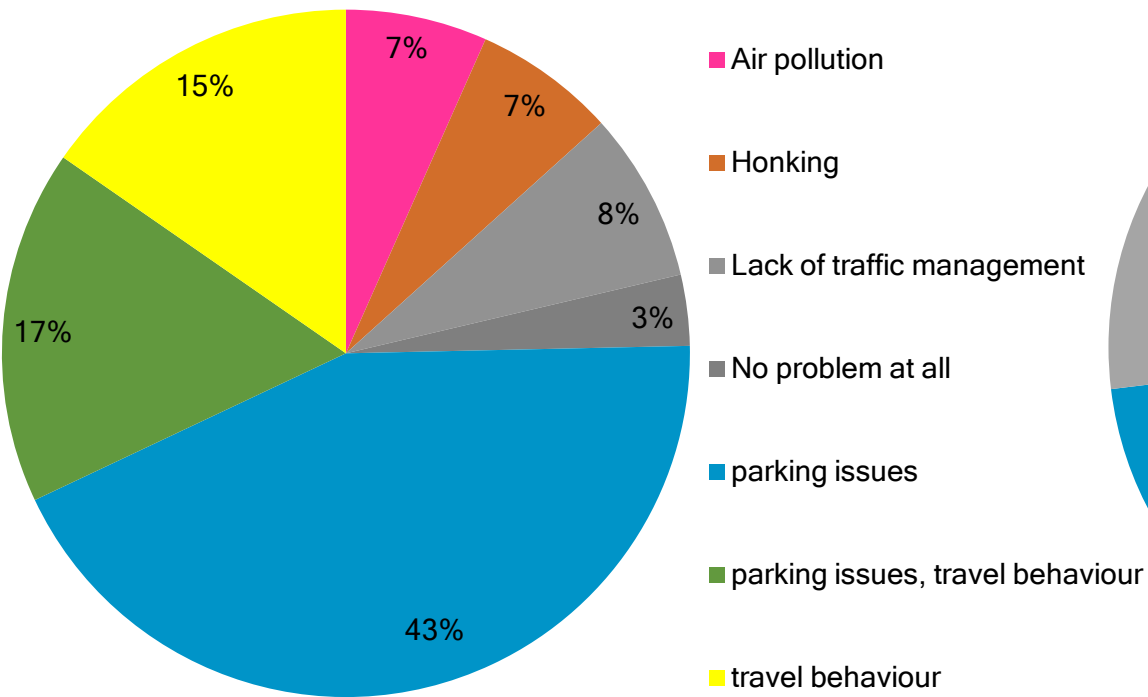


Observed managed parking

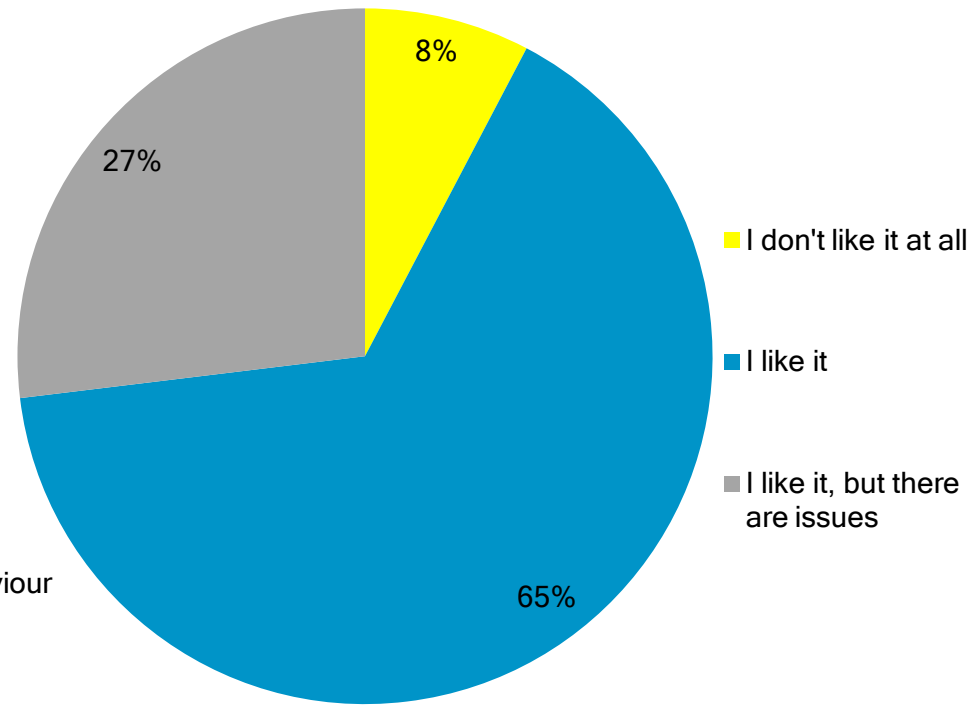


Issues on street (Shopkeepers)

Pre imp. - Major issues

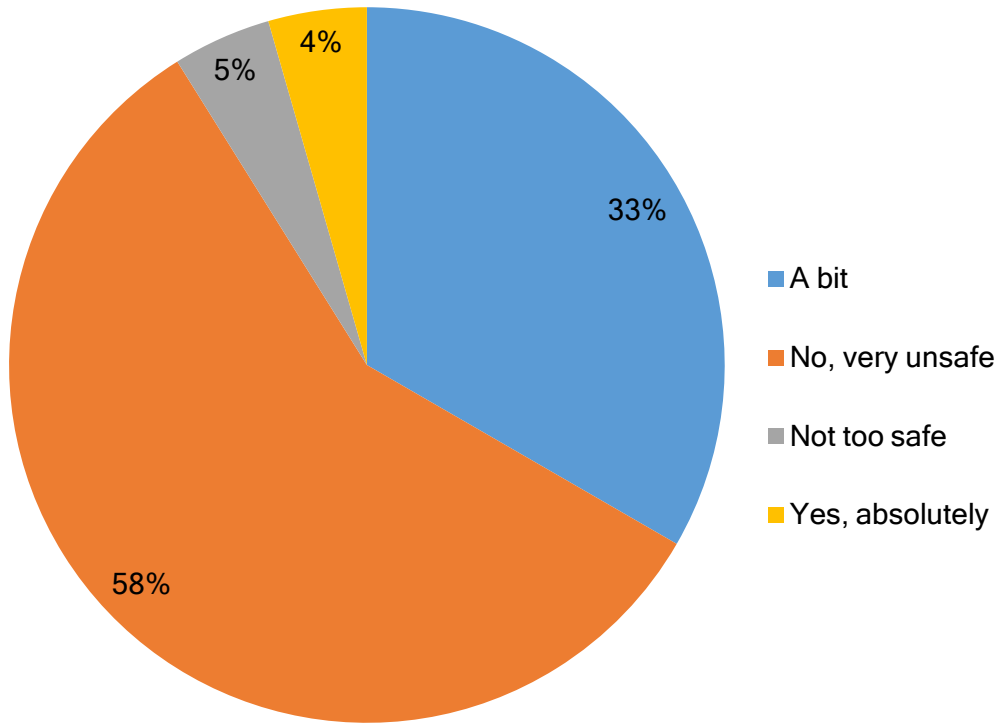


Post implementation

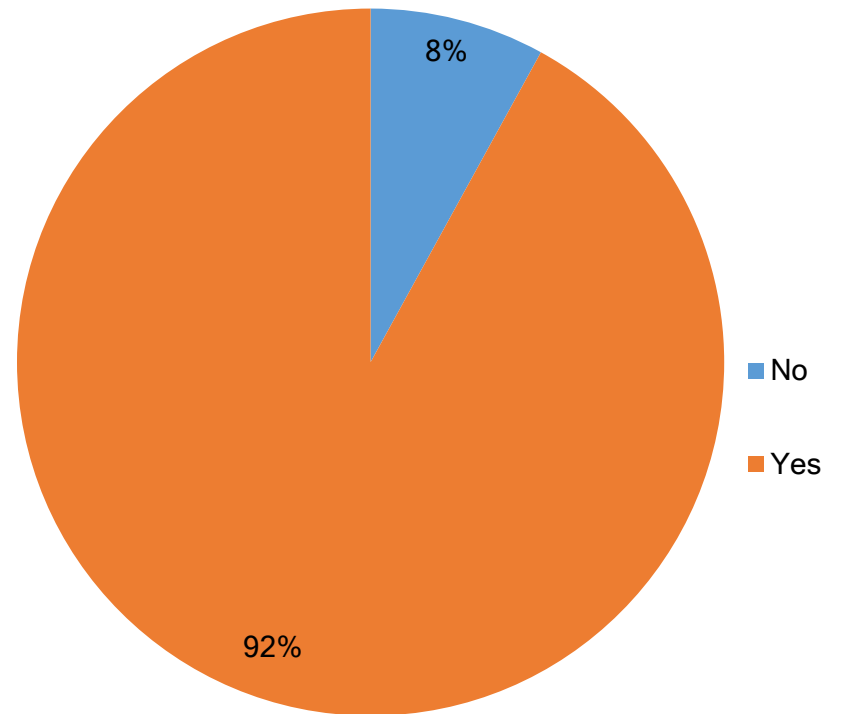


Do you feel street safe? (pedestrians)

Pre implementation



Post implementation



THE IMPACT

Geometric Design of Junction

Pedestrian safety at the junction.

Safety for cyclists at the junction.

High turning speeds.

High incidence of wrong lane driving (opposite currents).

Large wait time at junctions.

Managing traffic.

High Increase

Little Increase

Reduced by 60%

Reduced by 90%

Decrease by 35%

Easy

YES.....Increased queue length

Against,

Higher refresh rate.

Lane discipline

No conflict between left turning traffic and
straight traffic

The Crosswalk Lab

Traffic Junction management through improved design

NAROL JUNCTION
(Highway-City Road-BRT)

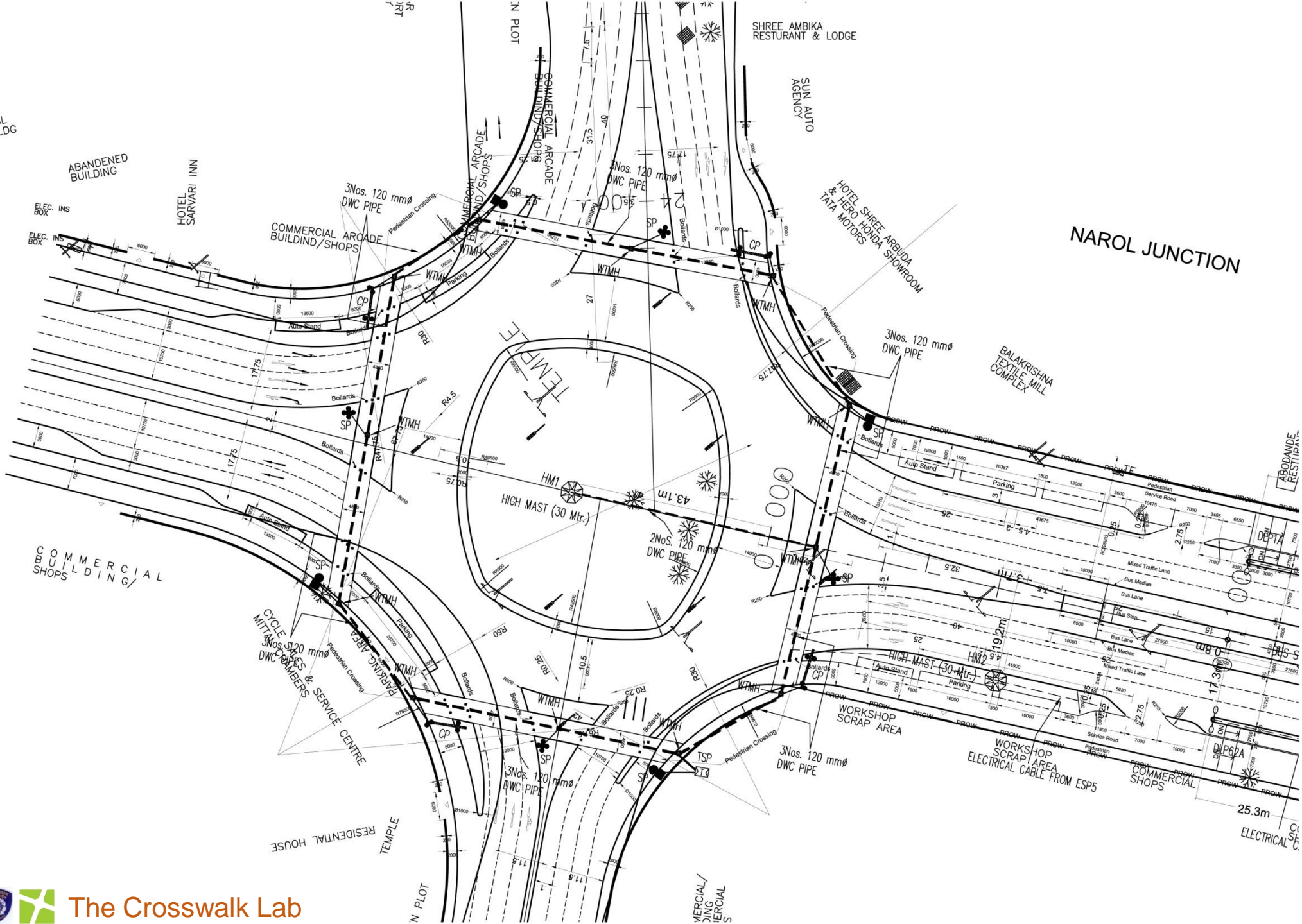








AL LDG



NAROL JUNCTION

ABANDENED BUILDING

HOTEL SARVARI INN

SHREE AMBIKA RESTURANT & LODGE

SUN AUTO AGENCY

HOTEL SHREE ARBUDA & HERO HONDA SHOWROOM

BALAKRISHNA TEXTILE MILL COMPLEX

ELEC. BOX

COMMERCIAL ARCADE BUILDING/SHOPS

COMMERCIAL BUILDING/SHOPS

CYCLE REPAIRS & SERVICE CENTRE

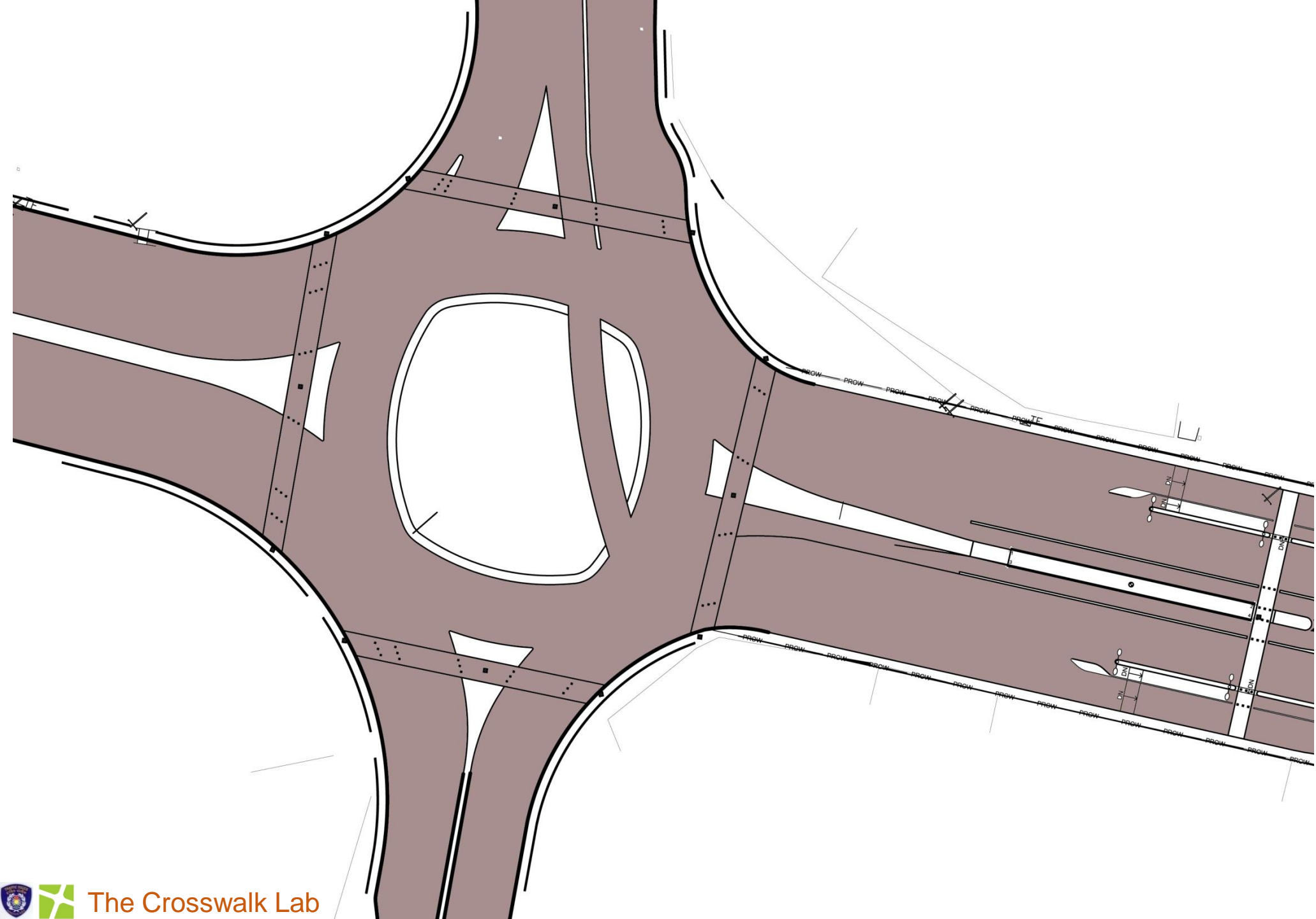
RESIDENTIAL HOUSE

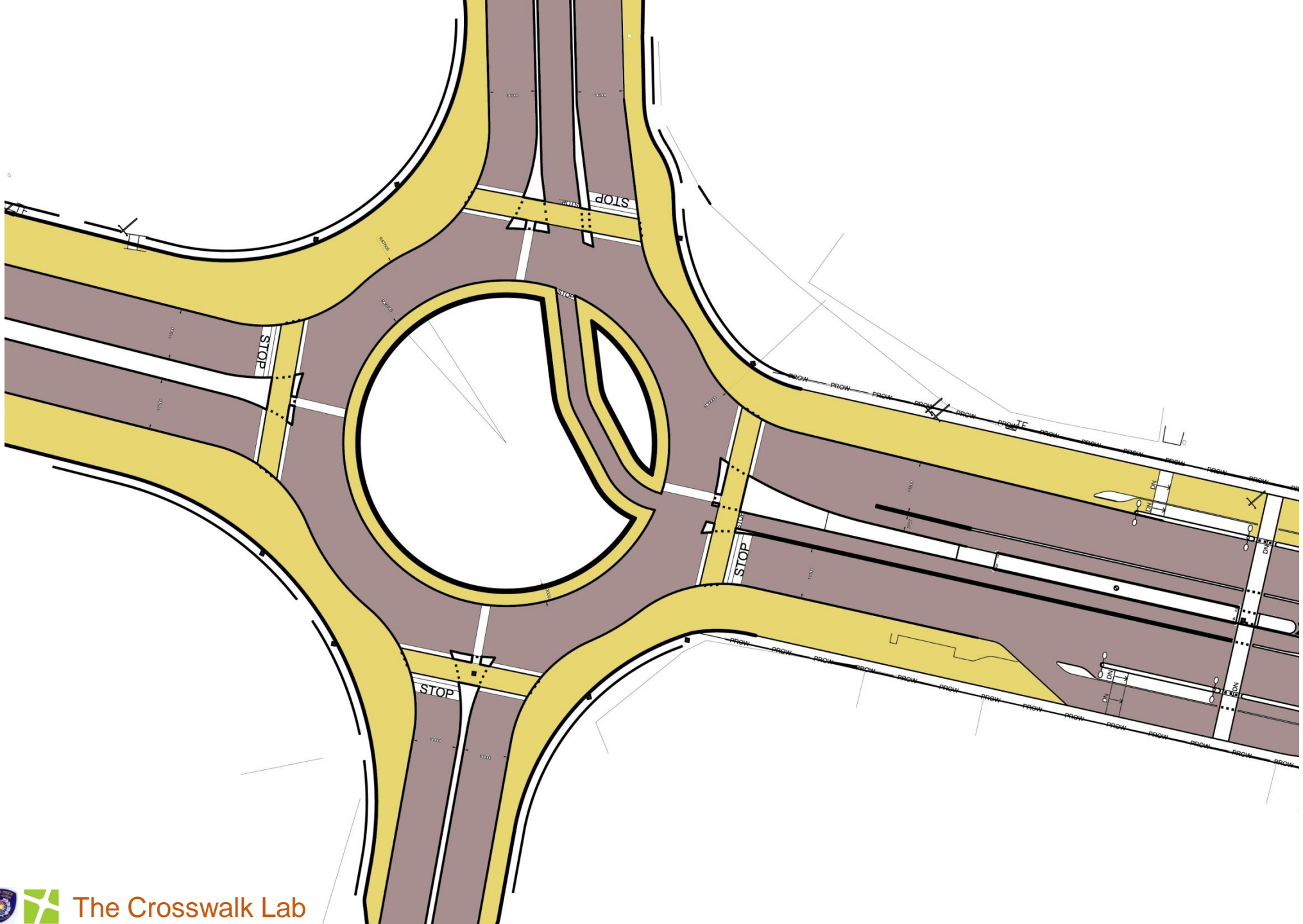
WORKSHOP SCRAP AREA

WORKSHOP SCRAP AREA ELECTRICAL CABLE FROM ESP5

COMMERCIAL SHOPS

ELECTRICAL C...

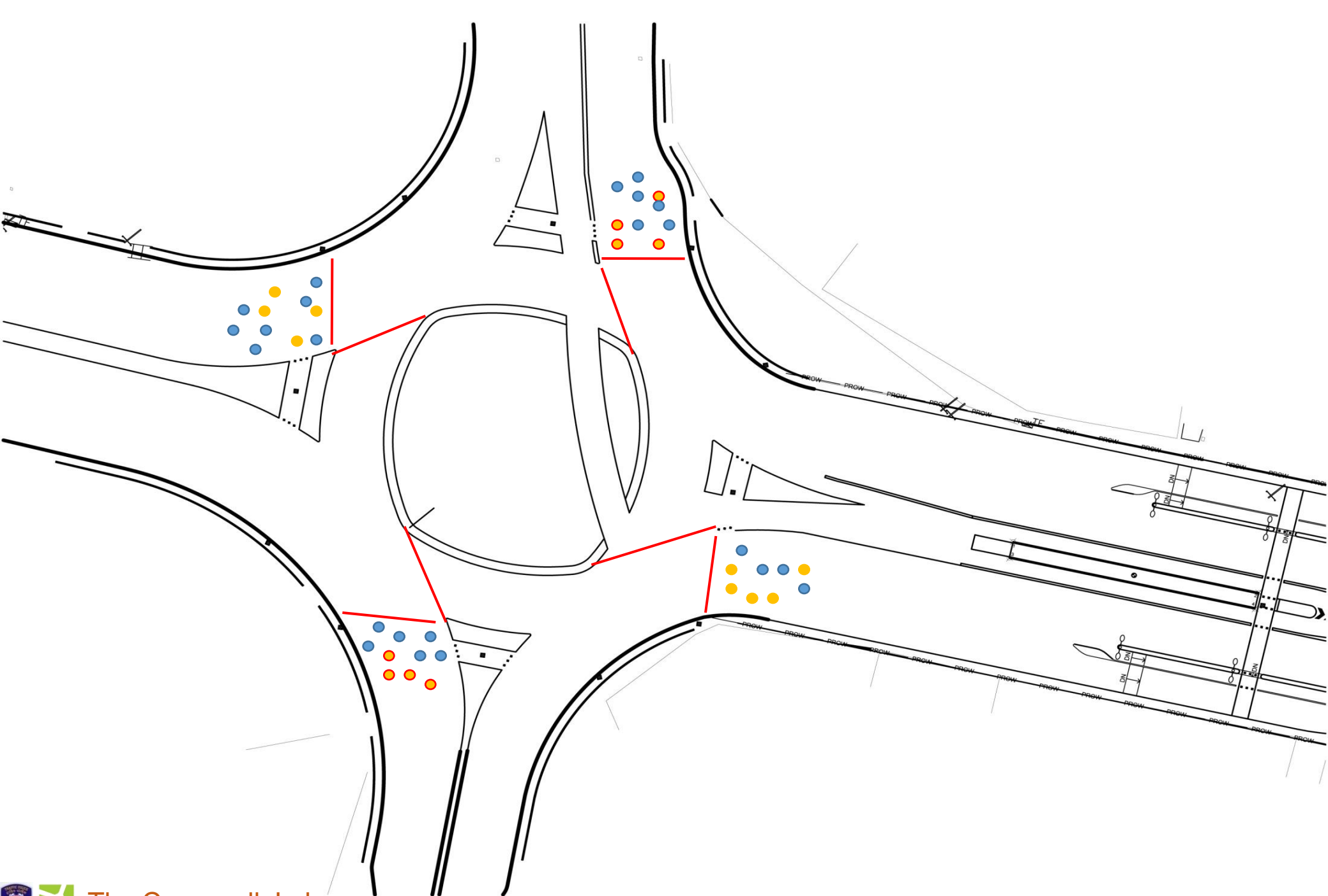






Barricading didn't work!











WORK IN PROGRESS

WZ-AMC

SHALIN HEIGHTS 6

















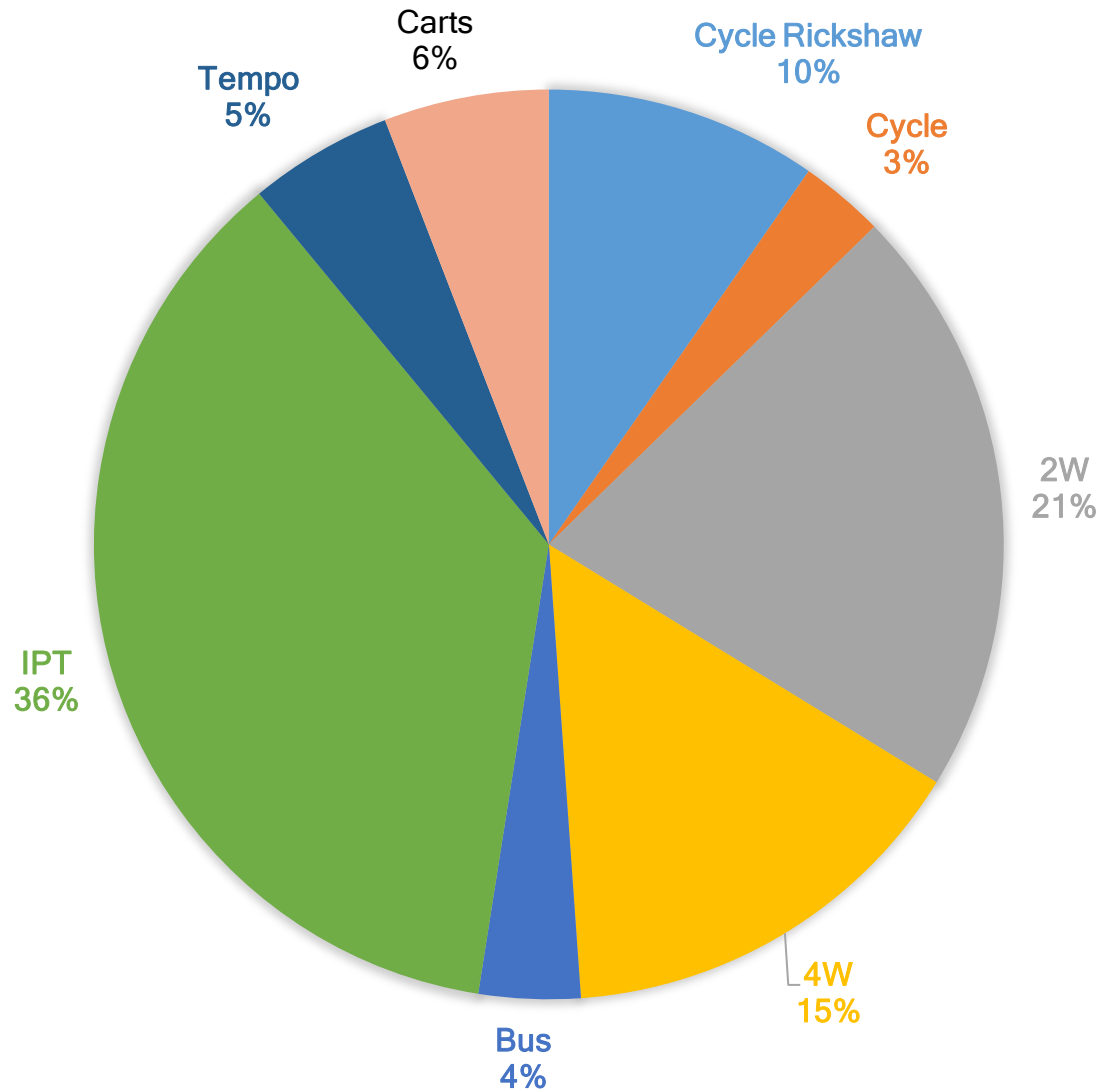
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Traffic Junction management through improved design

PAHARGANJ INTERSECTION

New Delhi

MODE SPLIT



PARKING ON ROAD



CREATE PERIL FOR PEDESTRIAN

REDUCE EFFECTIVE CARRYING CAPACITY OF LANES



NO REFUGE





MIX OF TRAFFIC

BLOCKED CROSSING



INCREASED RISK FOR PEDESTRIAN

LANE DISCIPLINE NOT ENFORCED



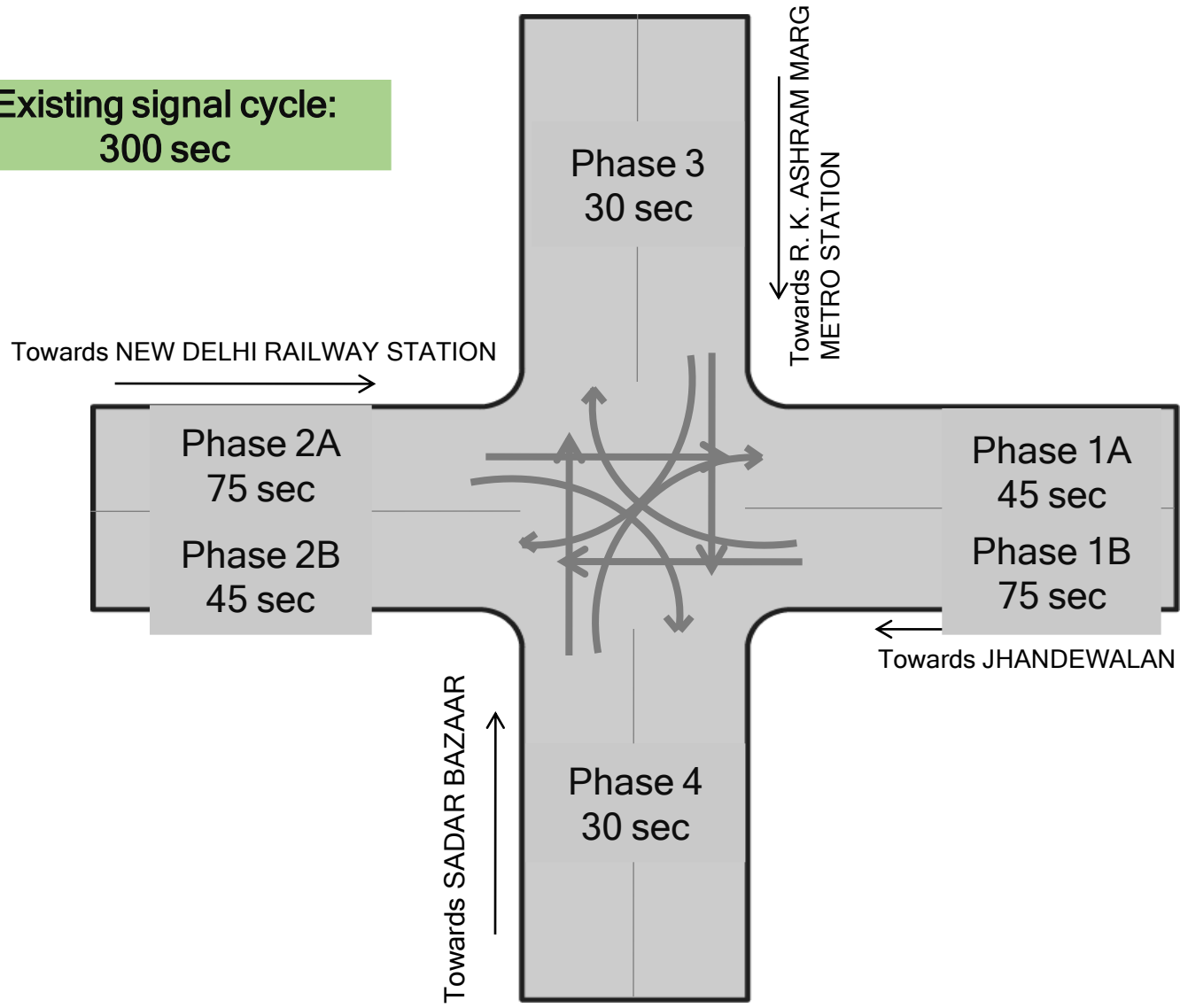


Existing

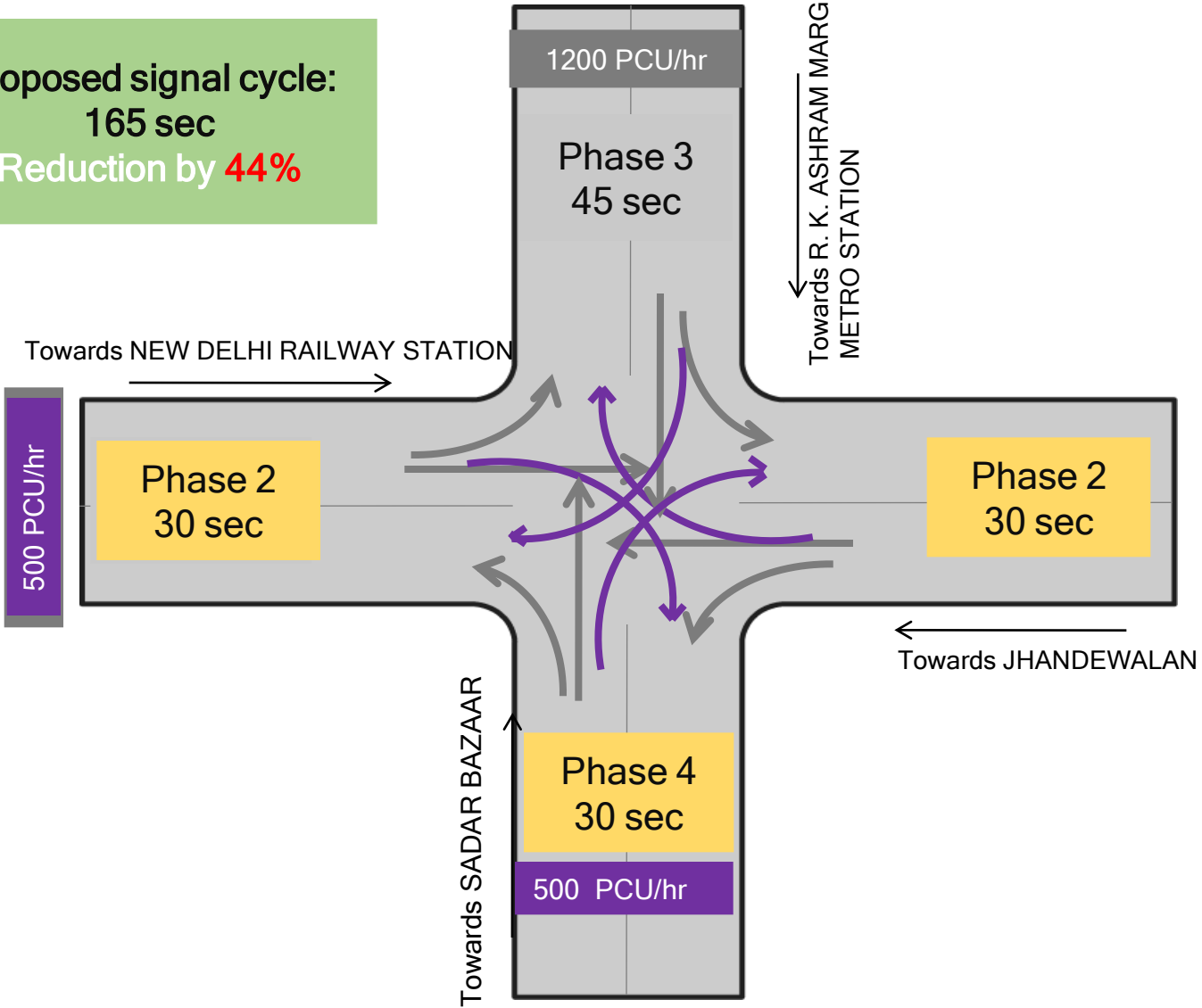


Proposed

Existing signal cycle:
300 sec



Proposed signal cycle:
165 sec
Reduction by 44%



MARKING OF JUNCTION



MARKING OF JUNCTION



MARKING OF JUNCTION



MARKING OF JUNCTION



MARKING & BARRICADING



MARKING OF JUNCTION



DISCUSSION WITH TRAFFIC POLICE



PLACEMENT OF BOLLARDS





Observations

UNSAFE PEDESTRIAN CROSSING



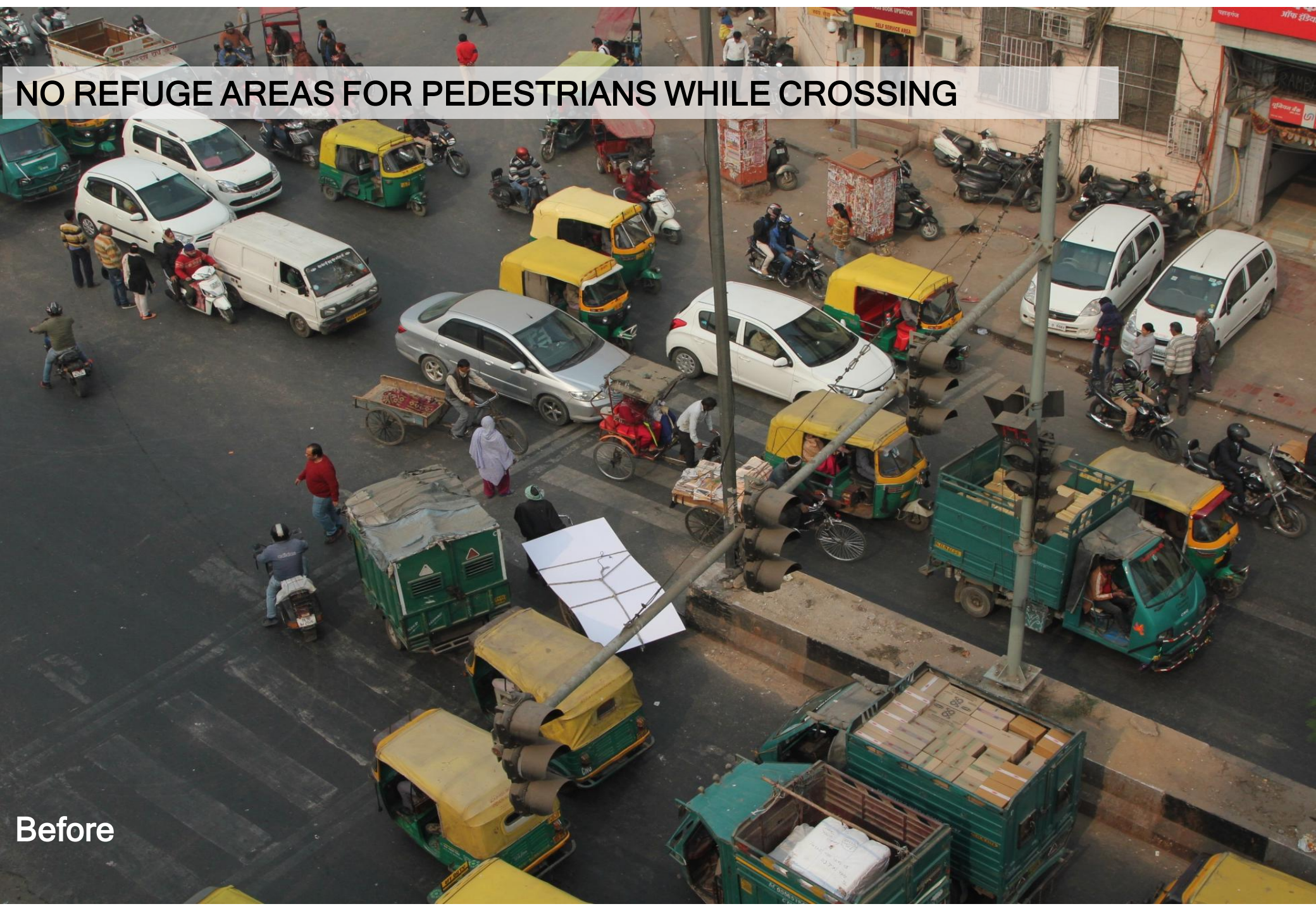
Before

PEDESTRIAN CROSSING SAFELY ON PEDESTRIAN MARKING



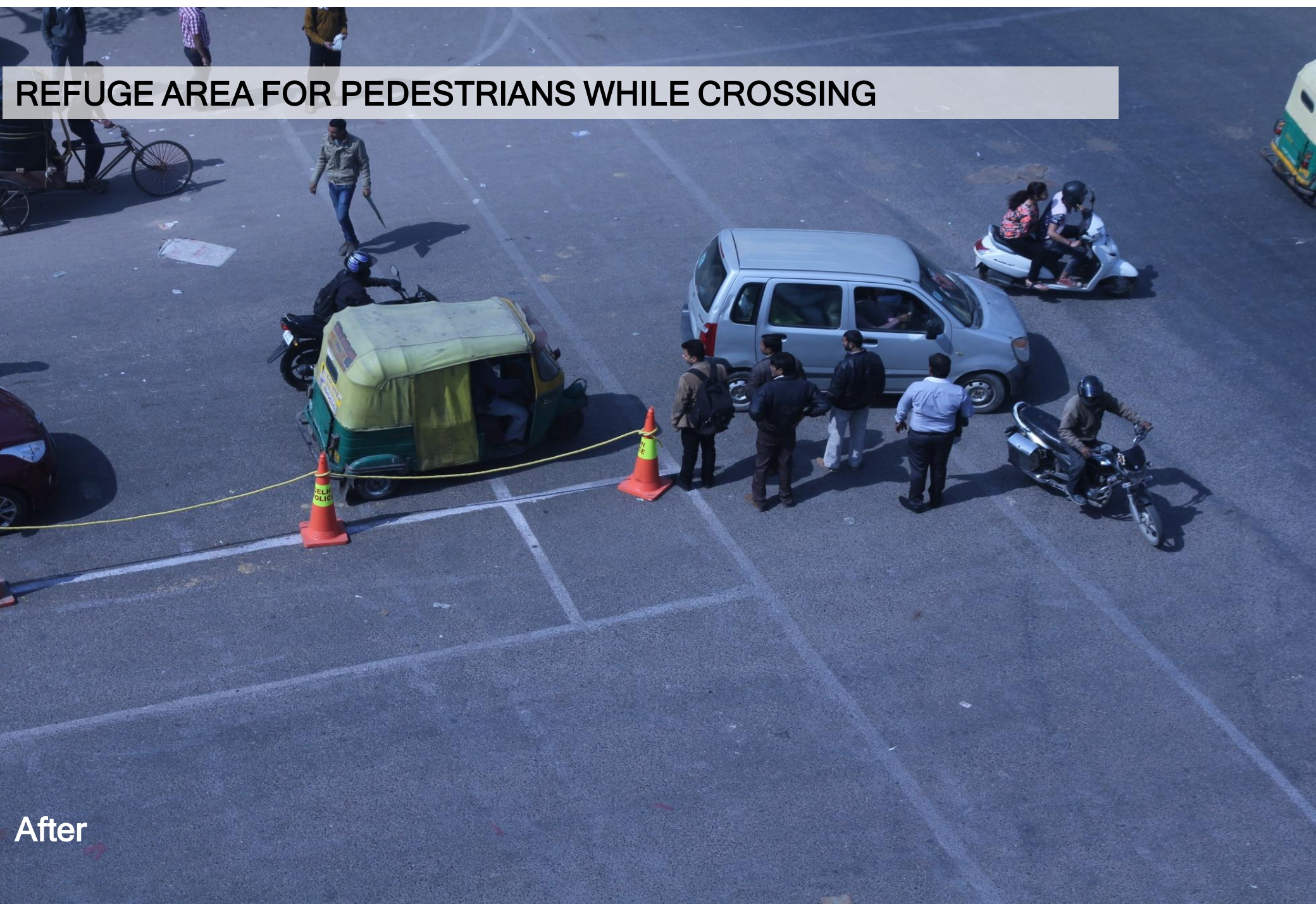
After

NO REFUGE AREAS FOR PEDESTRIANS WHILE CROSSING



Before

REFUGE AREA FOR PEDESTRIANS WHILE CROSSING



After

REFUGE AREA FOR PEDESTRIANS WHILE CROSSING



After

TRAFFIC TAIL DOES NOT GETS CLEARED CREATING CHAOS



Before

15 SEC YELLOW LIGHT PROVIDED FOR CLEARANCE OF TAIL



After

REDUCED TURNING SPEED WITH PROPER CURVATURE



After

REDUCED TURNING SPEED WITH PROPER CURVATURE



After



CYCLE RICKSHAWS & CYCLISTS BROUGHT TO FRONT FOR FAST CLEARANCE OF TRAFFIC

After



CYCLE RICKSHAWS & CYCLISTS BROUGHT TO FRONT FOR FAST CLEARANCE OF TRAFFIC

After

VEHICLES STOPPING AT STOP LINE



Final Outcome

VEHICLES STOPPING AT STOP LINE



Final Outcome

SPEED REDUCED BY 50%



Final Outcome

UNSUCCESSFUL TO REMOVE ENCROACHMENT FROM FOOTPATH



After



Before

NO CHANGE IN QUEUE LENGTH



After

SUMMARY

SUCCESSFUL

- Safe pedestrian crossing
- Safe turning of vehicles
- Removal of traffic tails
- Reduction in overall signal timing

UNSUCCESSFUL

- Reducing queue length
- Removal of encroachments (untimely MCD cooperation)
- Demarcating parking space for rickshaws



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