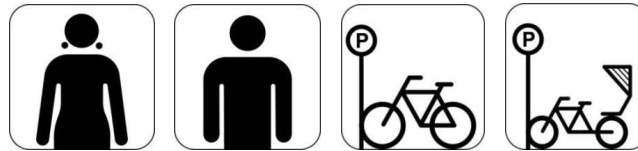


Consequences Of Favoring the MINORITY & Marginalizing the MAJORITY – in the “Indian Democracy”!!



Presented by: Romi Roy

Senior Urban Designer, [UTTIPEC](#) DDA Delhi

Spl. Invitee, Masterplan Review Committee under LG, Delhi

Member, High Court Special Task Force on Transportation under CS

Member, Technical Committee on Urban Drainage, GNCTD, Delhi

Spl. Invitee, LAP Monitoring Committee, MCD Delhi

Member, Sub-Committee on Sustainable Habitat, MoUD

Member of Committees, Indian Road Congress

28 Dec 2012



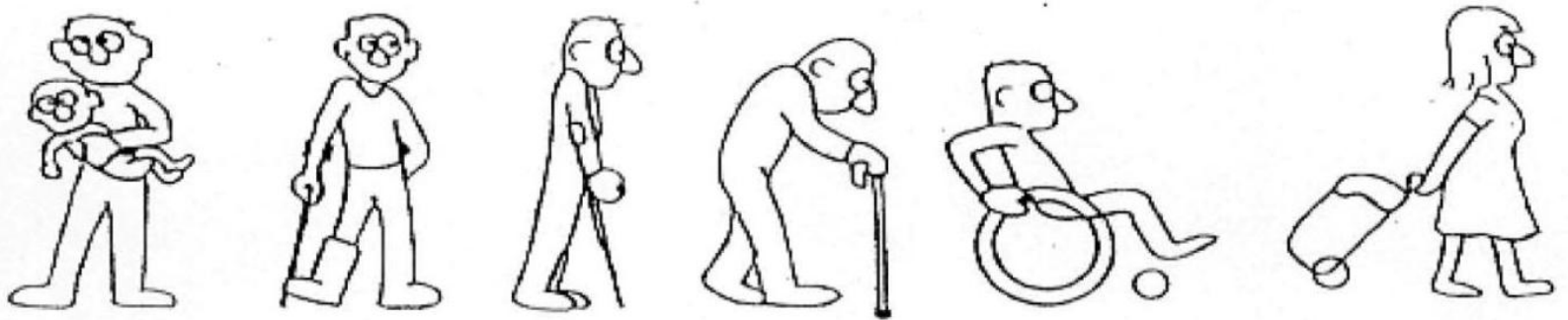
Who are the Roads for ??

Pedestrians + As Many as 20 Types of Vehicles



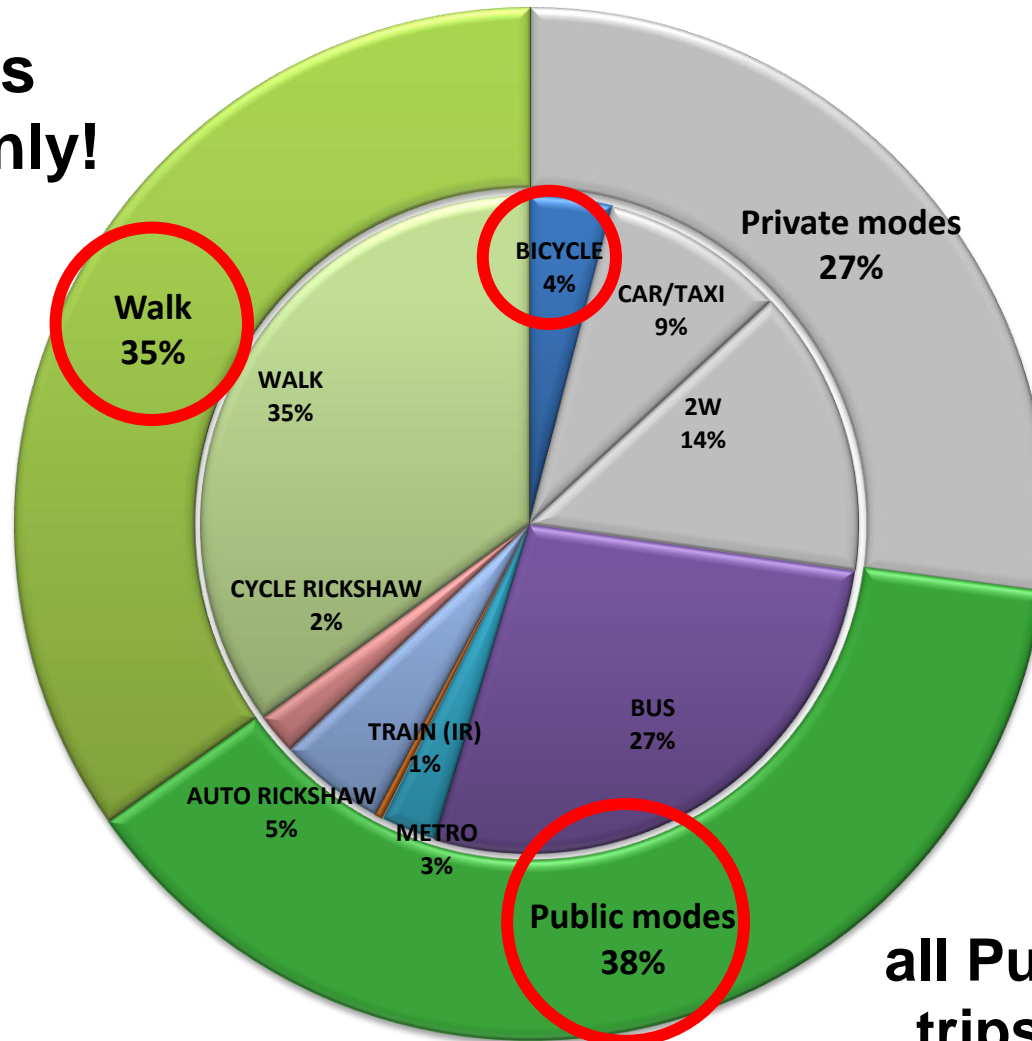
Who are the Roads for ??

More than 20 Types of Pedestrians too!



Delhi Modal Share

**35% of Trips
are Walk Only!**



**In addition,
all Public Transport
trips include walk!**



Delhi Modal Share

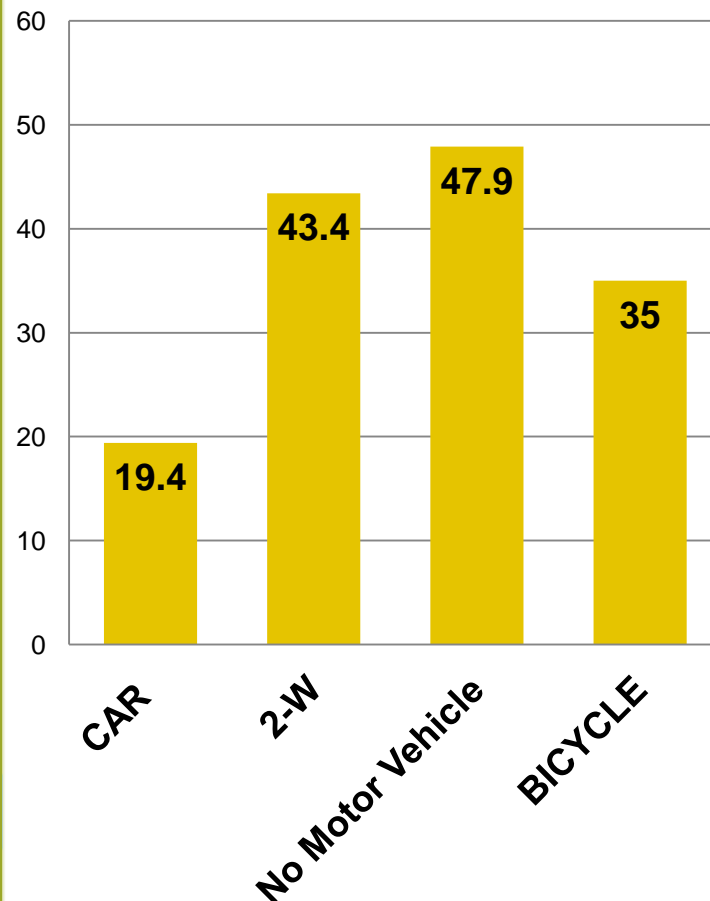
Only **23%** of the city's people use private vehicles (car/2-wheeler).

Yet almost all infrastructure investments in the city are made for this **MINORITY!**

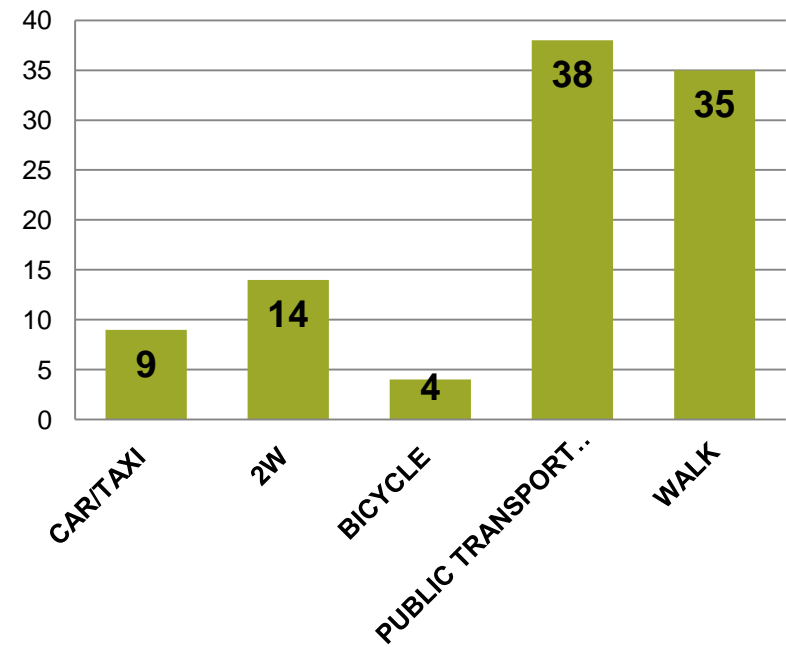


35% people of Delhi own CYCLES !! But only 4% of trips are by cycle – because its unsafe and dangerous to use them!

Private Vehicle **Ownership (%)**



Private Vehicle **Trips (%)**



Everyone is Walking!



ELITE 3rd FLOOR
Next level of fitness PH : 990002743







Engineering Education

LAD HOS

సరిగ్గా పాఠశాల & ఇంజనీరింగ్ సౌకర్యం

Plot No. 184, Madhura Road, Chidambaram, TN 605002
Plot No. 184, Madhura Road, Chidambaram, TN 605002
Cont: 99 88 88 88

Coming soon at: NH-5, Madhura Road





Who is Cycling?













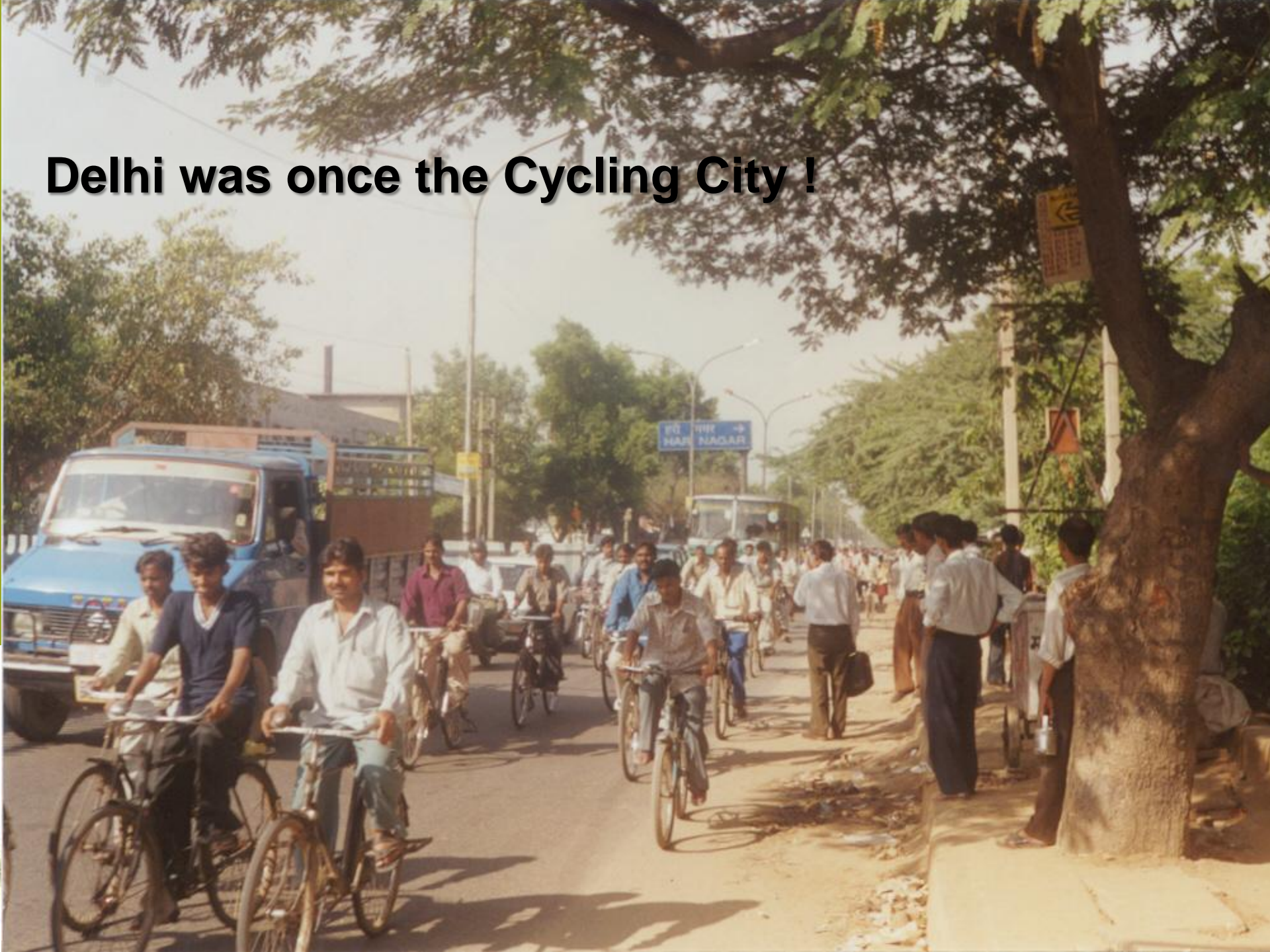
**Women prefer to travel in groups by Cycle – for Safety !!
Its also a Free mode. Gives them independence.**

Where are they on the road?





Delhi was once the Cycling City !



Soon cyclists were marginalized due to growing traffic...



Now they are “invisible” so they have no rights to road space and are at the mercy of motor vehicles!!



**Cycle tracks are sometimes constructed, but wrongly so!!
Therefore they land up being “encroached” by motor vehicles
while cycles/ rickshaws remain on road!!**



Samarthyam (an NGO) conducted Audit of one such road.



Police

MCD Engineers

Samarthyam

Police said they were **not aware** that the track constructed here was for Cycles & Rickshaws... !!

MCD engineers said they were **not aware** of the UTTIPEC or IRC design standards for footpaths & cycle tracks....!!



**Cycle tracks/ footpaths
are supposed to be 4-inch
high...**

**11-inch high were
constructed here.**

For whom ??





How can a rickshaw get on an 11-inch high cycle track, even with a ramp ???

They can't!! Therefore....





**....the Track meant for Cycles/rickshaws
is being used for Car-parking comfortably!!**



The physically disabled person with us could barely be pushed up on the footpath/ cycle track. Slope here is 1:2 !!

Message we are giving to people through our Road Design:

- If you are a car user, the Road is for you. You get **first priority** to do whatever you like.
- If you are a Pedestrian, you are “**At you Own Risk**”. If possible, install eyes at the back of your head.
- If you are running a cycle-rickshaw, you are **illegal** and there is no space for you on the road. Be thankful we are not throwing you out.
- If you are on a cycle, again, “**At your Own Risk**”.
- If you are old or even slightly physically challenged, **STAY AT HOME!**

Some good examples.... The BRT corridor....



Some good examples.... The BRT corridor....

Planned/ designed respectable spaces for pedestrians, cyclists, auto-parking as well as motor-vehicles !!

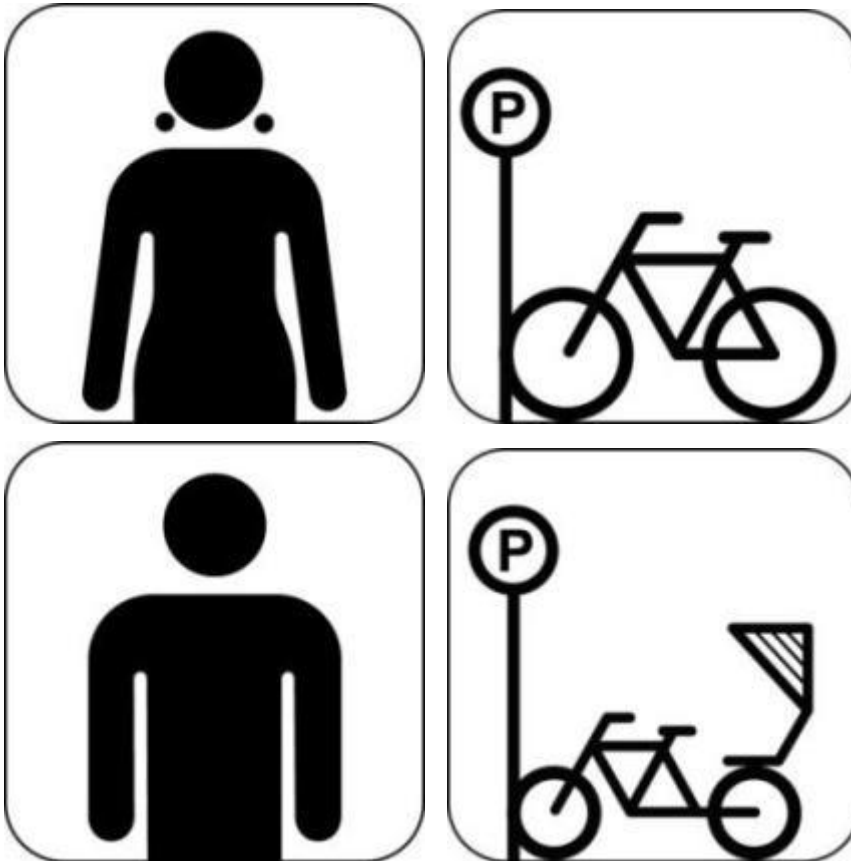


Some good examples.... The BRT corridor....

A simple table-top crossing lets a cyclist move freely across driveway, without hampering the car's movement!!



Policy recommendation 1:
**Promote Non-Motorized Transport &
Pedestrian Safety.**

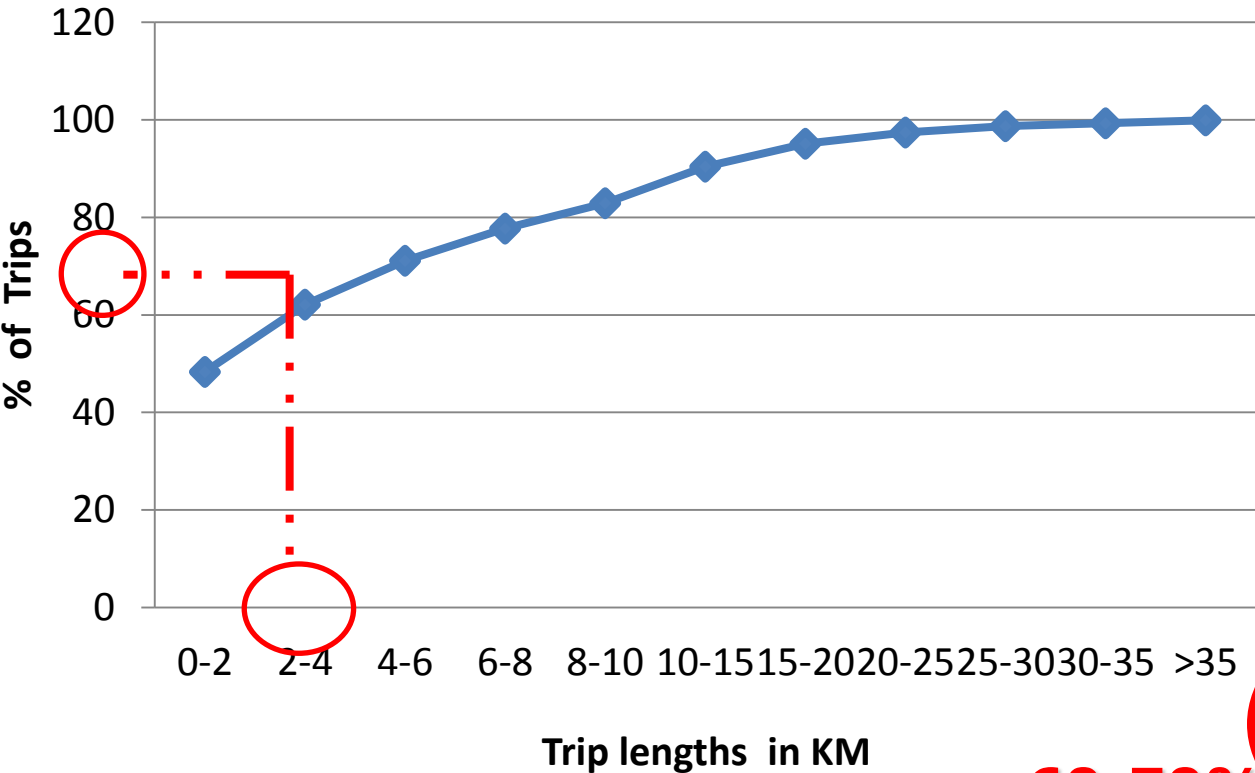


Why ?



• **60% of Trips in Delhi are below 4 KMs.**

Cycles, Cycle-rickshaws & Walking
are the ideal modes for short 1-4 km Trips.

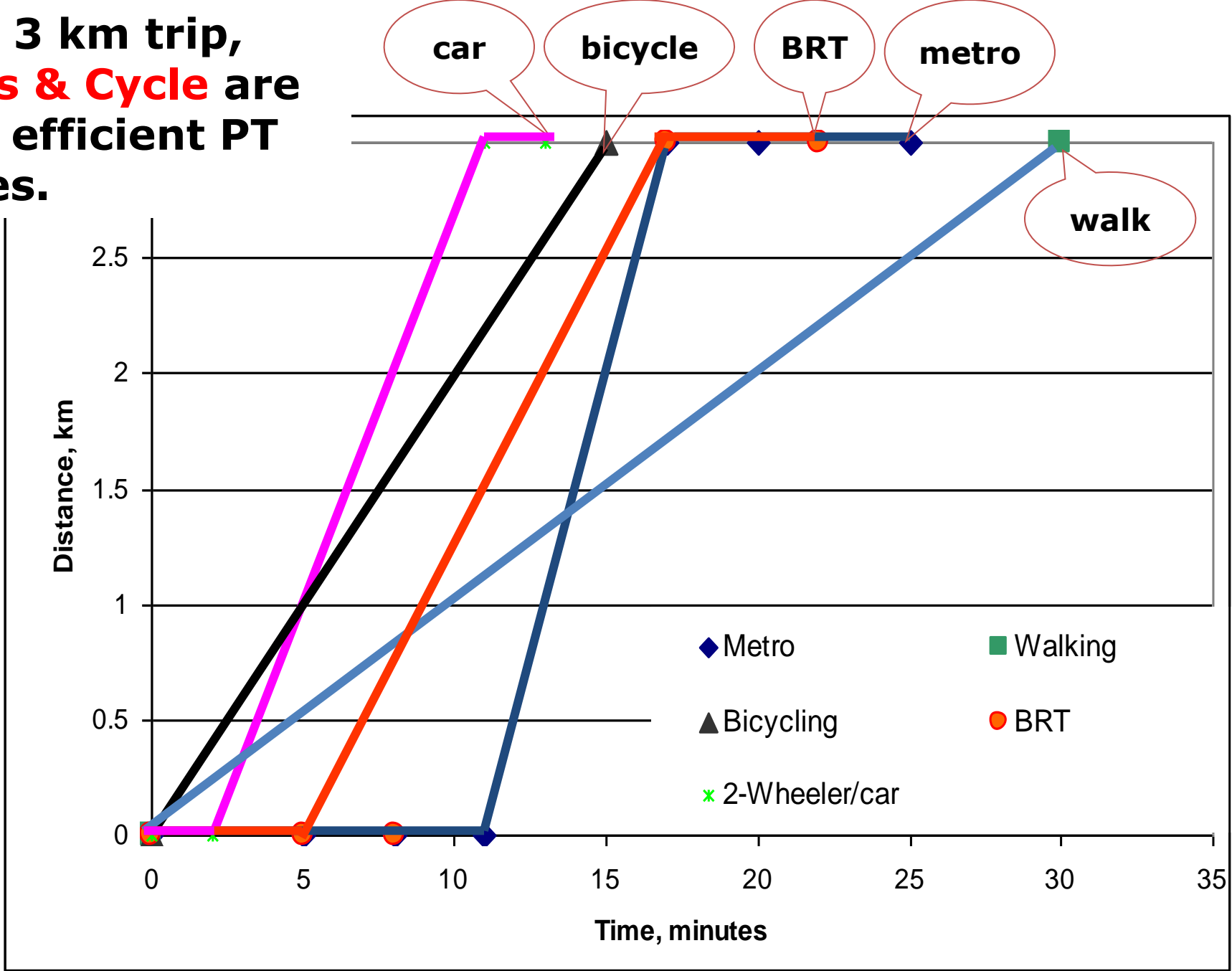


Average Trip Lengths
by Mode: Delhi

Mode	Average Trip Length (KM)
•Car	10.5
•2W	8.7
•Auto Rickshaw	4.7
•Bus	8.8
•Metro	13.8
•Train (IR)	20.2
•Bicycle	4
•Cycle Rickshaw	1.7
•Walk	1.1

60-70%
trips

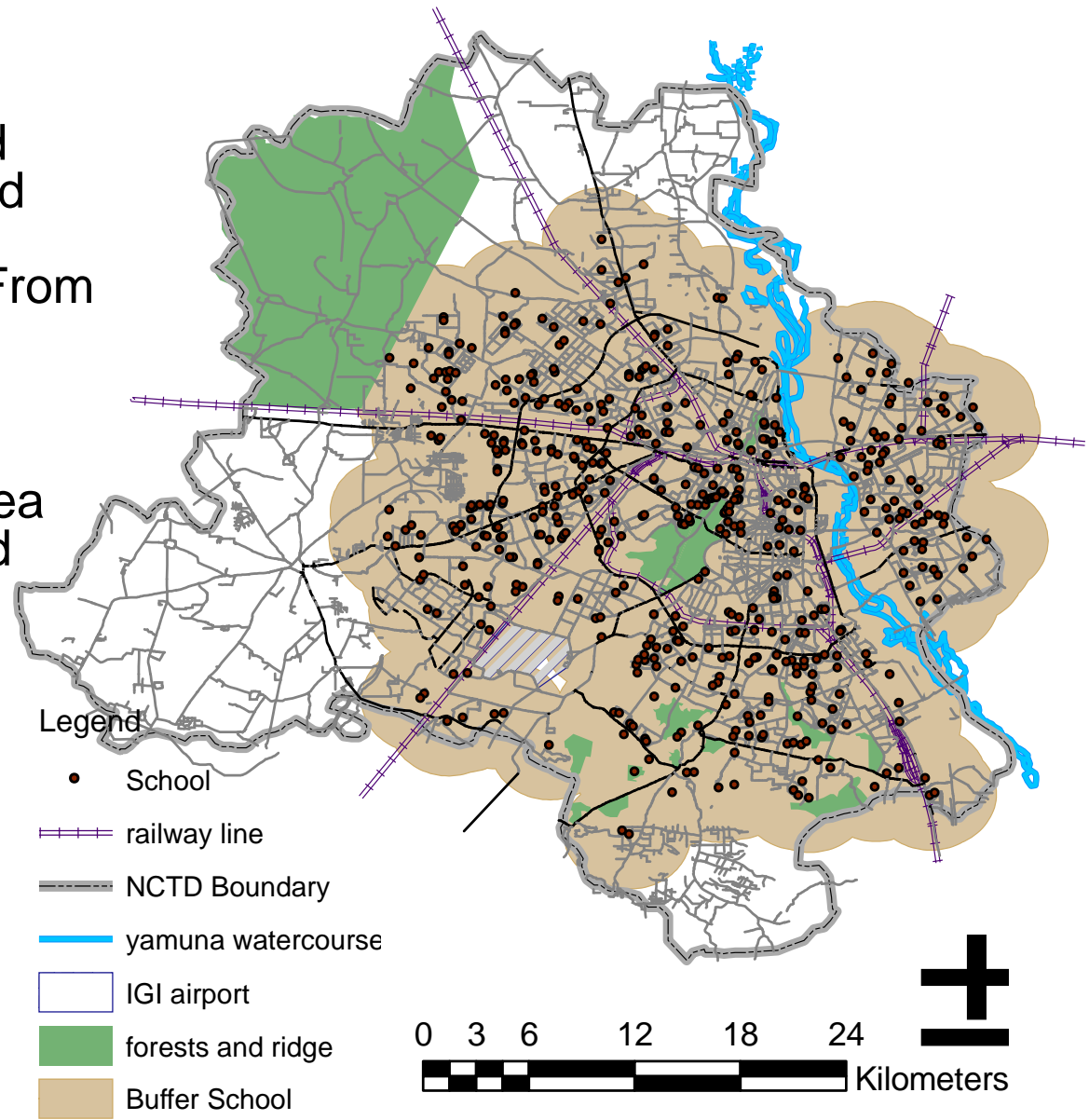
For a 3 km trip,
Buses & Cycle are
most efficient PT
modes.



NMT inclusive Planning – Where do you need it?

Schools

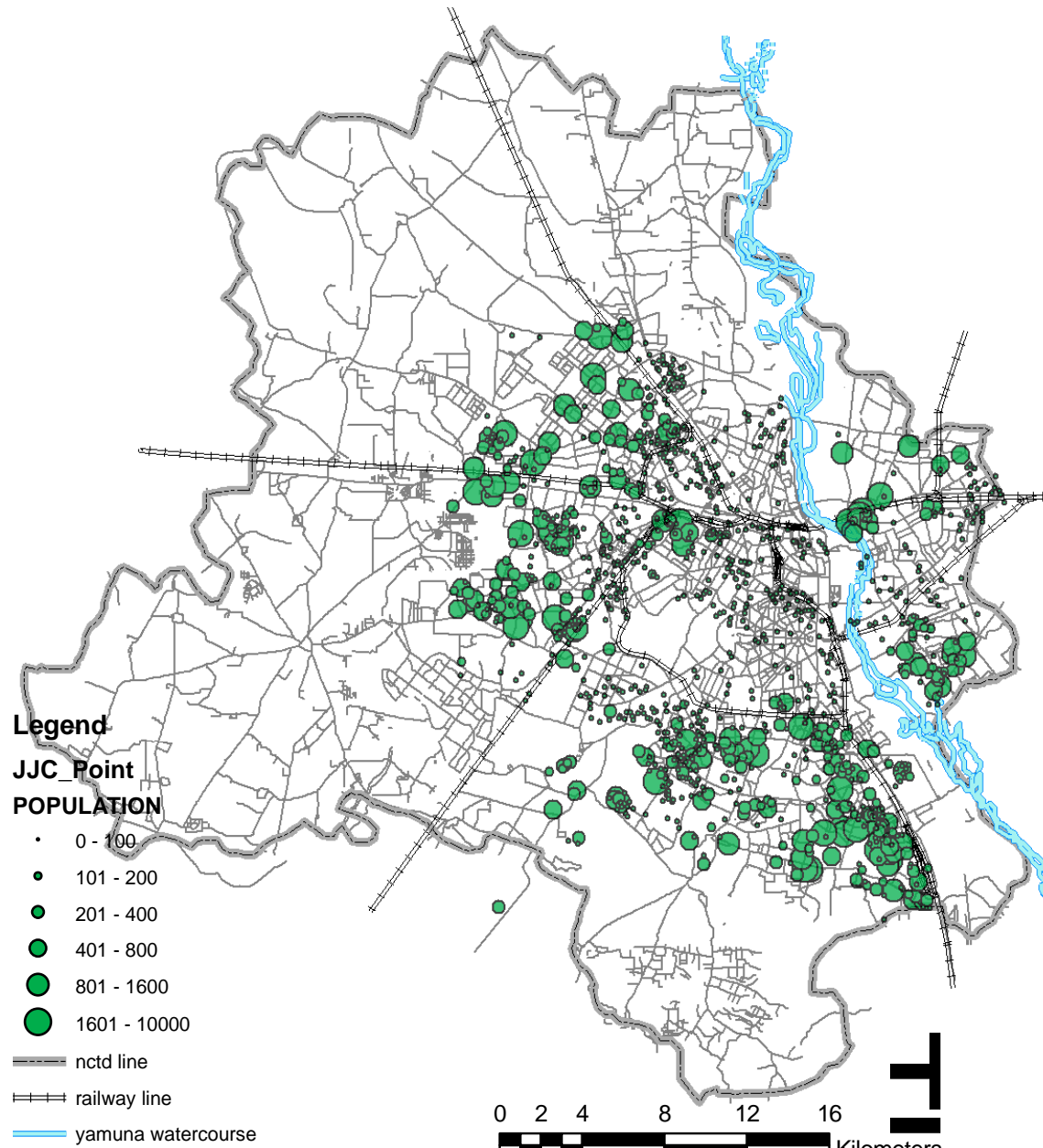
- 3 km buffer around schools of Sec. and Sr. Sec schools. (Schools marked From . Eicher City Map, Edition 2)
- The Catchment area of education based trips.



Source: TRIPP/IIT Delhi

Trips origin: slums

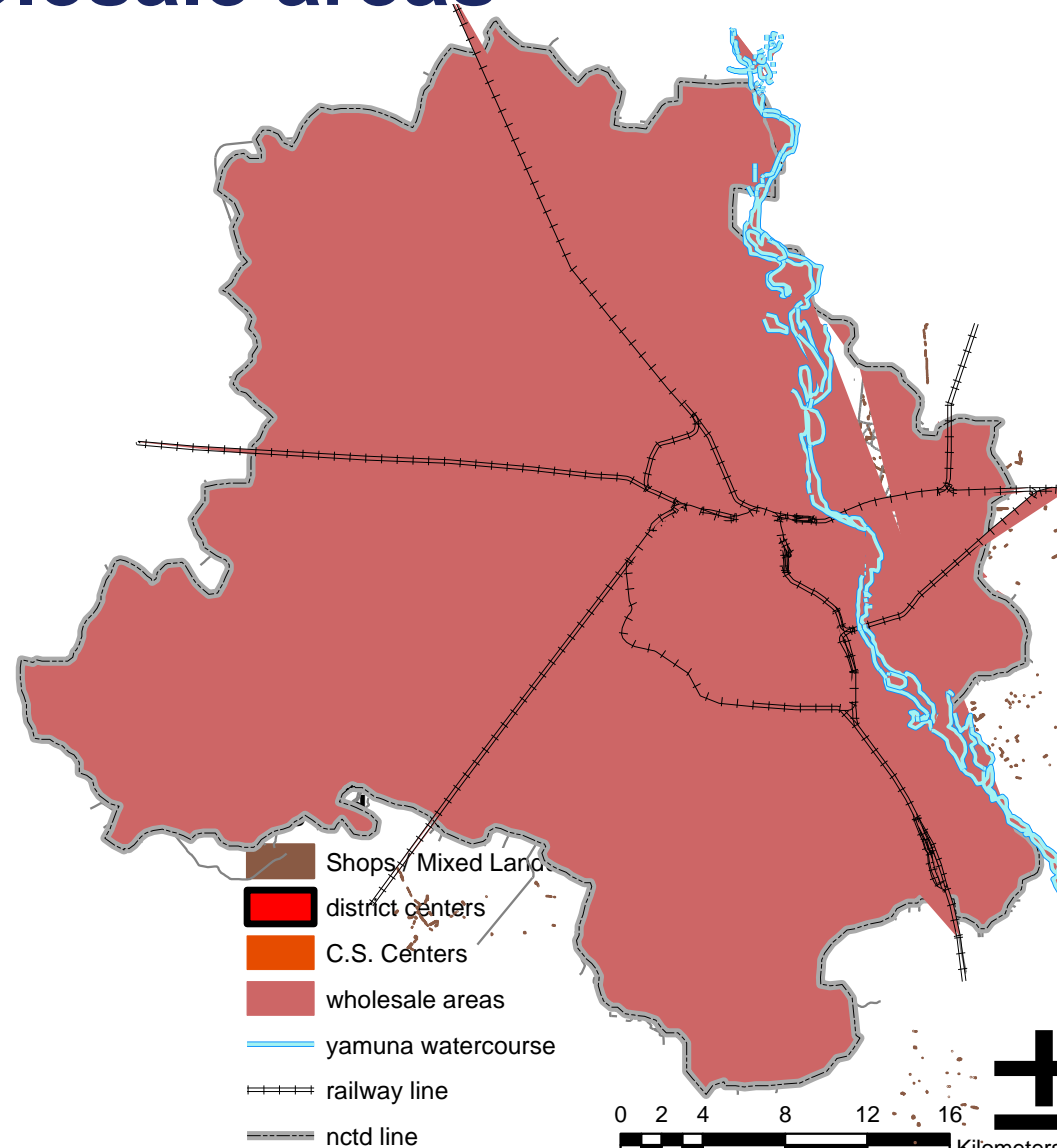
- Distributions of JJ Clusters in Delhi
- There is direct relation between the density of these poor households and the number of cycle trips origin.



Source: TRIPP/IIT Delhi

NMT trips destination: shops, MLU, CSC, DC, Wholesale areas

- Major Commercial Centres, District Centres, -18%
- Shops / Mixed Land Use and Wholesale areas - 23%
- These are spread all over urban area as major destination for poor urban workers using cycles for upto 20km per day



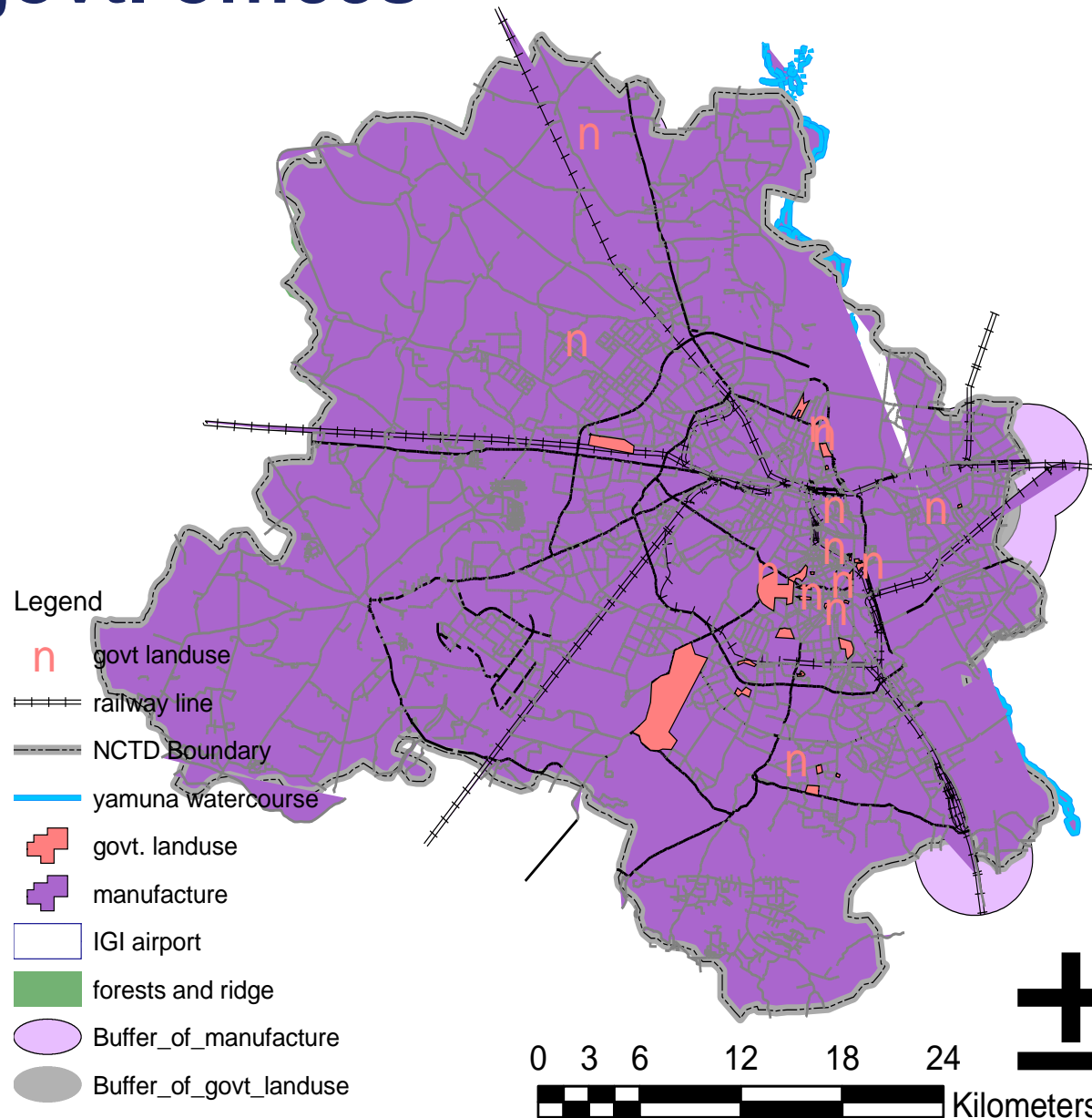
Source:
/TRIPP/IIT Delhi

Figure 4.17 Shows locations of major Commercial Centres, District Centres, Shops / Mixed Land Use and Wholesale areas

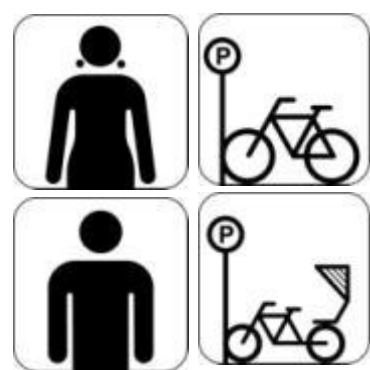


NMT destination: manufacturing areas and govt. offices

- 21% of cycle work- trips have factory destination and travel up to 10 km in a day
- about 35% have offices (Govt. and Pvt.) as their destination and travelling upto 10 km per day



Source: TRIPP/IIT Delhi



Walking & Cycle-rickshaws are the most important Feeders to Metro/ BRT Stations.

Mode used to Reach Metro Stations:

MODE	FROM ORIGIN TO METRO	FROM METRO TO DESTINATION
Walk	61%	78%
Cycle Rickshaw	12%	9%
Two Wheeler	11%	--
Auto	8%	8%
Bus	5%	5%
Car/Taxi	3%	1%

Source: RITES Transport Demand Forecast Study: May 2008

Yet NO Metro Station provides authorized cycle-rickshaw parking !!

Policy Recommendation 2:

- **Improve Supply & Service by IPT.**
- **Provide authorized Parking.**



- A Car serves one person a day & occupies minimum 3 parking spaces throughout the city.
- An IPT mode occupies only **one** parking space, and serves **multiple** people throughout the day.



- 1. Provide More IPT Choices**
- 2. Provide organized IPT Parking at all Metro Stations & along all Roads.**



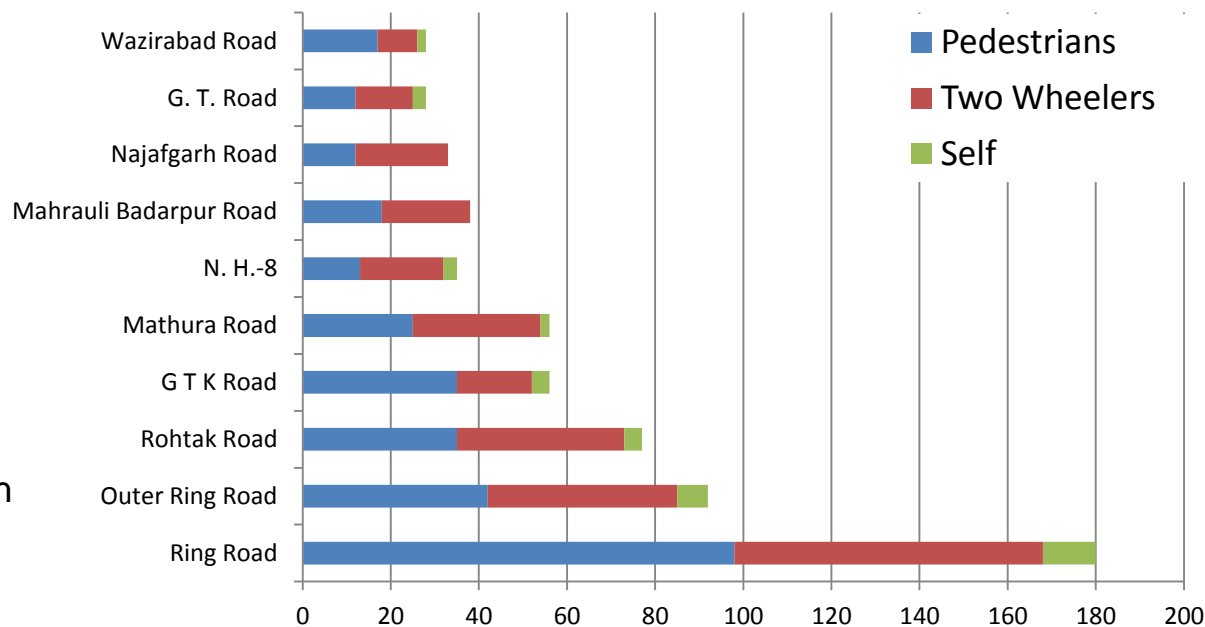
Road Safety is Low.

The reasons for all accidents are:

1. **Signal free high speed corridors.**
2. **Insufficient/ No pedestrian Crossing facilities.**
3. Central verge without grills.
4. No speed breakers/ rumble strips on long stretches.
5. **Absence of dedicated lanes for slow moving vehicles.**
6. Heavy volume of traffic.
7. Glaring during night etc.



- There are more than 2100 accidents occurred during 2010.
- **The maximum casualty in the fatal accidents are pedestrians, cyclists & 2 wheelers.**
- The maximum accidents have occurred during the lean hours both in the morning & night.



Fatal Accidents in 2010

How are Car-oriented Infrastructure Impacting us?

- Making motor vehicle movement smoother for a **few years**, before jams take over.
- Making it impossible/ very difficult to **cross roads** on foot!
- Making cycles & cycle-rickshaws move **contra-flow**, thus endangering their lives.
- Making it impossible/ difficult to **interchange** between different bus routes near junctions.
- Creating environments suitable for **eve-teasing** and heinous crimes like **Rape**!
- In long run, increased car use leads to **Congestion again**, while use of all other modes has been made excruciatingly difficult or impossible!

How to cross this road ??

Where to walk or cycle ??

What happens to Women here after 6 pm ?



Dhaulan Kuan Signal-free Cloverleaf (जलेबी)

All major Rape cases in the recent past happen on these large roads built to facilitate fast car movement.....



.... Creating vast inhumane, people-less, un-watched, places – which are rape & eve-teasing havens!!



AIIMS flyover

.... Creating vast inhumane, people-less, un-watched, places – which are rape & eve-teasing havens!!



Dwarka

Walking Distances are increased by >5 times after जलेबी construction at AIIMS!.

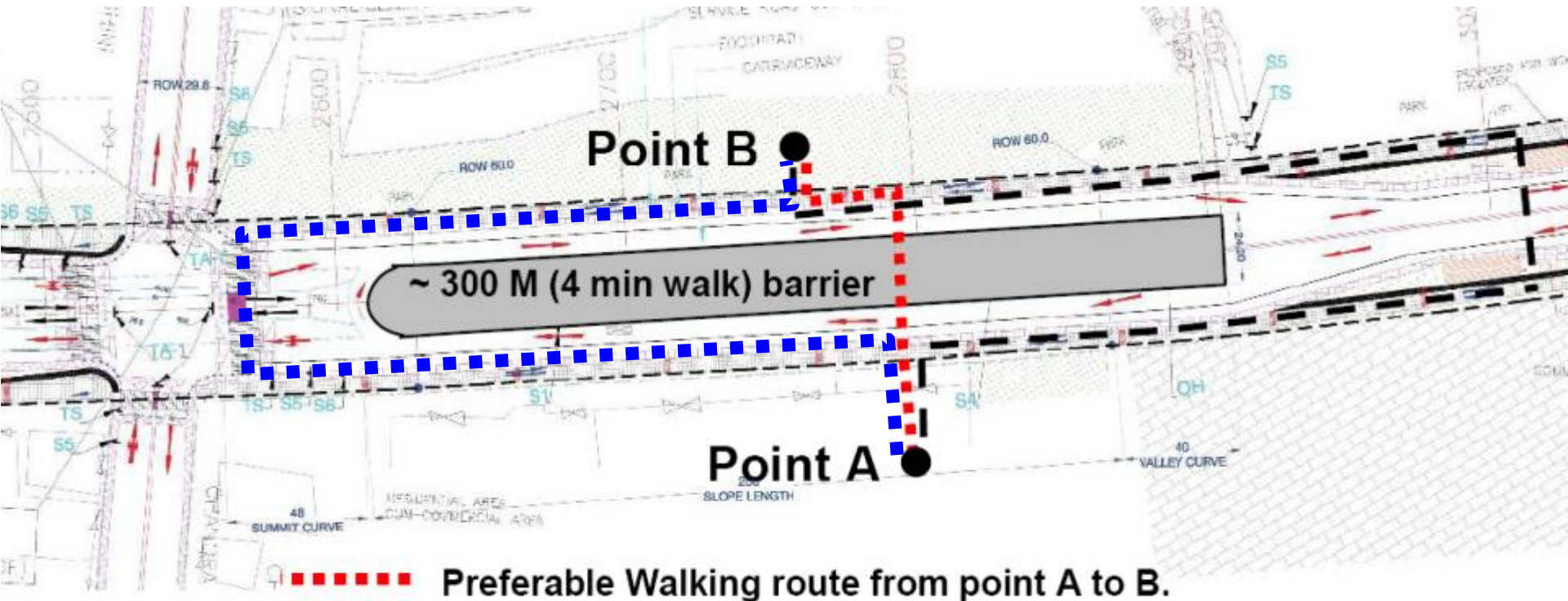


After construction of the Clover Leaf Flyover, the **walking distance** from AIIMS exit to Dilli Haat has increased by **over 5 times**.

No safe crossings available, so people risk their lives crossing the street at the most convenient locations.

Walking Distances are increased by >5 times wherever a flyover is constructed.

People can't cross the street between neighborhoods!!



All major flyovers have failed, or led to MORE congestion.

Six flyovers on 8km stretch but it takes 40 mins to cut through clutter

It's bumper-to-bumper traffic between Modi Mill and IIT on Outer Ring Road, a reinforcement of the fact that flyovers are failing to ease congestion



Dipak Kumar Dash | TNN

The long-held view that a series of flyovers is the answer to Delhi's traffic woes is under severe attack.

Sample this: Six flyovers between Modi Mill and IIT on Outer Ring Road were seen as the permanent solution to the unending snarls on the stretch. With the opening of each flyover, government promised a seamless movement on the road but driving on the stretch has become a painful crawl with vehicles jostling to get ahead. When all six flyovers were operational in 2005, the travel time between Modi Mill and IIT was 20-25 minutes but now the commute during peak hours is an excruciating 40 minutes. Commuters encounter a similar bottleneck at Ashram Crossing that was frontpaged by TOI on Wednesday. A review of major clog points on Outer Ring Road stretch:

1 Kalkaji Temple to Nehru Place Flyover

IIT-bound traffic on Outer Ring Road starts screeching as soon as it gets off the Kalkaji flyover. Buses and RTVs, which make unscheduled halts on the main road to pick up passengers, slow down the traffic. Vehicles heading towards Lady Sri Ram College pile up at Nehru Place crossing below the flyover and vehicles spill over on to the main carriageway blocking the road. However, the traffic headed for IIT gets a brief reprieve



JAM SESSION: A high number of vehicles clogging one spot at one point of time and decreasing average road space are seen as the reasons for frequent snarls

to be fined or reprimanded. "Commuters are not well informed and the radius of the right turn towards GK-II is not desirable," Baluja said.

6 Soami Nagar to Panchsheel

It's not a major bottleneck compared to other clog points on the stretch but traffic is slow.

7 Panchsheel Enclave to IIT flyover

The ongoing Metro work near the Panchsheel Enclave flyover is resulting in snarls on the stretch.

Why are flyovers failing

Traffic police officials attribute the regular jams to high number of vehicles clogging one spot at one point of time and decreasing average road space. Transport experts also blame poor traffic engineering and transport planning and inappropriate vehicular growth projections on different stretches. The road length per 1,000 vehicles in Delhi has reduced by nearly half between 1990-91 and 2005-06 from 12 km per 1000 vehicle to six km per 1,000 vehicles. And the result is congestion.

Experts have also floated a theory of 'inducement'. Baluja said: "A substantial number of vehicles which would not have used this stretch to head for Gurgaon have started taking this stretch because of the lure of flyovers. But the road can't take the load now. Traffic volume study has to be an annual practice and the

All major flyovers have failed, or led to MORE congestion.

Delhi's flyovers can't cope with rising traffic

Breaching Capacity Well Before Schedule

Dipak Kumar Dash | TNN

New Delhi: You probably sensed this already from your daily commute, but here's confirmation. The city's traffic may already have grown to a point where new flyovers no longer help in clearing the congestion.

In the first tacit admission of the approaching traffic disaster in Delhi, the Public Works Department is now preparing a new decongestion plan for the Ashram crossing, barely eight years after a flyover was built as a 'long-term' solution to the snarls at this intersection.

Intersection improvements have been carried out at flyover sites in the past. But these were flyovers built decades ago, such as the Moolchand crossing. The Ashram Chowk crisis has come as an indicator of how a critical congestion scare is looming large over the capital. Transport experts say Delhi is well on its way to becoming the next

Close To Gridlock



► Since 1972, traffic has increased by a whopping **21 times** while road space has risen just **3.7 times**

► **44%** of stretches are carrying more vehicles than they were designed for, **19%** more are on verge of exceeding capacity

► Peak hour speed **22 kmph**; off-peak speed **26 kmph**

► **Ring Road**, designed for 75,000 vehicles a day, has 160,000 vehicles. Will hit **400,000** by 2011

Flyover fails, South Ex choked

Thrown open to traffic in August 2002, the Andrews Ganj flyover today can't deal with rush-hour traffic, resulting in long snarls

Megha Suri | TNN

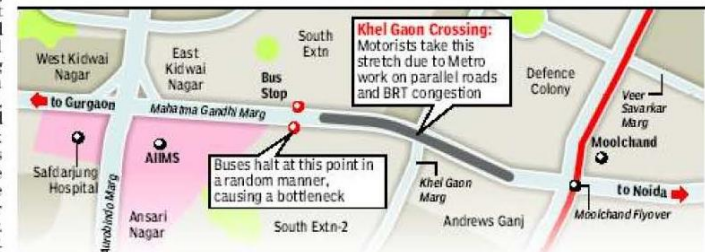
New Delhi: The Andrews Ganj flyover, along with a subway at South Extension, was touted as the one point solution to all the traffic woes of South Ring Road when it was thrown open for traffic in August 2002. Then, just about 5,000 vehicles used the intersection during peak hours daily. Barely seven years later, estimates suggest that the number of vehicles using the crossing have increased to over 40,000 during rush hour. Presumably the two-and-a-half-laned flyover is unable to deal with the rush of traffic and the jams witnessed on the main Ring Road are a classic case of bad planning, which everyone can see.

A drive down this stretch of Ring Road, between busy Moolchand and AIIMS crossings, can be quite a nightmare during the morning and evening rush hour. Crossing the flyover itself can take anything between 25-40 minutes, with no apparent reason for the jams. The traffic police say that the width of the flyover is insufficient to cater to the rush of traffic getting onto it. This causes a huge tailback on both sides, choking South Extension and Moolchand crossings.

"In the past few years, I have only seen the jams at South Extension becoming more acute. Flyovers were constructed at Andrews Ganj and AIIMS crossings but the problem has returned. It takes me over half hour to cross the stretch everyday," said Prabhat Chaudhary, a resident of Amar Colony.

Another regular commuter Neelima Singhal added: "The flyover is prone to accidents. Every other day either some

No Smooth Passage On This Stretch



BUMPER TO BUMPER: Over 40,000 vehicles cross the road during peak hours

The narrow flyover can't cater to the traffic rush and this causes a huge tailback on both sides, choking South Ex and Moolchand

tion is causing jams on Aurbindo Marg and the BRT corridor has choked JB Tito Marg, the middle road — Khelgaon Marg — seems to have become the preferred route for traffic bound for/ from south Delhi and Gurgaon. And for this, the route between Moolchand and AIIMS forms an important interchange with the

yond the South Extension market. To aggravate matters, a bus stop at South Extension where hundreds of buses stop, causes road space to further get constricted. The segregation of traffic at the foot of the flyover is another reason for the jams.

Traffic police say they are aware of the problem, but the main cause is increased traf-

Congestion is good!!

It makes people shift to BRT or other modes like cycles!!



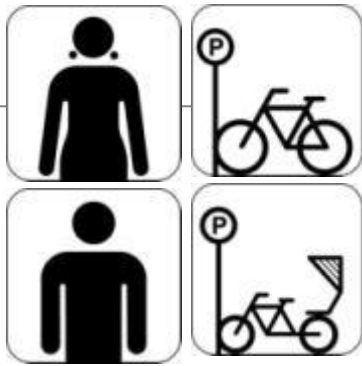
Jakarta



Delhi



Delhi



What to Do?

1. **Follow Road Standards & Guidelines.
(IRC+ UTTIPEC)**
2. **Plan a Network for cyclists, rickshaws & pedestrians, not pieces.**
3. **Technically Design, Implement & Supervise projects.**
4. **Regular Audit and Maintenance.**

PROCESS:

- Policy
- Guidelines

UTTIPEC Mandate



Street Design Guidelines

“...for Equitable Distribution of Road Space” - NUTP



© UTTIPEC, Delhi Development Authority, New Delhi
Nov 2010

Annexure – II: References

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Abbreviations:

NMT : Non Motorized Transport
NMV : Non Motorized Vehicle
MV : Motorized Vehicles
MRTS : Mass Rapid Transport System
BRTS : Bus Rapid Transit System
IRC : Indian Road Congress

DDA : Delhi Development Authority
MOUD : Ministry of Urban Development
ICE: Interface for Cycling Expertise
TRIPP: Transport Research and Injury Prevention Programme
GHG: Green House Gas

Note: The term “Kerb” used in the document could also be referred to as “Curb”.

Annexure – III: Working Group Members

Members of WORKING GROUP I-A (DEVELOPMENT OF PLANNING GUIDELINES)

S.N List of officers

o.

1.	Sh. Sanjiv Sahai	MD (DIMTS), Chairman
2.	Sh. Ashok Kumar	Commr.(Plg.) DDA, Co-Chairman
3.	Sh. J.B. Kshirsagar	Chief Planner- Town & Country Planning Organization (TCPO),Member.
4.	Sh. V.K. Bugga	Chief Town Planner, MCD, Member
5.	Sh. R P Indoria	Secretary General, Indian Roads Congress (IRC), Member
6.	Sh. S. Gangopadhaya	Head (T&T)- Central Road Research Institute (CRRI), Member
7.	Sh. Kumar Keshav	Director (Projects)- Delhi Metro Rail Corporation (DMRC), Member
8.	Dr. Ashok Kumar Saroha	Director (Urban Transport), MOUD, Member
9.	Representative	Ministry of Surface Transport (GOI), Member
10.	Sh. R.S. Minhas	Sr. Manager (Tr.) – Delhi Transport Corporation (DTC), Member
11.	Sh.Rakesh Mishra	Engineer – in – Chief, PWD, Member
12.	Sh. Ravi Dass	Engineer – in – Chief, MCD, Member
13.	Sh. V.L. Patankar	Member (Technical), National Highway Authority of India, (NHAI)Member
14.	Sh. Vijay Anand	Chief Engineer (Const.) – Northern Railway, Member
15.	Sh. Satyendra Garg	Jt. Commr. Of Police (Traffic)-GNCTD, Member
16.	Sh. Rohit Baluja	President – Institute of Road Training Education (IRTE), Member
17.	Smt. Sunita Narain	Director – Centre for Science and Environment (CSE), Member
18.	Sh. S.S. Mathur	Ex. Secretary General ,Nominee of Secretary – ITPI, Member
19.	Sh. B.S. Diwan	Secretary – Institute of Urban Transport Member (IUT)
20.	Sh. Ramesh Raina	Chief Engineer – New Delhi Municipal Council (NDMC), For Engineer in Chief, Member
21.	Sh.N.R.Aravind	Deputy Director (Plg) UTTIPEC, convener

Annexure – III: Working Group Members

Planning for Pedestrians – Design Guidelines: Sub Group Members:

1. Sh Sharad Varshney, Addl. (Dir.) Technical, IRC (Nominated)
2. Sh. R.Shri Niwas Associate Town & Country Planner (TCPO) (Nominated)
3. Sh. P.S. Uttarwar, Dir.(Plg.)UC, DDA
4. Ms M.Z. Bawa, Director(Plg.) MPPR,DDA
5. Sh. Simon Bishop, Consultant, DIMTS
6. Sh. Pradeep Sachdeva, Architect, Consultant
7. Ms. Anjlee Aggarwal, Executive Director, Samarthyam
8. Ms. Romi Roy, Sr. Consultant, UTTIPEC
9. Sh. Ashok Bhattacharjee, Director (Plg) UTTIPEC
10. Sh. N. R. Aravind, Deputy Director (Plg.) UTTIPEC, Convener
10. Nominated members of MCD, PWD, NDMC, Traffic Police

Special Invitees : (Contributors)

1. Sh. B. K. Jain, A.C. (Plg.) TC&B, UTTIPEC DDA
2. Sh. Ashok Bhattacharjee, Director (Plg.) UTTIPEC
3. Sh. Pramod Behera, Jt. Dir. (Plg.) UTTIPEC
4. Sh. Sabyasacchi Das, Dir (GIS & Website)
5. Sh. Sandeep Gandhi, SG Architects, Consultant
6. Sh. Akash Hingorani, Oasis Designs, Consultant
7. Ms. Anumita Roy Choudhary, Associate Director, CSE
8. Dr. Anvita Arora, Transport Planner

Others:

1. Sh. A.K. Saini, A.D.(Plg.)UTTIIPEC
2. Sh. Jeevan Babu, Planning Assistant, UTTIPEC

- Policy
- Guidelines

A set of 10 non-negotiable Street Design Components as well as additional guidelines:

Design Toolkit: Mandatory Components

1. Components of the Pedestrian only Zone (including Kerb Radii and Slip Roads)
2. Frontage Zone or “Dead Width”
3. Universal Accessibility Features/ Barrier Free Design
4. Multi-Functional Zone with Planting for Storm Water Management
5. Bicycle and Non-Motorized Transport (NMT) Infrastructure
6. Crossings
7. Medians, Refuge Islands
8. Street Lighting
9. Urban Utilities
10. Public Aménities (Toilets, Bus stops, Dustbins), Hawker Zones, Signage

Chapter 6 Design Toolkit: Additional Requirements

11. Traffic Calming Measures
12. Material Selection
13. Public Art, Street Furniture and Educative Signage
14. BRT Systems; Bus and HOV Lane

Masterplan-2021 Road Hierarchy:

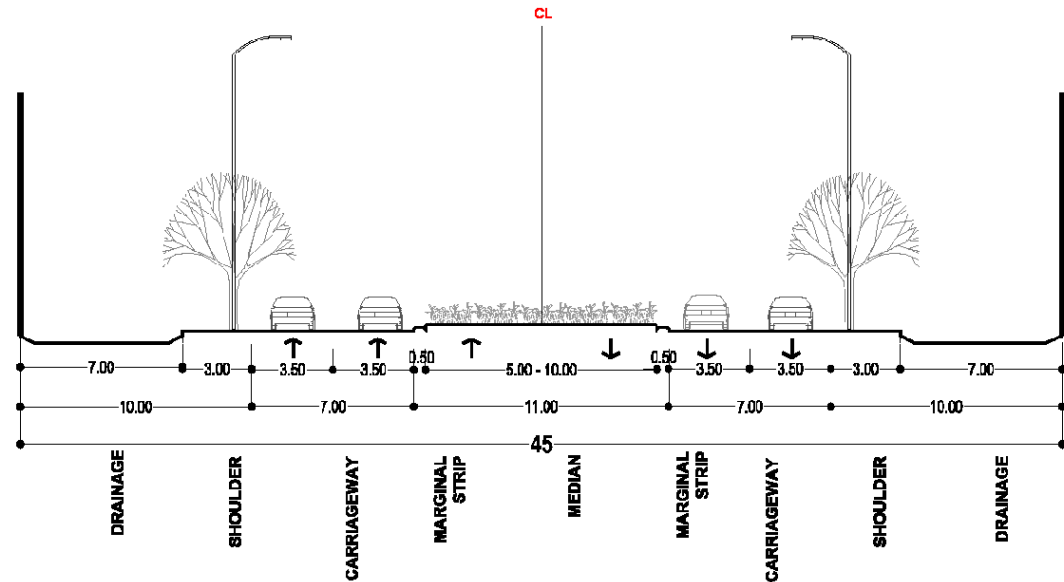
Categorization*

	Primary Arterial	Other Primary Arterial	Primary Collector	Secondary Collector	Local Streets
RIGHT OF WAY	60-80 M	36-60 M	18-36 M	12-24 M	6-20 M
SPEED RANGE	50 – 70 km/hr	30 - 40 km/hr.	20 - 30 km/hr	10- 20 km/hr	10-20 km/hr
SPEED CONTROL	Enforcement and Traffic Calming required	Enforcement and Traffic Calming required	Enforcement and Traffic calming required.	Traffic calming essential.	Traffic calming required
BUSWAYS FOR BRT	Segregated busways required where BRT proposed	Segregated busways required where BRT proposed	Segregated busways required where BRT proposed, at-grade segregation possible on R/Ws above 36 M	No segregated bus lane; but Road may be designated Bus-NMV only if required	No segregated bus lanes or bus operations required; but Road may be designated Bus-NMV only if required
MOTORIZED LANES	2 to 4 motorized lanes per direction, min. 3.3 m wide (min. 3.5 for BRT busways)	2 to 4 motorized lanes per direction, min. 3.3 m wide (min. 3.3 for BRT busways)	2 to 3 motorized lanes per direction, min. 3.1m wide (min. 3.3 for BRT busways)	No minimum lane width specification.	No minimum lane width specification.
CYCLE/ NMV TRACKS	Segregated cycle tracks required; min. 2.5 m wide for two-way movement.	Segregated cycle tracks required; min. 2.5 m wide for two-way movement.	Cycle Tracks not mandatory, to be provided only if vehicular traffic speed is >30km/hr. Traffic Calming essential . Cycle tracks if provided, to be min. 2.5 m wide if block lengths are >250m.	No segregated cycle tracks; Traffic Calming required.	No special feature for cyclists
SERVICE LANES	Service lanes required.	Service lanes required for residential frontages; for commercial / MU frontages, not required.	No service lane required	No service lane required	No service lane required
MEDIANS	Continuous median; all openings and intersections accompanied by signals and traffic calming. (no grade separators within city)	Continuous median; all openings and intersections accompanied by signals and traffic calming. (no grade separators within city)	Intermittent or No median; openings/ intersections accompanied by signals and traffic calming.	Intermittent or No median required; For roads where need for Median is felt, issue to be brought to UTTIPEC. Crossings to be traffic calmed	No medians; traffic calmed crossings, or mini roundabouts

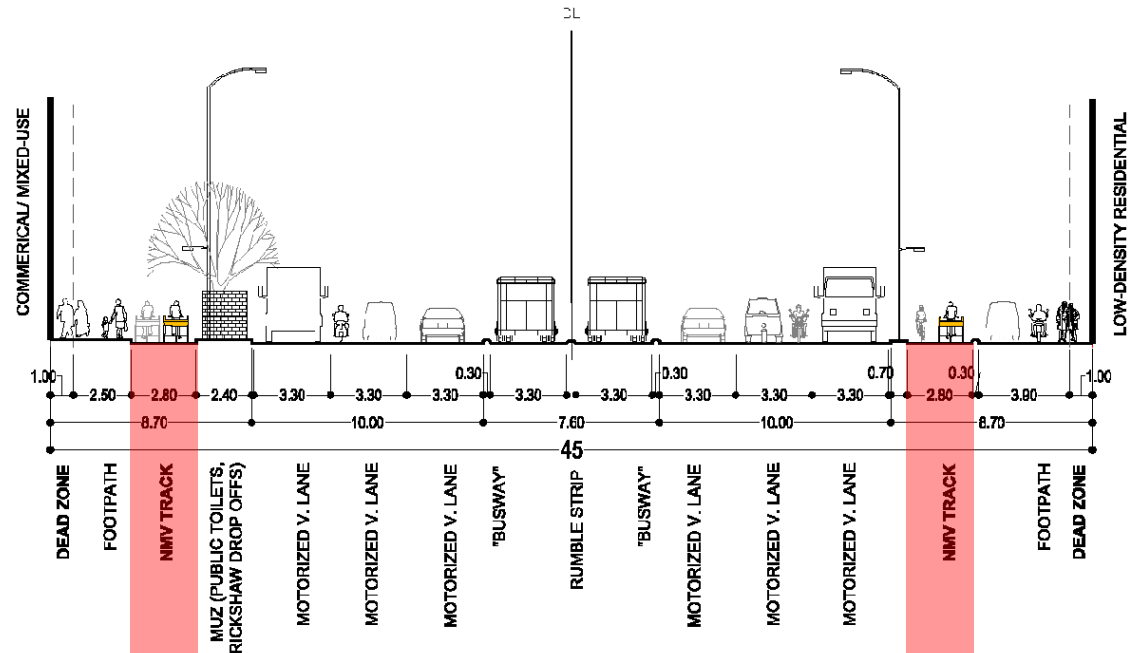
45 M Primary Arterial Road

IRC Section

IRC CROSS SECTION EXPRESSWAY (4 LANE DIVIDED)



45 M ROAD WITH BUSWAYS - Commercial or Residential at MID-BLOCK

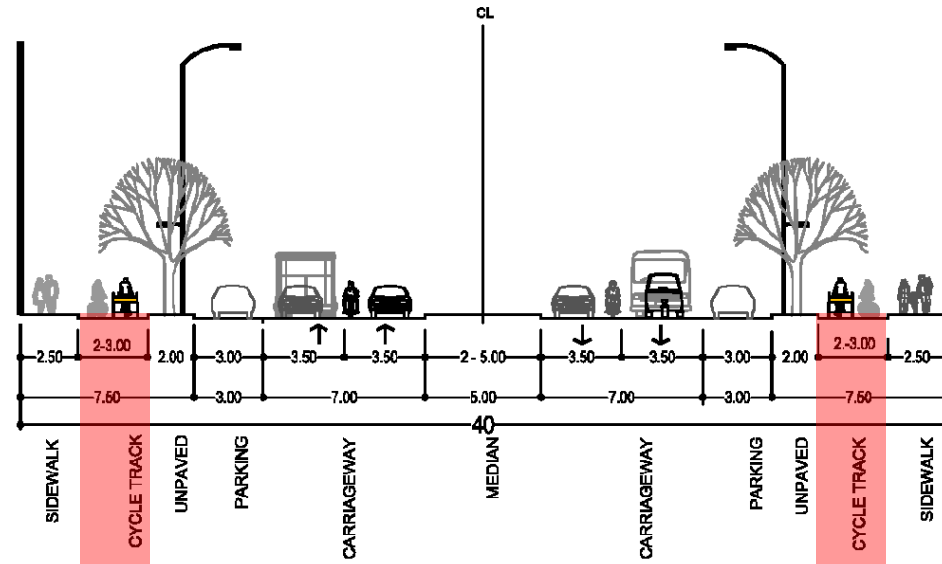


UTTIPEC Section

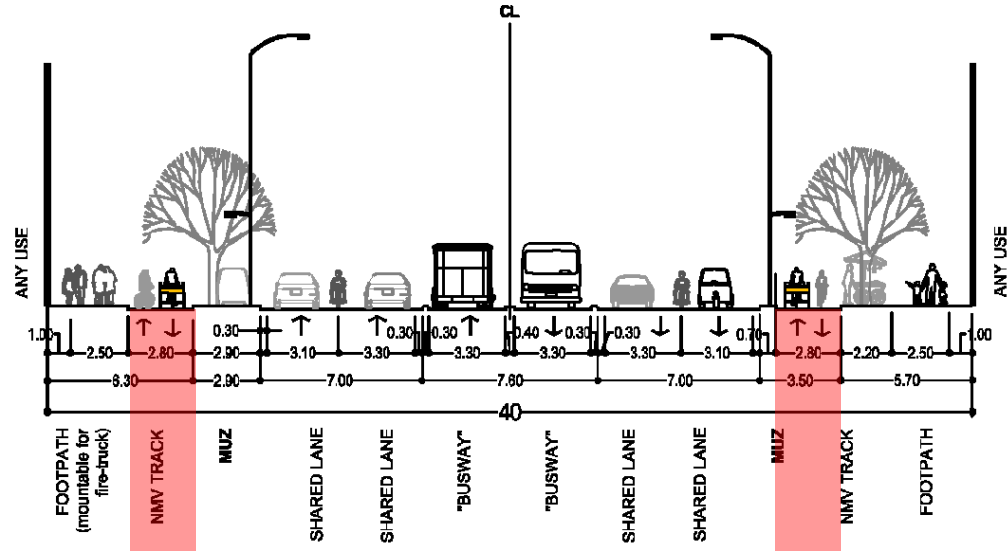
40 M Primary Arterial Road

IRC Section

IRC 40 M SUB ARTERIAL STREET WITH EXTRA PARKING LANE
(4 Lane Divided)



40 m ROAD WITH BUSWAYS & NMV-TRACKS at MID-BLOCK-
Arterial Road Function

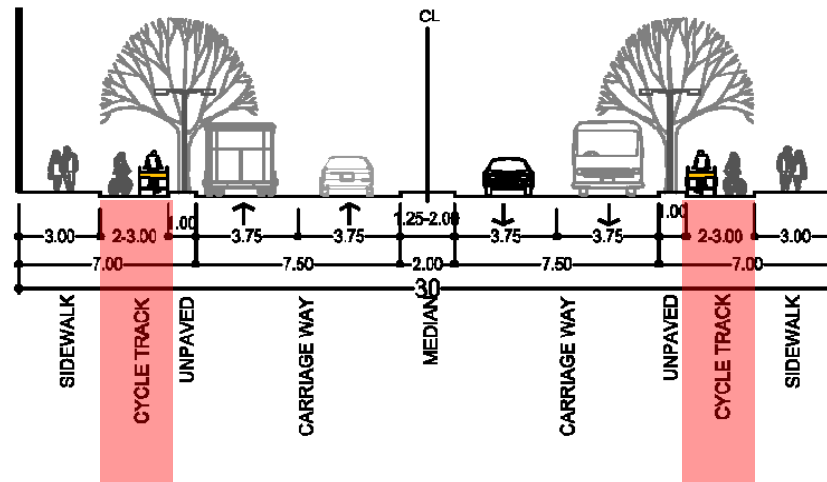


UTTIPEC Section

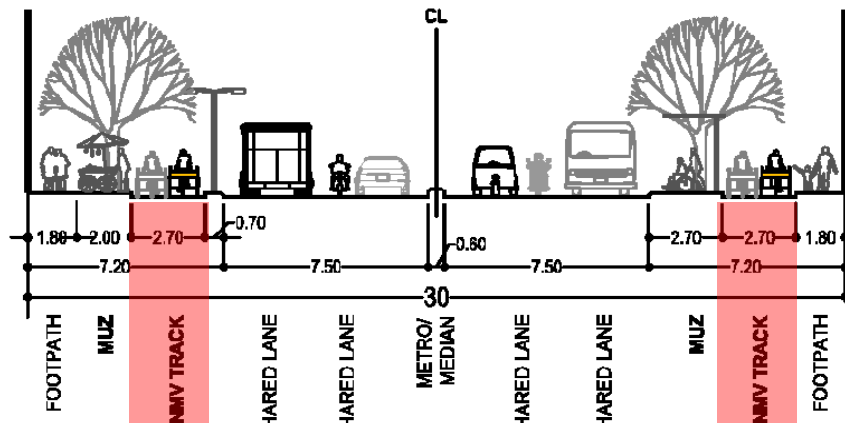
30 M Arterial Road

IRC Section

IRC CROSS SECTION - 30 M COLLECTOR STREET
(4 LANE DIVIDED)



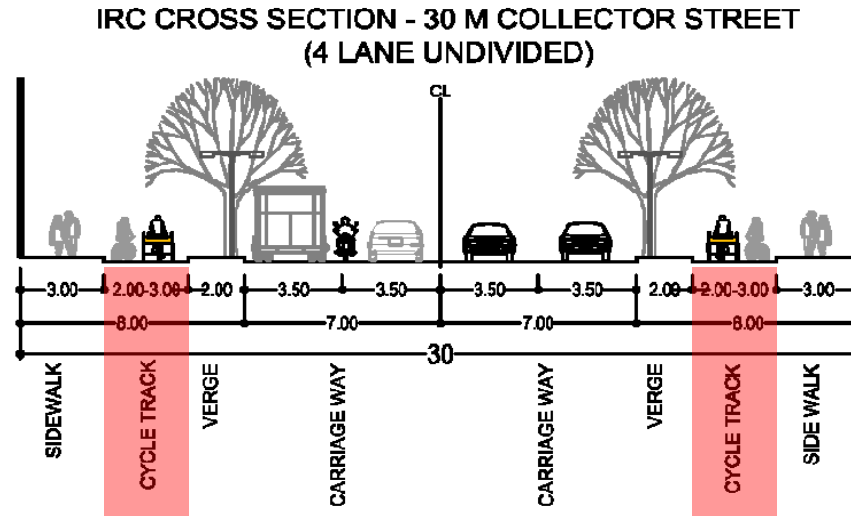
30 M ROAD WITH SEGREGATED TRAFFIC (Design Speed > 20km/hr)
Arterial Road Function



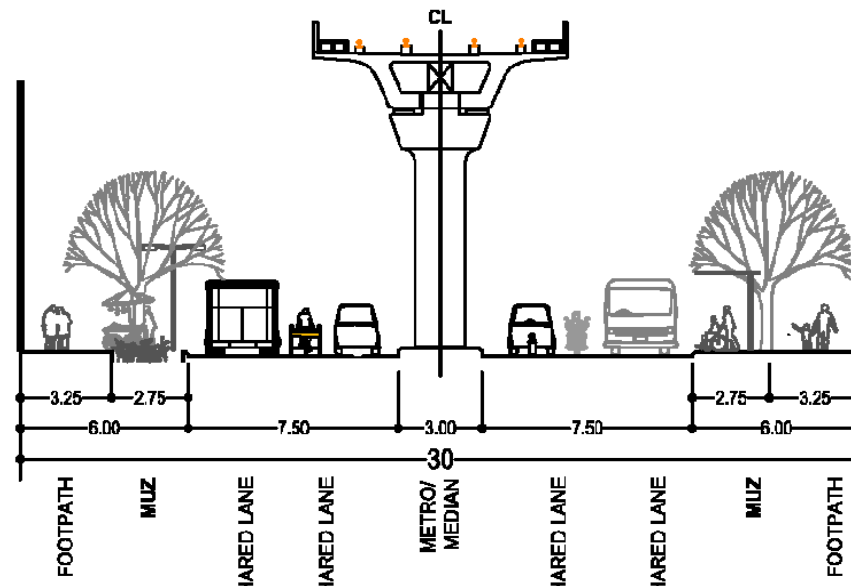
UTTIPEC Section

30 M Primary Collector Road

IRC Section



30 M ROAD WITH METRO & MIXED TRAFFIC (Design Speed <20km/hr) Collector/ Neighbourhood Road Function

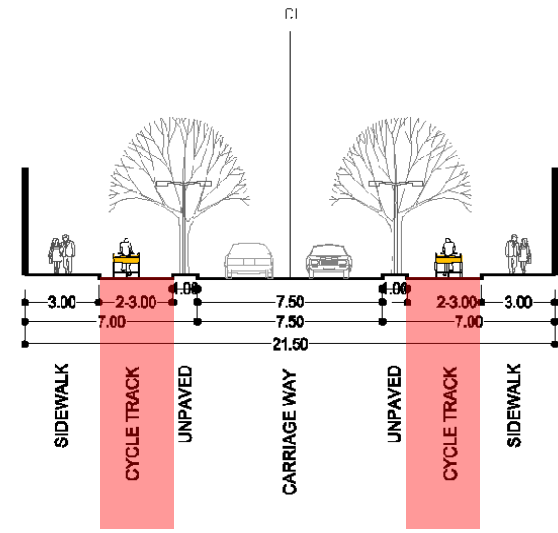


UTTIPEC Section

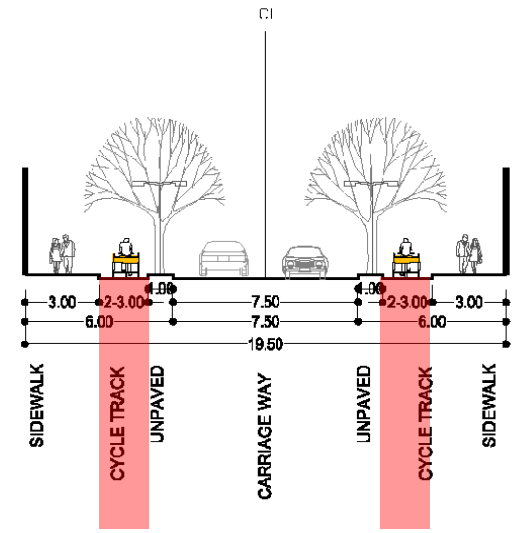
18-24 M Secondary Collector Road

IRC Section

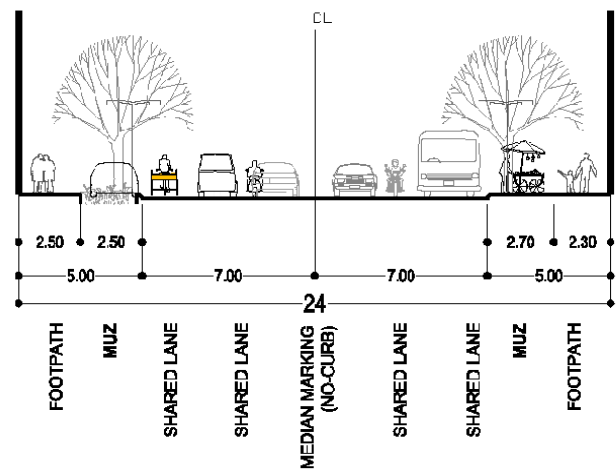
IRC COLLECTOR STREET (2 LANE)



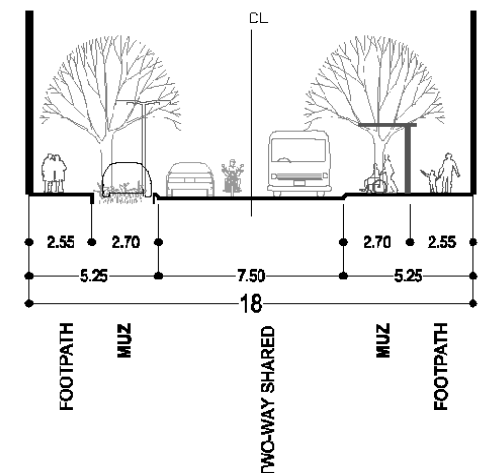
IRC COLLECTOR STREET (2 LANE)



UTTIPEC 24 M ROAD WITH MUZ



UTTIPEC 18 M ROAD WITH MUZ

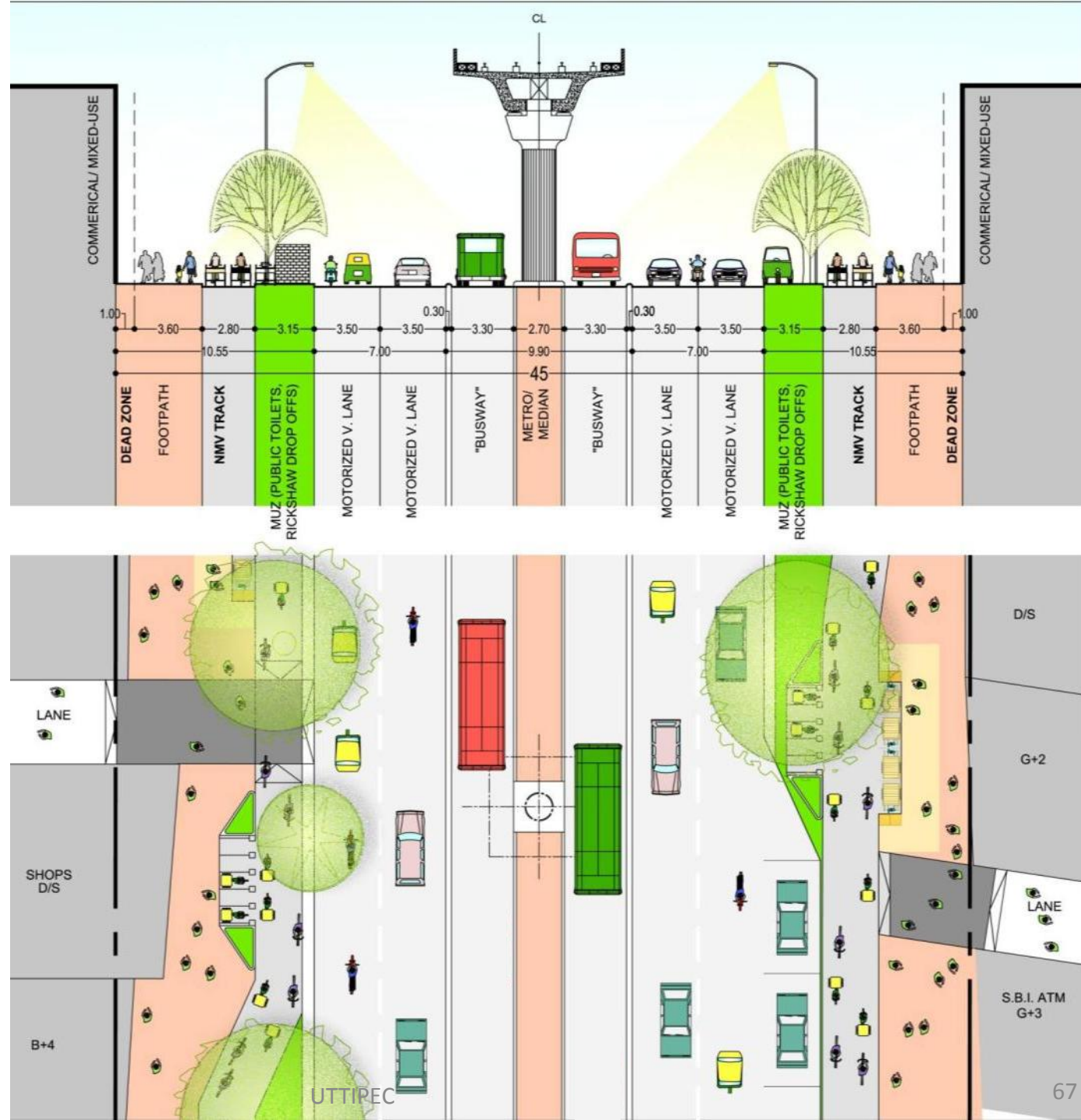


UTTIPEC Section

Example: 45m Road (Vikas Marg)

Cycle tracks,
footpaths,
rickshaw-parking,
auto-parking,
vendor cart spaces,
trees,
car-parking,
toilets...

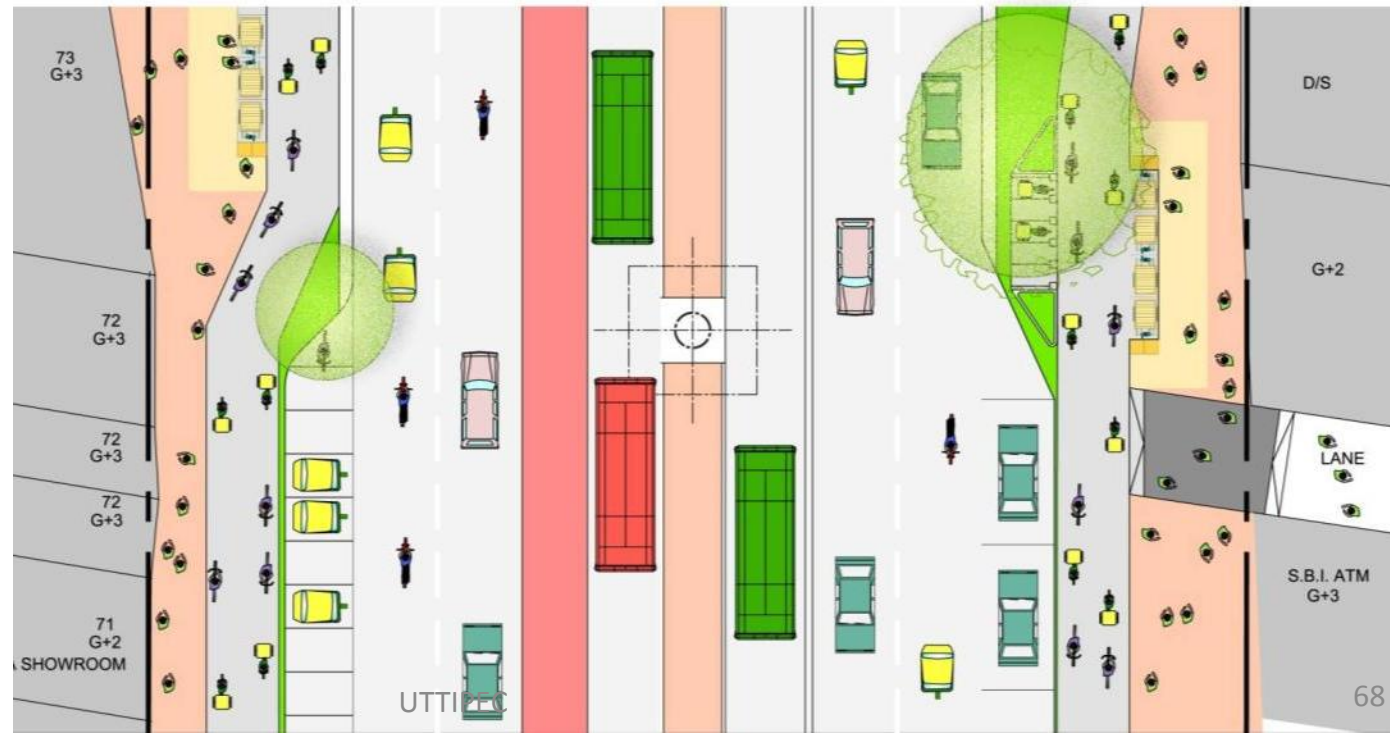
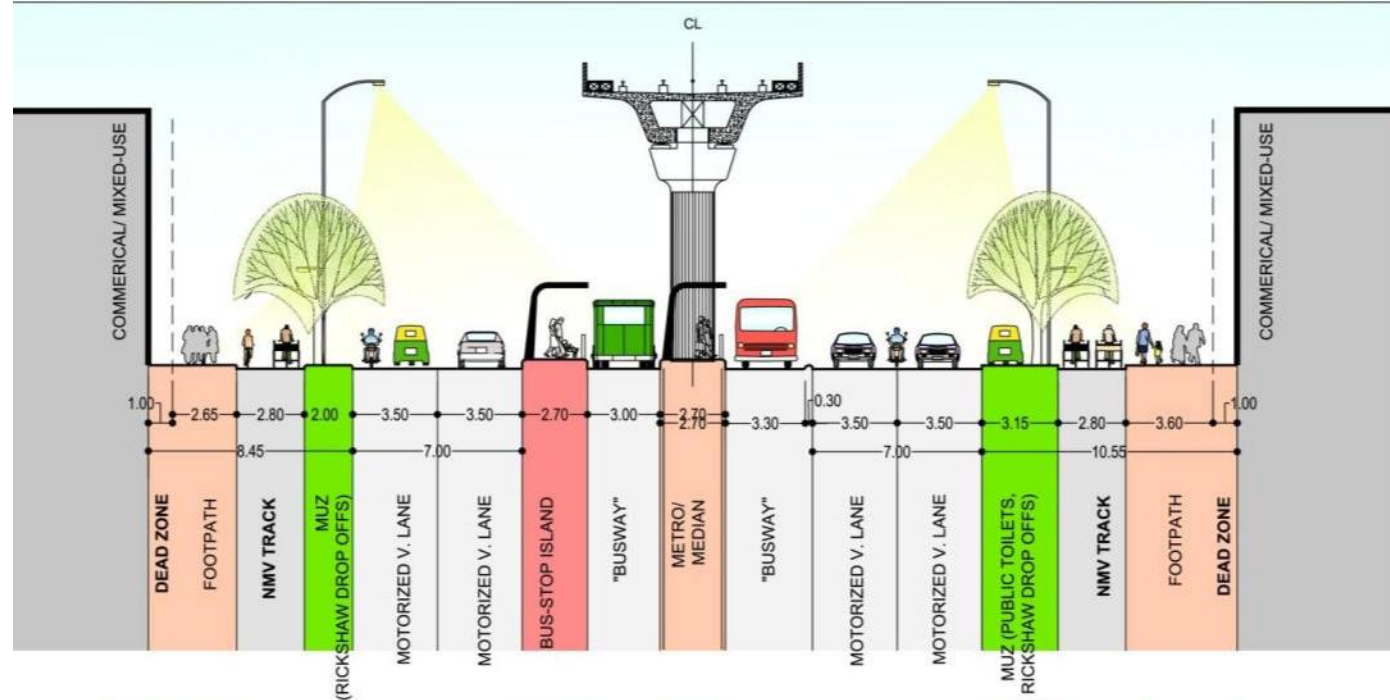
**accommodated
within R/W
without disturbing
carriageway
space !**



Example: 45m Road (Vikas Marg)

Cycle tracks,
footpaths,
rickshaw-parking,
auto-parking,
vendor cart spaces,
trees,
car-parking,
toilets...

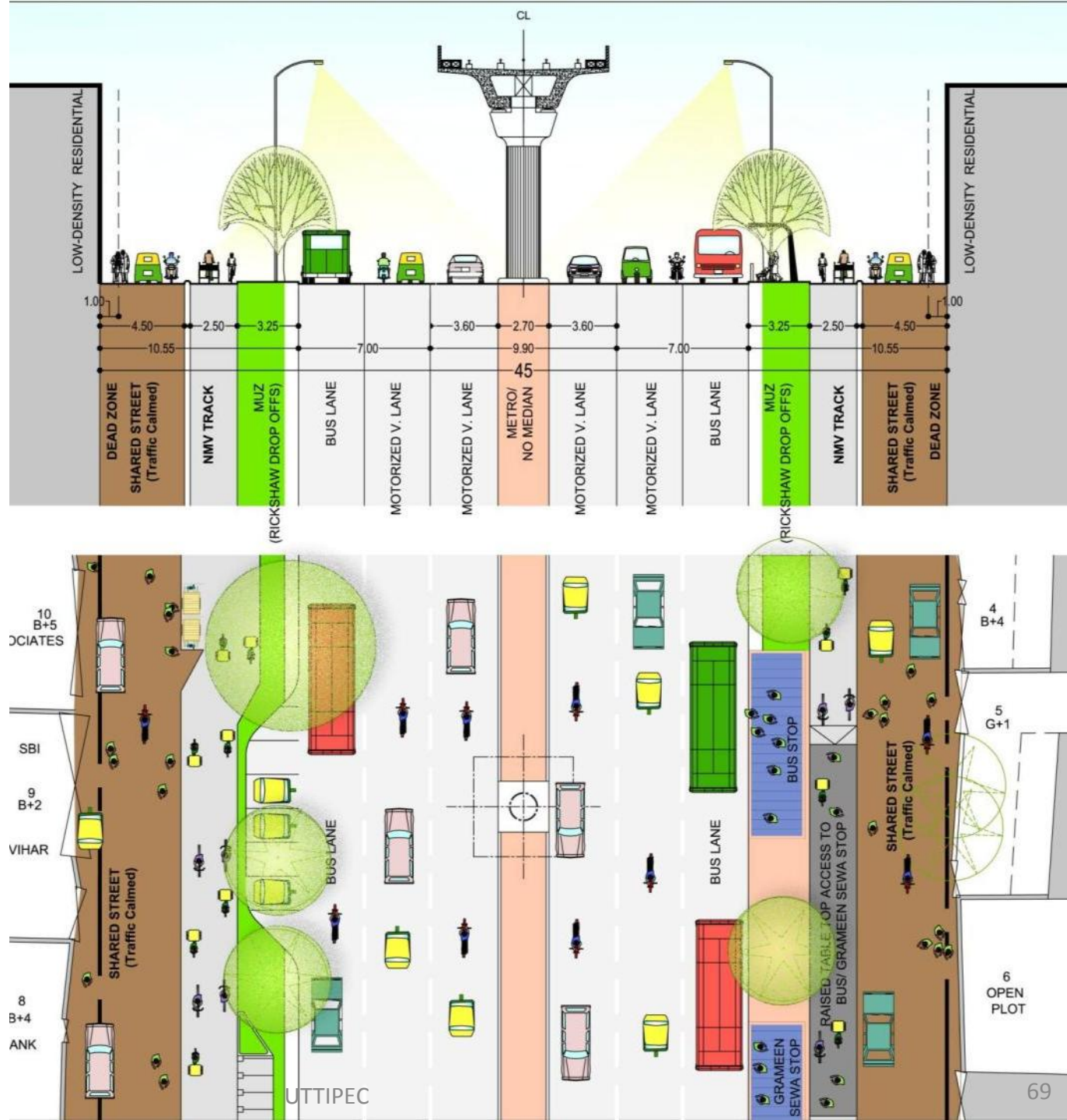
**accommodated
within R/W
without disturbing
carriageway
space !**

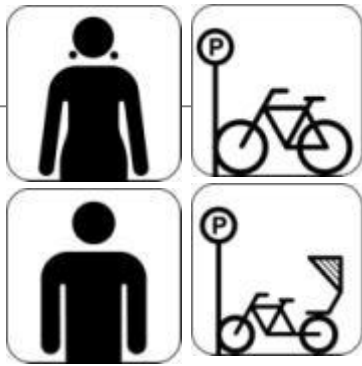


Example: 45m Road (Vikas Marg)

Cycle tracks,
footpaths,
rickshaw-parking,
auto-parking,
vendor cart spaces,
trees,
car-parking,
toilets...

**accommodated
within R/W
without disturbing
carriageway
space !**





What to Do?

**Problems, Issues and
Solutions are known!**

POLITICAL WILL IS MISSING !

Safety and Pride for Non-motorized Transport



One day we will have it!



Retrofitting of Aurobindo Marg to **PREVENT ACCIDENTS**

Road Accidents!

The plaguing issue

FOR SAFE ROADS



Some of the high speed crossings where speed calming strips will be installed

- Pritvi Raj Road
- Shanti Path
- C Hexagon
- Subramaniam Bharti Marg
- Maharshi Raman Marg
- Zakir Hussain Marg

■ 946 pedestrians were killed on Delhi's roads in 2011.

HT FILE

Even when traffic is jammed & standing, still pedestrian crossings are not left free !



Why No Crossings ?

**No signalized
zebra
crossings
= jaywalking
= Road
accidents!**



Signalized Crossings were proposed every ~250m on Aurobindo Marg to make it safer!

Pilot Projects

Focus on public transport: Govt body issues guidelines for seamless travel

Pilot project ordered for Jor Bagh-Aurobindo Place Market stretch; to be implemented on all Metro routes



Jaywalkers opposite Dilli Haat.

AMIT MEHRA

SOBHANA K
NEW DELHI | MARCH 19

MORE signalised pedestrian crossings, lesser distance between bus stands, auto stands and Metro stations — these are a few key measures that the Delhi Development Authority's planning body, Unified Traffic Transportation Infrastructure (Planning & Engineering) Centre, has directed civic agencies and Traffic Police to carry out for ensuring higher usage of public transport.

The guidelines issued by the body will have to be implemented on all Metro routes. The pilot project is being imple-

mented on the stretch between Jor Bagh and Aurobindo Place Market. There are four Metro stations of the Jahangirpuri-HUDA City Centre corridor that fall on the way — Jor Bagh, INA, AIIMS and Green Park.

The body has pointed out a series of problems faced by commuters on this particular stretch through a detailed plan. For example, despite a high flow of pedestrian traffic at the Dilli Haat-INA crossing, no provision exists for their convenience.

At AIIMS, traffic bottlenecks are a regular feature due to the fact that there is no fixed bus stand and the buses stop anywhere on the main road.

Ease of access

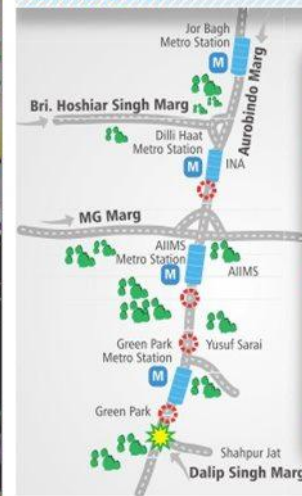
- Signalised pedestrian crossings at Dilli Haat-INA Market, AIIMS, Yusuf Sarai Market and Green Park
- Pedestrian access to Yusuf Sarai area
- Closing of central verge in front of Masjid at Green Park, where Khel Gaon Road meets Aurobindo Marg
- Enhancement of road alignment at Dalip Singh Marg-Aurobindo Marg intersection

Further on, at the Green Park Metro station, there is no bus stand for at least 500 metres. The footpath in front of a petrol pump at Padmini Enclave serves as a makeshift bus stand.

The UTTIPEC has directed

all civic agencies to shift the bus stands within 50 metres of the Metro station. Signalised pedestrian crossings have been suggested at four points — Dilli Haat-INA market, AIIMS, Yusuf Sarai Market and Gurudwara Green Park.

SMOOTH RIDE



Better connectivity with Metro stations between

Jor Bagh ↔ Aurobindo Place
Four Metro stations come en route : Jor Bagh, AIIMS, Green Park

IMPROVEMENTS SUGGESTED

➤ Removing encroachment in front of subway at INA

➤ **Signalised pedestrian crossing** at Dilli Haat-INA Market, AIIMS, Yusuf Sarai Market, Green Park

➤ Closing of central verge in front of Masjid

★ **A four-arm crossing** at Dalip Singh Marg ↔ Aurobindo Marg intersection

Graphic: RAHUL AWASTHI

"Aurobindo Marg is not a Ring Road or an expressway — there are markets on both sides of the road and two major hospitals; there is a heavy flow of pedestrians due to these reasons. Foot-overbridges have very low usage, so pedestrian crossings are essential," said Prem Nath, Deputy Commissioner of Police, Traffic (South).

The UTTIPEC has also told the agencies to put in place additional measures like making the entire stretch pedestrian-friendly by correcting flaws like the alignment of the Ch Dalip Singh Marg intersection.

"The road leading to Safdarjung Development Area is not properly aligned with the

intersection, leading to an increased chance of vehicle-to-vehicle collision. We are currently working on a viable plan to correct the alignment," Prem Nath added.

The project will be implemented by the New Delhi Municipal Council and the Public Works Department.

"To ensure that commuters shift to public transport, it is essential that there is a smooth interchange between all modes of transport and they are all easily accessible. Metro commuters should be able to step into a bus or an auto as soon as they get out of the station," said director (Planning) and member secretary of UTTIPEC, Ashok Bhat-tacharjee.

Signalized Crossings were proposed every ~250m on Aurobindo Marg to make it safer!

Pilot Projects



Better connectivity with Metro stations between


Jor Bagh  **Aurobindo Place**

Four Metro stations



come en route : Jor Bagh, AIIMS, Green Park

IMPROVEMENTS SUGGESTED

>> Removing encroachment in front of subway at INA

 **Signalised pedestrian crossing** at Dilli Haat- INA Market, AIIMS, Yusuf Sarai Market, Green Park

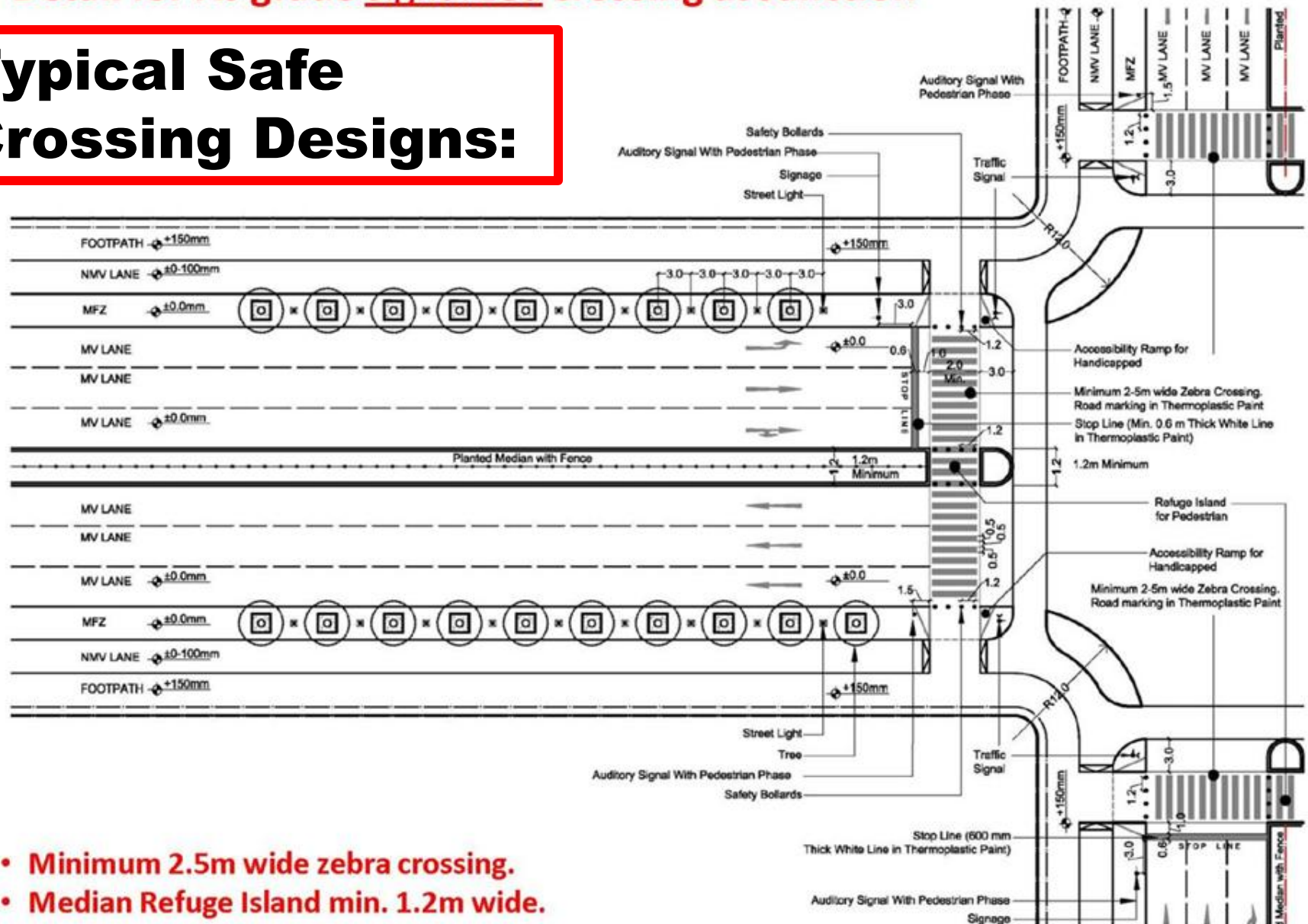
>> Closing of central verge in front of Masjid

 **A four-arm crossing** at Dalip Singh Marg  Aurobindo Marg intersection

R/W greater than 30m (with cycle tracks)

Detail for At-grade signalized crossing at Junction

Typical Safe Crossing Designs:



- Minimum 2.5m wide zebra crossing.
- Median Refuge Island min. 1.2m wide.

Detail for At-grade signalized crossing at Mid-Block

**Min. 2 rows of Cats Eyes
with Warning Signage.**

Stop Line (0.6m thick white line)

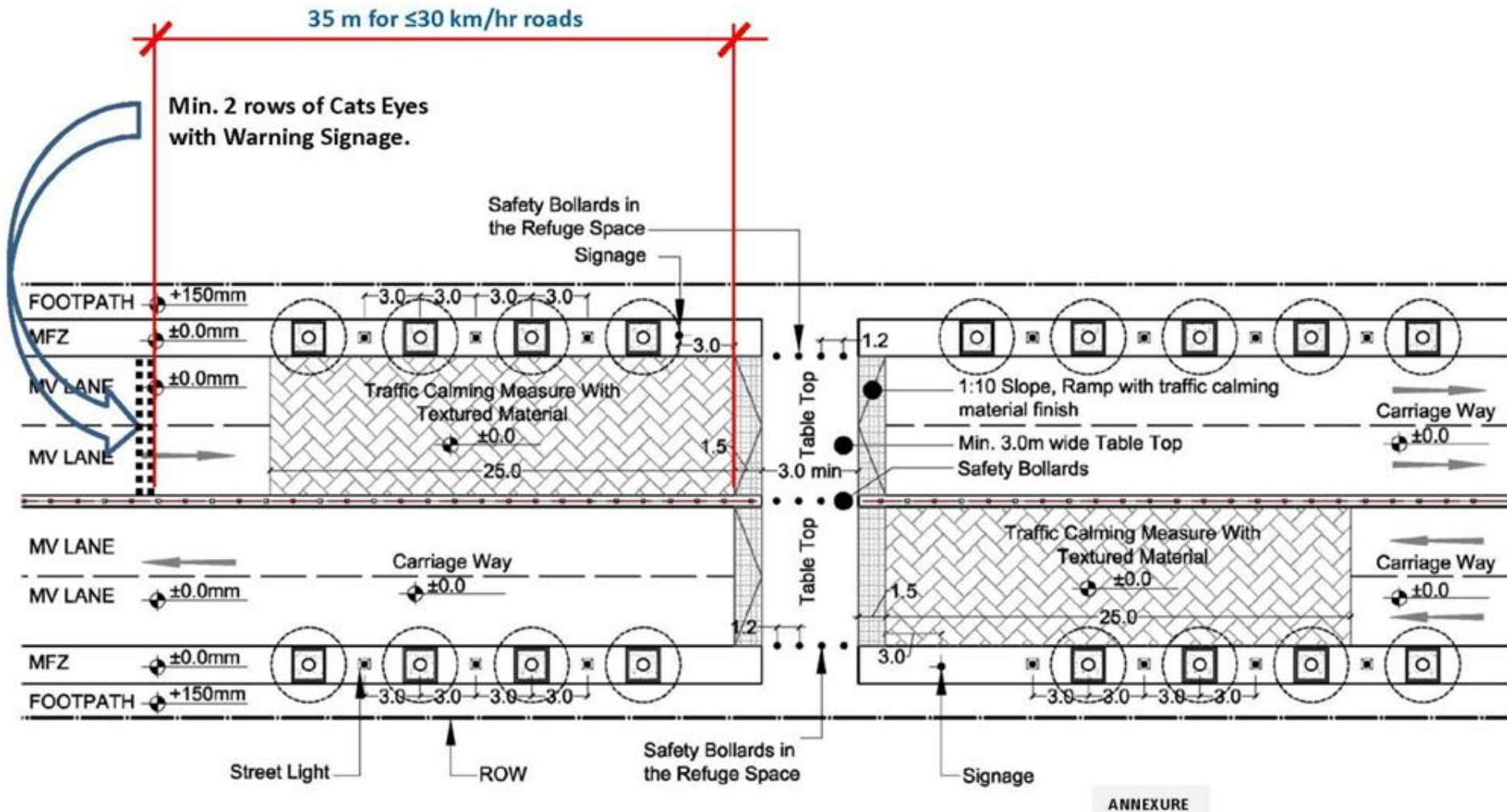
Pedestrian/Pelican Auditory Signal Signage

- Safety Bollards in the Refuge Space



R/W lesser than 30m

Detail for At-grade non-signalized Table-Top crossing at Mid-Block



- Minimum 3 m wide table top flat surface.
- Warning Cats Eye & Signboards ~35m before Crossing location

PROCESS:

Pilot Projects



Detail of Kerb Ramp.

Source: UTTIPEC Street Design Guidelines

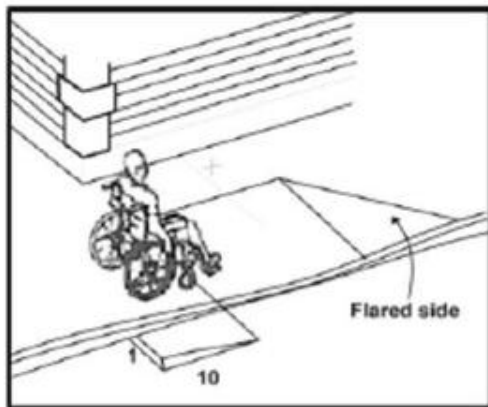


Figure 5 Kerb ramp

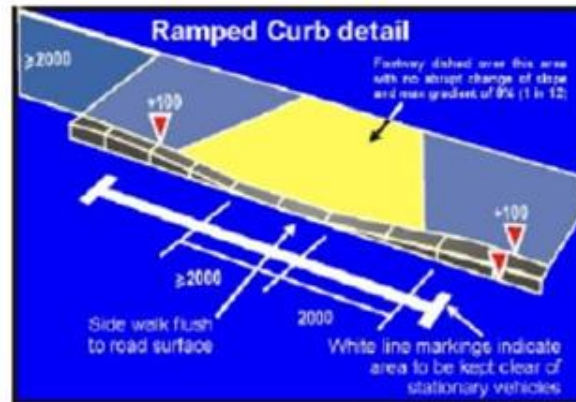


Figure 6 Kerb ramp detail Figure

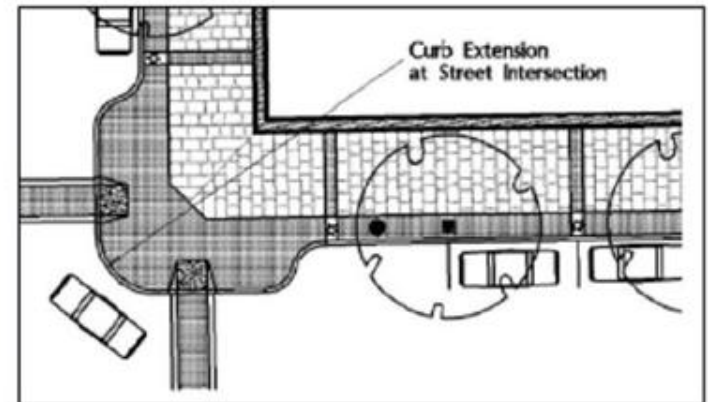


Figure 7 Kerb extension at street intersection

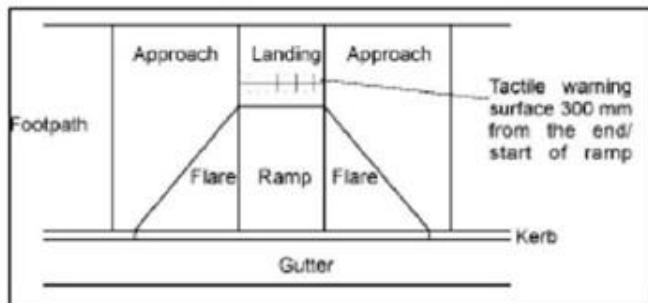


Figure 8 Recommended design for a kerb

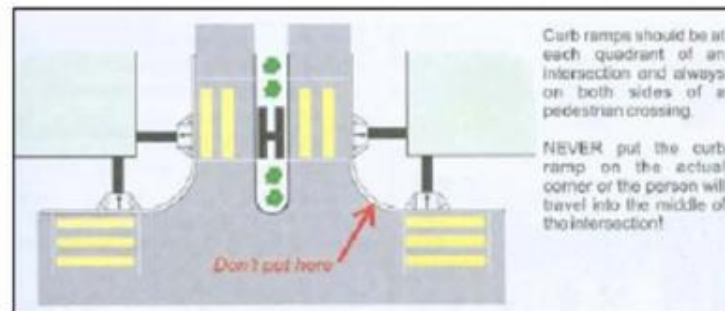
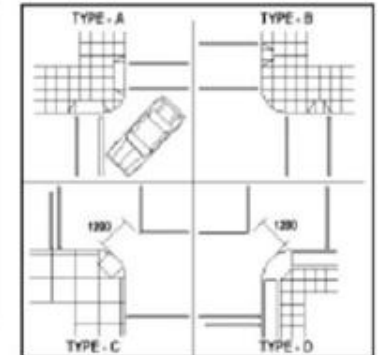


Figure 10 Plans of kerb ramps at intersections



Safe Crossings implemented on Aurobindo Marg:



- Traffic calming strips before zebra crossings

Provide safety through Design



- New Safe zebra crossings

Provide safety through Design



- New Safe zebra crossings

Detail of Kerb Ramp.

Source: UTTIPEC Street Design Guidelines

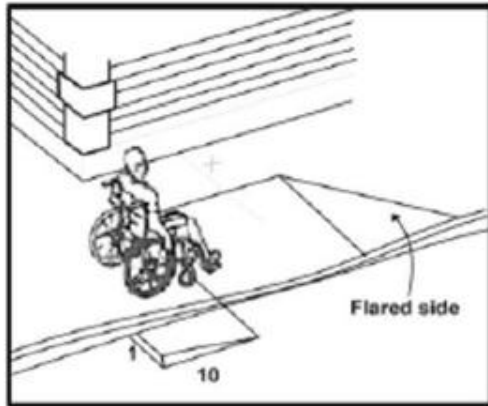


Figure 5 Kerb ramp

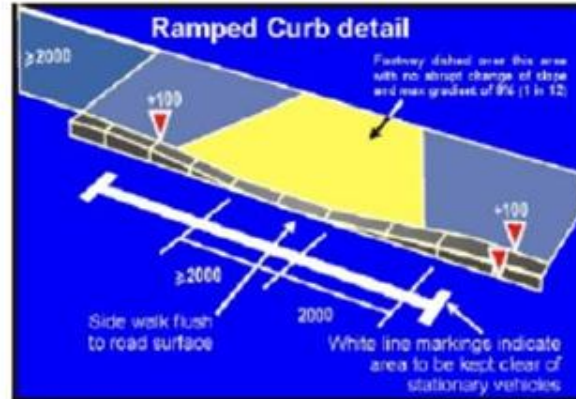


Figure 6 Kerb ramp detail

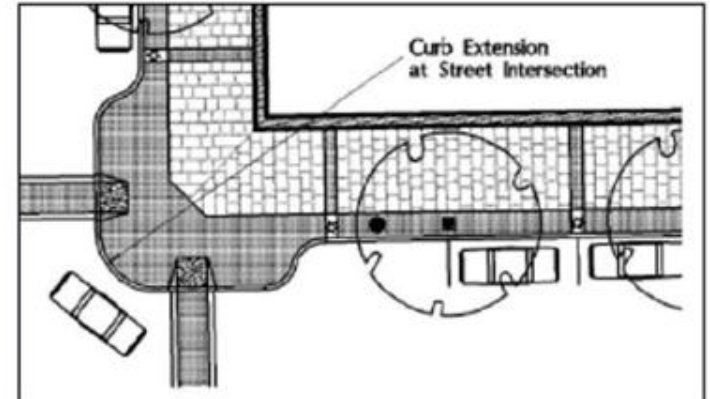


Figure 7 Kerb extension at street intersection

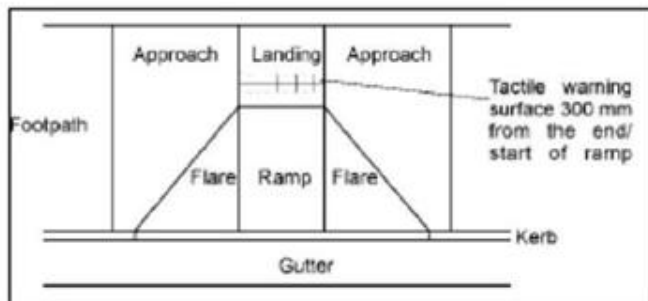


Figure 8 Recommended design for a kerb

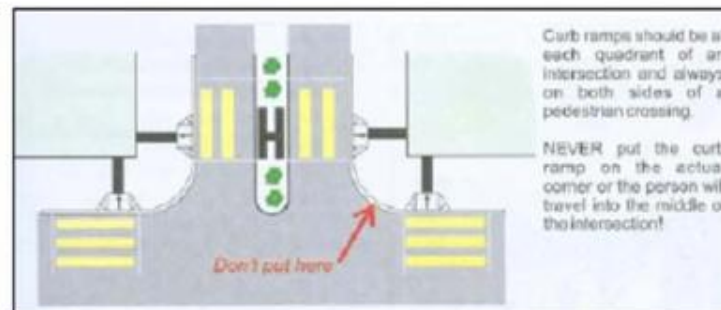


Figure 10 Plans of kerb ramps at intersections

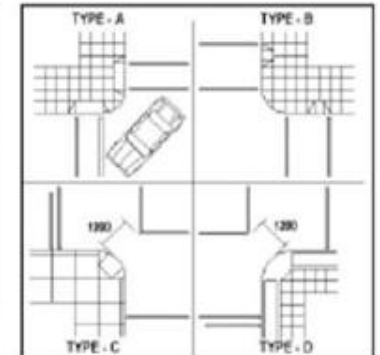


Figure 9 Kerb placements at turnings

Aurobindo Marg does a U-turn

SAFER In comparison to last year's 9 deaths till Aug 15, only 1 person has died on the stretch this year

Subhendu Ray

■ subhendu.ray@hindustantimes.com

NEW DELHI: Infamous for being among the 20 deadliest road stretches in Delhi till last year, Aurobindo Marg has today become one of the safest for road users.

A major arterial road in south Delhi that connects the historic Safdarjung's Tomb with Qutab Minar, Aurobindo Marg recorded an average of 13 road deaths till last year. This year, however, only one death has been recorded to date.

Traffic police officials claimed that certain steps had resulted in the sharp decline.

"We have taken measures to

restrict the speed of vehicles on the road. Only one person has been killed in a road accident this year as of now. This is a record," said Satyendra Garg, joint commissioner of police (traffic).

The accident happened on the morning of July 20, when a pedestrian died after being hit by an unknown vehicle.

Till August 15 last year, as many as nine persons were killed in accidents on the road. This included five pedestrians, one two-wheeler rider, one car driver, one riding an auto-rickshaw and one cyclist. Thirteen people were killed during the year.

Since then, the traffic police have put four pedestrian lights, two speed-calming rumble

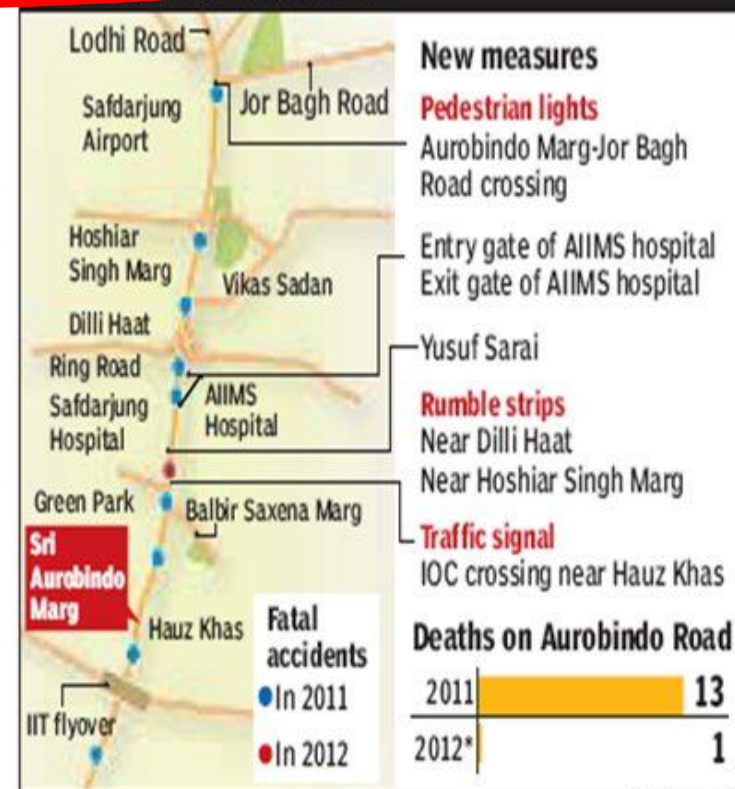
strips and one traffic signal on the 2.5-km stretch connecting IIT flyover and Lodhi Road crossing on Aurobindo Marg.

Pedestrian lights have been placed near Aurobindo Marg-Jor Bagh Road crossing, entry and exit gates of AIIMS hospital and Yusuf Sarai, rumble strips near Delhi Haat and Hoshier Singh Marg and traffic signal at IOC near Hauz Khas.

Road users, however, have complained that these steps have slowed down traffic on the stretch and at times cause jams.

"We are examining whether we can do away with the problem. If it is feasible, we will do it," said a traffic police officer.

TURNING OVER A NEW LEAF



PROCESS:

- Policy
- Guidelines
- Pilot projects
- Approval
- **Monitoring**
- **Audits**
- Workshops / Training

Audits



PROCESS:

- Policy
- Guidelines
- Pilot projects
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- **Workshops / Training**

Workshops



PROCESS:

- Policy
- Guidelines
- Pilot projects
- Approval
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- **Workshops / Training**

Workshops



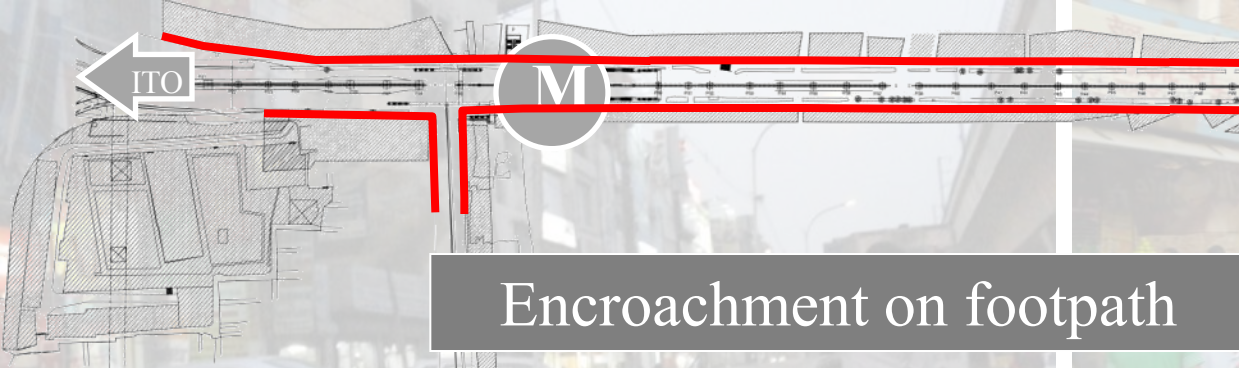
PROCESS:

- Policy
- Guidelines
- Pilot projects
- Approval
- Monitoring
- Audit
- **Workshops / Training**

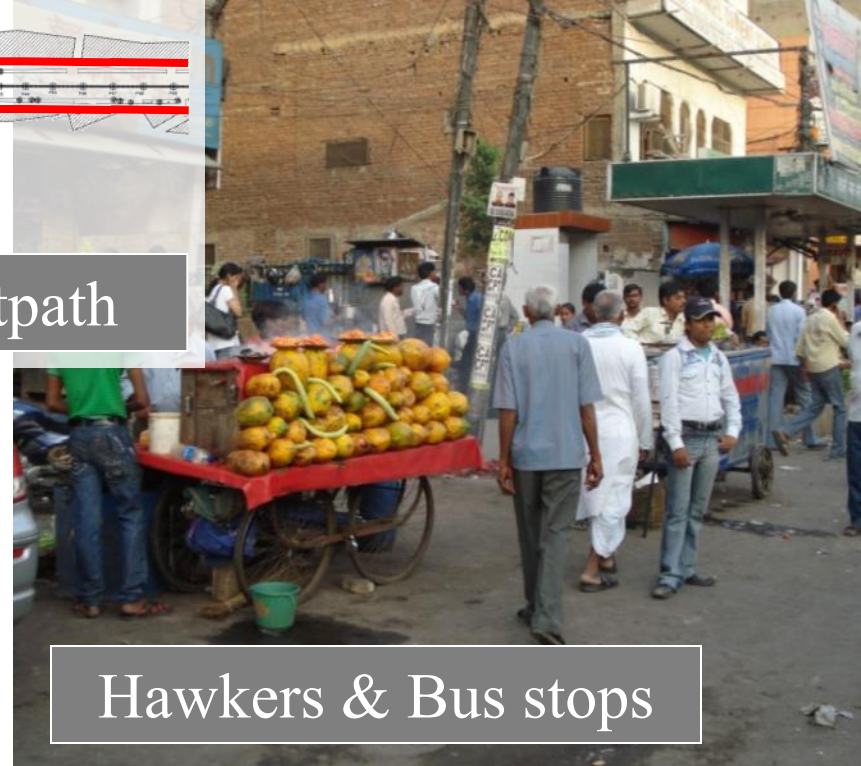
Workshops



Comprehensive Plan for Improvement of Vikas Marg



Encroachment on footpath



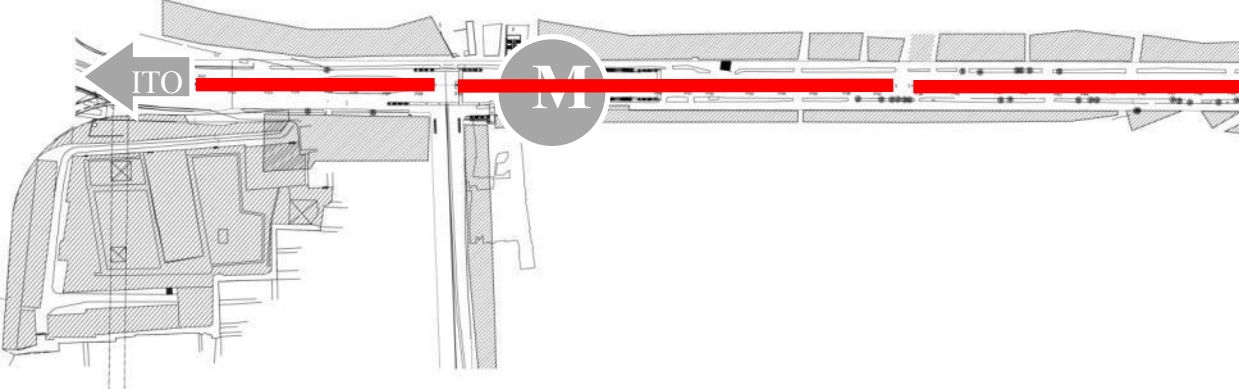
Hawkers & Bus stops



Public Utilities



Cars & Rickshaws



Key components of

‘Integrated Plan for connectivity Improvement to Vikas Marg’:

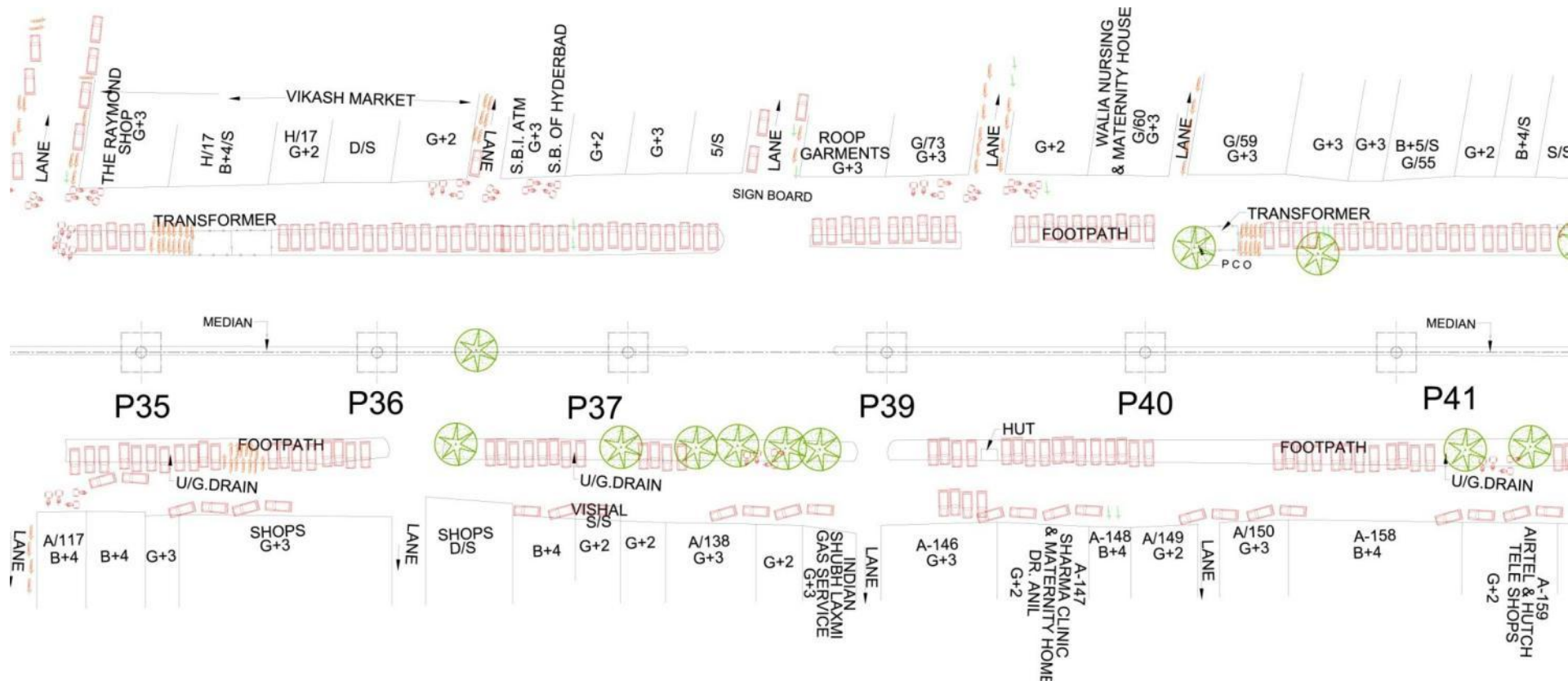


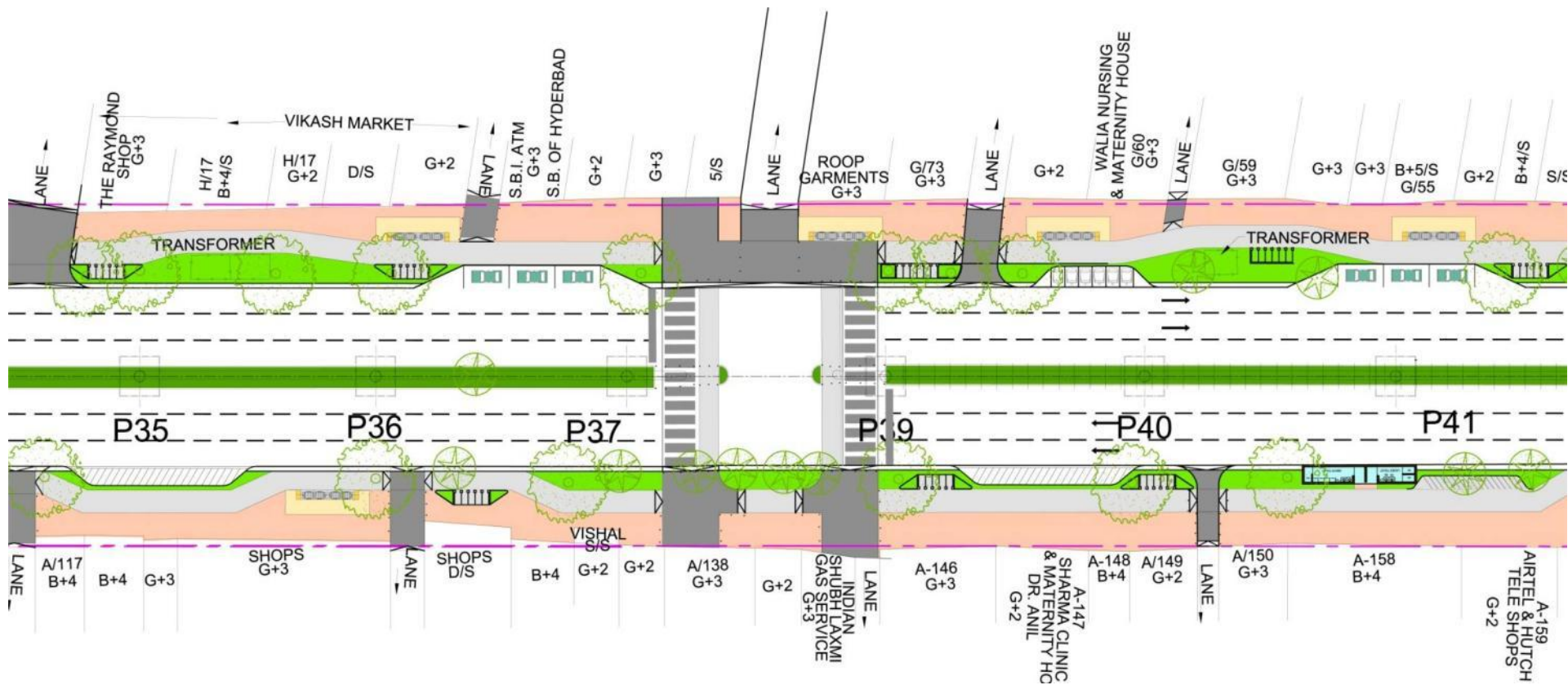
Removal of Encroachment:

- Allocation of Authorized Parking areas (Long Term & Short Term)
- Strategy for Parking Fees
- Parking Management

Road Improvement:

- Creation of pedestrian friendly streetscape
- Provisions for NMT Infrastructure
- Public Utilities
- Vendor Zones
- Street Signages





CL OF SCOPE TOWER STATION
CH: 7615.691m

MAHARAJA AJMEEDH MARG.

76 G+3
77 G+1
78 G+1

CP62

CP63 P64

SIGN BOARD

JB

U/G DRAIN

FOOTPATH

B,1 G+3

ROAD

HUT DELHI TRAFFIC POLICE

E/350 F/S

E/351 S/S

S.C KAPOOR
ADVOCATE
E/352 S/S

E/353 G+1

E/354 S/S

SYNDICATE
BANK
E/355 S/S

HUTCH
SHOWROOM
E/356 G+2

E/357 S/S

HOME OF DIAMOND
& GOLD JEWELLERY
E/358 B+4

OPEN LAND

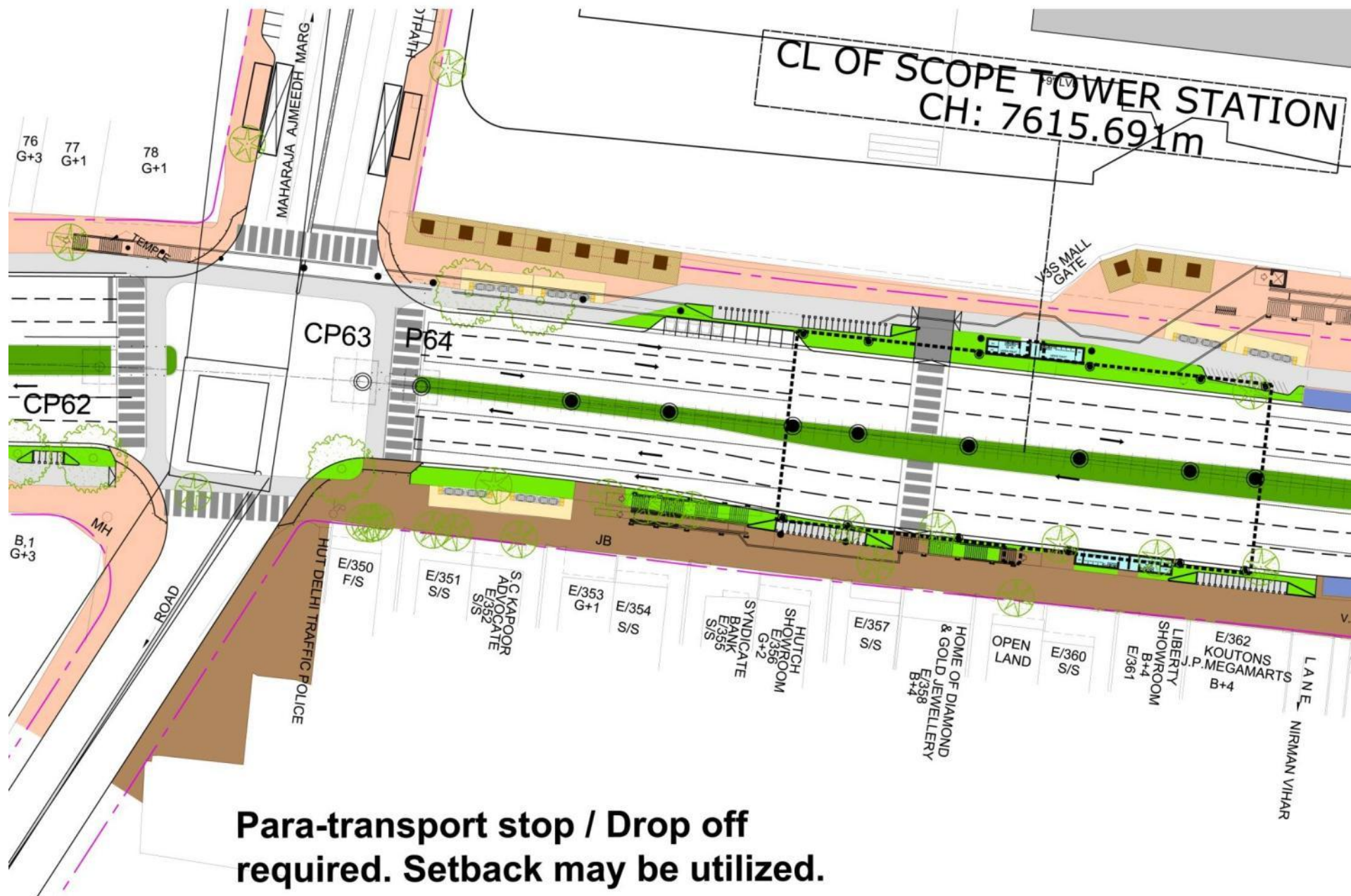
E/360 S/S

LIBERTY
SHOWROOM
E/361 B+4

E/362 KOUTONS
J.P. MEGAMARTS
B+4

LANE
NIRMAN VIHAR

CL OF SCOPE TOWER STATION
CH: 7615.691m



**Para-transport stop / Drop off
required. Setback may be utilized.**

04 Multi-Functional Zone with



04 Multi-Functional Zone with



04 Multi-Functional Zone with



04 Multi-Functional Zone with



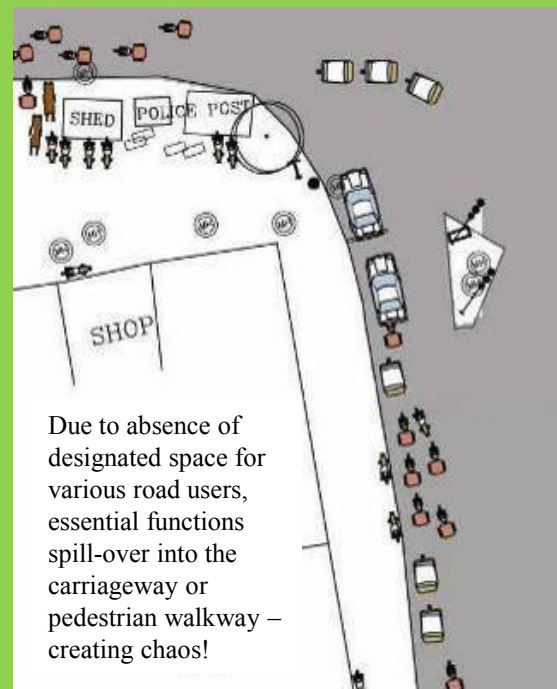
04 Multi-Functional Zone with



04 Multi-Functional Zone (MFZ)

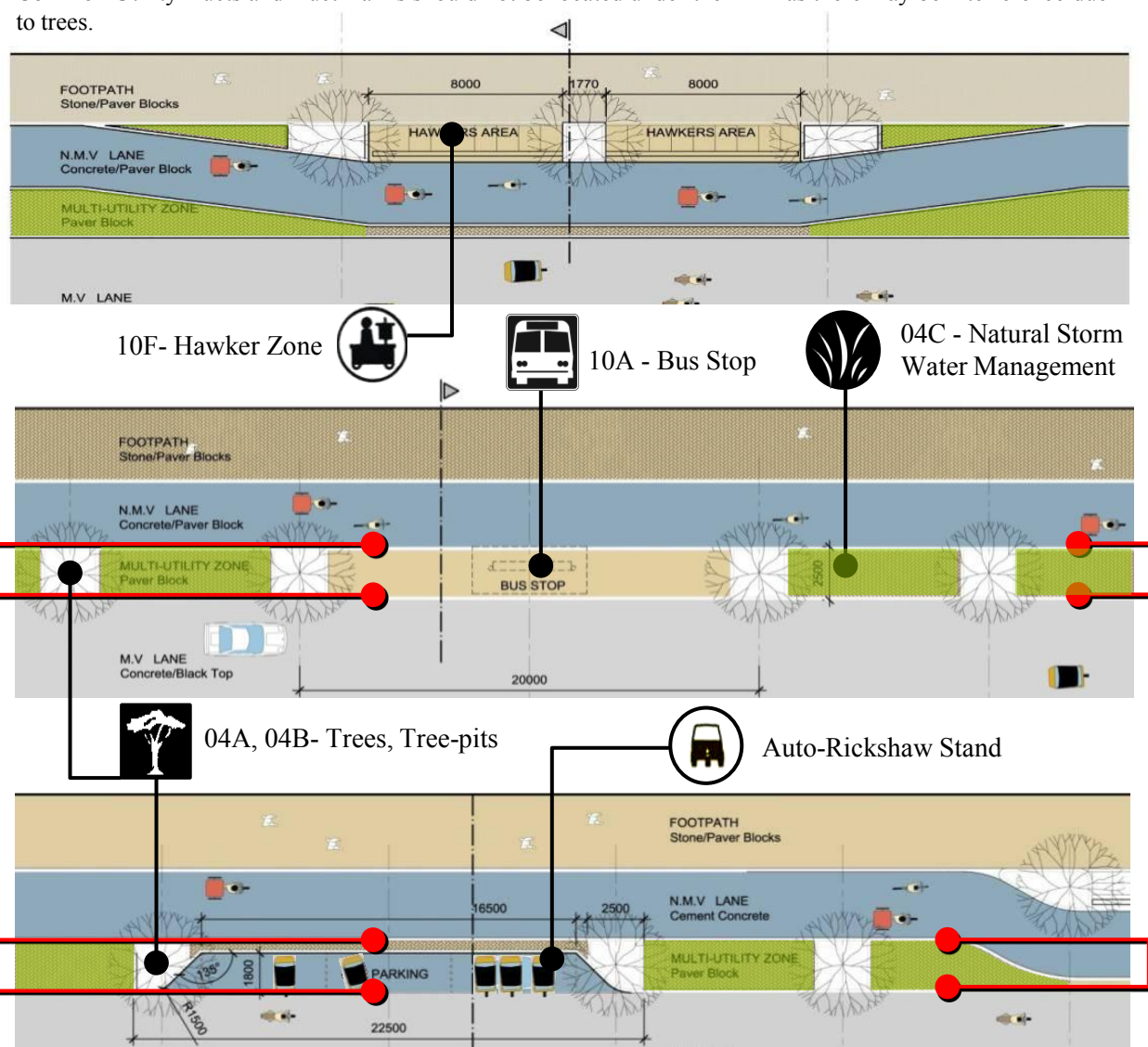
* Multi-Functional Zones on a Street may accommodate all functions described in Section 10, pg. 103, as well as the following:

- Tree Planting
- Planting for Storm Water Management
- Auto-rickshaw Stands
- Cycle-rickshaw Stands
- Hawker Zones
- Paid Car Parking
- Street Furniture
- Bus Stops
- Traffic Police Booths, MTNL boxes, fire hydrants, junction boxes, etc.
- Street lights/ pedestrian lights.



Multi-functional Zones on a Street should be a minimum of 1.8 M Wide, and may locate multiple functions. Provision of MFZ in most critical otherwise the uses/ components of streets (mentioned to the left) would encroach upon pedestrian, NMV or carriageway space.

- Common Utility Ducts and Duct Banks should not be located under the MFZ as there may be interference due to trees.



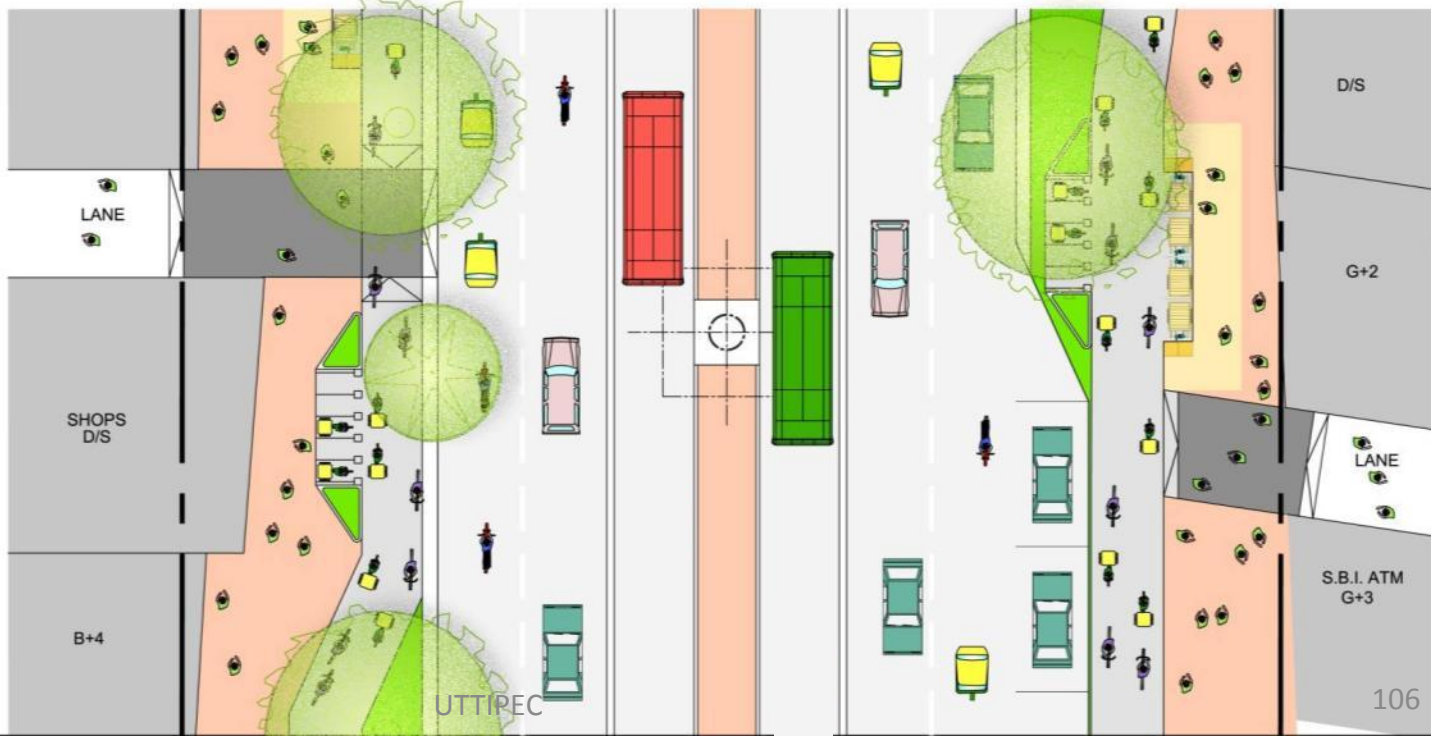
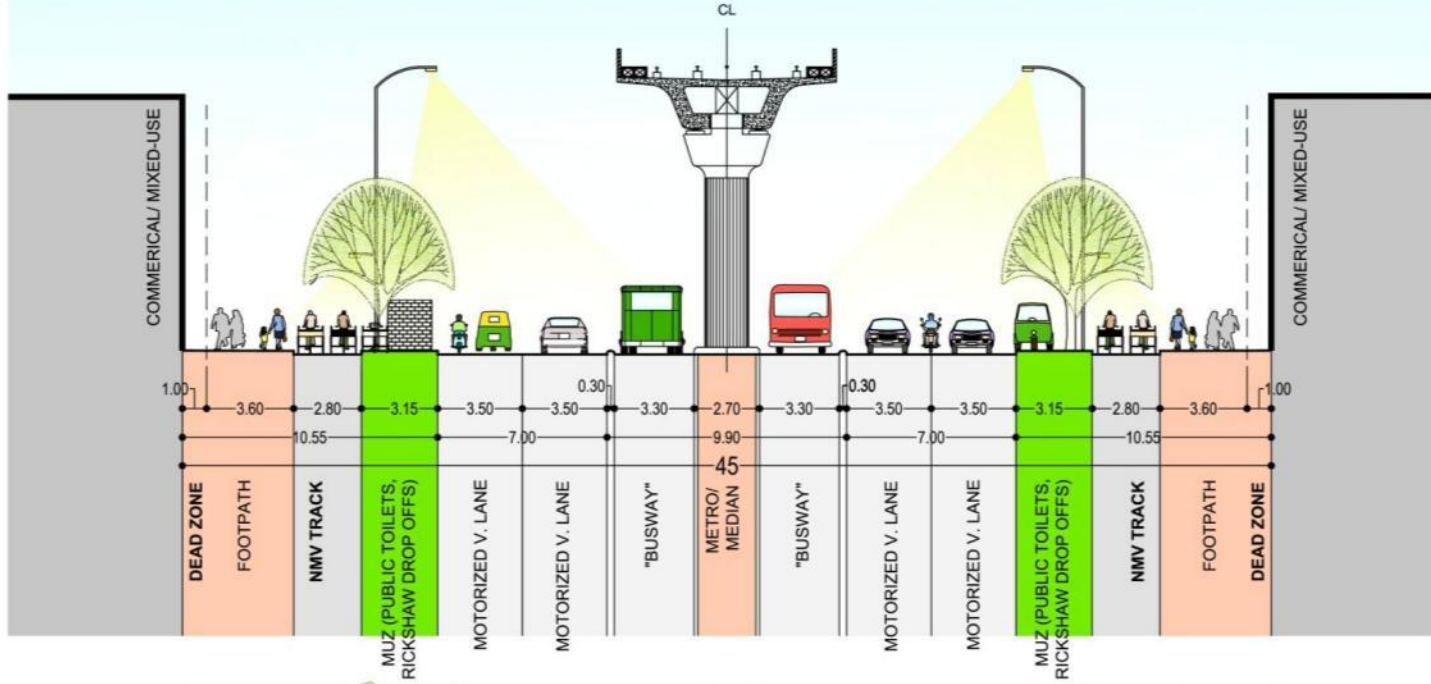
**Proposed
road section**

45M Road

Vikas Marg

**With BRT at
typical
section**

**Commercial
Edge**



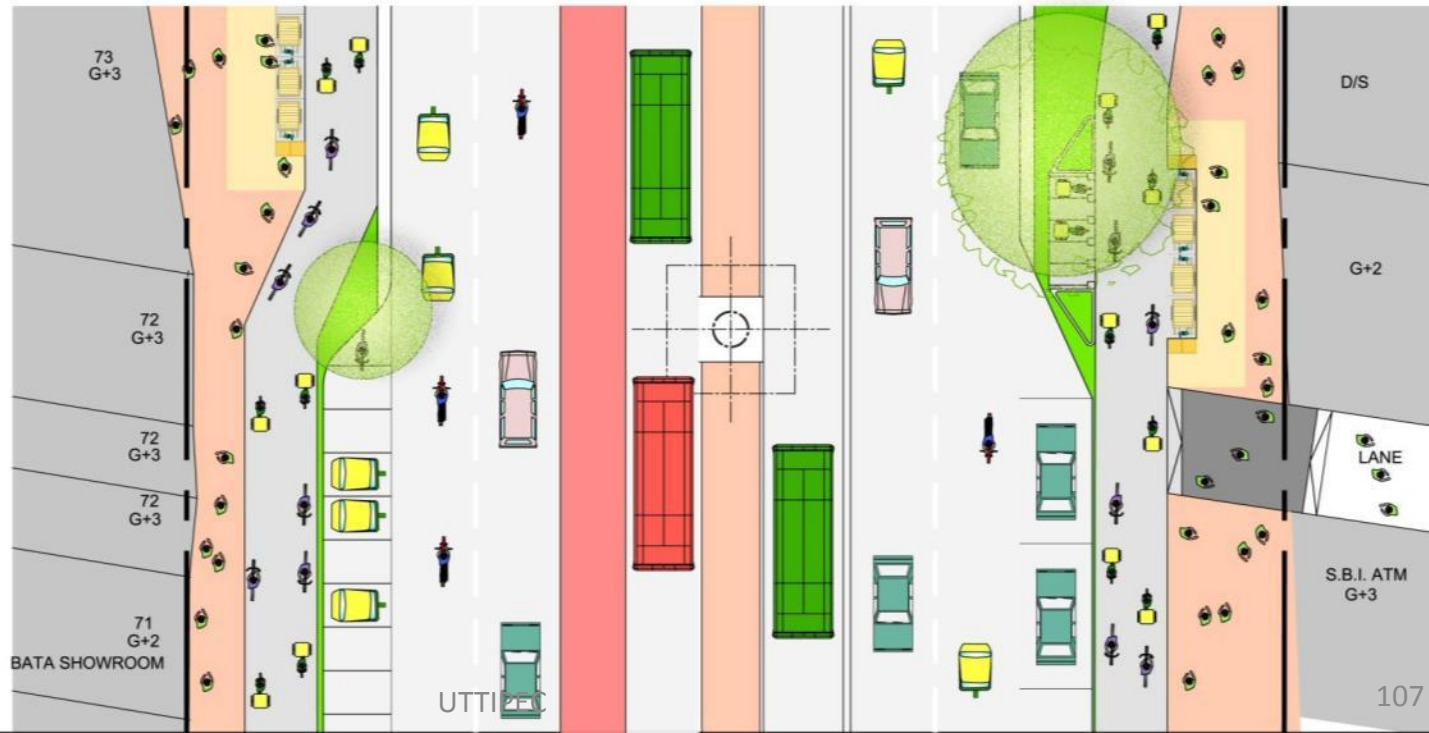
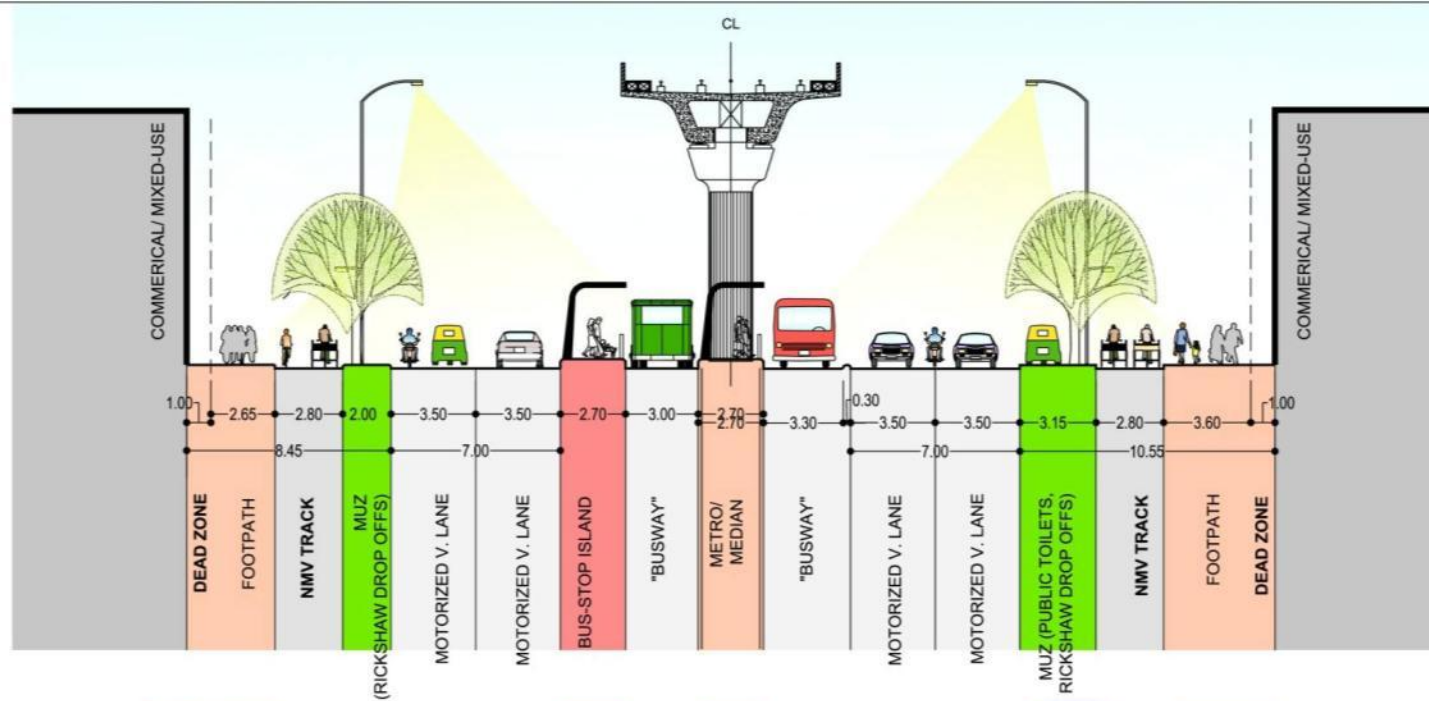
Proposed road section

45M Road

Vikas Marg

With BRT at Bus Island

Commercial Edge



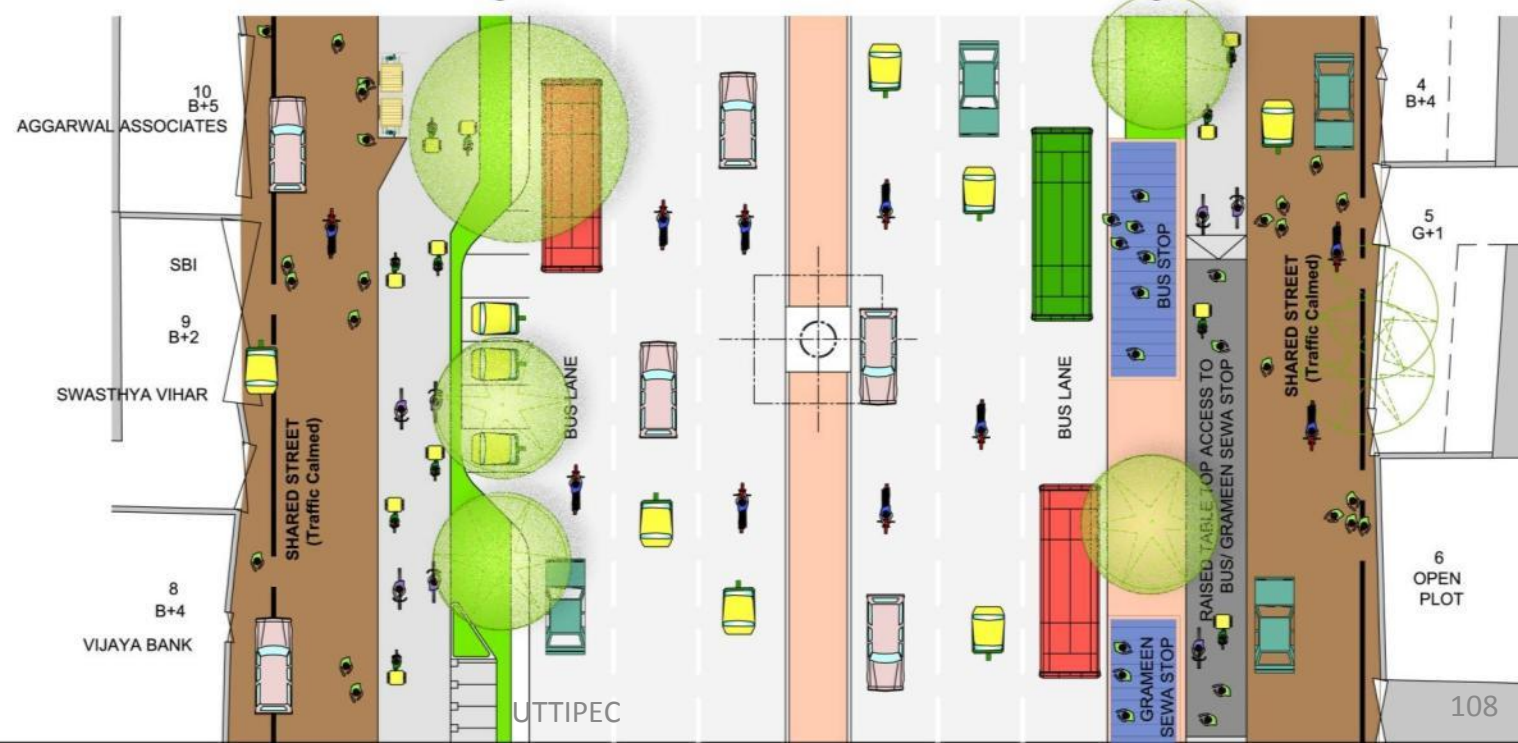
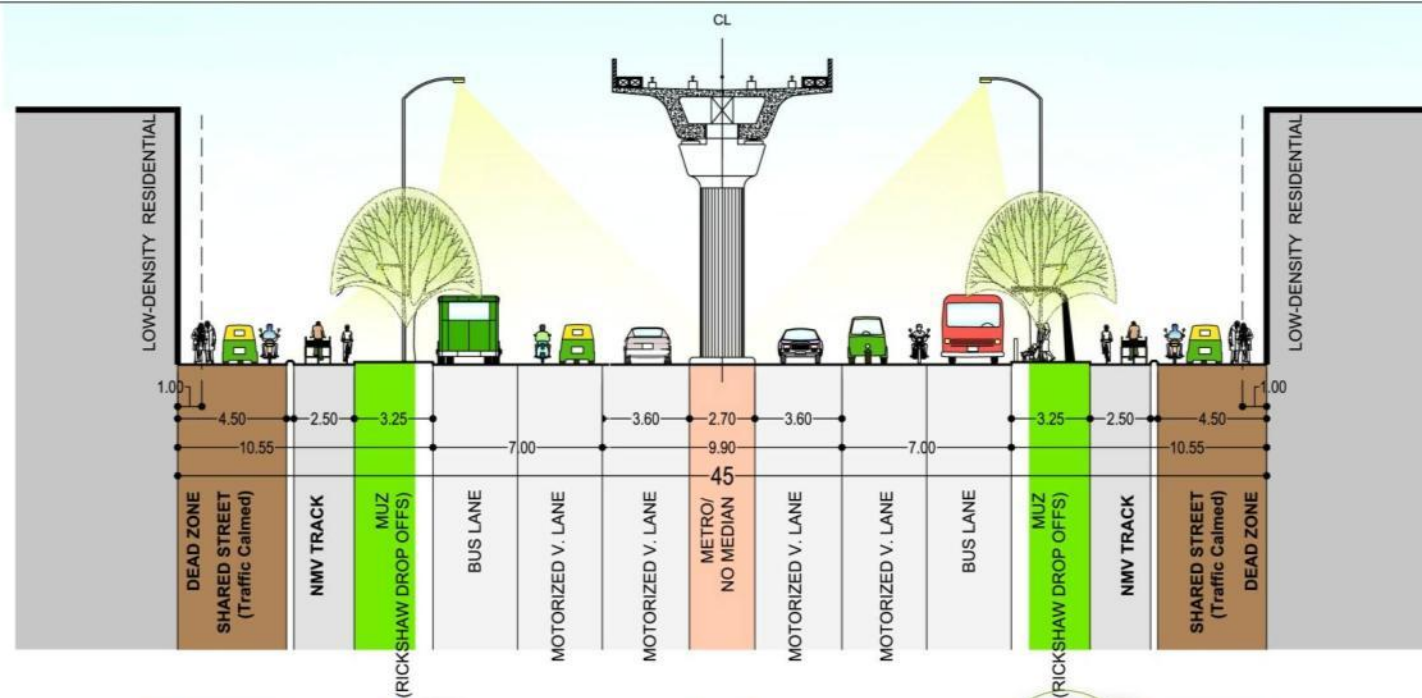
Proposed road section

45M Road

Vikas Marg

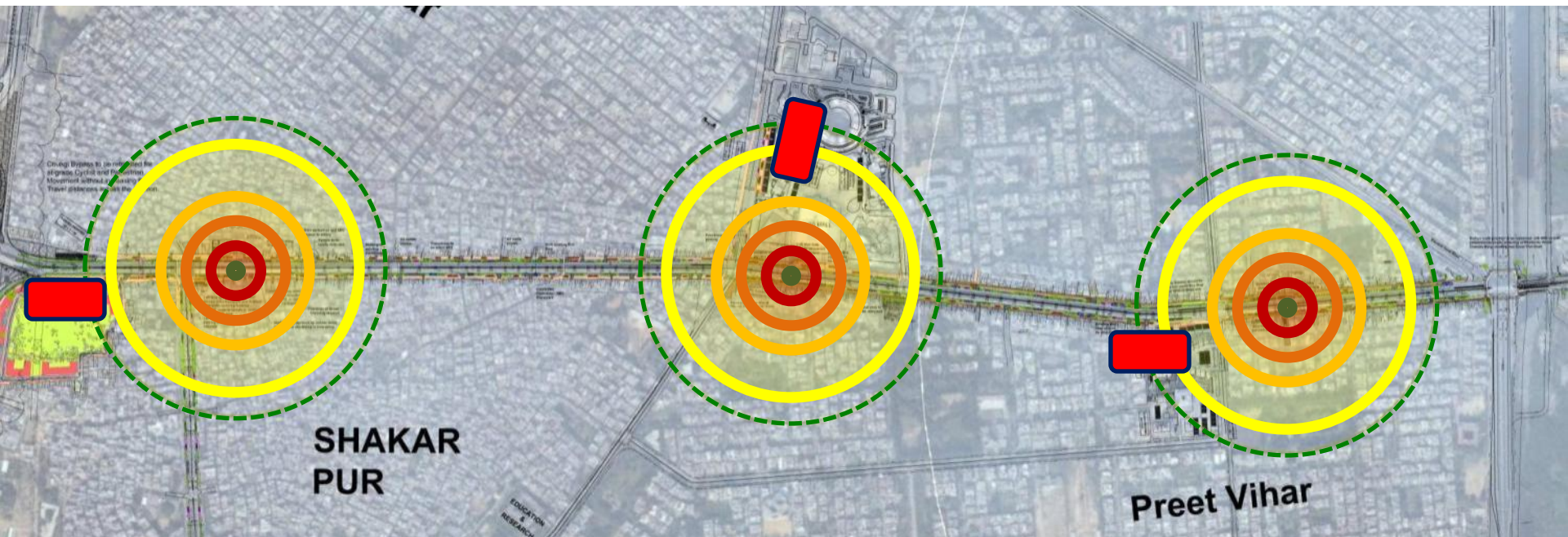
Without BRT

Residential Edge



Zones as per UTTIPEC MRTS Checklist w.r.t. Metro Stations

- 50m zone- ● Bus stop, Cycle rental, Cycle rickshaw stand
- 100m zone- ● Cycle and Two-Wheeler parking stand
- 150m zone- ● Auto Rickshaw stand
- 250m zone- ● Taxi stand, Private car drop-off
- Beyond 250m- ■ Long Term Stack parking



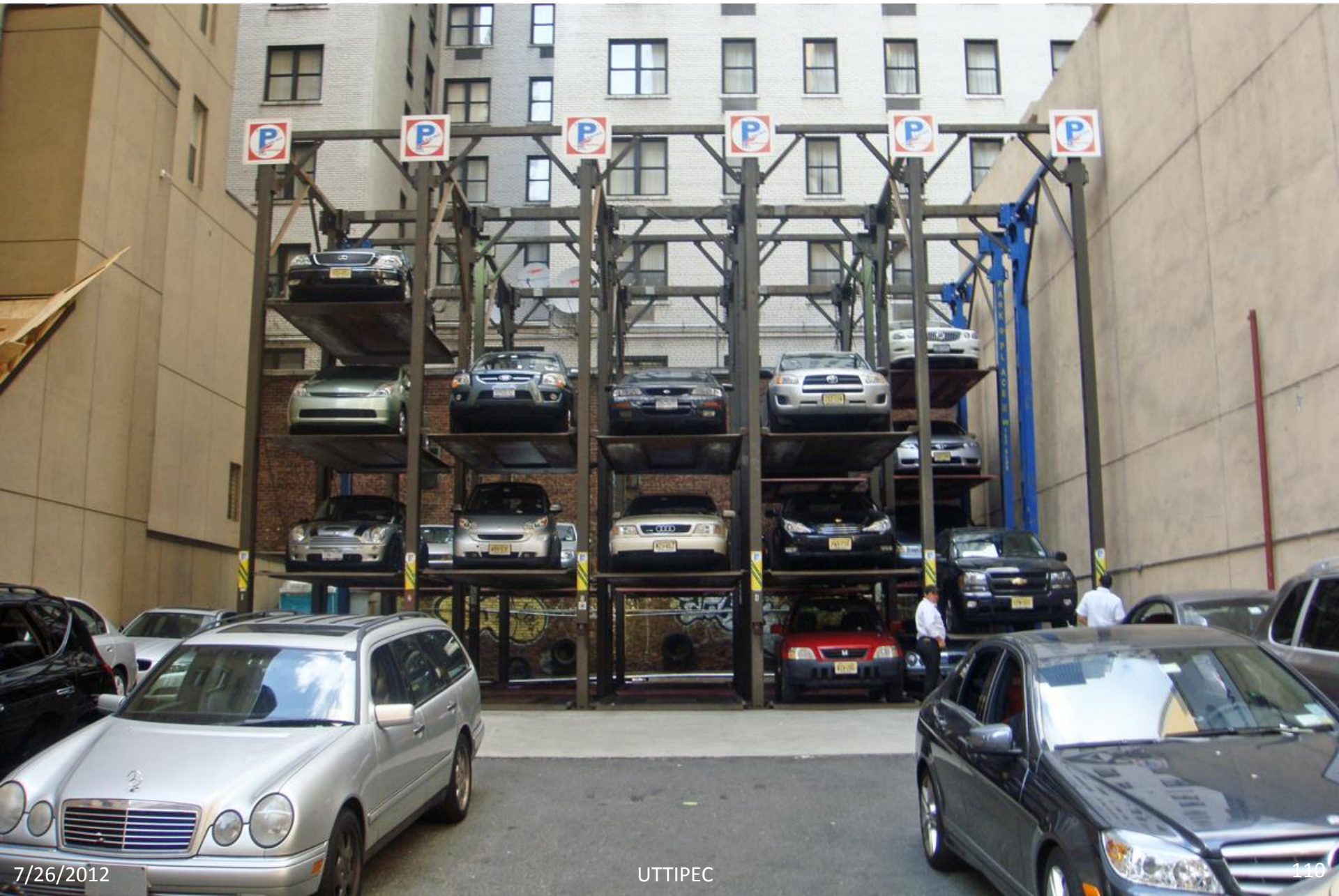
Laxmi Nagar Station

Nirman Vihar Station

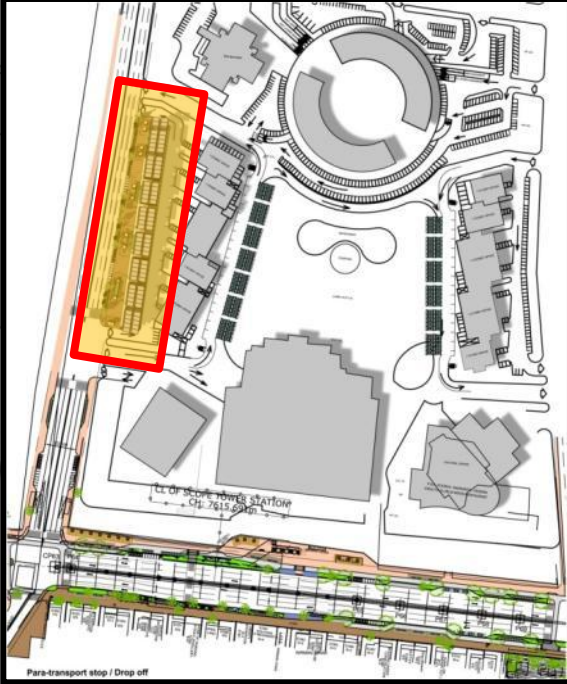
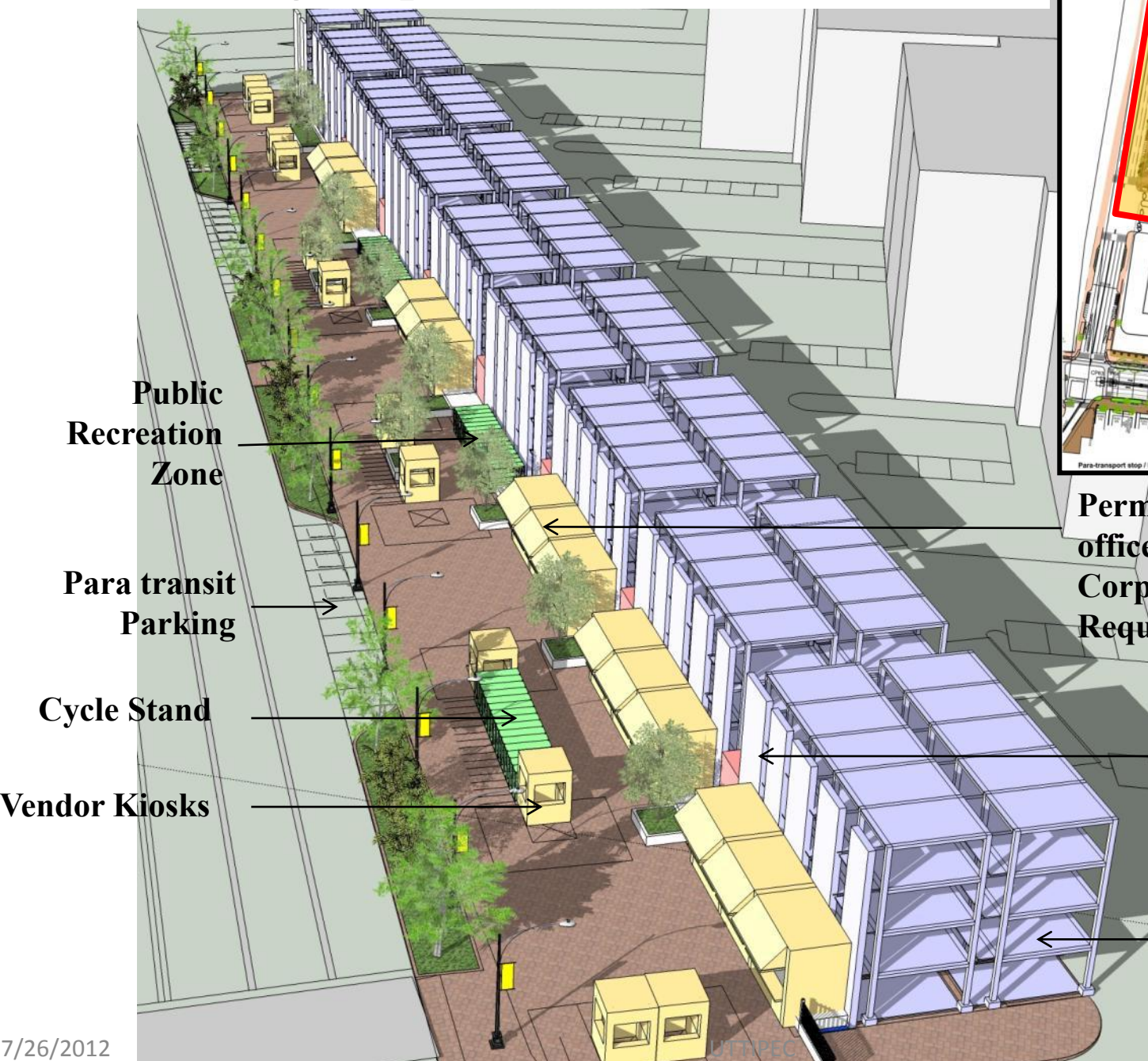
Preet Vihar Station

UTTIPEC

Stack Parking: Less space, more efficiency, lower cost.



Stack Parking Proposal



Public Recreation Zone

Para transit Parking

Cycle Stand

Vendor Kiosks

Permanent shops/ public offices as per Municipal Corporation Requirements

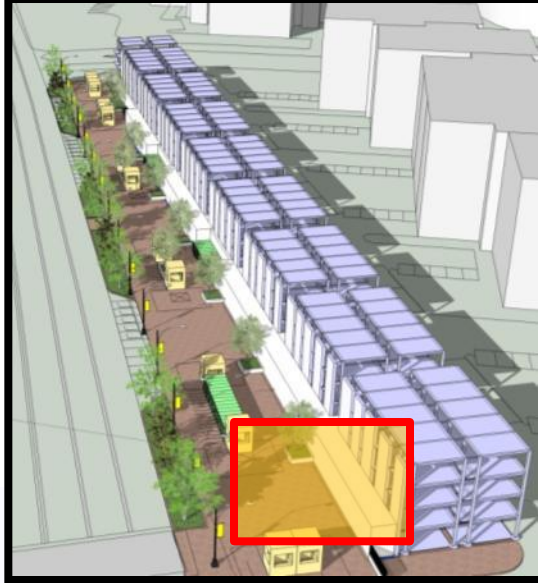
Graffiti/ Advertisement Hoardings on Stack parking

Stack Parking

Subsequent improvement of Public Realm

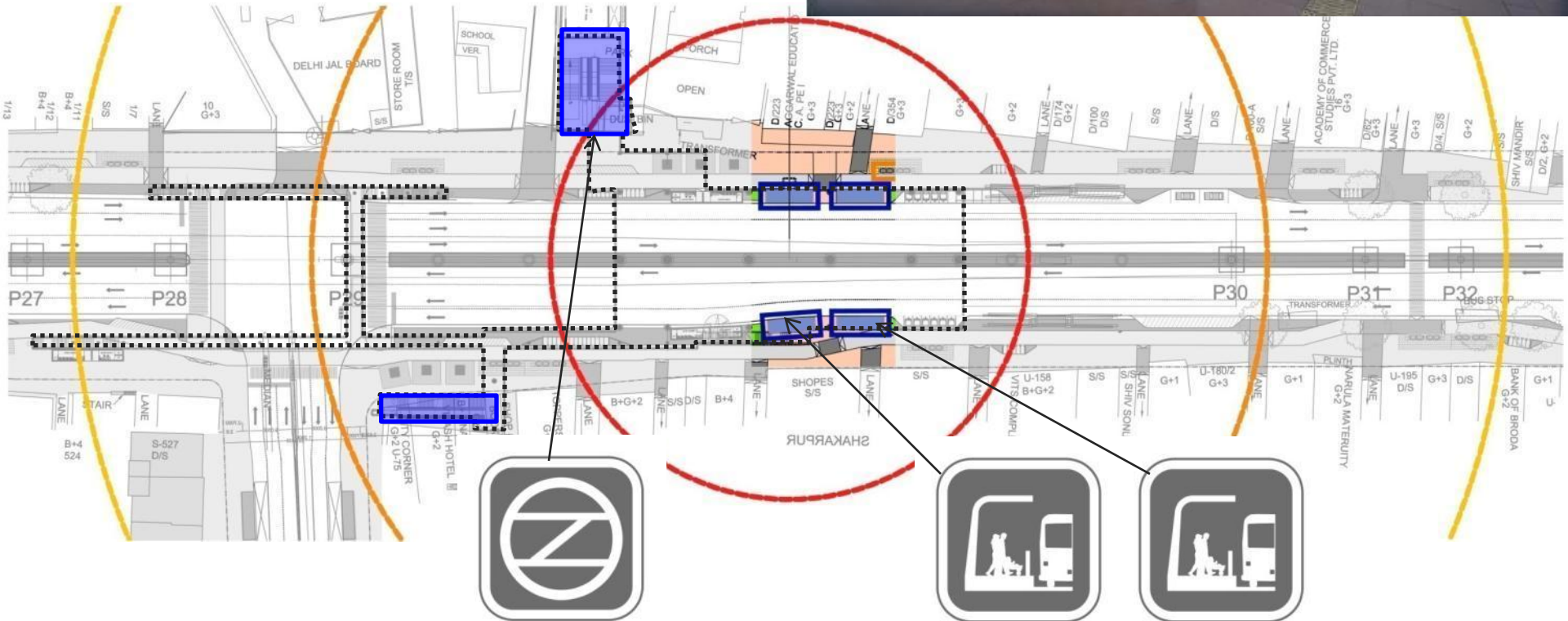
Permanent shops/ public offices as per Municipal Corporation Requirements

Graffiti/ Advertisement Hoardings on Stack parking



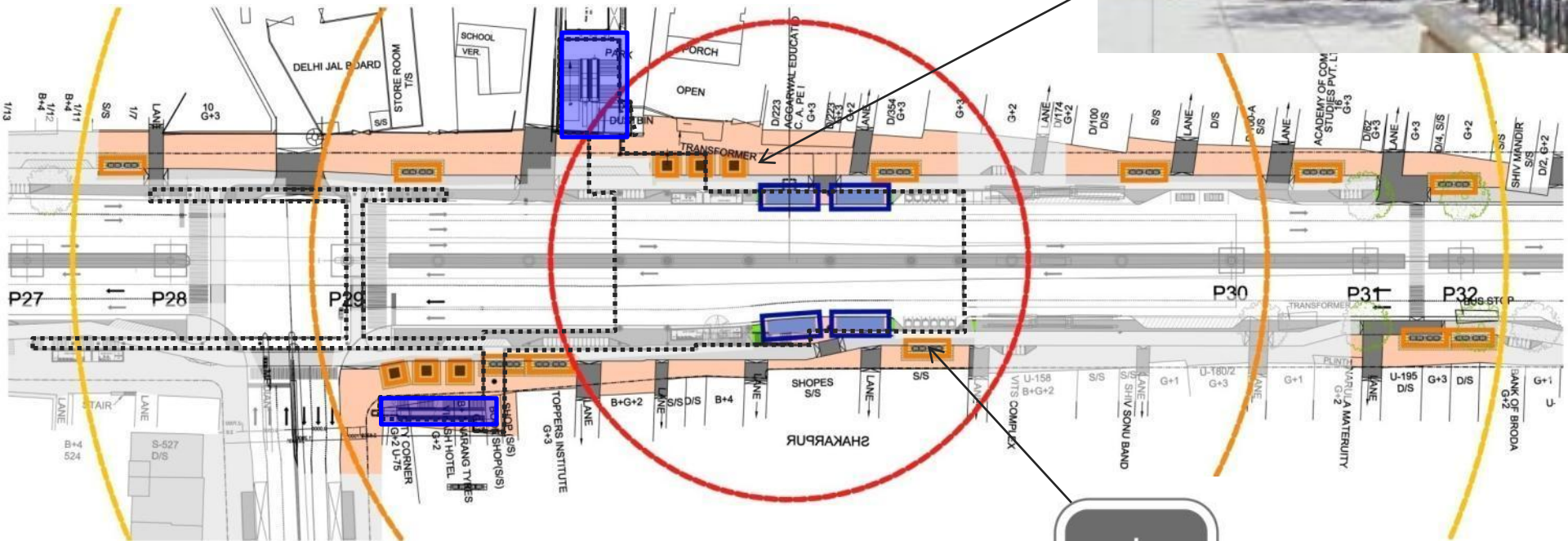
Bus Stops & Grameen Sewa Stops

- Within 50M from Metro Station
- Current location of Bus Stops area retained
- Separate Grameen Sewa Stands Near Bus Stands



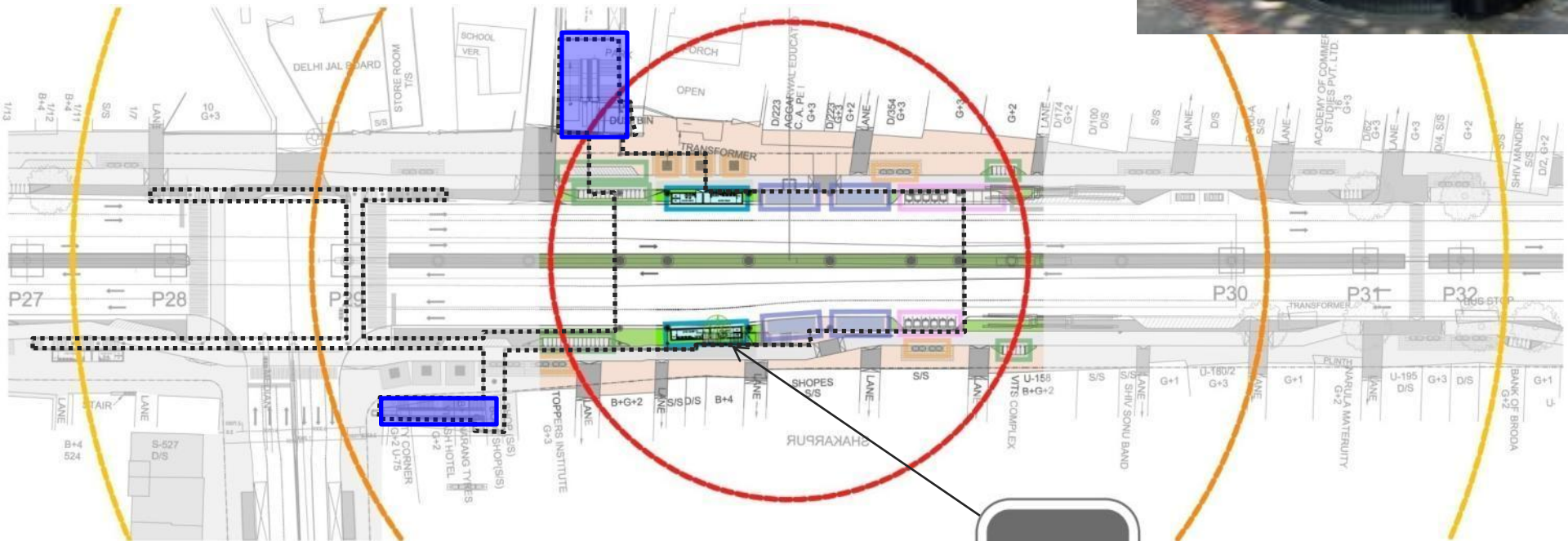
Vendor Zones

- Vendor zones as per Delhi Master Plan 2021
(Considering commercial on two floors along Vikas Marg)
- **Two Types-** Kiosks and Vendor cart parking




Public Utility

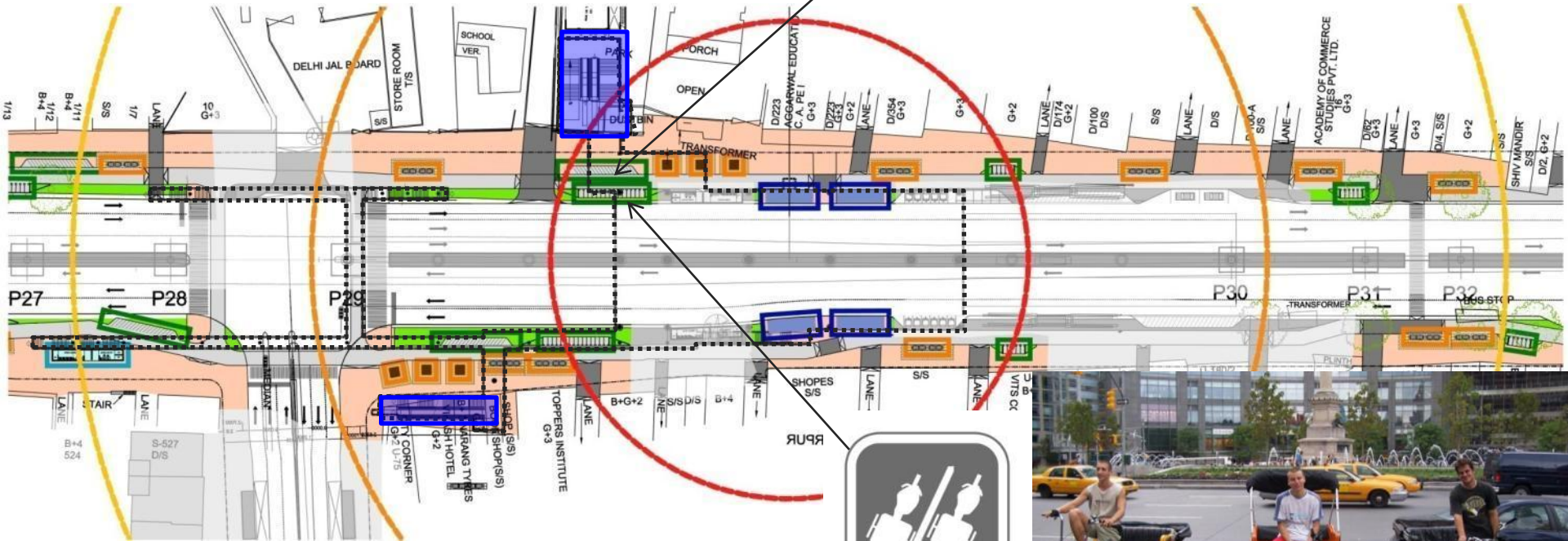
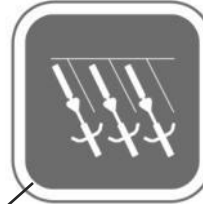
- Within close proximity to Bus Stands and Metro Exits for security reasons
- Male | Female | Handicapped TLT



Cycle & Cycle Rickshaw Stands

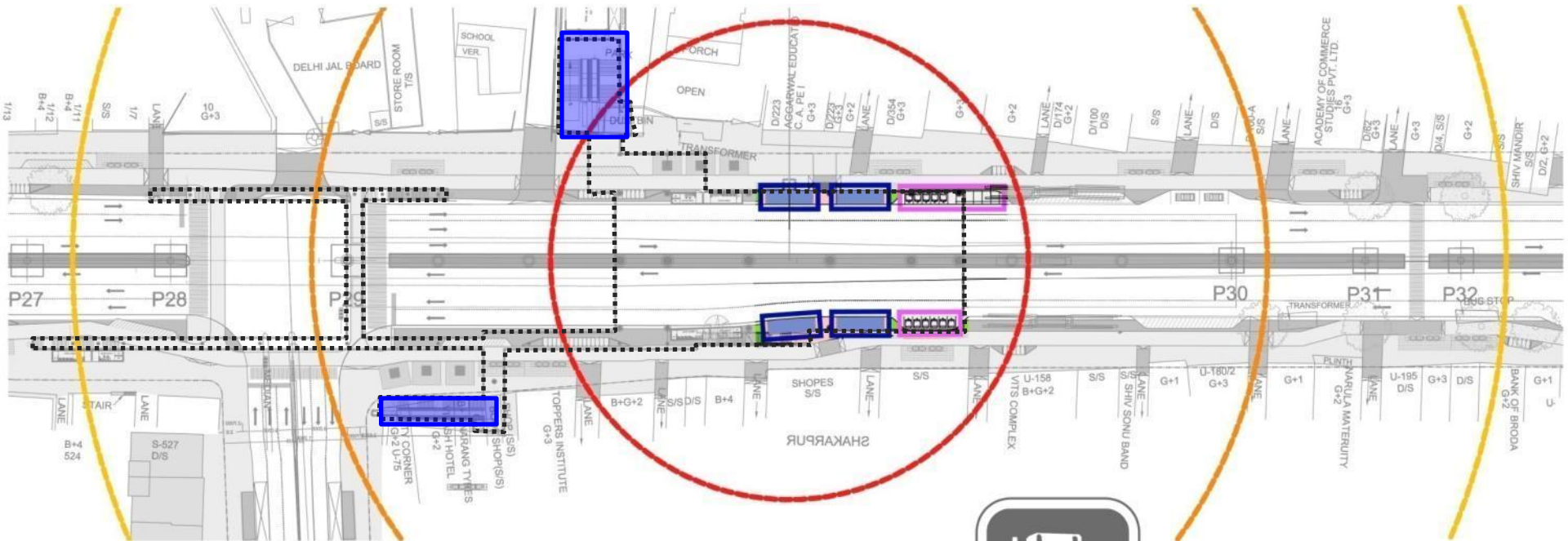
Close to-

- Bus Stand/ Metro Stations Entry Exit
 - Lane Entry/ Exit
 - Vendor zones
 - 2/4 Wheeler Drop-off
- 



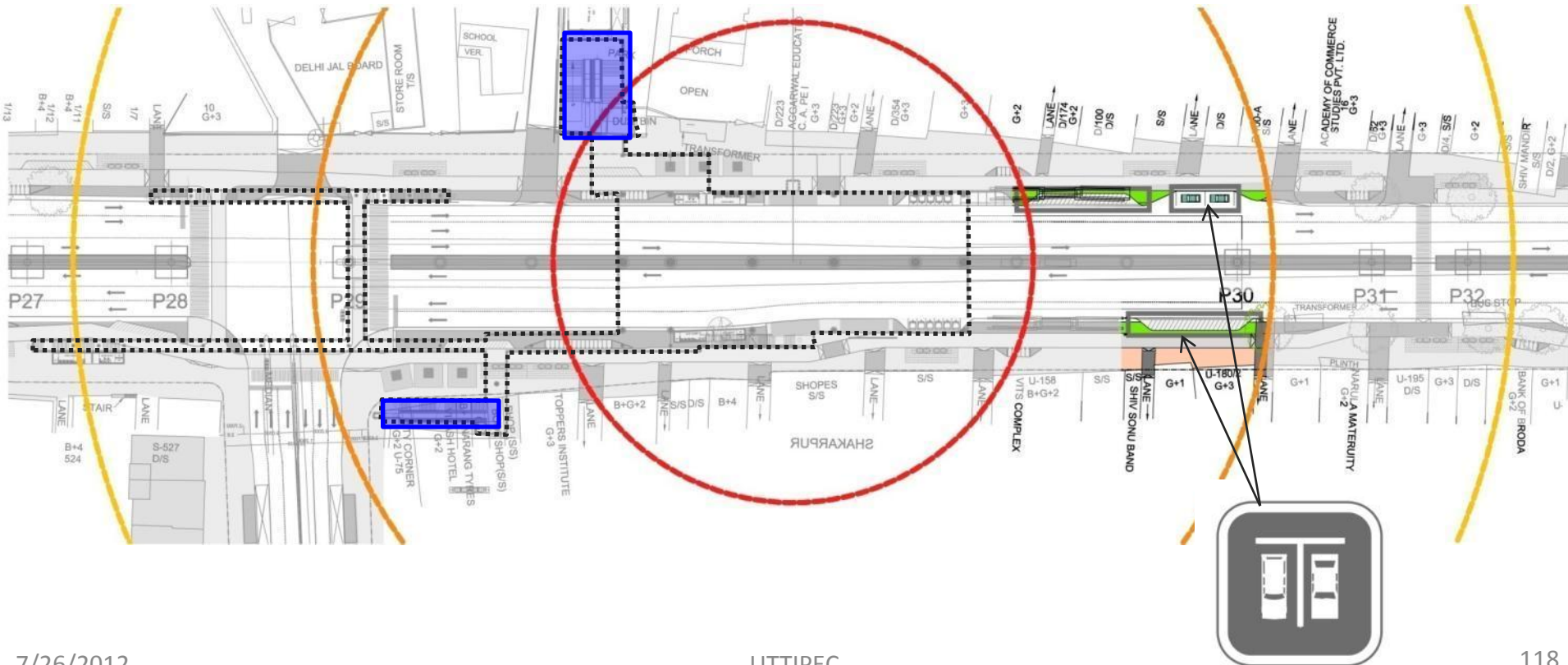
Para Transit Stops

Close to Bus Stand and
Metro Stations,
(as per availability of space)



Private Vehicle Drop off

- Emergency drop-off near Bus/ Metro Station, as per availability of space.



Karol Bagh Market
PEDESTRIANIZATION

A CLUTTER-FREE BAGH

A peek at what to expect in a pedestrian-friendly Ajmal Khan Road at Karol Bagh. Parks and a Metro station nearby will also get a facelift

WATCH OUT FOR...



ROADSIDE ART

Modern art will be placed along road lending it a swanky look



SIGNAGES

Smart-looking signs giving road name and direction



STYLISH BINS

Imported bins will replace ugly-looking plastic bins



TREE GUARDS CUM BENCHES

The tree guards cum benches will be of wood



SAY BYE BYE TO PARKING WOES

MULTI-LEVEL PARKING LOTS PLANNED

1,000 CARS CAN BE PARKED



MAKEOVER FOR AREA NEAR METRO STATION

Walkways for pedestrians will be paved with tiles. Rickshaws and cycles will not be allowed on the pedestrian tracks. Battery-operated rickshaws will ferry people to and from the station



WHAT MORE TO LOOK FOR



RICKSHAW LANE STOPS



RICKSHAW BAYS



TOILETS WITH ADVERTS



DRINKING WATER



BINS WITH CITY MAP

PEDESTRIAN-FRIENDLY PARKS



Nearby parks will get a makeover. Parking of vehicles will not be allowed on roads leading to the parks from Ajmal Khan Road. The area outside the parks will be paved with tiles. There will be kiosks and signages. Bollards will ensure passing vehicles do not graze past visitors near the parks



MCD- Municipal Corporation of Delhi
Karol Bagh Streetscape

UTTIPEC SUBMISSION

Scale: 1:2000
 January, 2010

DIMTS
 Delhi Integrated
 Multi-Modal Transit System



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NilA Architecture & Urban Design



URBAN DESIGN CONCEPT DRAWING ONLY
NOT FOR CONSTRUCTION –
 Realization is Subject to Implementation by Authorities
 & Further Construction Drawing



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