



Audit for safe accessibility

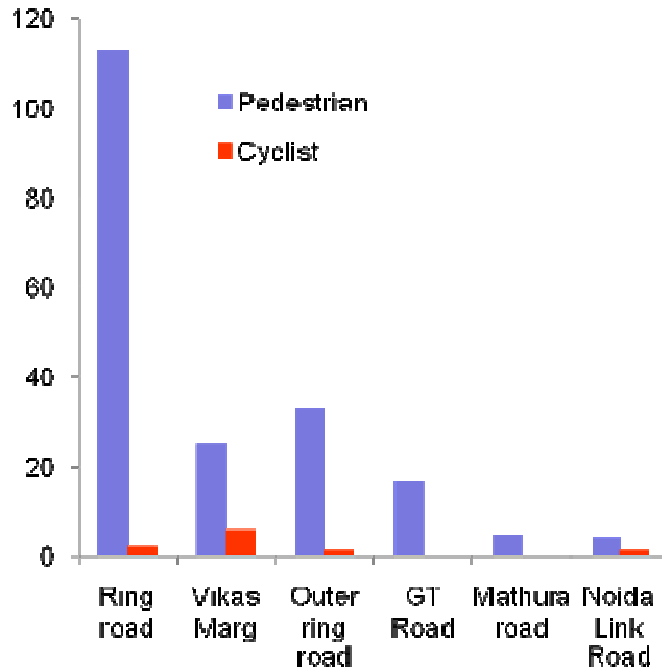




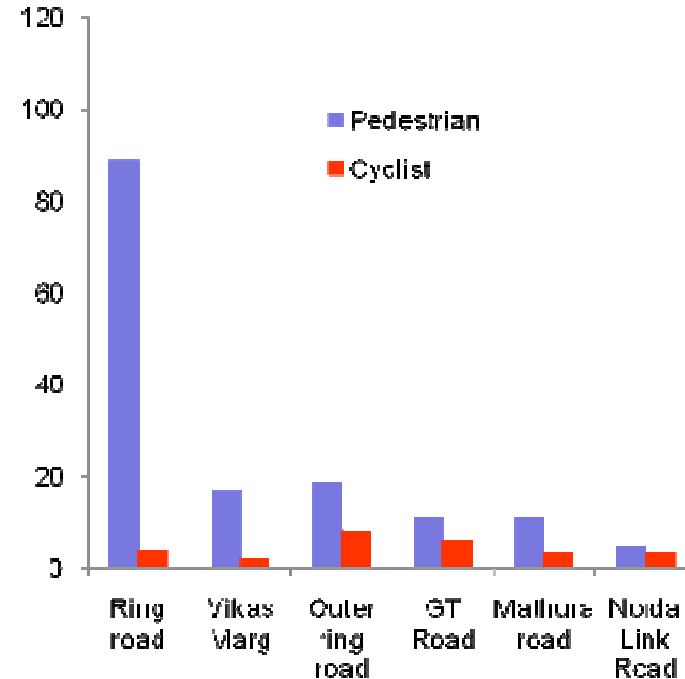
We walked on roads that are most dangerous for pedestrians and cyclists



Accidents 2012



Accidents 2013



CSE has carried out safety audit of six roads with highest number of accidents involving pedestrians and cyclists

- Few stretch from these roads were selected for the rapid assessment.
- The study includes immediate neighborhood and other landuses around to assess accessibility level of the corridor.

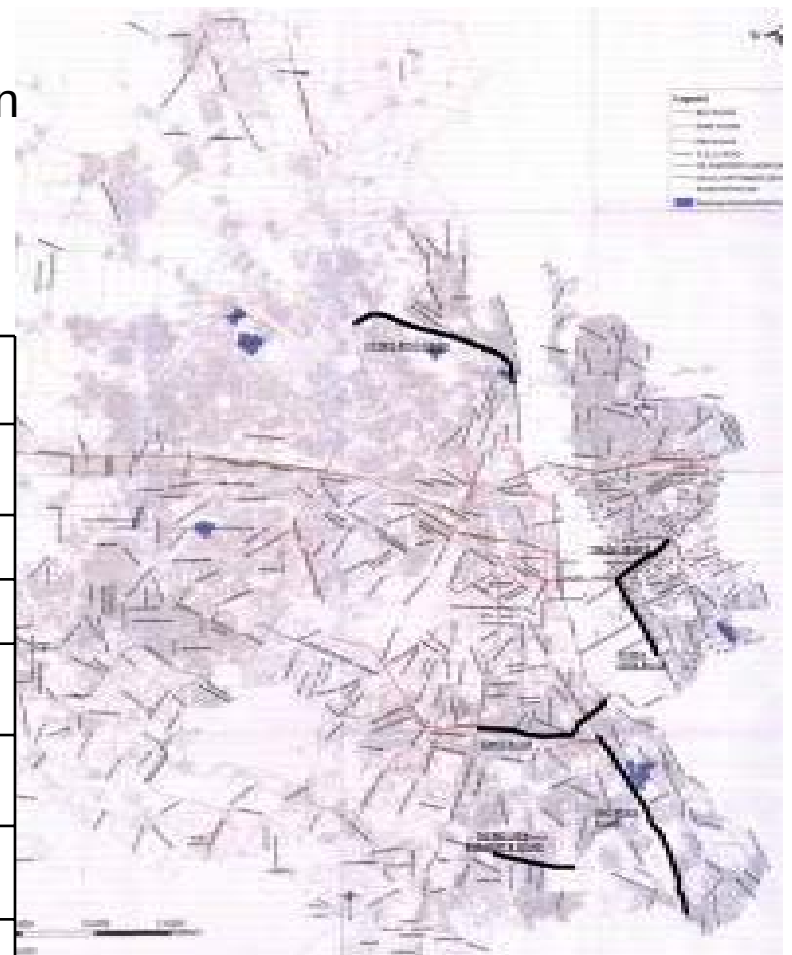
Source: Delhi Traffic Police



What did we do?

- Segments were selected from the roads based on hotspot data base. Stretches have been identified in continuity between junctions and intersections
- The total length of segments across 6 roads taken for the study is approximately 27 Kms. These include:

Road Name	Approx. Length	Start to End point
Mehrauli Badarpur Road	2.5 Kms	Khanpur T point to Hamdard Nagar T Point
Mathura Road	6.5 Kms	Harkesh Nagar to Badarpur extension
Ring Road	4 Kms	Maharani Bagh to Moolchand crossing
Outer Ring road	8 Kms	Mukarba Chowk flyover to Wazirabad intersection
Vikas Marg	4 Kms	Inderprastha marg crossing to Shakarpur More
Noida Link road	2 Kms	Laxmi Nagar Metro station to Gurjar samrat Mir bhoj marg intersection
Total	27 Kms	





What method did we use?



- **This rapid assessment includes reviewing, auditing and rating of existing infrastructure and accessibility features in each corridor.**
- For policy relevance we have benchmarked according to the checklist of parameters in UTTIPEC street design guidelines that are meant to be implemented in Delhi.
- This includes qualitative criteria as well as discretion of assessor and users (perception of safety, attractive for walking and wellbeing etc).

Broadly 8 criteria have been taken into account

- ☐ **Engineering and design features** of footpath and cycle track(height ,width, material, continuity, segregated from carriageway, obstructions, lighting),
- ☐ **Crossing- Intersection and mid section** (signal time, signage, marking, continuity/barrier free, traffic calming measures etc)
- ☐ **Encroachment/Impediments on footpath**(permanent, temporary structure, parking
- ☐ **Design features for Transit /Bus stop/shelter**(height, boarding/alighting time, clear width, crossing facility) :
- ☐ **Amenities** (Toilet, vendor space, trees, lighting, seating),
- ☐ **Conflicts** (between bus, motor vehicles ,NMT, pedestrians etc),
- ☐ **safety features** (lighting, dead width, public spaces) and
- ☐ **Aesthetics** (design qualities of each street furniture's/features,) have been considered for overall corridor assessment and rating.



Methodology

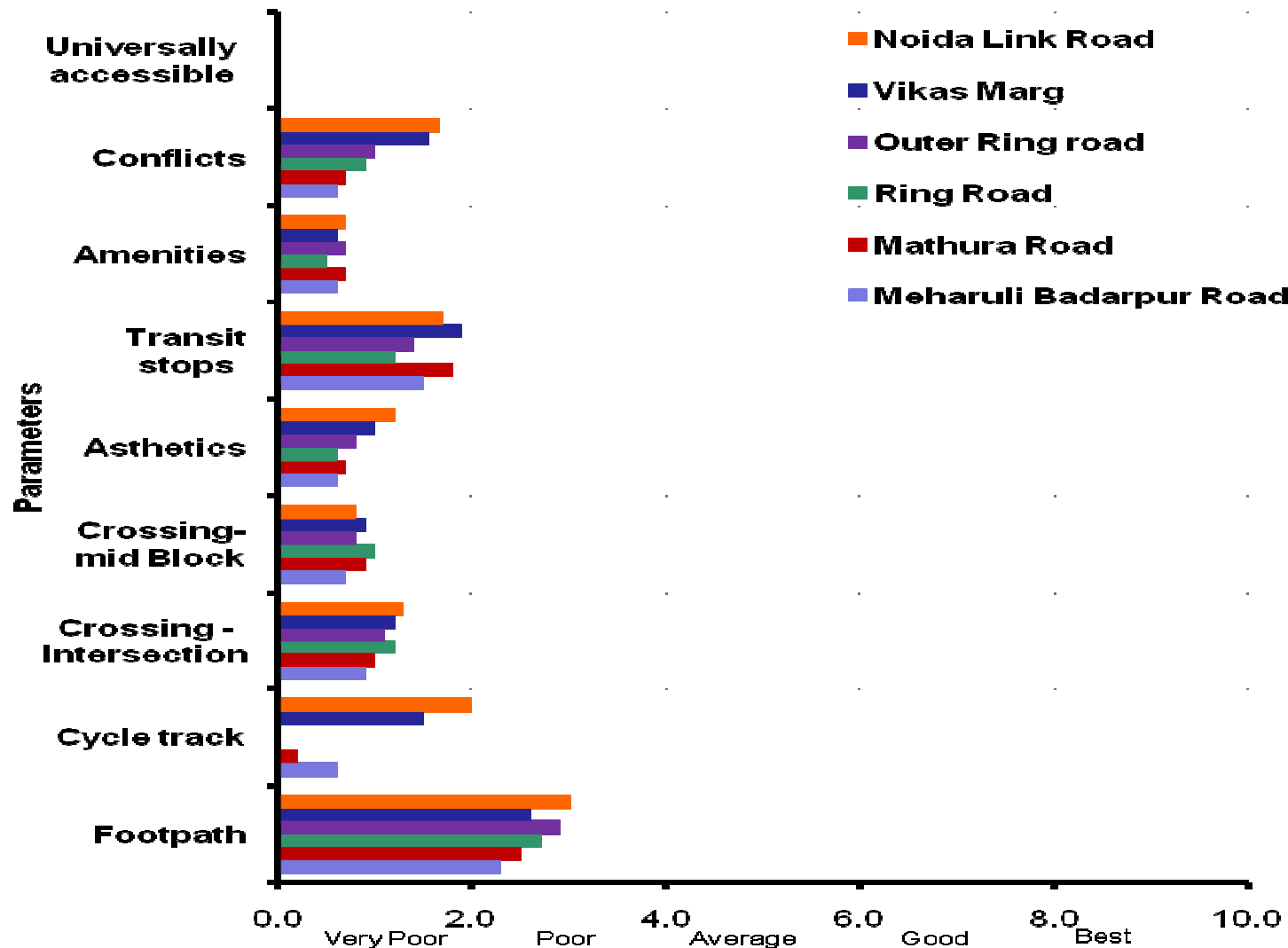


Scoring method:

- Use of detailed map and checklist. Field surveyors rated the selected road stretches from 1 to 10 for each indicators (1 being the lowest, 10 being the highest) in each section. Each road/ corridor was divided into segments for scoring.
- **The scoring for each segment was done on the basis of infrastructure available and its comparison with the existing standards.** The scoring for each 'assessment parameter' was done in two parts, -- design according to the standards and existing situation in a given segment.
- The final score of each segment in each component is multiplied with the segment length. Final score of the component is derived by adding scores of all the segments and then dividing it with the total length. This process gives scores for each corridor for the each components and where they stand in respect to safety and accessibility for the cyclists and pedestrians.
- **The scores are assigned to quantify the problem and indicate the variability on the scale.** The review of corridors is based on auditing.
- **User perception:** CSE has also taken into account the user perception on personal safety, availability and quality of infrastructure to evaluate ranking of each components and rating of the corridors.



The Audit Results



- **The ugliest of all:** The ranking of all these roads show that on all parameters all roads score from very poor to poor. None of the corridors appear in average, good, or best classes.



How can we walk safely?

Availability of walk and cycling infrastructure



- Footpaths are available in around 55% of the total length surveyed. Only 10 per cent of the total length has cycle tracks: Width of the footpath according to the guidelines is minimum 1.8 M and its available only at 10-15% of the total road stretch. The kerb height is unacceptable along all the roads except at some locations along Vikas Marg. Only 5-10 per cent of the total length has kerb height equivalent to standards i.e. 150MM. None of the corridors have continuous footpath.
- Only 10 per cent of the total length has cycle tracks. Noida Link Road and Vikas Marg have reasonable better cycle tracks but at some segments not accessible due to obstructions at the entry. Mathura road and Mehrauli Badarpur road stretch has cycle track only for 300-400 Mts. There are no legal parking spaces provided for cycles.





How can we access public transport safely



- Accessibility to public transport nodes is poor in almost all the corridors. Bus stops are located on footpaths, as there is no clear multi function zone and have no bus route maps displayed.
- Height of the base of the bus stop does not match with the base of the bus, so people tend to wait on the street as the kerb height of the footpath increases upto 900MM;
- Buses stop at the middle of the road; Roads with more public transport users have less bus stops.
- Bus stops along Mathura road and Ring road are located at the foot of the flyovers so buses tend to stop at the foot of the flyover rather than dropping passengers at Bus stops, making it unsafe for bus users.





Road designed for vehicles impede people's access



- None of the intersection is designed with raised table top crossings and none have pelican signals for convenient crossings.
- None of the corridors have mid section crossing; Crossing are given either in the form of foot over bridges or subways.
- No crossing on ground for people walking or cycling and medians are blocked with high railings.
- Only 15% of the total corridor studied has visible zebra crossings.
- Opinion survey show 90% of walkers and cyclists prefer crossing on the ground as FOBs or subways increase the distance and are inconvenient.
- Foot over bridges and subways with ramps attract motorized vehicles for crossing.





Environmental Conditions, aesthetics and amenities



- All corridors score poor even in aesthetics and amenities. Few toilets can be seen along Mehrauli Badarpur road, Noida Link road and Vikas Marg but these remain locked or are in horrible conditions.
- There are no facilities for women. No provision of shaded footpaths. Walking and cycling infrastructure and bus stops are not well maintained and are poor in cleanliness; no concentrated lighting making the infrastructure unsafe in the night.
- Footpaths all along the segments are along the boundary walls with no set backs, making them unsafe and vulnerable to crime;
- Parking on the footpath a menace -- majorly along Mathura road, Mehrauli Badarpur road and Vikas Marg. Around 50% of each road footpaths are encroached by parking.





How can anyone with some disability can negotiate in city's roads?



- The infrastructure in all the corridors is not designed keeping disable in mind. All the corridors score zero in this aspect.
- Disabled cannot access footpath as there is no ramp provision and kerb height is higher than 300mm. As there are no raised table top crossings with medians blocked this makes them vulnerable to accidents while crossing;
- Most bus stops do not have ramps or tactile paving; Tactile paving exist along some portions of Ring road, Mathura road and Vikas Marg but they do not lead the user anywhere as they are put in haphazardly manner.
- No provision of auditory signals at any corridor.





It is possible to have alternative design to make roads safe, convenient, and aesthetically pleasing for all road users

Pilot corridor: Mehrauli Badarpur road



Same stretch can be redesigned for better results.....



Conflict of various kinds of vehicles occurring at the foot of foot over bridge. Also encroached market shops reduce carriageway width.



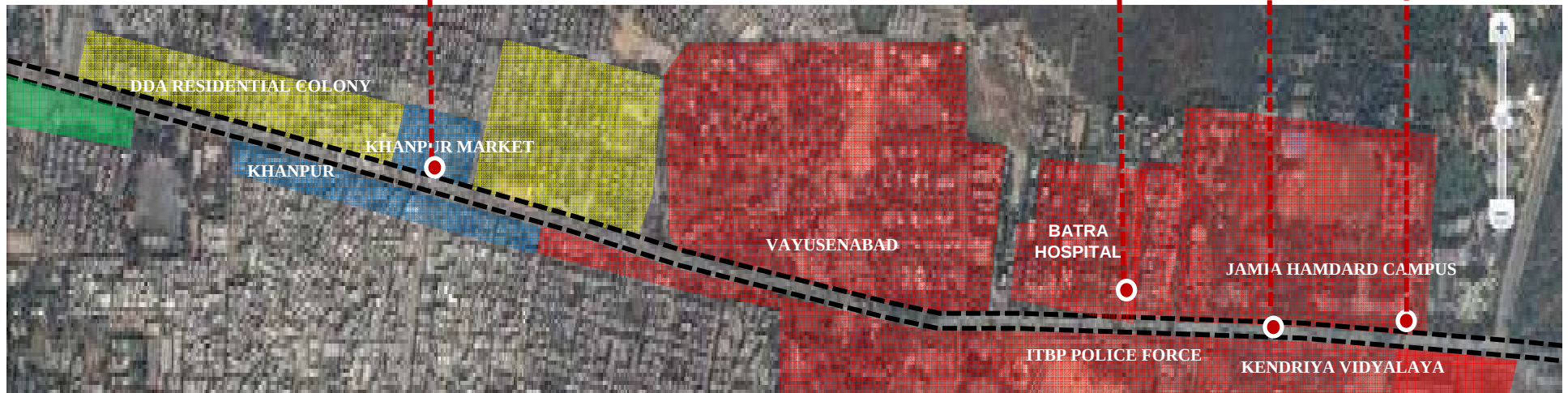
Illegal parking happening all along the service lane along Batra Hospital



Multiple activities happen at the foot over edge such as auto stops, bus stops etc. leading to congestion

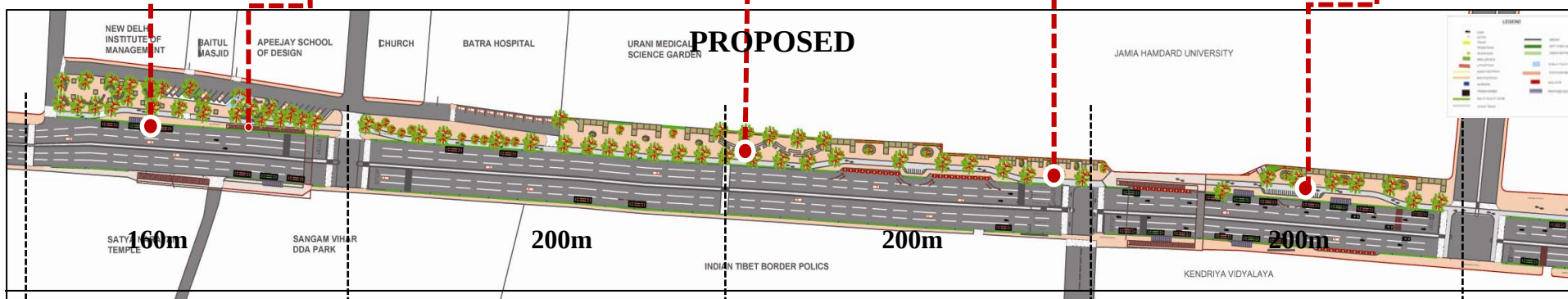
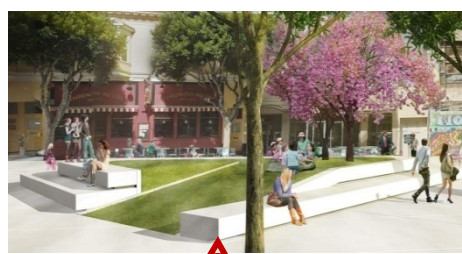
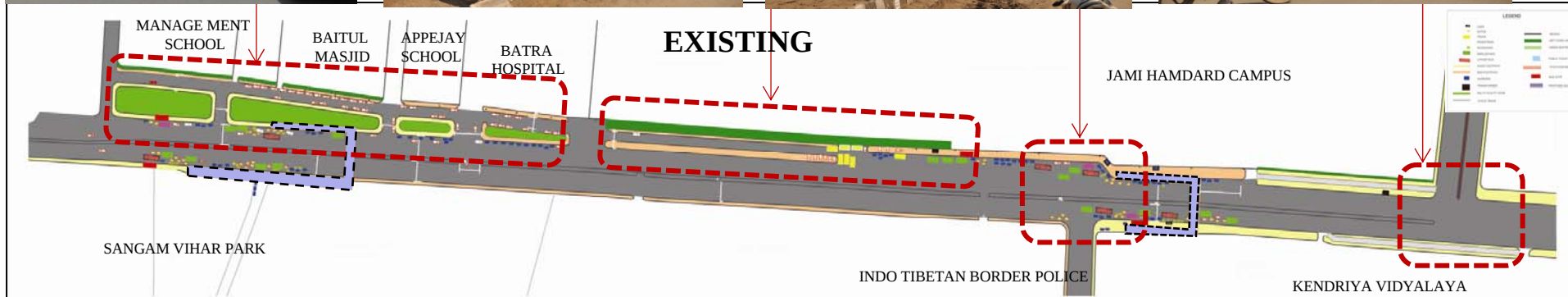
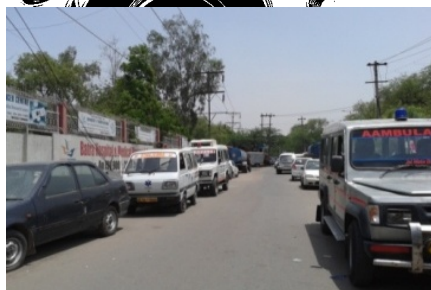


A very small part of the stretch has designed cycle track and pedestrian way.



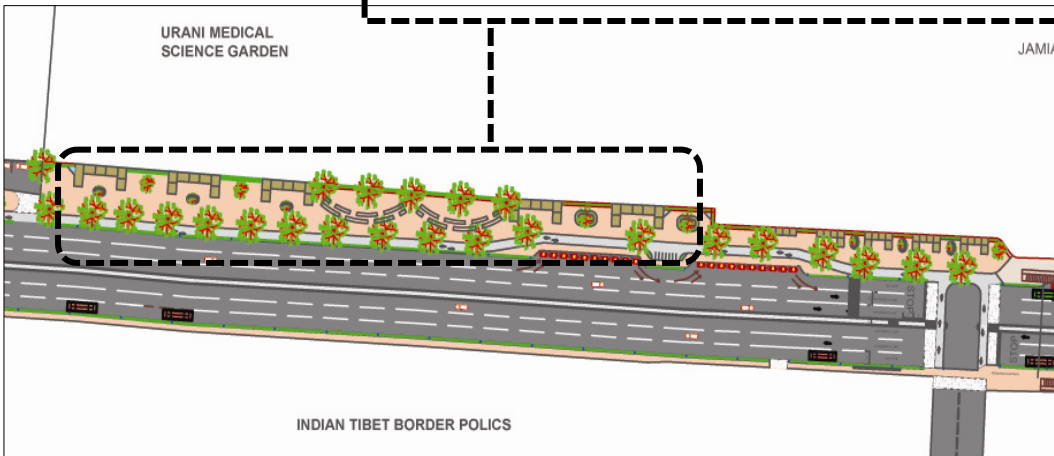
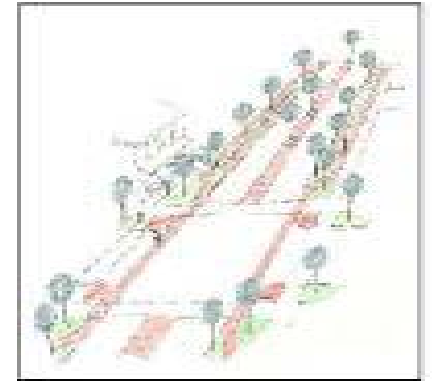
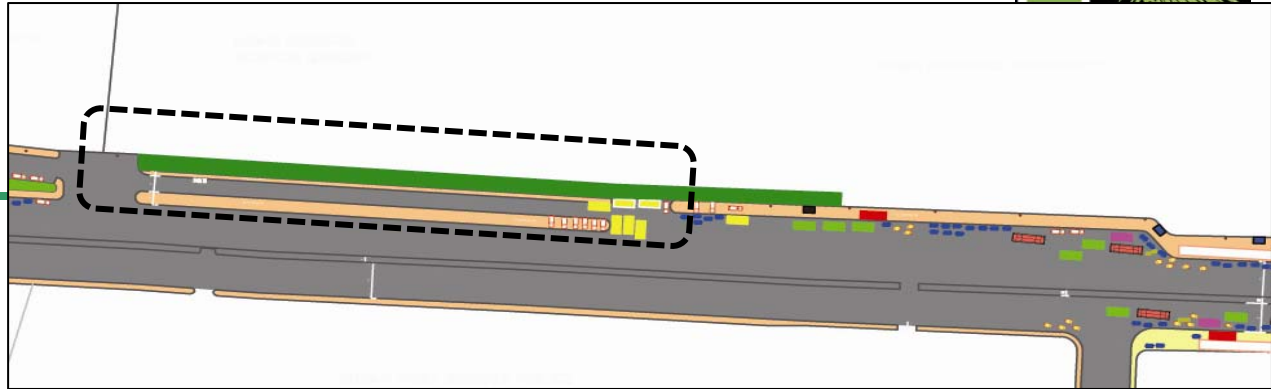


STRETCH A:

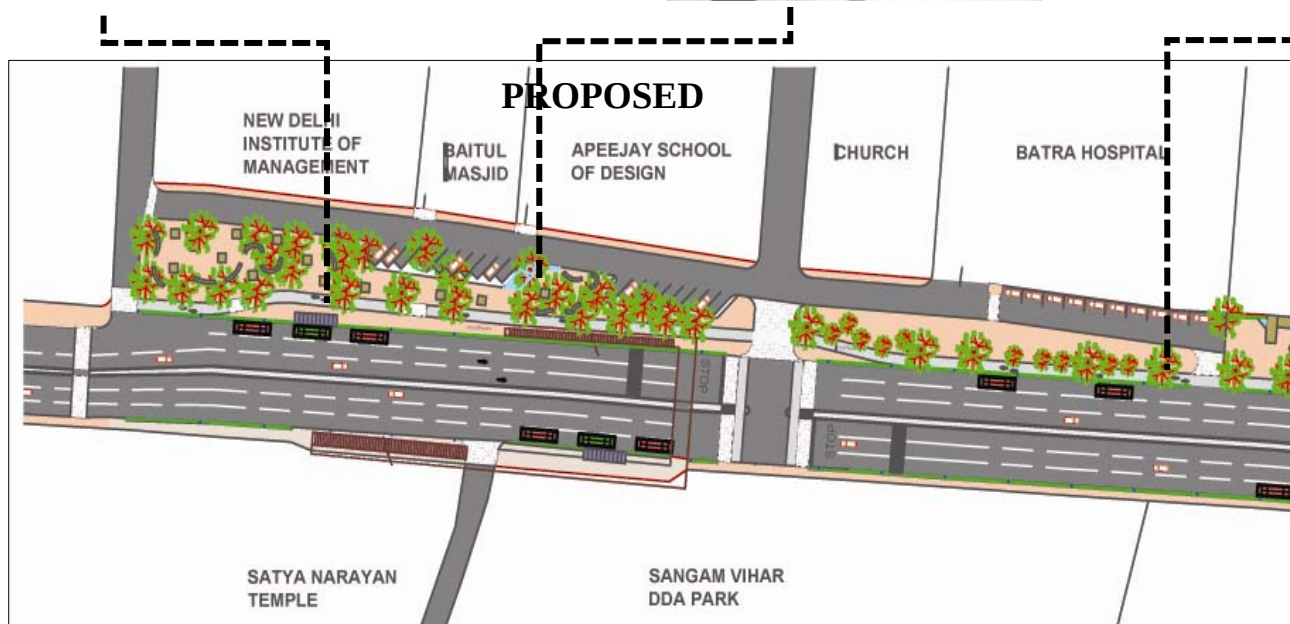
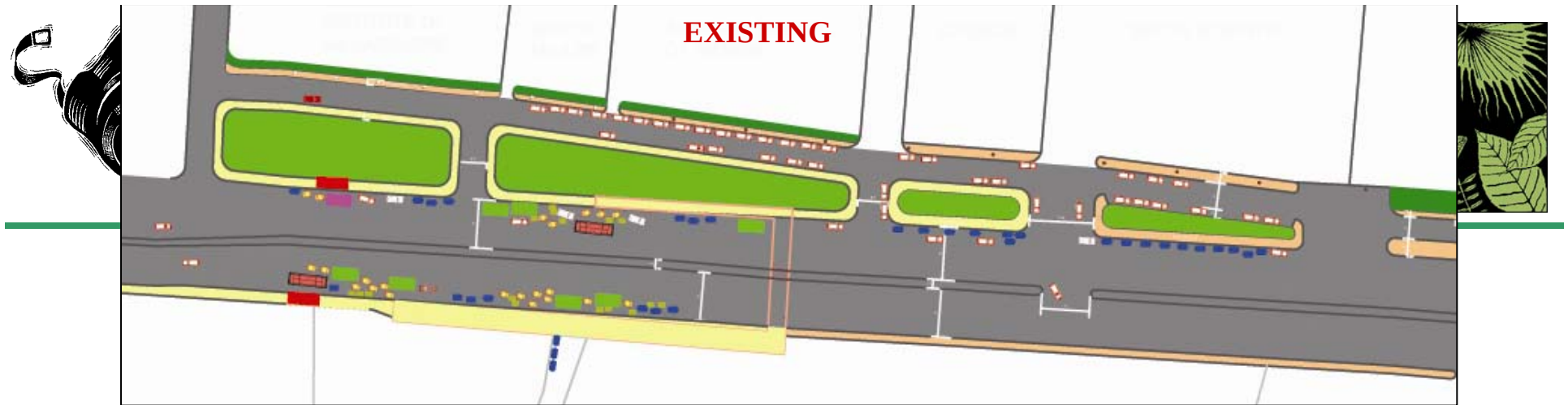




Reorganise hawkers and scattered multi transit facilities. This can free up 800 sq meter of additional area that can be developed as plaza.

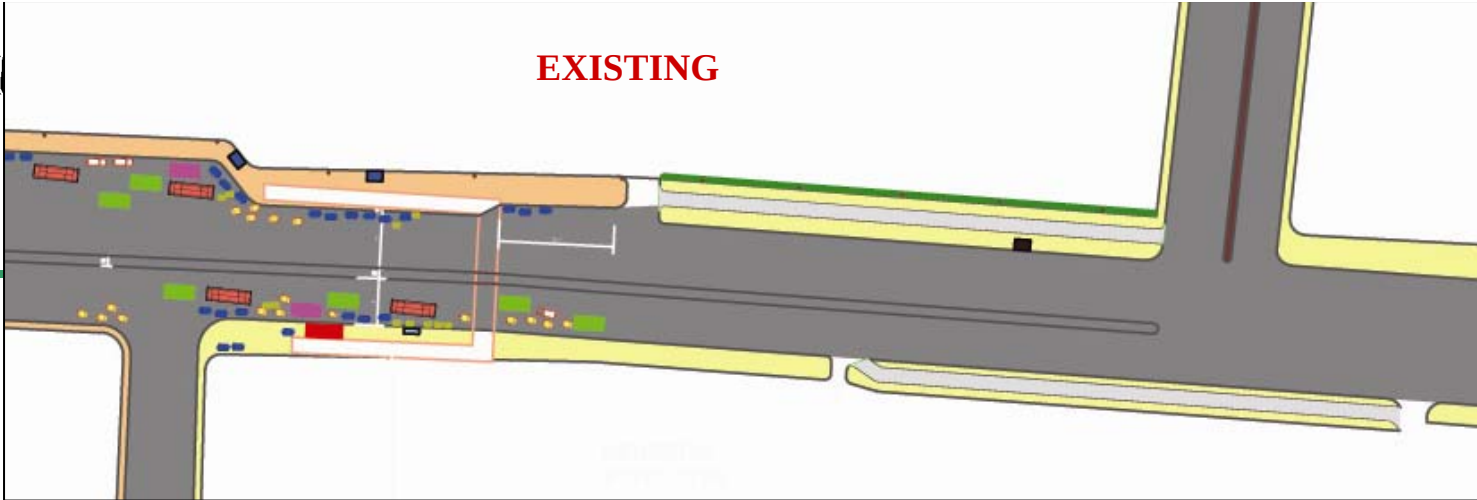


Enough space for linear public plaza (Food Courts, Art and Craft Bazaar etc) between Batra Hospital and Guru Ravidas Marg intersection. The plaza space will have designated hawkers space.

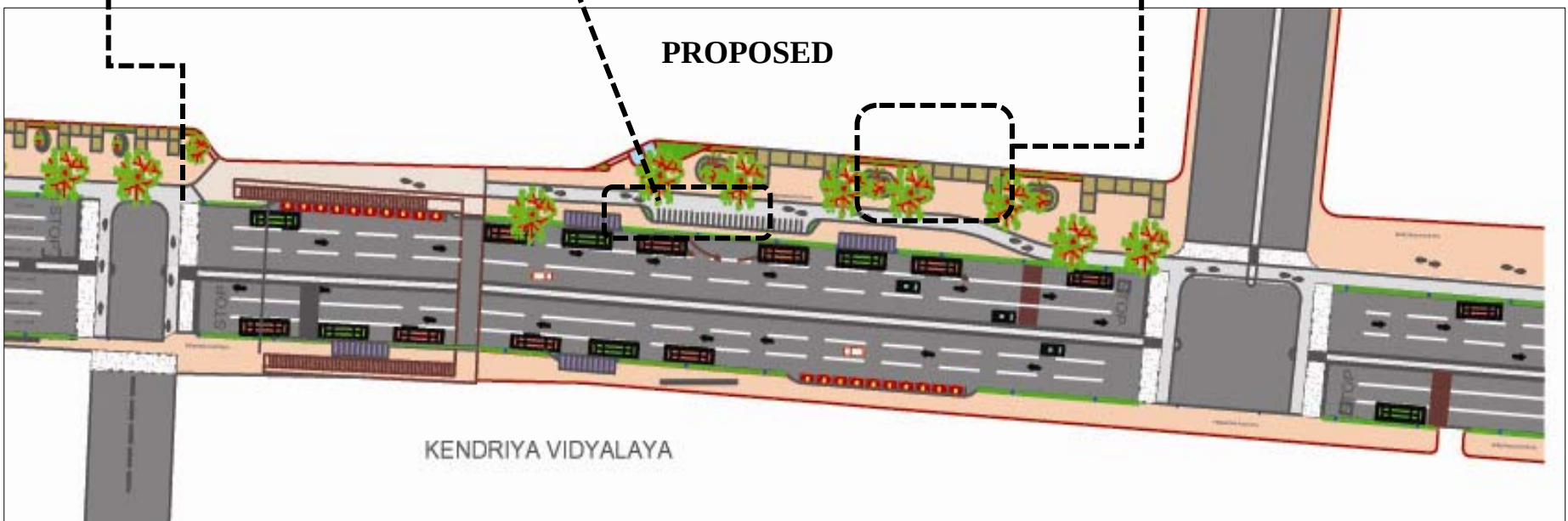


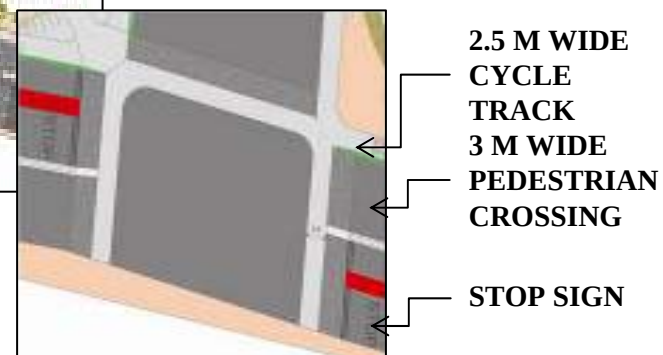
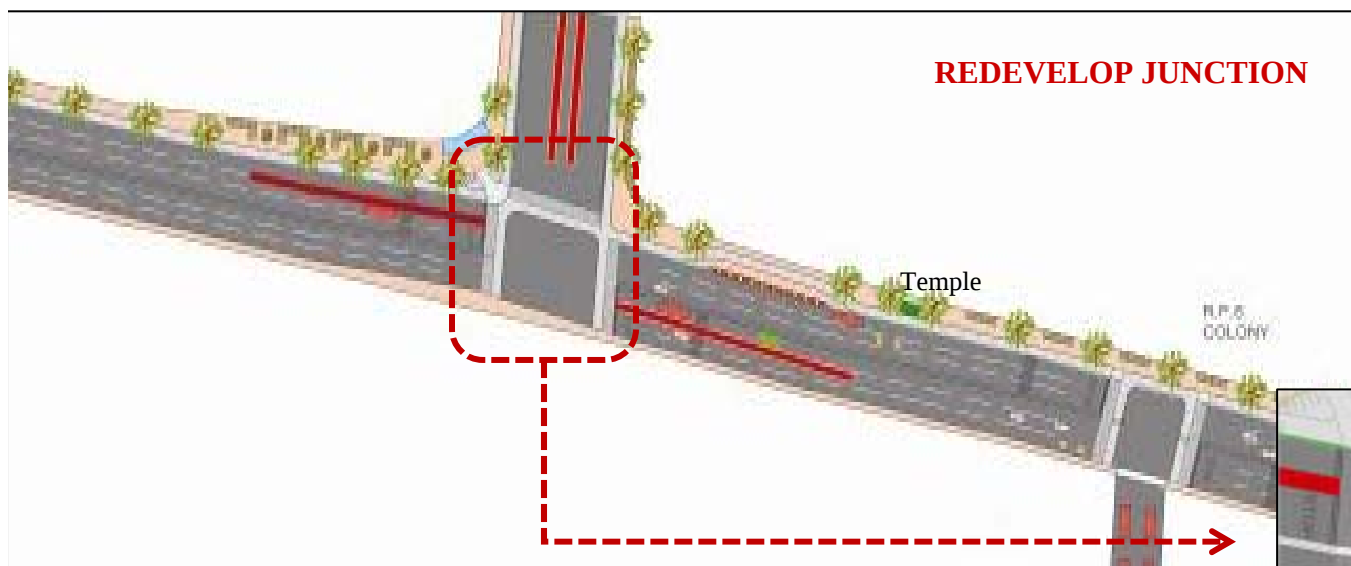
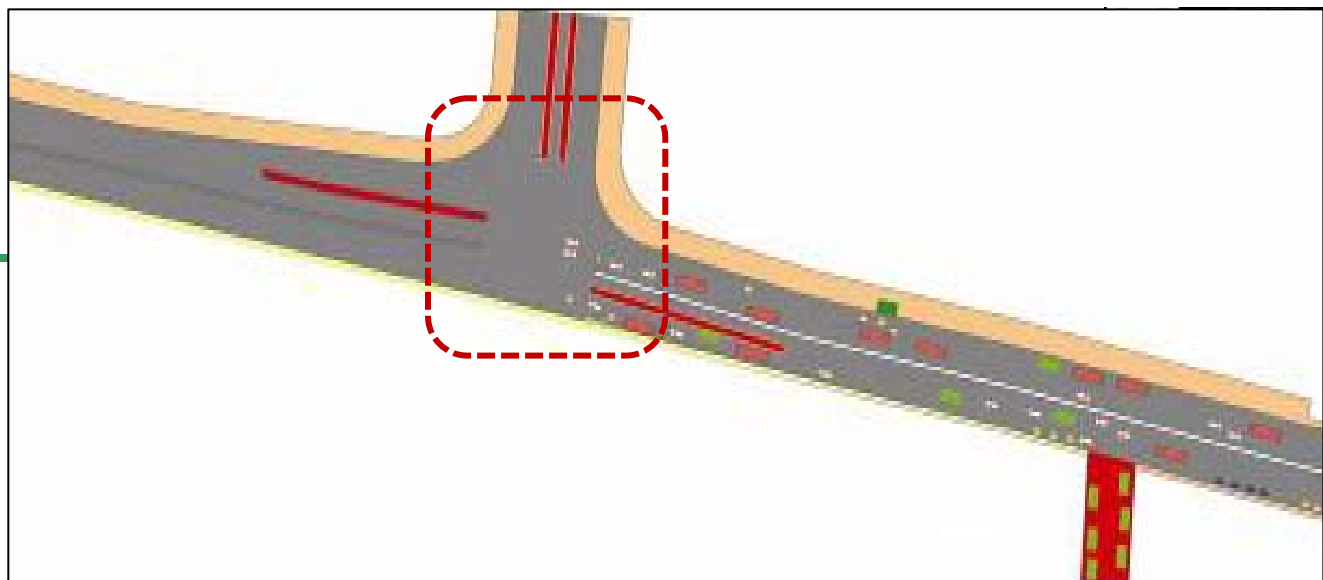
Shift unorganised parking from Batra hospital lane and form other stretches to dedicated parking slots to be designated along service lane. The parking will be chargeable

EXISTING



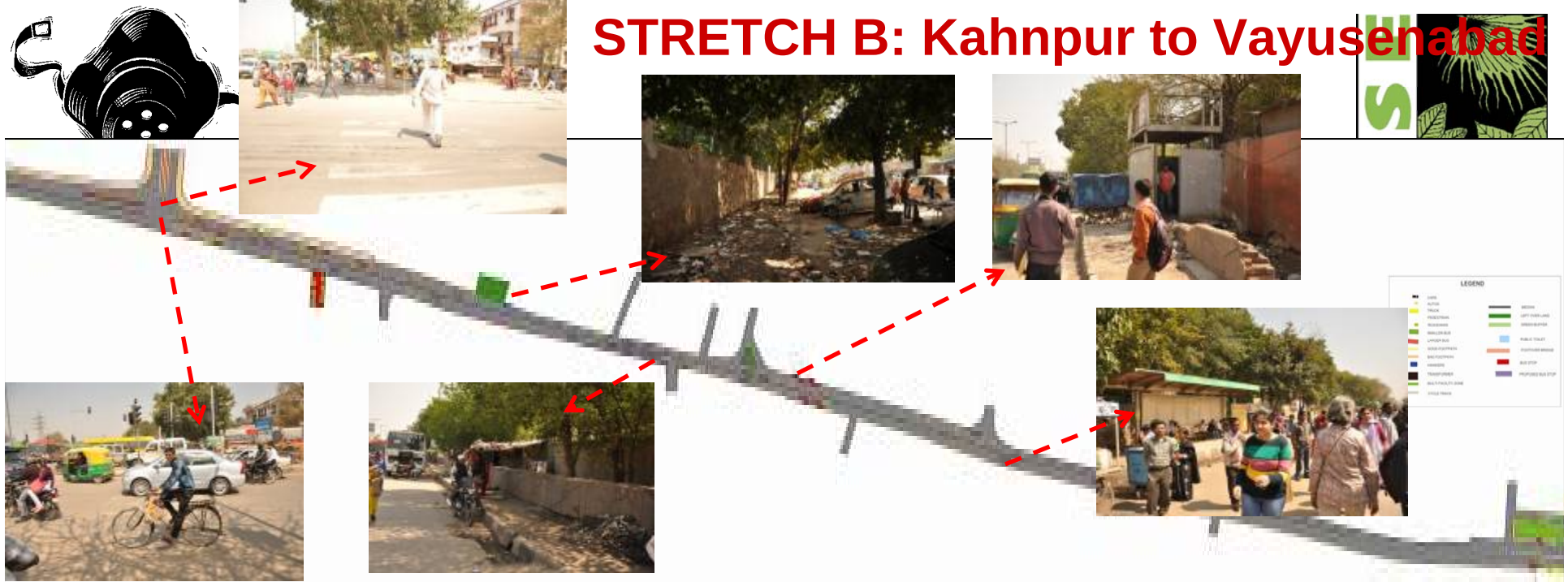
PROPOSED





As already planned for BRT corridor, amenities for pedestrians and cyclists to be maintained. The junction and various intersections at present are not designed based on proper standards. The proposal provides planned intersection designs along with treatment of the leftover spaces along with the junction.

STRETCH B: Kahnpur to Vayusenabad

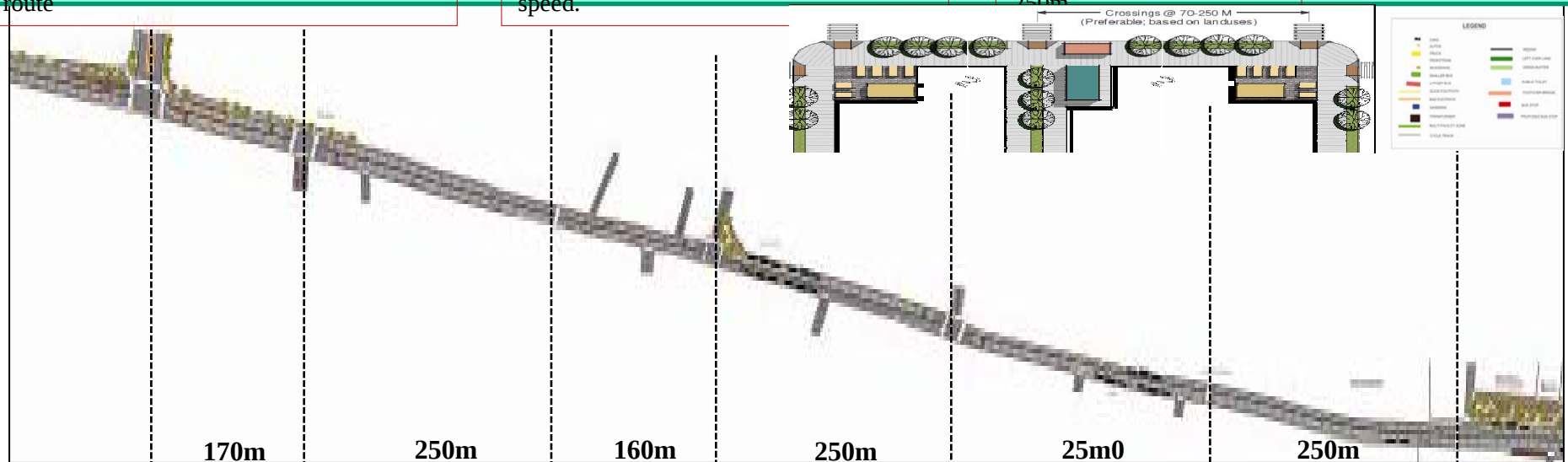


For a large part of the stretch where leftover space could be utilised, a cycle track has been designed along with the pedestrian route

The turning radius at the junctions has been kept minimum to discourage motor vehicles from taking sharp turns at speed.

Crossing for pedestrians have been provided within the prescribed range of 250m

Provision for cycle parking at places.





Leverage the potential for change

