



James Long Sarani

A Pilot Design Intervention Report by Safetipin

Cover Image: Life on the Footpath | Artist: Dwarka Nath Sinha | Source: medium.com/dns-notes/footpath-402ec577a692



James Long Sarani

Design strategies to improve accessibility

Everyone is a pedestrian. Walking is a basic and common mode of transport in all societies across the world. Virtually, every trip begins and ends with walking. Walking comprises the sole means of travel on some journeys, whether a long trip or running an errand. Therefore, footpaths are a fundamental form of urban infrastructure that facilitate walking, socializing and interacting with the public domain. In order to have a safe, barrier-free and successful trip, the street systems must be accessible to all pedestrians and especially to vulnerable users - women, children, elderly and people with disabilities using mobility devices such as wheelchairs and walkers, those who have vision, speech, hearing impairments or those with intellectual disabilities. The ease with which pedestrians can access and use streets influences their everyday life choices. **A good street design which enables the user to seamlessly complete a trip from doorstep of origin to the doorstep of the destination is critical.**

In the absence of accessible footpaths, pedestrians are forced to share the street with motorists which increases the chances of pedestrian injuries, disablement and fatalities. Absence or poor condition of footpaths also drastically restrict access to public space especially for those with reduced mobility. It influences their ability to move around, connect to wider transport networks and access the opportunities present in the city. Therefore, footpaths impact the quality of their daily life. **Because streets are an important component of public space, designing them with people in mind is the key.**

James Long Sarani is situated in the south of Kolkata and runs through the wards - 119, 120, 121, 123 and 124. It is a 7.2 Km long stretch and has been chosen for 'Pilot Design Intervention' to improve access for all, especially the vulnerable groups - women, children, elderly and people with disability.

Image 01: Woman with children walking on the vehicular road because of footpath condition being poor



J. L. Sarani today

Image-mapping through Safetipin Nite

Safetipin mapped James Long Sarani twice - first time, when mapping the entire city of Kolkata and second time, for the intervention to specifically assess the status of accessibility on the selected stretch.

James Long Sarani is a neighbourhood, secondary level road running parallel to Diamond Harbour Road and lies between Taratala and Joka in Kolkata. It runs through an organically developed, mixed-use (typically, retail and residential mixes) neighbourhood.

Footpaths are provided on either side of the road and are regularly used by all groups of people in everyday life. There are many schools both primary and secondary, few clinics, hospitals, a library, a children's park, a public pool, a sport's stadium, a football field, many religious and public buildings, small eating places, ATMs & banks and numerous small grocery stores.

These social amenities exist within walking distances of 5 minutes (400 metres) to 10 minutes (800 metres), making it a walkable neighbourhood. As seen in the walking radius diagram (refer image 05) drawn over a stretch of J L Sarani road - schools, bus stops and clinics is within 3 - 5 minutes of walking distance. It was also observed that people mostly walked in this neighbourhood. This could be seen on the Safetipin People parameter map which shows good presence of people on the street. Other parameter maps such as Walkpath, Lighting and Visibility show presence of footpaths, street lightings and enough eyes on the streets to enable people using the street.

The entire stretch has three vehicular road condition:
A. Two-way, four-lane road with median (Image 02)
B. Two-way, six-lane road without median (Image 03)
C. Two-way, six-lane road with median (Image 04)



Image 02: J L Sarani - Two-way, four-lane road with median



Image 03: J L Sarani - Two-way, six-lane road without median



Image 04: J L Sarani - Two-way, six-lane road with median

J. L. Sarani today

Image-mapping through Safetipin Nite

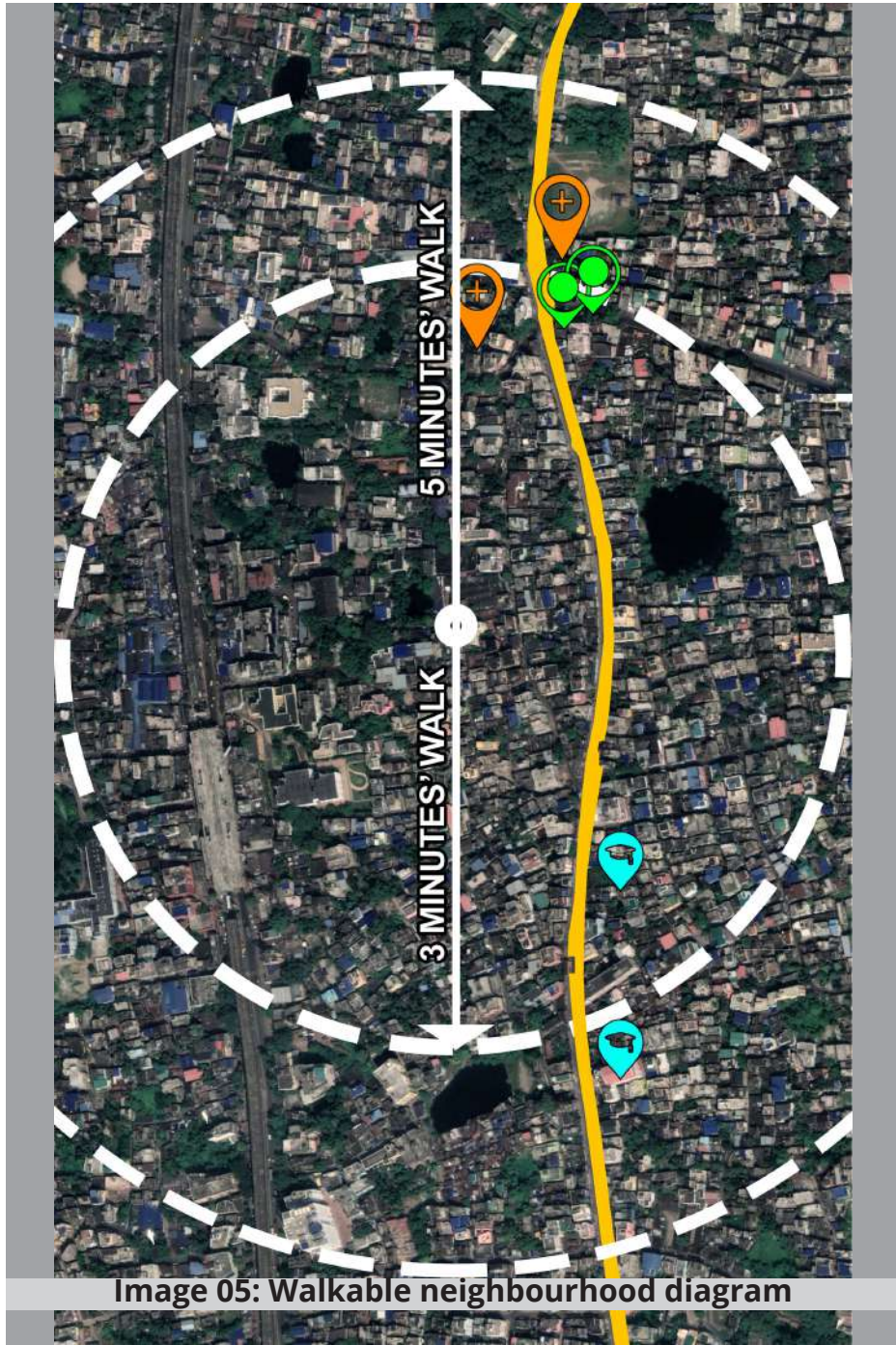


Image 05: Walkable neighbourhood diagram



Image 06: J L Sarani - Woman walking on the road as construction material is blocking the footpath



Image 07: J L Sarani - Man walking on the road as signage poles are blocking the narrow footpath

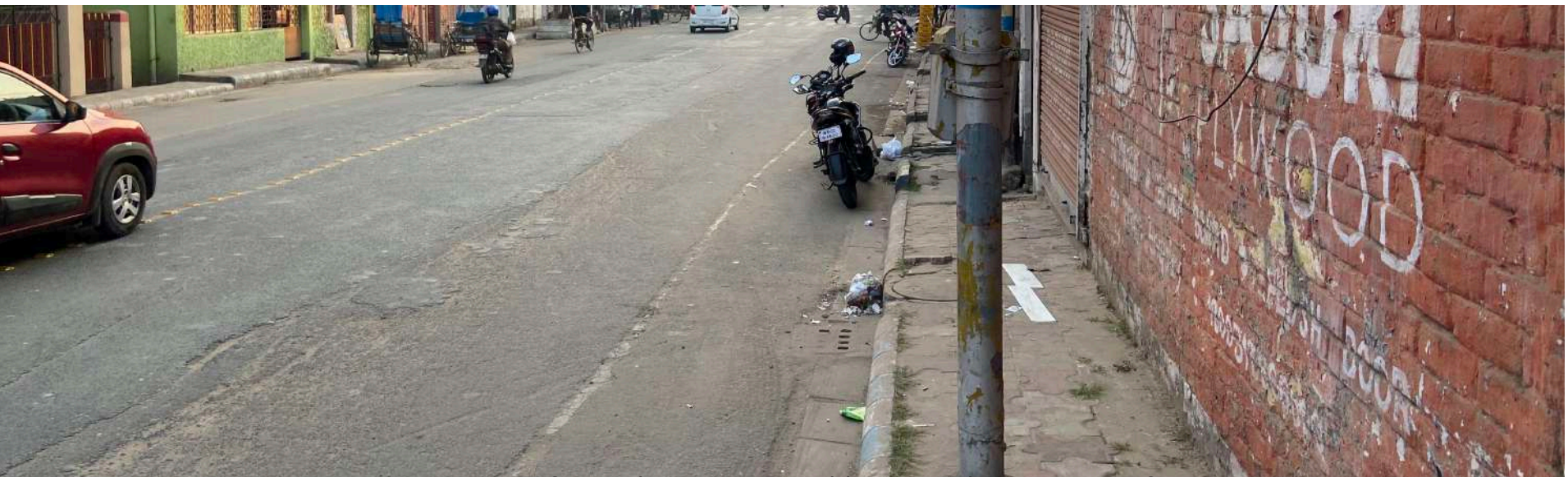


Image 08: J L Sarani - Very narrow footpath, minimum width required is 1.8 metres for two persons to pass

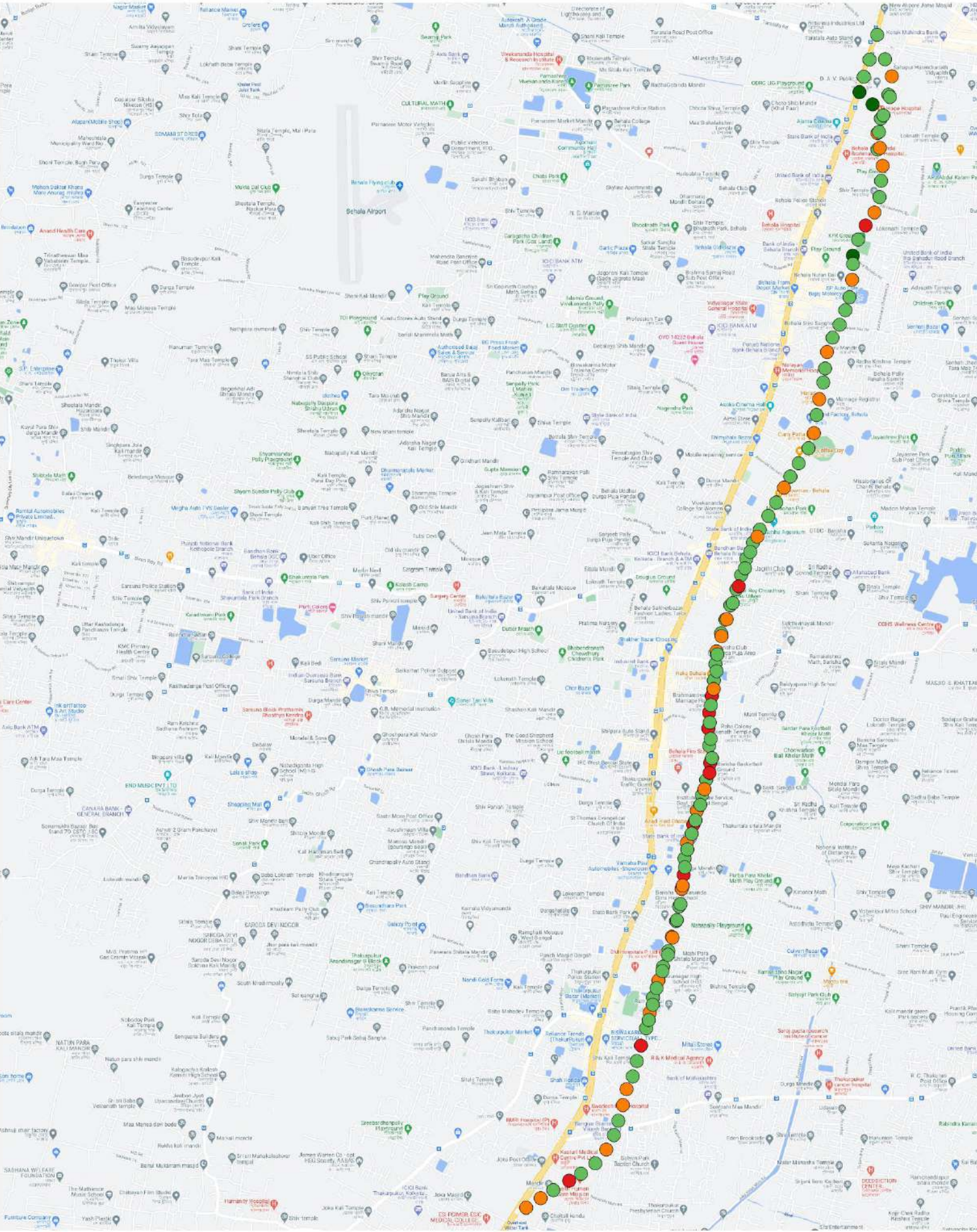
Kolkata:
J. L. Sarani Road
Parameter
People

Legend

Safety Audits

- Deserted
- Few People
- Some Crowd
- Crowded

Base: Google Map



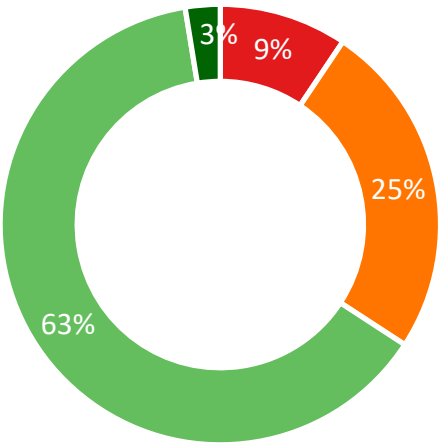
People

66% of the street have
good number of people using it

Safetipin mapped 66% of the street to have good
number of people present during the time of the
audit. 25% of the street were found to have few
people and 9% of the street were quite empty.

When this data is represented geographically (see
Map 01) it is seen that areas with higher ratings on
people are spread all along the street. This means,
people use the street well for performing everyday
activities.

A percentage distribution pie of the parameter map
is given below. Tally with the legend on the map.



Map 01: Safetipin Parameter Map of People on J L Sarani

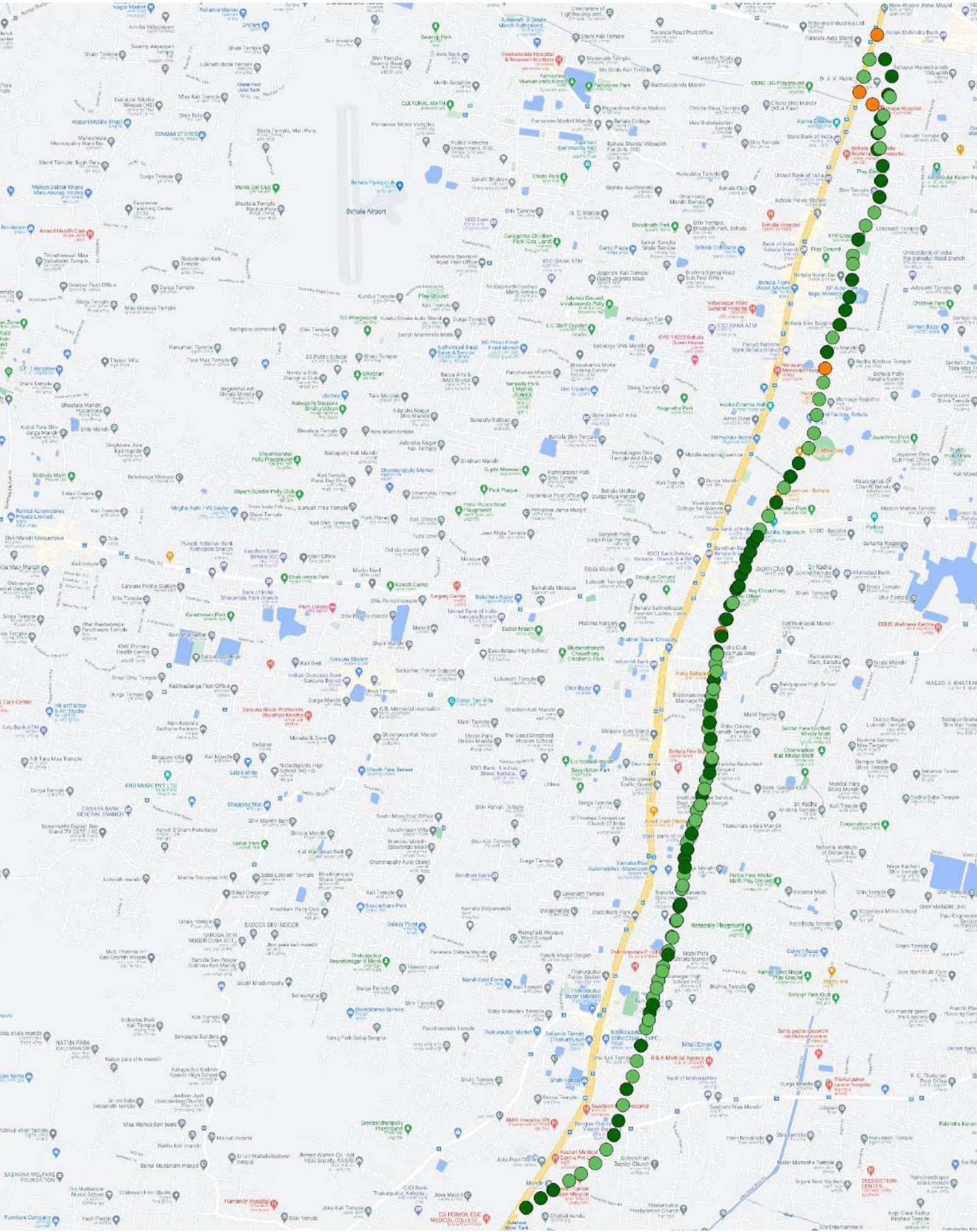
Kolkata:
J. L. Sarani Road
Parameter
Walkpath

Legend

Safety Audits

- None
- Poor
- Fair
- Good

Base: Google Map



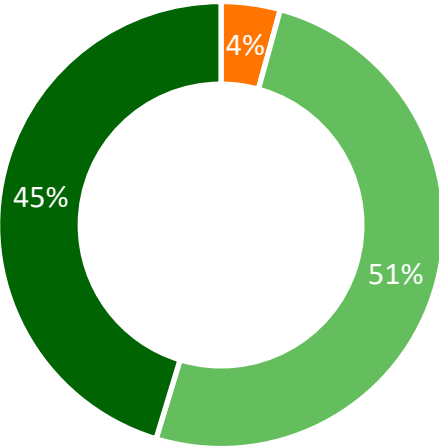
Walkpath

96% of the street have
footpaths built for pedestrians

Safetipin mapped 96% of the street to have
footpaths constructed for pedestrians and only 4%
of the street is rated poorly on the same.

When this data is represented geographically (see
Map 02) it is seen that areas with higher ratings on
footpaths are found all along the street and only in
few areas they are missing or completely broken.
This means, footpaths are built and allocated for
pedestrians on this street. A detailed footpath
analysis follows to understand the built condition of
the footpaths and how accessible they are for all.

This geo-located data is provided as a GIS layer and
could be used for locating areas with poor ratings.
A percentage distribution pie of the parameter map
is given below. Tally with the legend on the map.



Map 02: Safetipin Parameter Map of Walkpath on J L Sarani

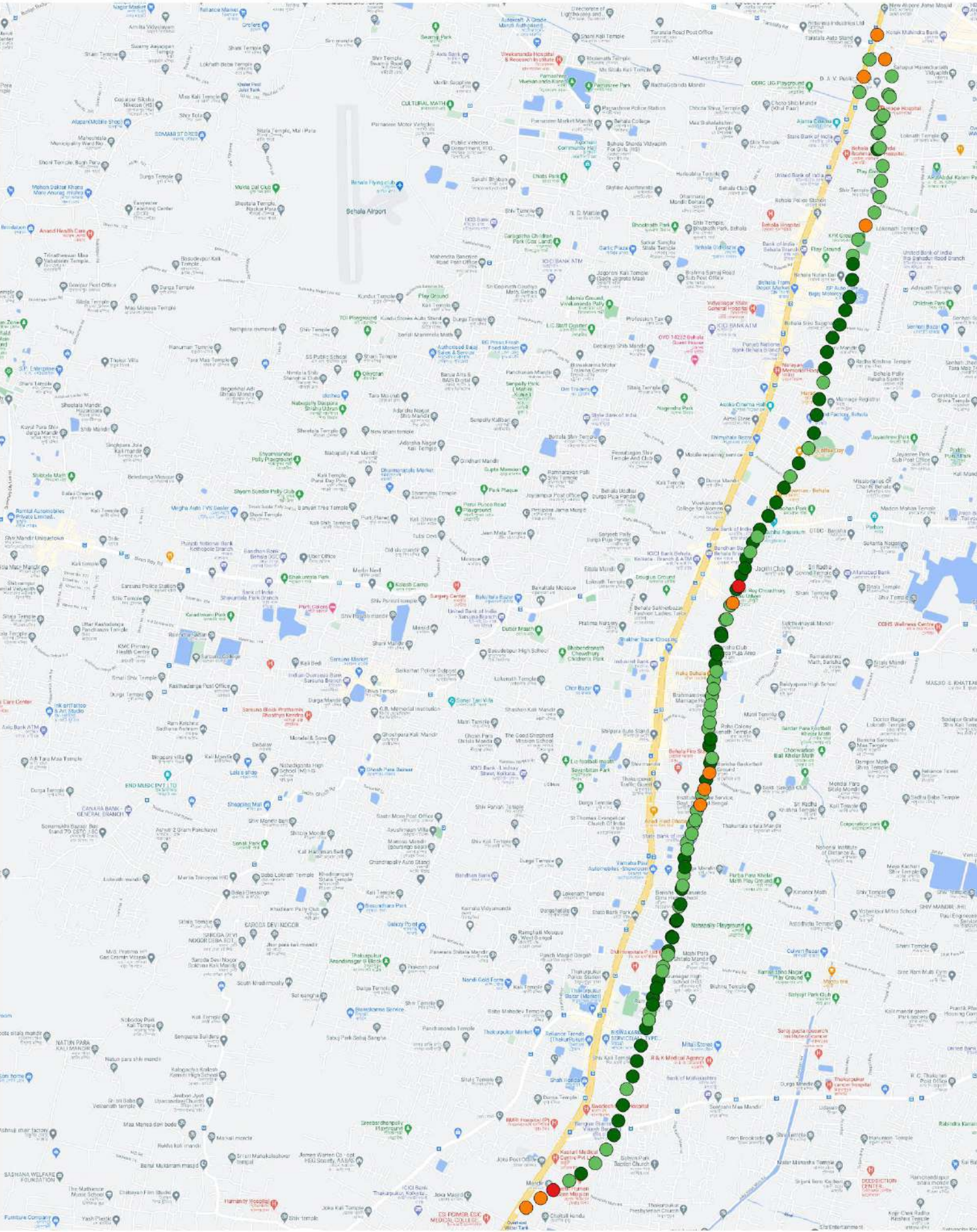
Kolkata:
J. L. Sarani Road
Parameter
Visibility

Legend

Safety Audits

- No Eyes
- Few Eyes
- More Eyes
- Highly Visible

Base: Google Map



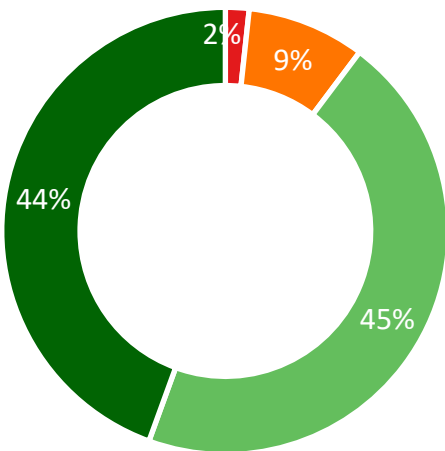
Visibility

89% of the street has active frontage and ‘eyes on the street’

Safetipin mapped 49% of the street to have good visibility or enough eyes on the street to make people feel safer on it. Only 11% were found to have poor visibility.

When this data is represented geographically (see Map 03) it is seen that areas with higher ratings on visibility are spread all along the street and only in few locations visibility is found to be low. This means, the street has less number of high boundary walls or blank facades facing the street and have more people, vendors, shops on the streets to provide active frontage. This also says that there is active engagement of people on this street.

A percentage distribution pie of the parameter map is given below. Tally with the legend on the map.



Map 03: Safetipin Parameter Map of Visibility on J L Sarani

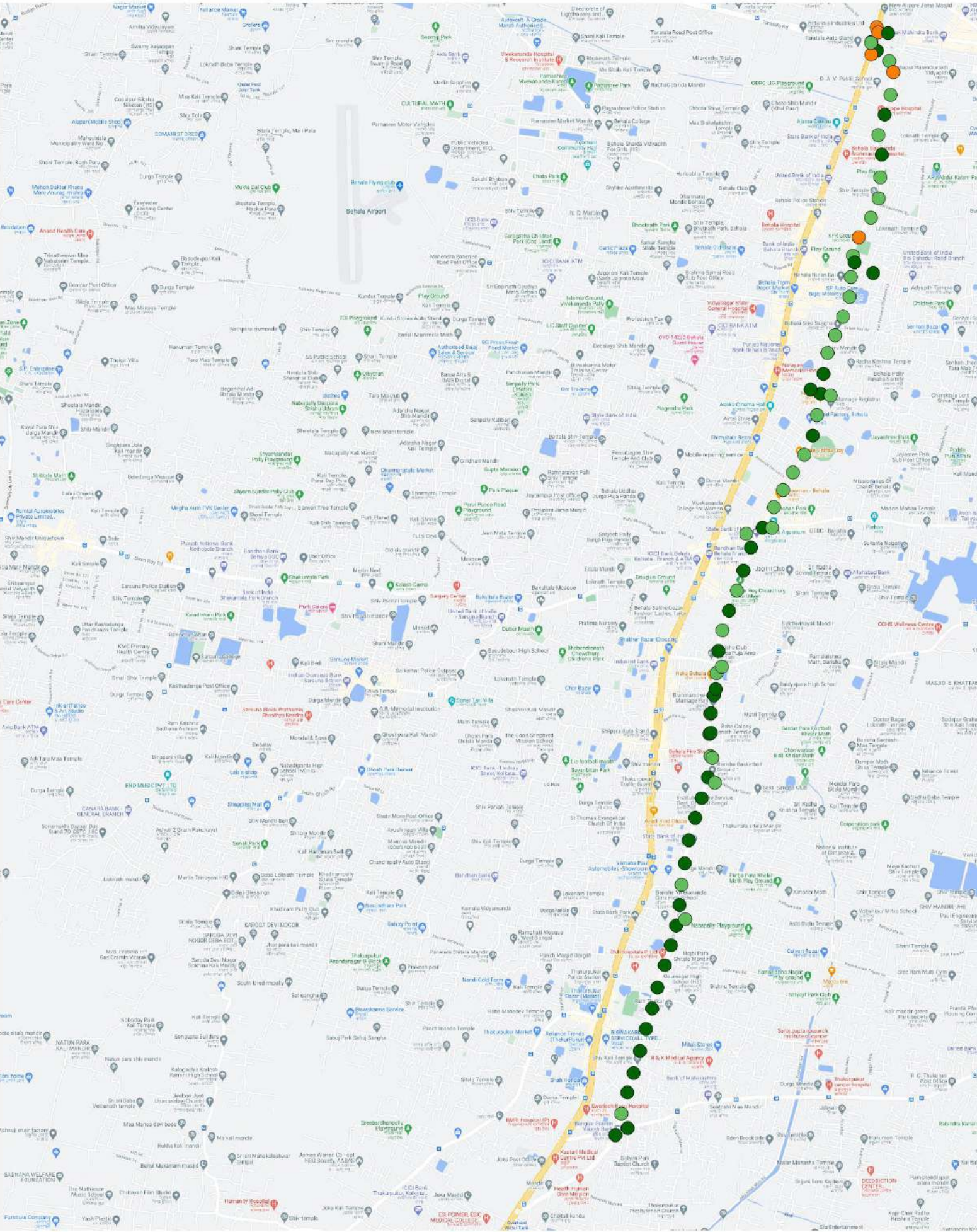
Kolkata:
J. L. Sarani Road
Parameter
Lighting

Legend

Safety Audits

- Poor Light
- Some Light
- Enough Light
- Bright Light

Base: Google Map



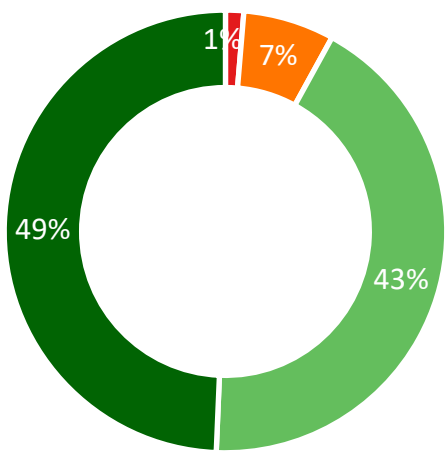
Lighting

92% of the street has adequate street lighting

Safetipin mapped 92% of the street to have adequate street lighting and only 8% of the streets is rated poorly on the same.

When this data is represented geographically (see Map 04) it is seen that areas with higher ratings on street lighting are found all along the street and only in few locations they are non-functional. This means, the street has adequate street lighting for clear visibility and is used by people for daily activities even after dark.

This geo-located data is provided as a GIS layer and could be used for locating areas with poor ratings. A percentage distribution pie of the parameter map is given below. Tally with the legend on the map.



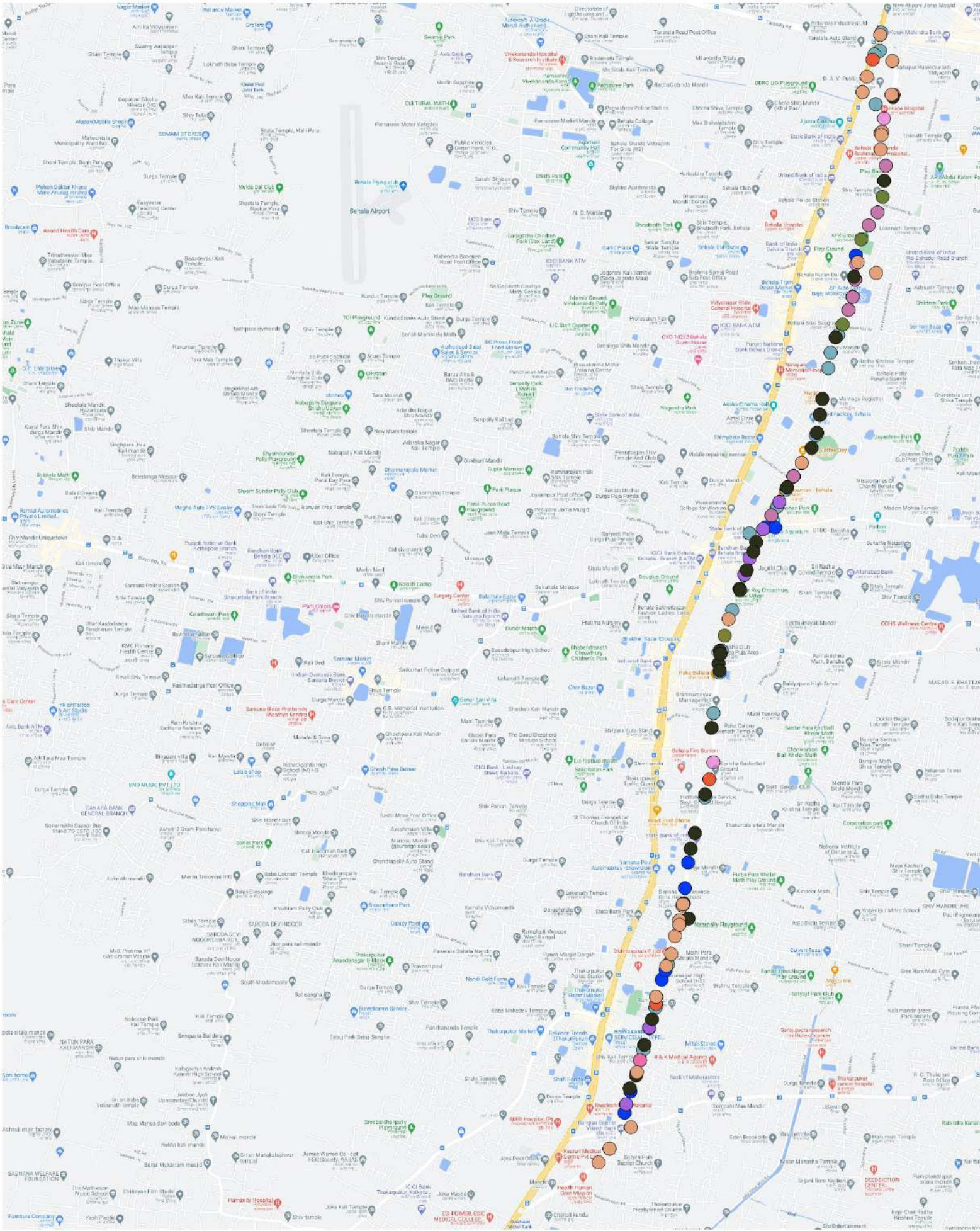
Map 04: Safetipin Parameter Map of Lighting on J L Sarani

Kolkata:
J. L. Sarani Road
Accessibility
Footpath Barrier

Legend

- Signage
- Light Pole
- Garbage
- Electricity Pole
- Vehicle Blocking
- Shop Encroachment
- Vendor Blocking
- Car Blocking

Base: Google Map



Barriers

currently blocking the footpath

An additional set of accessibility parameters apart from the standard vulnerability parameters discussed before (people, walkpath, visibility & lighting) were applied for better understanding of the status of accessibility on J L Sarani - especially for the vulnerable groups. To map this, two sets of factors were considered to assess ease of walking on footpaths. First, to map the present condition of the footpaths. Second, to see if the footpaths are clear of any barriers, hindering access.

Based on this, the accessibility parameters considered are as given below. A map was generated for both factors with geo-tagged information which helps to assess the nature of the issues related to accessibility and locate the same for action.

- Accessibility parameter used for mapping access:
- Footpath Barriers:**
- Garbage dumped on footpaths
 - Vehicles parked on footpaths
 - House and shop extensions onto footpaths
 - Temporary shops, vendors obstructing footpaths
 - Light, electric, signage and advert poles obstructing footpath

The Safetipin mapping shows (see Map 05) the presence of different types of barriers on the footpath on the entire stretch. The images on the right illustrate different types of barriers present on the street which together pose great difficulty for any pedestrian to walk safely and with ease on the footpath and certainly does not allow universal accessibility.

Map 05: Safetipin Parameter Map of Footpath Barriers on J L Sarani



Image 09: Parked two-wheeler



Image 11: Shop extension



Image 13: Power transformers



Image 15: Religious place



Image 17: Manhole jutting out



Image 10: Parked four-wheeler



Image 12: Vegetable vendors



Image 14: Construction material



Image 16: Garbage dump



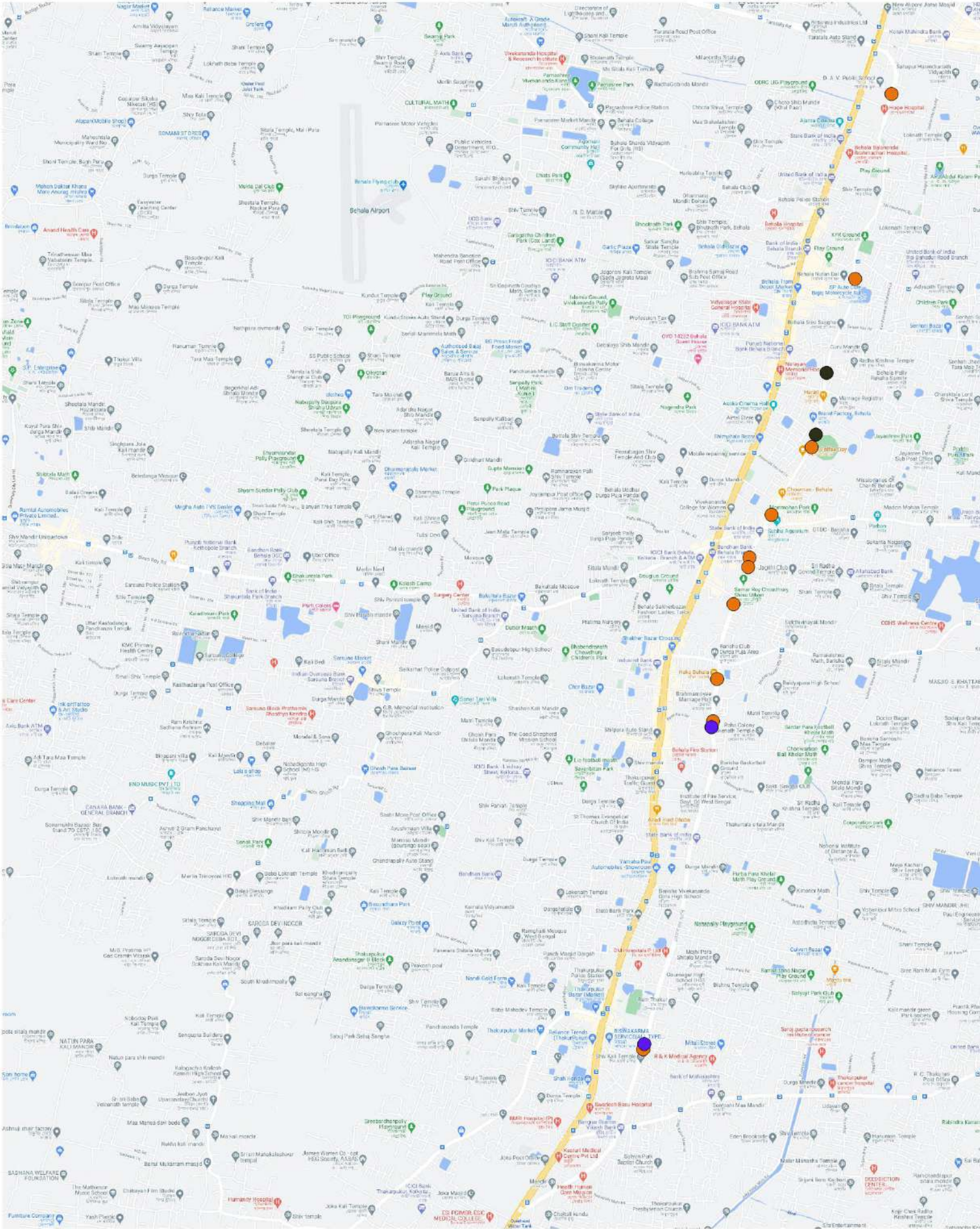
Image 18: Reverse ramp drop

Kolkata:
J. L. Sarani Road
Accessibility
Footpath Condition

Legend

- Ramp
- Curb Ramp
- Zebra Crossing

Base: Google Map



Elements

of the footpath to assist access

The other accessibility parameter used for mapping ease of access for all is:
Footpath Conditions:

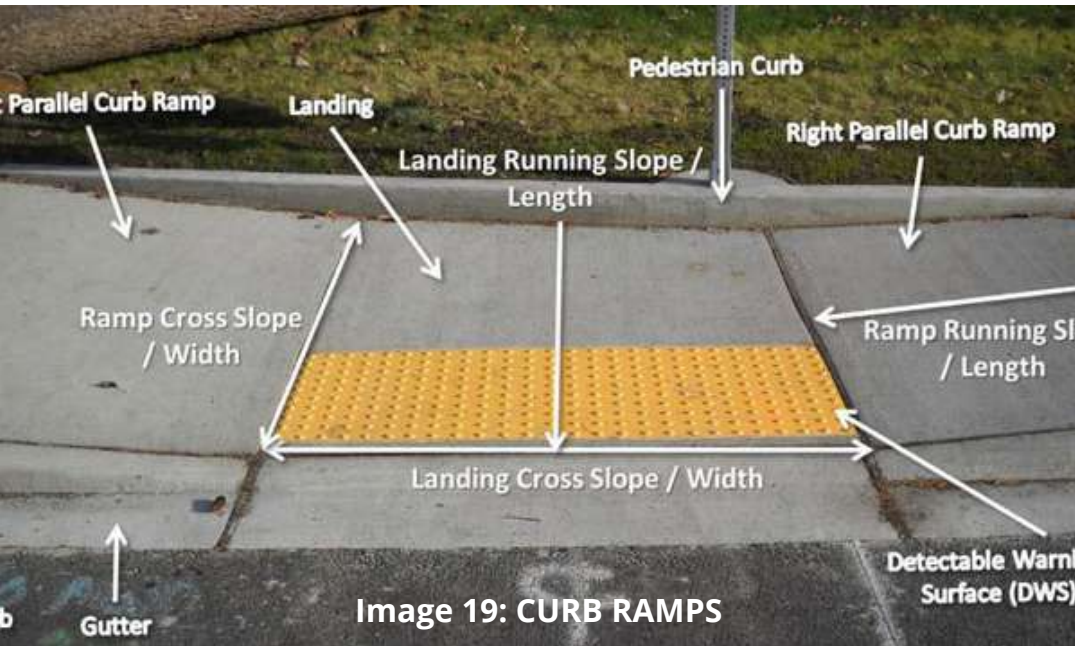
- Non-existent footpath
- Broken, dis-continuous footpath
- Availability of curb ramps, median breaks and zebra crossings

The Walkpath parameter findings (Page 06, Map 02) says that only 4% of the footpath on J L Sarani is in very poor condition. The rest 96% of the street has constructed footpaths for pedestrians. Image analysis shows that the condition of these footpaths are not fit for walking by all, especially the vulnerable groups. They are broken and dis-jointed in parts and pose as tripping hazard in many places because of having uneven walking surfaces.

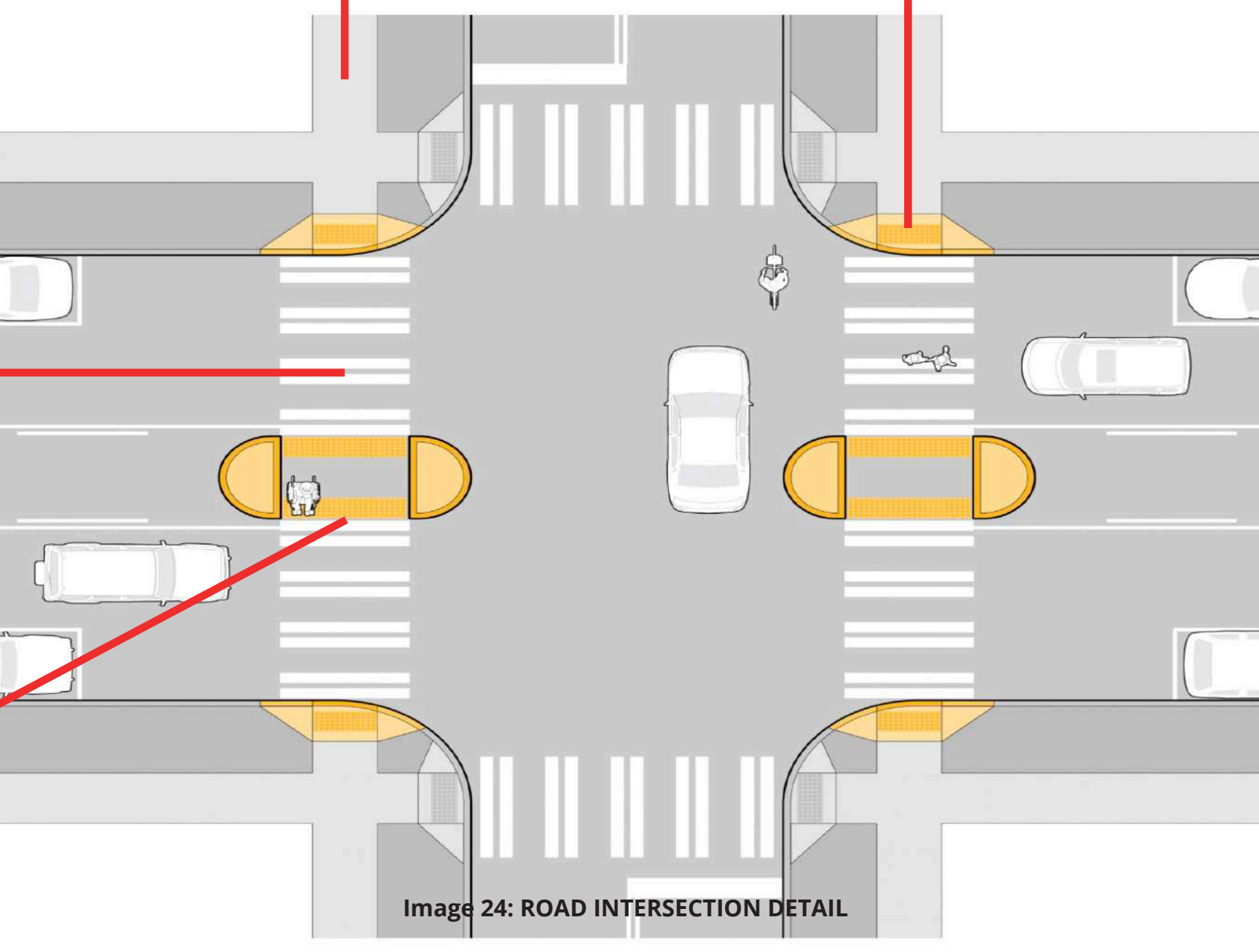
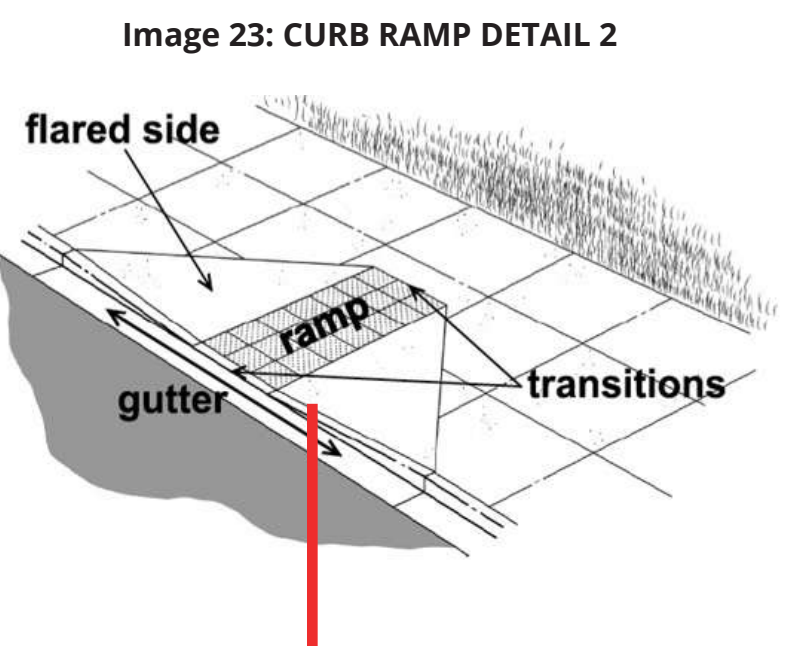
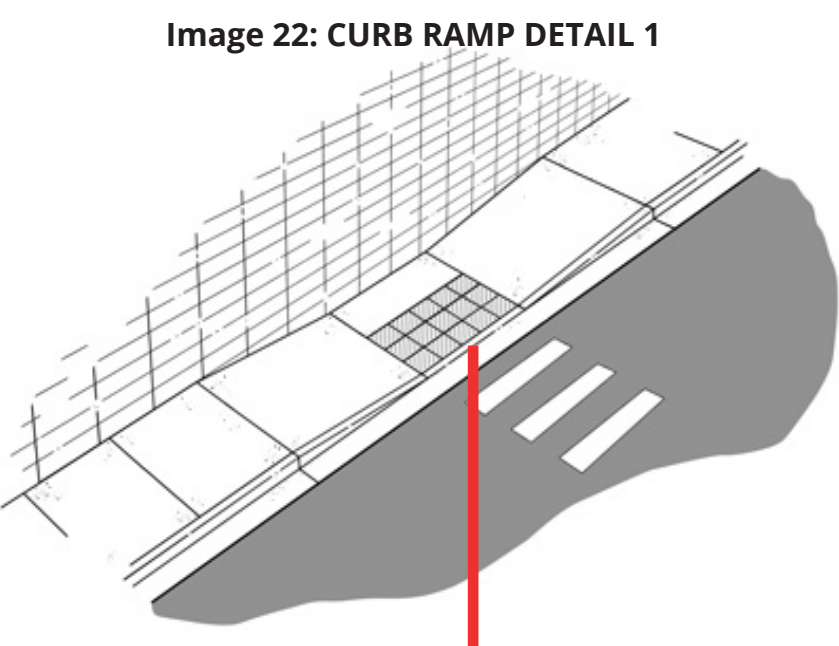
The Footpath Condition map (see Map 06) shows no median breaks for pedestrian crossings and very few pedestrian crossings marked at the street intersections. Curb ramps were found at 10 locations only on the entire stretch and those too were not constructed properly for universal accessibility.

The street intersection drawing (Image 24) on the next page illustrates the principles of intersection planning with footpaths with tactile paving, curb ramps, pedestrian crossings and median breaks to allow at grade pedestrian access. The supporting detail images of each element of the footpath shows how they enable the pedestrian to move at grade easily and effortlessly on the streets.

Map 06: Safetipin Parameter Map of Footpath Conditions on J L Sarani



ACCESS FOR ALL



Action Points

Design strategies to improve access for everyone on James Long Sarani

OBJECTIVES:

- To improve pedestrian accessibility in the neighbourhood
- To promote walkability for vulnerable groups
- To bring a shift in perspective - from car centric to people centric streets

PRINCIPLE:

Streets should allow all people to move at grade from point A (origin) to point B (destination) seamlessly and effortlessly.

STRATEGY: REMOVE - REPAIR - RECLAIM

This could be a three tiered action plan for James Long Sarani to improve access for all, especially the vulnerable groups - women, children, elderly and people with disability.

A. Remove all obstructions on the footpath.

The footpath provided on either side of the road have multiple obstructions, such as, parked vehicles, vegetable vendors, temporary shop extensions, restaurant encroachments, piled construction materials, garbage dumps (as illustrated on page 10). All most all of these could be removed immediately without causing any damage to the buildings or hindering public life on the street. The important components of the streets - parking, vendors and shop/restaurant spill-outs - could be then organised within the pedestrian realm without posing as obstructions on the footpath.

The section 1-1', 2-2' and 3-3' on page 18, 20 & 22 explains the proposed typical street section in detail.

B. Repair broken, disjointed and hazardous footpath.

The provided footpath is broken and disjointed at numerous places. It is has sudden drops at vehicular ramps cutting across and protruding manholes covers posing as tripping hazards (as illustrated on page 10). The curb height of footpaths are too high and they are very narrow in some parts. Maximum curb height should be 150 mm and minimum width of pedestrian footpath should be 1.2 meters. To move from point A to point B - people need to move at grade, so a continuous at grade walking surface is critical to improve pedestrian accessibility. Repairing the broken parts, adding curb ramps at every drop and providing pedestrian crossings with median breaks at every intersection will ensure seamless routes.

The drawings and illustrations on page 12 explains the elements of seamless pedestrian routes - curb ramps, pedestrian crossings and median grade to maintain at grade movement.

C. Reclaim part of the vehicular carriageway.

Currently, because of the road widening work, parts of the carriageway are cordoned off and the traffic on each side operates on two lanes only. This actually reduces traffic speed as wider roads are known to increase traffic speed and reduce both vehicular and pedestrian safety. It is good to maintain the two lane road width on each side and include the third lane on both sides for widening the footpath which does not have adequate width to allow clear access for pedestrians. The 3 metre wide traffic lane on each side will increase the width of the existing footpath on either sides and will provide 1.8 meter of clear access for pedestrians - the minimum width required for two people to move. The remaining 1.2 meter will provide multi-utility space for street utility, vendors and furniture.

The section 1-1', 2-2' and 3-3' on page 18, 20 & 22 explains the proposed typical street section in detail.



JAMES LONG SARANI - PILOT INTERVENTION STRATEGIES TO IMPROVE ACCESSIBILITY FOR ALL

FINDINGS

RECOMMENDATIONS

REMOVE obstructions out of the footpath to provide clear walking space	
OBSTRUCTIONS PRESENT ON THE FOOTPATH	Images of types of obstructions on the footpath can be seen on Page 10
Shop / house extensions	Remove shop and/or house extensions blocking on existing footpath to provide clear walking space (min 1.8m)
Temporary shops / hawkers	Remove temporary shops and hawkers occupying and blocking the existing footpath to provide clear walking space (min 1.8m) and organise them on the carriageway side of the footpath wherever the footpath width is more than 1.8m
Electricity, signage, signal poles and advertisement posts	Remove electricity, signage, signal poles and advertisement posts out of the existing footpath to provide clear walking space (min 1.8m) and arrange/align them on the carriageway side of the footpath wherever the footpath width is more than 1.8m
Telephone / communication boxes and power transformers	Remove telephone/communication boxes and power transformers out of the existing footpath to provide clear walking space (min 1.8m) and arrange/align them on the carriageway side of the footpath wherever the footpath width is more than 1.8m
Large garbage containers and loose garbage dumps	Remove large garbage containers and loosely dumped garbage from the existing footpath to provide clear walking space (min 1.8m). Plan and organise garbage collection points on the street at various locations to avoid spilling of garbage on the footpaths
Construction material blocking the footpath	Remove construction materials piled on and blocking the existing footpath to provide clear walking space (min 1.8m)
Vehicle (two, four wheelers, cycle rickshaws) parked	Remove two, four wheelers, autos, cycles and cycle rickshaws parked on existing footpath to provide clear walking space (min 1.8m). Organise parking for two, four wheelers, autos, cycles and cycle rickshaws on shared lane (parking and driving) of the carriageway
Google Map Link: https://www.google.com/maps/d/u/0/viewer?mid=1POdEbN0Q5xnxPqTi6Z6_XUf0FiL6Gef7&ll=22.48445074666058%2C88.31494778499999&z=13	Please use the given map link and the csv files shared for the project to view the collected data supported with images at every point where obstructions are present on the existing footpath.

JAMES LONG SARANI - PILOT INTERVENTION STRATEGIES TO IMPROVE ACCESSIBILITY FOR ALL

FINDINGS	RECOMMENDATIONS
REPAIR broken footpath and add accessibility elements	
ACCESSIBILITY ELEMENTS OF THE FOOTPATH	Images of types of footpath accessibility elements can be seen on Page 12
Availability of Curb Ramps	Curb ramps are an essential component of footpaths for improving accessibility for all and could be only found on few locations on J. L. Sarani. Add curb ramps to negotiate all level drops and make it step-free to reduce hazards for the vulnerable groups. Refer standards given on Page 12.
Availability of Zebra Crossings	Zebra crossings are vital elements of street design to ensure safe pedestrian crossover for all. Most street intersections on J. L. Sarani did not have zebra crossings. Add zebra crossings to all street intersections for safe pedestrian access. Refer standards given on Page 12.
Availability of Median Breaks	Median breaks facilitate at grade street crossovers for pedestrians and are a crucial component for improving accessibility for all. There was no median break available at the intersections. Add median breaks to facilitate at grade crossover for all vulnerable groups. Refer standards given on Page 12.
Height of the footpath	Footpath height should be not more than one step (150 mm) high as per international street design standards. Reduce overall footpath height to ensure easy, hazard-free, pedestrian access. Refer images on page 10&13
Surface of the footpath	Pedestrian, especially vulnerable groups need at grade walking surfaces. Footpath surfaces with missing, broken, dis-jointed paver blocks, manhole cover protruding out, other fixed objects pose as hazards for pedestrians. Ensure at grade, hazard-free walking surface. Refer images on page 10&13
Google Map Link: https://www.google.com/maps/d/u/0/viewer?mid=1rGN9GSZLNYF0vrFfIDgTxwogYWUZ87Sq&ll=22.485724321100623%2C88.31611722500003&z=13	Please use the given map link and the csv files shared for the project to view the collected data supported with images at every point where only few, incorrectly made footpath elements are present.

JAMES LONG SARANI - PILOT INTERVENTION STRATEGIES TO IMPROVE ACCESSIBILITY FOR ALL

FINDINGS	RECOMMENDATIONS
RECLAIM one vehicular lane on both side for footpath extension	
INSUFFICIENT SPACE AVAILABLE FOR PEDESTRIANS	Images on Page 4 of three typical vehicular road conditions seen on J. L. Sarani
Two-way, four-lane road with median	Reclaim encroached footpath spaces from house and shop extensions and maintain minimum 2 meters of footpath space for pedestrians and street lights. There is no space for any multi-utility or frontage zone on this stretch of the road. For illustration, refer proposed street section 1-1' on page 18
Two-way, six-lane road without median	Given the traffic on the existing road, two lane carriageway on each side of the road are enough. This keeps the vehicular speeds low and enhance both vehicular and pedestrian safety. The third lane on both sides could be reclaimed for widening the footpath which does not have adequate width to allow clear walking space for pedestrians. The 3 meter wide traffic lane on each side will increase the width of the existing footpath on either sides and will provide 1.8 meter of clear access for pedestrians - the minimum width required for two people to move. The remaining 1.2 meter will provide multi-utility space for street utility, vendors and street furniture. For illustration, refer proposed street section 2-2' on page 20.
Two-way, six-lane road with median	Same as above. For illustration, refer proposed street section 3-3' on page 22.

Existing Street Section 1A-1A'

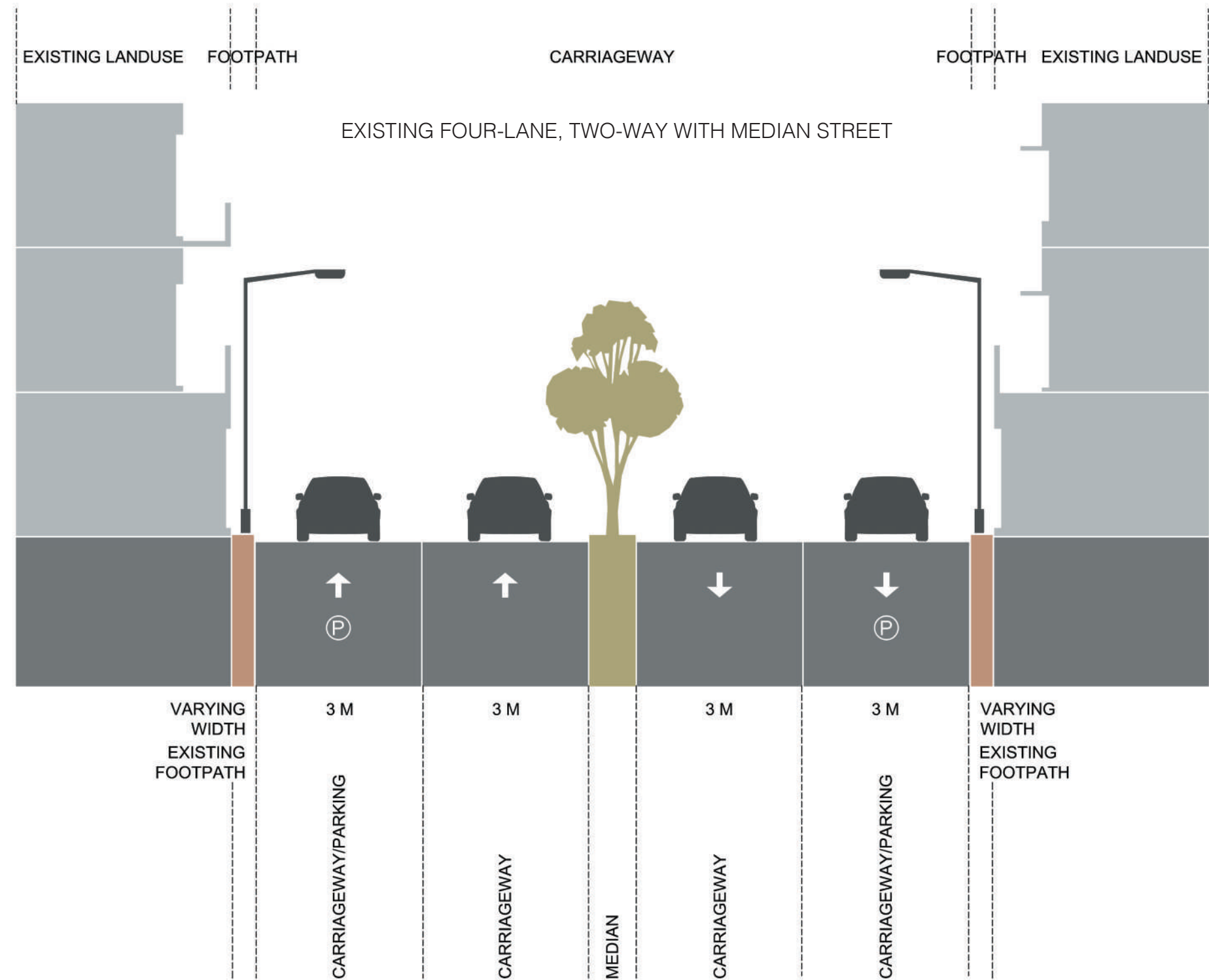


Image 30: **STREET SECTION 1A-1A'**
ACCESS FOR ALL

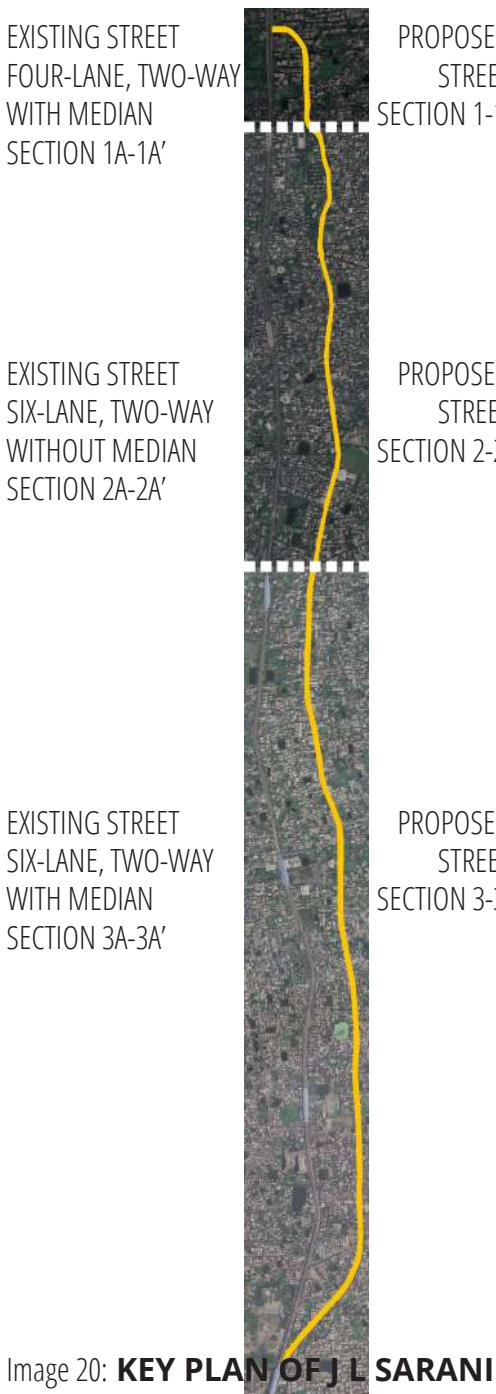


Image 20: **KEY PLAN OF J L SARANI**
SAFETIPIN | 17

Proposed Street Section 1-1'

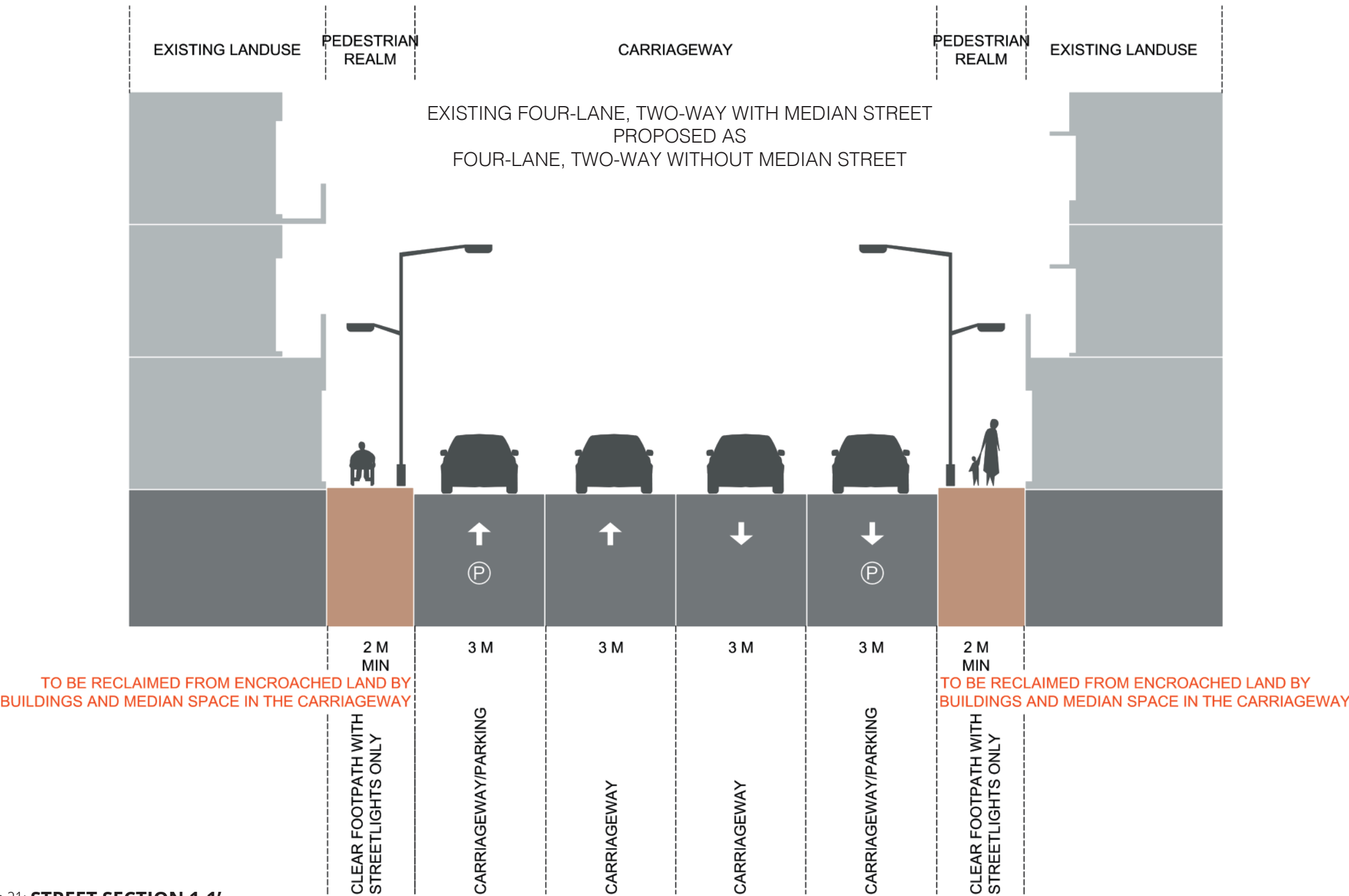


Image 31: **STREET SECTION 1-1'**
ACCESS FOR ALL

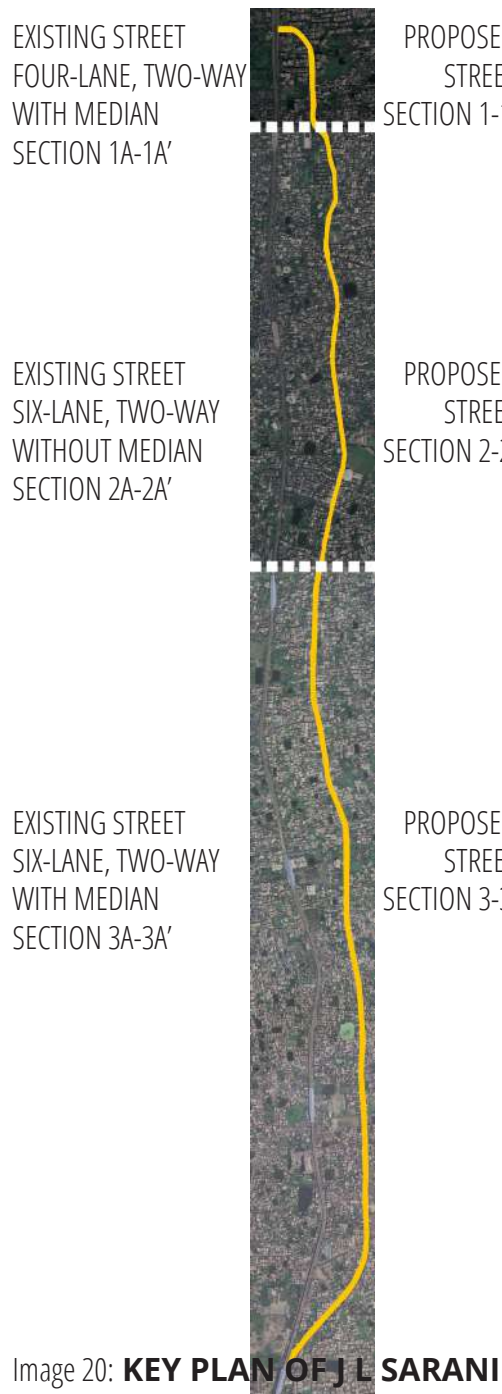
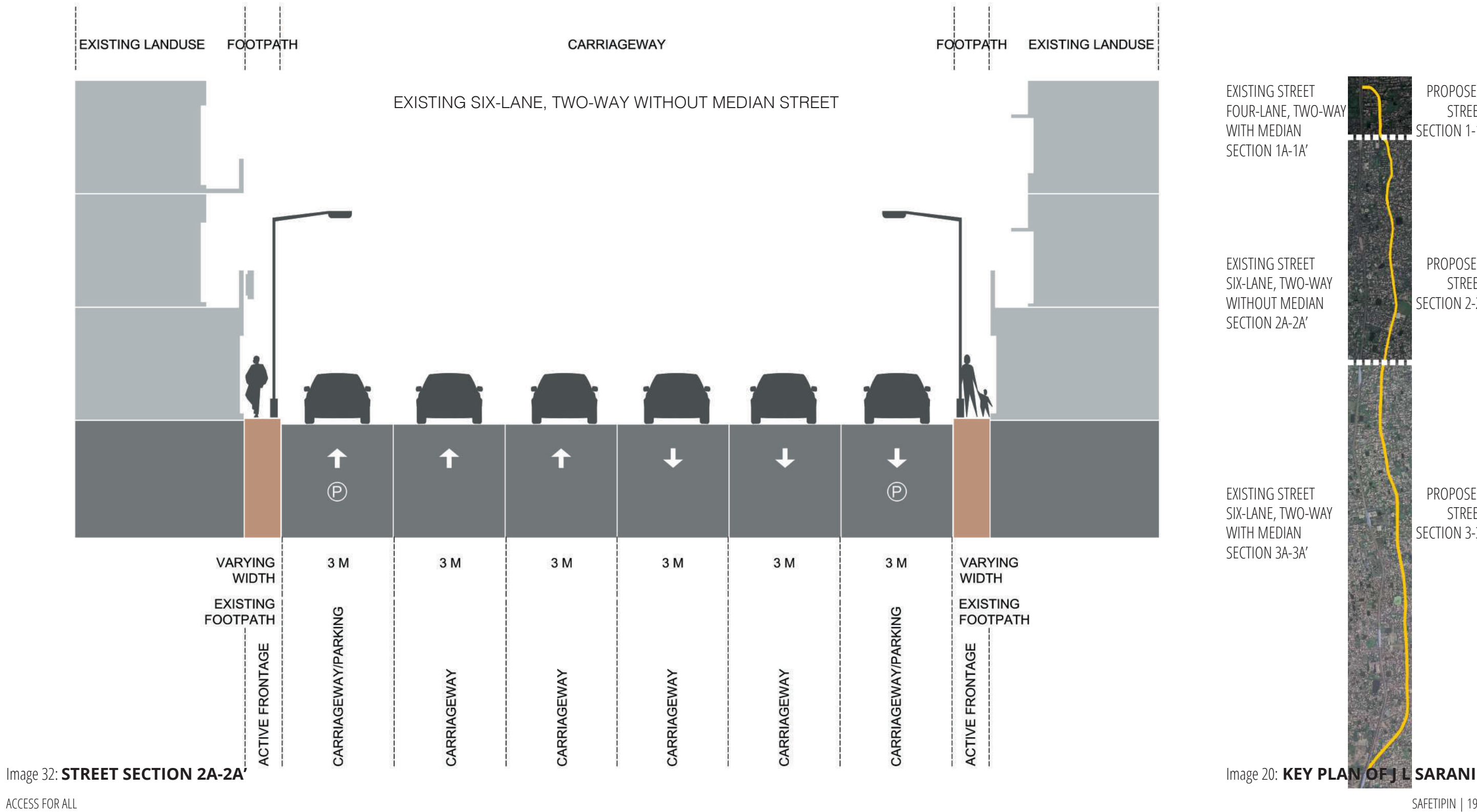
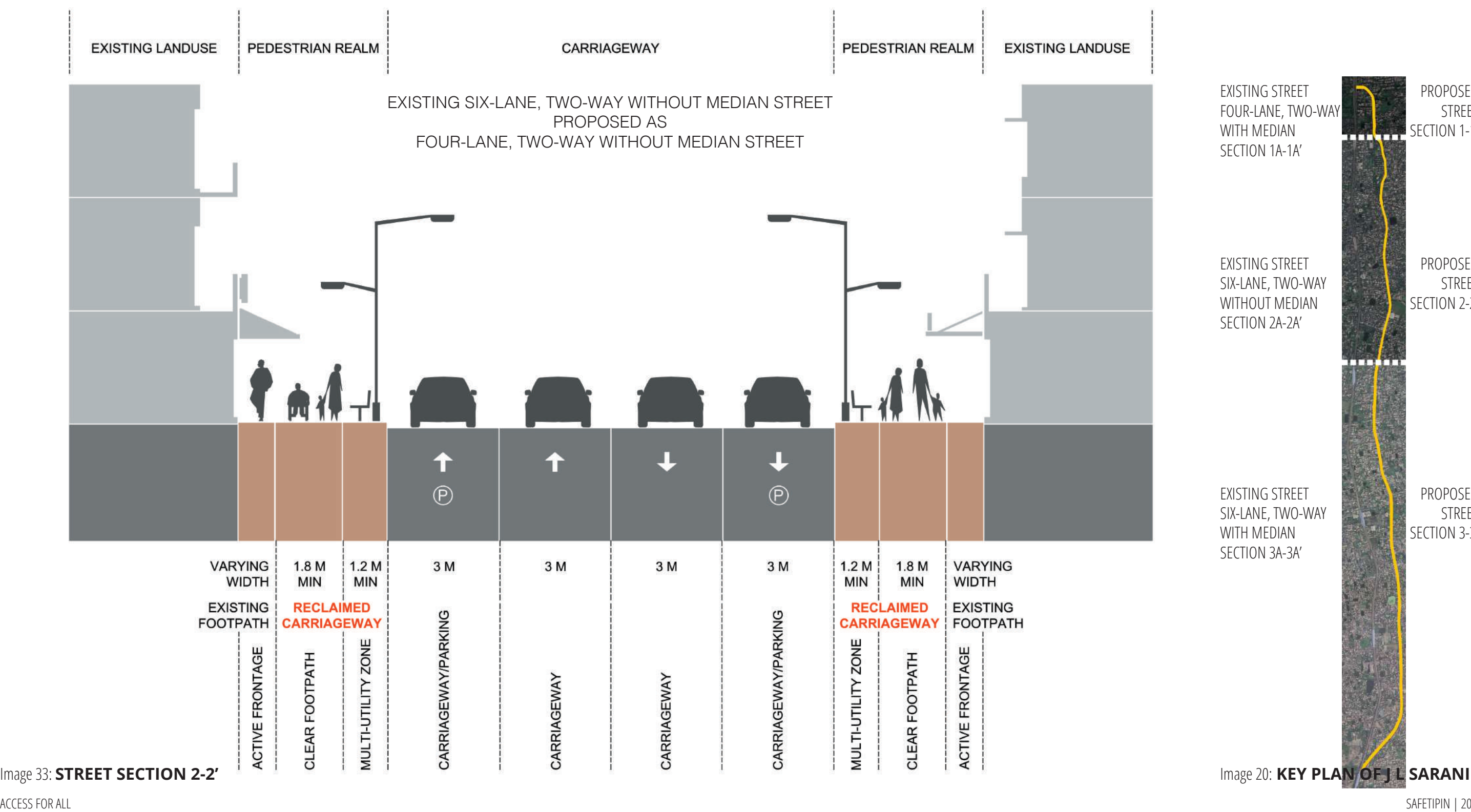


Image 20: **KEY PLAN OF J L SARANI**
SAFETIPIN | 18

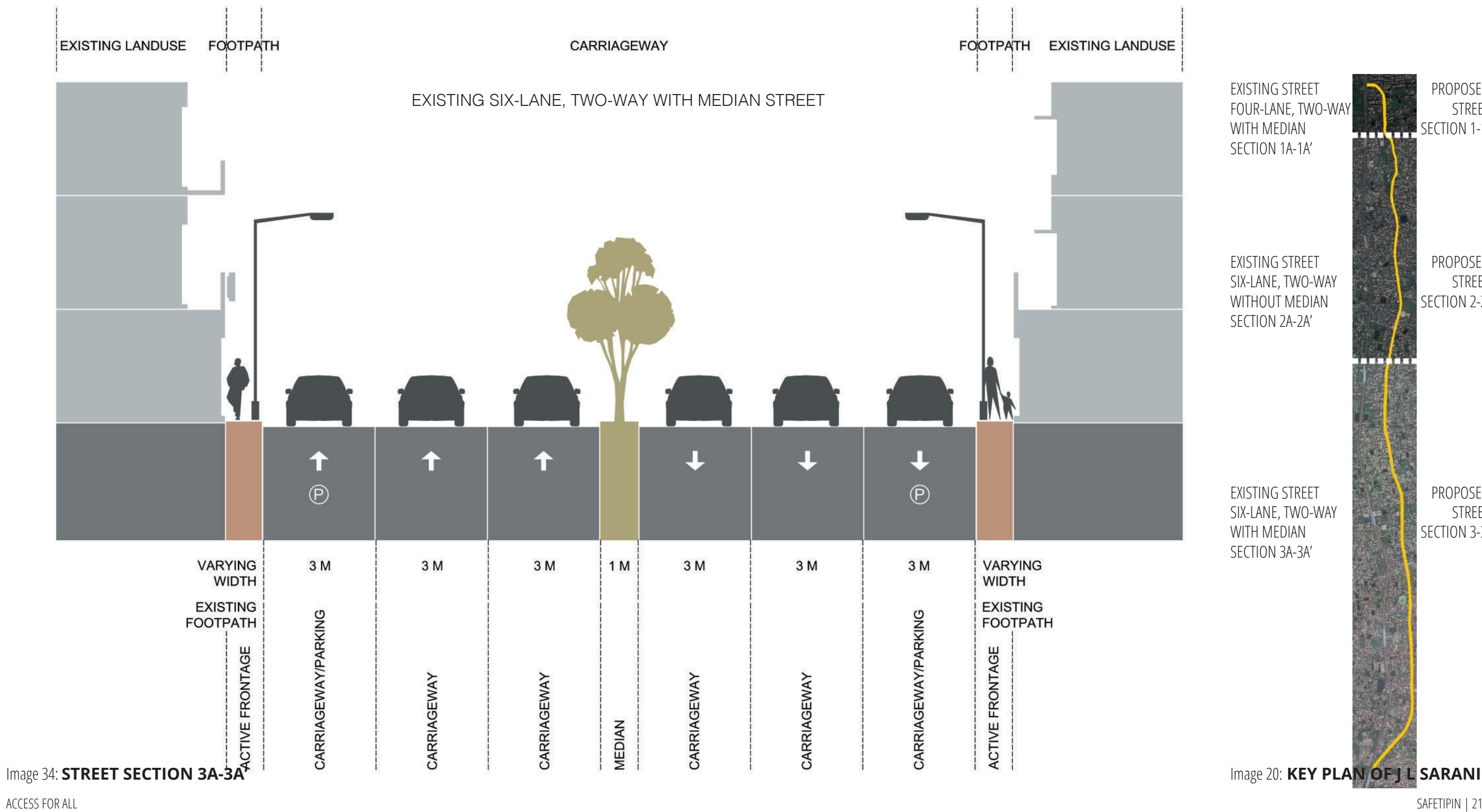
Existing Street Section 2A-2A'



Proposed Street Section 2-2'



Existing Street Section 3A-3A'



Proposed Street Section 3-3'

