

# ENHANCING LAST MILE CONNECTIVITY

a safety analysis of the Mandi House Metro Station



This Report has been prepared as part of the Project being undertaken with NDMC to Enhance the Last Mile Connectivity along the metro stations within its jurisdiction. The safety audits were conducted by Smt. Anju Bhatnagar, architect from NDMC along with Safetipin team.



# Mandi House

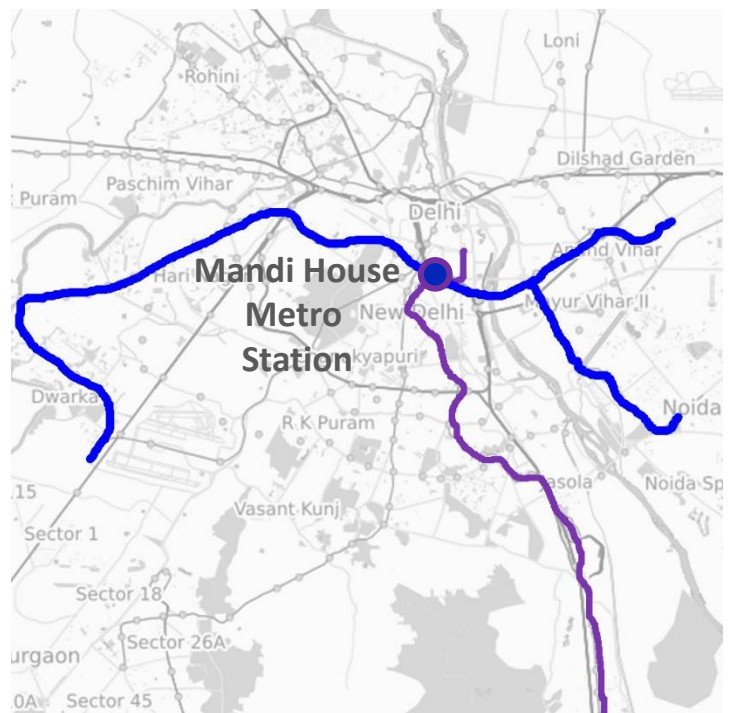
## SAFETY SCORE: 3.7/5

SafetiPin, is a map-based mobile phone and online application, which works to make communities and cities safer by providing safety-related information collected by users and by trained auditors. At the core of the app is the Women's Safety Audit. A Women's Safety Audit (WSA) is a participatory tool for collecting and assessing information about perceptions of urban safety in public spaces. The audit is based on nine parameters – Lighting, Openness, Visibility, Crowd, Security, Walkpath, Availability of Public Transport, Gender Diversity and Feeling.

The audits were conducted by an architect from NDMC along with Safetipin team. The assessment was done post sunset till 9pm.

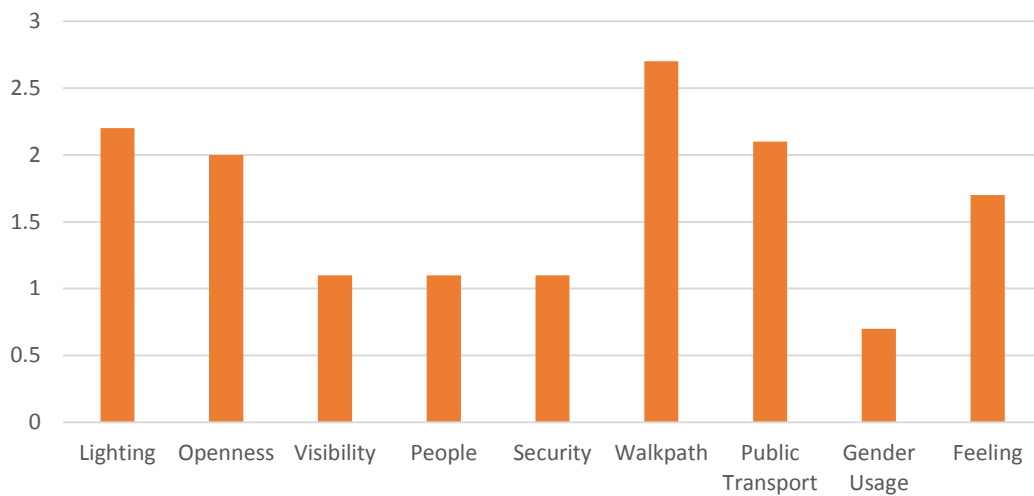
Mandi House is an underground metro station that provides a same-level interchange between the two lines of Delhi Metro namely Blue line and Violet line. This area serves as the cultural hub of Delhi as it is home to the country's finest cultural institutions like National School of Drama, Sangeet Natak Academy, Sahitya Academy among others.

An area of approximately 500m radius around the metro station has been studied and 40 audit pins have been generated. The area outside the metro entry/exit and the bus stop were studied.





### Average Audit Parameters (on a scale of 3)



Safety Audits indicate that the area around the metro station is safe. The safety score is rated lower at a few spots near the flyover on Sikandar Road. Walkpath parameter has been rated the highest i.e. Good. The parameter of Lighting and Public Transport has been rated Above Average.

Visibility has been rated Below Average due to high boundary walls of buildings. The parameters of Security, People and Gender Usage have been rated Below Average. Overall, auditors have rated the Feeling in this area as Average.

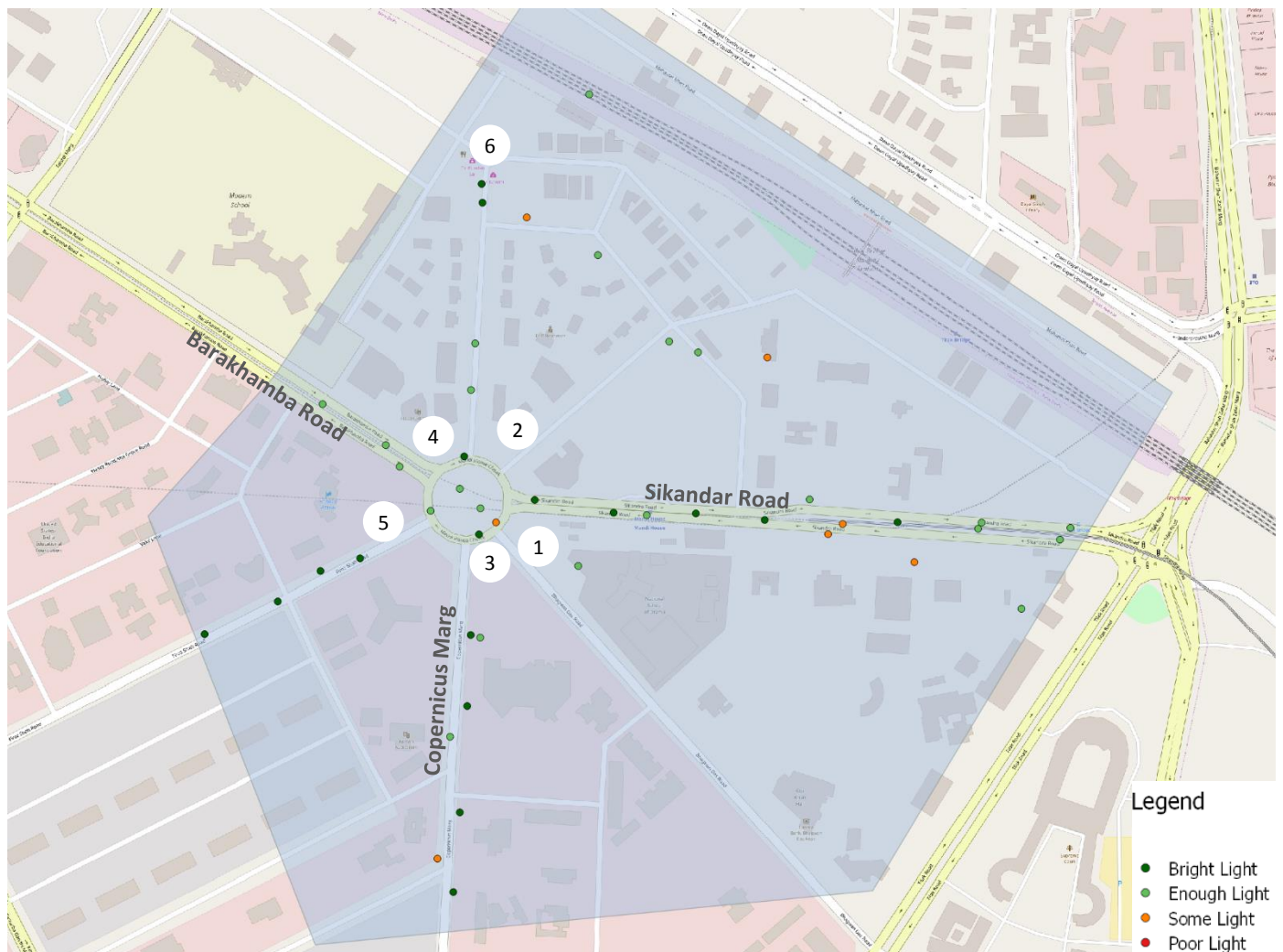


Map indicating Safety Score

# Lighting

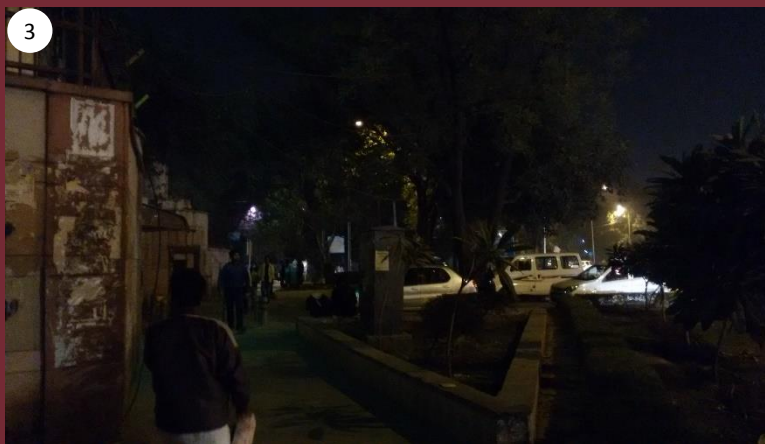
Lighting Parameter has been rated 2.2/3 i.e. Above Average. On main road except for Barakhamba and Sikandar Road, streetlights are installed on the edge of the footpath facing the vehicular carriageway resulting in the brightly lit road but dim lit footpath. On Barakhamba and Sikandar Road, streetlights face both the main road and service road, thus providing illumination on the footpath as well. Pedestrian scale streetlights should be installed on all the other roads.

Another issue found was the absence of streetlights on the pedestrian pathway at the junction. The pavement is illuminated by temporary sources, i.e. lights from adjoining building or kiosks. Streetlights need to be installed along these junctions to provide uniform illumination. At some points, streetlights are hidden behind trees' foliage. Tree leaves need to be pruned regularly.



Lighting Rating





*There are no streetlights installed along the pedestrian path on the roundabout (pic 3). As seen in pic 4, the path to the public toilet is poorly lit. At the junction between two roads, additional streetlights should be installed along the boundary wall focusing on pedestrians path.*



*As seen in Pic 1 and 5, the footpath in this area, flanked by trees is poorly lit. Seen in pic 2, pavement is lit by kiosk's light, i.e. a temporary source. Pedestrian scale streetlights should be installed along the boundary wall focusing on the footpath.*

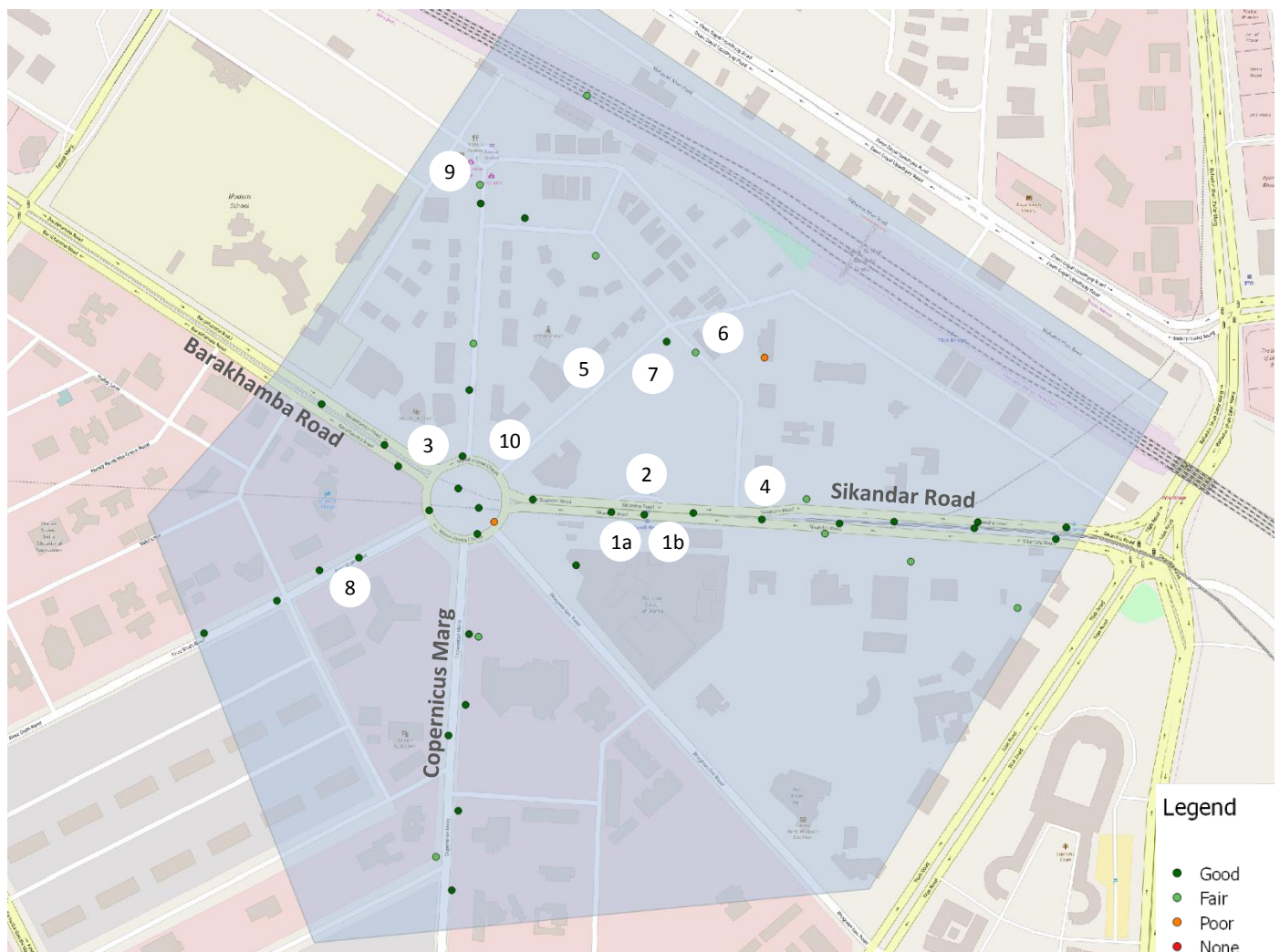


*Seen in pic 6, some streetlights were found to be non - operational. Regular maintenance checks should be carried out to ensure uniform illumination.*

# Walkpath

Walkpath Parameter has been rated 2.7/3 i.e. Good. The footpath was found to be well maintained in areas around cultural institutions. However, in residential and market area, footpath is obstructed by streetlights, vehicles, sign boards etc. The street furniture should be placed along the edge of the footpath. Vehicular parking should be disallowed on the footpath.

Also, seen at the metro station (Gate no. 3, 4) was tactile paving being provided all the way from the lift to the bus stop. However, on the other side of the road near Gate no. 1,2 the tactile paving provided is obstructed by an advertisement board and ends abruptly. The tactile paving should be provided throughout the footpath, clear of any obstruction.



Walkpath Rating





The footpath exists in good condition throughout the audit path. However, they are not easily accessible by the physically disabled. While there is tactile paving from metro station's lift to the bus stop on one side of the road (Pic 1a), the tactile paving provided on the other side of the road ends abruptly outside the lift (Pic 2). Seen in pic 1b at a little distance from the bus stop, a random L shaped tactile paving is provided i.e. not connected to any utility / building. Also, as seen in pic 1a, the placement of advertisement board is risky for the visually challenged. In order to provide smooth movement for them, proper tactile paving should be provided throughout on the footpath, clear of any obstruction.

As seen in pic 3 and 4, the ramp provided is not convenient for people on wheelchair, and two – wheelers can access the pavement as well. Also, bollards are placed where there is no ramp (Pic 5). To make commuting comfortable for the disabled, the ramp should have a gradual slope. The bollards should be placed such that it provides smooth movement for the physically challenged and prevent the vehicles from accessing the footpath.

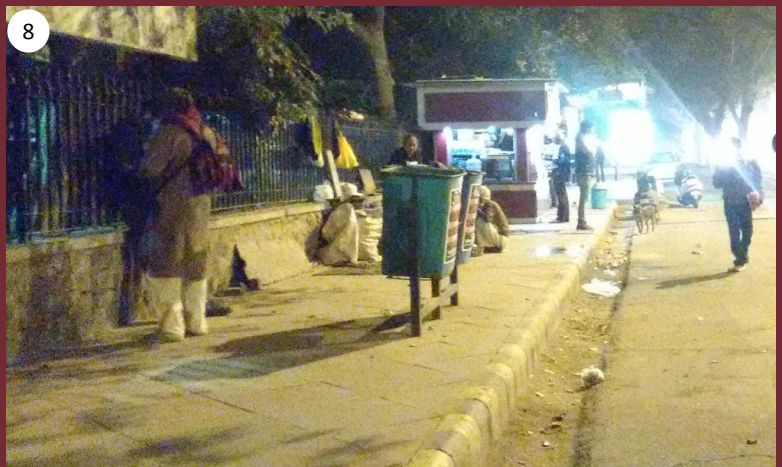


Footpath should be continuous and clear of any obstruction. Various obstructions found in the audit area include streetlights, banners, vehicles etc. As seen in pic 6, the streetlights and cooling appliances are obstructing the pedestrian path. These appliances should be removed, and streetlights should be installed along the edge of the boundary wall facing towards the road. Also, mother dairy booth seen in Pic 7 should be set up clear of the footpath.

Seen in Pic 8, the kiosk set up on the footpath has reduced the pedestrian path. Also, people squatting on the footpath and the placement of dustbins hinder pedestrian movement. Niches can be created along this boundary wall to house this kiosk. Benches and dustbins should be placed at the edge of the boundary wall.

The pavement along the shops in Bengali Market is flushed with road as seen in Pic 9. Parked vehicles hinder smooth movement of the pedestrians. The footpath should be raised at a level to demarcate pedestrian path and vehicular carriageway.

In spite of 'no parking' signage, vehicles were seen parked on the pavement (pic 10). A separate space should be provided for the parking and bollards should be placed to prevent vehicles from accessing the footpath.



# Visibility

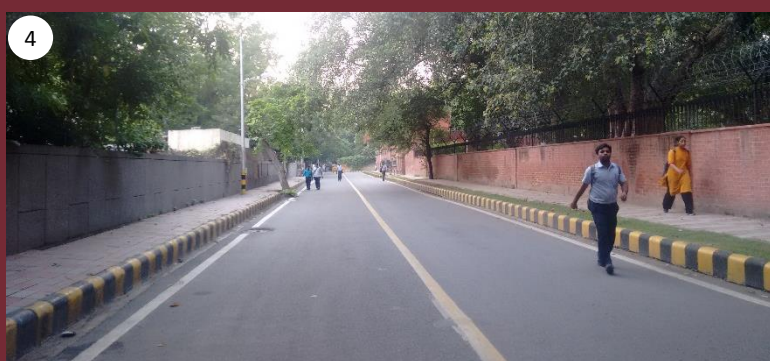
Visibility Parameter has been rated 1.1/3 i.e. Below Average. There are few kiosks and street vendors present at various audit points, that provide some visibility. But at most of the points, due to high boundary walls there is low visibility. The exception is around cultural institutions, where the boundary is defined by low height solid wall with grills, that brings some transparency.

The street vendors present near the metro station and the bus stops occupy the footpath and bicycle lane. At metro stations and bus stops, a designated space should be created for them in a way that, they do not obstruct the path of the pedestrians and cyclists. This space should be brightly lit and equipped with street furniture.



Visibility Rating





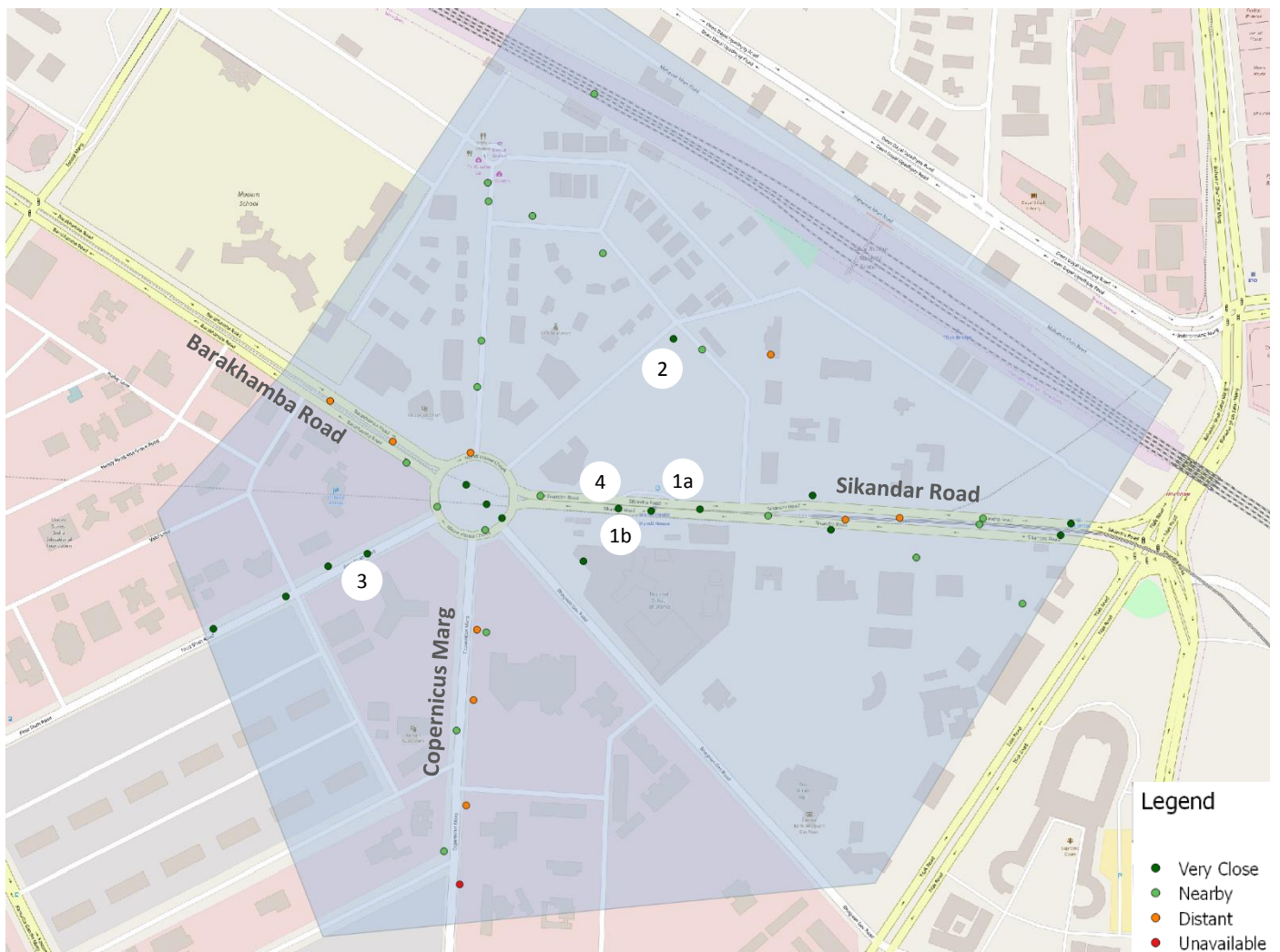
Street vendors present along the boundary wall contribute to visibility at various audit points as seen in Pic 1 and 6. These spaces should be redesigned to improve the experience. Vehicular parking on the pavement should be disallowed (Pic 1). Green belt along the built edge should be equipped with street furniture and designated for the hawkers. In case of Pic 6, the service lane is not used for vehicular movement. A hawker zone can be set up here, equipped with street furniture and a public convenience. The footpath should be widened wherever tree obstructs. The area outside the metro station (Pic 2) can also be developed as a hawker zone.

While cultural institutions maintain some transparency through their boundary walls (Pic 3), the government offices and housing societies have high boundary walls (Pic 4). The boundary wall of public buildings should also be of low height as seen in Pic 3. The solid part of the boundary wall should be maintained at 1 m and the rest of the height can be attained using grills. However, in some places the grills were found covered using plastic sheet (Pic 5). The grills should not be covered with any opaque material. Additionally, to improve visibility along the pavement, designated hawker zone should be set up, clear of the footpath. Street furniture can be added within the green belt.

# Public Transport

Public Transport Parameter has been rated 2.1/3 i.e. Above Average. Autos are available at the entry/exit gate of metro station and bus stops. However, in the absence of proper auto stand, it results in autos occupying the bus lane. Designated stands for autos should be set up near the bus stops.

Auto stands should also be set up in the residential neighbourhood at regular distance. These stands can be set up near Bengali Market and institutions, where several autos were seen waiting. Additionally, para-transit stands should have public convenience for the drivers.



Public Transport Rating





As seen in pic 1a and 1b, the bus stop is right outside the metro station. In the absence of proper parking space, autos occupy bus lane (Pic 1a). Auto stands should be set up near the bus stop on both sides of the road. The stand should have parking space for the autos and a public convenience for the drivers. Similarly, auto stands should be provided at all the bus stops. Autos were seen waiting near Lady Irwin College (Pic 2) and Bangla Market. To improve last mile connectivity to neighbourhood level, auto stands should be set up within the residential area as well.

As seen in pic 3, the bus lane is occupied by two wheeler and autos. As a result, buses stop on main road. The bus lane should be kept clear of any obstruction, and a para transit stand should be set up for auto/taxi. Vehicular parking should be disallowed in the bus lane.

Street vendors are seen occupying the cycle lane near the metro station (Pic 4). Designated space should be provided on the pavement along the main road for the hawkers. Street furniture can be added to enhance the area.

