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ENHANCING LAST MILE CONNECTIVITY

a safety analysis of the Barakhamba Road 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 it's jurisdiction. The safety audits were conducted by Smt. Nutan, architect from NDMC along with Safetipin team.

NDMC
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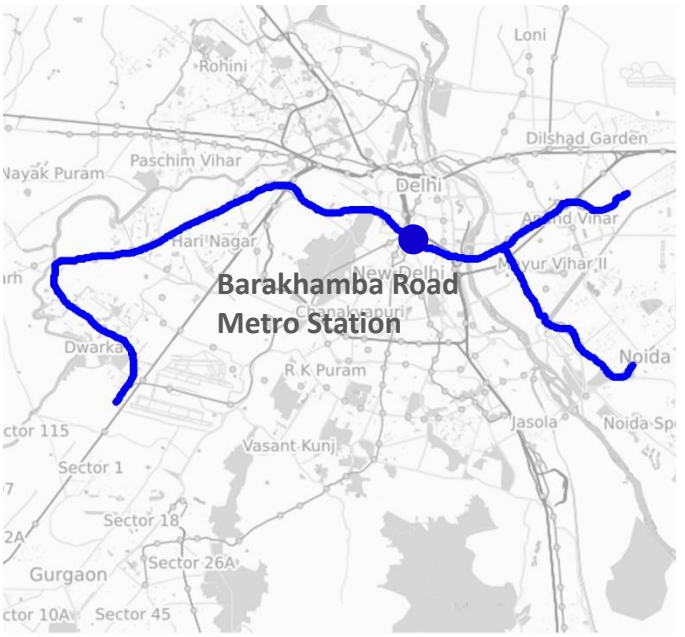
Barakhamba Road

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.

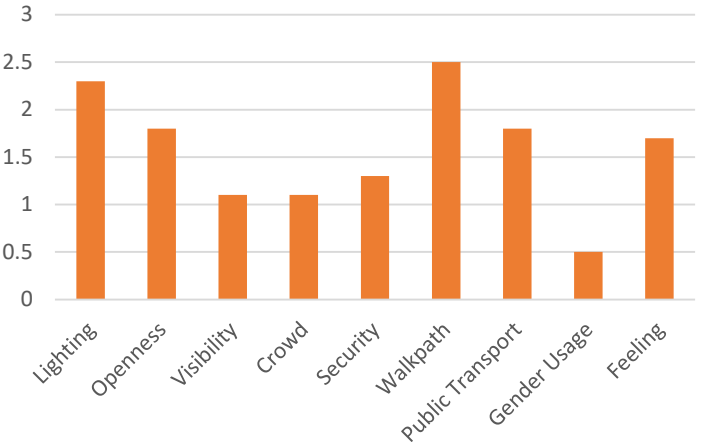
The audits were conducted along with female architects from NDMC. The assessment was done post sunset till 10pm. An area of approximately 500m around the metro station was audited and a total of 44 audit pins have been generated.

Barakhamba Road is an extension of central Delhi's Connaught Place. The stretch can be divided in two halves. The first half is a commercial stretch comprising mainly offices and some coaching centers. This stretch sees some activity even in the evening hours. This stretch was re-developed and transformed when the metro station was constructed. The second stretch towards Mandi House has few Embassies and residences and the reputed Modern School. The stretch is active during the day till the school is operational but in the evening there is no activity here.



Safety Audits indicate that the area around the Barakhamba Road metro station offers average amount of safety to women at night. The Walkpath parameter has been rated Good. Lighting has been rated Above Average. The parameters of Openness, Public Transport and Feeling have been rated Average. Visibility, Crowd and Security parameters have been rated Below Average. Gender Usage has been rated Poor. Since the area primarily has offices which close in the evening, few people are seen out of which very few are women. In the bungalow zone and along Modern School there is no activity in the evening hours and the stretch is predominantly secluded. The activity is mostly around the metro station entry/exits.

Average Audit Parameters (on a scale of 3)



Map indicating Safety Score

Lighting

Lighting Parameter has been rated 2/3 i.e. Above Average. Along the office stretch, lighting was found to be adequate. The streetlights are located on both sides of the road along the footpath. The footpath along the service lane is not well lit as the light fixture is obstructed by tree leaves. Even along the metro station entry/exits the streetlights are obstructed by trees. In the second stretch too this was a common observation. The tree leaves need to be pruned regularly as they shield the light casting dark shadows on the footpath as well as the road.

Also, at many points while the street pole has been fixed, it does not have a light fixture. This was seen on the stretch along the Modern School side. Also seen was multiple poles together. This was also seen at the junction. These poles should be properly spaced out such that the entire road is well lit. Additional poles can be re-located along the service lane footpath.

Some poles are very high due to which they get obstructed by leaves. Pedestrian scale streetlights should be provided at such locations.

A few lights were un-operational. Regular maintenance checks should be done to prevent this.

Lighting Rating

1

A few light fixtures were found to be un-operational. Regular maintenance checks are needed to ensure that all streetlights are operational at all times. Also, the lights need to be well spaced to ensure the entire area is well lit.

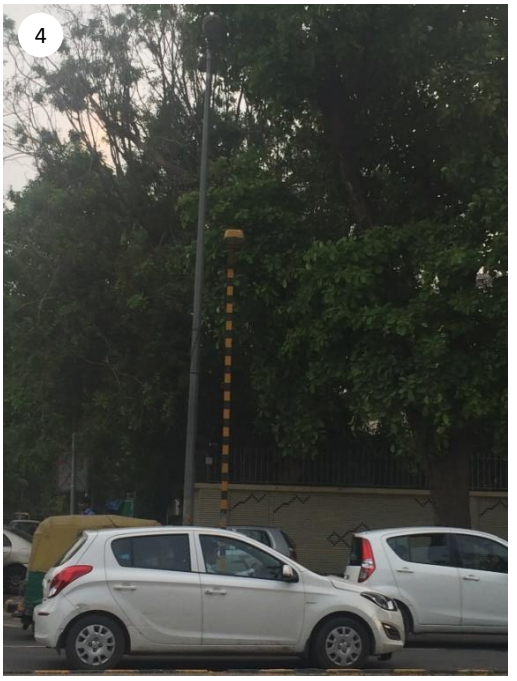
2

A few street poles do not have any light fixture installed on them. Light fixtures should be fixed and energized to sure illumination. Also tree leaves need to be pruned.

3

Some streetlights are covered by tree leaves resulting in dimmed illumination. Regular pruning of tree leaves is essential to prevent this.

4



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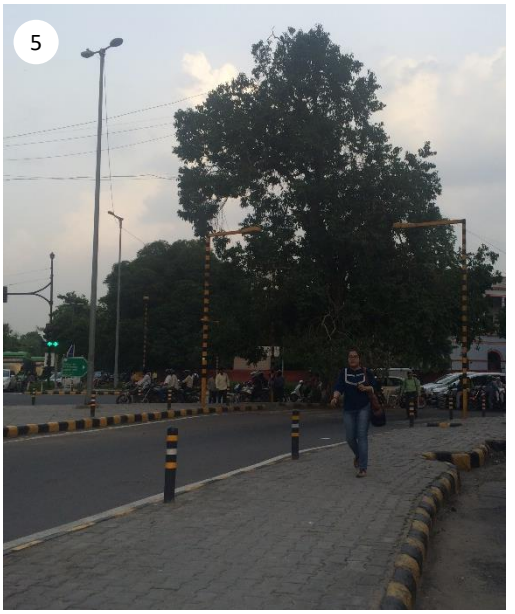


At few points , multiple streetlights have been located in close proximity. While installing new lights care should be taken to evenly space them such that the entire road stretch is uniformly illuminated. Currently while few spots are very brightly lit, other are not well lit. This also causes glare and should be avoided. Such poles should be re-located at a certain distance.

Walkpath

Walkpath Parameter has been rated 2.5/3 i.e. Good. Most of the audit area has footpaths in good condition. The commercial stretch has a footpath along the service lane as well while the second stretch doesn't. Many obstructions were observed which hinder pedestrian movement. Commonly seen obstructions are signages, light poles, electric poles and other units. Manhole covers are not flushed with the surface and protrude out. At many points the surface around the manhole was observed to be broken. The footpath needs to be repaired to have a smooth continuous surface. The obstructions need to be shifted. At few points especially at the turnings, the footpath was too narrow. This makes walking difficult and prohibits movement of people on a wheelchair.

The footpaths in the audit area do not have provision to enable smooth movement of people with disability. Tactile paving was observed only at the metro station and bus stop and these end abruptly. Even outside the Public Convenience no tactile paving has been provided. The ramps provided for ingress/egress of wheelchair are too steep and the footpath is too narrow.

Walkpath Rating

The tactile paving on the bus stop ends abruptly at the kerb. The kerb height is more than one feet which further makes it risky for the visually impaired. Tactile paving needs to be provided along the entire length of footpath and connected with the paving at the bus stops and metro stations.

The ramp to the Public Convenience does not have any tactile paving. Though it has a rough surface for easier movement of wheelchair, tactile paving too needs to be incorporated.

Bollards have been located randomly such that they not only prevent wheelchair movement but also obstruct pedestrian movement. Bollards should be spaced such that wheelchair can pass. A ramped edge also needs to be created.

Ramps have been provided for egress/ingress but these are too steep and without proper turning radius. Also, as seen here in pic4, bollards have been located blocking the ramp. These need to be removed and a proper ramp be created. In pics 5&6, the ramp ends into the boundary wall and there is no space for a wheelchair. Even for pedestrians it is difficult to move. Also the ramp should be clear of the footpath such that pedestrian movement is not disrupted.

Police Booth on Maharaja Ranjit Singh Marg

Tolstoy Road

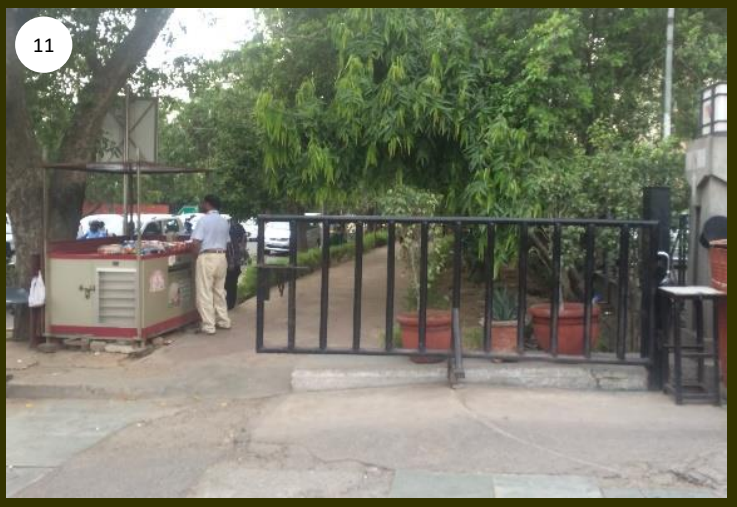
Seen above is the footpath ending abruptly in the boundary wall. Also at many points one is walking over the drain covers which are unstable. As a result people are forced to walk on the road. Though bollards have been located on one side, vehicles access the service lane from the other side resulting in pedestrian-vehicle conflict. The footpath needs to be made continuous while ensuring constant width.

The paving along most of the stretch is in fair condition. However due to obstructions it is difficult to walk on. Manholes and drain covers are seen protruding and obstructing the footpath. Either it is left broken after repair works or it is reducing the effective width of the footpath. Seen in pic7 along Maharaja Ranjit Singh Marg, the footpath is completely obstructed due to the Police Booth. People are forced to walk on the yet-to-be-developed green belt which too is blocked by sand bags and signage. Either the Police Booth should be relocated or the paving be extended and made continuous and obstruction free so people can walk comfortably. Also seen here is the drain reducing it's effective width.

Another obstruction observed was due to trees. At places where the tree exists on the footpath, the paving should be extended into the greenbelt such that a continuous footpath exists. In pic8 the paving is obstructed by the tree followed by a manhole and a bollard and it ends at the entrance to a private plot and foliage. At entrances the footpath should not be disrupted rather the driveway should end at the footpath. Currently at this location, one is forced to walk on the road. For plots which have a wider entry gate (pic 11), a continuous footpath becomes even more important. Traffic calming design should be used to ensure pedestrian safety.

In pic9 we see the low hanging branches of trees. These are troublesome to the pedestrian and should be pruned regularly. Pics 14-17 indicate some other obstructions that were observed. At few points private plots have encroached onto the footpath in varying degrees. Signages, electric poles and units need to be located clear of the footpath.

At turnings the footpath is often too narrow or non-existent at few points (pic 10). Accordingly the footpath should either be widened or constructed. Also proper footpath should be provided to access Public Convenience facilities.



The footpath is not provided outside the entry to Hans Hotel. In order to cater to both pedestrians and the vehicles entering/exiting from the hotel, the footpath should be made continuous with ramped egress/ingress i.e. designed as a table top. Private driveways should not be allowed to encroach upon the public right-of-way.

The zebra crossings too need to be continuous throughout the entire width of the road. The median should be broken at the zebra crossings.

The Public Convenience facilities need to have proper access to them. As seen in pic13, the footpath is not connecting to the Toilet and there are many obstructions in between. The space abutting the Toilet should be cleared and properly paved including provision of tactile paving.

Visibility

Visibility Parameter has been rated 1.1/3 i.e. Below Average. The commercial stretch of Barakhamba Road offers high visibility both due to high-rise office towers as well as the presence of street vendors catering to the office goers. However, the rest of the audit area offers no or very poor visibility.

Along the metro station entry/exits a lot of vendors are present. These cater to the metro commuters as well as the office goers. However, their number starts to dwindle post sunset. Their presence combined with the high rises results in good visibility along this stretch.

Along Tolstoy Road the visibility is low but along the remaining stretch of Barakhamba Road (towards Mandi House) and Maharaja Ranjeet Singh Marg, there is little or no visibility.

The office complexes like Parsvanath and RBS do not have tall opaque boundary walls. Instead the plot edge is defined by a low height transparent wall. This results in better visual connectivity between both sides. Such good practices should be adopted along other office buildings as well. For other built uses, the height of the opaque boundary wall should be reduced.

Visibility Rating

1

2a

2b

3

4

The entry/exit of the metro stations were found to be the most active and vibrant zones in the entire audit area in the post office hours. Many vendors are present here providing the much needed eyes-on-the-street. People were also observed to be loitering out in the after office hours. However, more men and few women were seen loitering. The vendors have mostly located themselves in the service lane in between two consecutive trees. At few points only the vendors were seen occupying the footpath. These should be re-located towards the side (as seen in pic3) such that they do not obstruct the pedestrian or vehicular movement. Also while people are seen loitering, there is no provision of street furniture. People use the extended plinth of the metro station exits to sit. But most people are forced to stand. There is a lot of vacant space around these sentry/exits where benches and seaters can be provided. These areas have the potential of being developed as proper public spaces. This will encourage people to loiter extending the duration of the activity. Since this stretch has many coaching institutes which are operational even till 9pm. These small but numerous activity zones throughout the stretch will help make it feel safer.

Outside RBS along Tolstoy Road

Tolstoy Road

Public Convenience on Barakhamba Road

The high rise office buildings along Barakhamba Road offer good visibility. Also along the RBS and Parsvanath office buildings the transparent nature of their boundary walls further enhances this as seen in pics 5, 8 & 9. Along the RBS building, the boundary wall has a grill which allows for complete visual connection between the activity/people inside the office complex and those outside on the footpath. Along the Parsvanath building (pics 8 & 9), the boundary wall though completely opaque is low in height. It has been designed with a planter. In the absence of any street furniture and due to its convenient height, the wall is being used as a seater. There are hawkers along the complex and people take support from the wall. This helps in activating the edge.

However, the remaining area with bungalows and institutes has high boundary walls. These stretches do not offer any visibility creating a blank facade as seen in pics 10-15. The height of these walls should be reduced to 1m. For commercial buildings, this can be further reduced and even re-designed to have an interactive edge like the RBS building. For private properties the opaque part of the wall should be limited to 1m and the remaining height needed for sense of security should be achieved using grills(and barbed wires if needed).

Also along the Tolstoy road there are many public functions. Hawkers were seen in the green belt as well as at the entry/exit of these complexes (pic6). Due to the absence of proper designated space they end up squatting on space available. Proper zones should be created and street furniture be provided along this stretch.

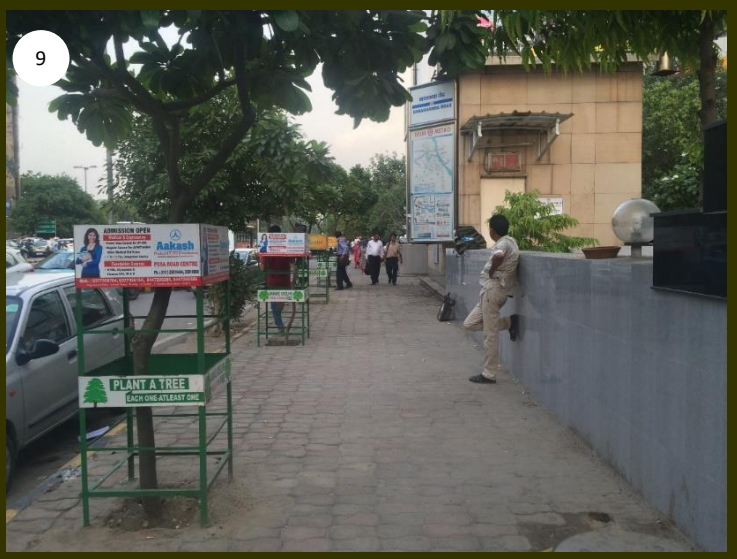
At certain locations like junctions and turnings and along public functions, there is vacant space which can be developed as a proper public space with street furniture and lighting. A small kiosk can also be incorporated. This would result in various small activity hubs scattered throughout the area making it more active and safe.

8a

8b

The boundary wall along Parsvanath building is low in height and has a planter. It allows for a visual connection hence enhancing visibility. Hawkers are present along it and people use the boundary wall as a seater. This should be adopted along the remaining area as well.

9



Seen above the boundary wall is not very high and allows some connection. It even has light fittings which add to the illumination. Street furniture can be incorporated in between the planters along with space for small kiosks. Alternately the wall height can be further reduced.

10

11

12

13

14

15

Public Transport

Public Transport parameter has been rated 1.8/3 i.e. Average. The Barakhamba Road has both metro and bus facilities. However the adjacent Tolstoy Road and Maharaja Ranjeet Singh Marg offer poor public transport facilities. Autos are easily available outside the metro station entry/exit. But as we move away from the metro station the para transit facilities are not easily available.

Along Barakhamba Road though bus service is available, proper bus shelters are missing at few points. The bus stop is identified by signage and there is no proper shelter for people to wait. As a result they end up squatting on the road. Also where the bus shelter is provided, additional street furniture needs to be provided for the passengers. Bus movement needs to be clearly resolved and proper turning radius be provided.

Para transit stands need to be created along the metro station entry/exits. Currently autos queue outside crowding the service lanes. Also since the road is very wide, certain parts of the service lane can easily be designated as a vehicular free zone with space for hawkers and people. the para-transit hub can also be incorporated here.

Rating of Public Transport

Shown here is the bus stop in front of Kanchenjunga building. It is located along the service lane. Proper turning radius hasn't been provided for the movement of buses. Furthermore, cars are parked in front of the shelter blocking bus movement completely. As a result while a few people wait in the shelter most people prefer to stand on the footpath along the main road. Proper turning radius should be incorporated at the junction and any obstruction should be prohibited.

Autos queued up outside metro station exit.

A Cycle Sharing System has been started along this metro station. However, the number of Cycle Stations is limited. These not to be provided at regular distances in the entire area for people to be able to avail this facility.

Seen above in pics 4 & 5 are people sitting on the footpath in the absence of adequate provision of street furniture. In pic 4, there is no bus shelter. A bus shelter needs to be provided clear of the footpath with adequate seating facility. In pic5, the bus shelter has been provided but the seating falls short of the footfall witnessed. Additional bus shelter should be provided.

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