

ENHANCING LAST MILE CONNECTIVITY

a safety analysis of the Jor Bagh 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. Kamlesh, architect from NDMC along with Safetipin team.



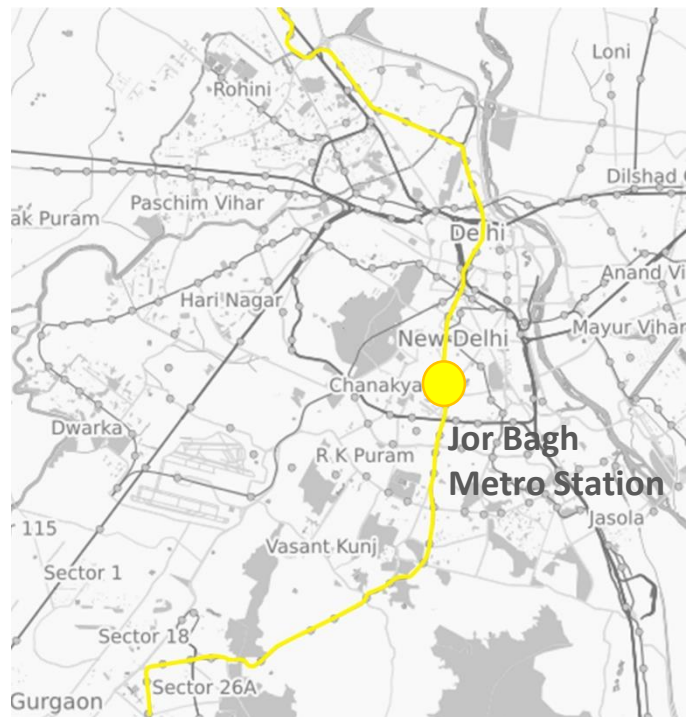
Jor Bagh

SAFETY SCORE: 3.5/5

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.

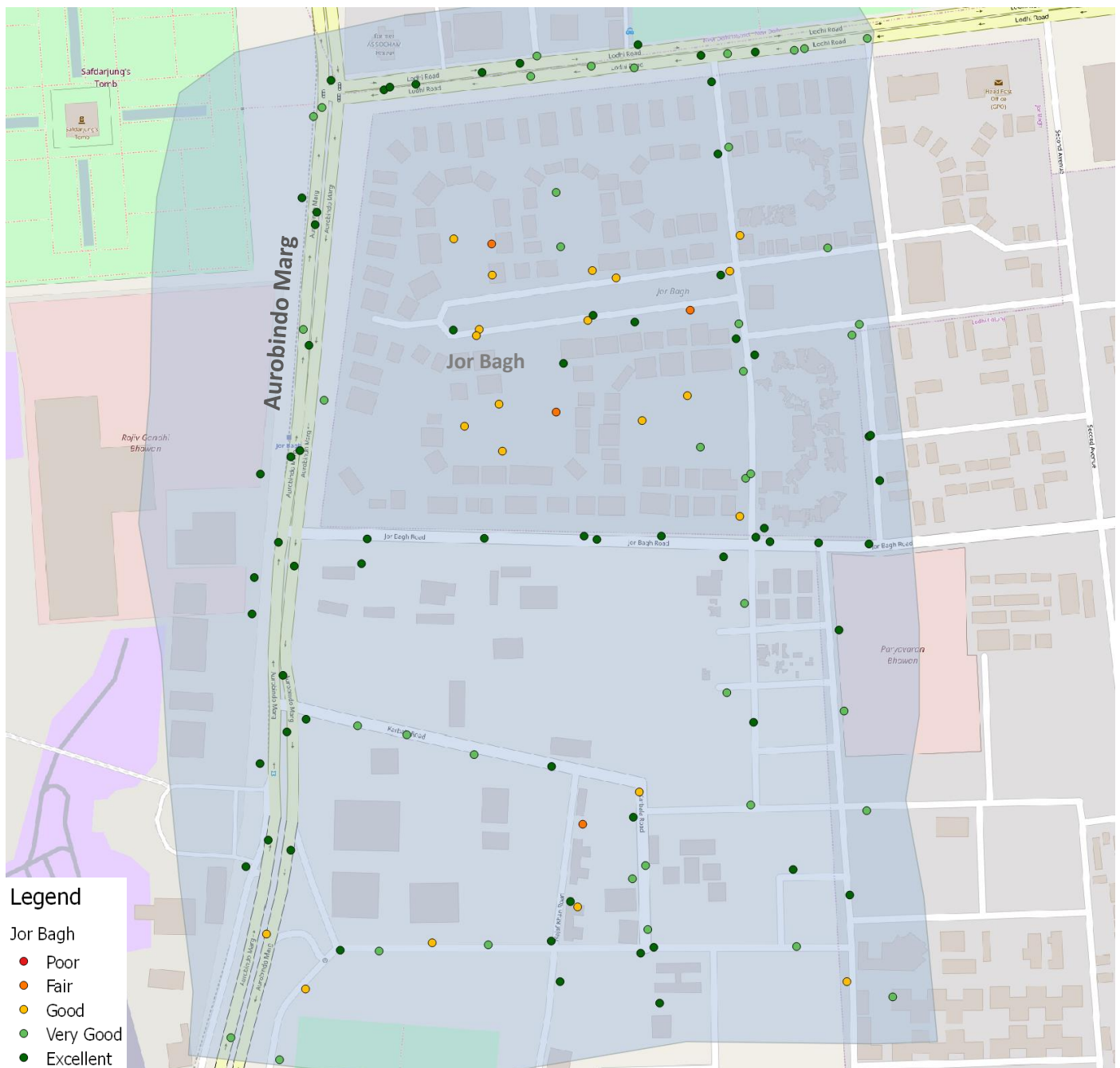
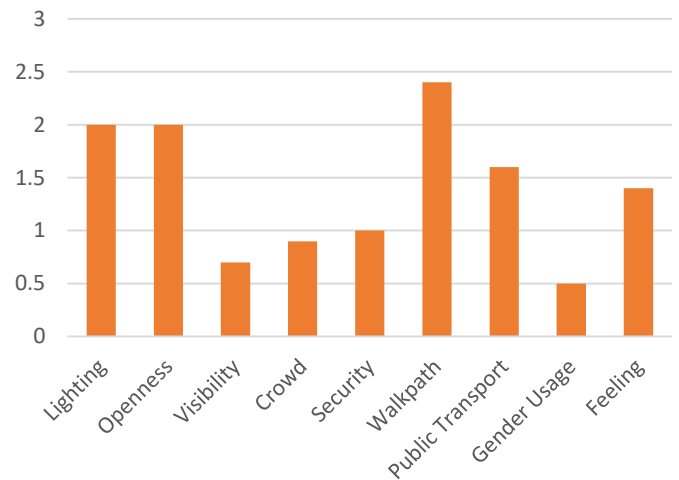
The audits were conducted along with female architects from NDMC. The assessment was done post sunset till 10pm. An area of approximately 500m around the metro station was audited and a total of 129 audit pins have been generated.

The Jor Bagh metro station is part of the Delhi Metro's Yellow Line and is located along the arterial road Aurobindo Marg catering to Lodhi Colony and Jor Bagh area comprising high-end bungalows, government offices and staff quarters, and various institutes like the Indian Habitat Centre, India International Centre, Alliance Francaise etc. The Lodi Garden and Safdarjung tomb are also strong attractions pulling people and tourists in this area. The user group is thus diverse ranging from daily office goers and residents to frequent visitors and occasional tourists.



Safety Audits indicate that the area around the Jor Bagh metro station offers average levels of safety for women at night. The parameters of Lighting, Openness and Walkpath have been rated Above Average. Public Transport and Feeling parameters have been rated Average. Visibility, Security, Crowd and Gender diversity have been rated as Below Average for this area. While there are people including women in the residential areas, the main roads tend to be secluded post office hours. However, most of the area was found to be lit and having good footpaths. The wide roads with buildings having setbacks accounts for the good rating for Openness parameter. Feeling of safety varied but overall it was found to be average in this area.

Average Audit Parameters (on a scale of 3)



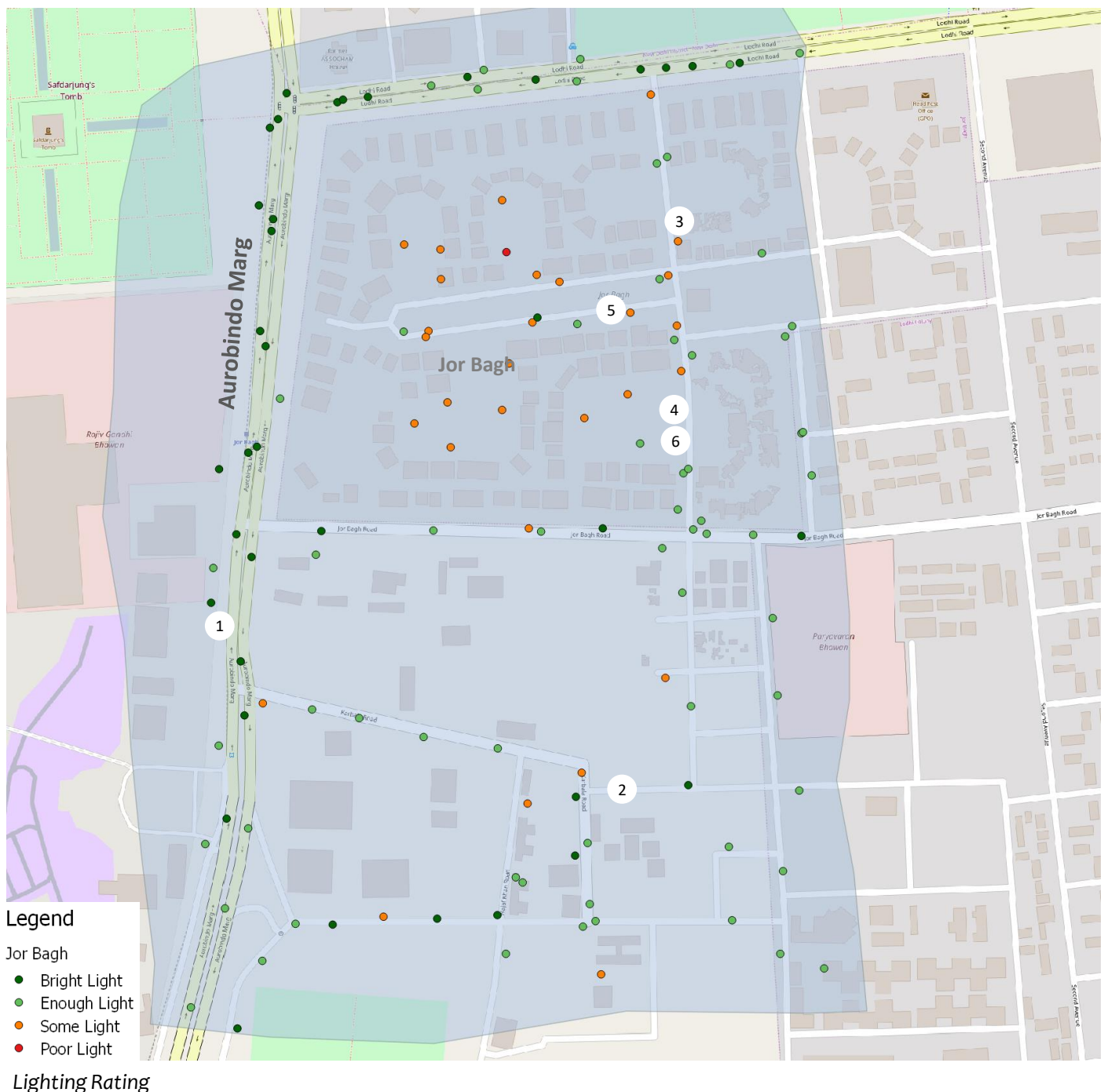
Map indicating Safety Score

Lighting

Lighting Parameter has been rated 2/3 i.e. Above Average. Most of the audit area was found to be adequately lit while some of the streets within the residential areas were found to be poorly lit. Along Aurobindo Marg, streetlights are located along both sides of the road. However, these have been located facing towards the vehicular carriageway of the main road as well as the service lane. The footpath was found to be lit but the illumination can be increased by installing pedestrian scale streetlights along the footpath. Also the road has trees planted along it and these should be regularly pruned to

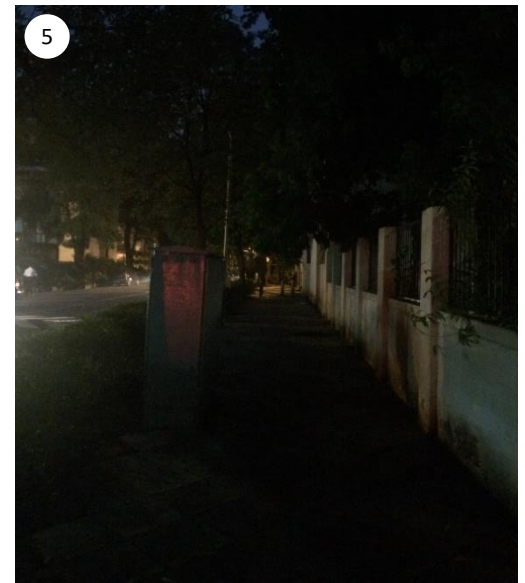
ensure the foliage doesn't obstruct the light.

In the residential areas, the roads are narrower and most of them have streetlights installed on one side only. As a result the footpath on the other side of the road is poorly lit. At certain points due to the high distance between two consecutive streetlights there is a dark spot created in between. Along such stretches, streetlights should be installed on the other side of the road and their location can be staggered with respect to the existing streetlights.





1
Outside Jor Bagh Metro Station. No streetlights are located along the footpath here. Illumination is from the metro station exit and the streetlights along the main road. Pedestrian scale streetlights should be installed along the length of the footpath.



4
5
6
The above photographs show the Lighting levels in Jor Bagh residential area. The high height of the light fixture results it in being obstructed by the foliage. As a result, dark shadows are cast on the footpath making the area poorly lit. Trees should be regularly pruned to prevent this from happening. Also since the lights are installed only on one side of the road, the other side remains poorly lit. Streetlights should be installed on both sides with their position being staggered such that both sides of the road are brightly lit.



2
B.K. Dutt Colony. Some streetlights were found to be un-operational at the time of the audit.



3
Jor Bagh Colony Market. The lighting around the market in the parking area was found to be inadequate with the illumination being primarily from the shops. Streetlights should be installed all around the market such that the abutting area is also brightly lit.

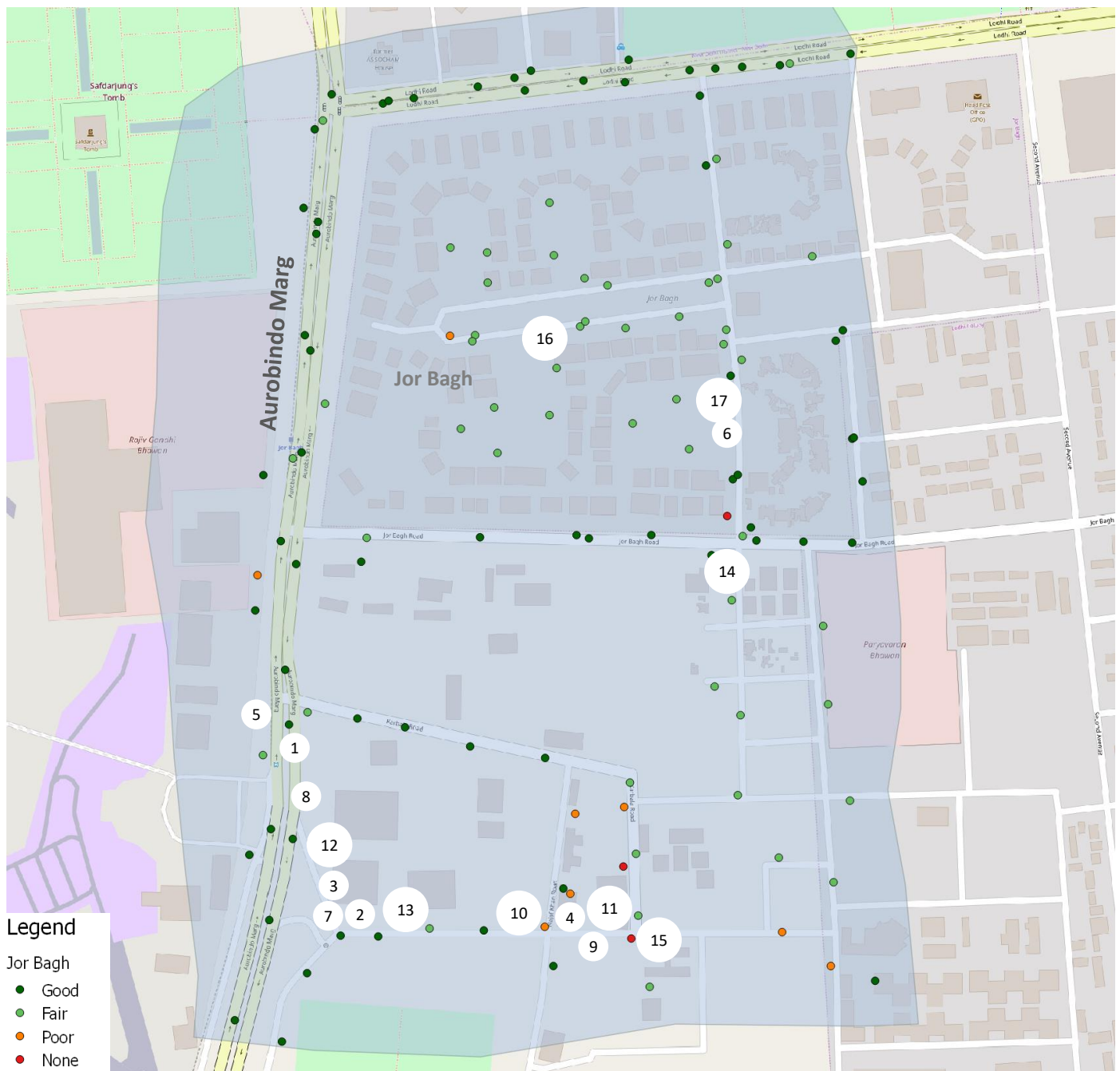
Walkpath

Walkpath Parameter has been rated 2.4/3 i.e. Above Average. The footpaths along the main Aurobindo Marg were found to be in good walkable condition. However they were broken at intersections and ended abruptly at few points. Also the width of the footpath was observed to be too narrow at a few points which was further reduced by obstructions like signages.

In the residential areas, the footpath was observed to be broken and obstructed at many points. Vehicles parked on the footpath obstruct pedestrian movement and also damage the footpath.

In Jor Bagh the main roads within the residential area has footpaths. However they need to be made continuous along the wide roads and also along public functions like Market Places, Schools and Temples.

Tactile paving and ramps need to be incorporated at all locations to ensure smooth pedestrian movement of people with disability. While there was tactile paving inside the metro station, the same does not extend into the footpath. Also proper ramps need to be built for ingress and egress and integrated with the location of zebra crossings.



Walkpath Rating



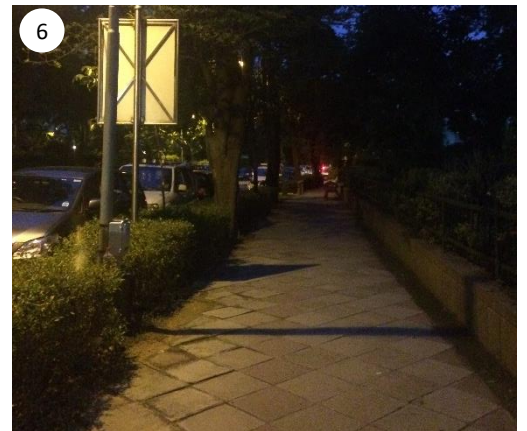
1
Along Aurobindo Marg, the footpath ends abruptly at the Public Toilet. The footpath should be continuous throughout the perimeter of the Public Toilet. The ramp should connect the road with this footpath.



2
Data Ram Bhutani Marg. As seen here in pic2, there is a ramped ingress/egress along the zebra crossing. However, the two ramps should be exactly aligned with the crossing. Currently, this is only on one side of the road and on the other side the zebra crossing meets the kerb stone.



3
4
Seen here in pics3 and 4 are the edge conditions of the footpath with the road. The ramp needs to be built at a slope of 1:15 to ensure comfortable movement of people on wheelchair and women with prams. The footpath needs to have a kerb height of 150mm such that vehicles cannot be parked on it.



5
6
7
In the study area, except at the metro station and bus stop, the footpaths do not have tactile paving. While the footpaths are paved and in fair condition, there were obstructions like signages and manholes which make walking difficult especially for the visually impaired. The entire length of footpaths should have tactile paving and this should be integrated with that at the transportation nodes and Public Convenience facilities as well as market areas.



In many areas while the footpath exists, it either cannot be used or is difficult to use. Seen in pic8, the foliage in the green belts abutting the footpath is hanging too low for comfortable movement of people. The leaves need to be pruned regularly.

As seen in pic9, vehicles were parked over the footpath. This was mostly in the residential areas where the paving is almost flushed with the road surface. A proper edge needs to be constructed such that the kerb height is atleast 150mm from the road level. Regular checks and patrolling should be done to prevent vehicles being parked on the footpath.

In pic10 we can see a well constructed, wide footpath with a ramped egress to the road. However the garbage dump has been located in the middle of the footpath hindering pedestrian movement. Also the location of bollards is important. They should be located to prevent vehicles from coming on the footpath. The current location of these bollards does not prevent vehicular movement on the footpath.

Pic11 shows a footpath being obstructed by the entry gate to the B.K. Dutt colony. The gate has fixed grill at the side along the boundary wall which obstructs the footpath completely. While the gate maybe necessary for the security of the residential area, it needs to be designed and constructed so as not to obstruct the footpath. Currently the design of the gate forces people to walk on the road. This also encourages people to park vehicles along the footpath as people are walking on the road.

Tactile paving too needs to be incorporated throughout the length of the footpath.





Along few roads while a proper pavement exists, it is too narrow for people to comfortably walk on. As seen in pic12 & 13 electric poles and protrusions in the boundary wall further reduce the effective width of the footpath. Pic12 shows the footpath along a wide service lane. There is space for the footpath to be widened to ensure comfortable movement of pedestrians and people on wheelchair. Also the shrubs in the green strip along the footpath need to be regularly trimmed.



Pic14 shows the situation inside the residential area. Here a wide pavement was reduced to half its original width. This forces people to walk on the vehicular carriageway. Also the footpath ends abruptly at the gate. The wall/grill should be removed such that the footpath is uninterrupted.



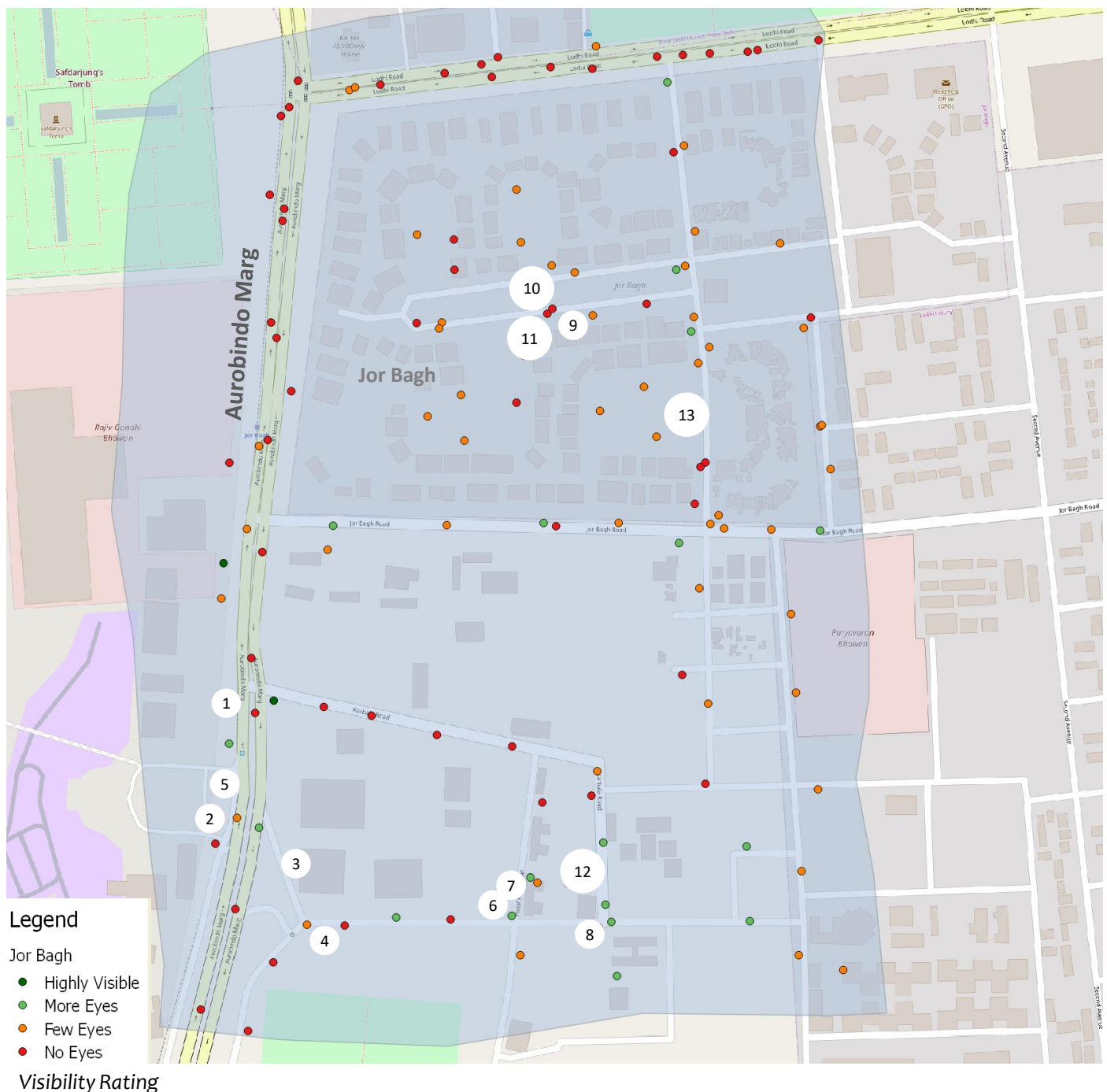
The footpaths in the residential areas are mostly broken or non-existent. Along shops, they are being used for display of products. At certain points they are obstructed by infrastructural elements as seen in pic15. In pics16 & 17, we see lanes in Jor Bagh residential area not having a footpath. At places the footpath was built over the drain but along many points there is no footpath. Even during a construction activity, the drains should be covered at all times and no private structures should be allowed to occupy the footpath or the vehicular carriageway. In pic17 we see a wide lane which does not have a footpath on either side. A footpath should be built atleast on one side on the lane to ensure safe and comfortable pedestrian movement.



Visibility

Visibility Parameter has been rated 0.7/3 i.e. Below Average. Most parts of the Aurobindo Marg and other main roads having offices and public functions offer poor visibility. Here the edge condition of the private plot with the road is defined by opaque boundary walls with the buildings having huge setbacks from the plot edge. The edge needs to be made porous by removing the boundary wall or reducing the opaque percentage of the walls. There is a wide green belt along some of these boundary walls. Adding street furniture and proper lighting will help activate these edges. Some vendors were seen along

the bus stop and the entry/exit of the metro station. Proper provision should be made for them as well. In the residential areas, the visibility is better owing to houses and shops overlooking the streets. The B.K. Dutt colony and Palika Kunj areas have mixed-use along many lanes along with vendors and hawkers which makes the visibility high. The Jor Bagh area offers some eyes-on-the-street but this is less owing to the low density single-use development. There is a temple and a market place but their design does not activate the street edge. These public functions need to be integrated with the public edge as well.





Bus Stop outside Jor Bagh Metro Station.



Aurobindo Marg



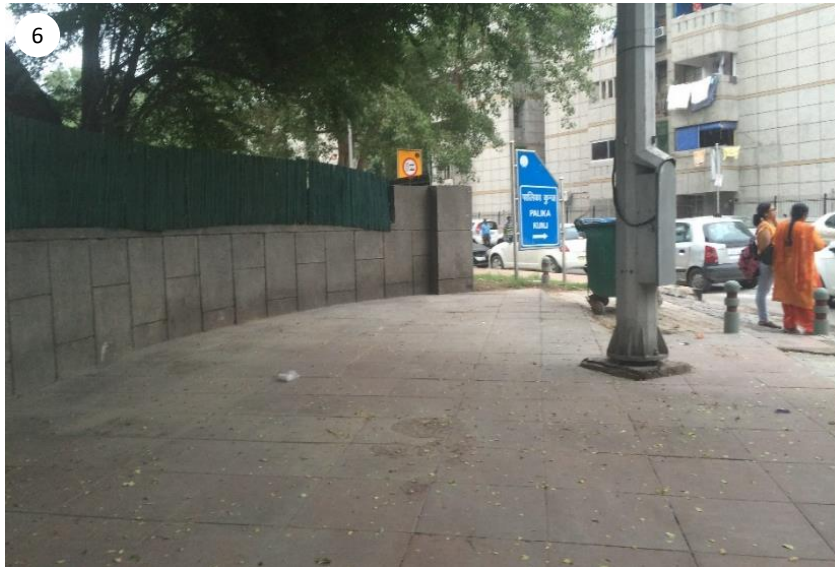
Data Ram Bhutani Marg

Seen in pic1 is the bus stop outside the Jor Bagh metro station. Few hawkers can be seen here. In the absence of a proper designated zone for them, they end up squatting along the footpath. In the absence of any street furniture people tend to bring their vehicles onto the footpath for sitting. Proper street furniture and lighting needs to be introduced and a proper Hawker Zone be created to formalize these activities. Similarly street furniture should be installed in locations shown in pics2, 3 and 4. There is a wide green belt along these roads. Installing street furniture, ensuring proper illumination and space for hawkers would help activate these currently dead edges. Currently even the municipal staff was seen squatting on the edge of the road. Such loitering is an added inconvenience to vehicular movement.

Public Convenience facilities also need to be provided along these areas for both the commuters as well as the vendors and autorickshaw drivers etc.



High Boundary wall along Aurobindo Marg. The opaque surface needs to be limited to 1m height. The remaining needed height can be achieved by a grill with barbed wire on the top. Another option is puncturing the wall to make it porous. Currently it creates an extremely blank edge to walk on. Reducing the opacity by either method would result in better visual connectivity between the private and public realm.



This area has plotted residential development. A few apartment societies were also seen but largely the area has private plots. B.K. Dutt and Palika Kunj have higher densities while Jor Bagh has lower density. However, due to the windows and doors of these houses overlooking the lanes and roads, these areas tend to offer better visibility than the main road. However, there are junctions and spaces within these developments where there are no or few eyes-on-the-street.

Shown in pics6 and 7 is the junction of the Data Ram Bhutani Marg and Najaf Khan Road. There is a wide paved open space on both sides of the road. There is also a green belt along the footpath. This intersection can be developed as a lively public space equipped with street furniture, a para-transit facility and Public Convenience. Weekly informal markets or haats can also take place here. These would cater to the domestic needs of the residents along with having various food stalls. This would not only activate an otherwise dead intersection but also give identity to it helping people orient themselves.



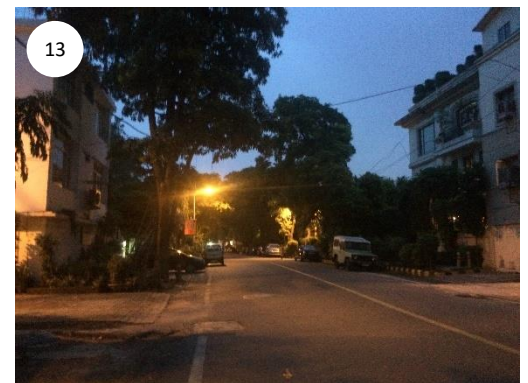
Seen in pics8 and 9 the junction at the intersection of Data Ram Bhutani Marg and Najaf Khan Road.

Pic8 was taken along the Ali Ganj Road having the Lal Masjid along with other Religious functions. There is a huge maidan in front of the masjid. Currently the area is used partly for car parking and rest is lying vacant. This land can be developed as a foreground to the Masjid. As a public place it would host various religious activities as well as catering to the needs of the residents. A part of the maidan can be developed as a sports field for all age groups. A hawker zone should be created along with providing para-transit facilities. Certain area can continue to be used for vehicular parking by the residents. Traditionally, temples and mosques and all religious functions abutted active public spaces which made the entire area lively and safe.

In Jor Bagh also there is a temple and the area outside it can be developed.



Lal Masjid along Ali Ganj Road



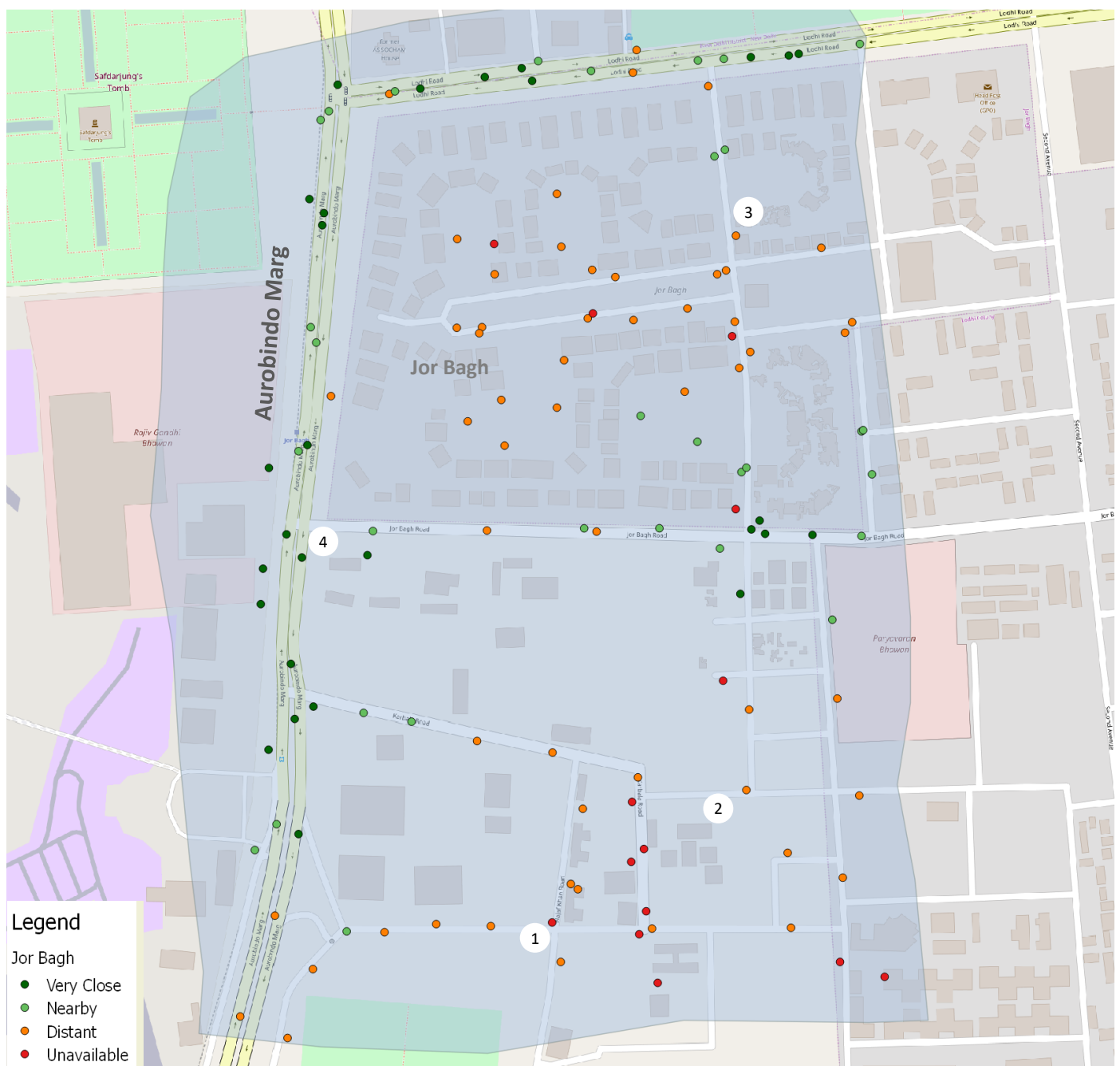
Shown above are the two residential areas that were studied. While in pic12 we see that the residential area has mixed use i.e. shops on the ground floor and residences above, in pic13 the Jor Bagh area is completely residential. Both areas offer some visibility making the area feel safe.

In Jor Bagh, there are two strips of green Park. In between these there is a huge vacant space which has a milk booth and a pavilion. This huge space can be developed as a vehicle-free zone having a para-transit stand as well as space for hawkers for weekly markets.

Public Transport

Public Transport Parameter has been rated 1.6/3 i.e. Average. The main Aurobindo Marg and Lodhi Road have metro stations and/or bus stops. Outside the metro stations, para-transit facilities are easily available. However, as one moves away from the main road into the residential area it becomes difficult to avail these facilities. In the Jor Bagh market area, autos are seen waiting. But otherwise there are not transit facilities inside the residential areas. Proper para-transit stands need to be created outside the metro station entry/exits as well as inside the residential neighbourhoods at regular distances.

Currently, the autos queue outside the metro station disrupting the vehicular movement. The movement outside the stations needs to be streamlined. Within the residential areas, para-transit stands should be created along the main lanes at junctions and outside public functions like markets and religious institutes. This would ensure clarity and ease of access to these facilities. Also, each para-transit stand should be equipped with Public Convenience facilities for the drivers.



Rating of Public Transport



Pic1 shows the junction of Data Ram Bhutani Marg and Najaf Khan Road. This junction has residential area on one side and public functions on the other. A para-transit stand should be established here. The facilities shall then be easily accessible by the residents as well as visitors.



In the residential area certain vacant land was seen. This is currently being used for the parking of private vehicles. Some part of government land can be used for creating a para-transit stand. This also has religious functions like Lal Masjid near it.



The Jor Bagh market has a lot of vacant space around it which is used for vehicular parking. This land around the market needs to be developed to have proper demarcation for vehicular parking, para-transit stand, Public Convenience and pedestrian zone. This would help in streamlining the movement and activities outside the market complex. Currently while the market is active, it still does not have an active and porous edge with the lane.



The metro station entry/exits have auto rickshaws and cycle-rickshaws waiting on the road for passengers. This causes congestion disrupting the movement of vehicles. Creating a para-transit stand with lanes for autos would help ease the flow of traffic. The para-transit stand can be integrated with space for hawkers seen outside the station as well as Public Convenience facilities.

