



BHOPAL

SAFETY ANALYSIS REPORT

2019

About the project: This report is part of a two-year project implemented by The Asia Foundation in partnership with SafetiPin and the Centre for Social Research (CSR), on “Making Cities Safe for Women in India.” The project goal is to engage diverse stakeholders tasked with improving public place safety for women in three Indian cities: Bhopal, Gwalior (Madhya Pradesh), and Jodhpur (Rajasthan). Supported by the Korea International Cooperation Agency (KOICA), the project initiates an evidence backed dialogue with policy makers, police, and civil society organizations about the challenges women face in accessing and enjoying public places and proposes implementable solutions to address these challenges.

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Introduction

Safetipin is a technology platform that uses apps to collect data in order to make cities and public spaces safer and more inclusive for women.

At the core of the app is the Safety Audit. A Safety Audit is a participatory tool for collecting and assessing information about perceptions of 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.

This report has been prepared as part of the project undertaken with Korea International Cooperation Agency (KOICA) and The Asia Foundation, India.

Sefetipin Parameters



Light (Night)

Lighting measures the amount of brightness/ illumination at a place and ranges from Dark to Bright. A place can be lit with street lighting or from other sources.



Openness

Openness refers to whether a person has a good line of sight in all directions.



Visibility

Visibility refers to how visible is one to others. It is based on the principle of 'eyes on the street'. This comprises windows-doors of shops, houses along with street vendors and hawkers.



People

People indicates the number of people around. This increases as a consequence of usage opportunities.



Security

Security refers to visible security offered either by the police or private security guards (for example along ATM/Bank).



Walk Path

Walkpath indicates whether a person can comfortably walk at a place. This could refer to the quality of a pavement or space along a road.



Public Transport

Transport refers to the ease of accessing any mode of public transport i.e. metro/bus/auto/taxi etc. and is measured in terms of the distance to the nearest mode.



Gender Usage

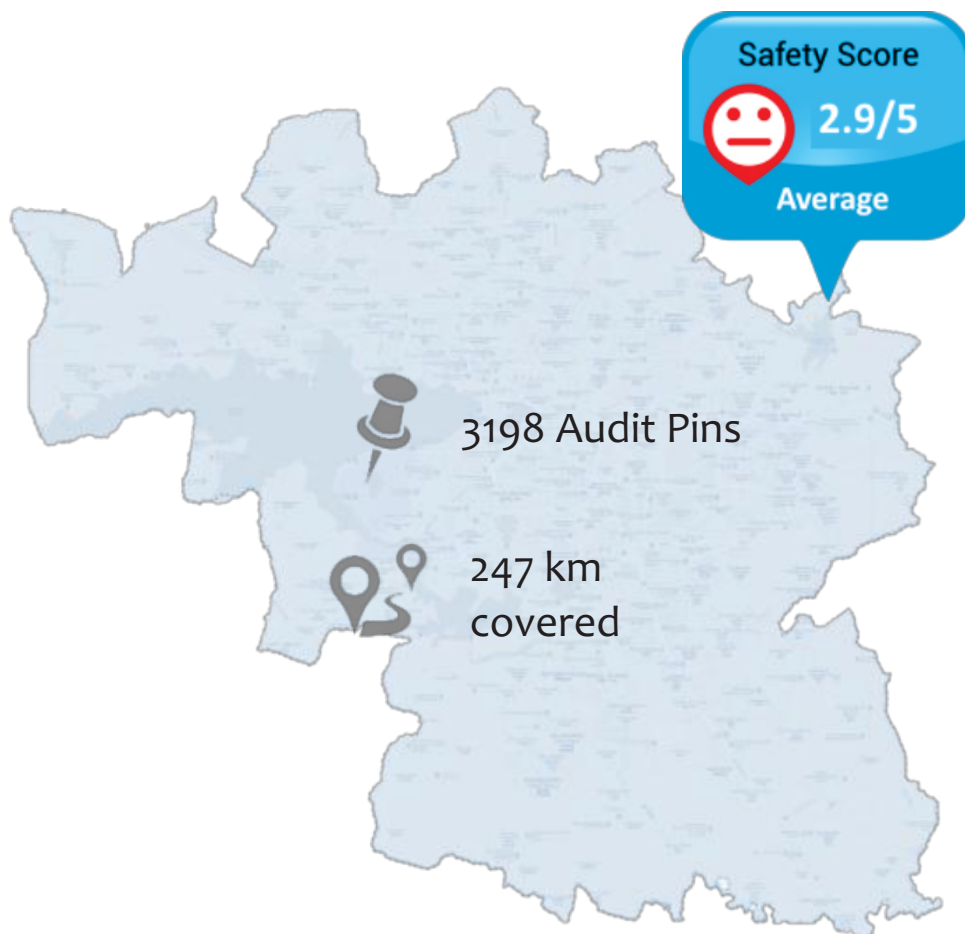
Gender is about diversity i.e. the percentage of women and children amongst the crowd. This increases as a consequence of safety perception.

Methodology

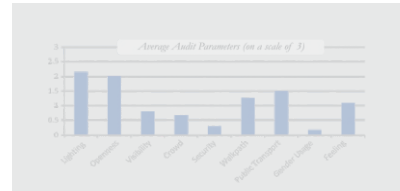
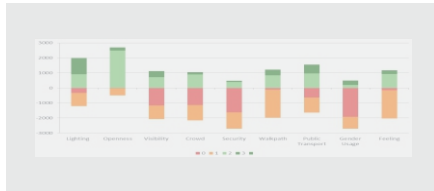
The safety audits have been generated using two methods. First, manual audits were conducted using My Safetipin app. A team of field investigators was hired to conduct safety audits at different public spaces in Bhopal. Second, safety audits were generated using the Safetipin Nite app. Taxis were hired which moved with mobile phones mounted on their windshield and photographs of the city roads were taken using the app. These photographs were then assessed based on the eight audit parameters to generate audit pins at each location.

A total of 3,198 audits have been generated in Bhopal City. Over 247 km of road length has been covered in this project.

Overall, the Safety Score for Bhopal is rated 2.9/5 i.e. Average.



Poor	Below Average	Average	Above Average	Good
1.0-2.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5



Audit Analysis

Safety Score

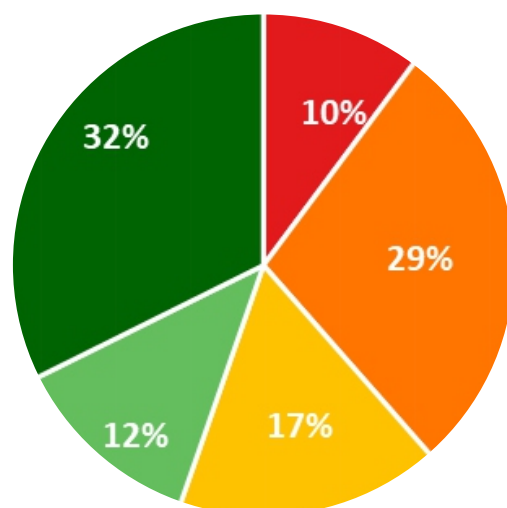
Parameter Ratings

Parameter-wise Pin Distribution

Safety Score

The Safety Score of a point is a reflection of the perception of safety at that particular location. For each audit point it is a number between 0 and 5, 0 being Poor i.e. Very Unsafe and 5 being Excellent in terms of overall safety.

Indicated in the pie chart is the percentage distribution of pins in each range. Over 39% of the audit points were rated poor i.e. safety score less than 2 out of 5, on the other hand 44% were rated excellent or good i.e. safety score above 3. As seen in the Safety Score map, points located around Ibrahimganj, Jahangirpura, Ibrampura, Arera Hills, Indra Press Complex and Kotra Sultanabad were highly rated whereas in BHEL, Govindpura, Gulmohar Colony and Lalghati road safety score was found to be poor.



Poor	Below Average	Average	Above Average	Good
1.0-2.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5

Legend

Safety Audits

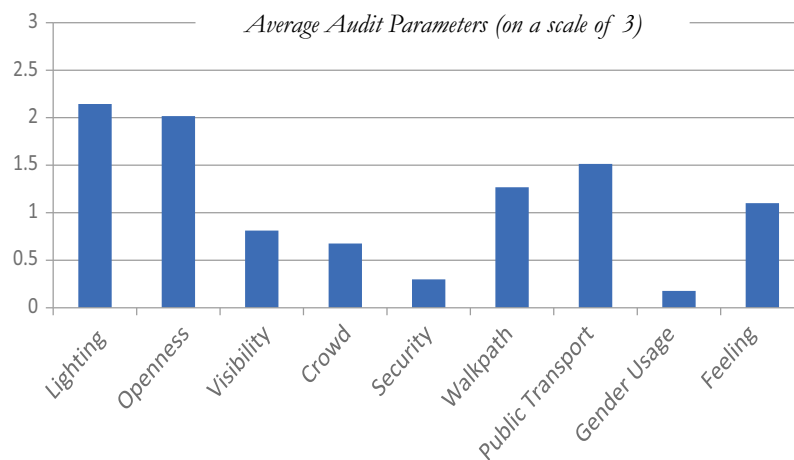
- Poor
- Below Average
- Average
- Good
- Excellent
- Bhopal

Base: Google Map

Parameter Ratings

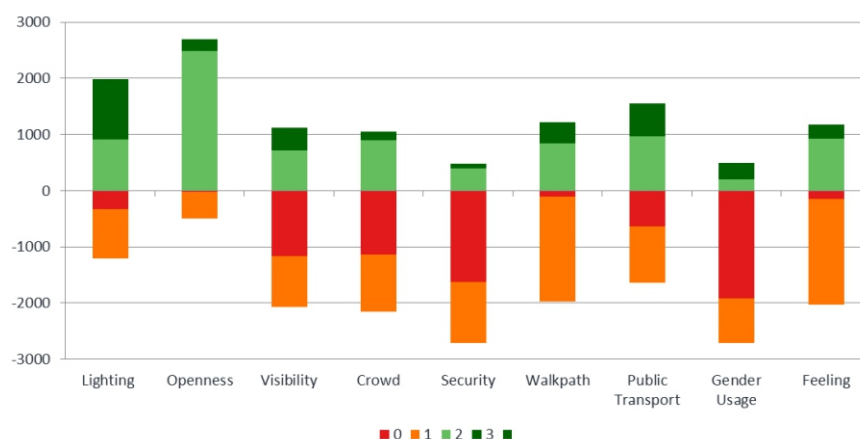
Each of the nine parameters is rated 0/1/2/3, 0 being the poorest and 3 is good. The average parameter ratings graph indicates the overall average rating for each parameter. As seen in the graph, the Lighting parameter has been rated the highest and is followed by Openness.

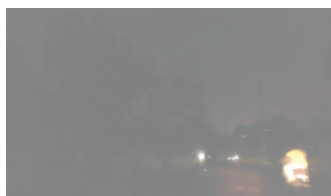
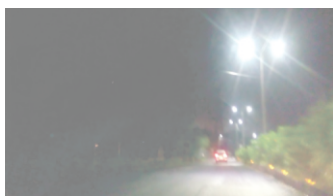
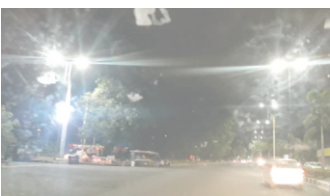
Crowd, Gender Usage, Security and Visibility parameters are the least rated parameters, indicating less number of pedestrians after sunset Women's participation in public spaces is very poor. Security parameter has not been assessed completely due to lack of information on police patrolling routes, hence it's rated low. The overall feeling of safety for Bhopal city is rated Below Average.



Parameter-wise Pin Distribution

The Parameter wise pin distribution graph indicates the number of points rated 0/1/2/3 i.e. 2 & 3 rated points as positive and 0 & 1 ratings as negative. The parameters of Gender Usage, Visibility and Crowd have been rated poorly for the most parts of the city. While parameters like Walkpath and Lighting can be improved by repairment or installation, increase in Crowd and Gender Usage is dependent on improvement of other parameters.





Lighting Walkpath Visibility Public Transport

Lighting

1.9 / 3

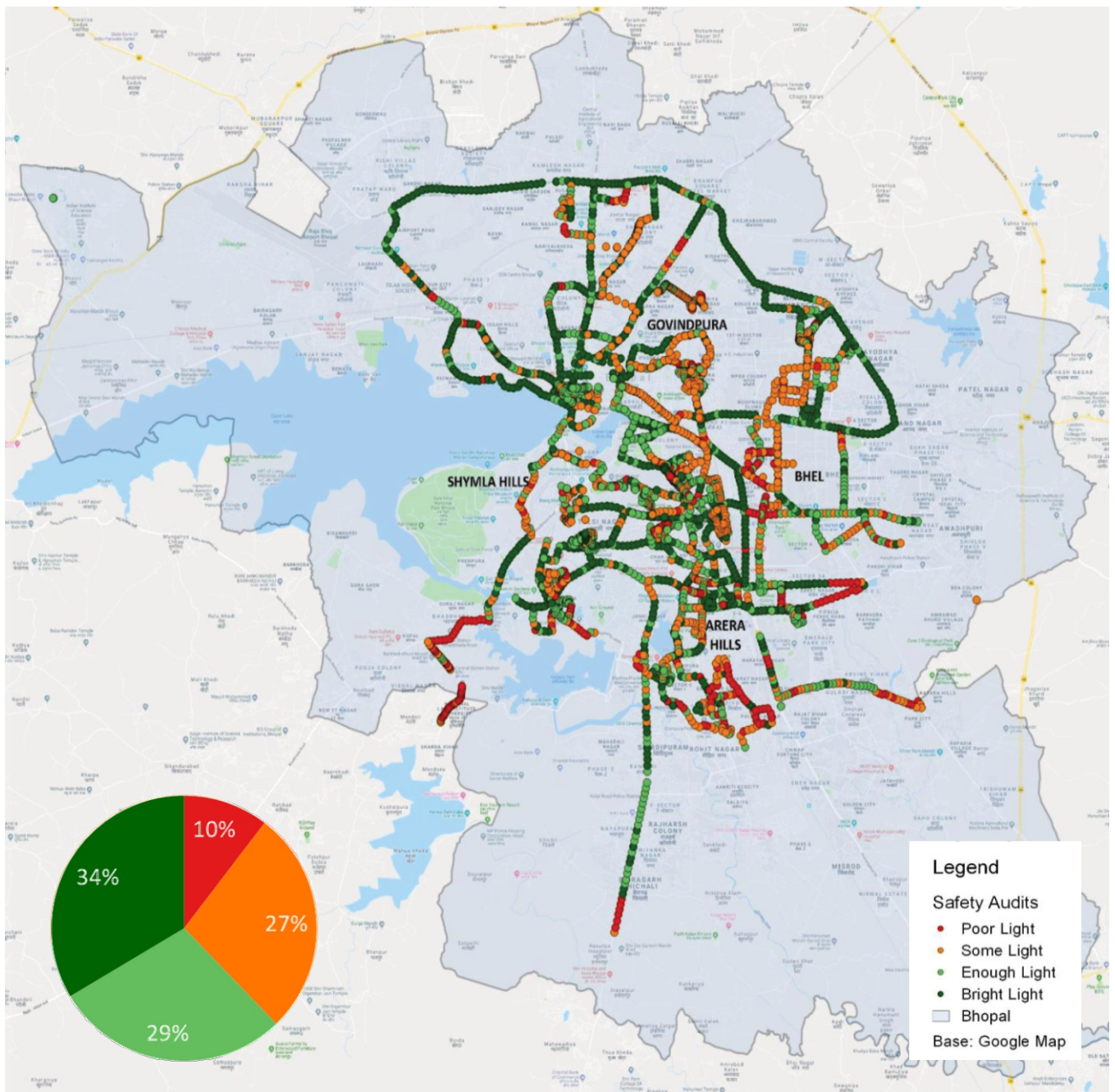
Lighting has been rated 1.9/3 i.e. Average. Streetlights are installed along the central median on most of the roads. While 63% of the audit points have been rated good, 10% of the points have been identified as dark spots. The dark spots indicate no source of lighting and no streetlights installed along the road. Streetlights need to be installed along this points immediately as most of them lie in residential areas including Gulmohar-3, Govindpura and Arera hills.

Additionally, 27% of the points have been rated poor. Majority of these points were found in southern and north western part of BMC area. Karariya Sajdabad, Pushpa nagar, Maharana pratap nagar and Arera hills were found to have streetlights obstructed by leaves resulting to dim illumination.

Image showing streetlights installed along median



Map 2 Indicating Lighting rating

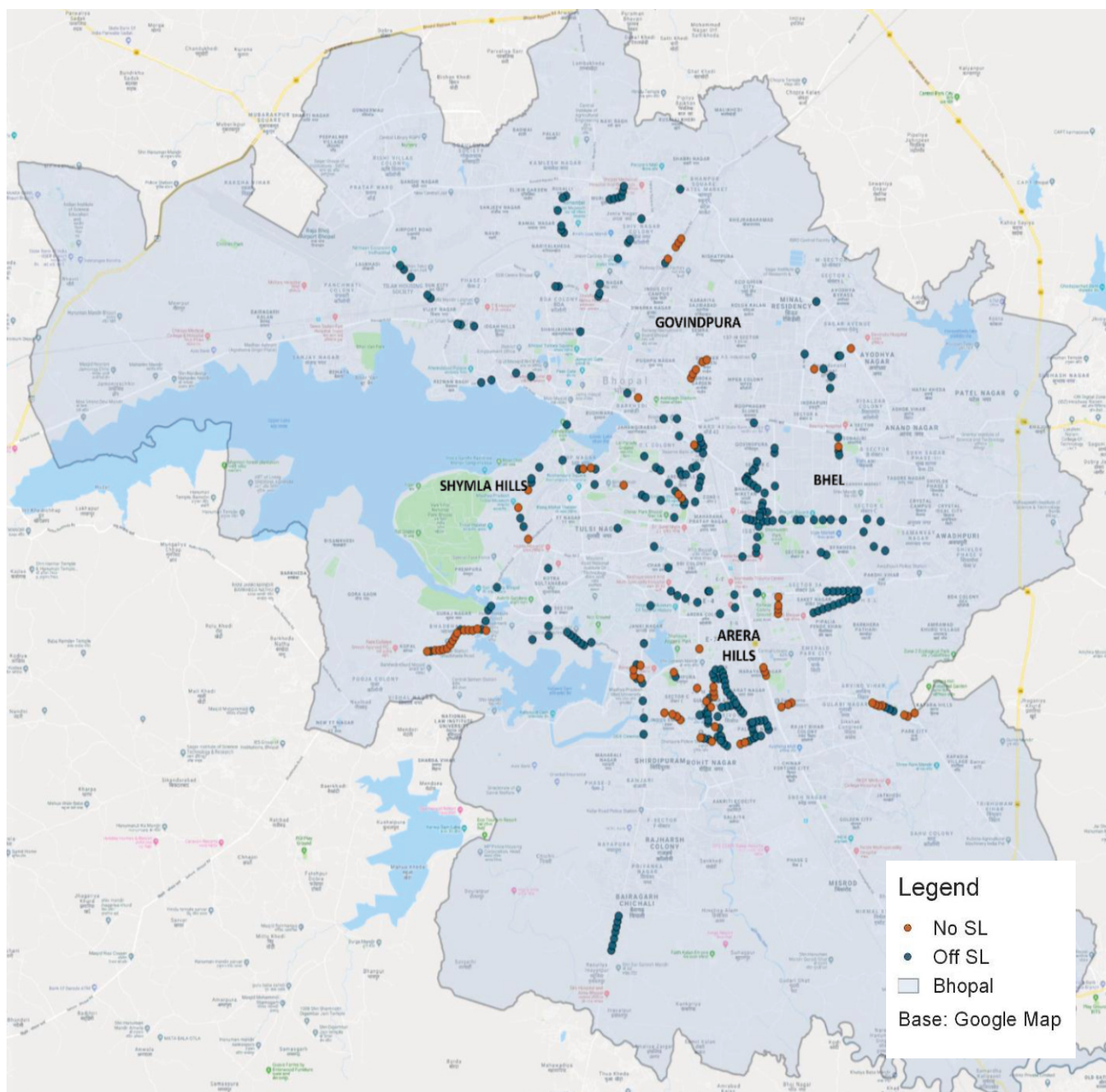


Map 3 indicates points which were found to have streetlights non-functional or no streetlight at all. Majority of these points are located in south east of BMC area. Kalibadi Marg was found with maximum number of non-functional streetlight. Bhadbhada Marg which is the main access to the city from south west had no streetlights on Sakshi Dhaba -Chander Hotel stretch.

Images showing stretches with non-functional streetlights



Map 3 showing points with no or non-functional streetlights



Walkpath

1.9 / 3

Walkpath parameter Walkpath indicates whether a person can comfortably walk at a place. This refers to the quality of walkpath or space left for pedestrians along a road. Walkpath has been rated 1.9/3 i.e. Above Average. The city has only 38% of total streets available with paved footpath, these are audit points which have been rated 2 and above for walkpath parameter. Majority of these streets are in Tulsinagar, Arera Hills, Maharanapratap Nagar and VIP Road. However, at some points the footpath was found to be obstructed by parked cars. On street parking management needs to be improved at majority of market and commercial areas of city.

62% of points were found to be poorly rated. These either don't have pavement or have kaccha/unpaved roads. As seen in the map 5, these points were found in TT Nagar, Moti Masjid area, Kotra Sultanabad and Arera Colony main road. Proper footpath needs to be constructed along these stretches. Signage and streetlights should be installed along the edge of the footpath, clear of the pedestrian path to ensure seamless and accessible walkpath for the pedestrians.

Map 4 indicating Walkpath ratings

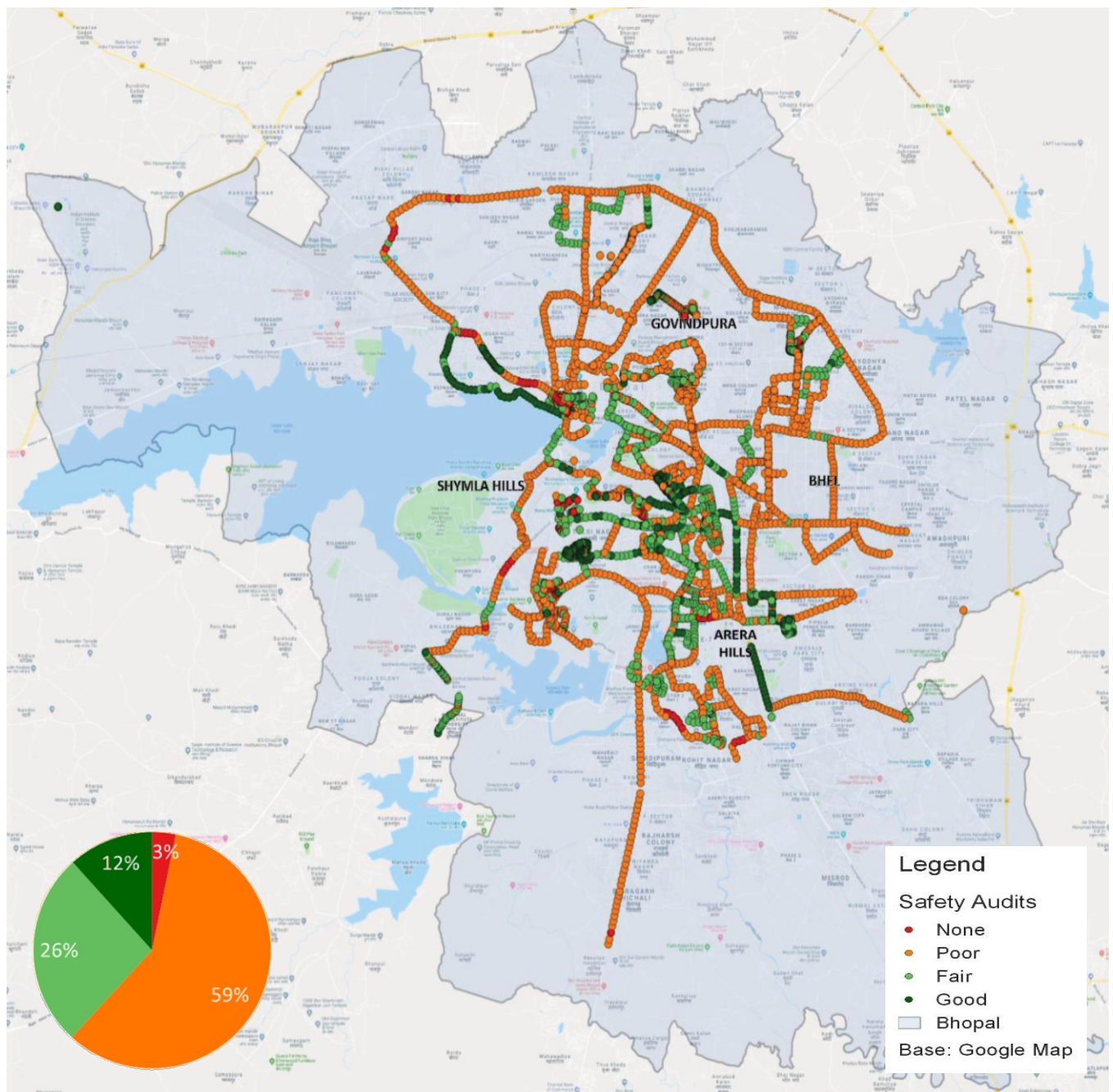


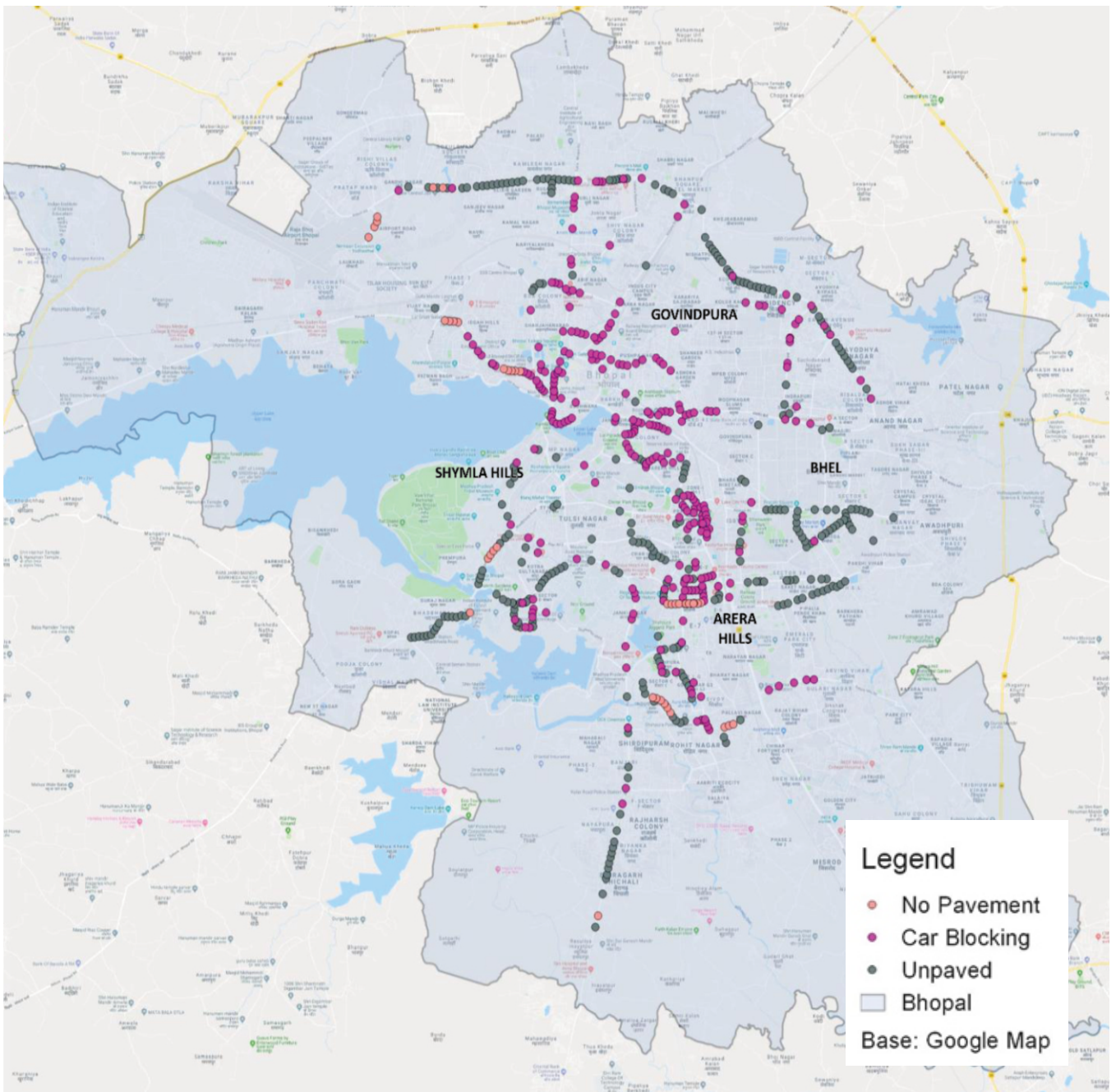
Image showing a stretch with vendors blocking the footpath



Image showing walkpath being blocked by the cars



Map 5 indicating points with no, unpaved or blocked walkpath



Visibility

1.1 / 3

Visibility has been rated 1.1 out of 3 i.e. Average. It is the least rated parameter in terms of physical infrastructure. 65 percent of the audit point have been rated poor visibility. The residences and government institutions on major roads have high boundary walls. This results in poor visibility and pedestrians have no visual contact with the inhabitants. To improve visibility, the height of solid part of the boundary wall should be reduced to 1 m and the rest of the height can be attained through grills. This would increase level of transparency between the streets and the buildings.

Vendors and hawkers at junctions and road sides were found to be contributing to 'eyes on the street' thus acting as a natural surveillance. Designated spaces i.e. 'hawker zones' should be provided for them along the footpath to clear of the pedestrian path.

Map 6 Indicating Visibility ratings

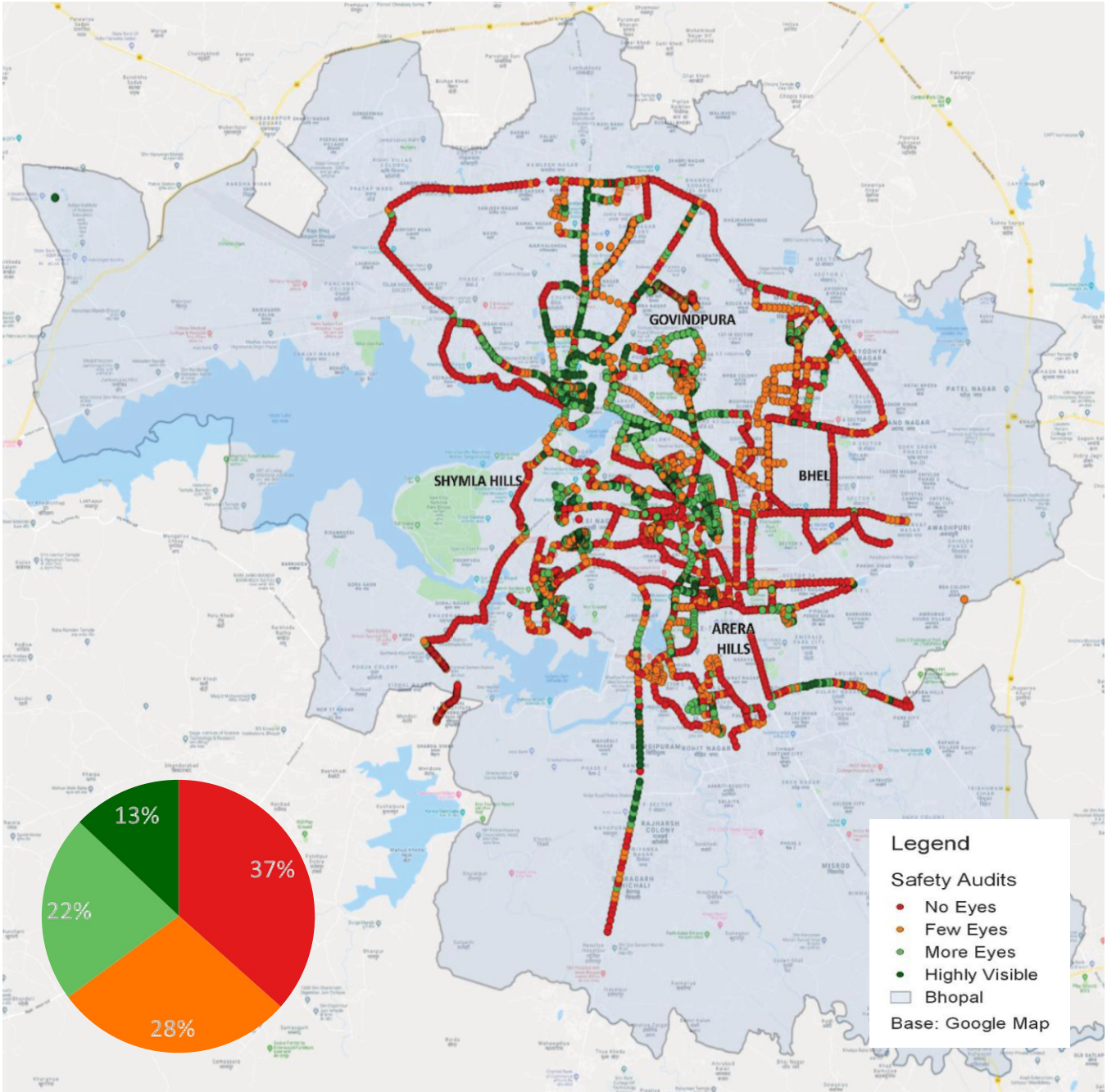


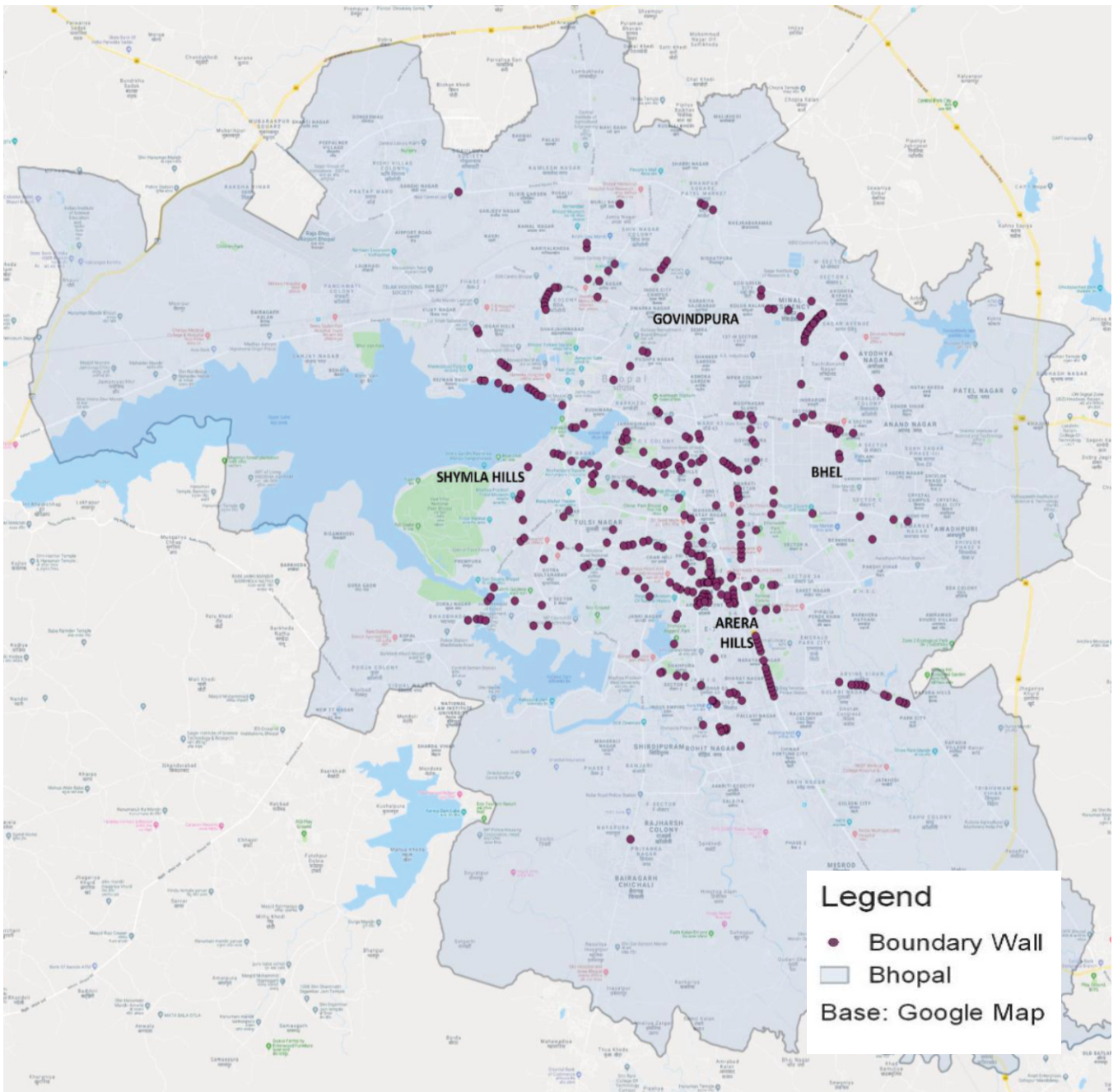
Image showing a stretch with high boundary wall



Image showing street vendors along a stretch



Map 7 Indicating points with low visibility due to high boundary walls



Public Transport

1.5 / 3

Public Transport has been rated 1.5/3 i.e. Average. The bus public transport in Bhopal is run by government as well as private operators. 48% of the audit area has good connectivity of bus public transport. Modes like auto-rikshaws & Tata Magic provide last mile connectivity as well as run on dedicated routes as shuttle service.

20% of the audit points have no bus stop within 10 mins walking distance There is a major need for organizing the private bus system and building bus shelters at major roads. Map 9 shows audit points where people parameter has been rated high but are more than 10 minutes walking distance from nearest bus stop. Bus stops and Auto stands lack proper lighting. Designated auto stands should be set up with proper space for parking autos, street furniture and convenience facilities for the commuters and drivers

Map 8 Indicating Public Transport ratings

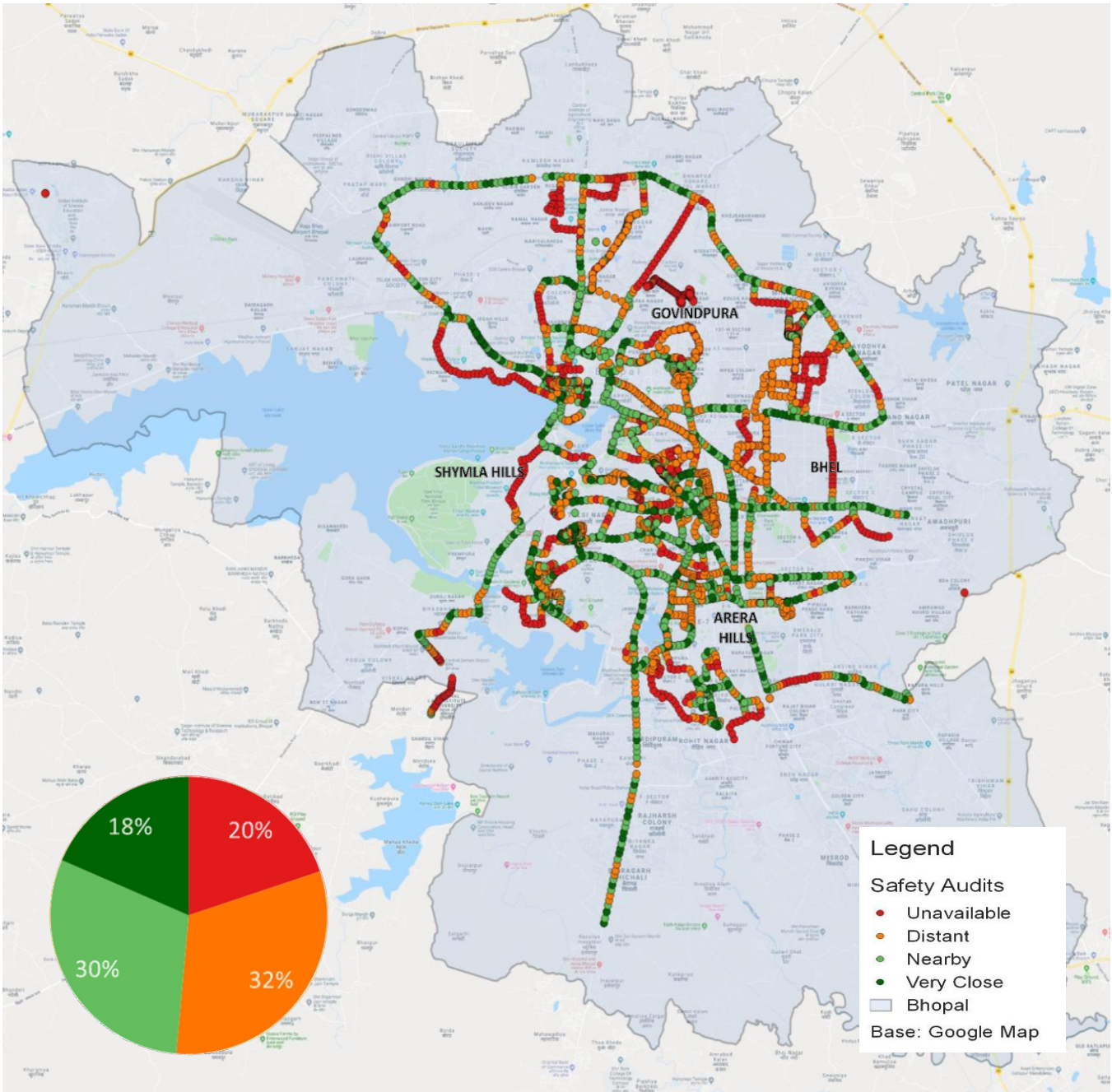
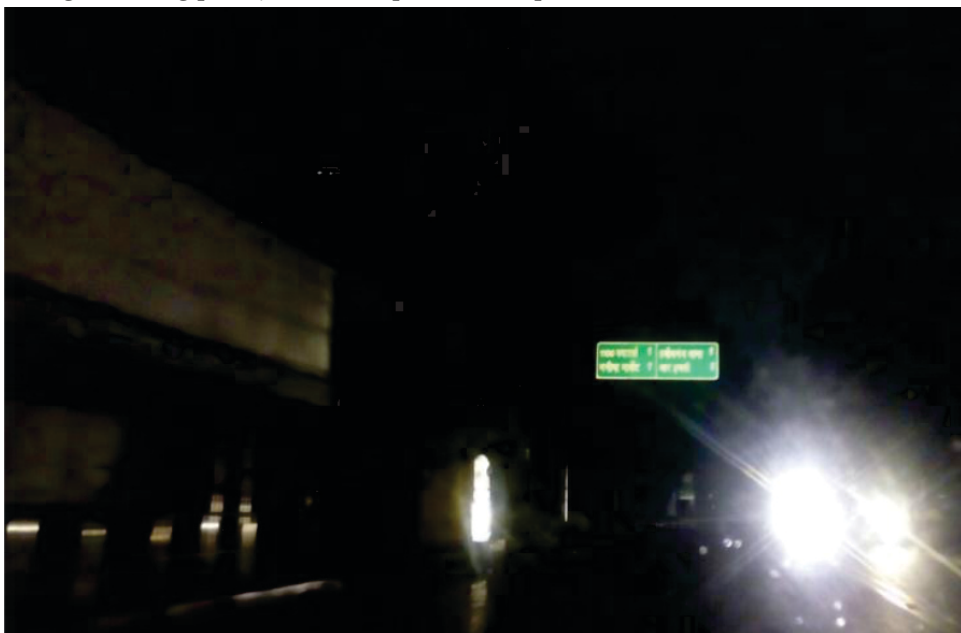


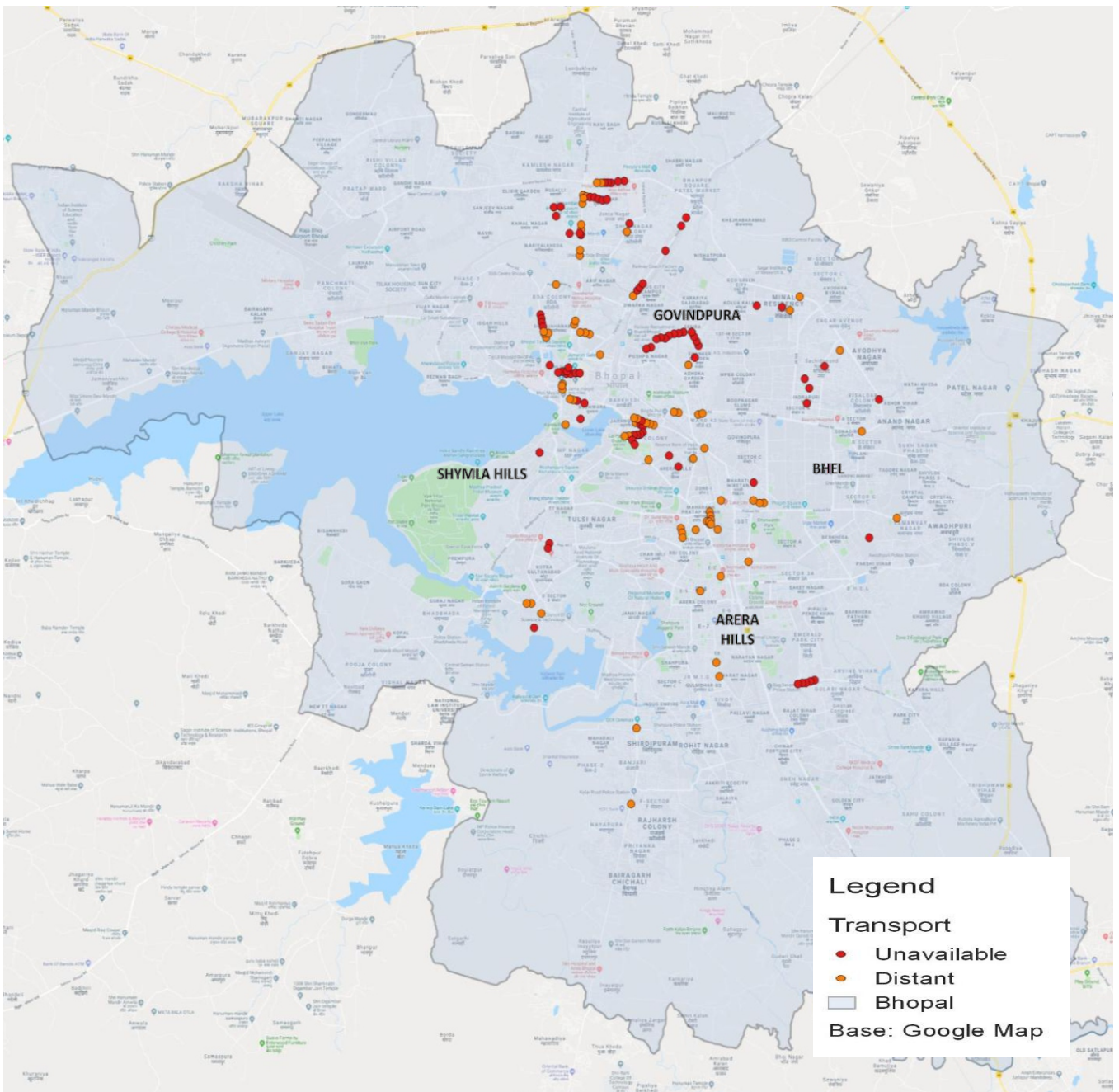
Image showing a deserted dim-lit bus stop



Image showing poorly lit Bus stop in Ibrahimpura



Map 9 Indicating areas which have high Crowd but low Public transport rating.



Overall Recommendations

The safety ratings varies largely on account of the infrastructure provision and planning typology of the area. Areas which are well lit, have proper footpaths, has access to public transportation and are active, tend to be more safer. Lighting, Walkpath, Public Transportation and Visibility are infrastructural parameters that can be improved upon. This improvisation would result in more people especially women using public places at night.

- Enhance Illumination along Walkpath

The existing streetlights that have been found non-operational need to be checked. Regular checks should be carried out to ensure uniform and unobstructed illumination. Streetlights need to be installed along areas, identified as dark spots i.e. at these locations there is no illumination at present.

Along the main roads having four lanes or more, streetlights are provided along the central median of the road. In such cases, additional streetlights need to be installed along the footpath. Pedestrian scale streetlights should be installed such that the footpaths are also well light.

- Maintenance of Footpath

Properly paved footpath should be constructed at points with unpaved or broken walkpath and they should be maintained regularly.

Footpath should be kept free from any obstructions. Obstructions due to vehicular parking, construction debris or extended shops should be removed. Designated space to be provided for on-street parking clear of pedestrian path. Space should also be provided for hawkers as they help in making streets active hence safer for women pedestrians.

- **Improve the Public Transport Infrastructure**

It is important to ensure that people find public transport in their city as safe and convenient. Existing bus shelters should be upgraded. They should be well lit and have adequate seating. Interactive panels indicating routes, emergency helpline numbers and an emergency button for help in distress should be provided at the bus stops.

Designated well lit para transit stands with public convenience facilities needs to be created near bus stops to ensure last mile connectivity. These stands should have designated parking space where autos , e-rickshaws, etc. can be parked and from where they can be hailed.

- **Improve Visibility**

High boundary walls result in poor visibility along the walkpath. Wherever possible, the height of the solid part of the boundary wall should be maintained at 1m. Above the solid part, grills can be used to achieve the remaining height. Inactive edges along the footpath instill a sense of fear in the pedestrians.

Edges can be made active by providing space for street furniture and incorporating the street vendors. Hawkers and vendors act as natural surveillance system. Creating such zones throughout the city will help activate the public realm making one feel safer.

Area based Recommendations

LIGHTING



Repair streetlights

- Nishatpura
- Swadesh Nagar Colony
- N1D Sector Road, Security lines, BHEL Township
- Subhas Market, Govindpura
- Jail Rd, Arera Hills
- Anna Nagar
- Saket Nagar (MGM- DRM Road & AIIMS Road)
- New Court (A), Arera Hills
- Dhanvantri Marg, Lalita Nagar



Install new streetlights

- Badhbhada Road, Kopal College
- Ishwar Nagar

WALKPATH



Build footpath

- Link Road 3, Arera Colony
- Shahpura
(Kesari Enterprise – Shiva Pharma)



Pave walkpath

- Bhadbhada Road
- Link Road 3
(Sair sapata square- MANIT square)
- Ayodhya By-pass Road



Clear vehicular obstruction

- Arera Colony
- Shivaji Nagar
- Jahangirabad Road
- Jail Road
- Chiklod Road
- Gimrori Road
- Sultania Road

PUBLIC TRANSPORT



Provide public transport (Bus Stops)

- VIP Road
- Chhola Road
- Shyamla Hills Slums
- Shahpura
- Indrapuri



Designate parking space for para-transit

- Semra Railway Station Road
- Shyamla Hills Slums
- Shahpura
- Indrapuri

VISIBILITY



Reduce Solid boundary

- Maharana Pratap Nagar
- Saket Nagar
- Arera Colony
- Arera Hills
- RBI Colony
- Tilak Nagar Road



Create designated hawker zones

- Hoshangabad Road
- Raisen Road

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The Asia Foundation is a non-profit international development organization committed to improving lives across a dynamic and developing Asia. Informed by six decades of experience and deep local expertise, our work across the region addresses five overarching goals—strengthen governance, empower women, expand economic opportunity, increase environmental resilience, and promote regional cooperation.



Safetipin is a technology platform that uses apps to collect data in order to make cities and public spaces safer and more inclusive for women. Safetipin works with city governments to use data for improvement, and specific initiatives to address women safety in public spaces.