

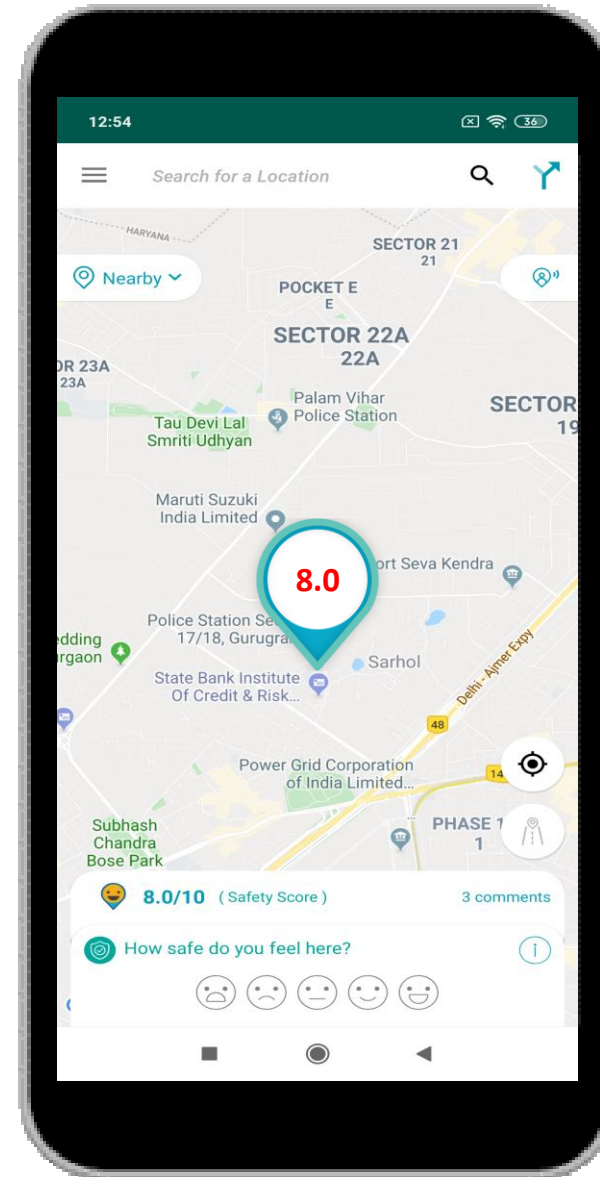


## Safety Mapping in Bengaluru

## What is SAFETIPIN?

Safetipin is a technology platform that works to make our communities and cities safer by collecting and disseminating safety-related information on a large scale through a set of map-based applications.

Safetipin has 3 different tools for data collection. For this project, 2 tools have been used – **‘My Safetipin App’** and **‘Safetipin Nite’**.





## SAFETY AUDIT

At the core of Safetipin is the safety audit. Based on the global experience of 20 years on safety audits, parameters that define safety perceptions are fixed.

## AUDIT POINTS

Each safety audit will appear as a point on the My Safetipin App.

Each point gets uploaded immediately and is then seen collectively on the screen.

The red signifies unsafe points, orange a bit safer and green would be relatively safe points.

## PARAMETERS



LIGHT



WALK PATH



OPENNESS



VISIBILITY



TRANSPORT



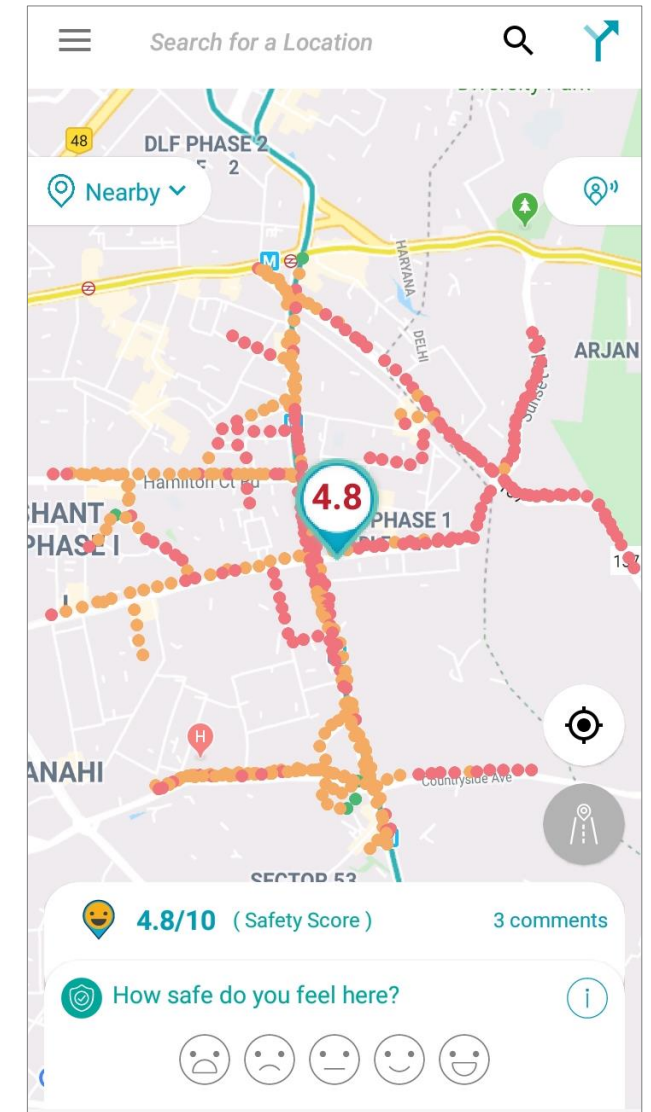
SECURITY



PEOPLE



GENDER USAGE



## SAFETIPIN MAPPING IN BENGALURU



## SAFETIPIN NITE

Phone with Safetipin Nite Application is mounted on the windshield of a moving vehicle for capturing night - time pictures. Pictures are taken at every 50 metres interval and uploaded to our system. These are then assessed according to the safety audit parameters.



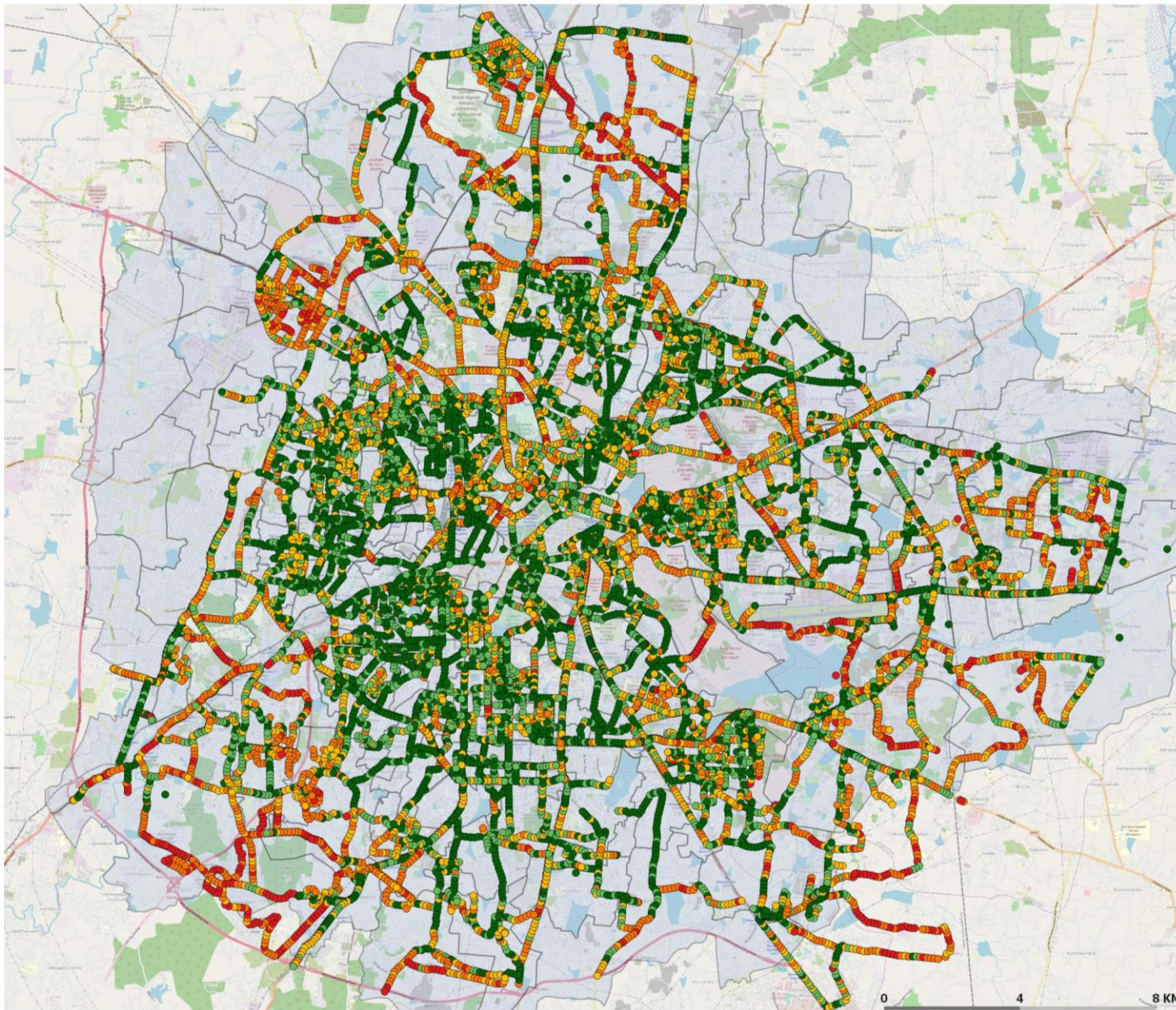
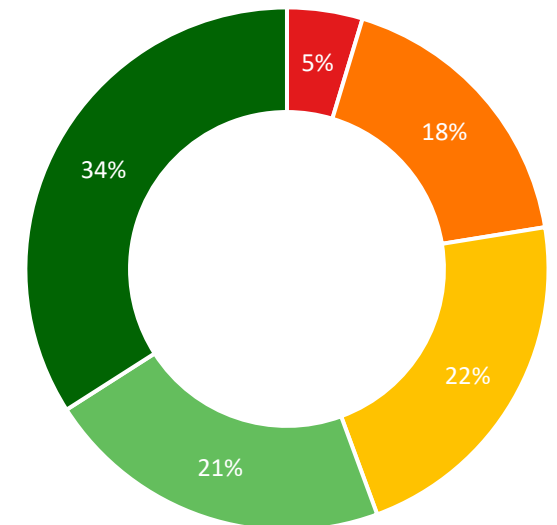
## SAFETY SCORE

The Safety Score at an audit location reflects the aggregated rating of all the parameters. For each audit point, a numeric value between 0 and 5 is provided where 0 is poor and 5 is good in terms of overall safety.

Total audits: 15,000  
Images collected- 1 Lac +  
Road length covered: 1900 km

### Safety Audits

- Poor
- Below Average
- Average
- Above Average
- Good



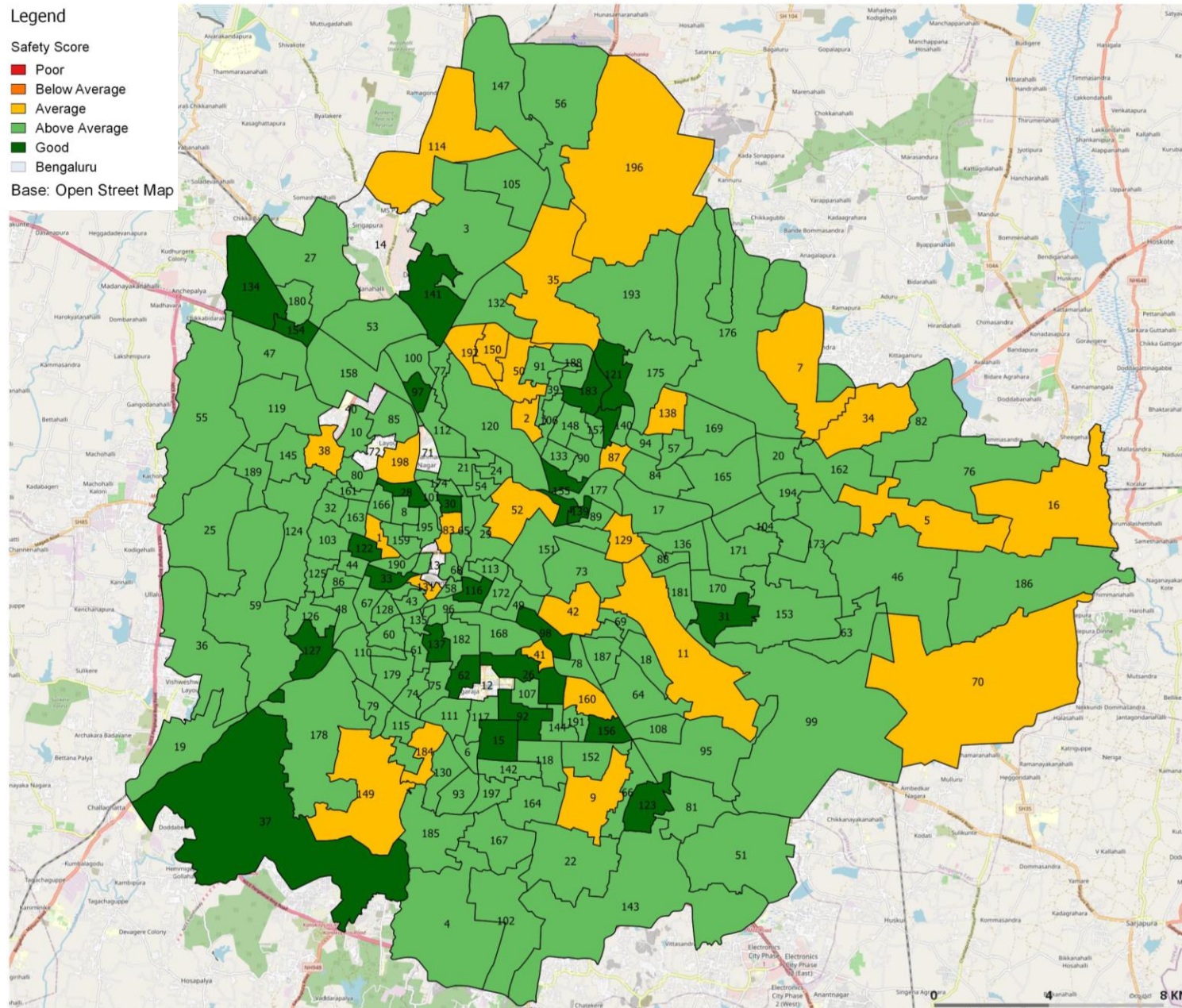


## Legend

### Safety Score

- Poor
- Below Average
- Average
- Above Average
- Good
- Bengaluru

Base: Open Street Map



## WARD WISE SAFETY SCORE

There are 198 wards in Bengaluru. For each ward, a safety score rating is shown on the map on the left.'

Most of the wards have been rated 'Above Average'.

Some wards are rated as 'Good' or 'Average'

## KEY FINDINGS



## LIGHTING



0- Poor Light



1- Some Light



2- Enough Light



3- Bright Light

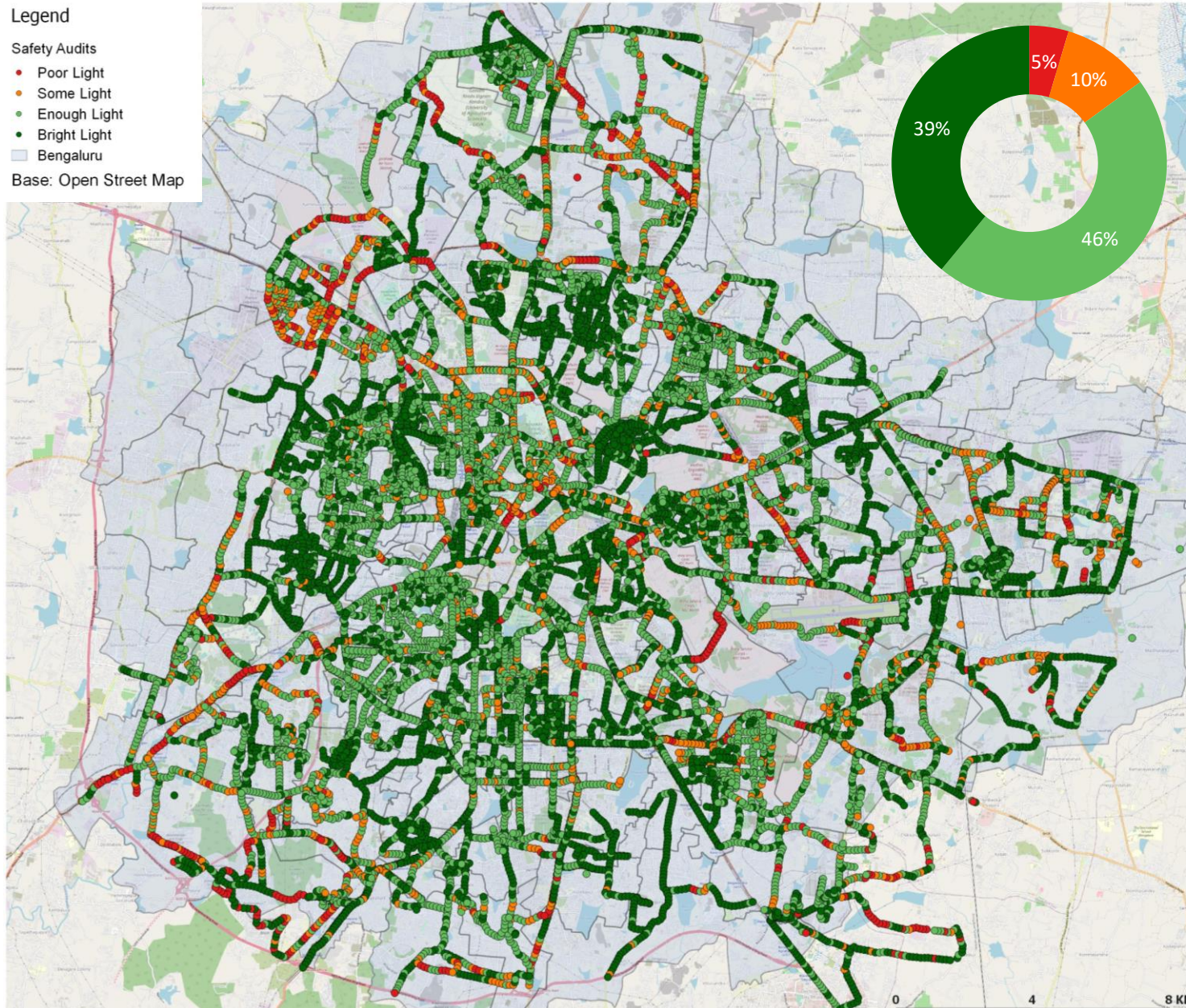
The Lighting parameter measures the amount of illumination at a place and ranges from dark to bright. For the rating of the Lighting parameter, the sources which are considered are streetlights, light from houses, shops and street vendors. Temporary sources of light like the light from cars are not considered when rating this parameter.

## Legend

### Safety Audits

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

Base: Open Street Map

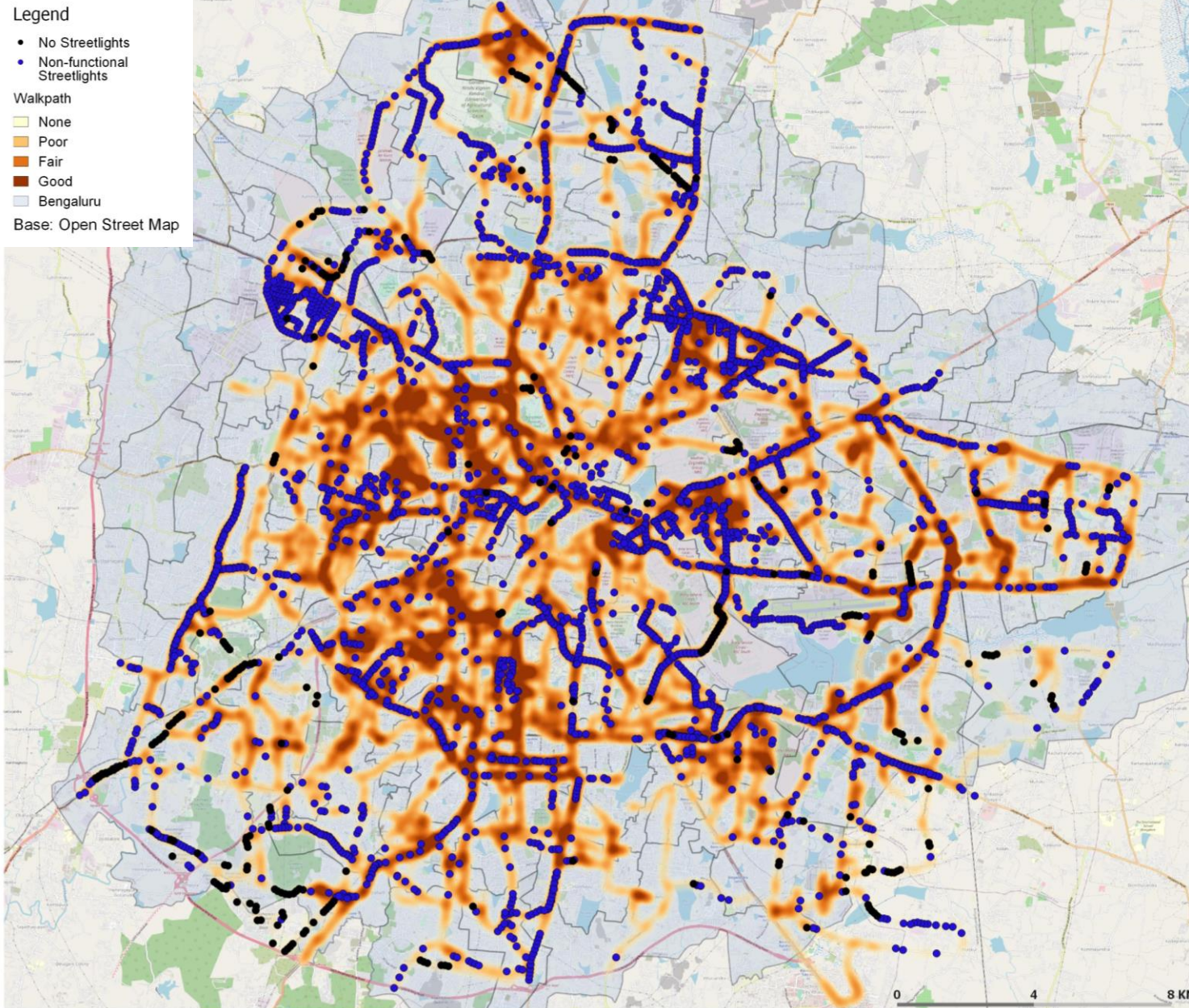


## LIGHTING





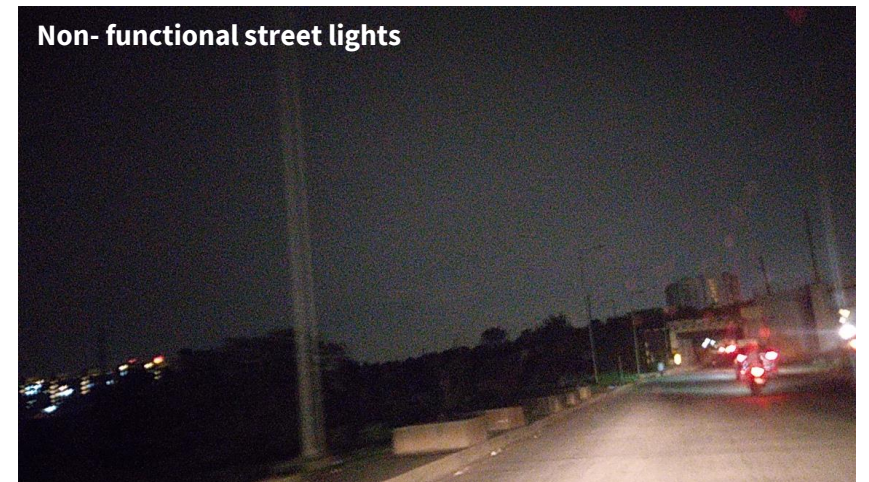
# LIGHTING ISSUES



No street lights



Non- functional street lights





0- None



1- Poor



2- Fair



3- Good



The Walkpath parameter indicates whether a person can walk at a place. This includes the quality of the pavement, or the space designated for walking along a road. If a pavement is present, its quality is assessed. If it is a residential lane, then the area for walking along with the condition of the road (broken or obstructed) is assessed.

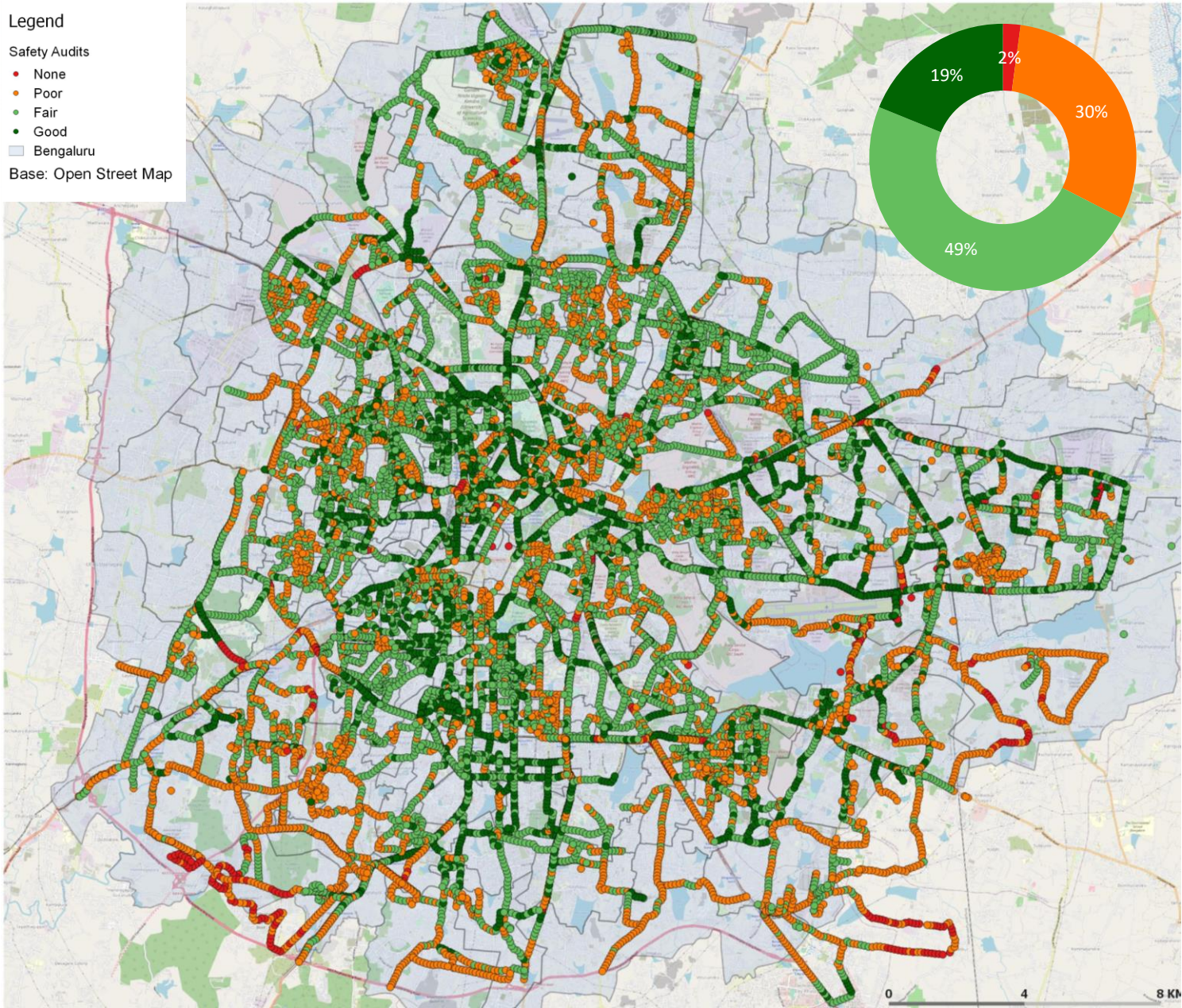


Legend

Safety Audits

- None
- Poor
- Fair
- Good
- Bengaluru

Base: Open Street Map

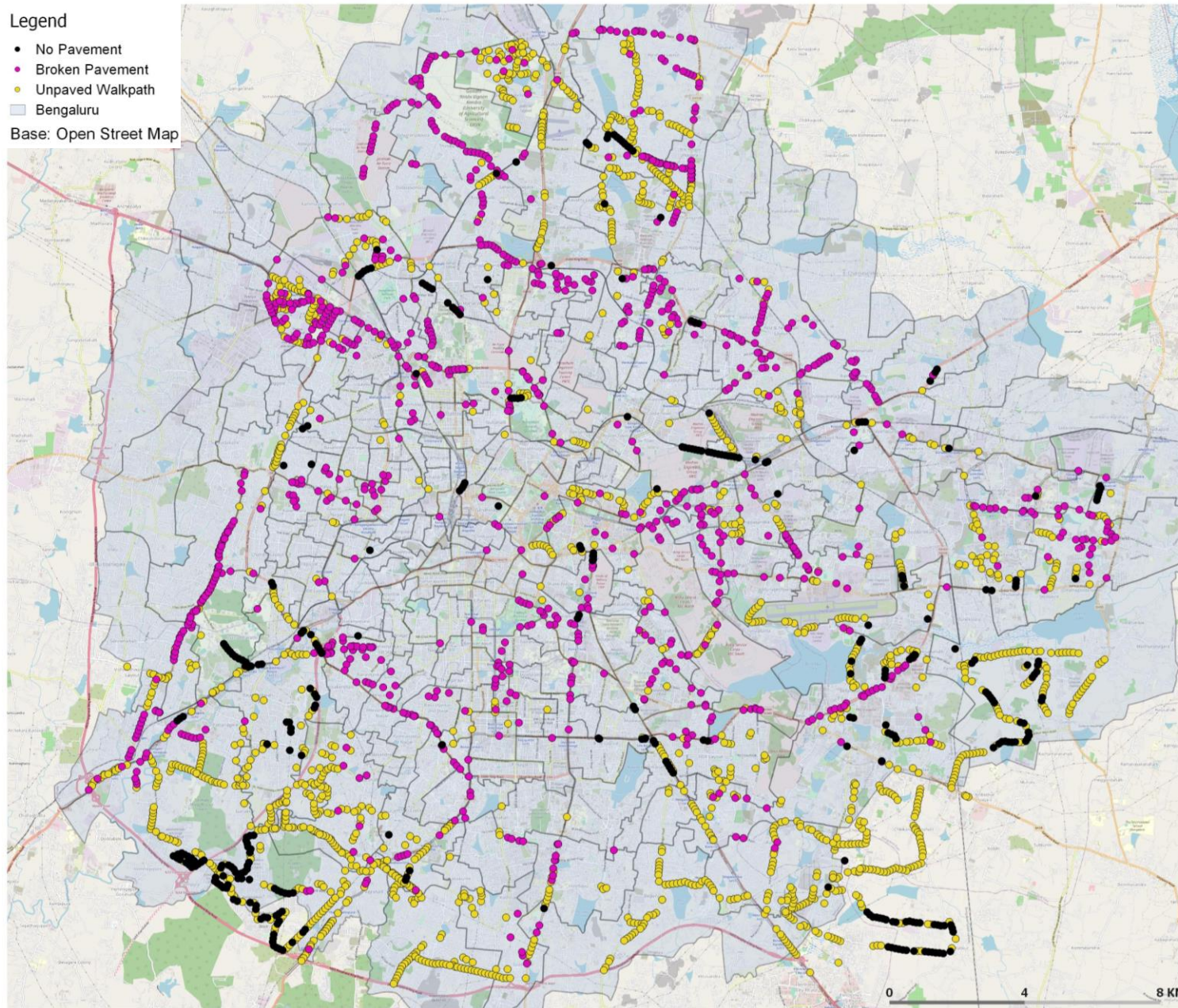




## Legend

- No Pavement
- Broken Pavement
- Unpaved Walkpath
- Bengaluru

Base: Open Street Map



## WALKPATH ISSUES



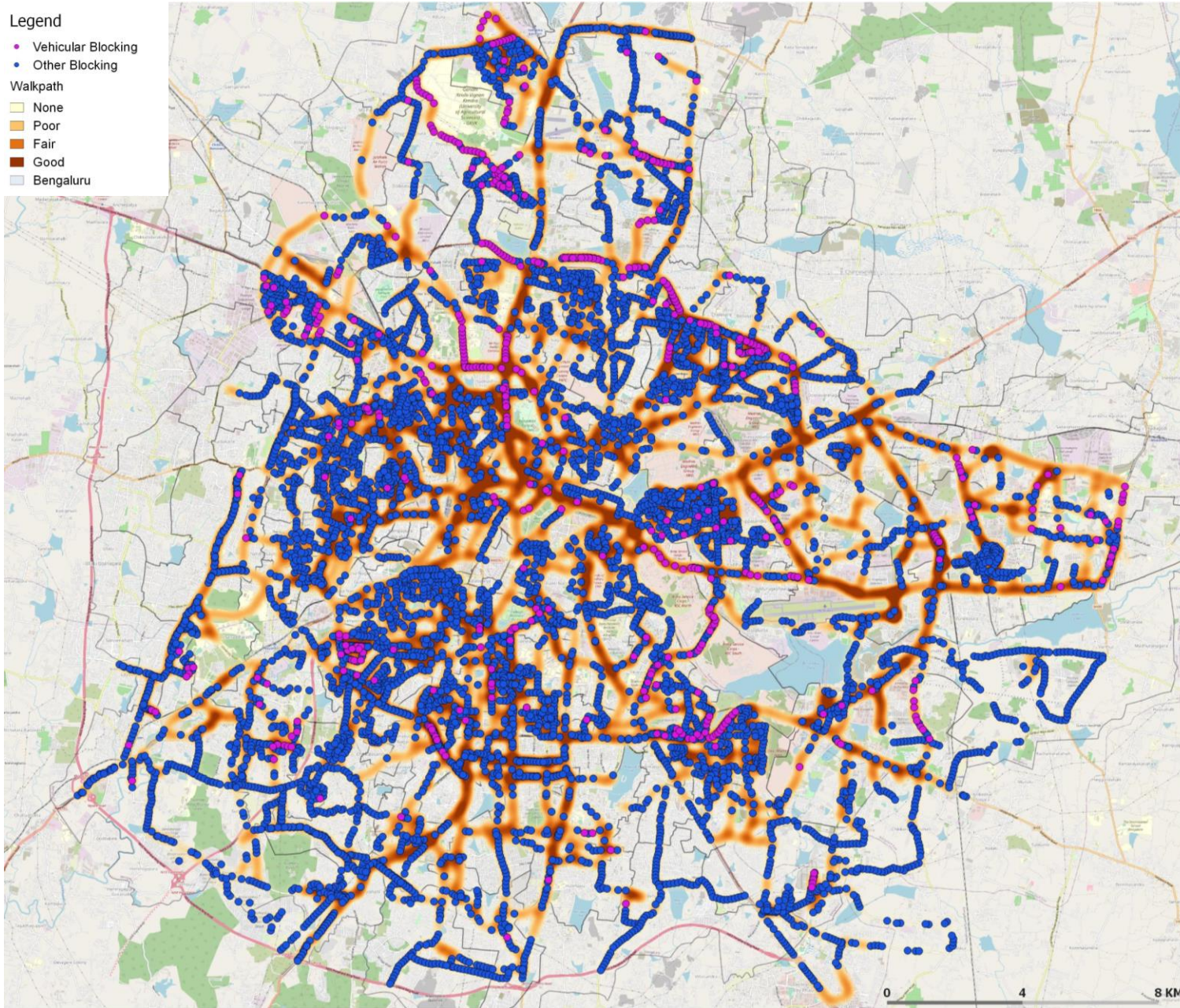


### Legend

- Vehicular Blocking
- Other Blocking

### Walkpath

- None
- Poor
- Fair
- Good
- Bengaluru



## WALKPATH ISSUES

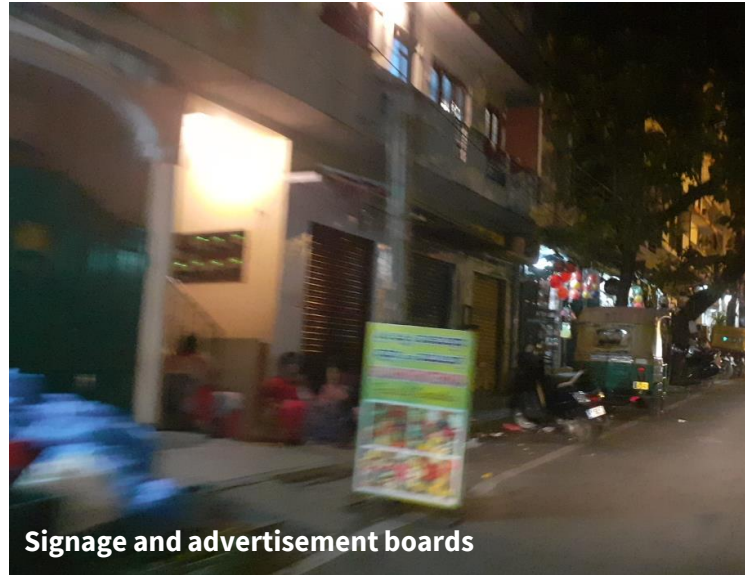




## WALKPATH ISSUES



Vendors



Signage and advertisement boards

Walk path in most part of the city are obstructed.

Common obstructions include:

- Vehicular parking
- Construction debris,
- Advertisement boards, signage, etc.
- Unorganized vendors on the footpath



Construction debris



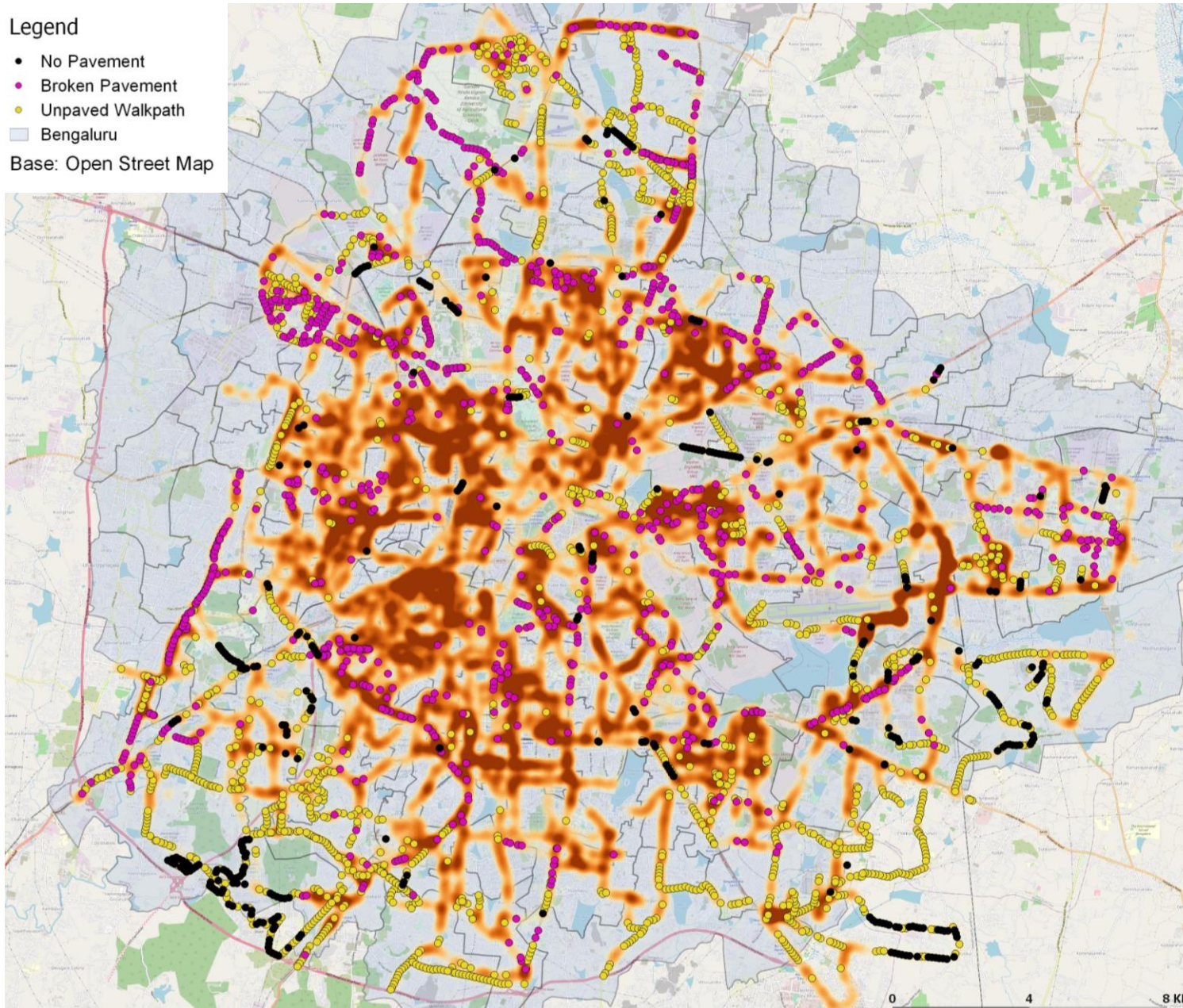
Cars obstructing the walk path



## Legend

- No Pavement
- Broken Pavement
- Unpaved Walkpath
- Bengaluru

Base: Open Street Map



## WALKPATH AND PEOPLE

The heat map on the left is a visualization of the walkpath conditions around people in the city.



Broken and obstructed walk path where people are present



0- No Eyes



1- Few Eyes



2- More Eyes



3- Highly Visible



The Visibility parameter refers to the number of people that can see a person who is on the street. It is based on the principle of “eyes on the street”, which refers to social and built environment to provide natural surveillance to the pedestrians. This includes street vendors, windows and doors of shops or buildings that can act as natural surveillance.

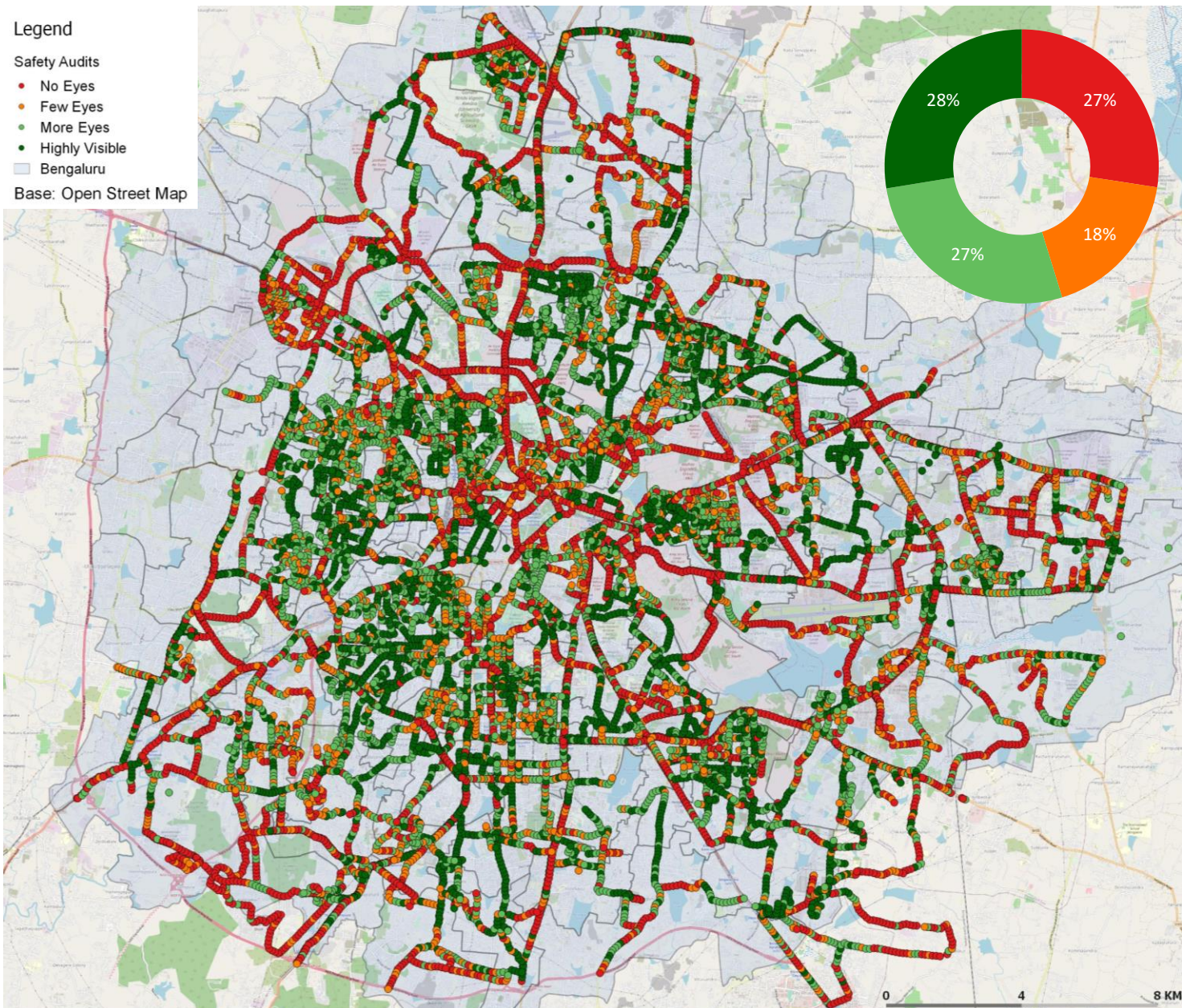


## Legend

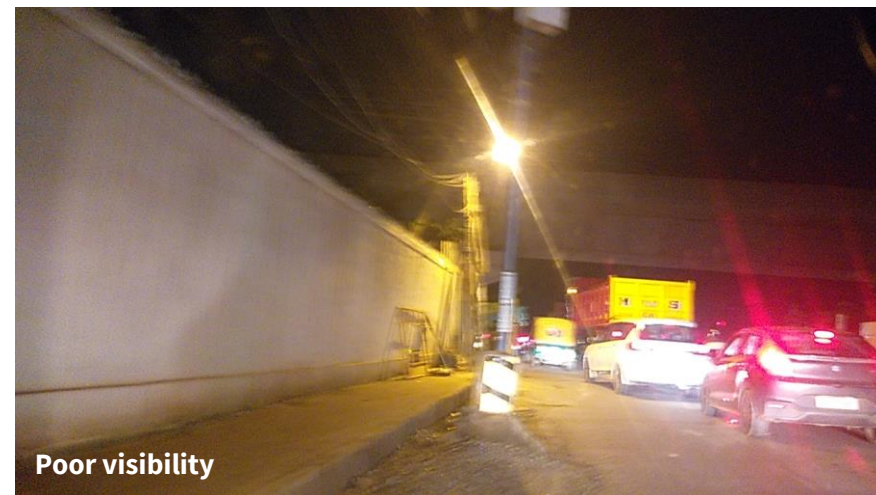
### Safety Audits

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

Base: Open Street Map



## VISIBILITY

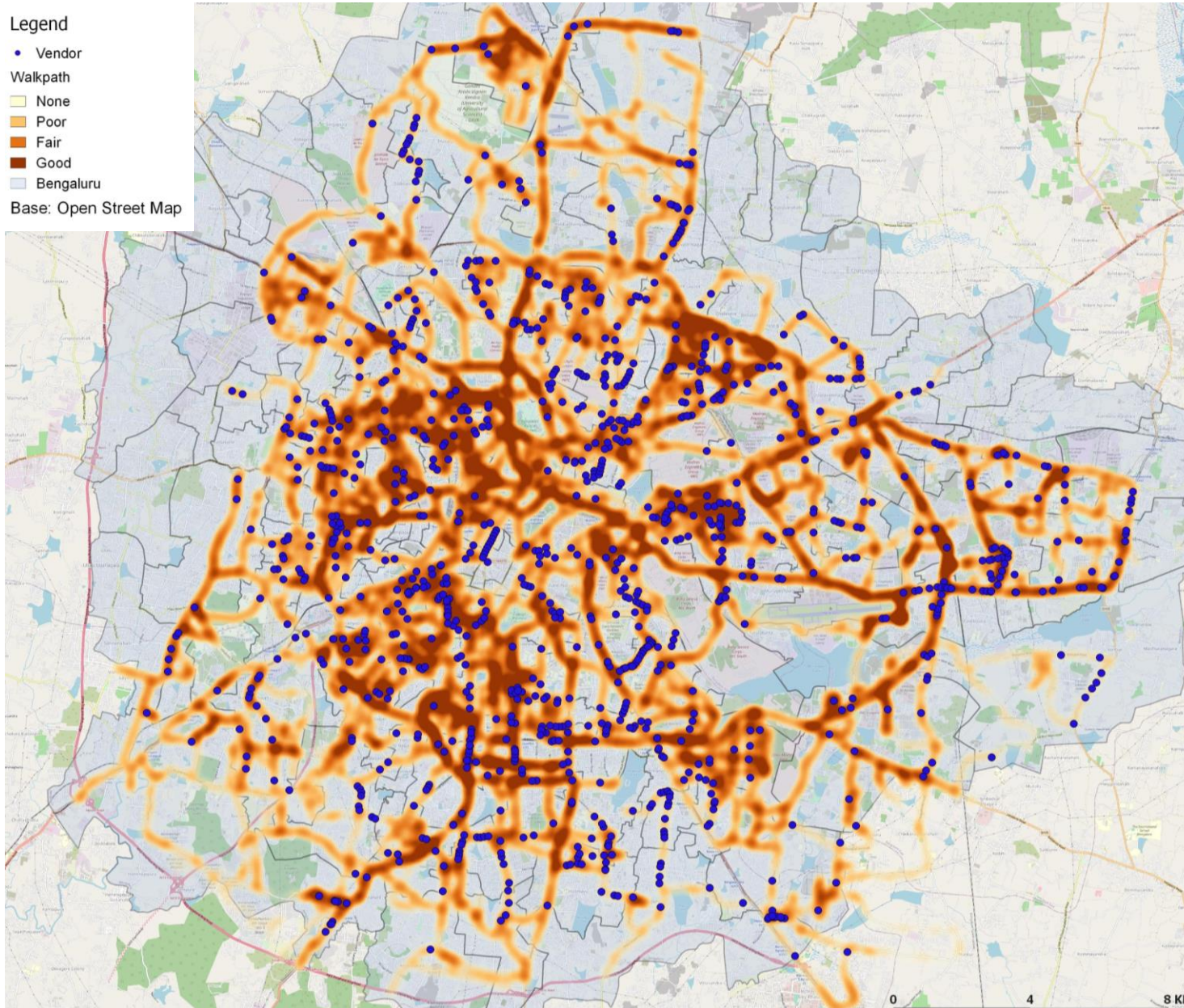




## Legend

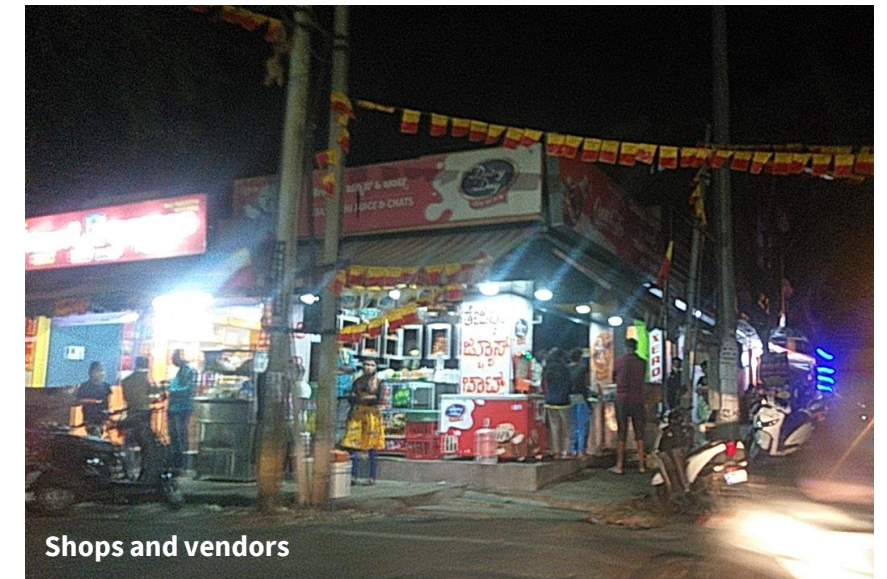
- Vendor
- Walkpath
- None
- Poor
- Fair
- Good
- Bengaluru

Base: Open Street Map



## VISIBILITY

The map shows the condition of walk path around the mapped vendors in the city.



Shops and vendors





0- Unavailable  
(>10 Minutes away)



1- Distant  
(5-10 Minutes away)



2- Nearby  
(2-5 Minutes away)



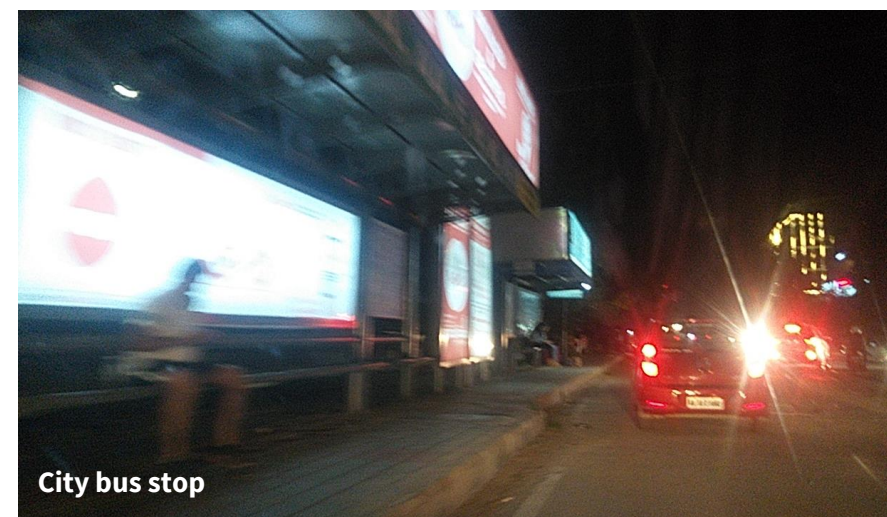
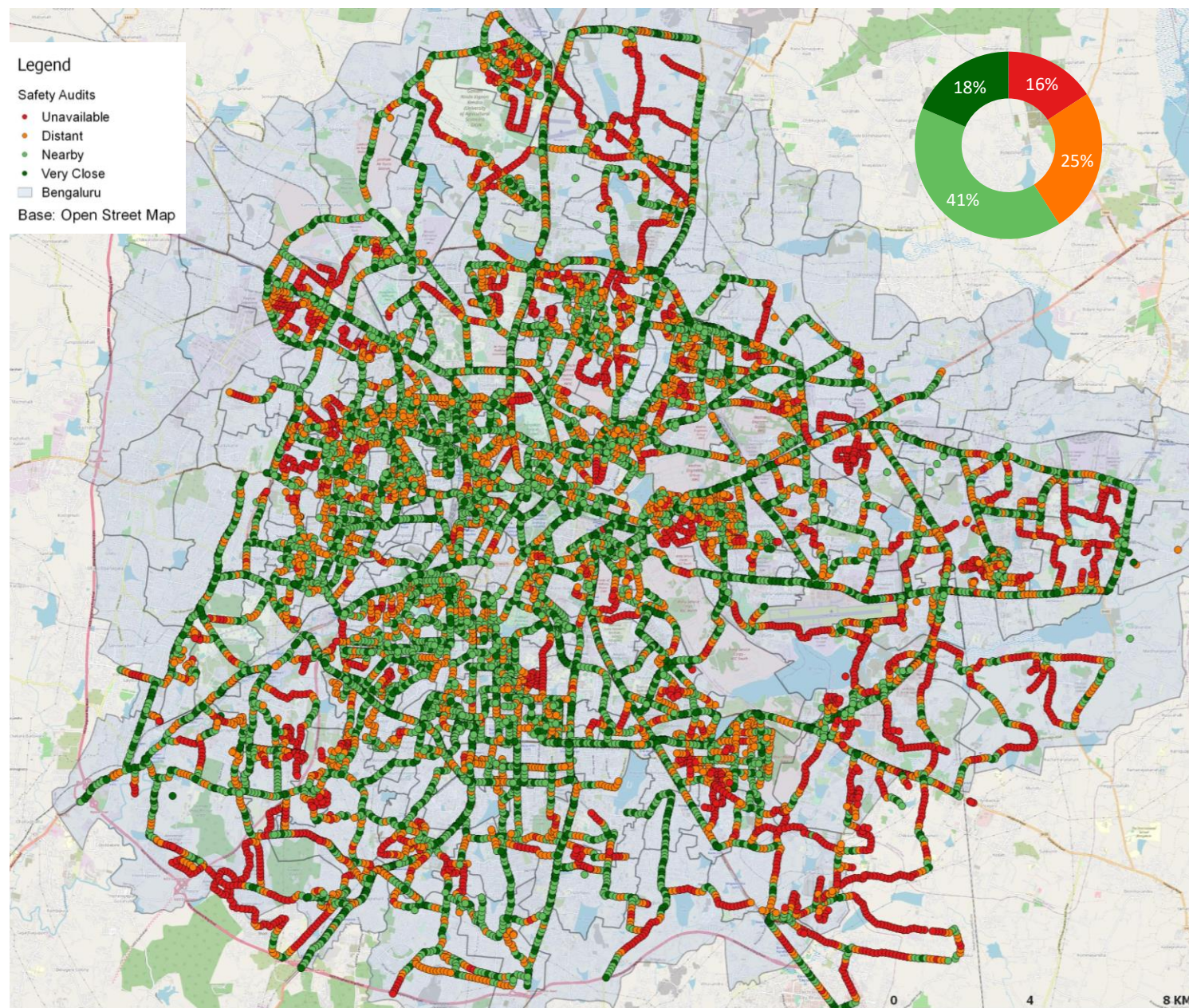
3- Very Close  
(2 Minutes away)



The Public Transport parameter measures the distance from the audit point to the nearest mode of public transportation. Through this parameter, the accessibility to the different modes of transport is measured. Public transport includes both formal and informal modes of transport such as, buses and e-rickshaw/autos , etc.

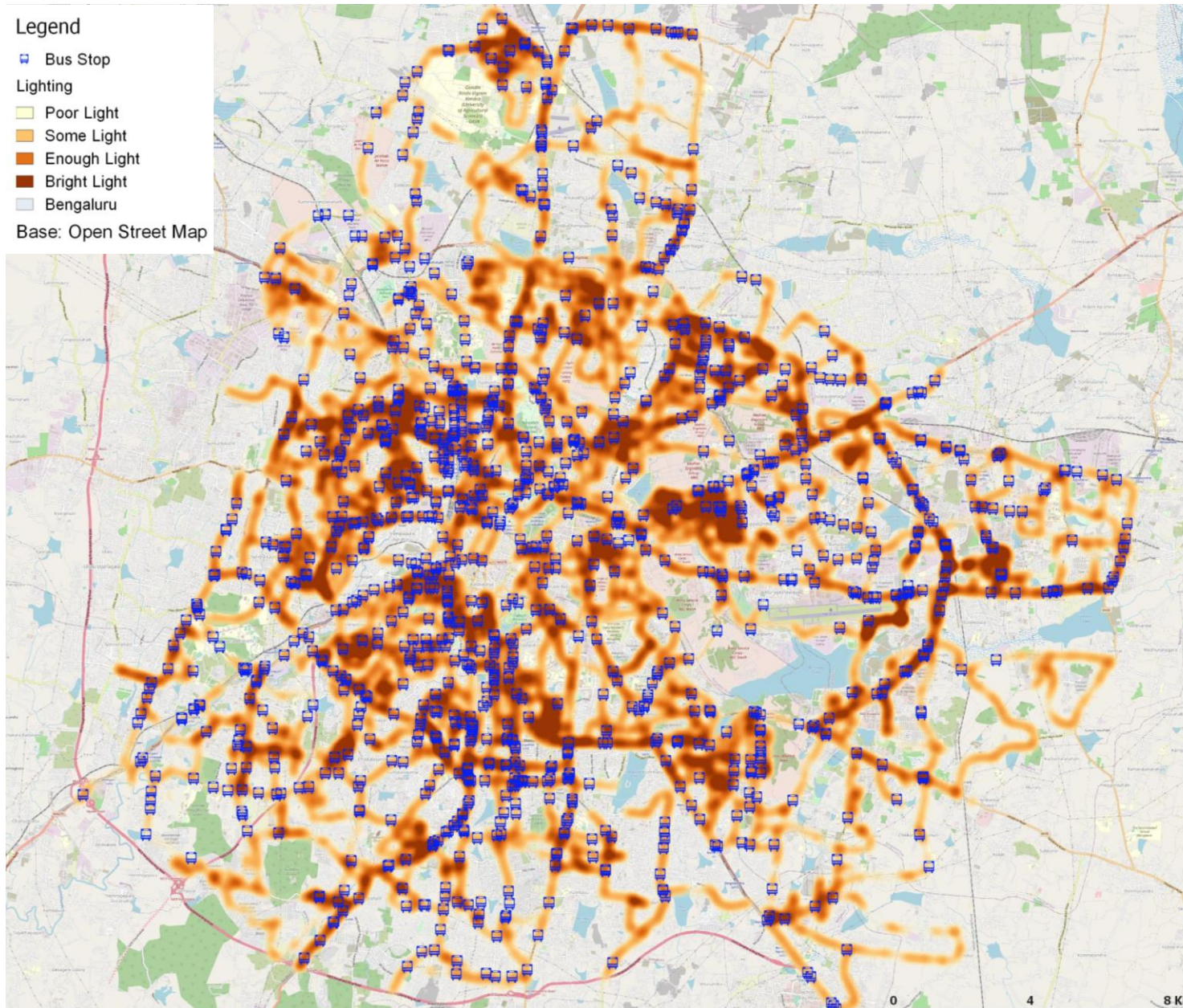


## PUBLIC TRANSPORT





## BUS STOPS AND LIGHTING



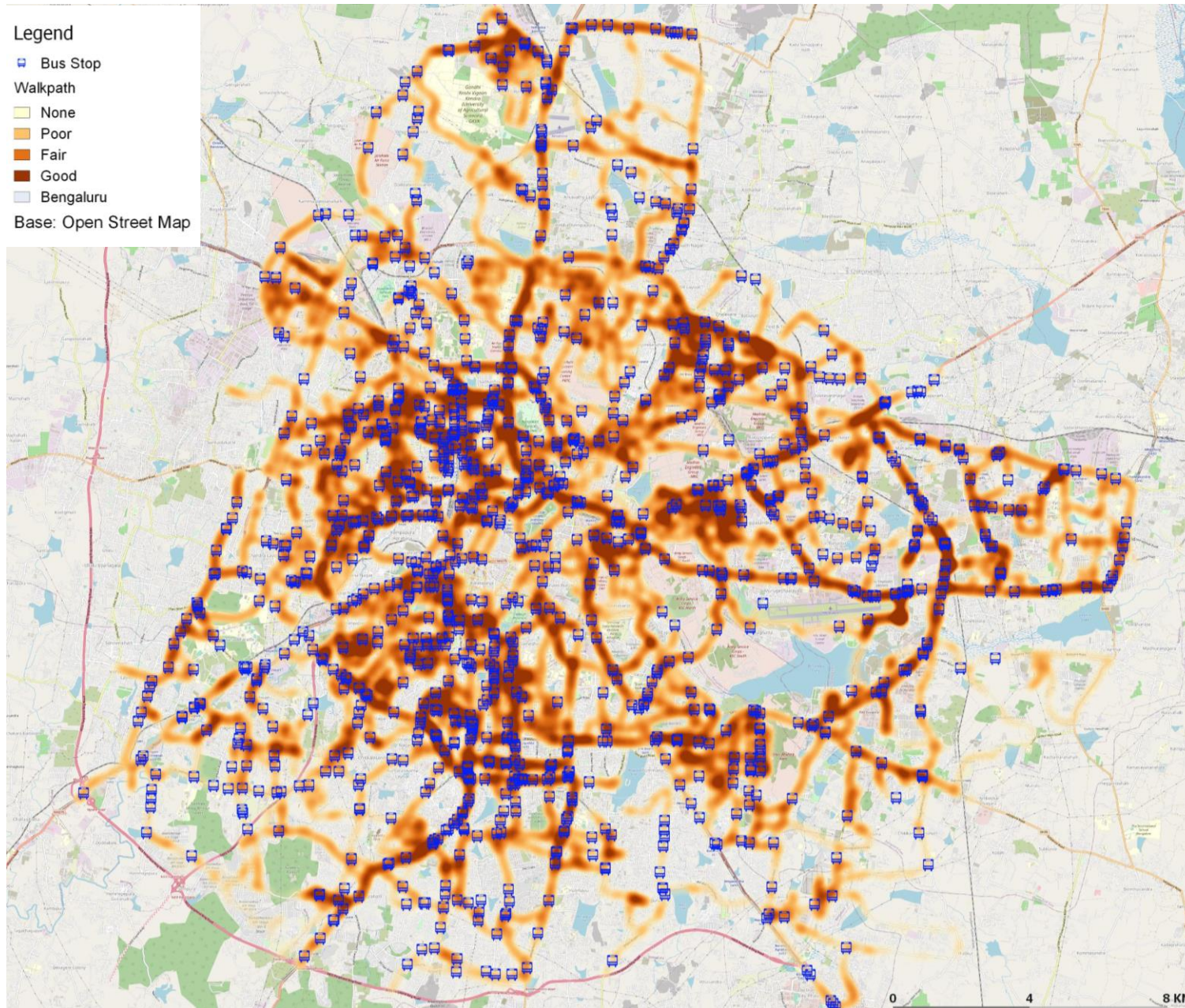
The map shows the location of bus stops and the condition of lighting around them.



Poor lighting near bus stops



## BUS STOPS AND WALK PATH



The map shows the location of bus stops and the condition of walk paths around them.



Broken walkpath near a bus stop



Parameter	Findings	Recommendation
<b>Lighting</b>	327 points were identified with no streetlights. At 3074 points, streetlights were not working	Installing new streetlights and fixing the non-functional streetlights will improve the lighting rating in the city
<b>Walkpath</b>	340 audit points were identified with no existing walk path. 1620 audit points were identified with unpaved walk path	Adequately spaced, well paved universally accessible footpaths should be provided. Broken footpaths should be repaired for the ease of movement of the pedestrians. Removing obstructions from the foot path will improve the walking experience of the pedestrians.
<b>Visibility</b>	1067 vendors were mapped across the city	Vendors provide natural surveillance on the streets. Designated well lit vendor zones, clear of the pedestrian path should be designed for ease of movement of the users.
<b>Public Transport</b>	1084 bus stops were audited across the city.	Bus stops were found with poor lighting (135 ) and poor walkpath condition (247). Improving the lighting and walkpath conditions around the bus stops will improve the accessibility of these bus stops for the users of the city.



# THANK YOU !



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