SAFETY AUDIT REPORT COLOMBO

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Supporting Safer Cities

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COLOMBO

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Acknowledgment

Acknowledgment

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Executive Summary

Urbanization has posed significant challenges for sustainable growth and development of cities around the world. In Colombo Metropolitan Area, urban challenges such as increased traffic congestion, inadequate infrastructure, lack of comfort and safety in public transport are some of the key issues. Research globally has shown that lack of safe mobility has larger implications for vulnerable groups such as women, differently abled and children. Past studies in Sri Lanka have shown that gender-based violence and fear of violence prevents women and girls from accessing opportunities for work, education, and leisure. Various factors contribute to women's perception of safety. Few of these factors include condition of physical infrastructure such as availability of streetlights, well-designed walkways, public toilets and drinking water facilities. Presence of police or security personnel, shops and vendors, availability of public transport including para transit also impacts women's perception of safety and her mobility choices. To encourage girls and women to use public spaces freely and without any hesitation, it is important to ensure that their travel needs, and concerns are understood and incorporated in planning of public spaces and public transport systems.

As a part of the Safe and Inclusive Cities Initiative under The Metro Colombo Transformation Platform, the World Bank engaged Safetipin to evaluate the public spaces of Colombo city and suggest recommendations to make them safer. Safetipin uses apps and technology platform to collect data to measure safety and inclusivity of public spaces in cities. At the core of the Safetipin apps is the safety audit, based on 9 parameters Lighting, Openness, Visibility,People Security, Walkpath, Availability of Public Transport, Gender Usage and Feeling. For this study, Safetipin used two of its applications i.e. My Safetipin and Safetipin Nite, to map the city by conducting safety audits. The audits were conducted in the five council areas of Colombo District i.e. Colombo Municipal corporation area,Sri Jayewardenepura Kotte Municipal council area, Kolonnawa Urban Council area, Dehiwala-Mount Lavinia Municipal Council area, and Moratuwa Municipal Council area. In total 7,663 safety audits were generated, and the collected data was analyzed to highlight key issues related to safety and mobility in each of the council area.

Executive Summary

The data analyses the state of physical infrastructure and social environment in public spaces within the five councils. Lighting, Transport, Walkpath are the physical infrastructure parameters Visibility, People, and Gender Usage are used to evaluate the social environment in and around a public space. Compared to other councils, Colombo Municipal Council recorded above average ratings for most of the parameters. In Sri Jayewardenepura Kotte, most of the audited points were rated Good in the Lighting and Walkpath parameters. However, they were rated Poor in the Visibility and Transport parameters. For the other three councils, all the parameters have been rated below average, except for lighting. The collected data when correlated with feeling parameter shows that people's perception of safety is linked to better infrastructure like lighting, public transport and higher usage of public space by women. In order to make public spaces safer and more accessible in these councils, all these parameters need to be worked upon holistically. Specific maps for each parameter with data points having lower ratings and need interventions have been given for all five councils in the findings section. Accessibility elements like crossings, tactile tiles and foot-over bridges have also been recorded. Additionally, parameter co-relation maps have been produced with respect to open spaces and educational institutions to identify possible intervention areas.

The study has generated an evidence-based data set that can be readily accessed and imported on any GIS platform to view existing gaps in infrastructure. City governments can integrate Safetipin data with other data sets for planning, designing and developing public spaces. This report has listed some recommendations and design principles to improve the safety and accessibility of citizens across all the five council areas.

Introduction

The Colombo District

The city of Colombo is the capital of Sri Lanka and part of the Colombo district which is one of the 25 districts of Sri Lanka. It is the largest city (by population) and the commercial capital of Sri Lanka. The Colombo district is in the South West of Sri Lanka with an area of about 700 square kilometers. It forms a part of the Western Province of the country. According to the census of population and findings of the 2012 statistics, Colombo district has a population of about 2.3 million which accounts for about 11.4 percent of Sri Lanka's total population. The main urban clusters in Sri Lanka are in and around the Colombo District. In the Colombo district, three out of four people live in urban areas. The population density of Colombo is 3,438 persons per square kilometer, which is more than tenfold of the national figure (population density of Sri Lanka is 325 persons per square kilometer).

The overall literacy rate of Sri Lanka stands at 95.7 percent with male literacy rate of 96.9 percent and female literacy rate of 94.6 percent. The total literacy rate in Colombo district is high (about 97 percent). As per Sri Lanka's Labour Force Survey report of 2018 by the Department of Census and Statistics, the labour force participation rate (LFPR) for Sri Lanka is 51.8 percent. Corresponding figures for males and females are 73.0 and 33.6%, respectively.

Institutional Architecture and Service Delivery

Sri Lanka has an institutionally bifurcated local development and service delivery system composed of:
• A devolved local authority (LA) system with Municipal Councils (MCs), Urban Councils (UCs), and Pradeshiya Sabhas (PSs) under the jurisdiction of Provincial Councils; and
• A "decentralized" (de-concentrated) system of local administration, which comprises Districts, Divisions, and Grama Niladharis as de-concentrated administrations of the national government.

The geographical area of a District contains various local authorities (LAs). This institutional bifurcation is replicated in the intergovernmental fiscal framework, with parallel flows of funds under various criteria and decision processes. The LAs are formally responsible for basic municipal infrastructure and service delivery including maintenance of local roads, street cleaning, street lighting, drainage, solid waste management, public health and curative services, land and environmental development, veterinary services, and local economic infrastructure such as markets. In addition, provision of social services, sports and recreation, and library services fall under the LAs.

The Study

Need for the Study

Achieving gender equality is a major development goal for Sri Lanka. Goal 5 of Sustainable Development Goals (SDG) states that empowering women and promoting gender equality is crucial to accelerating economic growth and development. The country has made commendable progress towards this, for example they have achieved gender parity at all education levels. However, these achievements have not translated to gains in the labour market. As per Sri Lanka's Labour Force Survey report of 2018 by the Department of Census and Statistics, the labour force participation rate (LFPR) for Sri Lanka is 51.8 percent. Corresponding figures for males and females are 73.0 and 33.6 percent respectively. The country's declining female labour force participation should be addressed by understanding the concerns affecting women. From a gender perspective, education and employment are key to achieving gender equality and empowering girls and women. Public transport acts as an enabler in providing economic and social opportunities for growth and development. Lack of safety and perceived threat of crime and violence in public spaces and public transport has a significant impact on women's workforce participation rates. The 2015 study by UNFPA highlights sexual harassment in public transport is one of the key deterrents that restricts women's mobility for economic opportunities [1].

Ease of access to a public space is one of its key elements that determines how it will be used. Safe and inclusive public transport improves the quality of life for all, especially for girls and women and enables them to access resources and opportunities available in the city. At present, the Colombo Metropolitan Area is faced with urban challenges such as inadequate pedestrian walkways and supporting infrastructural facilities, increased air pollution, traffic congestion, and lack of comfort and safety in accessing and using both public spaces and public transport. Lack of safety or perceived sense of safety makes girls and women feel unsafe thereby restricting their mobility both socially and economically. In order to ensure women's active participation in the public sphere, it is important to ensure that their travel needs, and concerns are understood and incorporated in planning of public spaces and public transport systems.

Under SDG Goal 11, Sustainable Cities and Communities a set of targets directly addresses the need for universal access to safe, inclusive and accessible public spaces, for women and children, older persons and persons with disabilities. At present, there is a limited data on usage and condition of public spaces in the country.

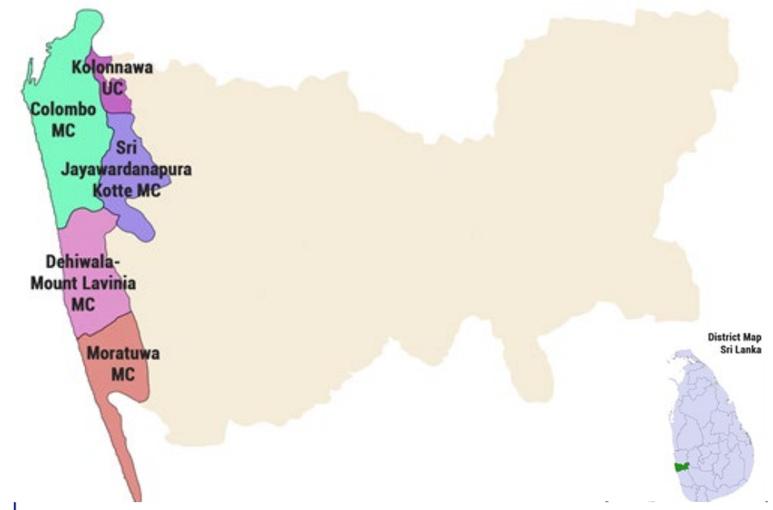
1-United Nations Population Fund (UNFP).2018. DOES SHE TRAVEL SAFE? Report on Sexual Harassment in Public Transportation in Sri Lanka.
Available online at: http://srilanka.unfpa.org

As a part of the Safe and Inclusive Cities Initiative under The Metro Colombo Transformation Platform, the World Bank has engaged Safetipin to evaluate the public spaces of Colombo city and suggest recommendations to make them safer and inclusive.

Safetipin, a technology platform and set of apps which collects data to measure safety and inclusivity of public spaces in cities. For this project, prominent urban areas of Colombo District were selected for mapping existing infrastructure and social environment (as seen in the map 1 below) using two Safetipin applications; My Safetipin App and Safetipin Nite App. The areas have been chosen in consultation with the World Bank team and local consultants. The areas within the limits of following municipal councils of urban areas were audited.

1. Colombo Muncipal Council
2. Sri Jayawardenepura Kotte Municipal Council
3. Kolonnawa Urban Council
4. Dehiwala-Mount Lavinia Municipal Council
5. Moratuwa Municipal Council

The collected data has been analysed in this report to identify the key safety concerns in public spaces, and recommendations have been provided on improving safety around schools, colleges, public spaces and markets. In addition, this project will work towards strategic partnerships with city stakeholders to influence and make cities safer and more inclusive by responding to the priority issues identified. The details of how the applications were used and data was produced to give recommendations for improvement are given in the following sections.



Map 1 on the left is showing the district of Colombo along with 5 council areas where audits were done

Methodology

Safetipin Audit Parameters

At the core of the Safetipin apps is the safety audit. A safety audit is a participatory tool for collecting and assessing information about key parameters of public space It is also used as a tool to record/capture the perception of safety of a user of public space. The safety audit measures both physical infrastructure and the social usage of a space. The audits done by Safetipin have 8 key parameters- Lighting, Openness, Visibility, Crowd, Security, Walkpath, Availability of Public Transport, and Gender Usage. In the audits conducted using the My Safetipin app, users also record their feeling as a parameter. Each parameter is rated 0/1/2/3 with 0 being a poor rating and 3 being good. The rubric for rating each of the nine parameters has been added in the annexure. It should be noted here that while rating the Security parameter, only designated police stations were taken into consideration. Due to the lack of information on police patrolling routes, security ratings have been recorded as poor in some of the audited area.

Lighting: Availability of enough light to see all around you

Walkpath: Either a pavement or road with space to walk

Public Transport: Availability of public transport like metro, buses, autos, rickshaws

Visibility: Vendors, shops, building entrances, windows and balconies from where you can be seen

Security: Presence of formal police or private guards

People: Number of people around you

Gender Usage: Presence of women and children near you

Openness: Ability to see clearly and move in all directions

Feeling: How safe do you feel

Data Collection using My Safetipin Application

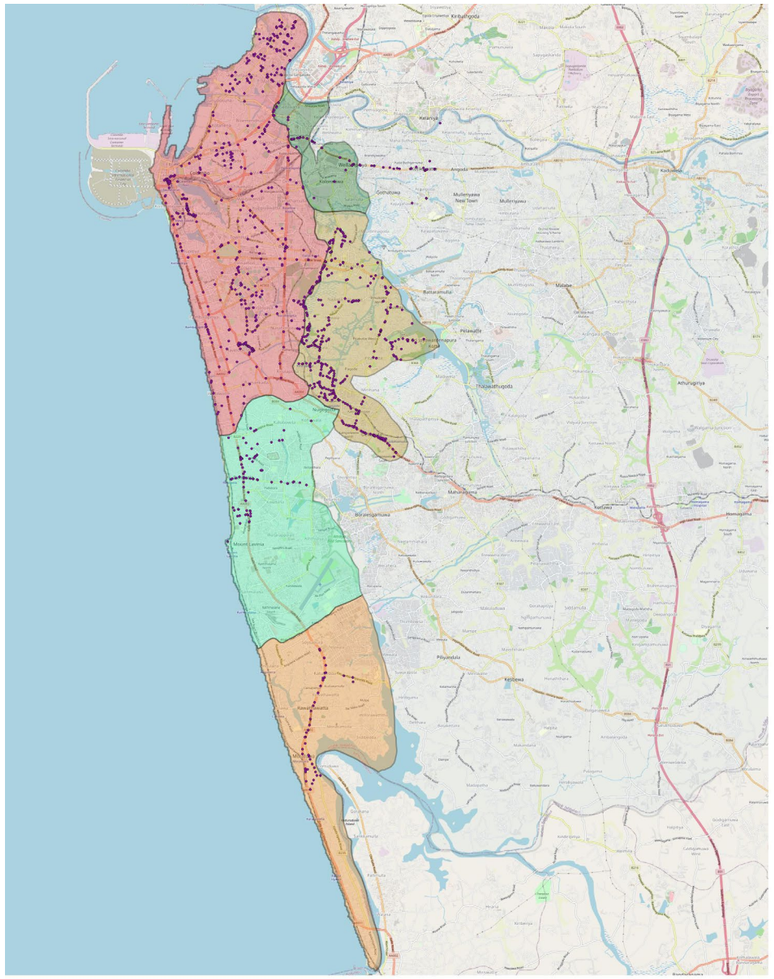
My Safetipin is a mobile app to collect crowd-sourced data on safety in cities. The app is available for the users to conduct a safety audit as well as view the safety score in a particular area or audit point. Other features of the app include tracking of friends and family on request, finding the safest route between two points and the list of nearby safe places in case of an emergency.

For the data collection, around 45 volunteers were mobilised by local WB team through UN Volunteers program. A training session for My Safetipin application was conducted for the volunteers by Safetipin team in the month of February 2020. The first session of the training initiated informal discussions with the participants on women's safety concerns, specific to the context of Colombo. Common safety concerns were related to the harassment in buses and trains, lack of effective redressal for women safety concerns and poorly-lit public spaces and public toilets. Few participants shared that some areas are not safe for girls and women after dark due to loitering of drunk men. This session was followed by technical training on conducting safety audits using My Safetipin app.

Post the session, the volunteers were classified in 5 groups according to their home location, and each group was assigned areas within the selected five councils to conduct audits. They were given a fortnight to conduct audits around their homes, schools, universities, market and transit stops. A total of 1,133 safety audits have were conducted by the volunteers. The areas covered by the volunteers is shown in the Map 2 on the next page.

Image 1 'My Safetipin' App training session with volunteers

Methodology



Map 2 showing 'My Safetipin' app audits or showing audits done using 'My Safetipin' app

Data Collection using Safetipin Nite Application

Safetipin Nite is a proprietary app of Safetipin which is provided to partner organisations for image data collection. The phone with the app of the Safetipin technology platform installed in it is mounted on the windscreen of a car. As the car moves, the app automatically clicks images of the street in landscape mode. These images are collected to capture a pedestrian's safety conditions at regular intervals. Using Safetipin Nite, the entire city road network is mapped with images which are then assessed on the Safetipin back-end technology platform.

For the data collection, three drivers who are comfortable using smartphones, and familiar with the city's streets were selected. In February 2020, Safetipin team conducted an on-site training on using Safetipin Nite app. The project area was divided into 3 groups and each driver was given a unique id to log-in the app. Data was collected over a period of one month and a total of 101,332 images were captured. The pictures were then uploaded on to a server, and generated as 7,662 audit pins as seen in the Map 3 on page no. 11

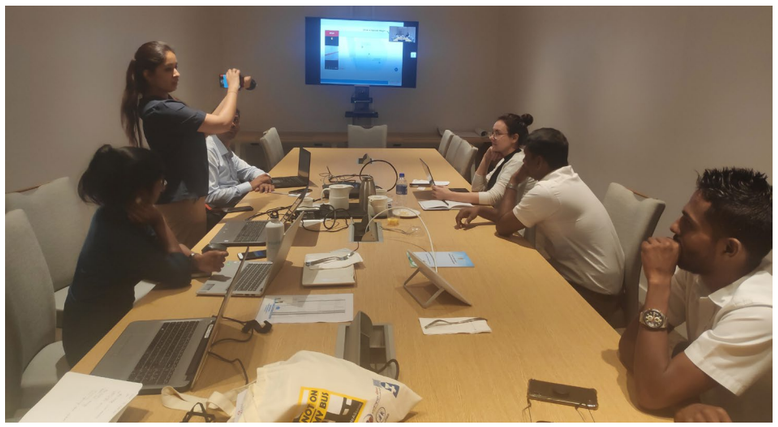
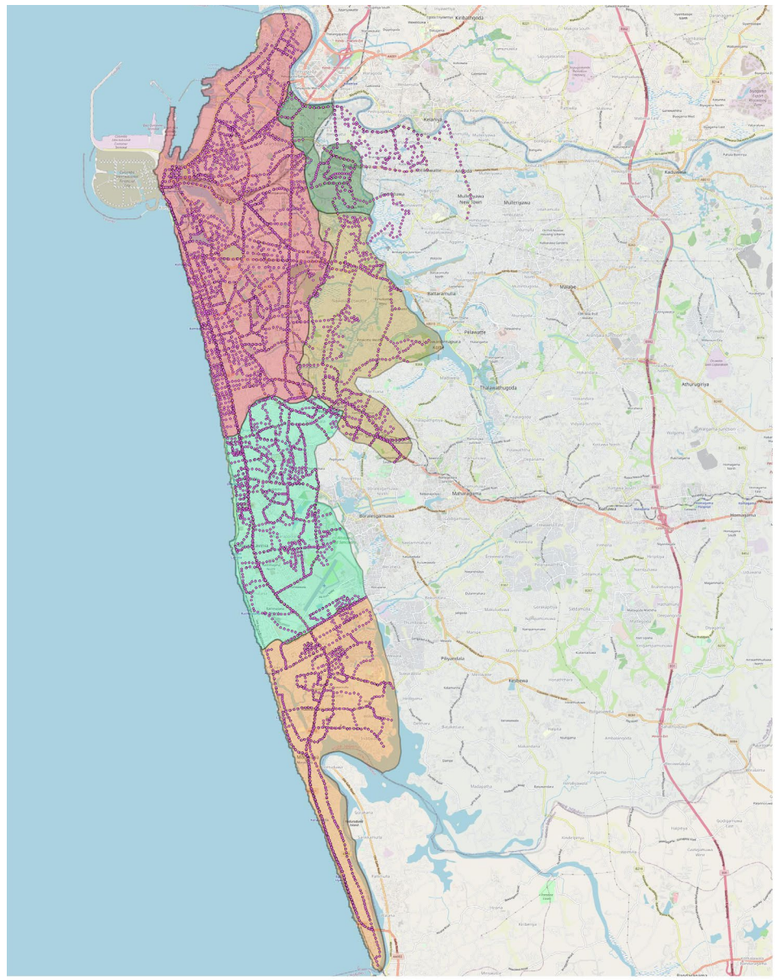


Image 2 Safetipin team training the drivers to use Safetipin Nite application

Image 3 Safetipin team training the drivers to mount the phone and adjust the camera



Map 3 showing audits generated from image analysis

DATA CODING AND ANALYSIS

The photographs collected through Safetipin Nite get uploaded on the Safetipin server. These are then accessed on the portal and analysed on a wide range of parameters linked to safety and inclusivity of public spaces. For deeper analysis, a set of sub-parameters for the parameters of Lighting, Walkpath, Public Transport, Visibility and Security are used for recording additional information. The complete list of sub-parameters is given below. Google Maps are also used to identify certain sub-parameters. Every 100 meters, an audit is generated at a point by using all the photographs collected around that point. It should be noted here, due to limited data on police patrolling routes, security parameter has only recorded the accessibility to formal security i.e. police station.

Based on the collected and coded data, the Safetipin team analysed and produced maps that can be used for on ground responses and to work towards improving safety for citizens on the streets and other public spaces in cities. In this report, maps have been produced for five councils on parameters related to physical infrastructure supported with images, followed by district level analysis on public space usage. Data is also analysed in terms of correlations and linkages with other data sets which further supports the findings. Based on these analyses, a concrete set of recommendations have been drawn out for the key stakeholders to use for city improvement programs.

Lighting	Visibility	Walkpath	Security	Public Transport
No Street Light (SL)	50% Boundary Wall	No Pavement	Private Guards	Rail
Off Street Light	100% Boundary Wall	Broken Pavement	Police	Bus/Mini Bus
Dim Street Light	Unused Land	Unpaved Pavement	Police Van/Bike	Auto (Tuk-Tuk) /Three wheeler/Shared Auto
High Street Light	Road side Vendors	Car Blocking	Police Check	Cycle Rickshaw/ E-Rickshaw
Too Far Street Light	Temporary Stalls	Vendor Blocking	Police Booth	Taxi/Cab
Leaves Cover SL	Shops	Houses Extending	Other Govt.	Bicycle
Other Cover SL	House upto 4 Floors	Trees Blocking		
One Side Street Light	Houses > 4 Floors	Other Blocking		
		Walkable Road		

Rubric showing all the sub-parameters for the listed five parameters

Methodology

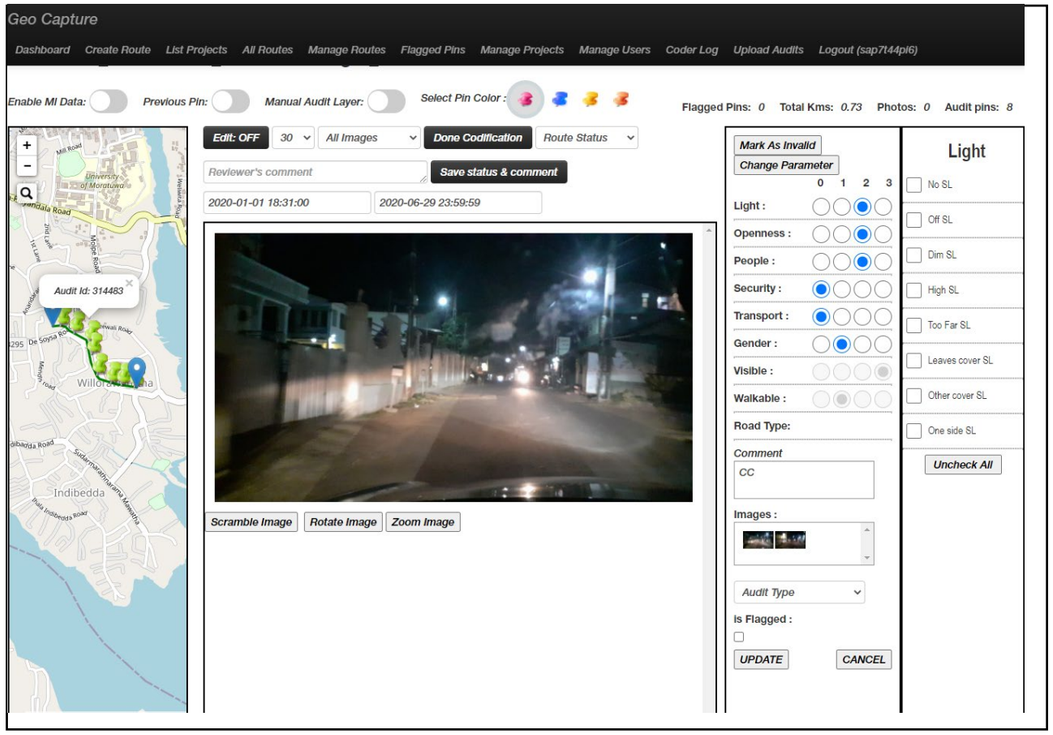


Image 4 is a visual of image analysis and coding platform

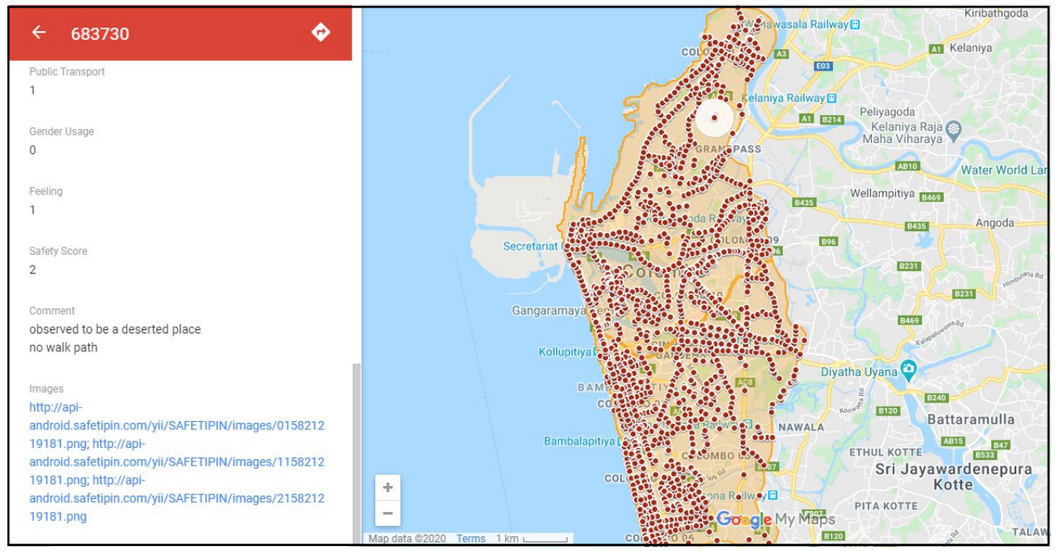


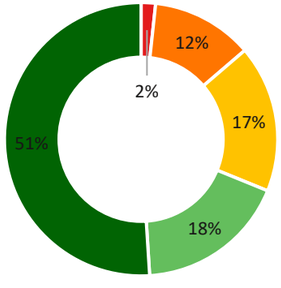
Image 5 is a visual of generated audits overlaid on google maps

Findings

Colombo Municipal Council

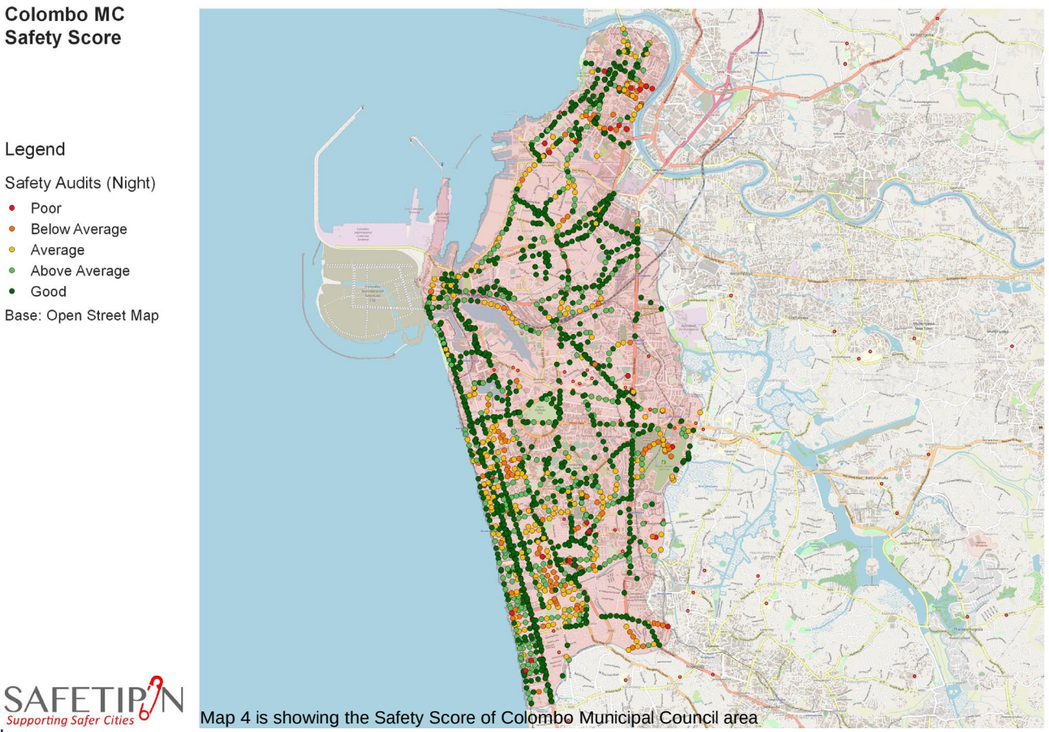
Colombo is the commercial and financial capital and largest city in Sri Lanka. In 2011, population was 752,993 (with an additional daily floating population of 500,000) and population density is 20,182/ km^2. The gender breakdown is 49.6% female and 50.4% male. Its land area is 37 km^2 with an estimated 106,000 residential properties, 35,500 commercial properties, and 10,000 government properties. The city's flat terrain, tree-lined boulevards, and beaches provide opportunities for a vibrant pedestrian environment. The Galle Face Green promenade is currently a 5-hectare ribbon between Galle Road and the Indian Ocean and is the largest open space in Colombo. The city is growing in popularity with tourists, with several luxury hotels being constructed.

Colombo Municipal Council (CMC) is the largest Local Authority in Sri Lanka and one of the oldest in South Asia. Established in 1865, it has grown into a large organization with additional powers compared to other Local Authorities. The Council's 15 Departments are responsible for the provision of services, including public health, solid waste management, maintenance of roads, street lighting, and water and drainage.



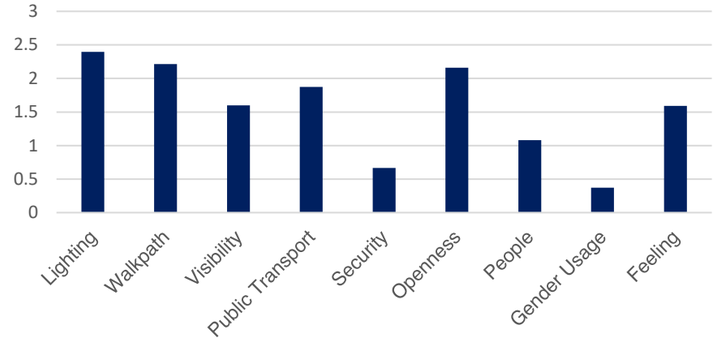
COLOMBO MUNICIPAL COUNCIL AREA

The number of audit points generated by Safetipin Nite were 2,834 and My Safetipin were 548 in the area of Colombo Municipal Council. The Map 4 below, shows the Safety Score for all the audit points. The safety score at an audit location reflects the aggregated rating of all the parameters. For each audit point it is a number between 0 and 5, 0 being Poor i.e. relatively unsafe and 5 being Good in terms of overall safety. More than half of the audit points have been rated good in terms of overall safety score. This indicates that Colombo Municipal Council area has good infrastructure and is accessible by most of the area which was audited. A thorough analysis of all physical parameters follows.



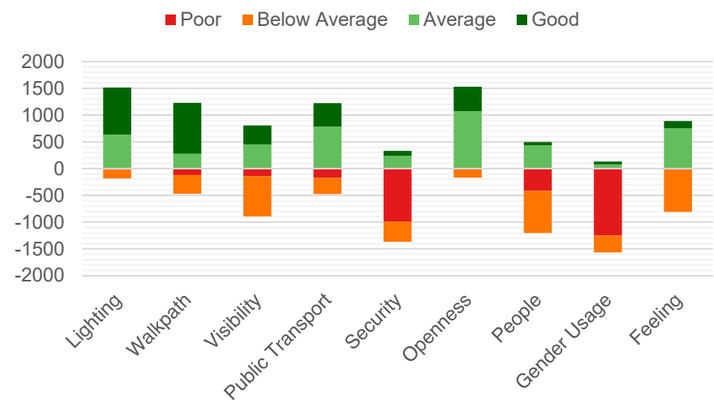
Map 4 is showing the Safety Score of Colombo Municipal Council area

The average parameter rating graph 1 below indicates the average rating for each parameter on a scale of three. Each of the nine parameters are rated either 0,1, 2 or 3, where 3 is Good and 0 is Poor. As seen on the graph 1, Walkpath and Lighting parameters have been rated the highest, followed by other parameters of Openness, Public Transport and Visibility. The parameters of Gender Usage and Security have been rated the lowest. The overall Feeling of Safety for Colombo Municipal Council area is rated average.



Graph 1 showing the average parameter ratings on the scale of 3 for Colombo Municipal Council area

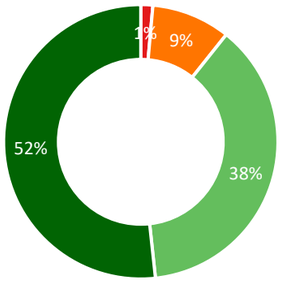
The parameter wise pin distribution graph 2 below indicates the parameter of Gender Usage, and Security are rated poorly for most parts of the area, whereas parameters like Lighting is rated above average and Walkpath and Visibility are rated average for this area



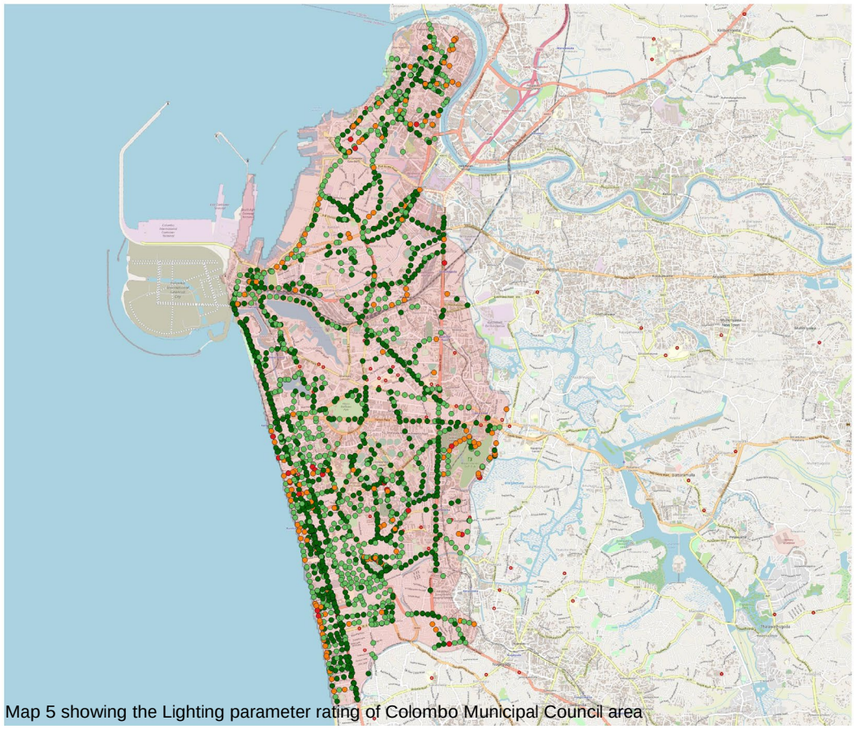
Graph 2 showing parameter wise pin distribution for Colombo Municipal Council area

52%

OF THE AREA MAPPED HAS GOOD LIGHTING



52% of the audit area has been rated good in terms of overall lighting. The pie chart on the left indicates the percentage distribution of the ratings of audit points and the map 5 below represents the points geographically. While most of the audited area has been rated good (Images 6 and 7), 10% of audit points have been identified as poorly lit spaces (Image 8 and 9). This is due to non-functional street lights (Off SL) or absence of street lights (NO SL) as shown in the map 6 below. This geo-located data could be used by the authorities to review the condition of the streetlights and improving overall lighting at the identified points.



Map 5 showing the Lighting parameter rating of Colombo Municipal Council area

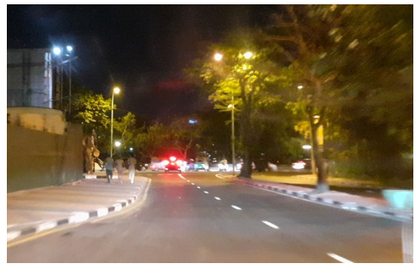


Image 6 showing well-lit Galle road

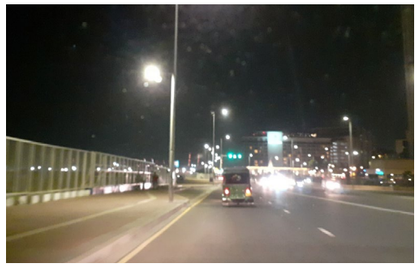
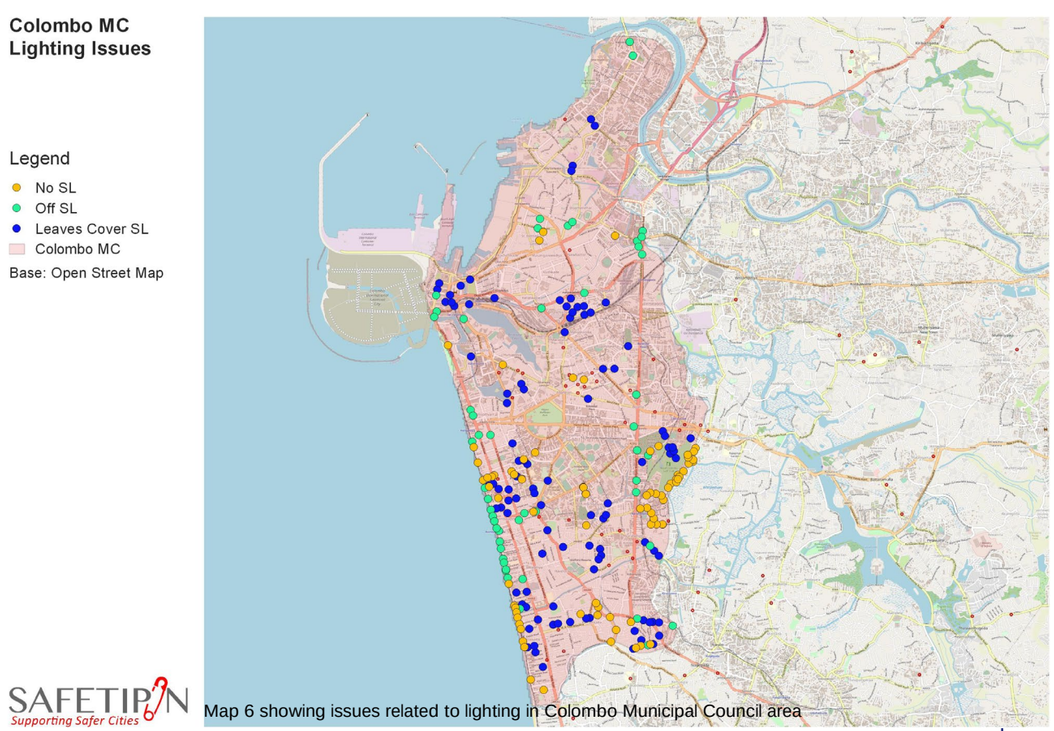


Image 7 showing well lit Sri Jinarathana road

Image 8 showing dark spots on Anula road

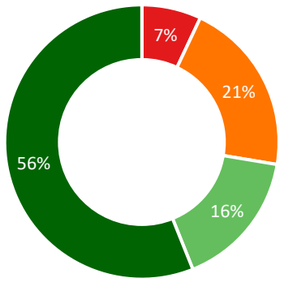
Image 9 showing non functional street lights on Marine Drive road



Map 6 showing issues related to lighting in Colombo Municipal Council area

56%

OF THE AREA MAPPED HAS GOOD WALKPATH



Walkpath parameter indicates whether a person can comfortably walk in and around a place. This refers to the quality of a pavement or space left for pedestrians along the road. 56% of the area has proper pavement to walk. The pie chart on the left indicates the percentage distribution of the ratings of audit points and the map 7 below represents the points geographically. While most of the audit area has been rated good (Images 10 and 11 on the next page), 28% points have been identified as having unpaved or no designated path for pedestrians (Images 12 and 13 and map 8 on the next page). This geo-located data could be used for up-gradation work to improve the condition of walkpath in the city.

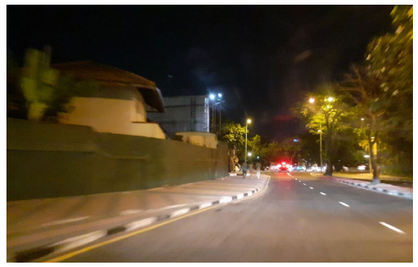


Image 10 showing good walkpath on Jinarathan Road

Image 11 showing paved pedestrian path on pedestrians on R.A. De Mel Mawatha Road

Image 12 showing unpaved pedestrian path on Chitra Lane

Image 13 showing the broken pavement

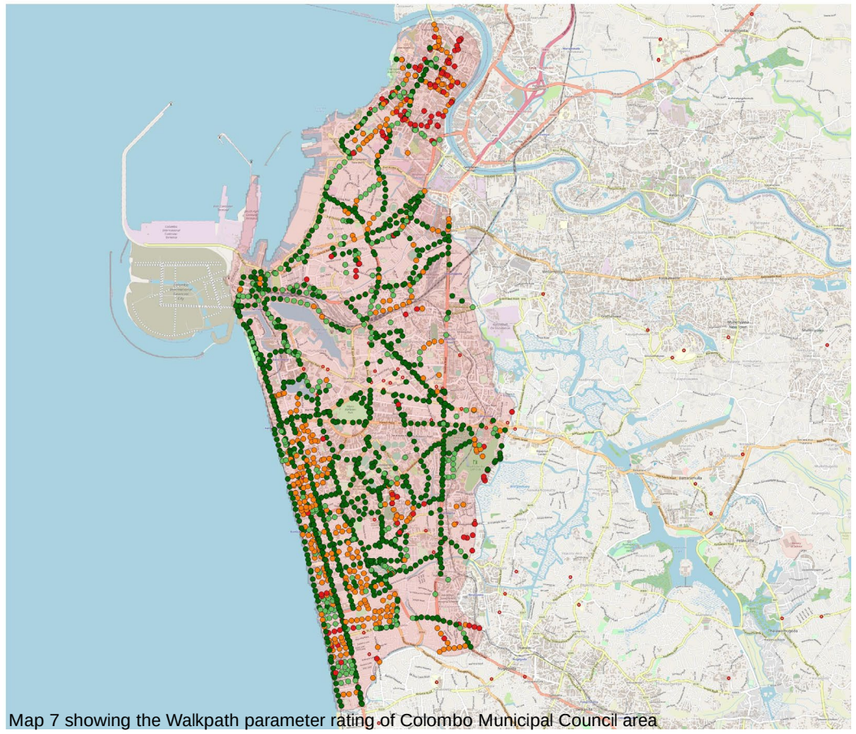
Colombo MC Parameter Walkpath

Legend

Safety Audits (Night)

- None
- Poor
- Fair
- Good

Base: Open Street Map



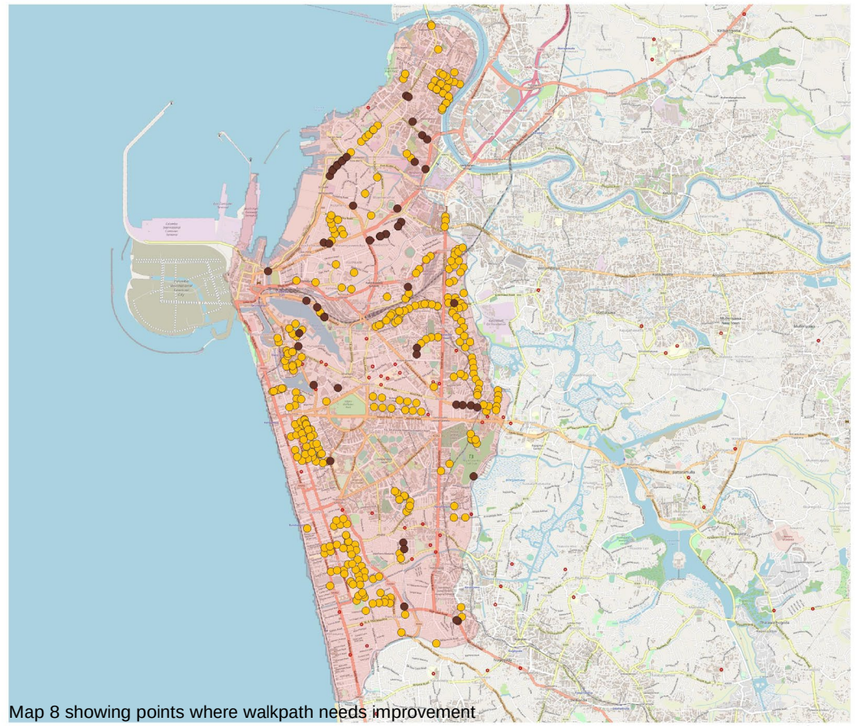
Map 7 showing the Walkpath parameter rating of Colombo Municipal Council area

Colombo MC Walkpath Issues

Legend

- Broken Pavement
- Unpaved Path
- Colombo MC

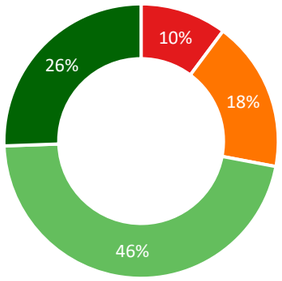
Base: Open Street Map



Map 8 showing points where walkpath needs improvement

72%

OF THE AUDIT POINTS HAVE GOOD ACCESSIBILITY TO PUBLIC TRANSPORT



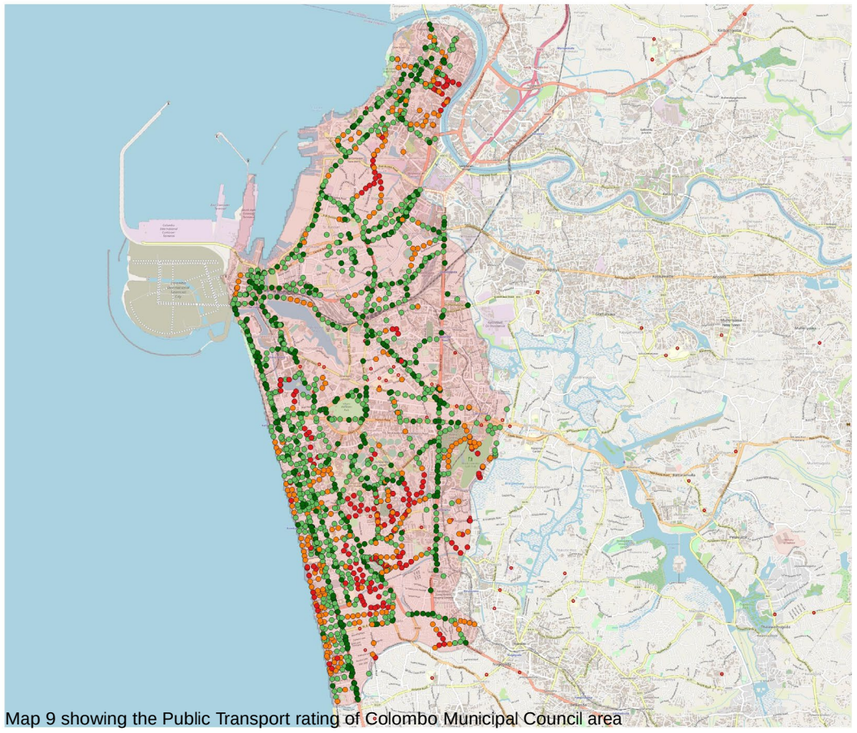
Public Transport refers to the ease of accessing any mode of public transport i.e. rail/bus/taxi/three wheeler etc. and is measured in terms of the distance to the nearest mode. 72% of the area has public transport stands within 5 mins walking distance, whereas 10% of the audited area does not have formal transit stands/stops reachable within 10 minutes walking distance. This data can be used by the authorities to strengthen the overall transit network of the city and make public transport more accessible by building IPT stops to support the bus and train network. The map 10 on next page shows the bus stops and train stations that were audited. Images on the page 23 indicates the difference in infrastructure at various bus stops. There is a need to upgrade some of the existing bus stops with proper signage and seating infrastructure

Colombo MC Parameter Public Transport

Legend

Safety Audits
- Unavailable (>10 Mins)
- Distant (5-10 Mins)
- Nearby (2-5 Mins)
- Very Close (2 Mins)
- Colombo

Base: Open Street Map



Map 9 showing the Public Transport rating of Colombo Municipal Council area

Image 14 showing a bus stop with shelter

Image 15 showing a bus stop with shelter in CMC area

Image 17 showing a bus stop without any seating area

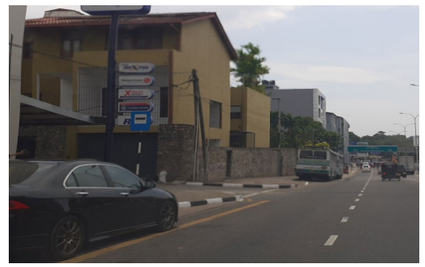
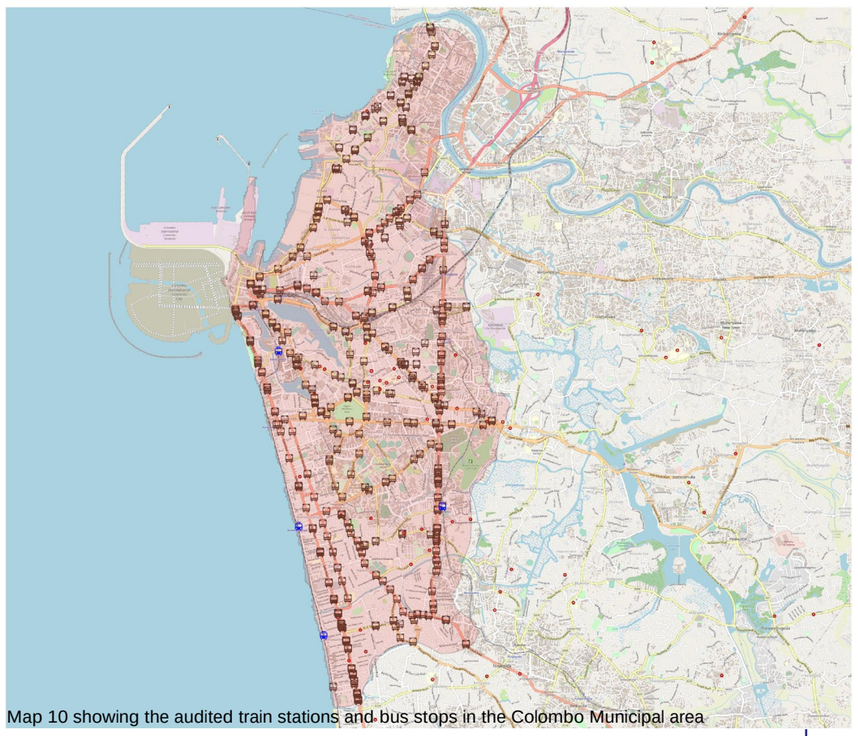


Image 16 showing a bus stop without shelter in CMC area

Colombo MC Public Transport Audits

Legend
- Train Station
- Bus Stop
- Colombo MC

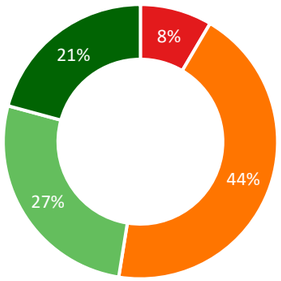
Base: Open Street Map



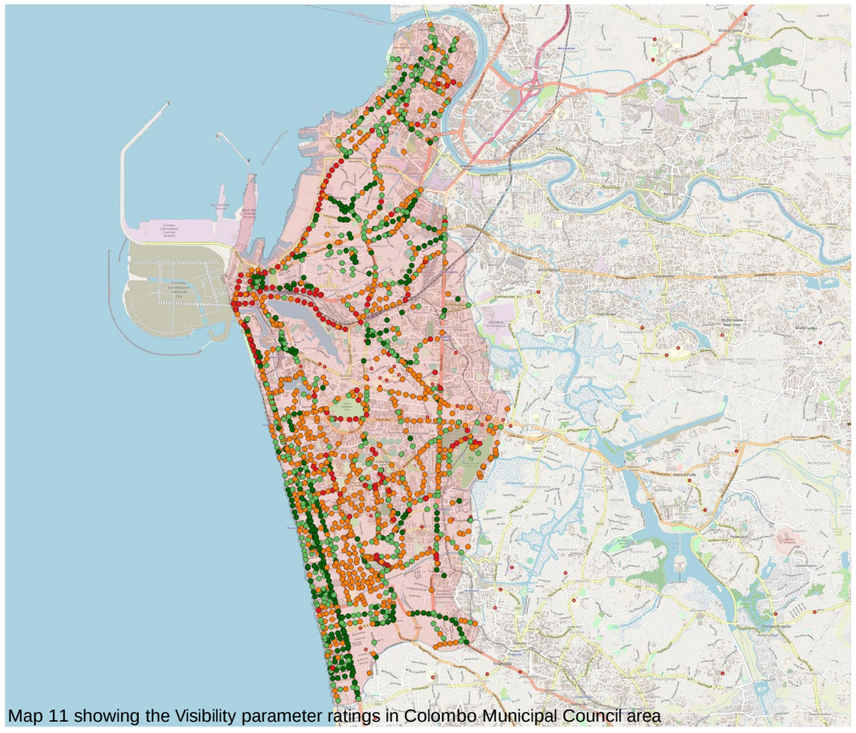
Map 10 showing the audited train stations and bus stops in the Colombo Municipal area

48%

OF THE AREA MAPPED HAS GOOD VISIBILITY



Visibility parameter measures presence of vendors, shops and building entrances facing towards the streets and public areas, also considered as eyes on street. This gives a sense of natural surveillance as one can be seen while walking on the road. The pie chart on the left explains that 48% of the points have been rated Good in terms of overall visibility. When data is represented geographically (map 11 below) it is seen that, most of the highly rated points are along the commercial streets of the council area. On the streets along the sea shore, vendors and hawkers were found acting as natural surveillance. Some of the vending locations were identified and mapped as seen in map 12 on page 25.



Map 11 showing the Visibility parameter ratings in Colombo Municipal Council area

Image 18 showing 2nd cross street with good visibility ratings

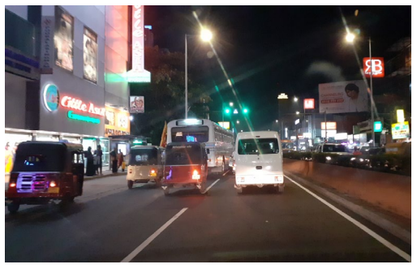


Image 19 showing a stretch on Galle Road rated high in visibility

Image 20 showing poor visibility on Sri Marcus Fernando Mawatha road

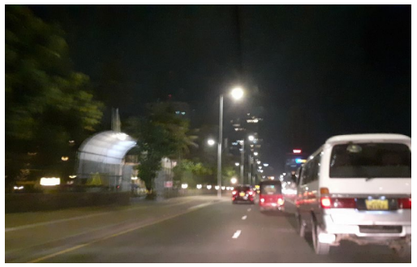
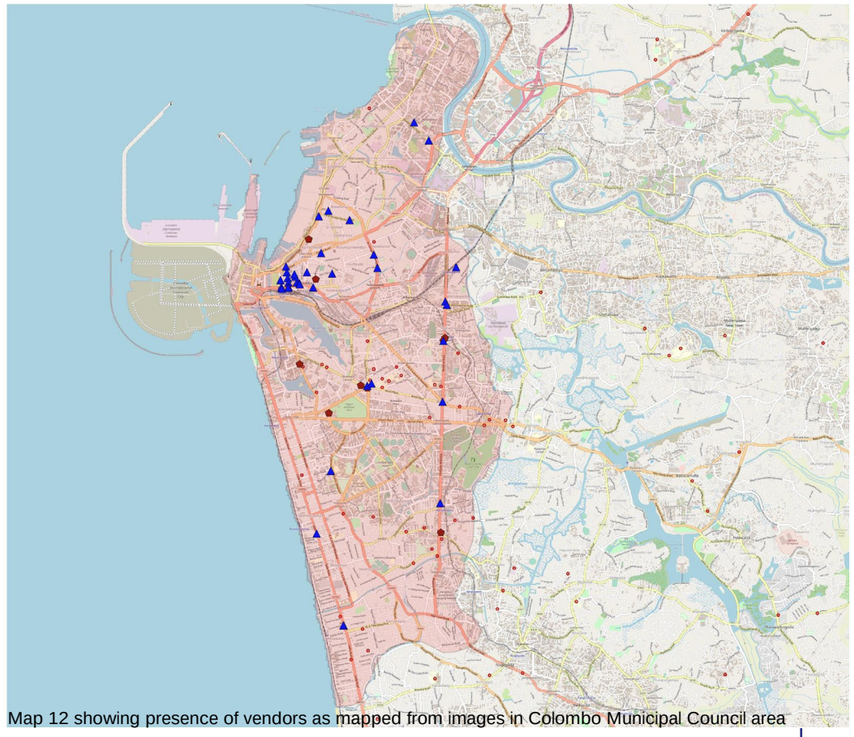


Image 21 showing a stretch on Galle Road having poor visibility

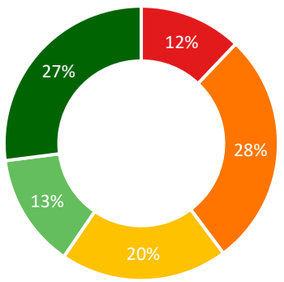


Map 12 showing presence of vendors as mapped from images in Colombo Municipal Council area

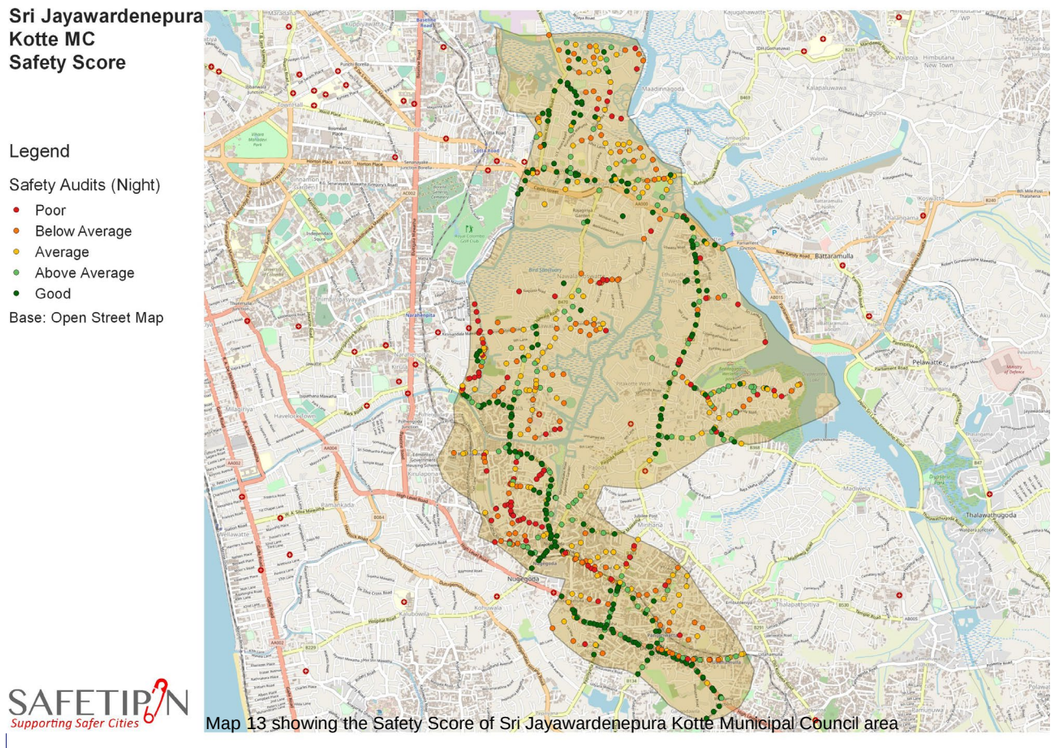
Sri Jayawardenepura Kotte Municipal Council

Sri-Jayawardenapura-Kotte is the administrative capital of Sri Lanka. It was declared the national capital in 1985, and today, the Parliament and most ministries and public institutions are located in Sri Jayawardenapura-Kotte Municipal Council (SJKMC). Due to its proximity to Colombo and the number of government and administrative services, it has experienced rapid urbanization. The 2011 population was 107,925 with a population density of 6,386/km$^{2.}$ Its land area is 17km^2, and the primary land uses are residential and institutional. This area is known for its urban wetlands and biodiversity, which provide a unique opportunity for recreation, but are in danger of being reclaimed and polluted. It is well linked to the rest of Metro Colombo and the country by a good road network and public transport system.

SRI JAYWARDENEPURA KOTTE MUNICIPAL COUNCIL AREA

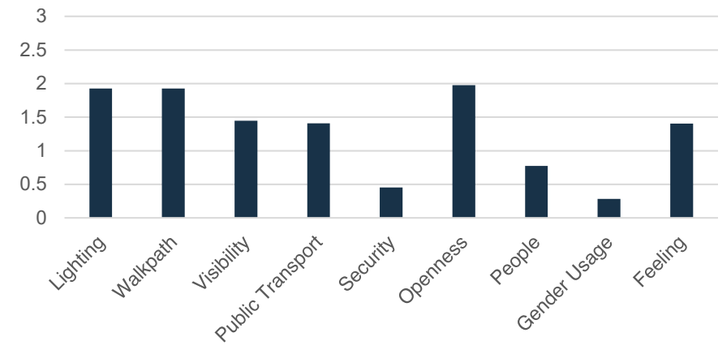


The number of audit points generated by using Safetipin Nite were 663 and My Safetipin were 352 in the area of Sri Jayawardenepura Kotte Municipal Council. The map 13 below, shows the Safety Score for all the audit points. The safety score at an audit location reflects the aggregated rating of all the parameters. For each audit point it is a number between 0 and 5, 0 being Poor i.e. very unsafe and 5 being Good in terms of overall safety. 27% of the audit points have been rated good and 12% of the audit points have been rated poor in terms of overall safety. A thorough analysis of all physical parameters follows.



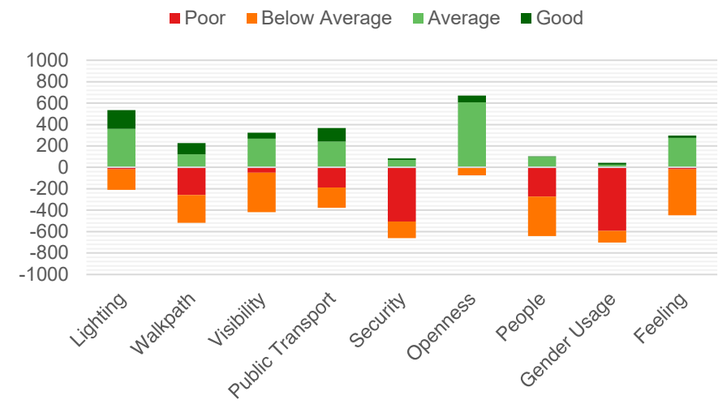
Map 13 showing the Safety Score of Sri Jayawardenepura Kotte Municipal Council area

The average parameter rating graph 3 below indicates the average rating for each parameter on a scale of three. Each of the nine parameters are rated either 0,1, 2 or 3, where 3 is Good and 0 is Poor. As seen on the graph 3, Walkpath and Lighting parameters have been rated the highest, followed by other parameters such as Public Transport and Visibility. The parameter Gender Usage have been rated the lowest. The overall feeling of safety for Sri Jayawaredepura Kotte Municipal Council area has been rated below average.



Graph 3 showing average parameter rating on the scale of 3 for Sri Jayawardenepura Kotte Municipal Council area

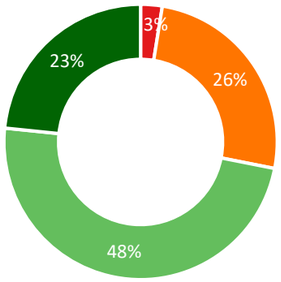
The parameter wise pin distribution graph below indicates the number of points rated as 0, 1, 2 and 3. The good ratings are taken as positive and poor ratings as negative. As shown on the graph, the parameter of Gender Usage, is rated poorly for most parts of the area, parameters like Walkpath is rated average for this area.



Graph 4 showing parameter wise pin distribution for Sri Jayawardenepura Kotte Municipal Council area

23%

OF THE AREA HAS GOOD LIGHTING



23% of the audited area has been rated good in terms of overall lighting. The pie chart on the left indicates the percentage distribution of the ratings of audit points and the map14 below represents the points geographically. While most of the audited area has adequate lighting (Images 22 and 23), 3% of the audit points have been identified as dark spots (No SL) and 26% of audit points have been identified as poorly lit spaces (Image 25 and 26). This is due to non-functional street lights (Off SL) or absence of street lights (No SL) as shown in the map 15 on the next page. This geo-located data could be used by the authorities to review the condition of the streetlights and improve overall lighting at the identified points.

Image 22 showing well-lit Nawala Road

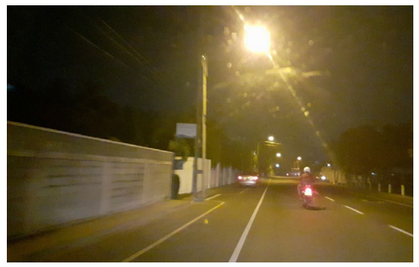
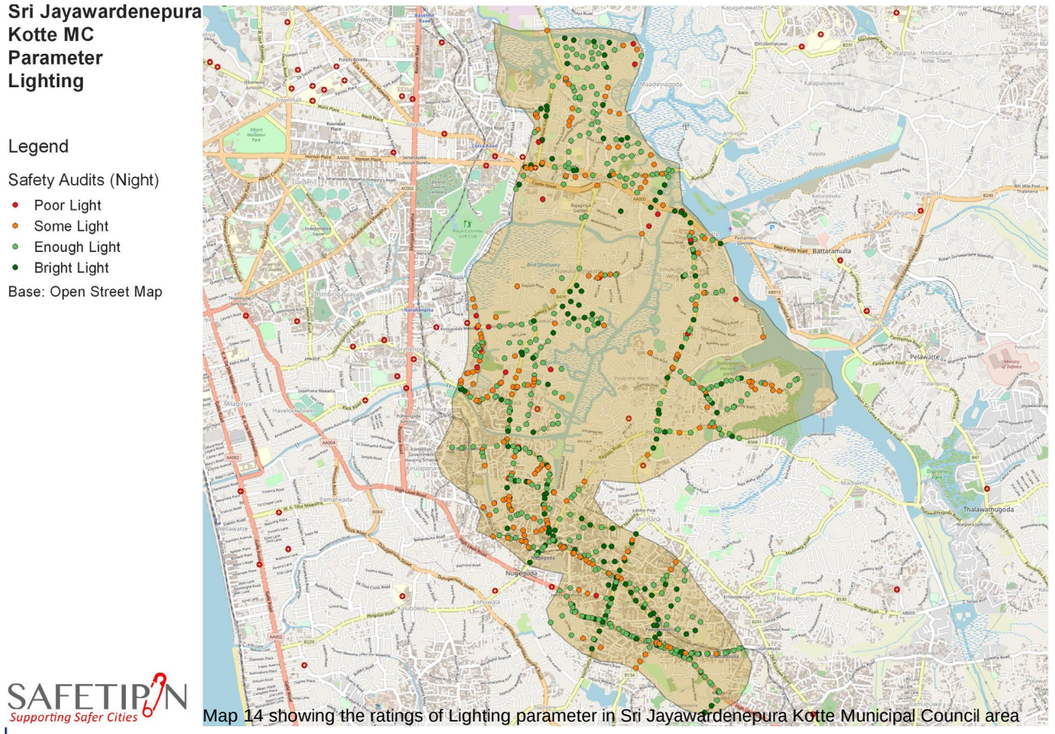


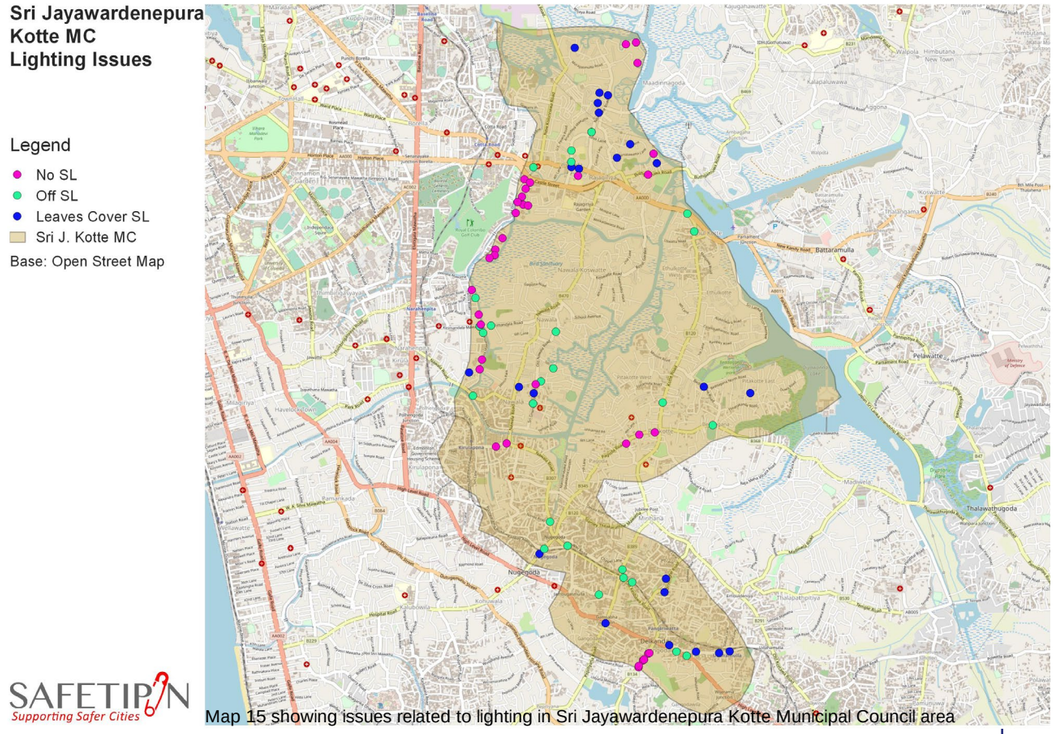
Image 23 showing well-lit Rathmalana Mirihana Road

Image 24 showing non functional streetlight on Klrimandala Road

Image 25 showing that there is no street light along the Old Kesbawa Road



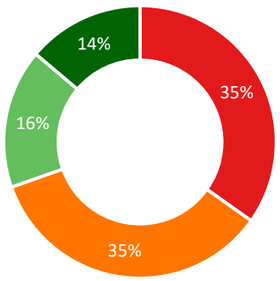
Map 14 showing the ratings of Lighting parameter in Sri Jayawardenepura Kotte Municipal Council area



Map 15 showing issues related to lighting in Sri Jayawardenepura Kotte Municipal Council area

14%

OF THE AREA MAPPED HAS GOOD WALKPATH



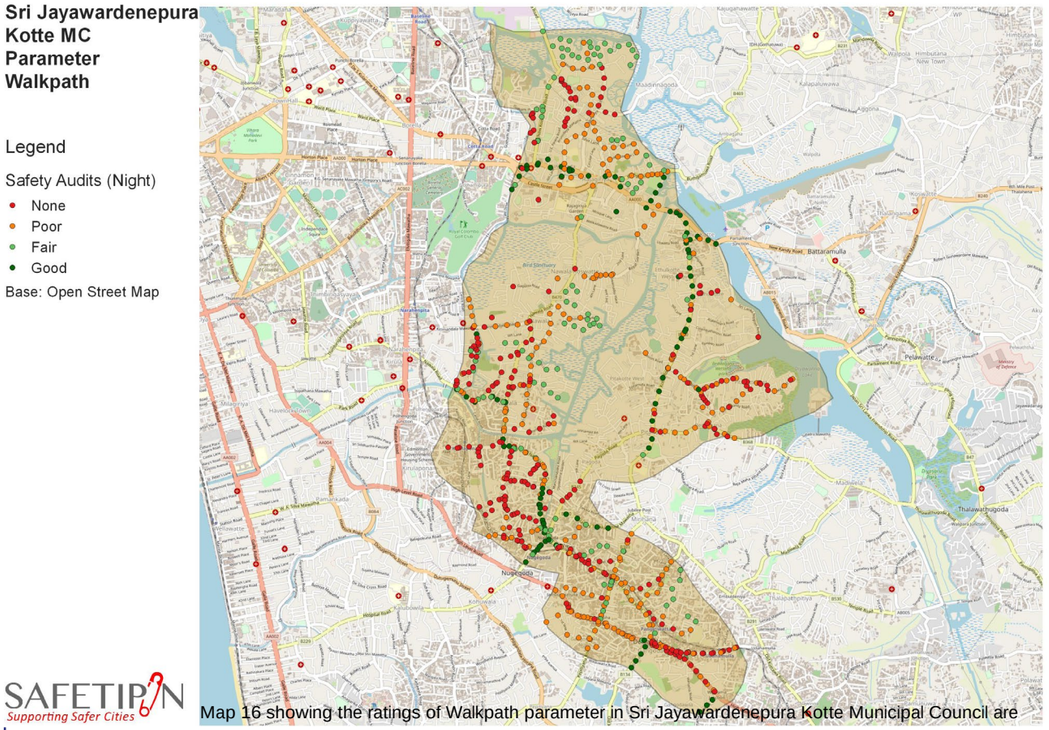
Walkpath parameter indicates whether a person can comfortably walk at a place. This refer to the quality of a pavement or space left for pedestrians along the road. The pie chart on the left indicates the percentage distribution of the ratings of audit points and the map 16 below represents the points geographically. Only 14%.of the audited area has paved and unobstructed pavement to walk. (images 26, 27) and 16% of the audited area has proper pavement but broken or obstructed in between. 35% of the audited points have recorded no pavement and remaining 35% have unpaved path for the pedestrians as seen in the map 17 on page 33. This geo-located data could be used for up-gradation work and to identify the condition of walkpath in the area

Image 26 showing well obstructed pavement on High level Road

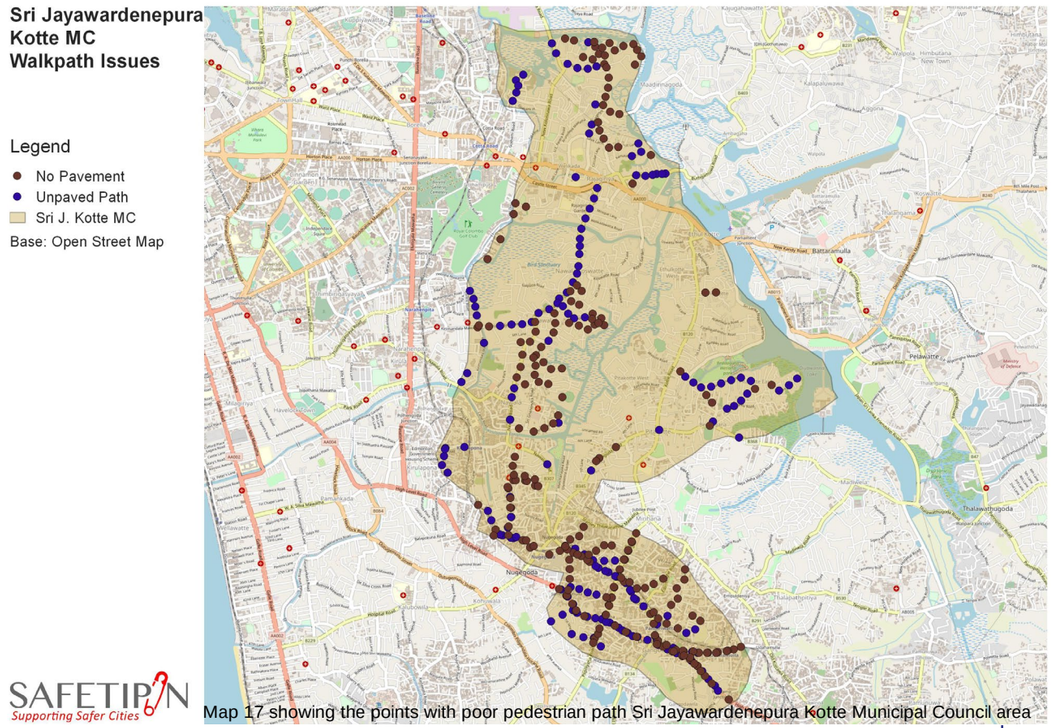
Image 27 showing proper pavement for pedestrians on Castle Street

Image 28 showing unpaved path for pedestrians

Image 29 showing unpaved path for pedestrians



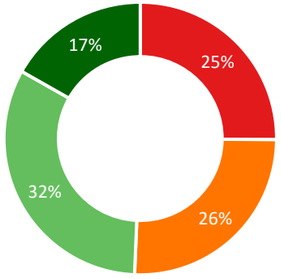
Map 16 showing the ratings of Walkpath parameter in Sri Jayawardenepura Kotte Municipal Council are



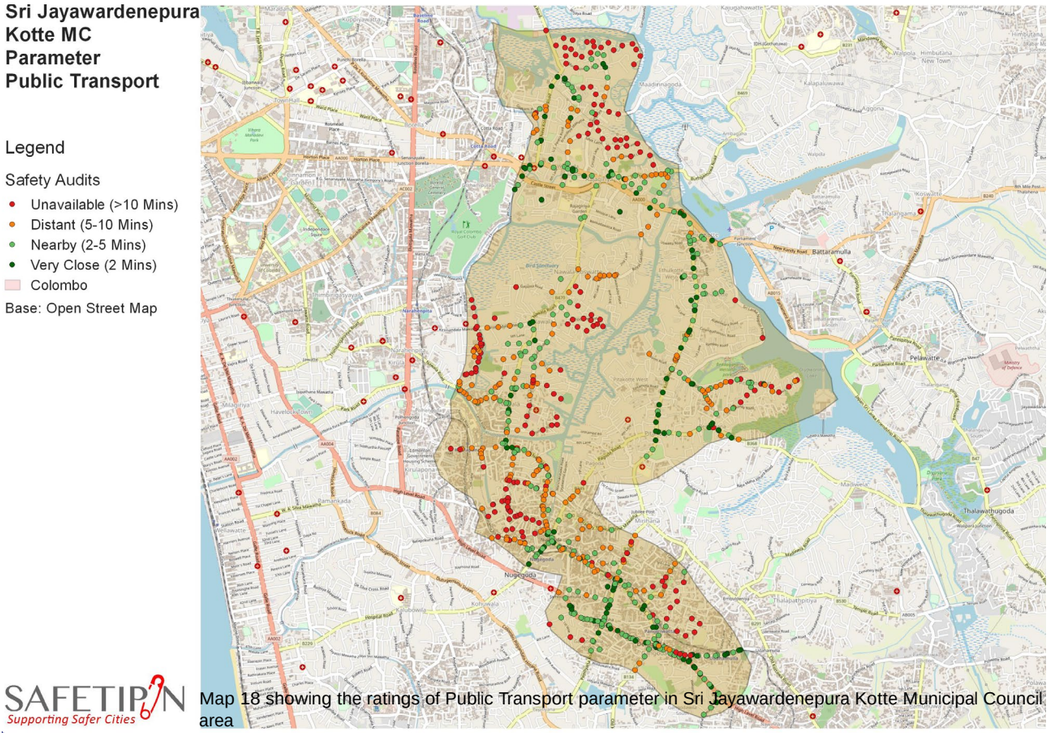
Map 17 showing the points with poor pedestrian path Sri Jayawardenepura Kotte Municipal Council area

49%

OF THE AUDITS POINTS HAVE GOOD ACCESSIBILITY TO PUBLIC TRANSPORT



Public Transport refers to the ease of accessing any mode of public transport i.e. rail/bus/cab/three-wheeler etc. and is measured in terms of the distance to the nearest mode. 49% of the area has public transport stands within 5 mins walking distance whereas 25% of the audited area does not have formal transit stands/stops reachable within 10 minutes walking distance and 26% of the audited area has transit stands/stops reachable within 5-10 mins walking distance. This data can be used by the authorities to plan or improve the overall transit network of the city and make public transport more accessible by building IPT stops to support the bus and train network The map 19 on next page shows the bus stops and train stations which were audited. Images on the page 35 indicates the difference in infrastructure at various bus stops. There is a need to upgrade some of the existing bus stops with proper signage and seating infrastructure



Map 18 showing the ratings of Public Transport parameter in Sri Jayawardenepura Kotte Municipal Council area

Image 30 showing a bus stop with shelter

Image 31 showing a bus stop without any shelter

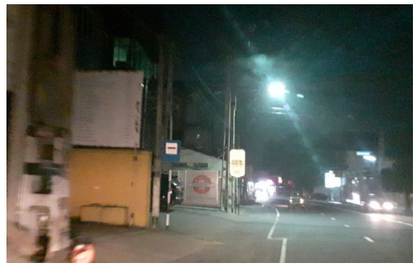
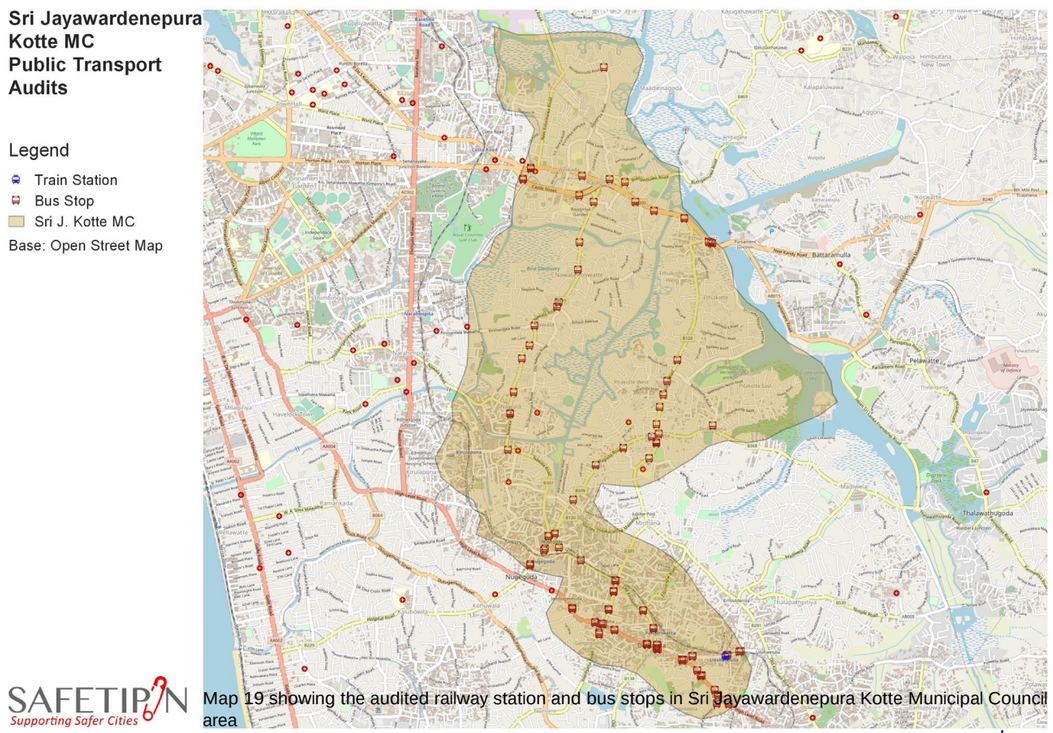


Image 32 showing a bus stop with a signage

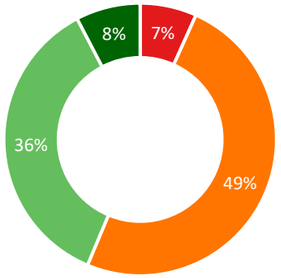
Image 33 showing a bus stop with a signage



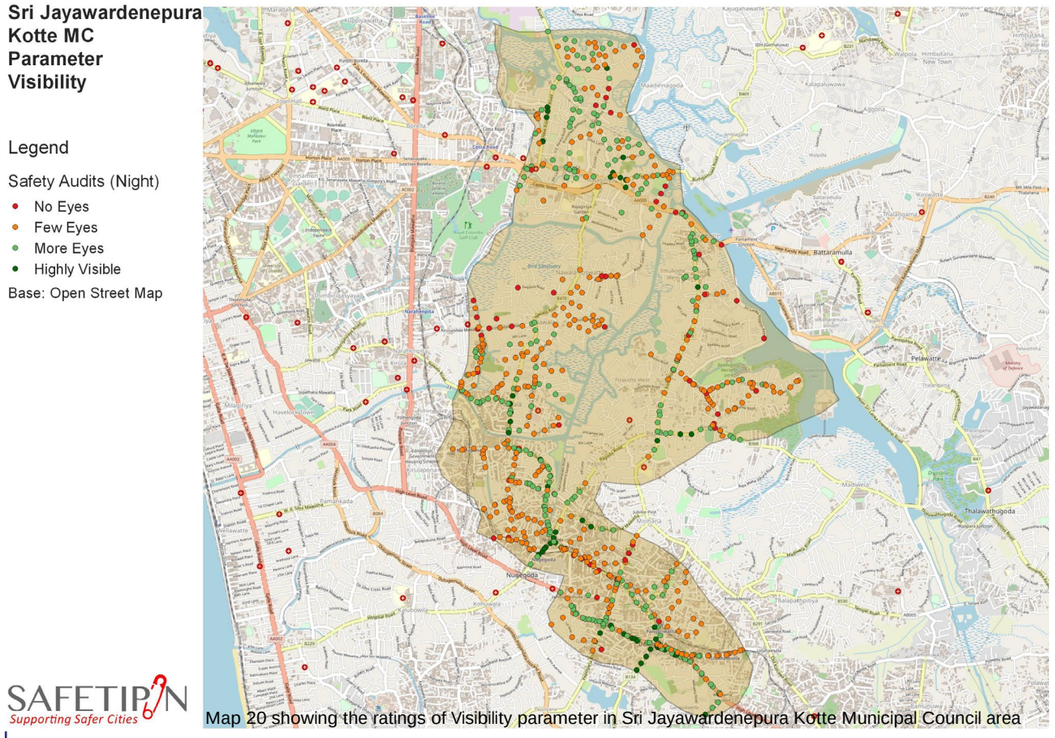
Map 19 showing the audited railway station and bus stops in Sri Jayawardenepura Kotte Municipal Council area

44%

OF THE AREA MAPPED HAS GOOD VISIBILITY



Visibility parameter measures presence of vendors, shops and building entrances facing towards the streets and public areas, also considered as eyes on street. This gives a sense of natural surveillance as one can be seen while walking on the road. The pie chart on the left explains that 44% of the points have been rated good in terms of overall visibility. More than half of the audit points have limited visibility due to high boundary walls. When data is represented geographically (map 20 below) it is seen that, most of the poorly rated points are along the main roads of the council area. Very few vendors and hawkers were found in this area. Some of the vending locations were identified and mapped as seen in map 21 on page no 37.



Map 20 showing the ratings of Visibility parameter in Sri Jayawardenepura Kotte Municipal Council area

Image 34 showing a stretch of Old Kesbawa Road with high visibility

Image 35 showing a stretch of Old Kesbawa Road with high visibility

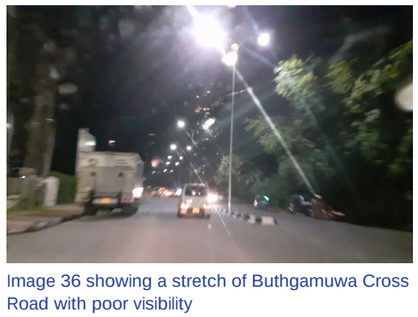


Image 36 showing a stretch of Buthgamuwa Cross Road with poor visibility

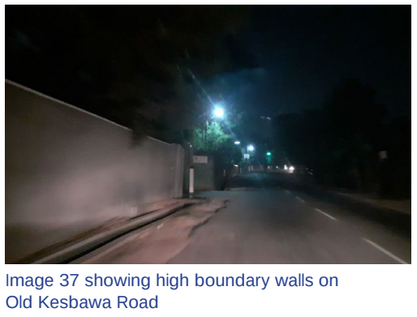
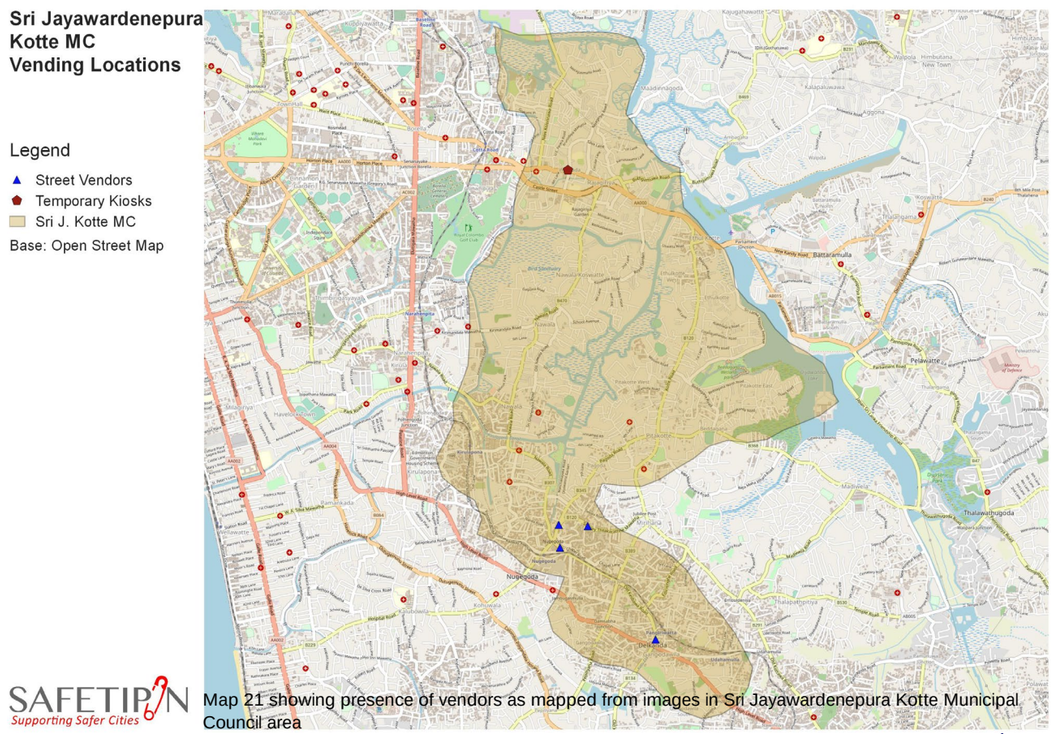


Image 37 showing high boundary walls on Old Kesbawa Road

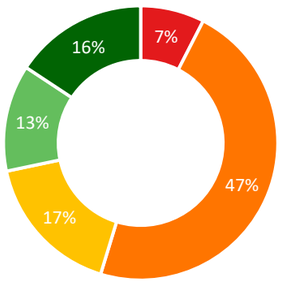


Map 21 showing presence of vendors as mapped from images in Sri Jayawardenepura Kotte Municipal Council area

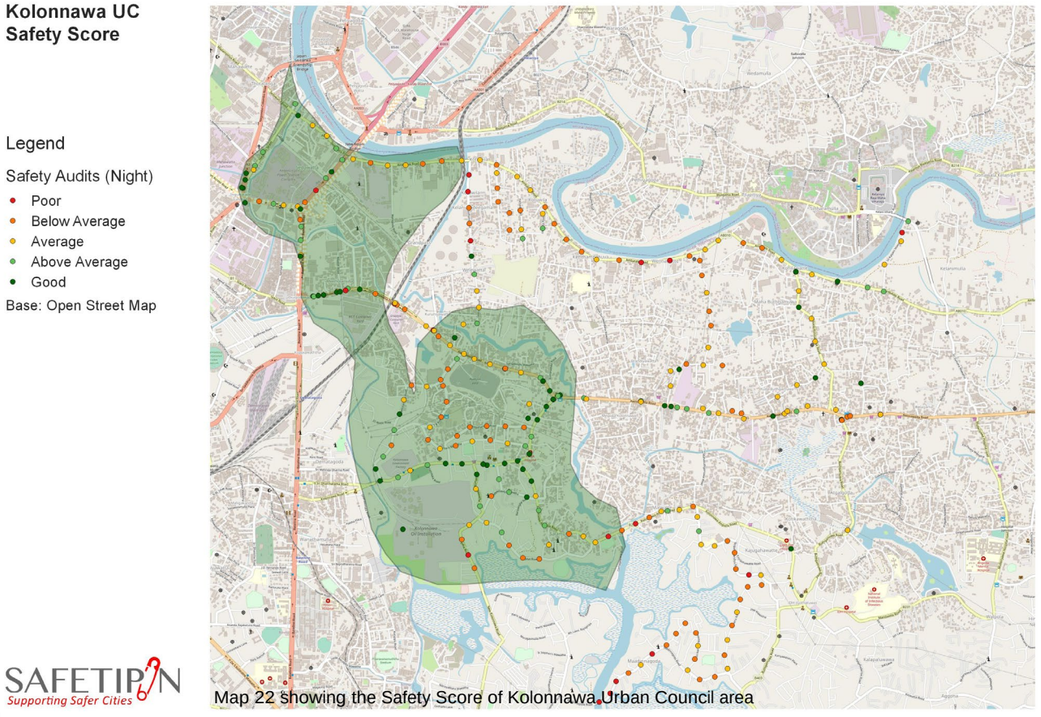
Kolonnawa Urban Council

Kolonnawa is a town within Colombo District with a population of 190,000. The Urban Council area is dominated by two canals, the Dematagoda and Kittampahuwa canals, and the Kelani River. The Urban Council's area is 28km^2 with a population density of 6,846km^2. The gender breakdown is 50.9% males and 49.1% female. The age breakdown is: 24.7% are 0-14 years (47,421), 68.1% 15-64 years (130,565), and 7.2% 65+ (13,701).

KOLONNAWA URBAN COUNCIL AREA

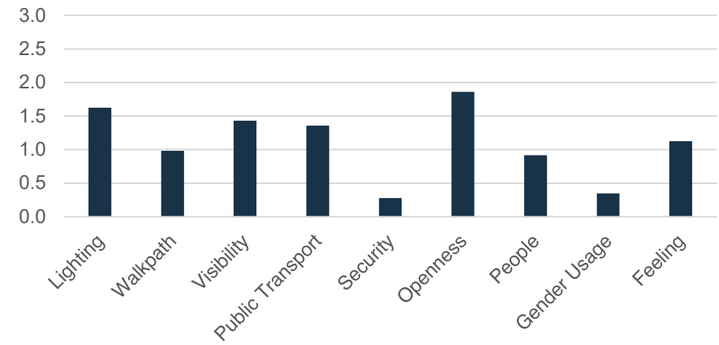


The number of audit points generated by using Safetipin Nite were 457 and My Safetipin were 120 in the area of Kolonnawa Urban Council. The map 22 below, shows the Safety Score for all the audit points. The safety score at an audit location reflects the aggregated rating of all the parameters. For each audit point it is a number between 0 and 5, 0 being Poor i.e. very unsafe and 5 being Good in terms of overall safety. More than half of the audit points have been rated low in terms of overall safety score. This indicates that the existing infrastructure has been rated poorly for most of the audited areas in Kolonnawa. A thorough analysis of all physical parameters follows.



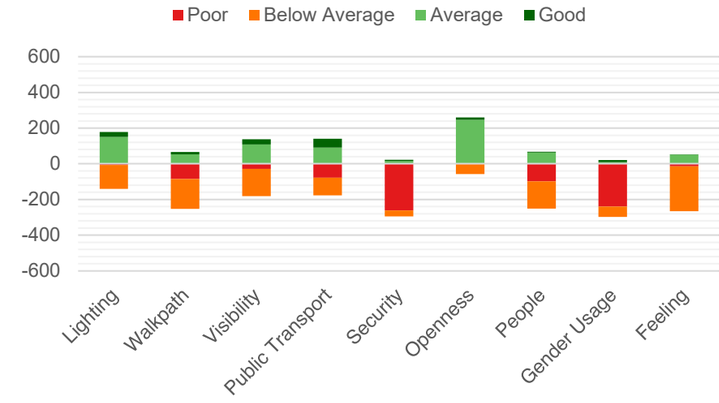
Map 22 showing the Safety Score of Kolonnawa Urban Council area

The average parameter rating graph 5 below indicates the average rating for each parameter on a scale of three. Each of the nine parameters are rated either 0,1, 2 or 3, wherer 3 is Good and 0 is Poor. As seen in the graph 5, Lighting, Visibility and Public Transport parameters have been rated the highest. However, when looked individually, they have not scored well on the scale of 3. Walkpath, People and Gender Usage are among the lowest rated parameters. The overall feeling of safety for Kolonnawa Urban Council area is rated below average.



Graph 5 showing average parameter rating on the scale of 3 for Kolonnawa Urban Council area

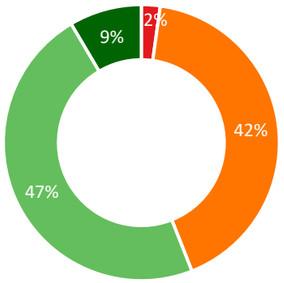
The parameter wise pin distribution graph below indicates the number of audit pins on the ‘y’ axis and break-up of ratings as negative (0/1) positive (2/3). As shown on the graph 6, the parameter of Gender Usage, and Security are rated poorly for most parts of Kolonnawa Urban Council area.



Graph 6 showing parameter wise pin distribution for Kolonnawa Urban Council area

9%

OF THE AREA HAS GOOD LIGHTING



The pie chart on the left indicates the percentage distribution of the ratings of audit points and the map 23 below represents the points geographically. 9% of the audited area has been rated good (Images 38 and 39). 2% of audit points have been identified as dark spots and 42% of the audited area have been identified as poorly lit spaces (Image 40 and 41). This is due to the streetlights being installed either along only one side of the road or along the central median (Map 24). This results in well-lit roads for vehicles but poorly-lit walkpath for the pedestrians. This geo-located data could be used by the authorities to review the condition of the streetlights and improving overall lighting at the identified points.

Image 38 showing well-lit New Kolonnawa Road

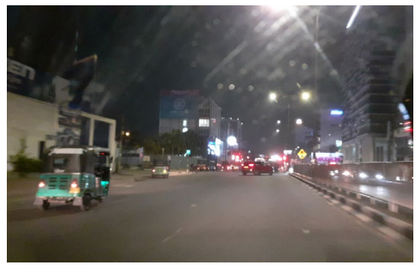


Image 39 showing well-lit Baseline Road

Image 40 showing leaves covering street lights on K Cyril C. Perera Mawatha Road

Image 41 showing off street lights on New Elevated Kelani Bridge Road

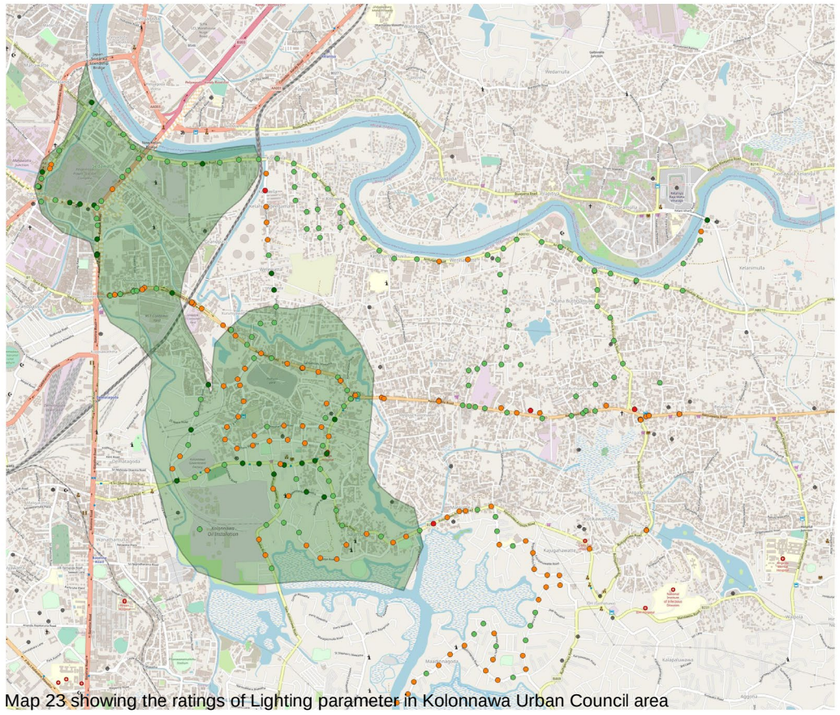
Kolonnawa UC Parameter Lighting

Legend

Safety Audits (Night)

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

Base: Open Street Map



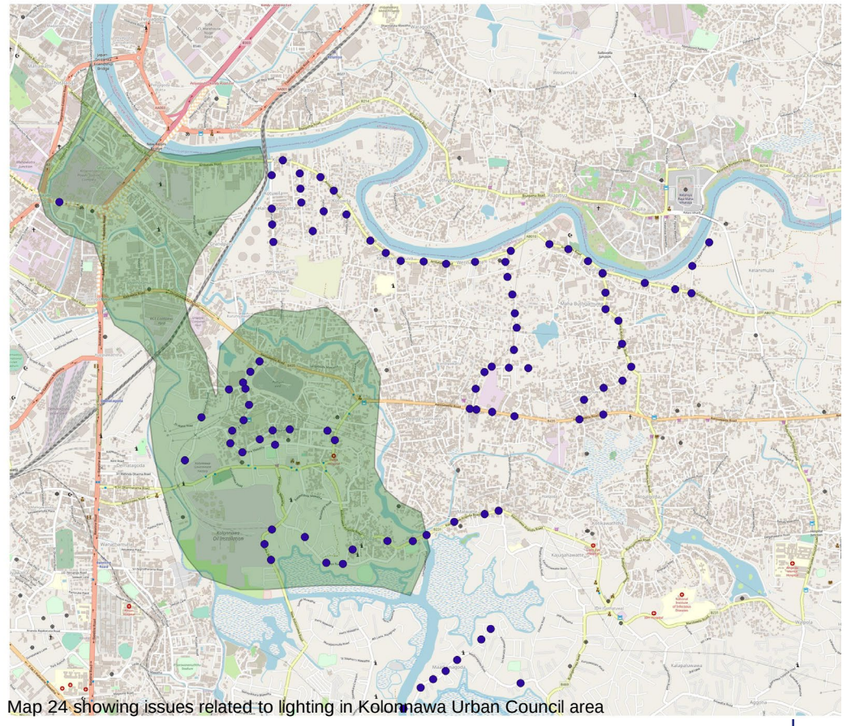
Map 23 showing the ratings of Lighting parameter in Kolonnawa Urban Council area

Kolonnawa UC Poor Lighting

Legend

- One Side SL
- Kolonnawa UC

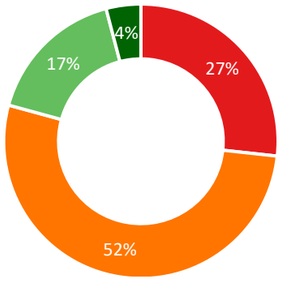
Base: Open Street Map



Map 24 showing issues related to lighting in Kolonnawa Urban Council area

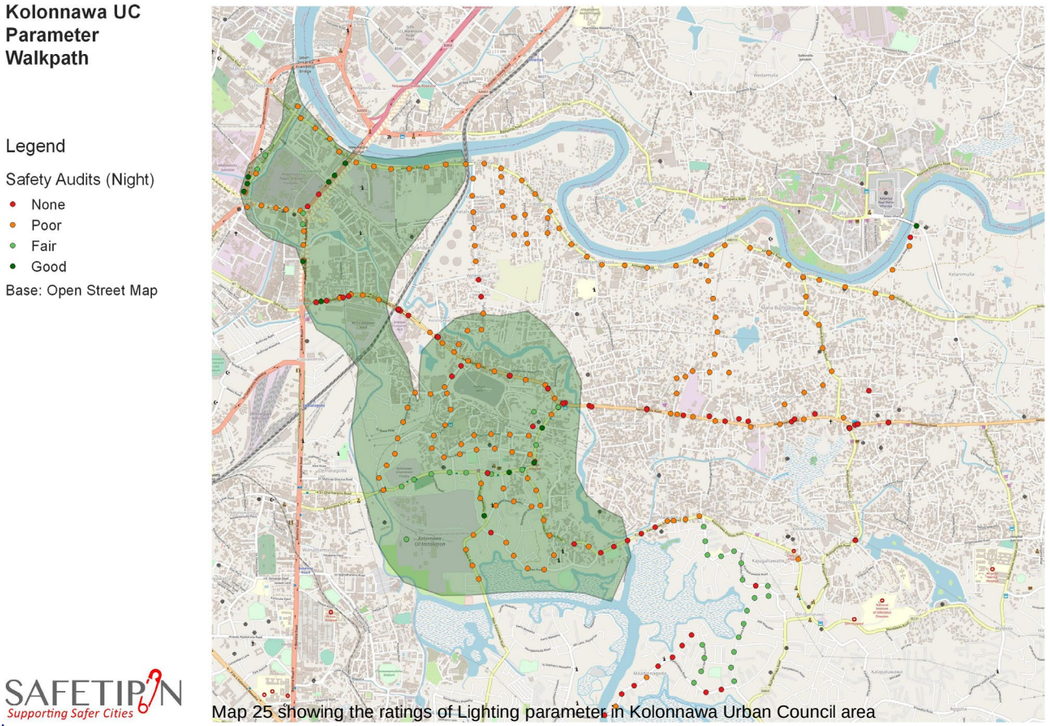
4%

OF THE AREA MAPPED HAS GOOD WALKPATH



Walkpath parameter indicates whether a person can comfortably walk at a place. This refer to the quality of a pavement or space left for pedestrians along the road. Only 4% of the area has proper pavement to walk. The pie chart on the left indicates the percentage distribution of the ratings of audit points and the map 25 below represents the points geographically. While some of the audit area has good pavement (Images 42 and 43 on the next page), more than half of the audited area has been identified having unpaved or no designated path for pedestrians (Images 44 and 45 and map 26 on the next page). This geolocated data could be used for up-gradation work and to identify the condition of walkpath in the area.

Kolonnawa UC Parameter Walkpath



Map 25 showing the ratings of Lighting parameter in Kolonnawa Urban Council area

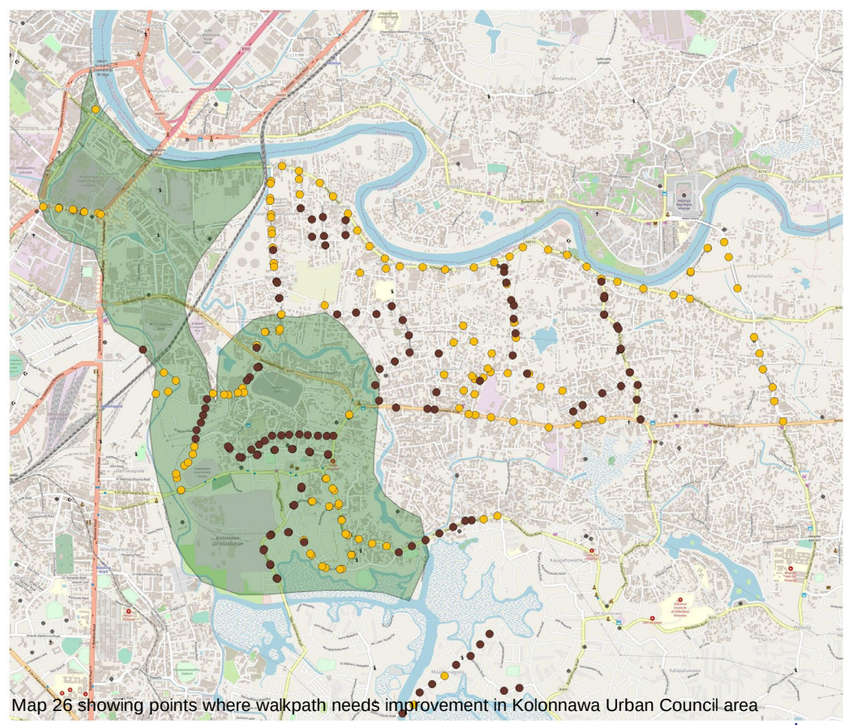
Image 42 showing good pavement on Bodhiraja Mawatha Road

Image 43 showing good pavement on Bandaranaike Mawatha Road

Image 44 showing unpaved pedestrian path on Kolonnawa Anagoda Road

Image 45 showing no pedestrian path on Welikada-Kohilawatte Road

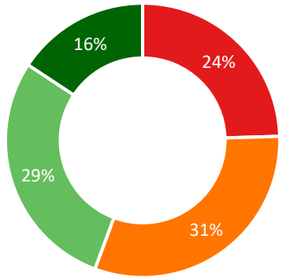
Kolonnawa UC Walkpath Issues



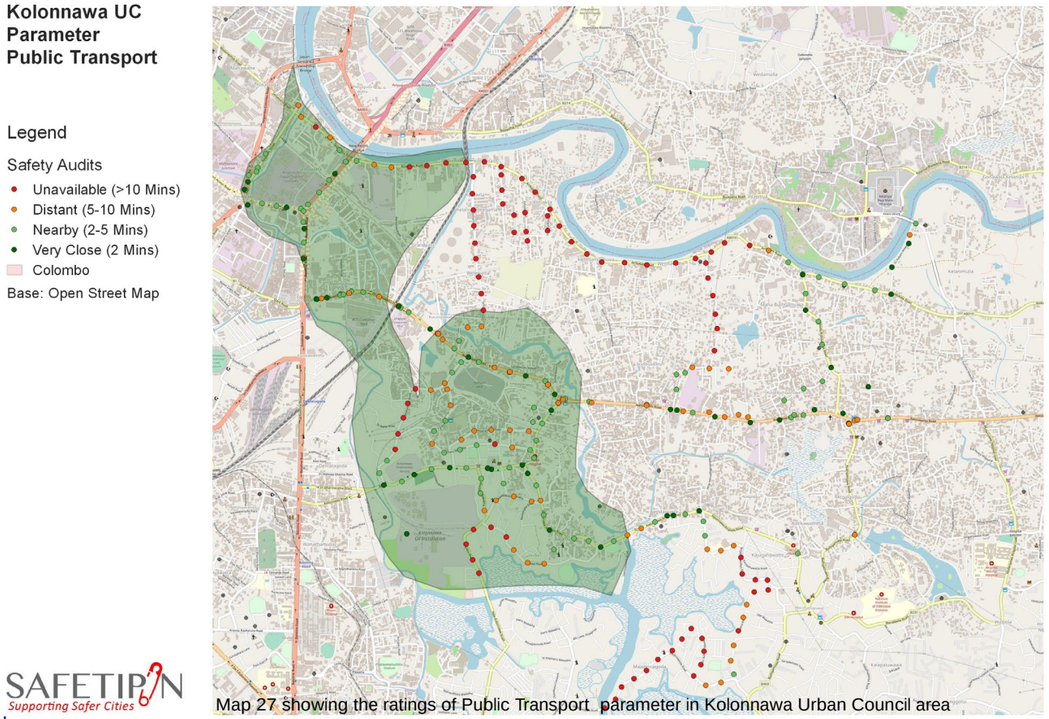
Map 26 showing points where walkpath needs improvement in Kolonnawa Urban Council area

45%

OF THE AUDITS POINTS HAVE GOOD ACCESSIBILITY TO PUBLIC TRANSPORT



Public Transport refers to the ease of accessing any mode of public transport i.e. rail/bus/taxi/three-wheeler etc. and is measured in terms of the distance to the nearest mode. 45% of the audited area has public transport stands within 5 mins walking distance, whereas 24% of the audited area does not have formal transit stands/stops reachable within 10 minutes walking distance and 31% of the audited area has transport accessible within 5-10 mins This data can be used by the authorities to strengthen the overall transit network of the city and make public transport more accessible by building IPT stops to support the bus and train network. The map 28 on page 47 shows the bus stops and train stations which were audited. Images on page 47 indicates the difference in infrastructure at various bus stops. There is a need to upgrade some of the existing bus stops with proper signage and seating infrastructure



Map 27 showing the ratings of Public Transport parameter in Kolonnawa Urban Council area

Image 46 showing a bust stop marked by a signage

Image 47 showing an IPT stand on Kolonnawa Road

Image 48 showing a bus stop without shelter

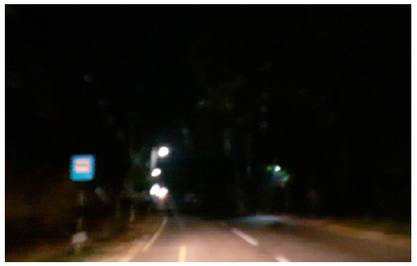
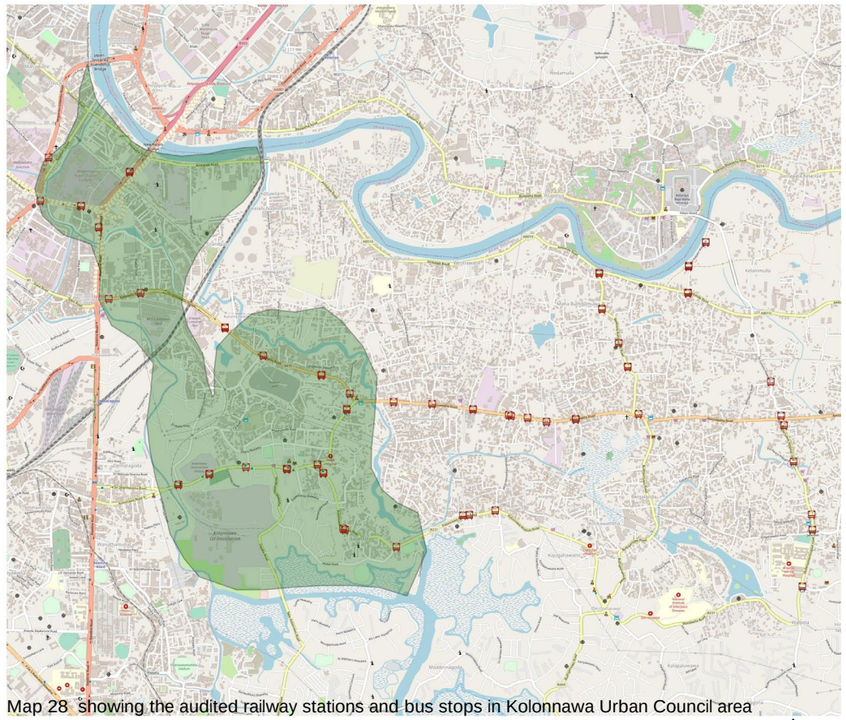


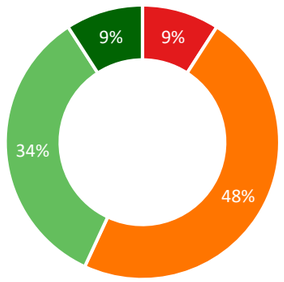
Image 49 showing a bus stop without shelter



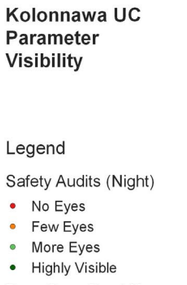
Map 28 showing the audited railway stations and bus stops in Kolonnawa Urban Council area

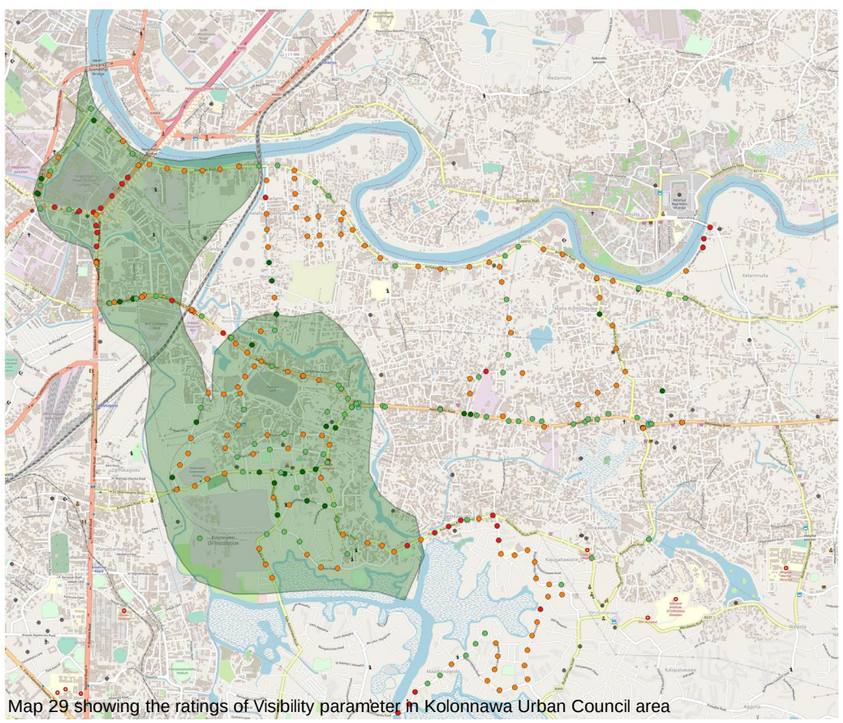
43%

OF THE AREA MAPPED HAS GOOD VISIBILITY



Visibility parameter measures presence of vendors, shops and building entrances facing towards the streets and public areas, also considered as “eyes on the street”. This gives a sense of natural surveillance as one can be seen while walking on the road. The pie chart on the left explains that 43% of the points have been rated good in terms of overall visibility. Most of the audit area has limited visibility. When data is represented geographically (map 29 below) it is seen that, most of the poorly rated points are along the primary roads of the council area. Very few vendors and hawkers were found in this area resulting in poor visibility due to low natural surveillance. Some of the vending locations were identified and mapped as seen in map 30 on page 49.





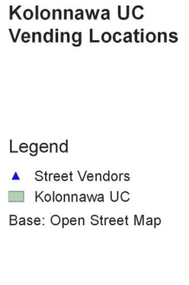
Map 29 showing the ratings of Visibility parameter in Kolonnawa Urban Council area

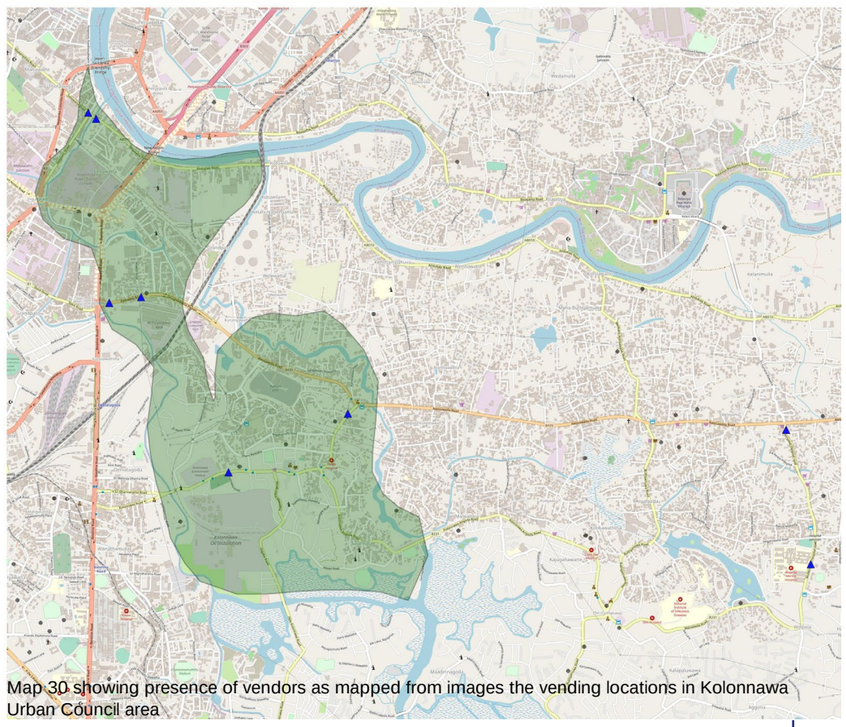
Image 50 showing a stretch of Sedawatta Road with high visibility

Image 51 showing a stretch of Sedawatta Road with high visibility

Image 52 showing a stretch of Mulleriyawa Hospital Road with poor visibility

Image 53 showing a stretch of Kaduwela Road with poor visibility



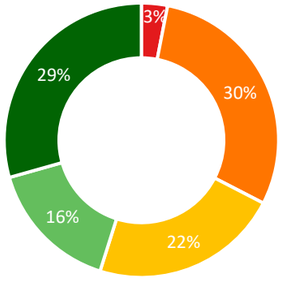


Map 30 showing presence of vendors as mapped from images the vending locations in Kolonnawa Urban Council area

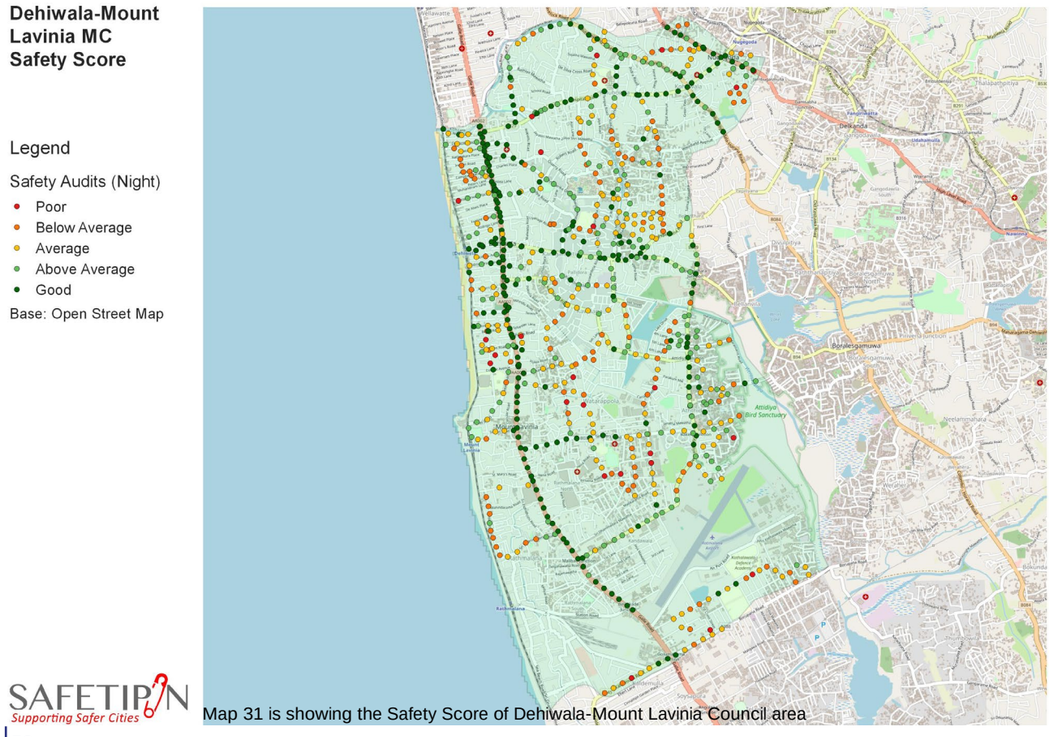
Dehiwala- Mount Lavinia Municipal Council

Dehiwala-Mount Lavinia covers 21 km^2 and has a total population of 184,468 (population density 8,784/km^2). It lies to the south of Colombo Municipal Council, separated by the Dehiwala canal, which acts as a northern boundary of the municipality. Acting as a suburb of Colombo, Dehiwala-Mount Lavinia has experienced population growth and rapid industrialization and urbanization in recent years. Galle Road, which connects Colombo to the Southern Province, bisects the Municipal Council. It is home to the country's National Zoological Gardens and public beaches as well as wetlands around the Weras Ganga river and Bolgoda Lake. The Beallanwila and Attidiya marshes are noted for their biodiversity and are considered as ecologically protected zones.

DEHIWALA-MOUNT LAVINIA MUNICIPAL COUNCIL AREA

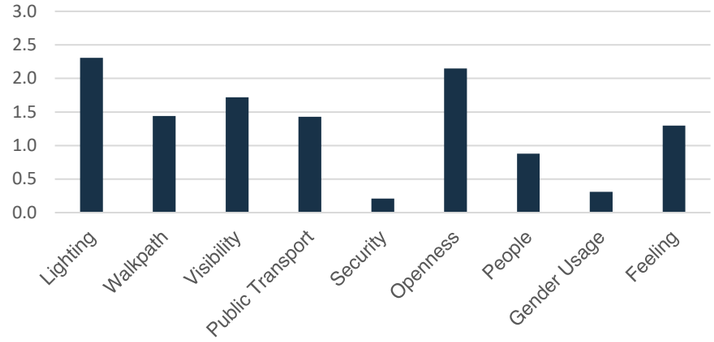


The number of audit points generated by using Safetipin Nite were 1,435 and My Safetipin were 95 in the area of Dehiwala Mount Lavinia Municipal Council. The map 31 below, shows the Safety Score for all the audit points. The Safety Score at an audit location reflects the aggregated rating of all the parameters. For each audit point, it is a number between 0 and 5, 0 being Poor i.e. Very Unsafe and 5 being Good in terms of overall safety. As seen in the map, the primary roads of the audit area fared well in terms of overall safety as compared to secondary roads. A thorough analysis of all Physical Parameters follows.



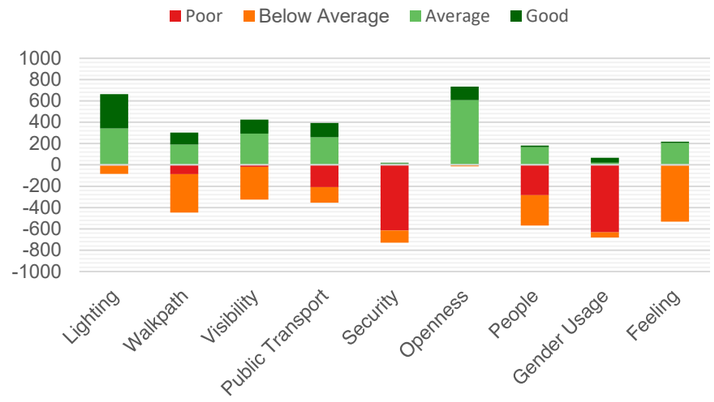
Map 31 is showing the Safety Score of Dehiwala-Mount Lavinia Council area

The average parameter rating graph 7 below indicates the average rating for each parameter on a scale of three. Each of the nine parameters are rated either 0,1, 2 or 3, where 3 is Good and 0 is Poor. As seen on the graph 7, Lighting parameter has been rated the highest, followed by other parameters Walkpath, Public Transport and Visibility. Gender Usage have been rated the lowest. The overall feeling of safety for Dehiwala-Mount Lavinia Municipal Council area is rated below average.



Graph 7 showing average parameter rating on the scale of 3 for Dehiwala-Mount Lavinia Municipal Council area

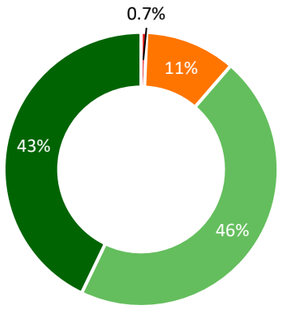
The parameter wise pin distribution graph 8 below indicates the number of audit pins on the ‘y’ axis and break-up of ratings as negative (0/1) positive (2/3). As shown in the graph 8 parameter of Gender Usage and Security are rated poorly for most parts of the area. Walkpaths and Transport needs to be improved in some areas of the council.



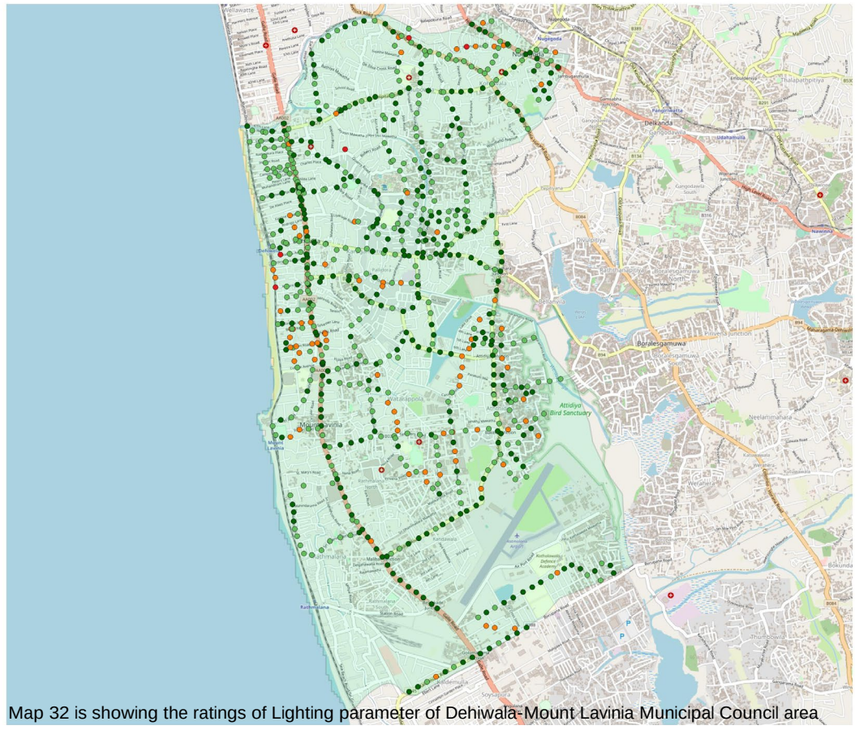
Graph 8 showing parameter wise pin distribution for Dehiwala-Mount Lavinia Municipal Council area

43%

OF THE AREA HAS GOOD LIGHTING



43 % of the audited area has been rated good in terms of overall lighting. The pie chart on the left indicates the percentage distribution of the ratings of audit points and the map 32 below represents the points geographically. While many of the audited area has been rated good (Images 54 and 55). 11% of audit points have been identified as poorly lit spaces (Image 56 and 57). This is due to non-functional street lights (Off SL) or absence of street lights as shown in the map 33 below. This geo-located data could be used by the authorities to review the condition of the streetlights and improving overall lighting at the identified points.



Map 32 is showing the ratings of Lighting parameter of Dehiwala-Mount Lavinia Municipal Council area

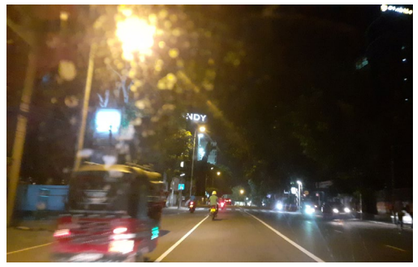


Image 54 showing well-lit High Level Road

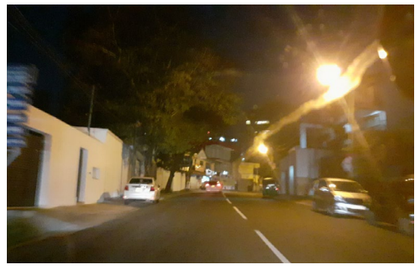
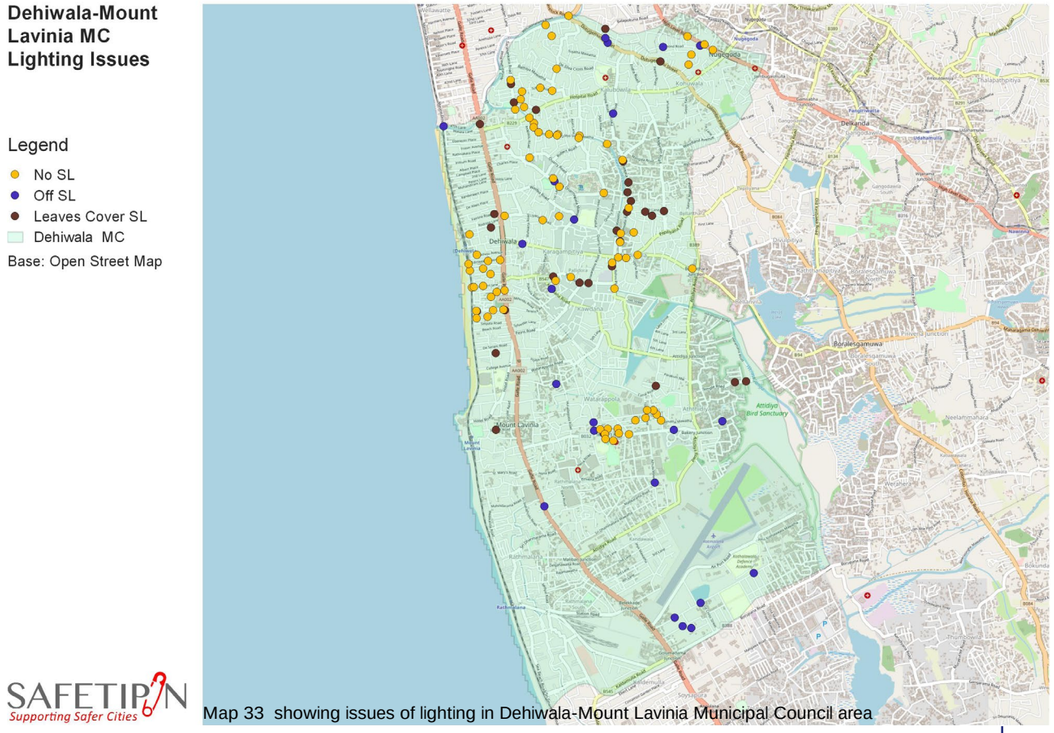


Image 55 showing well-lit Allen Ave Road

Image 56 showing leaves covering the street light on Anderson Road

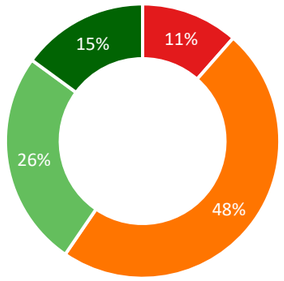
Image 57 showing School Avenue Road with no street light



Map 33 showing issues of lighting in Dehiwala-Mount Lavinia Municipal Council area

15%

OF THE AREA MAPPED HAS GOOD WALKPATH



Walkpath parameter indicates whether a person can comfortably walk at a place. This refer to the quality of a pavement or space left for pedestrians along the road. Only 15% of the area has proper pavement to walk. The pie chart on the left indicates the percentage distribution of the ratings of audit points and the map 34 below represents the points geographically. While some of the audit area has been rated good (Images 58 and 59 on the next page), most of the audit points have been identified as having unpaved or no designated path for pedestrians (Images 60 and 61 and map 35 on the next page). This geolocated data could be used for upgradation work and to identify the condition of walkpath in the area.

Image 58 showing good pavement on Union Pl Road

Image 59 showing good pavement on Templers Road

Image 60 showing unpaved pedestrian path on Anagarika Dharamapal Mawatha Road

Image 61 showing absence of dedicated pedestrian path on Kawdana Road

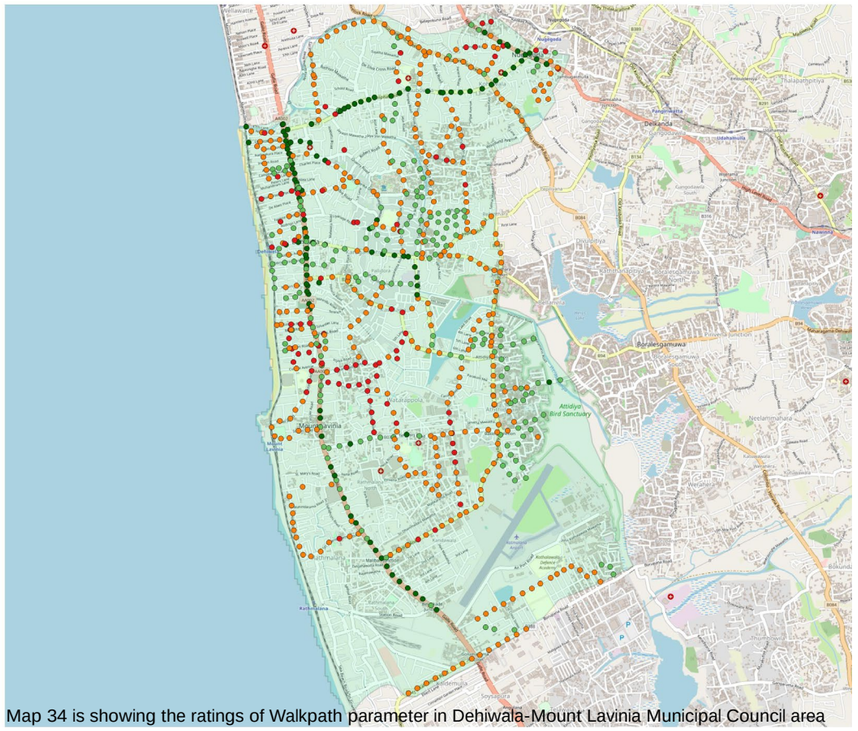
Dehiwala-Mount Lavinia MC Parameter Walkpath

Legend

Safety Audits (Night)

- None
- Poor
- Fair
- Good

Base: Open Street Map



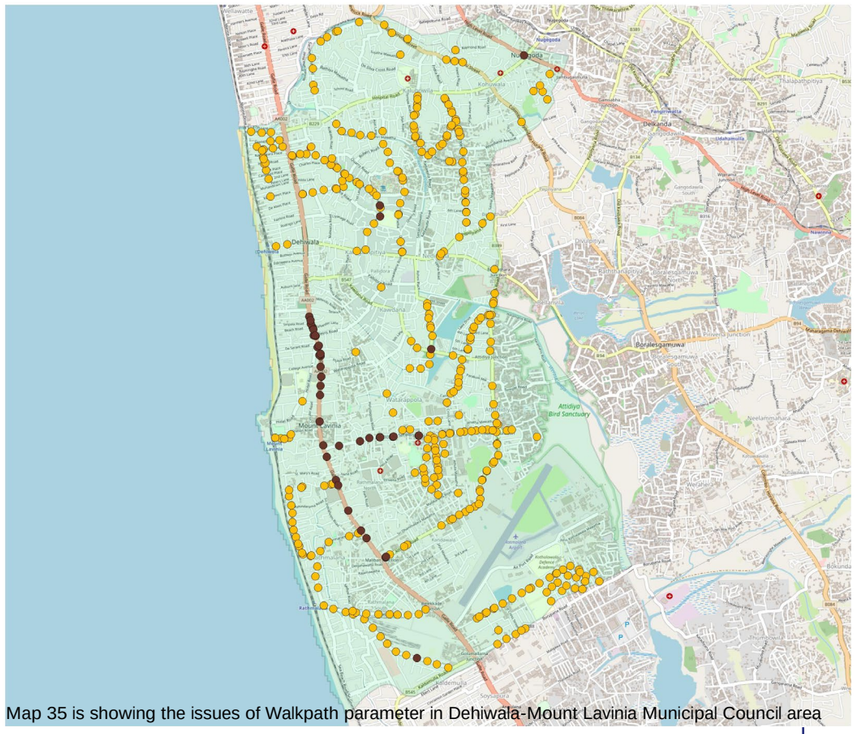
Map 34 is showing the ratings of Walkpath parameter in Dehiwala-Mount Lavinia Municipal Council area

Dehiwala-Mount Lavinia MC Walkpath Issues

Legend

- Broken Pavement
- Unpaved Path
- Dehiwala MC

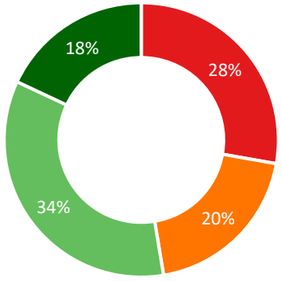
Base: Open Street Map



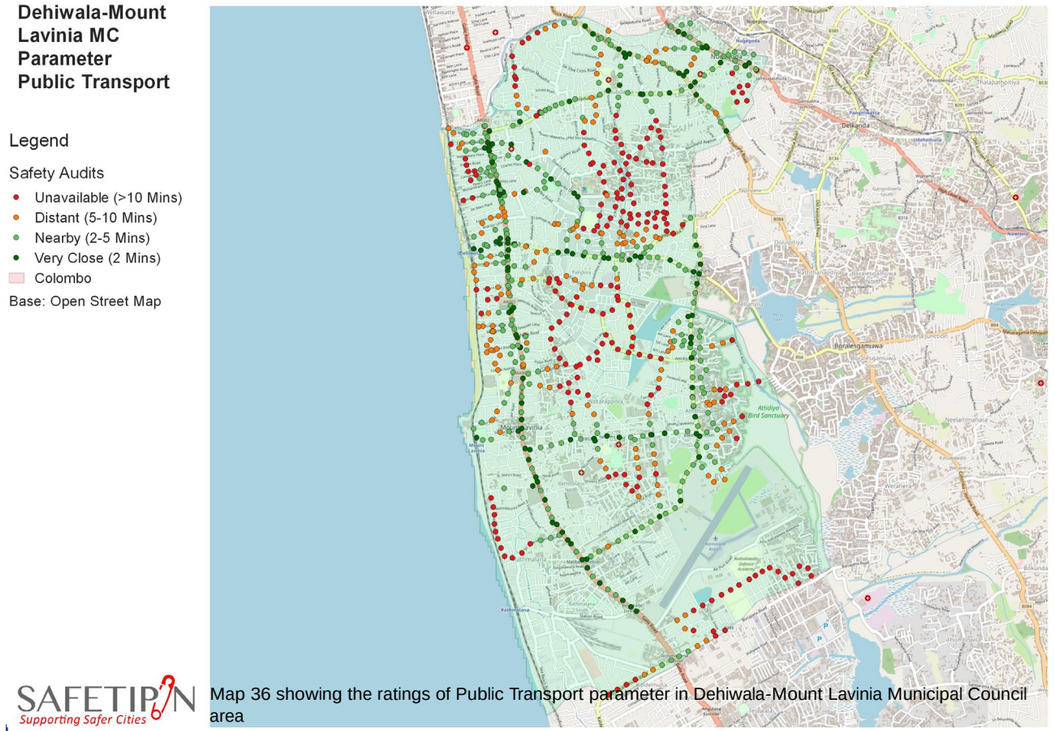
Map 35 is showing the issues of Walkpath parameter in Dehiwala-Mount Lavinia Municipal Council area

52%

OF THE AUDITS POINTS HAVE GOOD ACCESSIBILITY TO PUBLIC TRANSPORT



Public Transport refers to the ease of accessing any mode of public transport i.e. rail/bus/taxi/three-wheeler etc and is measured in terms of the distance to the nearest mode. 52% of the audited area has transport stand within 5 mins of walking distance whereas 20% of the audited area has formal transit stands/stops reachable within 5-10 minutes walking distance and 28% of the audited area does not have public transport stands within 10 mins of walking distance. This data can be used by the authorities to strengthen the overall transit network of the city and make public transport more accessible by building IPT stops to support the bus and train network. The map 37 on next page shows the bus stops and train stations which were audited. Images on the page 59 indicates the difference in infrastructure at various bus stops. There is a need to upgrade some of the existing bus stops with proper signage and seating infrastructure.



Map 36 showing the ratings of Public Transport parameter in Dehiwala-Mount Lavinia Municipal Council area

Image 62 showing a bus stop with a signage and a shelter

Image 63 showing a bus stop with a shelter

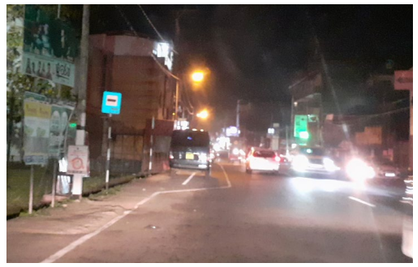
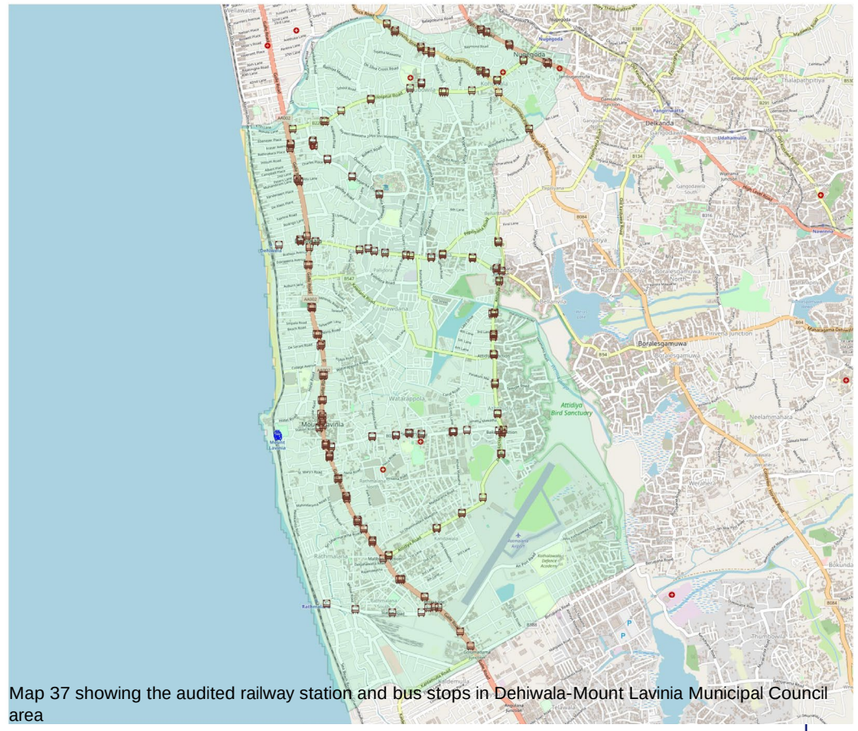


Image 64 showing a bus stop without a shelter

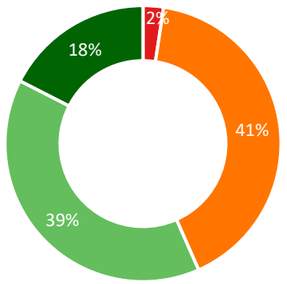
Image 65 showing bus stop with a signage



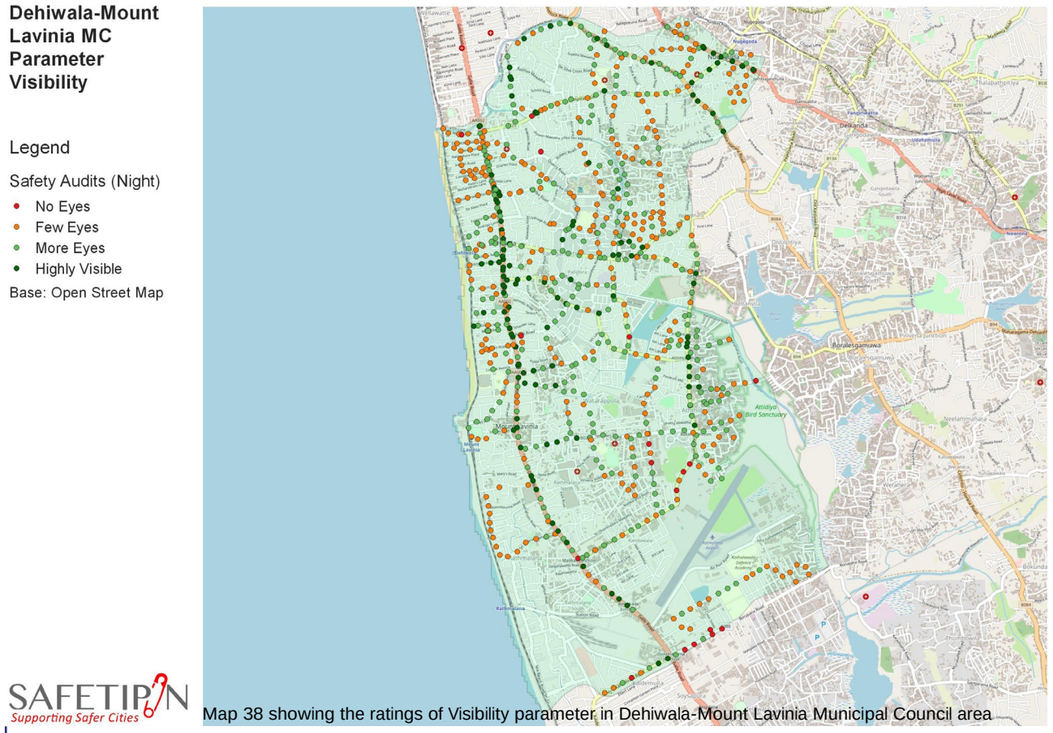
Map 37 showing the audited railway station and bus stops in Dehiwala-Mount Lavinia Municipal Council area

57%

OF THE AREA MAPPED HAS GOOD VISIBILITY



Visibility parameter measures presence of vendors, shops and building entrances facing towards the streets and public areas, also considered as “eyes on the street”. This gives a sense of natural surveillance as one can be seen while walking on the road. The pie chart on the left explains that 57% of the points have been rated good in terms of overall visibility. When data is represented geographically (map 38 below) it is seen that, most of the streets are having good visibility. Along some of the streets, vendors and hawkers were found acting as natural surveillance. Some of the vending locations were identified and mapped as seen in map 39 on the page 61



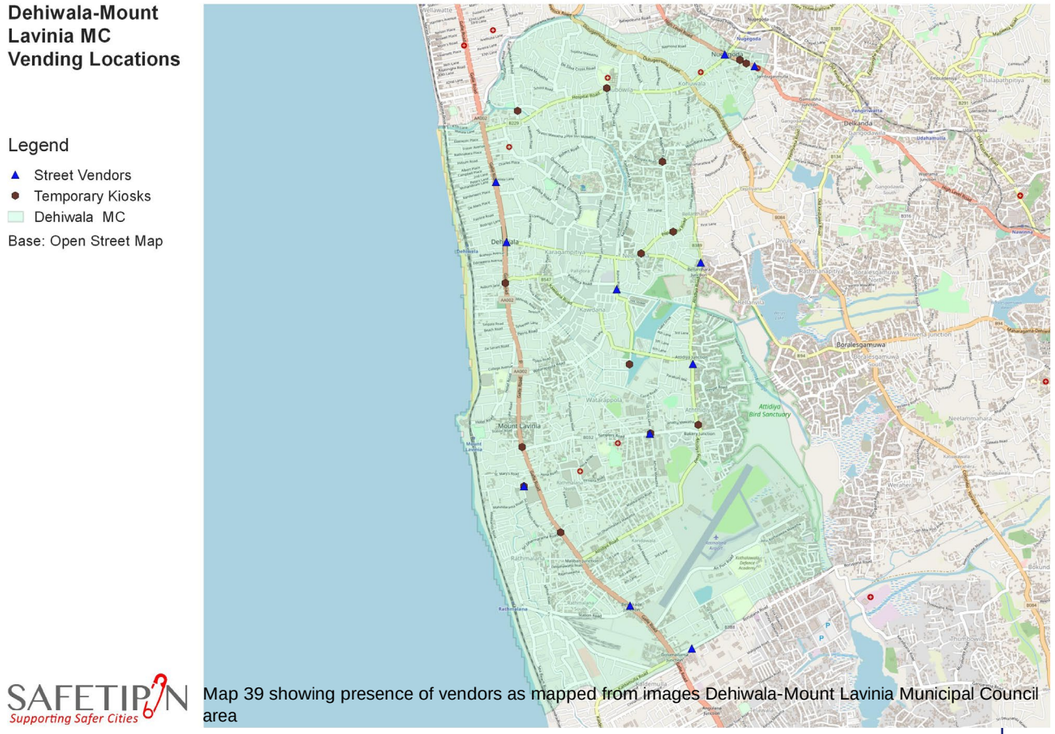
Map 38 showing the ratings of Visibility parameter in Dehiwala-Mount Lavinia Municipal Council area

Image 66 showing good visibility on Attidiya Road

Image 67 showing a stretch Galle Road with high visibility

Image 68 showing a stretch on Borupana Road with poor visibility

Image 69 showing a stretch with poor visibility on St. Rita’s Road

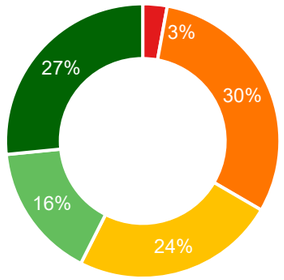


Map 39 showing presence of vendors as mapped from images Dehiwala-Mount Lavinia Municipal Council area

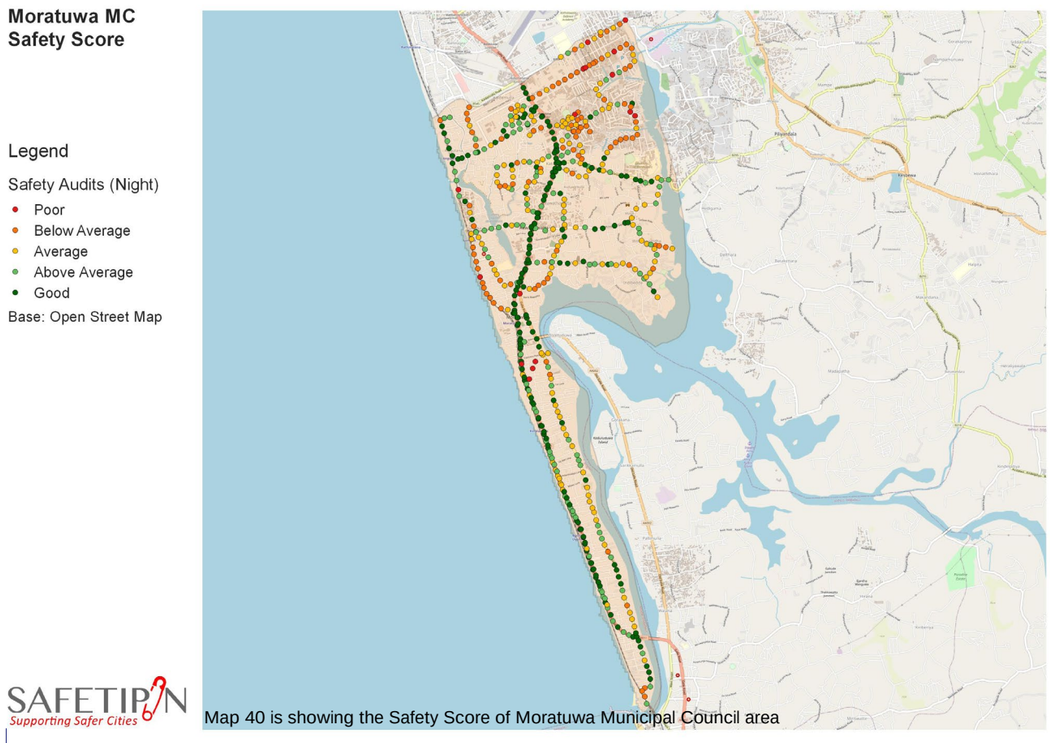
Moratuwa Municipal Council

Moratuwa has a total area of 23km^2 with a population of 168,280 and a population density of 7,317/km^2. The gender breakdown is 51.1% males and 48.9% female. The age breakdown is: 21.1% are 0-14 years (35,485), 70.5% 15-64 years (118,594), and 8.4% 65+ (14,201). Moratuwa is well known for its carpentry and furniture and its coastal fisheries industry. Moratuwa is linked to Dehiwala-Mount Lavinia and Colombo via Galle Road. The coastal railway from Colombo to Matara runs through Moratuwa, and railway stations at Angulana, Lunawa, Moratuwa, Koralawella and Egodauyana serve the residents of Moratuwa

MORATUWA MUNICIPAL COUNCIL AREA

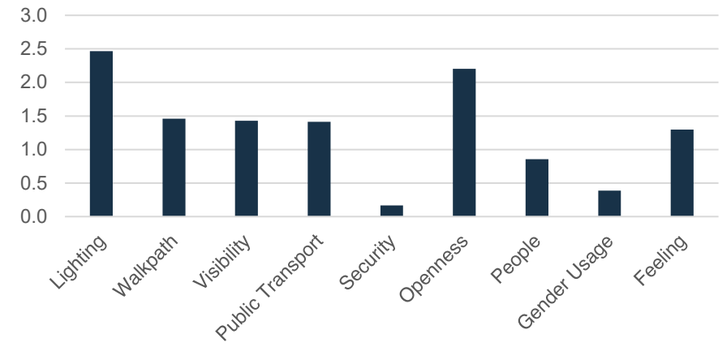


The number of audit points generated by using Safetipin Nite were 1,121 and My Safetipin were 46 in the area of Moratuwa Municipal Council. The map 40 below, shows the Safety Score for all the audit points. The safety score at an audit location reflects the aggregated rating of all the parameters. For each audit point it is a number between 0 and 5, 0 being Poor i.e. Very Unsafe and 5 being Good in terms of overall safety. The audit points on primary and secondary roads have been rated far better than the inner tertiary lanes in the council area. A thorough analysis of all Physical Parameters follows.



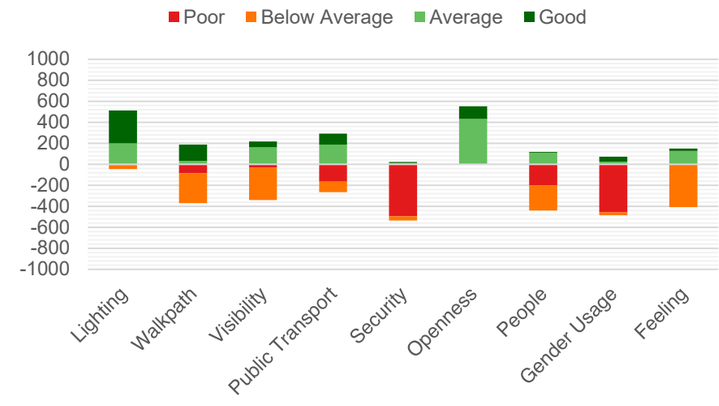
Map 40 is showing the Safety Score of Moratuwa Municipal Council area

The average parameter rating graph 9 below indicates the average rating for each parameter on a scale of three. Each of the nine parameters are rated either 0,1, 2 or 3, where 3 is Good and 0 is Poor. As seen on the graph, Lighting parameter has been rated the highest, followed by other parameters Walkpath, Public Transport and Visibility. People and Gender Usage are among the least rated parameters. The overall feeling of safety for Moratuwa Municipal Council area is rated average.



Graph 9 showing average parameter rating on the scale of 3 for Moratuwa Municipal Council area

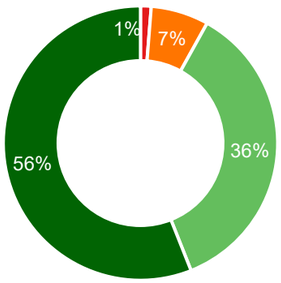
The parameter wise pin distribution graph 10 below indicates the number of audit pins on the ‘y’ axis and break-up of ratings as negative (0/1) positive (2/3). As shown on the graph 10 the parameter of Gender Usage, and Security are rated poorly for most parts of the area. Walkpath and Transport needs to be improved in few parts of the area.



Graph 10 showing parameter wise pin distribution Moratuwa Municipal Council area

56%

OF THE AREA HAS GOOD LIGHTING



56% of the audited area has been rated good in terms of overall lighting. The pie chart on the left indicates the percentage distribution of the ratings of audit points and the map 41 below represents the points geographically. While most of the audited area has been rated good (Images 70 and 71), 1% of the audited points have been identified as dark spots (No SL) and 7% of audit points have been identified as poorly lit spaces (Image 72 and 73). This is due to non-functional street lights (Off SL) or absence of street lights as shown in the map 42 below. This geo-located data could be used by the authorities to review the condition of the streetlights and improving overall lighting at the identified points.

Image 70 showing well lit Galle Road New Deviation

Image 71 showing good lighting condition on De- Soysa Road

Image 72 showing off street lights on some points of Galle Road New Deviation

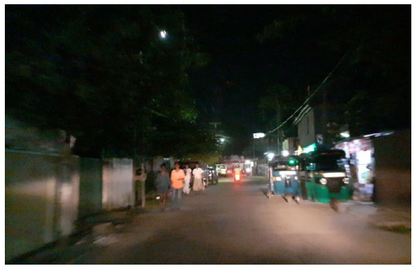


Image 73 showing leaves covering the street lights on Shasana Jothi Mawatha Road

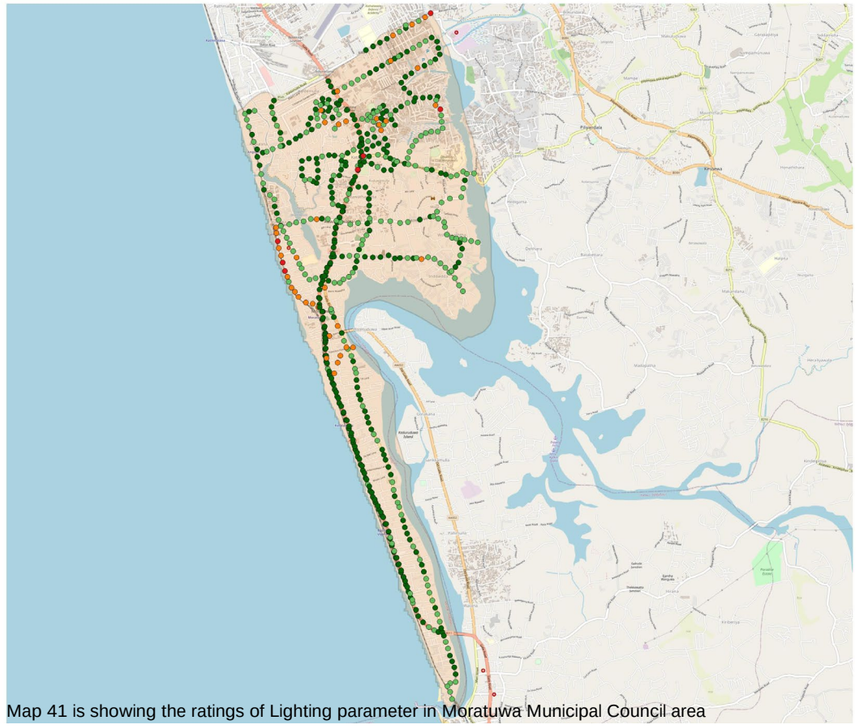
Moratuwa MC Parameter Lighting

Legend

Safety Audits (Night)

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

Base: Open Street Map



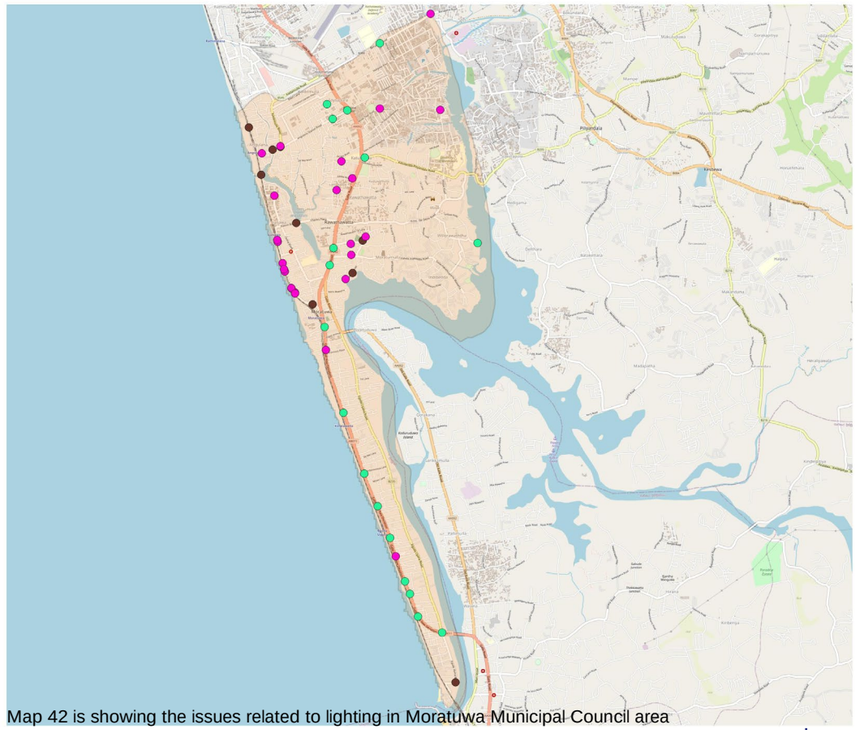
Map 41 is showing the ratings of Lighting parameter in Moratuwa Municipal Council area

Moratuwa MC Lighting Issues

Legend

- No SL
- Off SL
- Leaves Cover SL
- Moratuwa MC

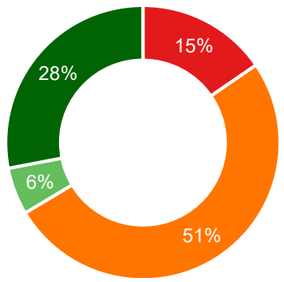
Base: Open Street Map



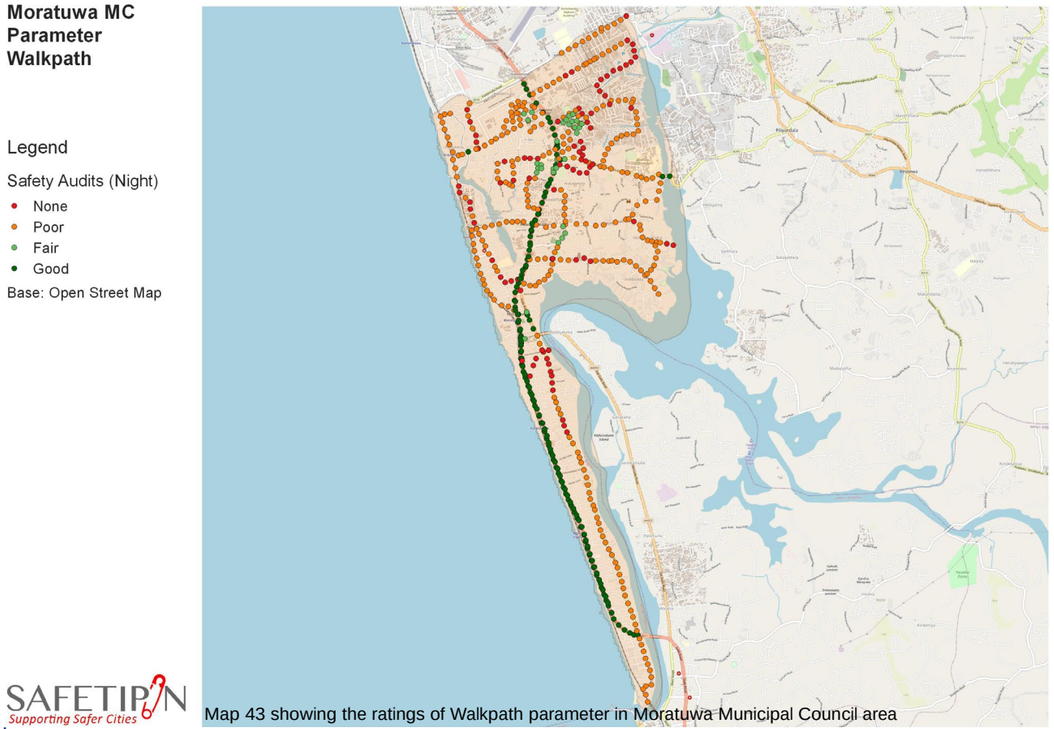
Map 42 is showing the issues related to lighting in Moratuwa Municipal Council area

34%

OF THE AREA MAPPED HAS GOOD WALKPATH



Walkpath parameter indicates whether a person can comfortably walk at a place. This refer to the quality of a pavement or space left for pedestrians along the road. Only 34% of the mapped area has proper pavement to walk. The pie chart on the left indicates the percentage distribution of the ratings of audit points and the map 43 below represents the points geographically. While some of the audited area has been rated good (Images 74 and 75 and map 44 on the next page), more than half of the audit points have been identified as having unpaved or no designated path for pedestrians (Images 76 and 77 on the next page). This geo-located data could be used for up-gradation work and to identify the condition of walkpath in the area.



Map 43 showing the ratings of Walkpath parameter in Moratuwa Municipal Council area

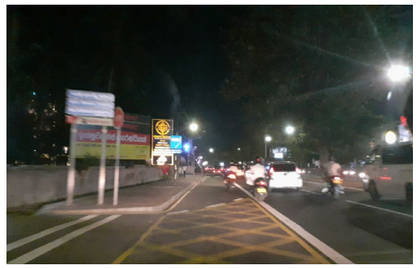


Image 74 showing good pavement on Galle Road

Image 75 showing paved path on Galle Road

Image 76 showing unpaved pedestrian path on Koralawella Road

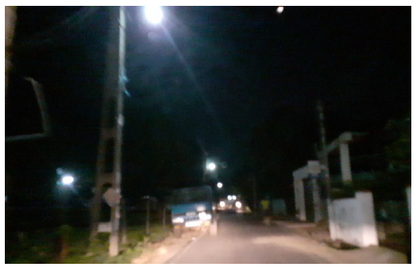
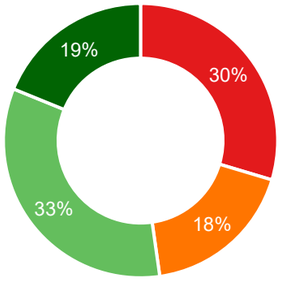


Image 77 showing unpaved pedestrian path on Sri Rahula Mawattha Road

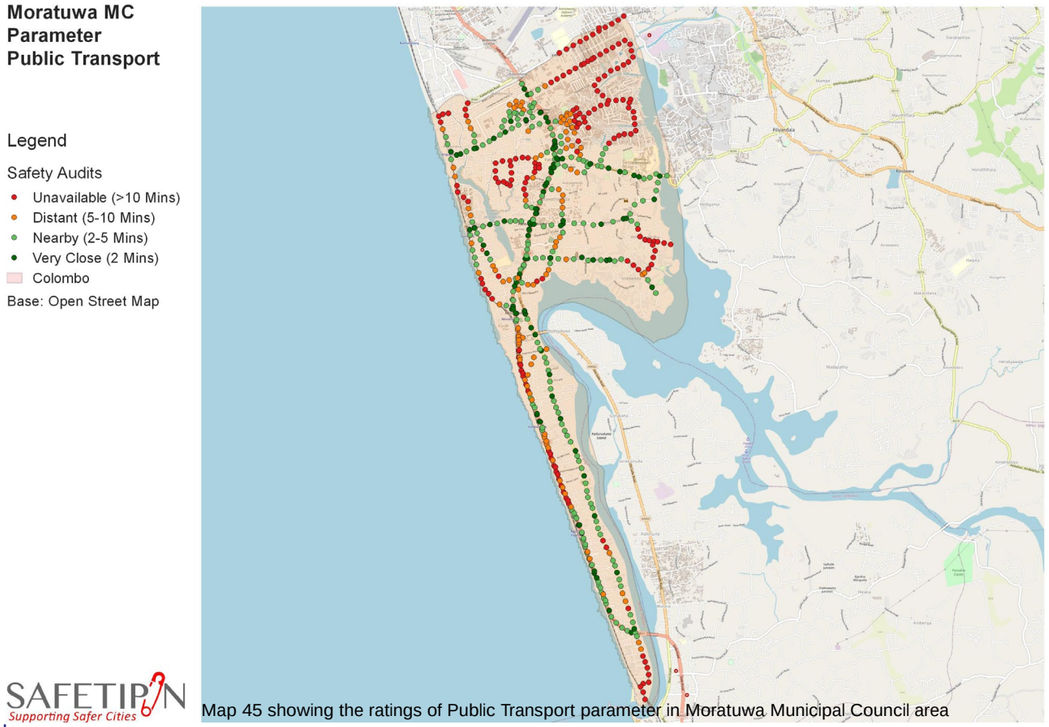
Map 44 showing points where walkpath needs improvement in the Moratuwa Municipal Council area

52%

OF THE AUDITS POINTS HAVE GOOD ACCESSIBILITY TO PUBLIC TRANSPORT



Public Transport refers to the ease of accessing any mode of public transport i.e. rail/bus/taxi/three-wheeler etc and is measured in terms of the distance from the nearest mode. 52% of the mapped area has public transport stands within 5 mins walking distance, whereas 18% of the mapped area has public transport stand within 5-10 min of walking distance and 30% of the audited area does not have formal transit stands/stops reachable within 10 minutes walking distance. This data can be used by the authorities to plan or improve the overall transit network of the city and make public transport more accessible by building IPT stops to support the bus and train network. The map 46 on page 71 shows the bus stops and train stations which were audited. Images on the page 71 indicates the difference in infrastructure at various bus stops. There is a need to upgrade some of the existing bus stops with proper signage and seating infrastructure



Map 45 showing the ratings of Public Transport parameter in Moratuwa Municipal Council area

Image 78 showing a bus stop with a shelter

Image 79 showing a bus stop with signage

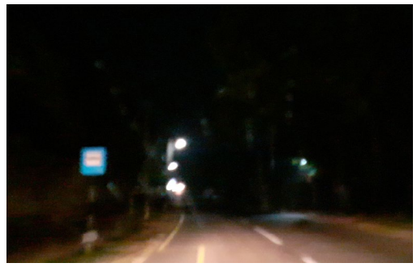
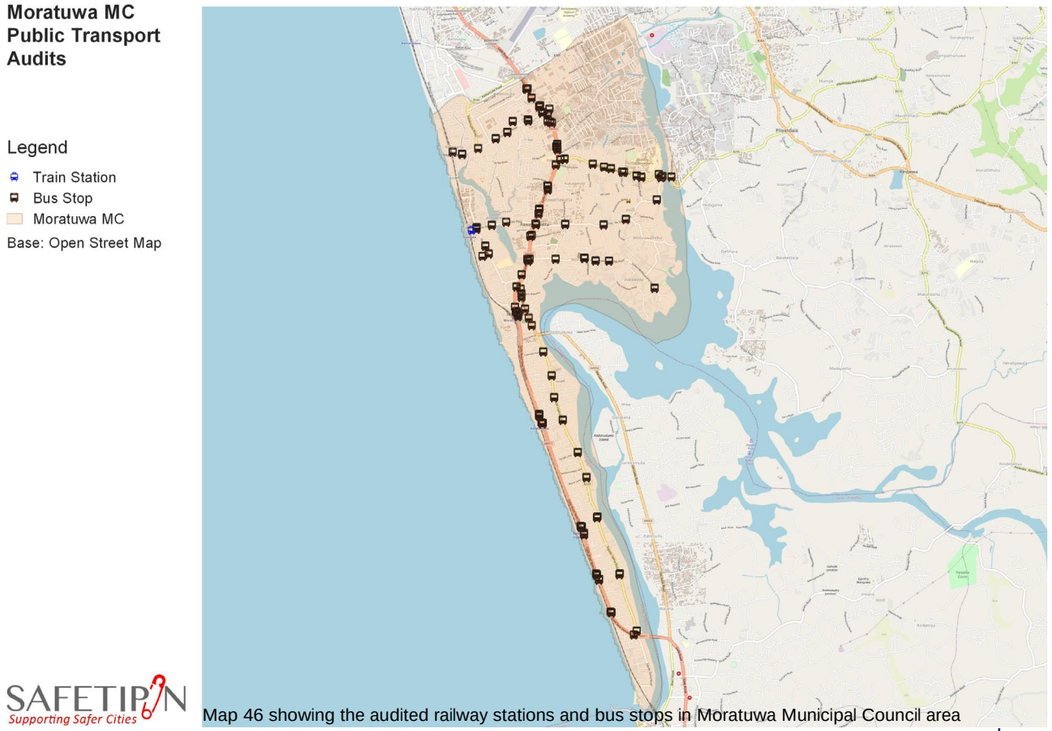


Image 80 showing a bus stop without a shelter

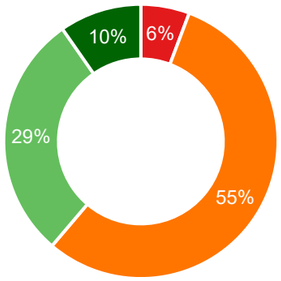
Image 81 showing a bus stop without a shelter



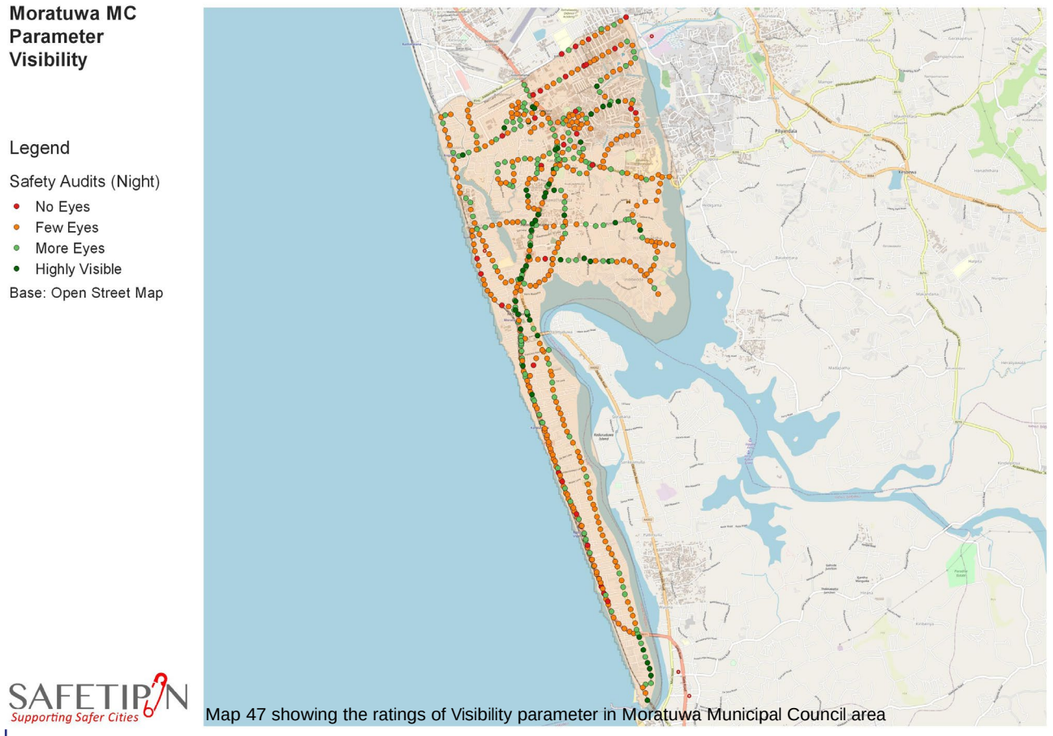
Map 46 showing the audited railway stations and bus stops in Moratuwa Municipal Council area

39%

OF THE AREA MAPPED HAS GOOD VISIBILITY



Visibility parameter measures presence of vendors, shops and building entrances facing towards the streets and public areas, also considered as eyes on the street. This gives a sense of natural surveillance as one can be seen while walking on the road. The pie chart on the left explains that 39% of the points have been rated good in terms of overall visibility. However, most of the audit area has limited visibility. When data is represented geographically (map 47 below) it is seen that, most of the poorly rated points are along the secondary roads of the council area. On the main roads, a few vendors and hawkers were found acting as natural surveillance. Some of the vending locations were identified and mapped as seen in map 48 on the next page.



Map 47 showing the ratings of Visibility parameter in Moratuwa Municipal Council area

Image 82 showing good visibility on Galle Road

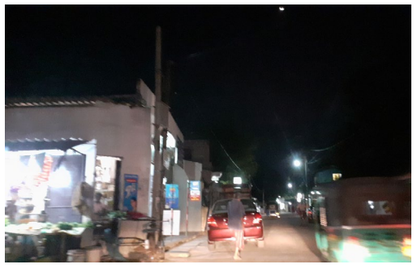
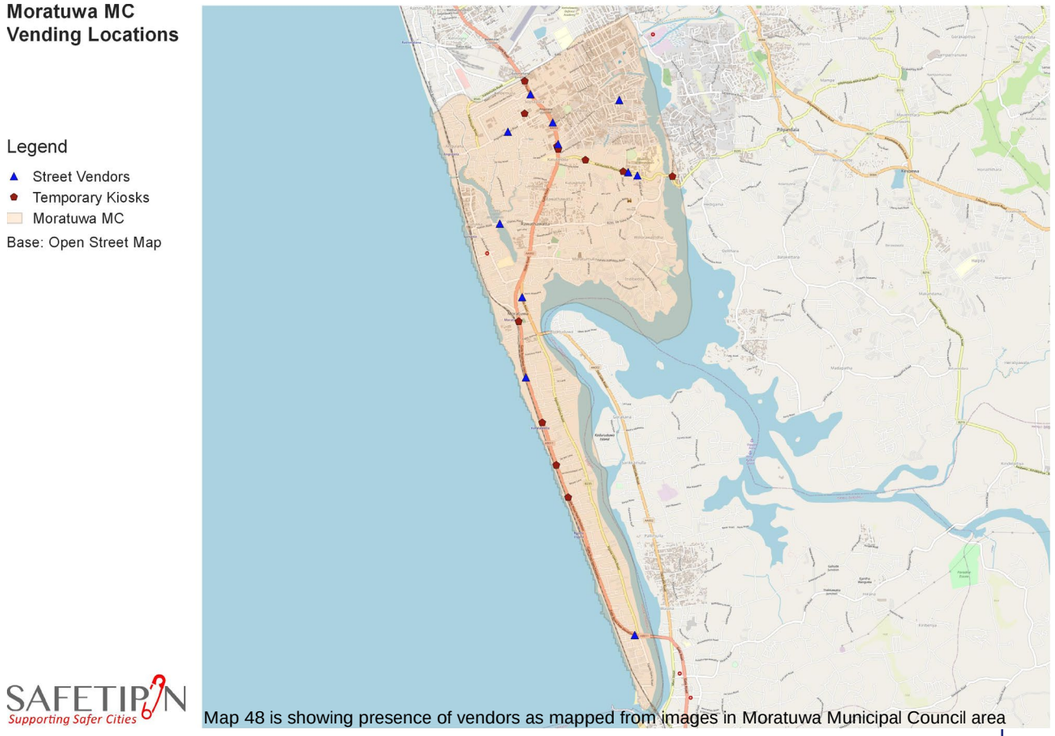


Image 83 showing a stretch with good visibility on Sri Rahula Mawatha Road

Image 84 showing a stretch with poor visibility on some points on Angulana Station Road

Image 85 showing poor visibility on a stretch on Galle Road



Map 48 is showing presence of vendors as mapped from images in Moratuwa Municipal Council area

Public Space Usage in Colombo District

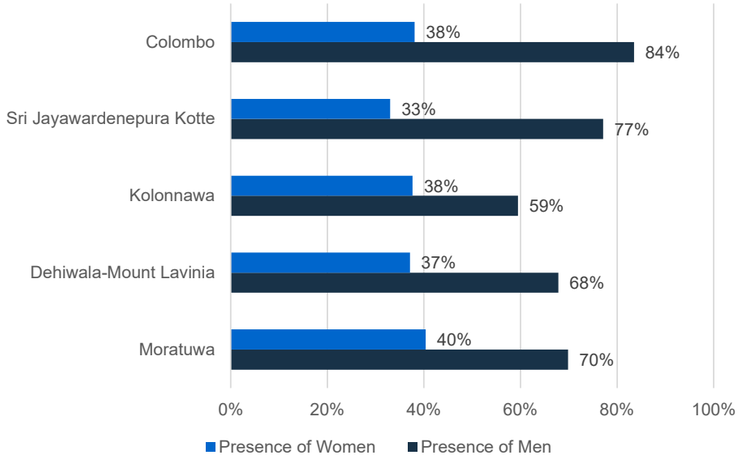
Public spaces play a significant role in enhancing the liveability of its cities. They are an important asset to our cities. Public spaces of a city provides a platform where people can come together and engage with the community. Social inclusion and safety are important characteristics of a good public space. A great public space attracts a wide range of people who are involved in various activities.

While the parameters of lighting, openness, walk path, public transport and visibility are based upon the urban form, parameters of People and Gender Usage refer to the way that a public space is used and occupied. The People parameter represents the number of people in a place and Gender Usage indicates the number of women and children in comparison to the total number of people.

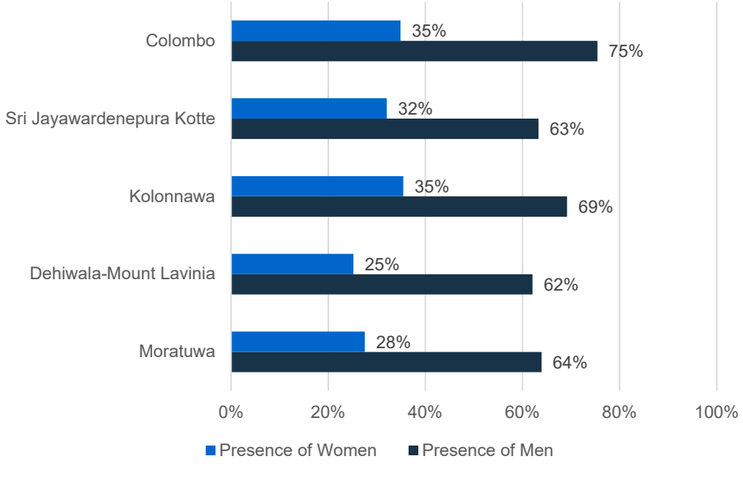
PEOPLE AND GENDER USAGE

Graphs 11and 12 show the percentage of audit area where presence of people, and women were recorded during the day and night, respectively across all the five councils, It was found that compared to men, women's participation in the streets was low and further reduces at night.

Women tend to avoid places where they feel unsafe. Various factors that contribute to women's perception of safety include condition of physical infrastructure such as availability of streetlights, well-designed walkways, presence of shops and vendors, availability of public transport including para transit mode. In order to ensure safety in public spaces of a city, it is important to identify factors that contribute towards feeling of safety.



Graph 11 on the right showing the percentages of people and women using the public spaces during the day time for all 5 areas

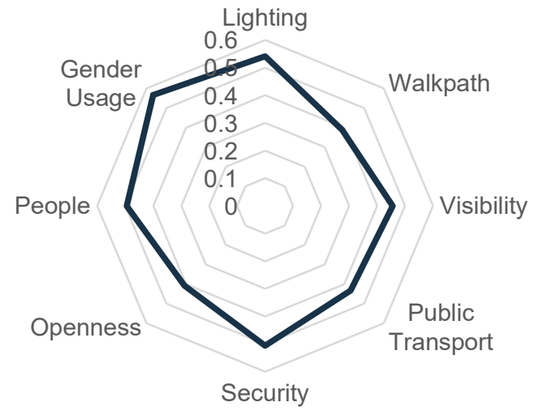


Graph 12 on the right showing the percentages of people and women using the public spaces during the night time for all 5 areas

Public Space Usage

FEELING OF SAFETY

The ninth parameter, Feeling reflects the perception of safety at a place. All parameters do not have an equal impact on the perception of safety. It is therefore useful to know how an improvement in each parameter will impact the overall feeling at a place. Graph 13 below shows the correlation of the feeling parameter with all the other parameters. It can be seen that gender usage, lighting, presence of people, security and visibility have the maximum impact on the feeling of safety. However, increase in gender usage and people parameter is dependent on physical parameters, thus indicating the inter-dependency of the parameters in improving the overall safety score of a place. This is further corroborated by the comments from the auditors as shown below.



Graph 13 on the right is showing the correlation of parameter Feeling with all 8 other parameter for Colombo dictrict

"No women in sight, no street light no pathway"

"A bit nervous in this part of the road. Men staring makes me feel afraid. The street lights here seems to be out of order"

"The road does not have a walk path. The road is bordered by two walls on both sides and there is no lighting at all"

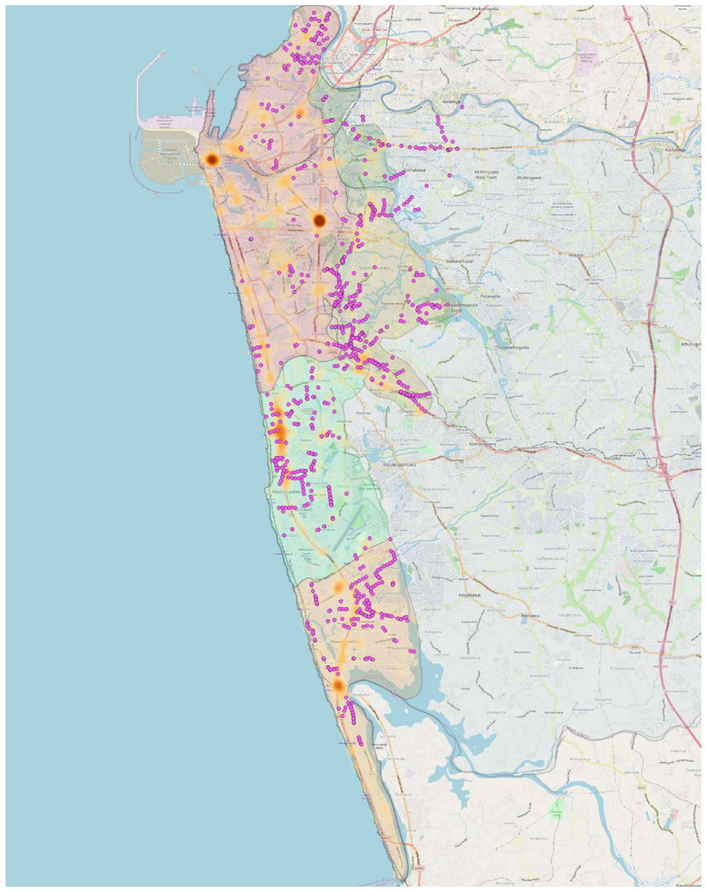
"This is the road people take frequently during office rush hours to catch the train. No walk path and the roadsides have a very bad odors coming off. Little to no street lights available"

CORRELATION BETWEEN PARAMETERS

GENDER USAGE AND WALKPATH

The map 49 shows audit points in the Colombo District where women are present but walkpath has been rated poor. There are all together 478 points identified that are frequently used by women but poor walking conditions. The walkpath is either unpaved or broken, thereby obstructing smooth pedestrian movement. Since this is visual mapping, every geo-tagged audit point is supported by two or more images. Such data would enable the authorities to investigate deeper into the city's walking infrastructure and plan better in order to improve its quality and accessibility. Women's mobility would certainly improve if there is an obstruction-free pavement with ramps, tactile paving and signage.

Map 49 on the right is showing the audit points with there is high gender usage but walk path is poor



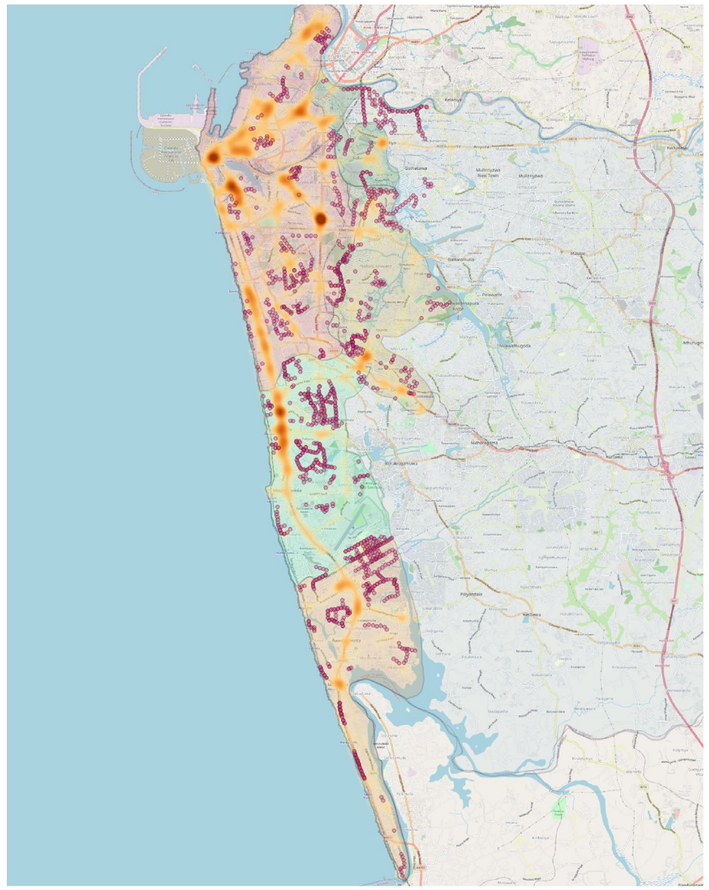
Public Space Usage

CORRELATION BETWEEN PARAMETERS

PEOPLE AND PUBLIC TRANSPORT

The map 50 shows audit points in the Colombo District where people are present but public transport stops are distant or out of reach. A total of 196 points were identified where people cannot reach public transport stops within 10 mins walking distance. Since this is a visual mapping, every geo-tagged audit point is supported by two or more images. Such data would enable the authorities to investigate deeper into the city's transportation systems and plan better in order to improve its access and reach. Women's access to public spaces would certainly improve if the overall transport system is upgraded and last mile connectivity is prioritised.

Map 50 on the right is showing the audit points where many people are using the space but the public transport is poor

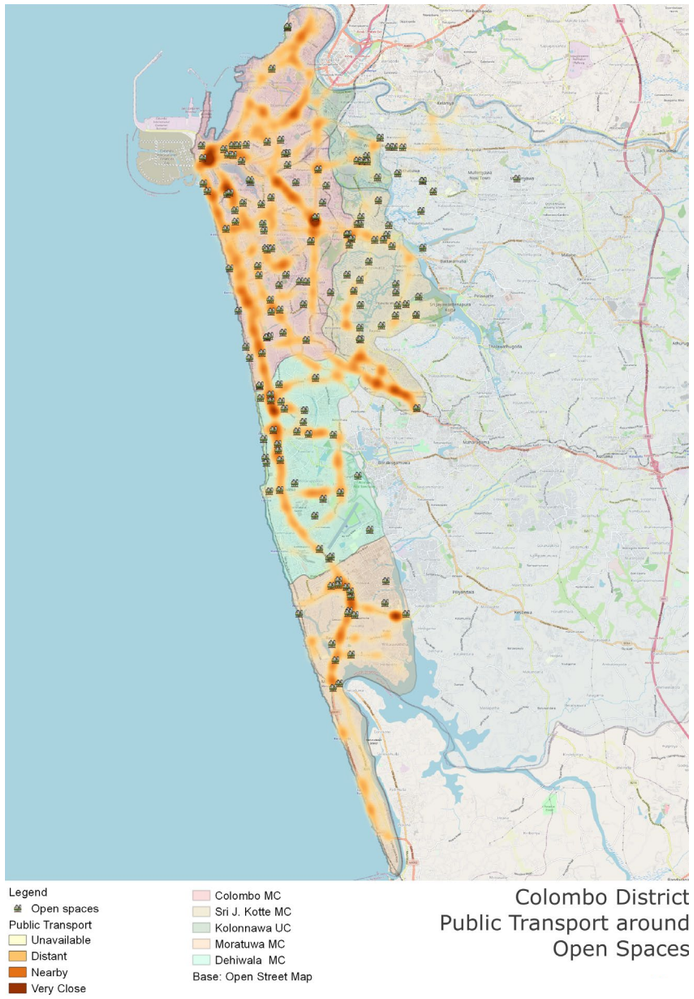


CORRELATING AUDITS WITH PUBLIC SPACE

PUBLIC TRANSPORT AROUND OPEN SPACES

Factors such as accessibility and provision of physical infrastructure: streetlights, well designed and properly paved walkways and accessible public transport influence the use of public spaces in a city. Safety Audits were overlaid on a GIS layer of open spaces (parks, beaches, markets) mapped by Safetipin team. These open spaces are frequently visited by people, and require proper transport connectivity. This mapping helped in identifying the open spaces where transport is not available within 400 m of walking distance (as seen in Map 51). This combined GIS layer could be used to upgrade the transport network or plan new bus stops.

Map 51 on the right is showing the open spaces around which public transport is not easily available



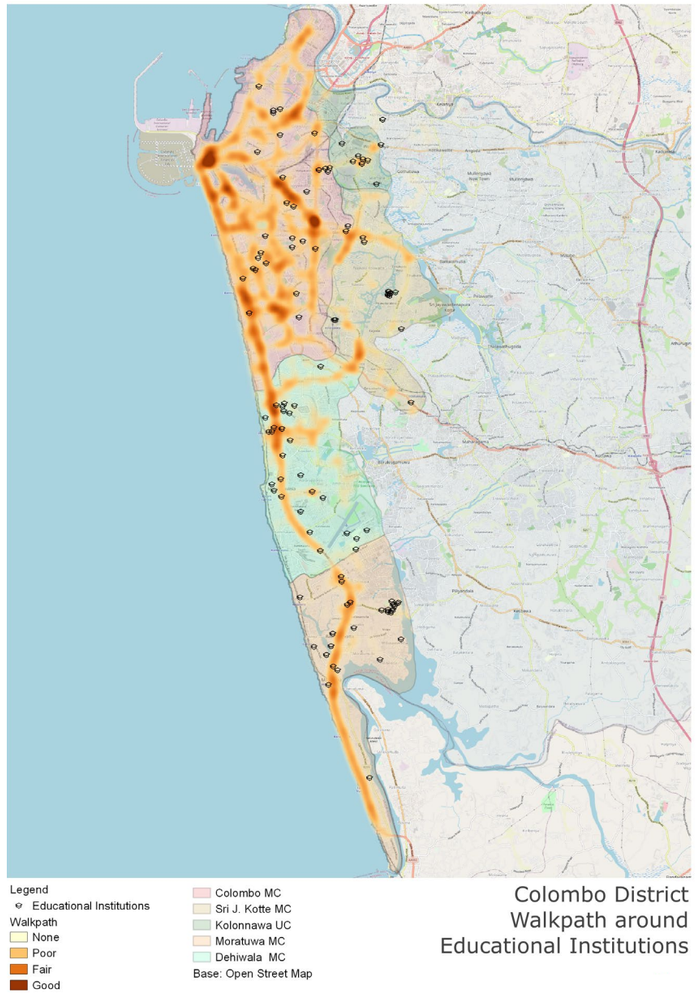
Public Space Usage

CORRELATING AUDITS WITH PUBLIC SPACE

WALKPATH AROUND EDUCATIONAL INSTITUTIONS

A public space, such as an educational institution is visited by people from different age groups, gender, socio-economic classes. As students are more likely to walk to and from their school, college or university, it is pertinent that walking infrastructure around these places should be provided. In map 52, safety audits were overlaid on a GIS layer of educational institutution (schools and universities) mapped by Safetipin team. This helped in identifying the areas where pavement was not present or was unpaved/broken. This combined GIS layer could be used to upgrade the walking infrastructure. Providing pedestrian crossing around these spaces would ensure safe and convenient passage for the students

Map 52 on the right is showing the educational instutions around which good walkpaths are not available.

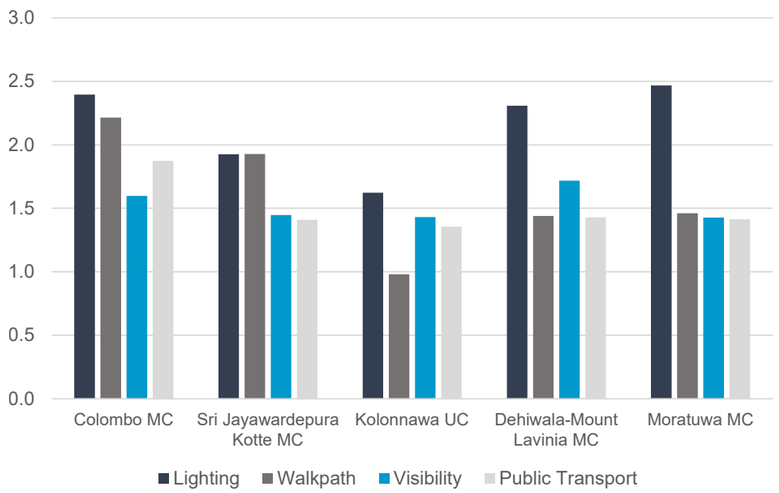


Recommendations for Colombo District

INTERVENTION AREAS FOR THE COUNCILS

As discussed in the previous chapter on Findings, the data primarily points toward the state of physical infrastructure and social participation in public spaces of the five councils. Lighting, Transport, Walkpath are the physical infrastructure parameters Visibility, People and Gender Usage are the social participation parameters. Graph 14 below shows the ratings of the four crucial parameters for which interventions can be made across the five councils. Compared to other councils, Colombo Municipal Council recorded above average ratings in most of the parameters.

In Sri Jayewardenepura Kotte, audited points recorded good lighting and walkpath but low visibility and poor transport network. For the other three councils, all the parameters have been rated below average, except for lighting. The collected data when correlated with feeling parameter shows that people's perception of safety is linked to better infrastructure like lighting, public transport, and higher usage of public space by women. In order to make public spaces safer and more accessible in these councils, all these parameters need to be worked upon. Specific maps for each parameter with data points having lower ratings and need interventions have been given for all five councils in the findings section. Additionally, accessibility elements and presence of cyclists have been discussed in the following section.



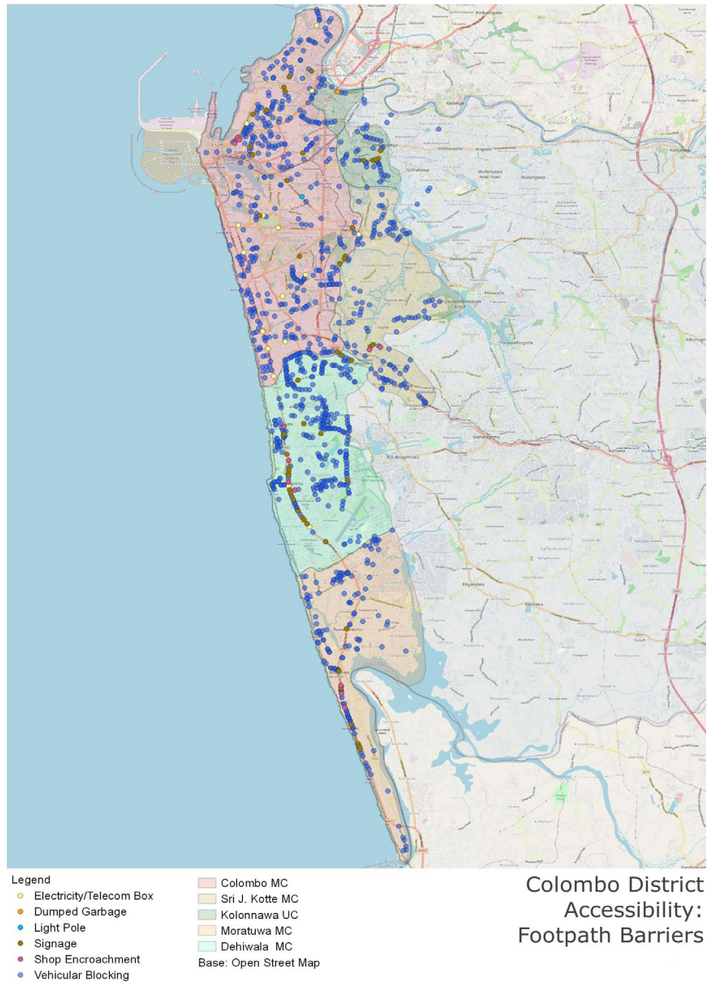
Graph 14 on the right is showing the parameter ratings of 5 different councils in comparison to each other

WALKABILITY ASSESSMENT

MAPPING BARRIERS ALONG THE PEDESTRIAN PATH

Safetipin identified five type of physical barriers which make walking uncomfortable for the pedestrians especially vulnerable groups like elderly, children, women and the differently abled.. These are parked vehicles, electricity/telecom box, light pole, dumped garbage and shop encroachment. We mapped all of these barriers present on the footpath during the image mapping and geo-tagged the information with their exact locations on GIS layers. The composite map 53 below represents all the kinds of barriers found on footpaths and highlights the intensity of the issue in all the five councils. The data could be integrated with the city's existing GIS platform for further analysis.

Map 53 on the right is showing the Footpath Barriers in Colombo district

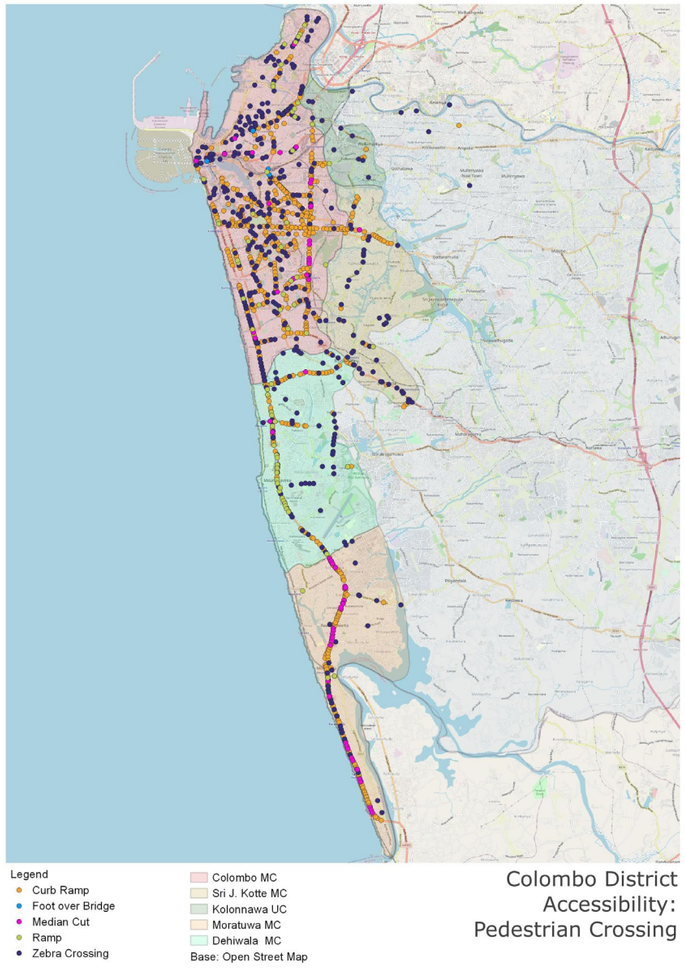


WALKABILITY ASSESSMENT

MAPPING ACCESSIBILITY ELEMENTS ALONG THE PEDESTRIAN PATH

Safetipin mapped various accessibility elements which helps pedestrians especially vulnerable groups such as the differently-abled to cross the road safely. These elements are curb ramps, median cut, zebra crossings and foot over bridges. We mapped these as found in the city during the image mapping and geo-tagged the information with their exact locations on GIS layers. The composite map 54 below represents all the elements as found on the streets. The map 54 highlights the highlights the lack of accessibility elements/gap in provision of accessibility elements in all the councils except Colombo

Map 54 on the right is showing the Pedestrian Crossings in Colombo district



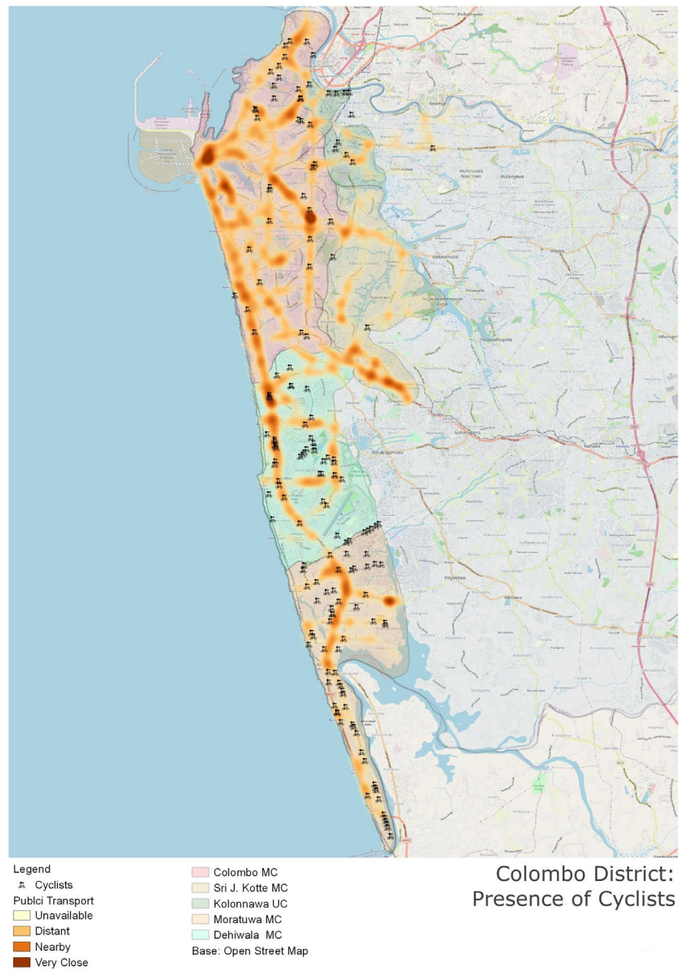
Colombo District
Accessibility:
Pedestrian Crossing

TRANSPORT NETWORK

MAPPING CYCLIST

Safetipin identified people using cycles as a mode of transport along the audited routes. We mapped the people using cycles as found in the city during the image mapping and geo-tagged the information with their exact locations on GIS layers. This data when looked with respect of the transport network of the city as shown in the map 55 below, could be used to plan and develop cycle paths to improve last-mile connectivity. As seen in the map 55, most of the cyclists were seen in Moratuwa and Dehiwala-Mount Lavinia council followed by areas around University and tourist places in Colombo council.

Map 55 on the right is showing the Presence of Cyclists in Colombo district



Colombo District:
Presence of Cyclists

INTERVENTION STRATEGIES FOR THE COUNCILS

Colombo District needs to be looked at holistically to plan public space intervention strategies. The strategies would serve the purpose of helping the city function better and more effectively. They make the connection between aspects that are linked but not so visible, such as the link between improved physical access and opportunities for a better life for all, especially people from vulnerable groups. Below are a few recommendations that would help Colombo District in achieving the overarching goal of 'Safe Public Spaces for all.'

MAKE WALKING SEAMLESS

Footpaths, curb ramps, crossings, footovers

Pedestrian fatalities in Sri Lanka account for 40% of all road deaths, and in Colombo District, it is as high as 70% (University of Moratuwa, 2010). To make walking easy, safe and seamless walking routes must be in good condition and connected to a larger network of streets in the city. A good walking route must be well-paved, well-lit and free from any type of obstruction. Additionally, all walking route must be well connected to other routes and well designed with crossovers (equipped with curb ramp, median cut, tactile pavers etc.) to have a seamless walking experience when travelling from point A to point B. Pedestrian path with at-grade crossing particularly benefits women and other vulnerable groups

MAKE STREETS ACTIVE

Mixed-use development, informal shopping, eyes on the streets
Active streets are safe streets.

Active streets are safe streets. Streets which have people overlooking it from buildings at the edge next to it and have people present on it are safer. The multi-layered, rich, diverse activity that takes places in the street possesses an energy that makes Colombo an extraordinary urban environment and this activity could become a resource and asset in improving the walkability and safety, for everyone. Encouraging mixed-used developments, on-street shopping, informal hawking and discouraging high boundary walls or front setback for buildings are good practices to make streets active round the clock in all the other councils.

BOOST WOMEN'S PARTICIPATION

Employment in public services, women's representation in govt, advocacy and sensitisation programs

To ensure diverse perspectives in planning and maintaining urban spaces, more representation of women is needed in areas of decision making. This will help in addressing the realities of women as workers and users of public infrastructure and services. It is imperative to have more women in public spaces not just as commuters but also as transport and other service providers to be part of the decision-making process. Consistent efforts to be made to provide supporting infrastructure like public toilets, day-care centers, women hostels etc. to increase women participation in the workforce.

MAKE PUBLIC TRANSPORT EASILY ACCESSIBLE

Transport stops, routes, frequency, capacity, safety within transport

To make public transport within everyone's reach, various transportation systems functional in the city need to be looked at. It is important to understand how one transport system interacts with the other and how people use them. Only then the gaps or overlaps between systems could be identified and improved to make them seamless. Such interventions to stitch different systems makes the overall transport network accessible and allows people to switch within transport systems easily. Women's safety at public transport stands as well as inside every form of transport is an essential aspect to consider too.

FOCUS ON LAST MILE CONNECTIVITY

Non-motorised transport, light motor vehicles, informal transport

Last-mile connectivity is an important aspect of any public transportation system operating in the city. Strengthening informal transport like non-motorised vehicles and light motor vehicles which serve as first/ last mile connectivity to one's origin and destination could be a useful way of ensuring safe travelling. Often people especially women forego opportunities available in the city due to weak, unsafe or expensive first/ last mile connectivity options. Time poverty is another reason for women to lose out on opportunities when transport options are infrequent or inadequate.

DESIGN PRINCIPLES FOR GENDER INCLUSIVE AND SAFE PUBLIC SPACE

Walkable Streets

Every trip begins and ends with walking, and therefore everyone is a pedestrian on a city's street at some point. Providing continuous and unobstructed paths ensures walkability for everyone. Streets in the cities are places where diverse activities are performed by people. Designing streets requires keeping people at the highest priority, with careful consideration for the most vulnerable users: women, children, elderly, and the disabled. The middle image on page no 75 illustrates different types of uses of the street which should be catered to while designing a street - people walking, cycling, driving, waiting, conducting business, doing maintenance work and residing or working in the buildings by the street.

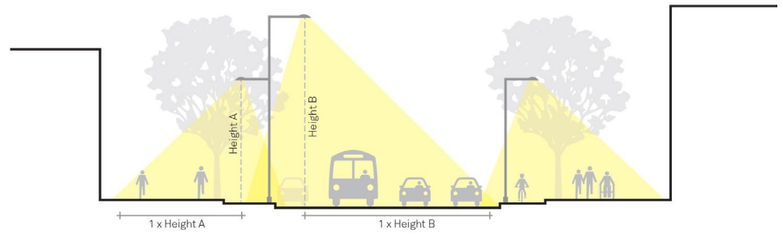
Well-lit Streets

There is a wide range of light sources that contribute to the overall illumination of the public realm. Well-designed solutions incorporate different types of light sources whereas borrowed light spilling from storefront, residences and shops also adds to the illumination of streets. However, borrowed illumination may not always be consistent, or designed for human comfort. Hence pole-mounted street-light fixtures are installed for uniform distribution and illumination of roadways and footpaths. The top image on page no 75 illustrates thumb rules used for streetlight spacing, height and light cone.

Active Streets

Streets that provide safety, comfort and amenities for all users are active streets. Create "eyes on the street" by removing setbacks and boundary walls and building to the edge of the street's right of way. This would allow people from inside to look out on to the pavement, thus discouraging misbehaviour .Encourage commercial facades to have minimum 30-50% transparency. Provide adequate street lighting for pedestrians footpaths and bicycles lanes. Create mixed-use developments, commercial edges/ shopfronts and hawking zones at regular intervals to encourage walkability, increase street activity and provide safety. The bottom image on the page no 75 illustrates the above principles which makes safe, inclusive and accessible streets.

Recommendations



The spacing between light poles is typically 2.5–3 times the height of the fixture. A single row of light poles might be sufficient for a narrow street, while wider streets will require multiple rows.

Image 86 showing the standard design for the placement of the streetlights

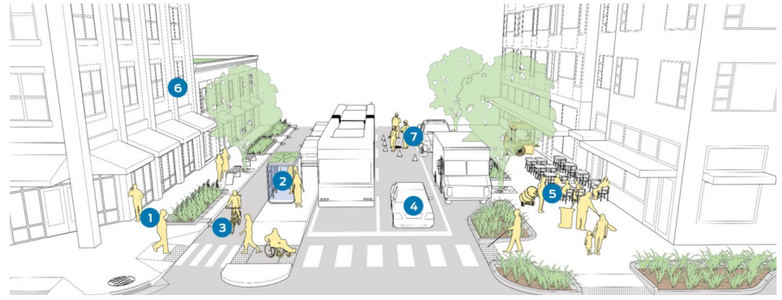


Image 87 showing a visual of walkable streets

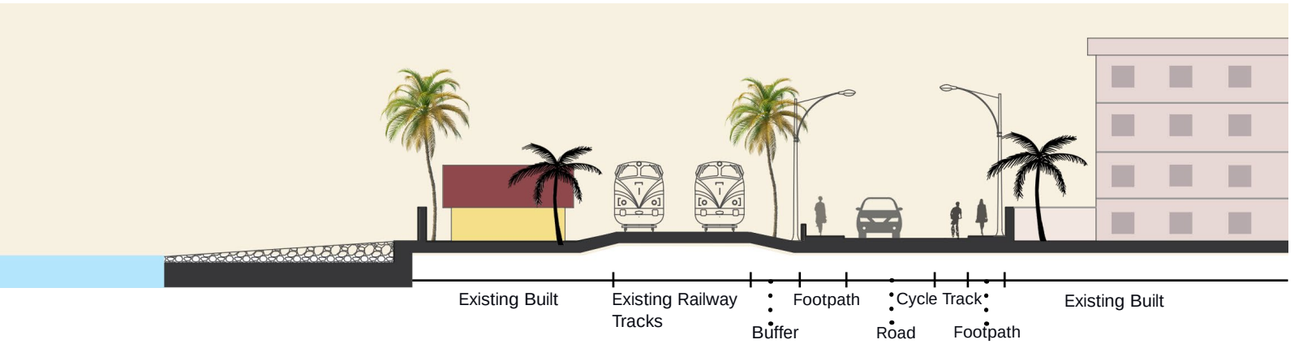
Source of Images: Global Street Design Guide, Global Designing Cities Initiative

Image 88 showing a visual of active street

BUILDING ON GOOD PRACTICES IN COLOMBO

Galle Road is one of the major roads that connects Metro Colombo with all the other councils of the district. In terms of pedestrian infrastructure, the road has well-maintained pavement along with proper elements for crossing (curb ramp, median cut and zebra crossing). The bus stops along this road are well marked and have proper shelter for the commuters. The other major roads within Colombo Municipal Council area follows the same design principle and offer seamless walking experience for pedestrians.

As we move down to other councils, these elements are limited to few stretches along this road and other major roads of the council area also lack proper civic infrastructure. This can be seen on Puranappu Raja Mawatha Road and Uyana Road which run parallel to the Galle road in Moratuwa Council area. As seen in the map 56 and images on the next page, Puranappu Raja Mawatha road doesn't have streetlights or proper pavement for the pedestrians along the unhindered railway line that runs along this stretch. The beaches in Moratuwa and Mount Lavinia council areas are on the other side of this railway line, thus making it essential to provide safe walking and crossing areas for people. Building on existing design principle and good practices, an attempt to re-imagine the street can be seen in the image below. Installing streetlights and constructing a proper pavement maintaining a safe distance from the railway line as well as vehicular carriageway would positively impact people's use and perception of the street



Graphical Representation of re-imagined Puranappu Raja Mawatha Road

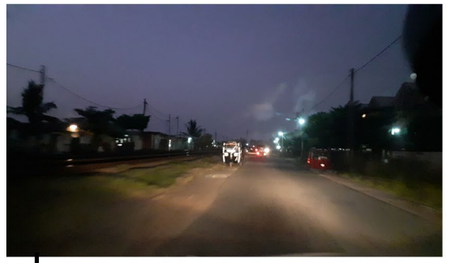


Image 89 showing Raja Mawatha road with poor lighting, walkpath and visibility

Image 90 showing deserted Raja Mawatha Road

PURANAPPU RAJA MAWATHA ROAD

Image 91 showing poor walkpath and visibility on Uyana Road

Image 92 showing deserted Uyana Road

UYANA ROAD

Image 93 showing good lighting and visibility on Galle Road

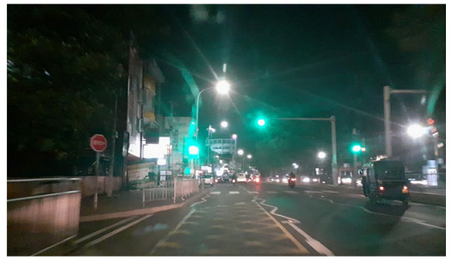


Image 94 showing good walkpath on Galle Road

GALLE ROAD

Map 56 showing three parallel roads with stark difference in infrastructure in Moratuwa Municipal Council area

Annexure

Rubric on the right explaining the 9 parameter rating/score

Parameter	Score 0	Score 1	Score 2	Score 3
Lightning (Night)	None	Little	Enough	Bright
	No Street or other lights	Can see lights, but there is low visibility in the areas	Lighting is enough for clear visibility	Whole area is brightly lit
Walkpath	None	Poor	Fair	Good
	No walking path available	Path exist but in very bad condition	Can walk but not run	Easy to walk fast or run
Public Transport	Unavailable	Distant	Nearby	Very Close
	No metro, bus, auto/ rickshaw/3-wheeler stop within 10 mins walk	Metro or bus, auto/rickshaw/3 wheeler stop between 5-10 min walk	Metro or bus, auto/rickshaw stop between 2-5 mins walk	Metro or bus,auto/ rickshaw stop available withing 2 mins walk
Visibility	No Eyes	Few Eyes	More Eyes	Highly Visible
	No windows or entrances of shops or residences overlook the point	Less than 5 windows or entrances overlook the point	Less than 10 windows or entrances and vendors overlook the point	More than 10 windows or entrances and vendors overlook this point
Security	None	Minimal	Moderate	High
	No guards or police visible in surrounding areas	Some private security visible in surrounding area but not nearby	Private security within hailing distance	Police/reliable security within hailing distance
Openness	Not Open	Partly Open	Mostly Open	Completely Open
	Many blind corners and no clear sight-lines	Able to see a little ahead and around	Able to see in most directions	Can see clearly in all directions
People	Deserted	Few People	Some Crowd	Crowded
	No one in sight	Less than 10 people in sight	More than 10 people in visible	Many people withing touching distance
Gender Usage	Not Diverse	Somewhat Diverse	Fairly Diverse	Diverse
	No one in sight, or only men	Mostly men, very few women or children	Some women and children	Balance of all genders or more women and children
Feeling	Frightening	Uncomfortable	Acceptable	Comfortable
	Not venture here without sufficient escort	Will avoid this place whenever possible	Feel Safe enough, but will be careful	Feel safe here even after dark

Annexure

AUDIT DATA IN CSV FILE

S No	ID	Latitude	Longitud	Council	Lighting	Opennes	Visibility	People	Security	Walkpat	Public Tr	Gender U	Feeling	Safety Sc	Commen	Image 1	Image 2	Im
1	630118	6.9332	79.859	Colombo	3	2	1	0	0	3	2	0	1	3.5	D	https://sa	https://safet	
2	630122	6.9336	79.862	Colombo	3	2	1	2	0	1	2	2	2	4.2	D	https://sa	https://safetipinimages	
3	630733	6.9377	79.88	Colombo	3	2	1	2	0	1	2	0	1	3.5	D	https://sa	https://safetipinimages	
4	630741	6.9365	79.881	Colombo	3	2	1	1	0	1	0	3	1	3.5	D	https://sa	https://safetipinimages	
5	630744	6.9347	79.879	Colombo	3	2	1	2	0	1	2	0	1	3.5	D	https://sa	https://safet	
6	630758	6.9261	79.867	Colombo	3	2	3	3	1	3	2	1	2	4.5	D CR	https://sa	https://safetipinimages	
7	630761	6.9239	79.869	Colombo	3	2	2	1	1	3	2	0	2	4.3	D CR	https://sa	https://safetipinimages	
8	630764	6.9218	79.871	Colombo	3	2	2	2	0	3	3	3	2	4.5	D CR	https://sa	https://safetipinimages	
9	630767	6.9222	79.87	Colombo	3	2	2	2	0	3	2	0	2	4.3	D CR	https://sa	https://safetipinimages	
10	630802	6.9265	79.867	Colombo	3	2	2	1	0	3	1	0	1	4	D	https://sa	https://safet	
11	630805	6.9287	79.878	Colombo	3	2	2	1	0	3	3	0	2	4.3	D ZC	https://sa	https://safet	
12	630808	6.9262	79.878	Colombo	3	2	1	2	0	3	3	0	2	4.3	D CR MC	https://sa	https://safetipinimages	
13	630810	6.924	79.878	Colombo	3	3	1	1	0	3	2	0	2	4.2	D CR			
14	630814	6.9252	79.878	Colombo	3	2	1	2	0	3	3	0	2	4.3	D CR MC	https://sa	https://safet	
15	630816	6.9273	79.878	Colombo	3	2	1	1	1	3	2	0	2	4.2	D CR	https://sa	https://safet	
16	630817	6.9281	79.878	Colombo	3	2	2	1	0	3	2	0	2	4.2	D CR	https://sa	https://safet	
17	630822	6.9331	79.878	Colombo	3	2	1	1	1	3	2	0	2	4.2	D CR	https://sa	https://safetipinimages	
18	630823	6.9343	79.878	Colombo	3	2	0	0	0	3	2	0	1	3	D CR	https://sa	https://safet	
19	630826	6.9376	79.878	Colombo	3	2	1	0	0	3	3	0	1	4	D	https://sa	https://safet	
20	630831	6.9199	79.878	Colombo	3	2	1	1	0	3	2	0	1	4	D CR	https://sa	https://safet	
21	630833	6.9187	79.878	Colombo	3	2	1	2	0	3	3	2	2	4.4	D ZC CR	https://sa	https://safetipinimages	
22	630834	6.9178	79.878	Colombo	3	2	1	3	0	3	3	1	2	4.4	D CR MC	https://sa	https://safet	
23	630835	6.9167	79.878	Colombo	3	2	2	3	1	3	3	3	3	4.8	D CR	https://sa	https://safet	
24	630836	6.9157	79.878	Colombo	3	2	2	1	0	3	2	0	2	4.2	D CR	https://sa	https://safet	
25	630837	6.9148	79.878	Colombo	3	3	1	3	1	3	3	3	3	4.8	D CR	https://sa	https://safet	
26	630839	6.9124	79.878	Colombo	3	2	1	2	1	3	2	0	2	4.3	D CR	https://sa	https://safetipinimages	
27	630841	6.9112	79.877	Colombo	3	2	2	1	0	3	3	0	2	4.3	D CR	https://sa	https://safetipinimages	
28	630848	6.9063	79.873	Colombo	3	2	1	0	1	3	2	0	1	4	D CR	https://sa	https://safet	
29	630854	6.9035	79.864	Colombo	3	2	1	1	0	3	3	0	2	4.2	D CR	https://sa	https://safetipinimages	
30	630858	6.9035	79.868	Colombo	3	2	1	1	1	3	1	0	1	4	D CR	https://sa	https://safet	
31	630859	6.9034	79.869	Colombo	3	2	1	0	1	3	0	0	1	3	D CR	https://sa	https://safet	
32	630860	6.9034	79.871	Colombo	3	2	1	2	1	3	0	0	1	4	D ZC	https://sa	https://safet	
33	630862	6.9115	79.868	Colombo	3	2	1	2	0	3	3	0	2	4.3	D CR ZC	https://sa	https://safet	
34	630864	6.9116	79.866	Colombo	3	2	1	1	0	3	2	0	1	4	D CR	https://sa	https://safetipinimages	
35	630865	6.911	79.864	Colombo	3	2	1	0	0	3	2	0	1	3.5	D	https://sa	https://safetipinimages	
36	630866	6.9101	79.864	Colombo	3	2	1	1	0	3	3	0	2	4.2	D CR	https://sa	https://safetipinimages	
37	630863	6.9132	79.86	Colombo	3	2	1	3	1	3	3	3	2	4.6	D CR	https://sa	https://safetipinimages	
38	630874	6.918	79.865	Colombo	3	2	1	1	0	3	3	0	2	4.2	D CR	https://sa	https://safet	
39	630875	6.9188	79.865	Colombo	3	2	1	2	0	3	2	0	2	4.2	D CR MC	https://sa	https://safet	
40	630900	6.9197	79.87	Colombo	3	2	1	3	0	3	2	3	2	4.4	D	https://sa	https://safetipinimages	
41	630323	6.8979	79.86	Colombo	3	2	1	2	0	3	2	1	2	4.3	D CR	https://sa	https://safet	

Notes

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