

# SAFE SCHOOL PRECINCTS ENCOURAGING ACTIVE MOBILITY AMONG SCHOOLCHILDREN

## VOLUME I – STATUS QUO REPORT AND OUTCOME STRATEGY FOR COIMBATORE, INDIA







# IMPRINT

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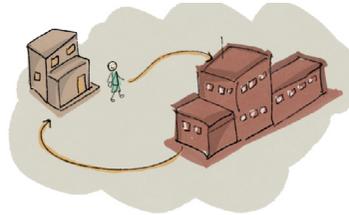
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# ABOUT THIS REPORT

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The report has been prepared as part of the bilateral technical cooperation project 'Integrated Sustainable Urban Transport Systems for Smart Cities (SMART-SUT)' commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) and jointly implemented by Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) GmbH and the Ministry of Housing and Urban Affairs (MoHUA), Government of India. The objective of the project is to improve the planning and implementation of sustainable urban transport systems in selected Indian cities. The project also supports the Green Urban Mobility Partnership (GUMP) between the governments of India and Germany.

Providing safe access to all has been an integral feature of the mobility projects taken up by Coimbatore City Municipal Corporation (CCMC) and Coimbatore Smart City Limited (CSCL). To strengthen its objective, a Non-Motorised Transport (NMT) Network Plan was prepared which elaborated the need for prioritising various vulnerable road users including schoolchildren.

The 'Safe School Precincts' study aims at providing a safe commuting ecosystem for schoolchildren. It highlights the issues related to accessibility around schools by analysing travel pattern of schoolchildren and identifying infrastructure gaps through an

evidence-based rating mechanism. As a way forward, it recommends a collaborative approach to achieve the target of safe access to schools.

The study is presented in three volumes:

**Volume I – Status Quo Report and Outcome Strategy for Coimbatore, India**, presents the status-quo analysis and outcome strategy that covers needs assessment, results from the travel pattern survey, infrastructure gap assessment through iRAP star rating for schools and a strategy for the way forward.

**Volume II – Results from the Star Rating Analysis of Schools in Coimbatore, India**, presents the detailed results from iRAP star rating for schools to assess the infrastructure gaps around 25 schools with 69 locations in Coimbatore.

**Volume III – Guidance Document for Designing Travel Pattern Survey of Schoolchildren** presents a step-by-step process for conducting a travel pattern survey of schoolchildren. The survey sheets are divided into three categories to carefully capture the quantitative and qualitative responses from children, parents and school administrators. This document will serve as a ready-to-use guide for engineers, NGOs and academicians while carrying out these surveys.



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# ABBREVIATIONS AND DEFINITIONS

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BoQ — Bill of Quantities

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CCMC — Coimbatore City Municipal Corporation

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CSCCL — Coimbatore Smart City Limited

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GIZ — Deutsche Gesellschaft fuer Internationale Zusammenarbeit

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GUMP — Green Urban Mobility Partnership

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iRAP— International Roads Assessment Programme

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MoHUA — Ministry of Housing and Urban Affairs

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NMT — Non-Motorised Transport

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PT — Public Transport

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Precinct — The area or a zone with perceived boundaries

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SDG — Sustainable Development Goals

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SMART SUT — Integrated Sustainable Urban Transport Systems for Smart Cities

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SSP — Safe School Precincts

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SR4S — Star Rating for Schools





# 01

## INTRODUCTION

This chapter provides general introduction to the safe schools precincts study. It will also discuss in brief the need and scope of the study followed by methodology adopted to achieve the goal of safe access to schools.





## 1.1 BACKGROUND

Creating safe and accessible facilities for schoolchildren does not only benefit the children but also other road users in the city. CCMC realised this need for safer streets in the city and prepared a NMT Network Plan that identified 300 km NMT routes and 26 pedestrian hotspots which will benefit 70% of the schools in the city. As a way forward, the NMT Network Plan proposes safe routes to school as a measure to prioritise schoolchildren as the prime beneficiaries of the NMT Plan. In continuation to this measure, CCMC has initiated a unique project called Safe School Precincts to assess schoolchildren's mobility needs and infrastructure requirements associated with it.

Safe School Precincts is a result-oriented programme that meticulously captures and addresses the accessibility issues of schoolchildren through a study of the travel patterns of the schoolchildren and infrastructure gaps, and then provides measures to overcome the barriers to make accessibility safer for schoolchildren. It is envisaged that this programme will eventually become a partnership activity of CCMC, Coimbatore Smart City Limited, Coimbatore Schools and NGOs. The present study is a preamble to provide a basis and strong ground for the long-term programme. Safe School Precincts considers accessibility around schools with a buffer of 250 m.

This volume provides a baseline and a roadmap for the design and implementation of the Safe School Precincts. The report details out the steps that provide a way forward for safe school commuting by identifying the accessibility issues of schoolchildren through travel demand survey and iRAP star rating for schools. In the report preparation process, Coimbatore City Municipal Corporation (CCMC) has shown commitment to increasing accessibility to schools, centralising safe and children-friendly mobility and the city's mobility development. This report outlines, in three broad steps, the objective of the Safe School Precincts project, provides details on the status quo, and proposes a strategy and measures to improve accessibility of schools.

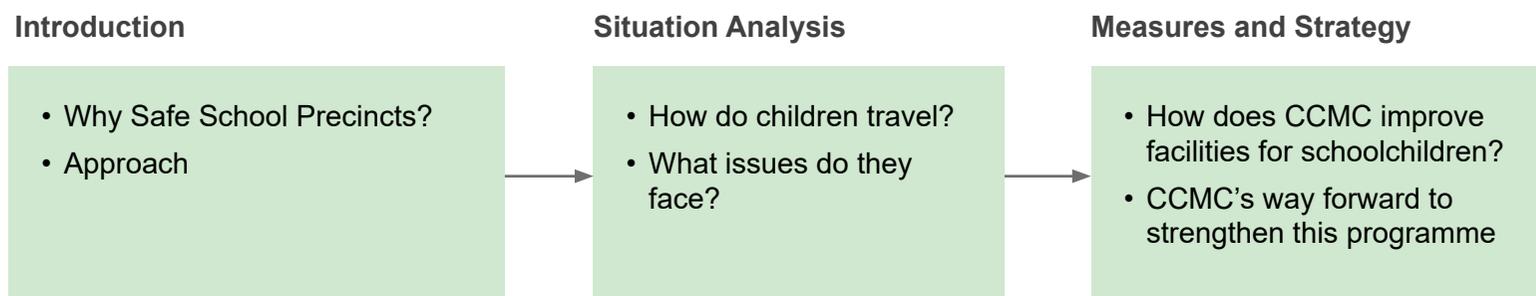


Figure 1: Process in brief



## 1.2 CONTEXT

Currently, nearly 50% of the world's population resides in cities, and it is expected to reach 70% by 2050. It is essential that the co-design of the city is inclusive and accessible to all residents, including the most vulnerable groups. As per the road accidents in India report 2019,<sup>1</sup> 30 children age below 18 are killed in road accidents every day and 7.8% of total accidents are reported near to the educational institutions. By 2030, six out of ten urban residents will be under 18 years old.<sup>2</sup> According to the 2011 census, 41% of the population is under the age of 18 in India. For policymakers, city planners and engineers, the real question is not where these children live, but how they live.

Providing children with convenient and safe urban infrastructure is the guarantee for their future and society. It provides quality education through sustainable cities and communities and paves the way for the achievement of Sustainable Development Goals (SDGs) 4 and 11.

Improving the safety of children means taking into account that they need to be active in different parts of the city, including public places, parks, schools and playgrounds.

Going to school is a daily function and an important link in the children's travel chain. Improving the safety of these trips will not only encourage children to receive education, but will also strengthen the importance of sustainable transportation. In short, to meet this need, Coimbatore envisioned a unique approach called the Safe School Precincts (SSP). This status quo report will provide an in-depth understanding of the approach and methods to solve the problems of school children in Coimbatore.

**Coimbatore Smart City Limited** under the Smart Cities Mission (launched in 2015) is implementing various NMT interventions in the city. A 30-km eco-mobility corridor along eight lakes in the city and three model streets are identified as key projects under the mission which provided a strong base for encouraging NMT initiatives. To strengthen these initiatives, CCMC had prepared a city-wide NMT network plan and implementing measures across the city.

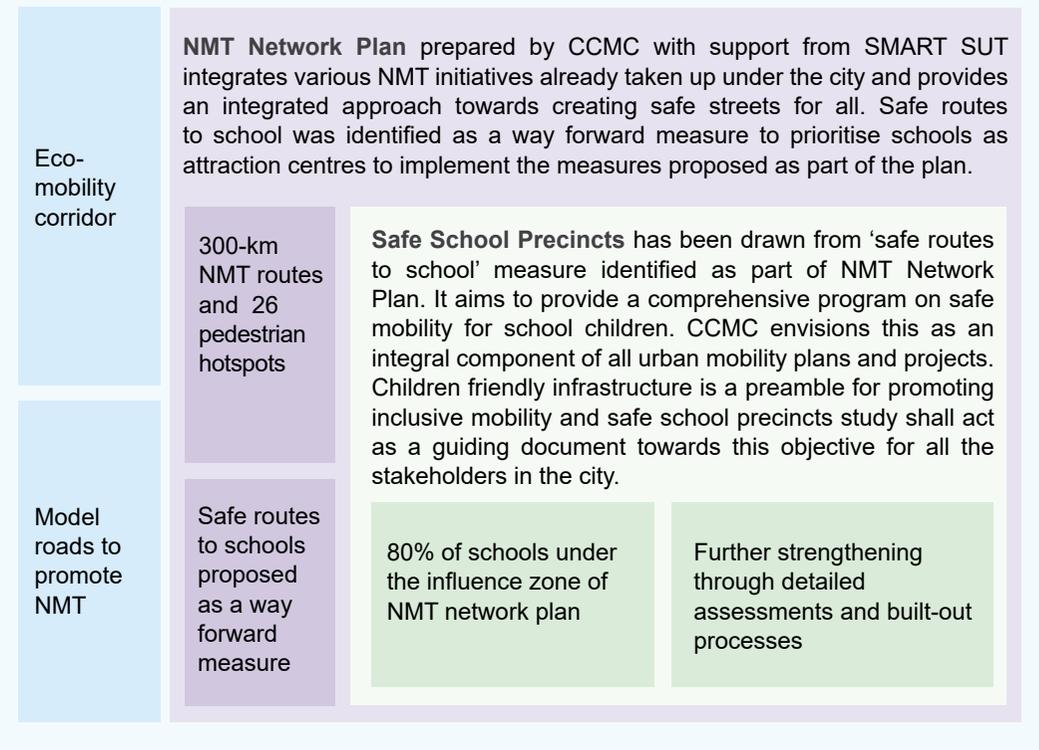


Figure 2: Placing 'Safe School Precincts' under Coimbatore's larger vision of promoting NMT related interventions

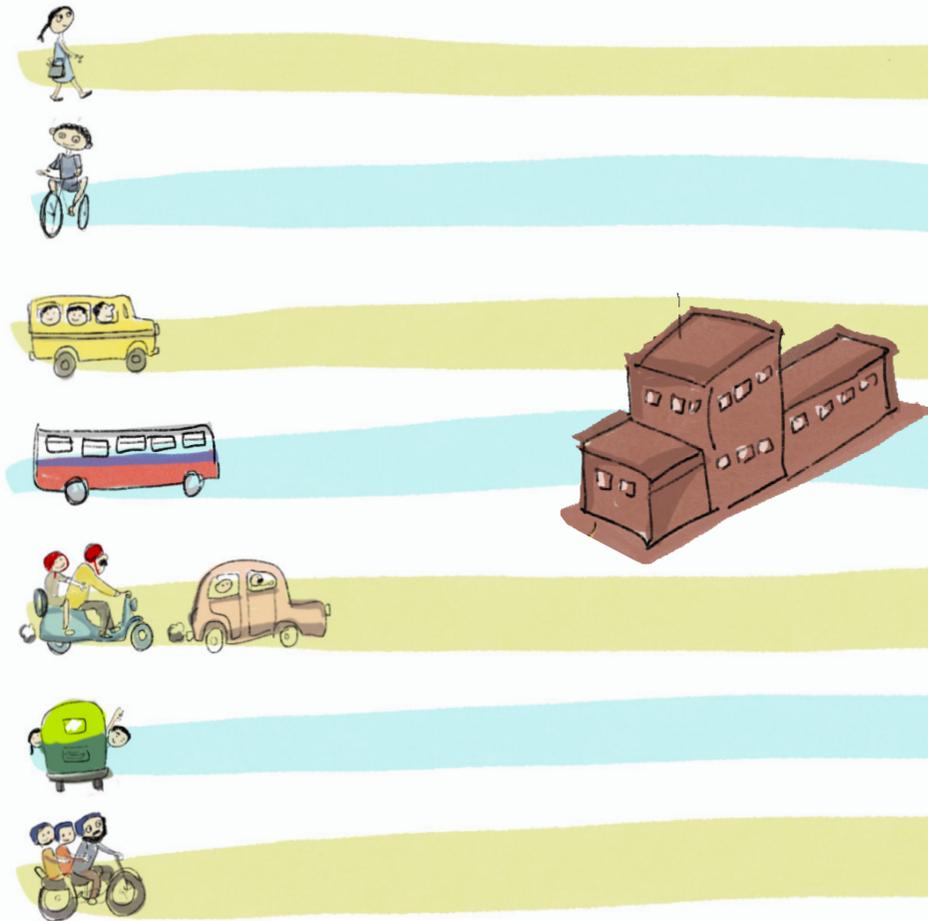
<sup>1</sup> Road accidents in India report 2019 by Ministry of Road Transport and Highways, Government of India

<sup>2</sup> Analysis based on data from Statista

## 1.3 NEED FOR SAFE SCHOOL PRECINCT STUDY

Going to school is considered the main activity in the series of children's trips, which takes place every day. Safe access to these rides will encourage more children to retain or switch to sustainable modes of transportation such as walking and cycling. Coimbatore, the second largest city in Tamil Nadu, has started making progress towards safer streets in the city, thanks to the **NMT Network Plan 2020-35**,<sup>3</sup> the eco-mobility corridor along various lakes as part of the Smart City Mission and the modernization of existing streets as model streets to reclaim pedestrian space and improve safety for cyclists. Improving accessibility to schools is an inherent measure in the NMT Network Plan with one outcome measure being the promotion of **safe routes to school**. In this context, CCMC considers the creation of safe school precincts as a long-term programme to improve schoolchildren's road safety.. While the overall goal of this programme remains safe access for all, Safe School Precincts acts as a torch-bearer to identify vulnerable road users as priority and implement appropriate interventions.

**Safe Schools Precincts** is envisaged as a partnership between Coimbatore City Municipal Corporation (CCMC), Coimbatore Smart City Limited (CSCL), Coimbatore Schools, and local community organizations (NGOs, CSRs) that work to support and encourage students and parents to safely walk, bicycle, and commute to school. The Safe School Precincts programme aims to improve road safety through targeted infrastructure improvements, active transportation safety education, enforcement collaborations, and encouragement programmes (for example, Tamil Nadu provides free bicycles to schoolchildren).



<sup>3</sup> NMT Network Plan, for Coimbatore 2020, Coimbatore City Municipal Corporation

\* Source: NMT Network Plan, for Coimbatore 2020



## 1.4 SCOPE OF THE STUDY

Road safety around schools in Coimbatore in general is looked at as an infrastructure obligation, rather than an overarching opportunity, to promote sustainable modes of transport and encourage parents to leave their children to travel alone by walking, cycling or by public transport. The global objective of safe school precincts will only be achieved by implementing a combination of measures proposed in the NMT network plan and by improvement in the overall mobility scenario in the city. The measures and outcomes proposed as part of the safe school precinct project should be treated in conjunction with other mobility initiatives and integrated with the city master plan.

The status quo analysis report and strategy document is a preamble to safe school precincts programme to understand mobility issues of schoolchildren through a step-by-step process that determines the travel pattern of schoolchildren, stated and revealed infrastructure issues and measures to unfold the way forward.

Safe school precinct programme will cover the schools located within CCMC limits (See Map 1). Through this study, CCMC intends to provide various stakeholders, the background of accessibility issues faced by schoolchildren in the city. This will stand as evidence-based road-map for policy, planning and design interventions for safe access to schools. It leads towards the outcome of improving NMT accessibility around schools in the city.

Figure 3 describes the data analysis structure for status quo report.



Map 1: Location of schools in Coimbatore

Source: Compilation from open sources, SMART-SUT analysis

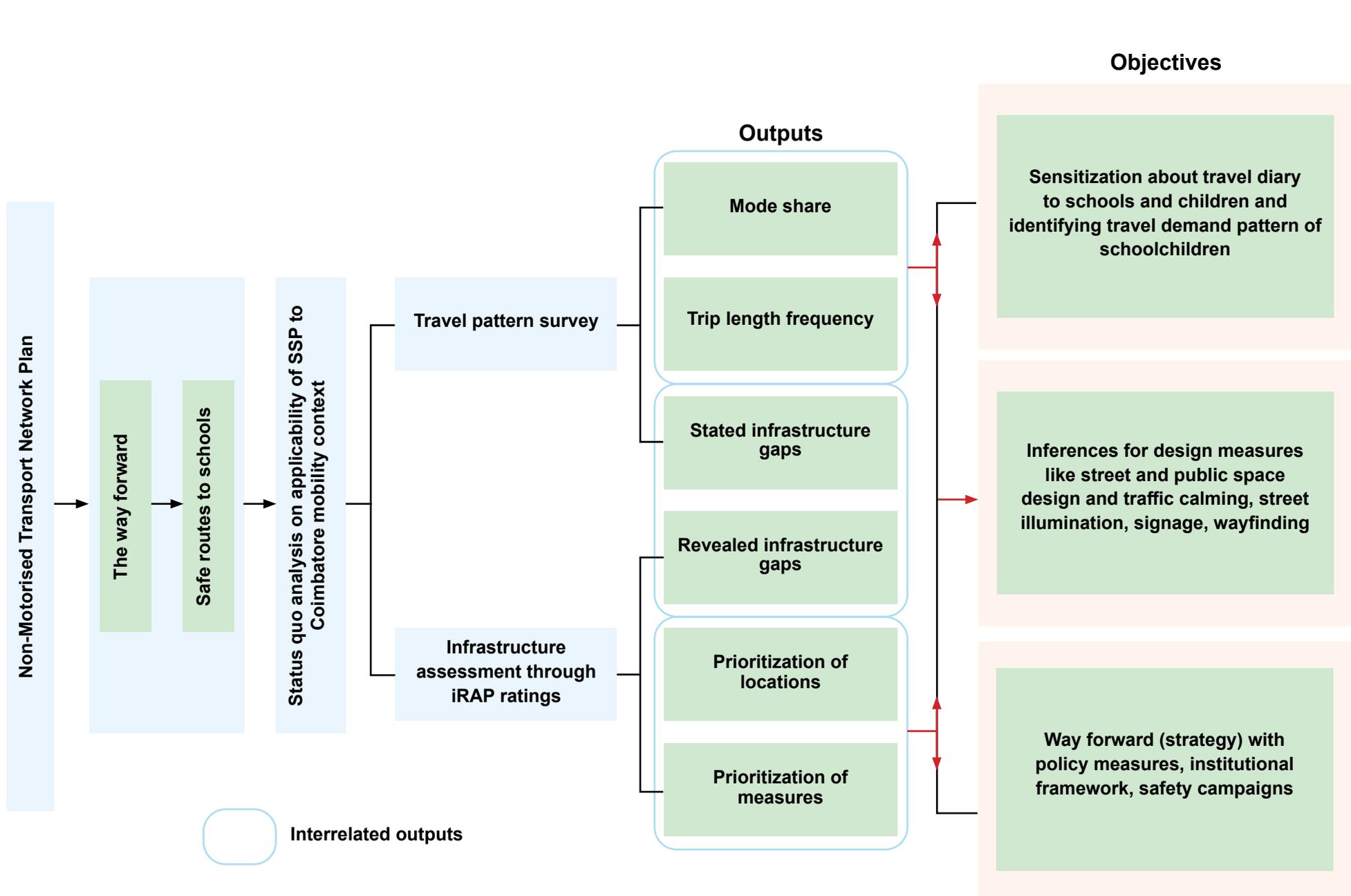


Figure 3: Detailed methodology for status quo analysis



# 02

## SITUATION ANALYSIS

This chapter presents the existing situation of accessibility around schools in Coimbatore through spatial analysis of various schools results from the travel diary of schoolchildren and iRAP star rating for schools (SR4S). Detailed analysis and inferences from the travel pattern survey and iRAP ratings feed into the safe school precincts strategy which CCMC will undertake to sustain the safe school precincts programme.





## 2.1 EXISTING SITUATION IN COIMBATORE

Coimbatore is the second largest city in Tamil Nadu with a population of nearly 2 million. Grown as an industrial hub, Coimbatore is also famous as an educational hub of the region. A majority of the higher and technical education institutions are located along the major arterial road making them one of the most vulnerable locations for students in the city.

Coimbatore is home to 400+ schools, maintained and operated by the State Government, City Government, Private, Aided and NGOs. As per 2011 census, there are around 0.25 million students in the city studying in various schools. Coimbatore City Municipal Corporation runs 84 schools with 24,000 students.

It is estimated from spatial analysis that around 60% of the schools are located within 250 m of a public transport stop and 67% of the schools are accessible to the nearest bus route (250 m buffer) in the city. Only 33% of the schools have footpaths within 250 m buffer around the schools.

It is observed from spatial analysis that, compared to private schools, the CCMC-operated schools are located in a safe environment with the main entry and exit located on a local street with low speed limits.



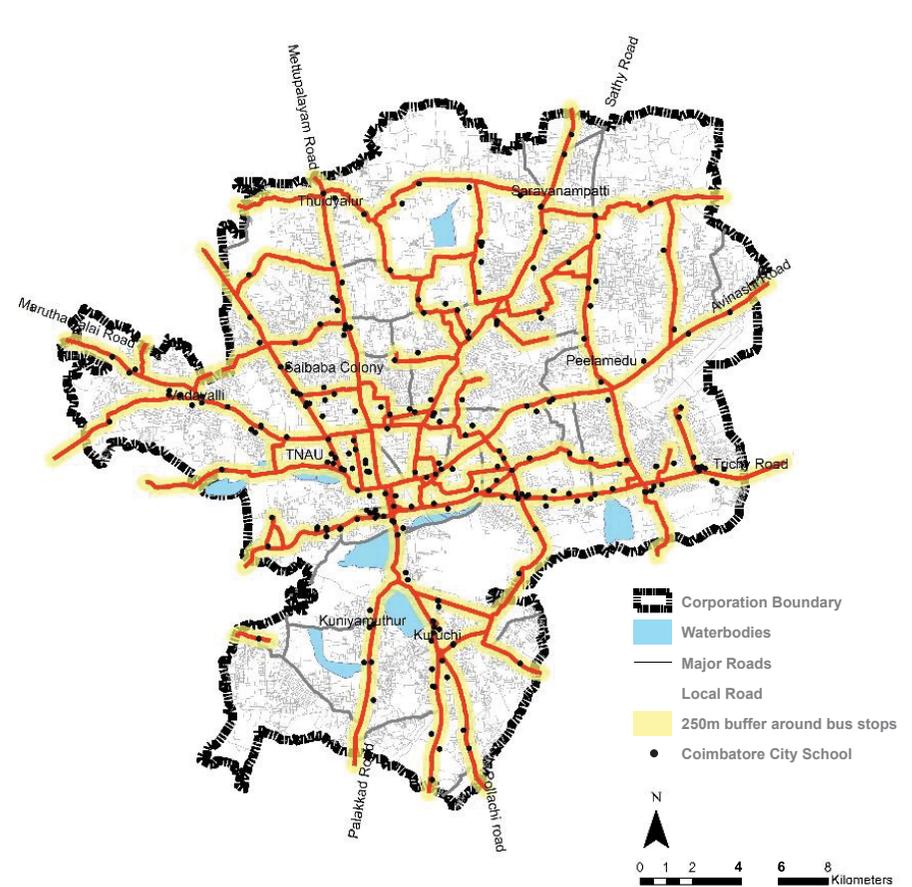
### 2.1.1 Spatial analysis of schools – Public transport

Coimbatore is covered with nearly 1000 km of bus route network with 573 bus stops which can cater to 60% of the schools located within the 250 m buffer. This provides a great flexibility for students to use bus as mode of transport as the Transport Department provides free bus pass to school students. Maps 4 and 5 present the location of schools within 250 m buffer of bus route network and bus stops in the city. As mentioned earlier, 67% of the schools are located within 250 m of bus route. However, a detailed analysis on the applicability of this coverage to school trips needs to be carried out. Travel diary analysis presented in Section 2.2 provides results from travel pattern surveys, and could be used as a starting point to understand share of bus transport trips in schoolchildren’s overall travel pattern.



Map 3: Location of schools within 250 m buffer to bus stops

Map source: Compilation from open source spatial data, SMART-SUT analysis



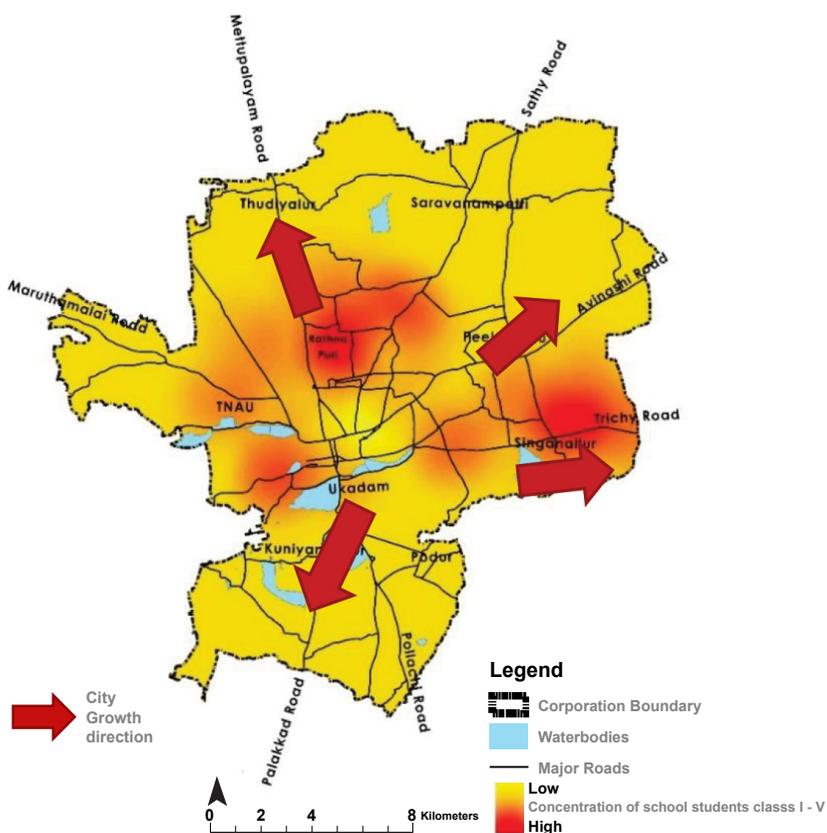
Map 4: Location of schools within 250 m buffer to bus routes



## 2.1.2 Concentration of student population in Coimbatore

Majority of the educational institutions and schools are established within the old boundary that has slowly concentrated into the core city of Coimbatore city. As per Coimbatore Comprehensive Mobility Plan 2015, the average trip length for educational trips is below 3 km, which can be easily covered by cycle. Detailed understanding on current trip lengths and travel time are discussed in Section 3.2, with results from travel pattern survey of schoolchildren. As the city is growing rapidly and also the opportunities to establish new schools, it is important that NMT and PT facilities can grow exponentially with the land-use changes.

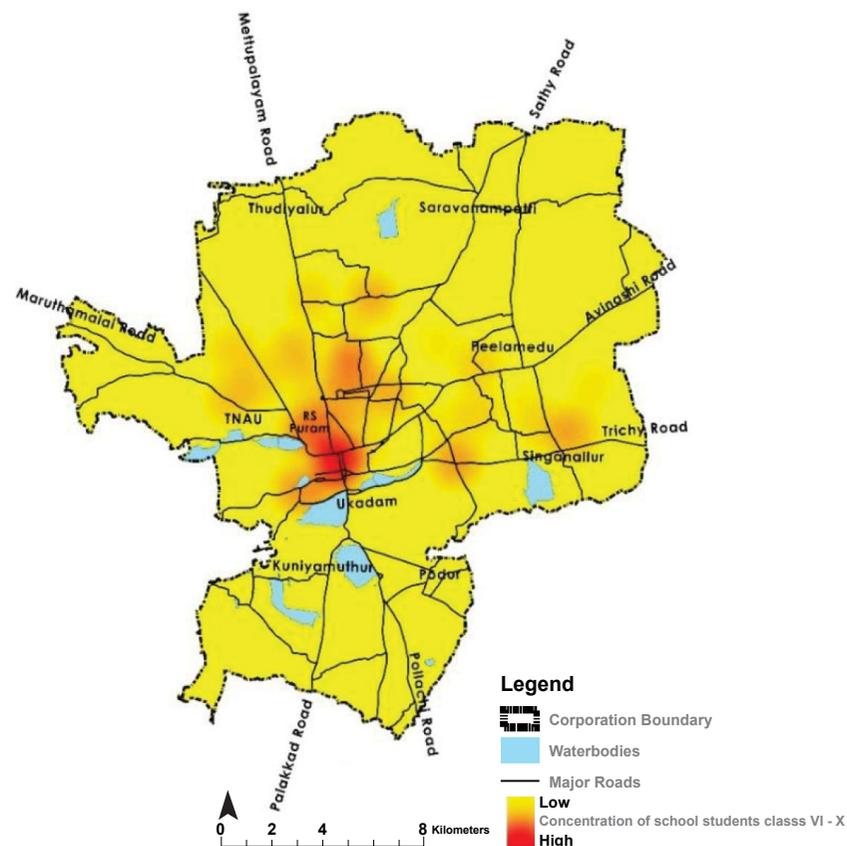
Concentration of students of Classes I – V



Map 5: Concentration of Schools in Coimbatore

Map source: Compilation from open source spatial data, SMART-SUT analysis

Concentration of students of Classes VI – X



Map 6: Concentration of Schools in Coimbatore

## 2.2 TRAVEL PATTERN SURVEY OF SCHOOLCHILDREN – RESULTS

Existing data from city mobility plan, NMT Network Plan and other transport data can only provide a broader data understanding on mobility issues of schoolchildren. This survey helps the city to understand students' current travel patterns, preferences and parents' concerns, and existing conditions around schools. While a show of hands is sufficient to understand how pupils travel to school, take-home survey was carried out to understand why certain decisions are made for their travel. For example, some pupils might have to be dropped off to school by their parent because the route to school has many unmanned intersections. In addition to understanding travel patterns and preferences, it is necessary to audit existing infrastructure around schools. While a detailed audit is obviously necessary and has been carried through iRAP, star rating for schools as a pre-condition, take-home survey interviewed school administrators by asking them about existing safety measures such as traffic signals, zebra crossings, school zone demarcations, etc.

Due to the onset of pandemic, the surveys were restricted to 25 schools in the city. Schools were contacted with the help of Residents Awareness Association of Coimbatore (RAAC), who in turn contacted the school management prior to filling the questionnaire. After getting an official consent from school management, RAAC distributed the questionnaire to school teachers through email to be further distributed to schoolchildren for show-of-hands surveys and parents surveys. School teachers were provided with time-to-time guidance on any issues in the questionnaire. Due to the pandemic, school teachers, students and parents were given required time to fill the questionnaire. RAAC provided guidance to school management to fill the administrators questionnaire.





## 2.2.1 Results from the travel pattern survey

### Raise of hands survey – Mode of travel

Out of 400 odd schools in Coimbatore, 25 schools were selected on random sampling basis to represent the complete geography of the city. The survey was conducted with students from all grades attending in private, government, aided and corporation-governed schools. Cross-verification of the mode of travel and distance to school was carried out using Google Earth, to adjust any confounders (however, detailed modelling was not carried out due to scope limitations).

Out of 25 selected schools, 24 schools responded to the raise-of-hands survey, with 99% response rate. Majority of the children used **NMT (walk and cycle)** as the preferred (**50%**) mode of transport followed by **bus/Intermediate Public Transport (IPT)** (**26%**) and personal vehicles (**parents/guardian**) (**24%**). Schoolchildren using private motorised transport are observed to be higher in case of private schools in comparison to government schools.

Children in **higher grades** tend to use **public transport** rather than in the lower grades. Similarly, usage of IPT reduced from lower grades to higher grades. NMT has shown balanced share among all grades.

There is no significant difference observed in mode shares through various days and during morning and evening journeys.

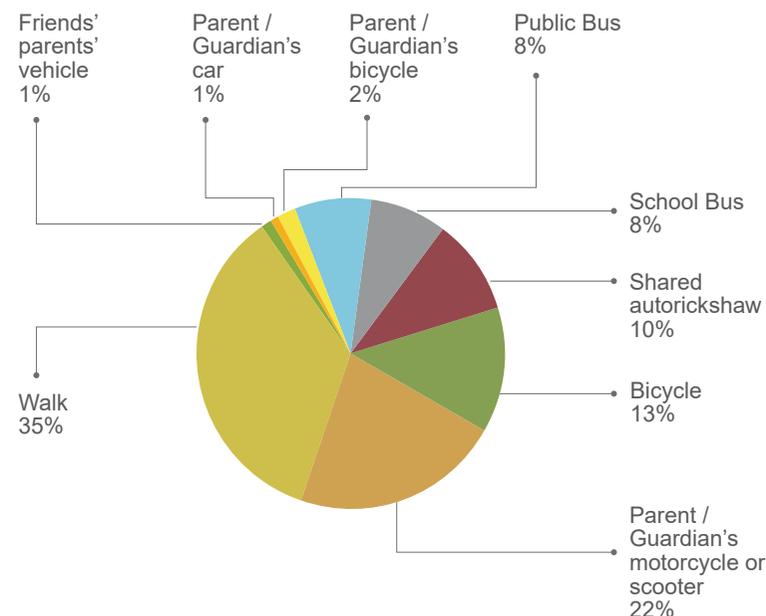


Figure 4: Mode share of schoolchildren trips

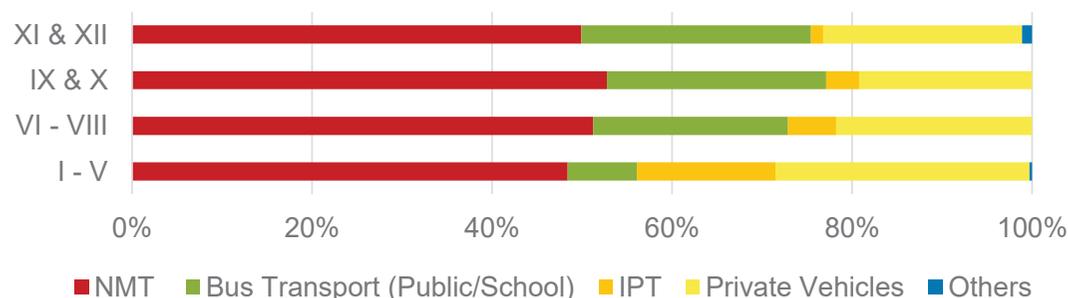


Figure 5: Mode share according to school grades

Source: Travel pattern survey analysis

## Take home survey – Travel time and distance

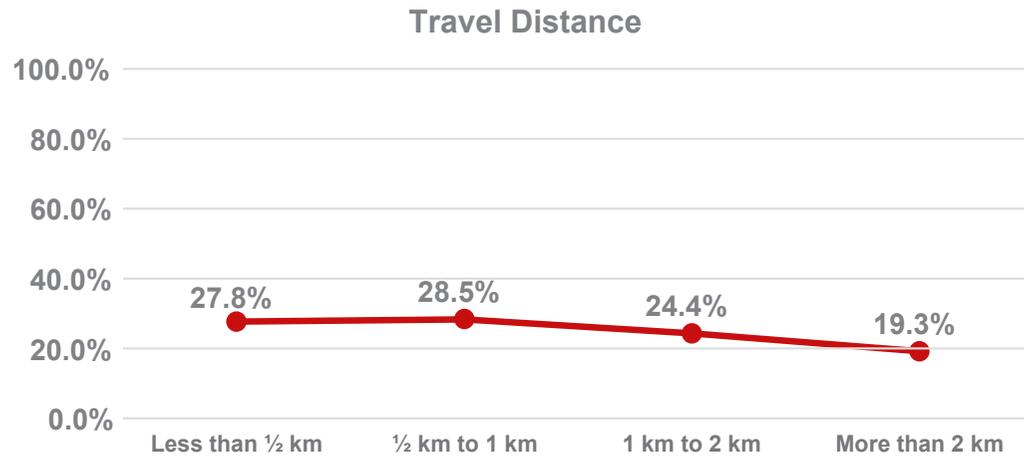


Figure 6: Trip length of school children from their homes

Source: Travel pattern survey analysis

For detailed understanding of the travel characteristics of schoolchildren, ‘take home’ survey was conducted to record the responses with the help of their parents. The average trip length to school is observed to be 1.1 km. The mixed land use nature of the city provides an opportunity for location of schools within neighbourhoods and also families living near to the schools.



### Travel Time - Walking vs All Modes

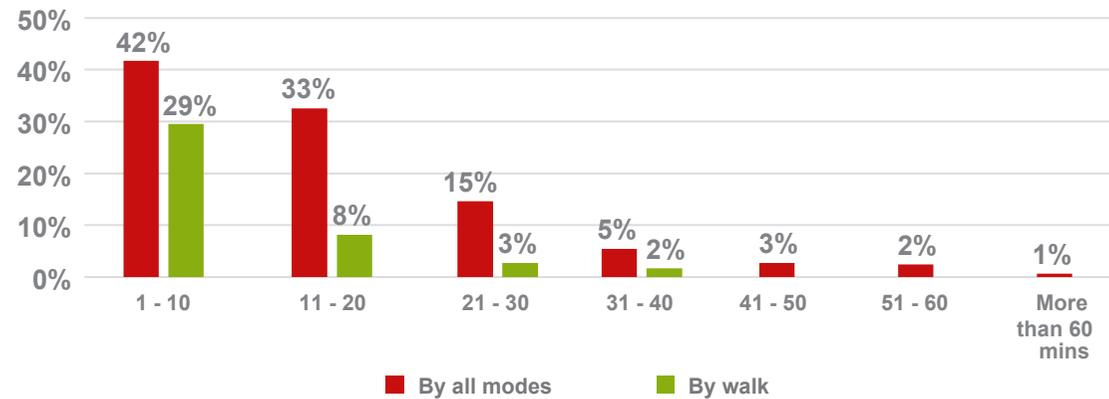


Figure 7: Walking travel time compared to other modes

Source: Travel pattern survey analysis

- **56%** of the students attend school within **1 km travel distance** from their house
- **42%** of the students reach school within **10 minutes**.
- **13%**, out of 58% students who travel more than **10 minutes** to schools, travel to school **by walking**.
- Out of the **42%** students who reach school within **10 minutes**, **70%** of the students reach by **walking**.



## Take home survey – Travel time and mode share

Walking is observed as the predominant mode of transport for shorter commutes to school. Given that schoolchildren live predominantly within 1 km radius of their school, improving the NMT accessibility of schools is of highest priority.

- Out of the students who walk to school, **30%** of the students walk more than **10 mins** to reach their school.
- This also shows that **70%** of the children stay near to their school as they reach their school within **10 mins of walk**.

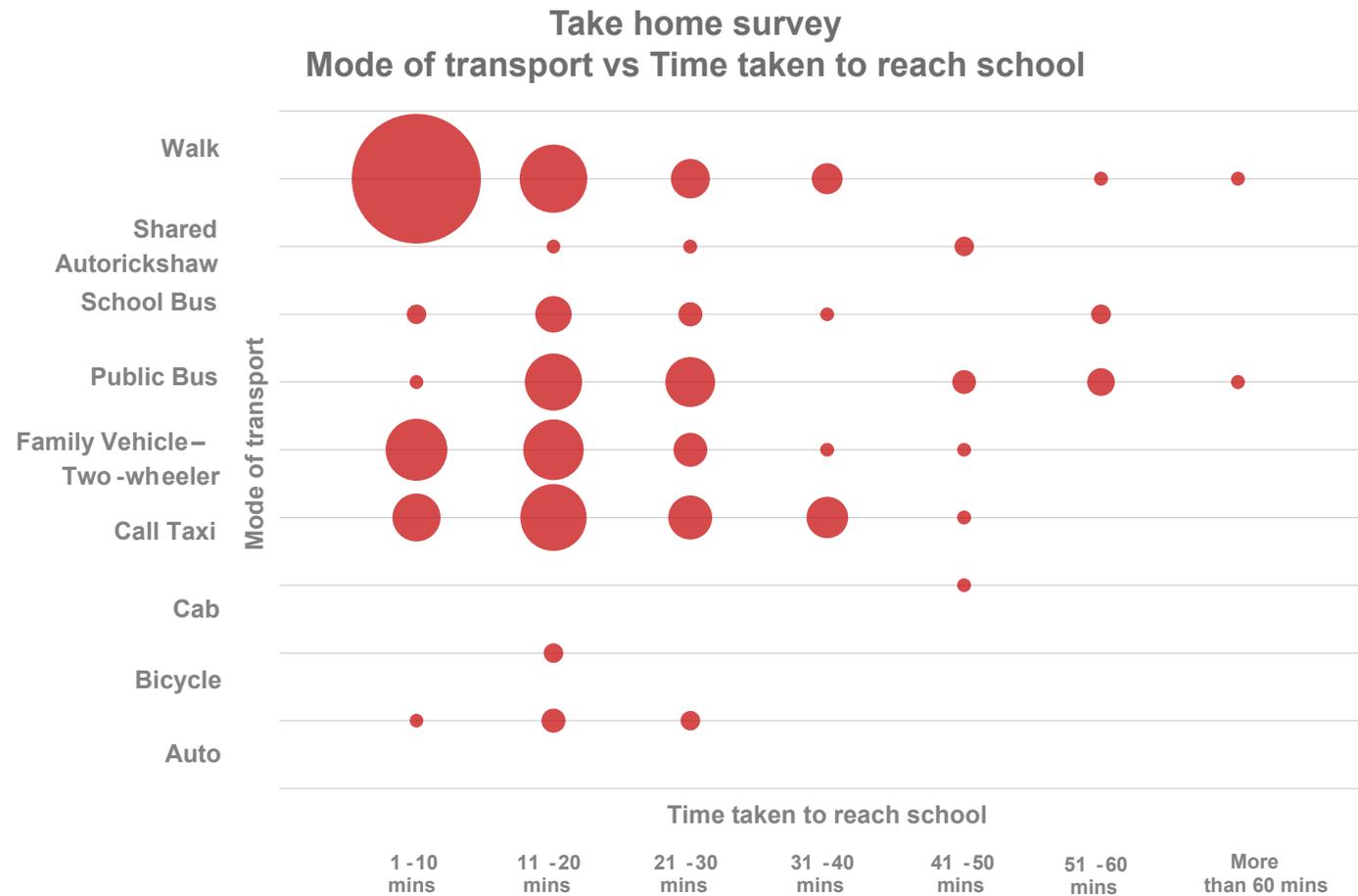


Figure 8: Travel time according to mode

## Take home survey – School environment audit

Parents do not allow their children to use NMT modes to commute to school due to road safety concerns. This is an important reason to improve road safety. Parents have highlighted the issues that require improvements to encourage their children to walk and cycle to school.

Primary reasons stated by parents are high traffic volumes, high traffic speeds, and bad quality of footpaths which refrain 70% of the parents from encouraging their children to use NMT modes to travel to their respective schools.

Take home survey – What reasons prevent you from allowing your child not to travel by bus, cycle or walk?

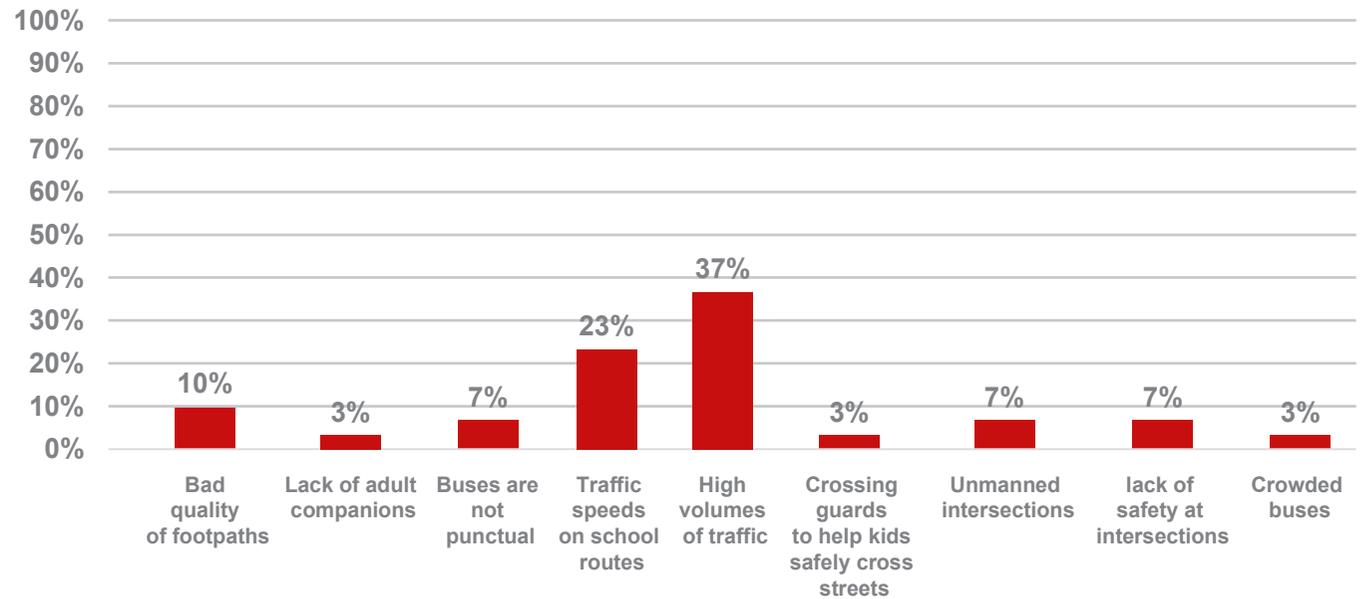
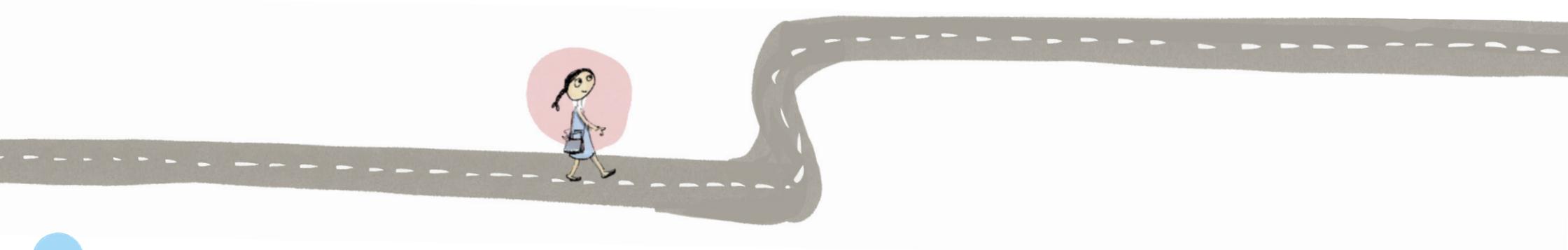


Figure 9: Stated reasons to avoid NMT modes



## School environment audit – Infrastructure assessment

The administrators of schools audited their respective school environment to record the presence and absence of the existing infrastructure available for safe and easy access to schoolchildren. This bar chart shows the existing scenario of the audited schools.

- While schoolchildren predominantly walk to school, they face significant obstacles in street infrastructure that require attention and civil interventions. The results from this audit highlight the gaps in street infrastructure that put school children at risk during their journey to schools.
- From the audit results, it is evident that **there are no proper footpath facilities**, road crossing facilities and proper signages nearby most of the schools in Coimbatore.
- **72% of the total schools do not have adequate safety measures.**
- **>50% of the schools do not have designated drop-off and pick-up points** nor any traffic management plans.

Infrastructure provided around the school environment to enhance safety of the school students

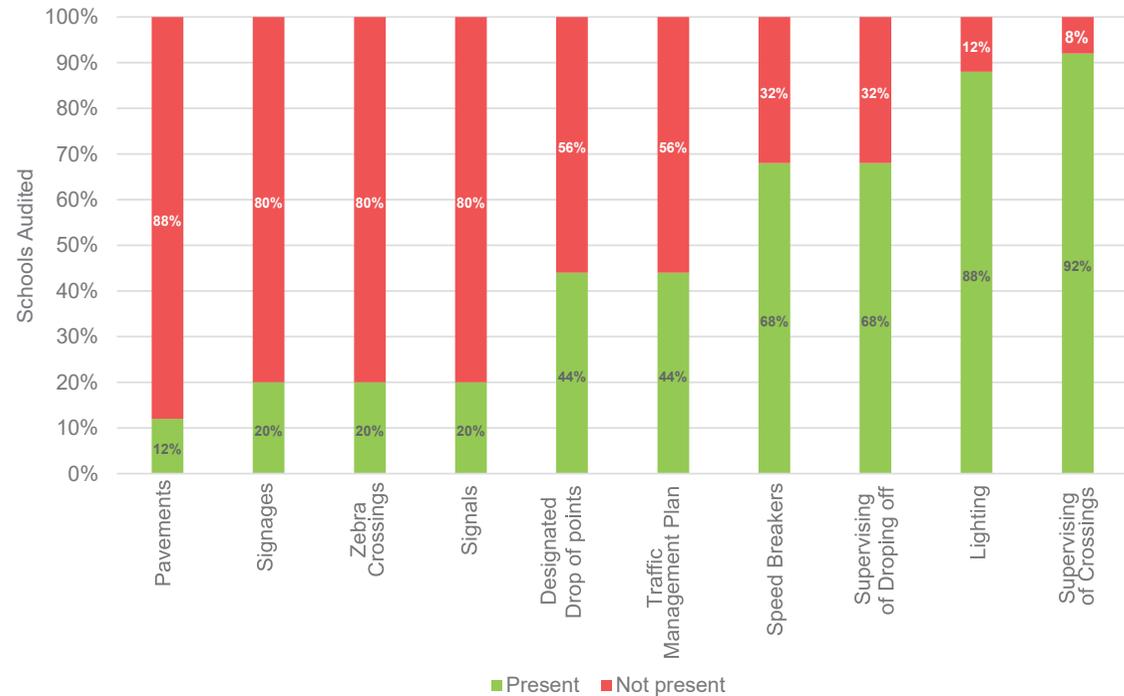
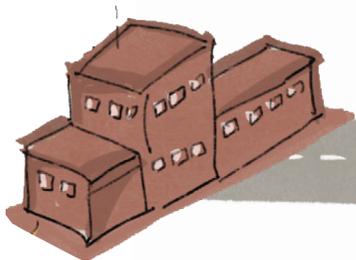
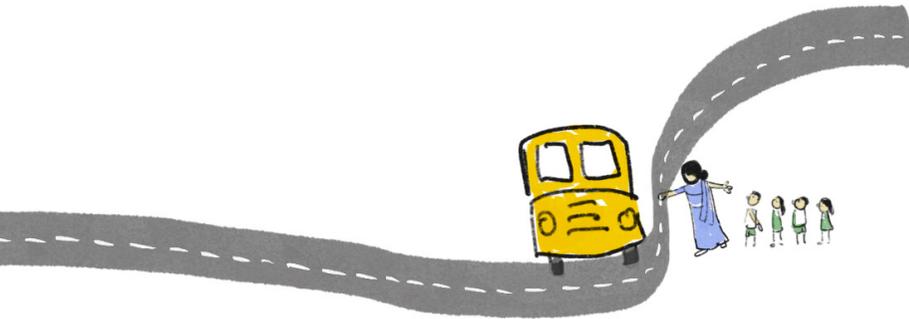


Figure 10: Status of infrastructure around schools



## 2.3 SCHOOL PRECINCT ACCESSIBILITY ANALYSIS

The results of the travel pattern survey indicate safety issues around schools based on the perception of schoolchildren and their parents. To understand the road safety issues around schools in Coimbatore, the survey findings are complemented by an evidence-based star rating of schools. The International Roads Assessment Programme (iRAP) prepared a star-rating across 69 locations in the city that were selected based on predefined criteria. Based on the available data from the NMT Network Plan, locations were determined using an indicator based selection criteria. Further details on indicators are provided in Annexure 1.



### What is Star Rating for Schools (SR4S)

Star Rating for Schools (SR4S) is the first evidence-based tool for measuring, managing, and communicating the risk children are exposed to on a journey to school. It supports quick interventions that save lives and prevent serious injuries from day one.

SR4S allows an easy assessment of each of these features and using evidence-based research of their impact on safety, a star rating can be calculated at spot locations, where 1-star is the least safe and 5-star is the safest.

### Star Rating for Schools

- Measures safety before and after road improvements.
- Provides an evidence-based rating of road safety.
- Supports education campaigns for students, drivers and the wider community for safe travel around schools.
- Guides decision-makers in prioritizing road upgrades around schools by assessing different options.

## Step-by-step process of the star rating for schools assessment

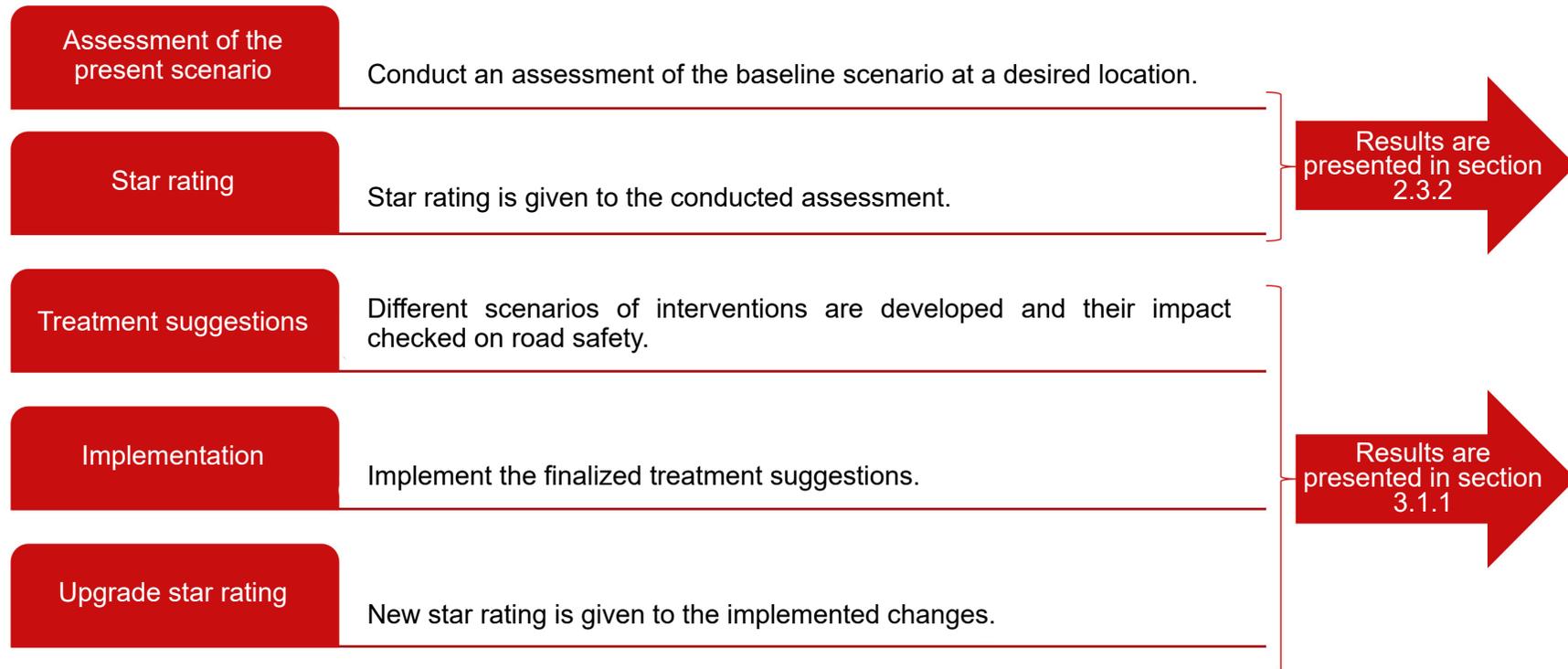
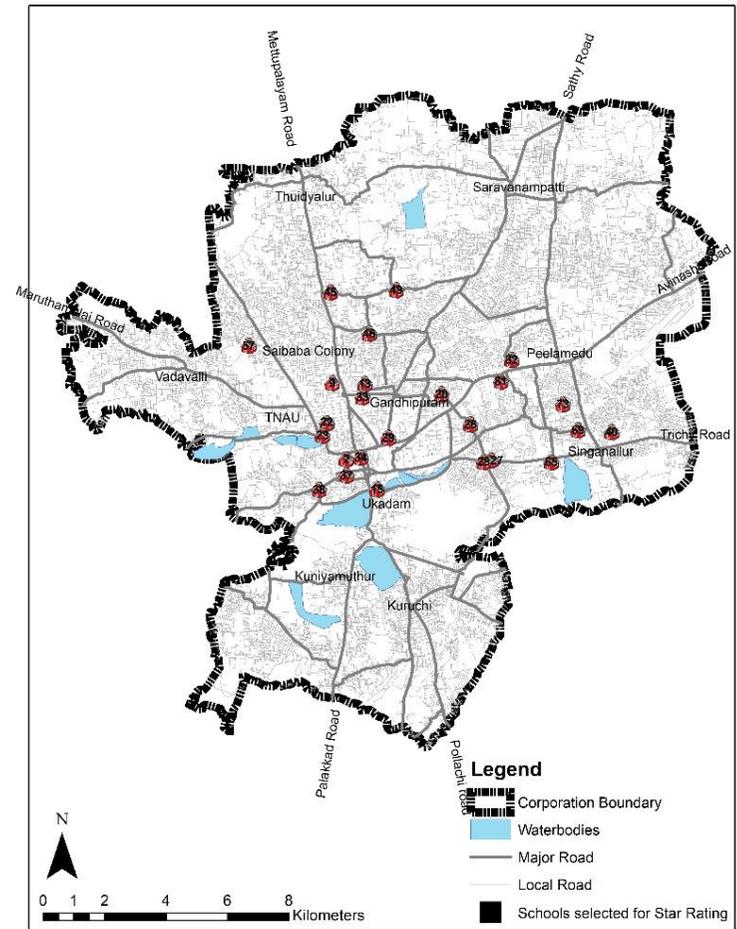


Figure 11: Process for star rating for schools



### 2.3.1 Schools assessed for SR4S



Map 7: Schools assessed for iRAP rating



## 2.3.2 Star Rating results – Business as usual

Based on the results from iRAP’s SR4S application, the summary of star rating attained by various schools in the city are presented here. The iRAP assessment observed that at several places the existing sidewalks are encroached by parking and illegal encroachments forcing pedestrians to walk on traffic lanes resulting in an increased risk. 87% of the locations assessed are rated 1 and 2 star for pedestrians. This showcases a gap in the existing NMT infrastructure around schools in the city. The design options to improve star rating are presented in chapter 3. Location-wise detailed assessment is presented in Volume III.

Star Rating	No. of locations	% share
1-star	44	64
2-star	18	26
3-star	7	10
4-star	0	0
5-star	0	0
<b>Total</b>	<b>69</b>	<b>100</b>

Figure 12: Star rating for existing scenario around schools

### Examples of star rating images

★

CGHSS R.S.Puram West > Azad Road Junction

No sidewalk | No crossing facility | 4-leg intersection

★★

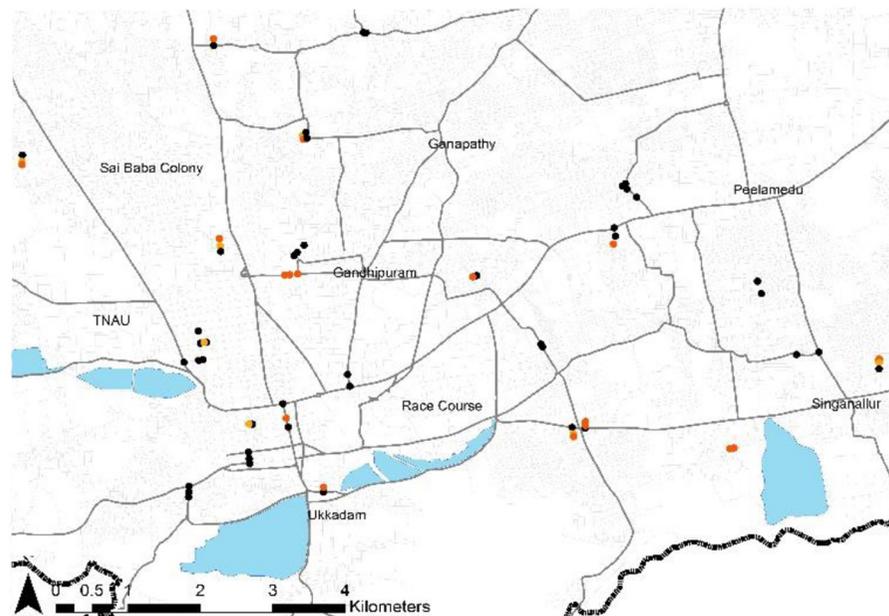
CGHSS Oppanakara Street

Informal sidewalk | No crossing facility | No intersection

★★★

CMS Sangapur

No sidewalk | No crossing facility | No intersection | Low speed | Low traffic volume  
(This location achieved 3-star as speed and traffic volume are low)



Map 8: Locations that have attained star rating



### 2.3.3 Orientation of inferences to derive measures

The results from the surveys are correlated to understand the relation between the data. With the gaps identified from the analysis, Table 1 below presents a summary of the findings.

Table 1- Comparative statement from surveys

Travel Pattern Survey	Infrastructure Assessment (School Audit and iRAP Ratings)
<ul style="list-style-type: none"> <li>Majority of the students reach school by walk (50%) and travel less than 1 km to reach school and within shorter time.</li> <li>A considerable number of students use cycles to reach school but the safety concerns en route is preventing more students to shift towards cycling.</li> <li>Parents prefer to drop their children to school and it is causing issues to parents and students who walk and cycle to school due to lack of proper traffic management near to school</li> </ul>	<ul style="list-style-type: none"> <li>Poor walking facilities put school children at risk during their journey. Majority (90%) of the schools do not have safe walking facilities.</li> <li>This is also substantiated by the assessment of parents who say that <b>87%</b> of them feel the present facilities are <b>unsafe</b></li> <li>Majority of the schools do not have proper pick-up and drop-off points leading to serious risks to those who cross the road.</li> <li>Often <b>speed control measures</b> are present only at the entry or exit of the school.</li> <li>&gt;60% of the school road sections have <b>high speed and high volume</b> of traffic</li> </ul>
<p>Students using walk, cycle and public transport (&gt;55%) face issues while crossing the road as there are inadequate speed control measure within 250 m of the vicinity of the school</p>	<ul style="list-style-type: none"> <li>Often speed control measures are present only at the entry or exit of the school.</li> <li>&gt;60% of the schools have high speed and high volume of traffic</li> </ul>
<p>Improving infrastructure around schools is crucial to retain and strengthen the trust among school children and parents to continue using walk and cycle as modes of transport. However non-design measures such as creating sensitization among parents, teachers, and officials is equally important to make these design measures sustainable. Chapter 3 provides detailed insight into the list of measures CCMC will take up to make accessibility safer.</p>	



# 03

## THE MEASURES

This chapter illustrates various measures proposed based on the status quo analysis of schools assessed for iRAP star rating. The proposed measures include design and non-design interventions, that can be implemented immediately and have long-term impact.



### 3.1 DESIGN MEASURES TO IMPROVE ACCESSIBILITY AROUND SCHOOLS

The Infrastructure gap assesment and the travel pattern survey highlight the need for immediate interventions that are required to improve accessibility around 64% of the schools in Coimbatore. Figure 3 below outlines the proposed interventions subdivided by design and non-design measures. Based on these findings, a few of the proposed measures have been carried out and will be presented in Section 4 of this report. Others, are recommended to be taken up in due time.

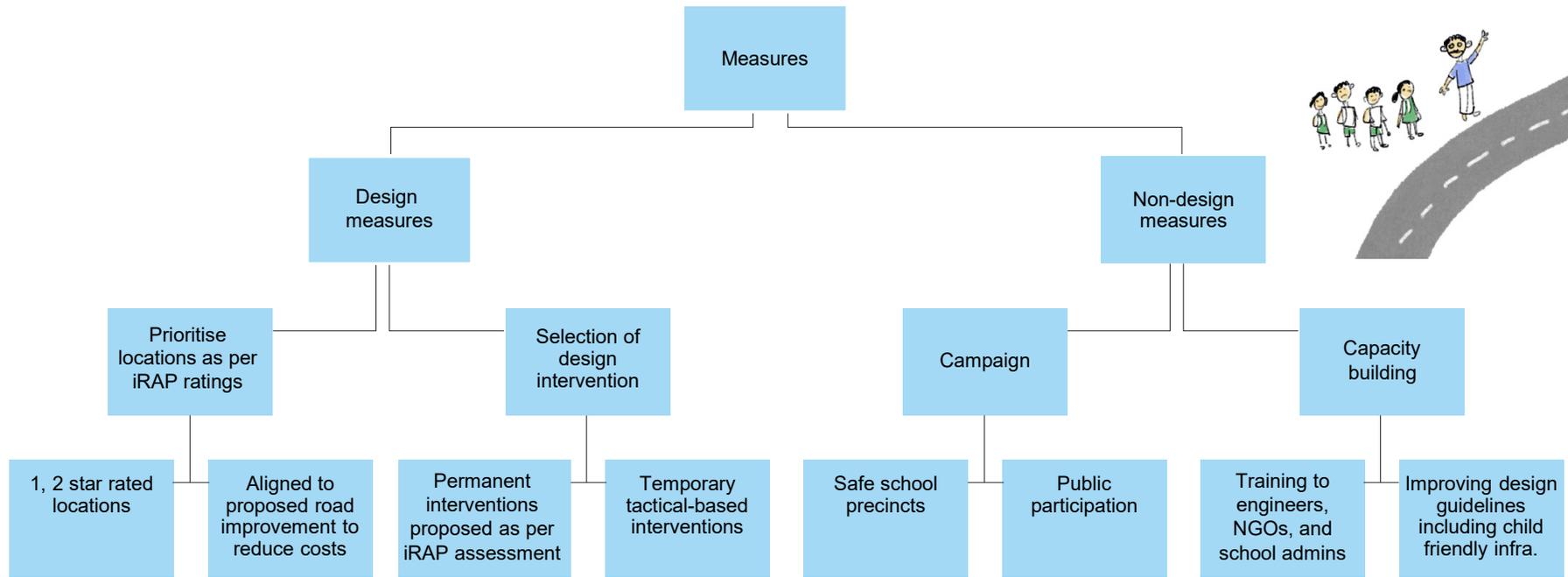
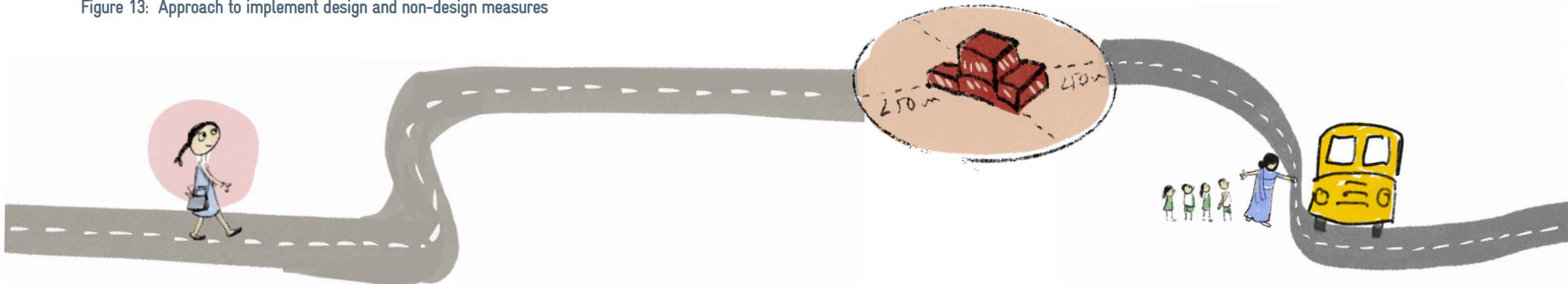


Figure 13: Approach to implement design and non-design measures





### 3.1.1 Star rating – After applying proposed interventions

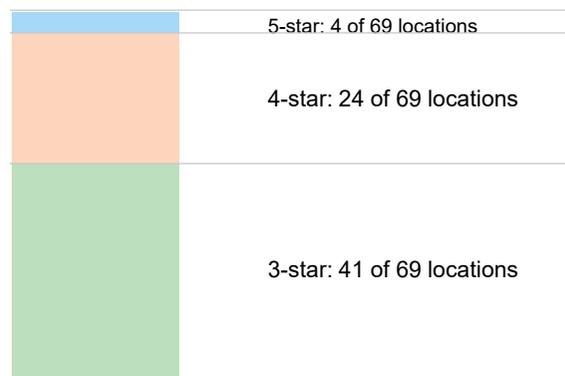
Based on star rating assessment, gaps within the existing infrastructure are identified and design measures are proposed to make them safe for school children. Series of measures are pre-applied in the assessment process to understand before and after improvement rating, which provide a guidance for field engineers to prioritise the locations and improvement measures. Elements of design measures are present in the subsequent section. Locations already assessed are further grouped based on existing infrastructure and improvements to be made.

100% of the locations will achieve 3 star or better rating for pedestrians if the treatments suggested under Option 1 are implemented. But as per Option 2, 31% of the locations still remain with rating of 1 and 2 stars.



**Option 1** in general includes raised table-top type crossing for undivided road and signalised crossing for divided roads.

#### After Star Rating (Improvement Option 1)

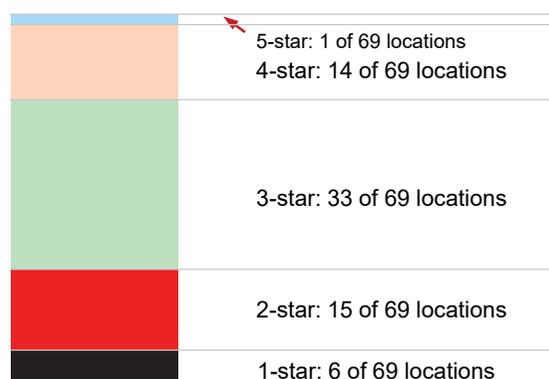


Star Rating	No. of locations	% share
1-star	0	0%
2-star	0	0%
3-star	41	59%
4-star	24	35%
5-star	4	6%
Total	69	100%

Figures 14: Star rating post-implementation based on improvement option 1

**Option 2** includes zebra marking for undivided road and raised table-top type crossing for divided roads.

#### After Star Rating (Improvement Option 2)



Star Rating	No. of locations	% share
1-star	6	9%
2-star	15	22%
3-star	33	48%
4-star	14	20%
5-star	1	1%
Total	69	100%

Figures 15: Star rating post-implementation based on improvement option 2

### 3.1.2 Classification of locations for implementation of safety treatments

Treatments such as road surface improvement, road delineation improvement, shoulder marking, intersection and curve quality improvement, school ahead sign, are also suggested at locations under all groups as required. Detailed design templates are presented in Volume 3. Locations assessed are grouped into three categories based on ease of implementation of suggested treatments.

Group-1	Group-2	Group-3
includes locations on low traffic streets or local roads with low pedestrian flow. Low cost safety treatments as listed below can be provided at these locations.	includes locations on medium to high traffic roads (mostly collector / distributor roads) having moderate to high pedestrian flow. Treatments listed below can be considered here.	locations are mostly on divided high traffic arterial or sub-arterial roads and have high pedestrian flows. Safety treatments suggested for these locations are shown below.
Marked pedestrian crossing (zebra marking)	Raised (table-top) crossing or combination of zebra marking and speed humps	Signalized pedestrian crossing (Pelican type)
Obstruction-free space for pedestrians to walk (informal footpath). Provide formal footpath if feasible	Formal footpath on both sides	Formal footpath on both sides with pedestrian fencing

Example location image:



Figure 16: Grouping of locations for safety treatments



## 3.2 DETAILED STEPS FOR DESIGN MEASURES

Table 2- Detailed tasks for implementing design measures

Timeline*	Measures	Tasks	Cost Implication	Outputs
Short term	Raised crossing/ Table-top crossings	<ul style="list-style-type: none"> <li>Continuation to footpath</li> <li>Site clearance</li> <li>Design and Bill of Quantities</li> <li>Tender and implementation</li> </ul>	Low to medium	Safe and seamless crossing
	Speed control measures (speed humps, lane configuration)	<ul style="list-style-type: none"> <li>Implement as part of ongoing road improvement</li> <li>Interim implementation</li> </ul>	Low	Reduce vehicle speed and reduce intensity of accidents
	Rumble strips	<ul style="list-style-type: none"> <li>Implement as part of ongoing road improvement</li> <li>Interim implementation</li> </ul>	Low	Alert drivers on pedestrian priority zone
	Road marking	<ul style="list-style-type: none"> <li>Implement as part of ongoing road improvement</li> <li>Interim implementation</li> </ul>	Low	Guide the vehicles and pedestrians on their right of way
	Signage (school zone, speed limit)	<ul style="list-style-type: none"> <li>Implement as part of ongoing road improvement</li> <li>Interim implementation</li> </ul>	Low	Alert drivers on school zone and speed limits
Medium to long term	Footpath improvement	<ul style="list-style-type: none"> <li>Removal of Obstructions</li> <li>Design and BoQ</li> <li>Tender and implementation</li> </ul>	Medium to high	Safe movement along the street
	Bus stop improvement	<ul style="list-style-type: none"> <li>Removal of obstructions</li> <li>Lane configuration</li> <li>Design and BoQ</li> <li>Tender and implementation</li> </ul>	Medium to high	Safe access and waiting area for children
Long term	Cycle lane	<ul style="list-style-type: none"> <li>Removal of obstructions</li> <li>Lane configuration</li> <li>Design and BoQ</li> <li>Tender and implementation</li> </ul>	Medium to high	Safe cycling and access to destinations

\*Short- 1-3 months | Medium- 3-6 month | Long- 6-12 months

### 3.3 DETAILED STEPS FOR NON-DESIGN MEASURES

Table 3: Detailed tasks for implementing non-design measures

Timeline*	Measure	Tasks	Cost Implication	Responsible
Short to medium	Capacity building and design guidance	<ul style="list-style-type: none"> <li>• Training of CCMC officials, NGOs, and contractors on school zone infrastructure</li> <li>• Sensitisation of politicians, administrators, and media on safe school precinct programme</li> <li>• Updating street design guidelines to include children-friendly infrastructure</li> </ul>	Low to medium	CCMC in association with TNIUS or other technical assistance agencies should prioritise these tasks
Short to medium	Stakeholder consultations and public participation	<ul style="list-style-type: none"> <li>• Preparation of material for public participation</li> <li>• Invite relevant stakeholders</li> <li>• Organize the participatory sessions</li> <li>• Define focus groups and organize meetings</li> </ul>	Low	CCMC to appoint nodal officers from engineers to prioritise as per need
Short to long term	Campaign	<ul style="list-style-type: none"> <li>• Road safety campaign</li> <li>• Campaign on safe school precincts</li> <li>• Campaign on walking and cycling</li> <li>• Organizing programmes like mandatory walk or cycle to school days</li> <li>• Walking bus campaigns</li> <li>• Leader of safe school programme</li> </ul>	Medium to high	NGOs along with CSR initiatives should prioritise this
Short to medium	SSP champions	<ul style="list-style-type: none"> <li>• Initiate SSP champions programme in schools</li> <li>• Integrate timely with campaigns</li> <li>• Organize yearly champions meet</li> </ul>	Medium	NGOs with approval from CCMC to take this up
Medium to long	Co-curricular activities	<ul style="list-style-type: none"> <li>• Incorporate safe schools in school curriculum in general subjects</li> <li>• Physical activities planned around safe school precincts objective</li> </ul>	Low	CCMC, NGOs to pursue with education department and school administrators

\*Short- 1-3 months | Medium- 3-6 month | Long- 6-12 months



## 3.4 PROPOSED ROLES AND TASKS TO INITIATE SAFE SCHOOL PRECINCTS

Based on the overall understanding from status quo analysis and brief discussions with stakeholders in the city, the outcome strategy provides a framework for establishing the city-wide safe school precincts in Coimbatore.

In order to make SSP initiative successful and sustainable, well-defined roles need to be framed with an equal partnership between various agencies such as the City, Schools, Community, and Children. Rather than establishing top-down expectations, SSP programs can be collaborative and participatory, constantly trying new approaches and cultivating new relationships.

### 3.4.1 Context setting for institutional strengthening

This programme also requires at least one person with a formal job responsibility to organize and coordinate between the partners. Given the extent of inter-agency coordination required to serve various schools in Coimbatore, this SSP Coordinator should be housed at the city level or with a local NGO. Ideally, the position should be full-time to coordinate between partners and keep activities going, but a part-time position could be effective as well, in a more limited capacity. The SSP Coordinator should begin work by:

- Identifying technical partners to carry out travel pattern and infrastructure assessments of schools. Identify relevant measures to improve road safety around the schools
- Creating project management sheet to keep tracking various projects that can provide an opportunity to integrate the principles of safe school precinct
- Creating communication plan with key contacts, the timeline of specific activities, and campaign mechanisms
- Working on development of stakeholder consultation or focus group discussion mechanism to involve schools, parents, and relevant stakeholders for identification of issues and resolution

CSCMC will convene a multi-stakeholder consultation to present the outcomes of this study and discuss the roles that every organization needs to deliver to make SSP a successful initiative in the city. Roles and tasks for various departments identified as main stakeholders for this programme are presented in Table 4.

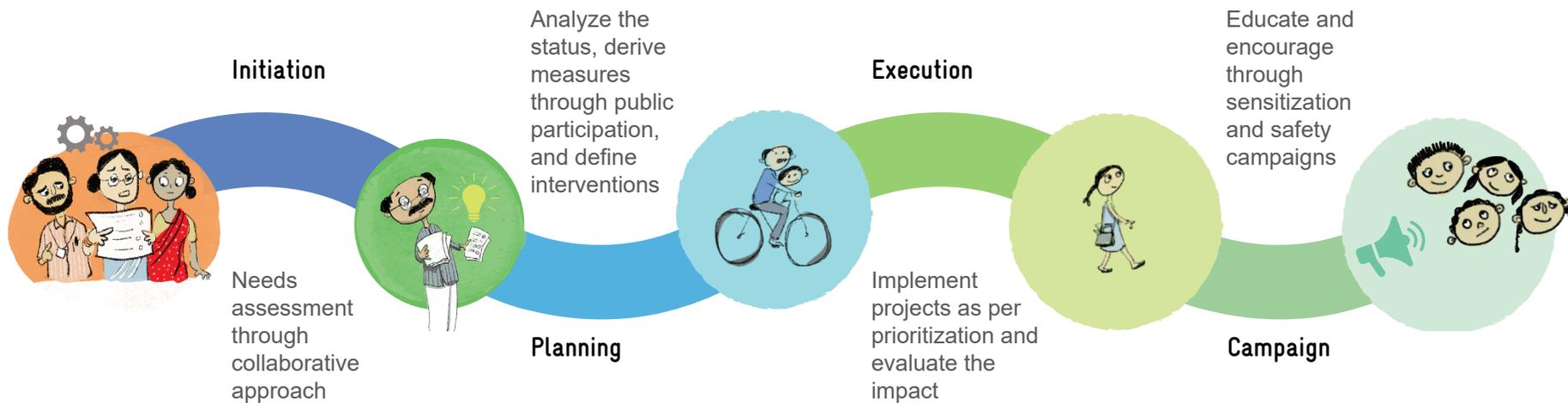


Table 4- Roles and tasks for immediate intervention on Safe School Precincts

Organization	Role	Tasks (Immediate)
Coimbatore City Municipal Corporation (CCMC)	CCMC to convene SSP initiative, appoint a coordinator (Nodal Officer). Train the coordinator and start guiding city staff on prioritizing locations to implement safe street designs and implement the design measures	<ul style="list-style-type: none"> <li>• Adopt this status quo report and convene meeting with relevant stakeholders to disseminate results and announce the programme</li> <li>• Form a sub-committee under Transport for all task forces to discuss and approve any proposed initiatives</li> <li>• Select five locations from iRAP rating and implement quick design measures</li> </ul>
Coimbatore Smart City Limited (CSCL)	Act as a technical nodal agency, conduct regular reviews, identify gaps and propose measures to overcome. Identify any state/central government funding sources to implement projects	<ul style="list-style-type: none"> <li>• Support CCMC in preparation of technical notes for meetings</li> <li>• Support in the preparation of detailed designs through external consultants and review them for final approval</li> <li>• Support CCMC in convening meetings and disseminating information</li> </ul>
Residents Awareness Association of Coimbatore/UYIR	Local community partnership, stakeholder interactions and bottom-up information channel. Collaborating with CSR institutions to implement the design measures and make school safely accessible	<ul style="list-style-type: none"> <li>• Initiate campaigns and collaborate with support from CSR initiatives</li> <li>• Active participation in sub-committees and technical meetings</li> <li>• On-ground support from CCMC officials to liaison with schools and children</li> </ul>
Traffic Police	Key stakeholder and enforcement agency for redesigned streets. Support in campaigning about sustainable modes of transport	<ul style="list-style-type: none"> <li>• Active participation in meetings and design development</li> <li>• Timely inputs for design interventions</li> <li>• Be part of trainings</li> <li>• Educate drivers, parents, and children on road safety rules in connection to SSP</li> </ul>
Schools/Children/Parents	Active participation in road safety education and encouragement activities like campaigns. Timely response and coordination with city SSP coordinator	<ul style="list-style-type: none"> <li>• Active participation of school administrators in relevant meetings</li> <li>• Be part of campaign programmes</li> <li>• Active participation in design development</li> </ul>

# SAFE SCHOOL PRECINCT PARTNERSHIP

Safe School Precinct Partnership (SSPP) is a collaborative initiative, proudly announced by Coimbatore City Municipal Corporation (CCMC) along with Coimbatore Smart City Limited, and local NGOs. This initiative will work as a living lab to prioritize mobility issues of school children in all urban mobility improvement projects. SSPP draws inputs mainly from NMT Network Plan for Coimbatore and will keep building upon it.



# 04

## THE STRATEGY

This chapter proposes a way forward that CCMC, in association with various stakeholders, will adopt to implement a children-friendly infrastructure around schools. The strategy proposed as part of way forward will help other stakeholders to define their roles in the project.





## 4.1 SAFE SCHOOL PRECINCTS STRATEGY

Gaps and needs identified: Given its niche nature, safe school precincts requires continuous guidance to establish itself into the city's development process. The present study provided a baseline understanding on the importance of safety for school children during their commute to school and the role of various elements and stakeholders in this whole process. As a way forward, it is important to have a clear strategy on achieving the listed outcomes that will guide various stakeholders in putting the actions together in a graded manner. CCMC adopts the following strategy to successfully implement the initiative.

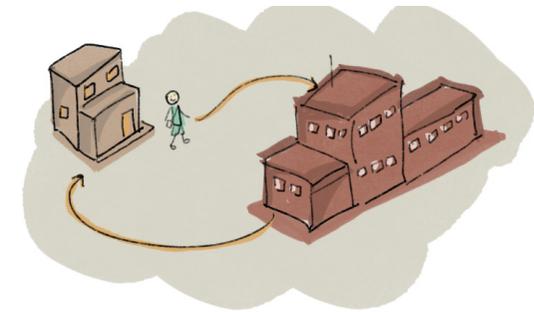
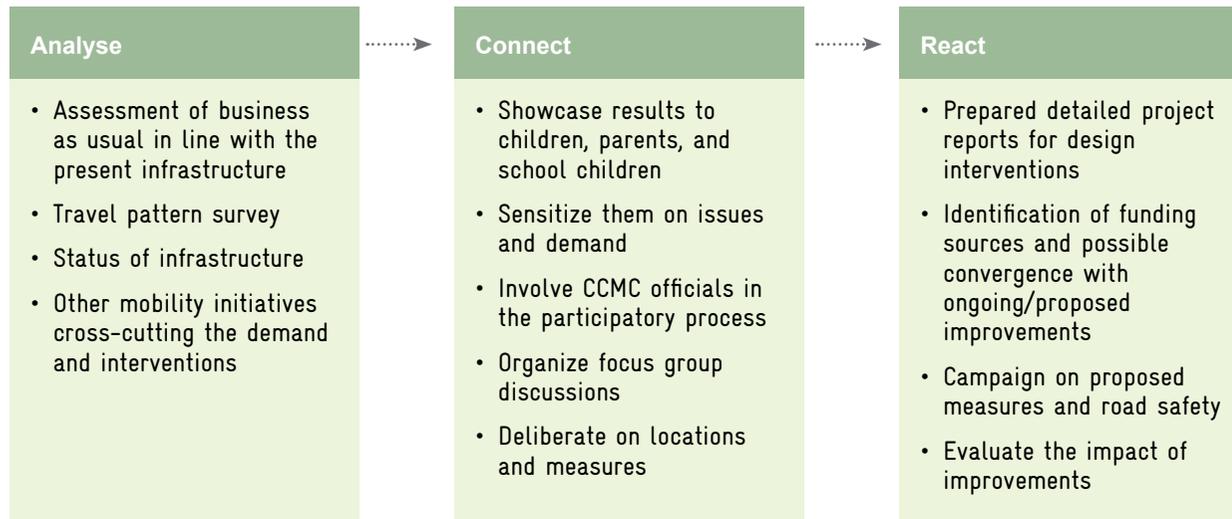
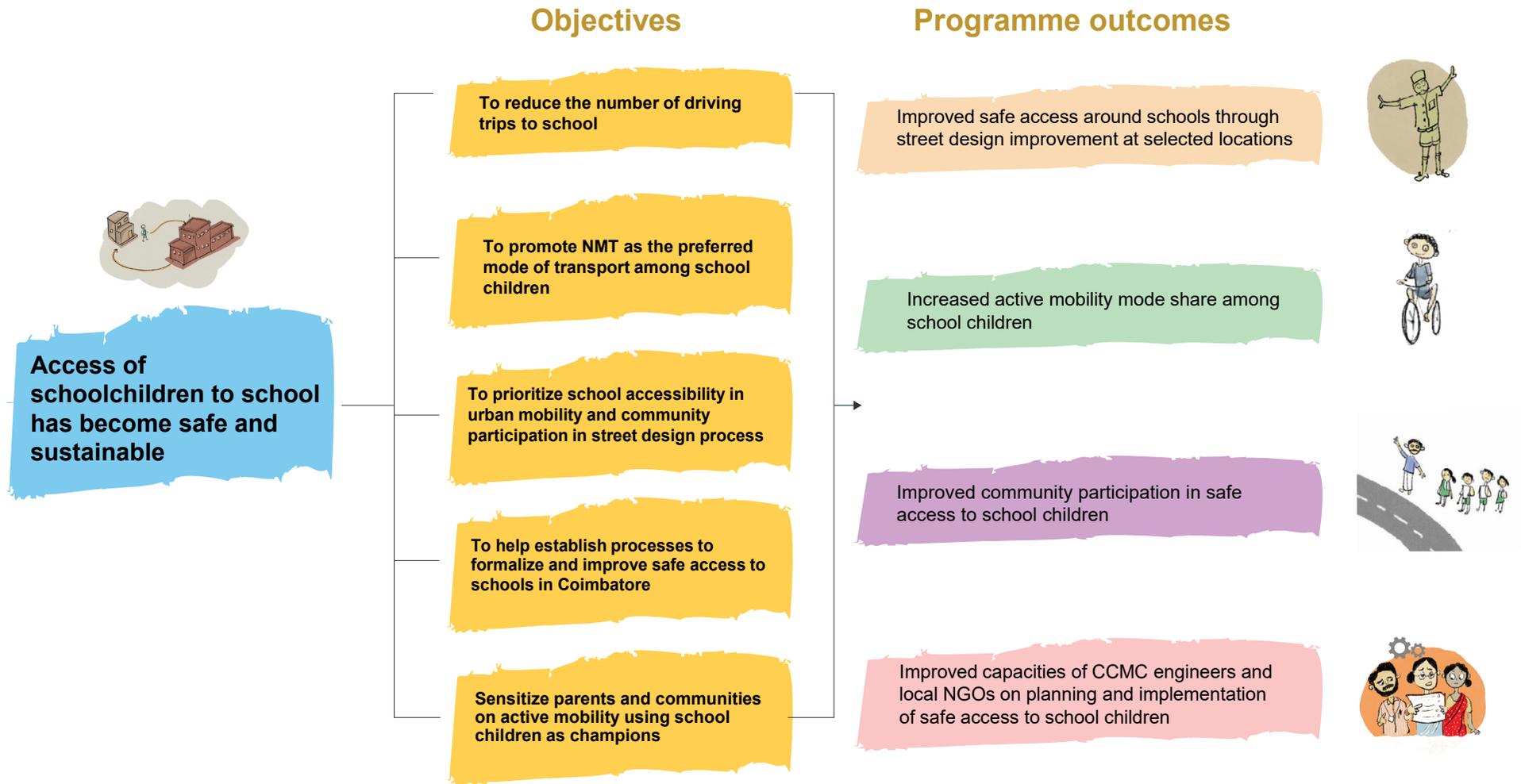


Figure 17: Approach for outcome strategy



## 4.2 RECOMMENDED OBJECTIVES AND OUTCOMES



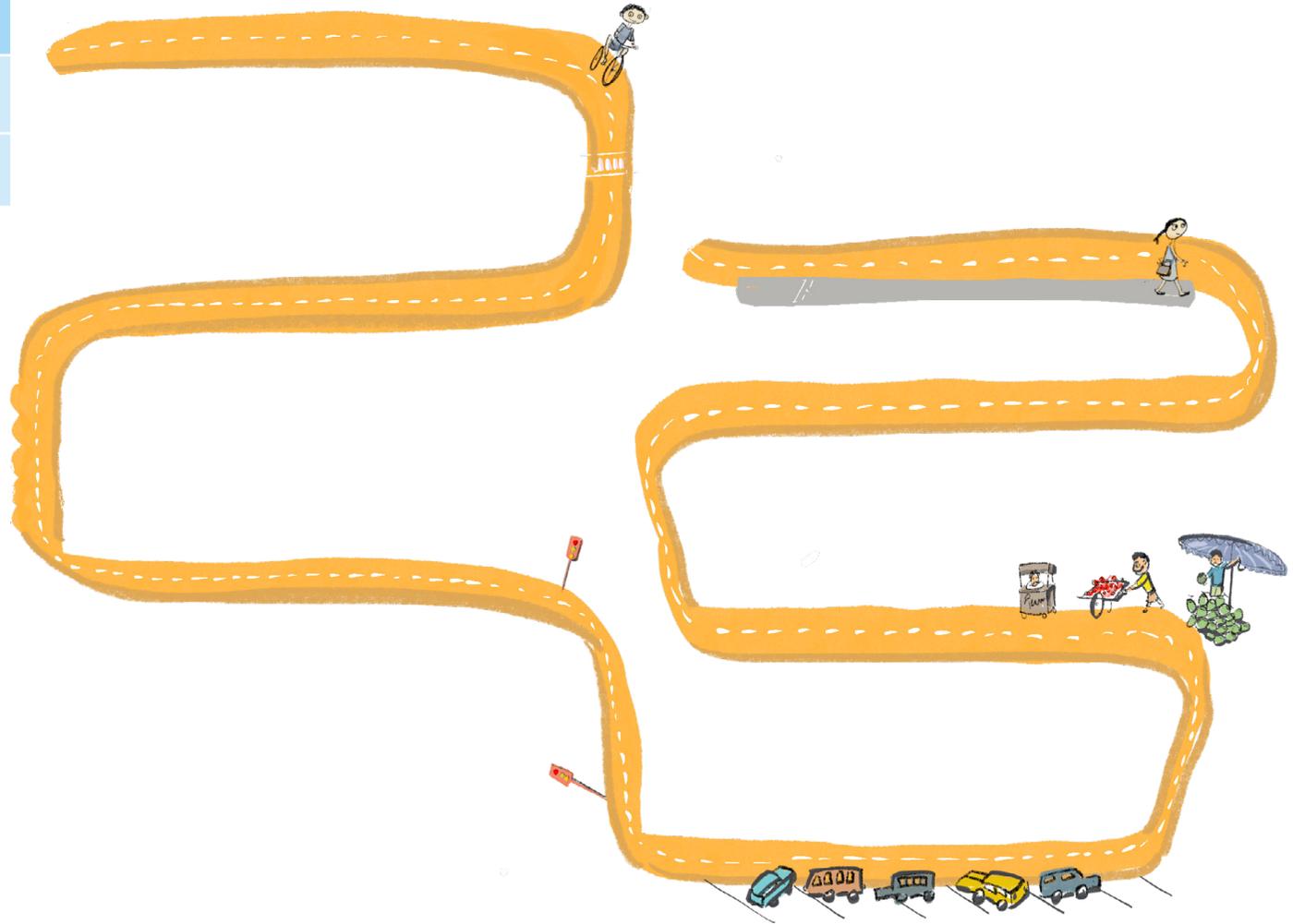
Refer to Annexure 2 for detailed definitions of objectives

Figure 18: Recommended objectives and outcomes as part of the strategy



# LIST OF ANNEXURES

Annexures	Relevant section
Annexure 1	Selection of schools for iRAP rating
Annexure 2	Defining objectives





# ANNEXURE 1: SELECTION OF SCHOOLS FOR iRAP RATING

Each school was allotted points against each of these sub-indicators ranging from 7 to 35 (7 being lowest and 35 being highest). The higher the points, vulnerable the location, ranking was given according to points obtained by each school. 25 schools out of 84 were selected for iRAP rating assessment. In order to maintain an unbiased assessment result, at least 6 schools from each of the three grades were selected.

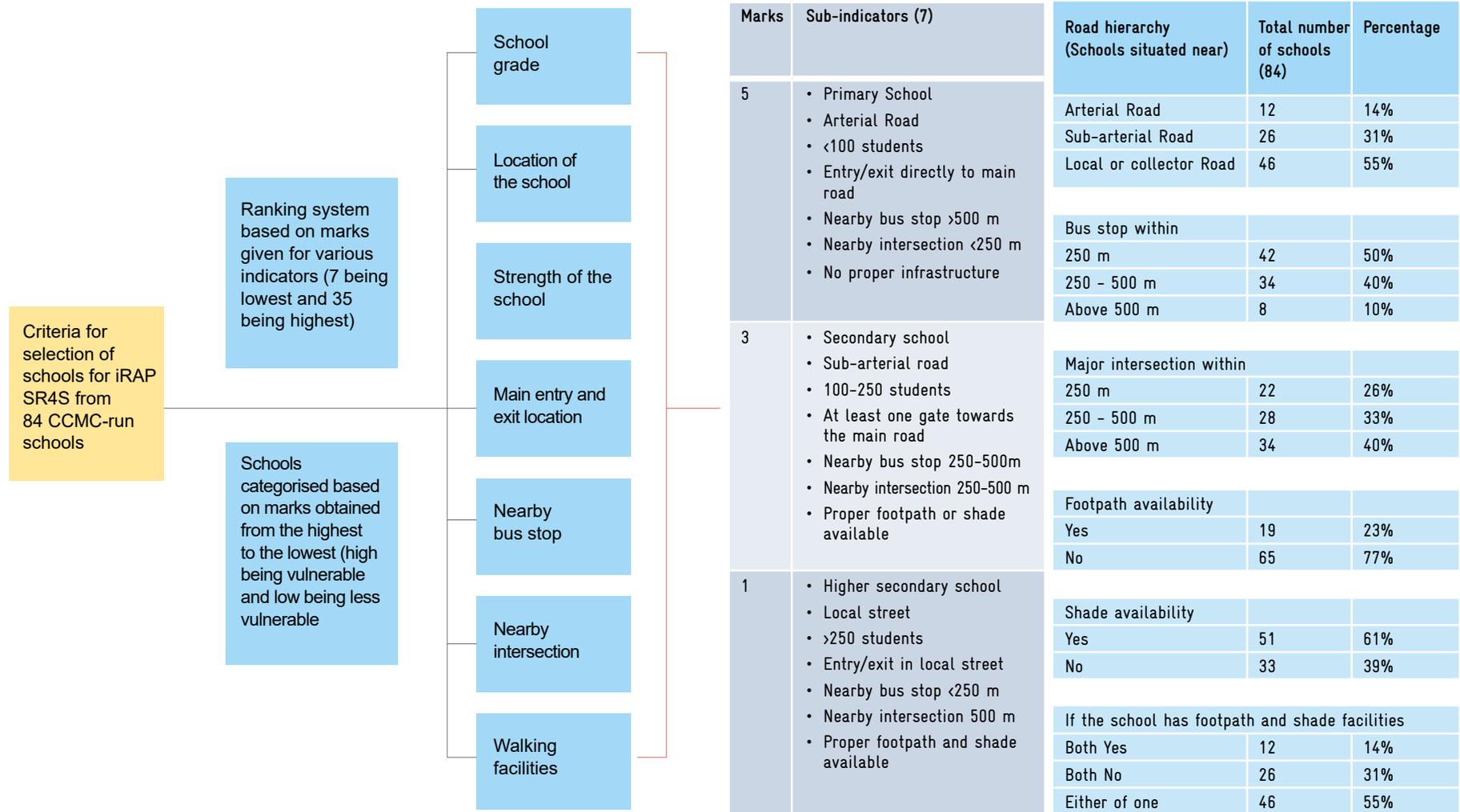


Figure A1: School selection criteria for iRAP rating

Source: SMART-SUT analysis

## ANNEXURE 2: DEFINING OBJECTIVES

### To reduce the number of driving trips to school

Encourage parents to promote children to walk and cycle to school more often. This can only be achieved through trust in infrastructure. Travel diary of school children provides a detailed understanding on the mode share, trip length, frequency distribution of school children and mode choice, which will provide a basis and evidence for creating more active mobility infrastructure.

### To prioritize school accessibility in urban mobility and community participation in street design process

Education trips within urban mobility plans are often shown as aggregated trips for all age groups. It is important to show education trips of age below 18 as an independent category to understand the underlying issues of school children accessibility. City mobility plans should highlight the need for further research and study of school children accessibility issues and provide detailed infrastructure recommendations that will encourage children to walk and cycle to school.

### Sensitize parents and communities on active mobility using school children as champions.

Working for child-friendly improvement requires special attention and approach in identifying the issues and needs. This can only be achieved through continuous discussions and collaborations between authorities and end users (including parents and schools). A clear championship is required from all stakeholders to make any intervention successful within such initiatives.

### To promote NMT as the preferred mode of transport among school children

Tamil Nadu government already distributes cycles to school children. However, these are restricted to government school children. A policy measure should be undertaken to expand this scheme to private school children or to provide subsidy to purchase bicycles. Along with this, frequent campaigns should be conducted to educate parents, children, and schools on the importance of active mobility.

### To Help establish processes to formalize and improve safe access to schools in Coimbatore

Provision of school zones as road safety measure is a general practice in the road projects. This will resolve safety issues only partially. At least 250 m around schools should be studied in detail to understand the safety concerns and measures to improve the locations that are vulnerable to road accidents. Measures for locations should be aligned with the larger network improvement goal.



Ministry of Housing and Urban Affairs (MoHUA) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH are jointly implementing the technical cooperation project 'Integrated Sustainable Urban Transport Systems for Smart Cities (SMART-SuT)', commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). The project works with the three Smart Cities of Bhubaneswar, Coimbatore, and Kochi and respective state governments of Odisha, Tamil Nadu, and Kerala to promote low carbon mobility planning, and to plan and implement sustainable urban transport projects.

As part of the Indo-German bilateral cooperation, both countries have also agreed upon a strategic partnership—Green Urban Mobility Partnership (GUMP)—between the Ministry of Housing and Urban Affairs (MoHUA) and Federal Ministry for Economic Cooperation and Development (BMZ). Within the framework of partnership's technical and financial cooperation, the German government will support improvements in green urban mobility infrastructure and services, strengthen capacities of national, state, and local institutions to design and implement sustainable, inclusive, and smart mobility solutions in Indian cities. As part of the GUMP partnership, Germany will also be supporting the expansion of public transport infrastructure, multimodal integration, low-emission or zero-emission technologies, and promotion of non-motorised transport in India. Through this strategic partnership, India and Germany intend to jointly achieve effective international contributions to fight climate change.

