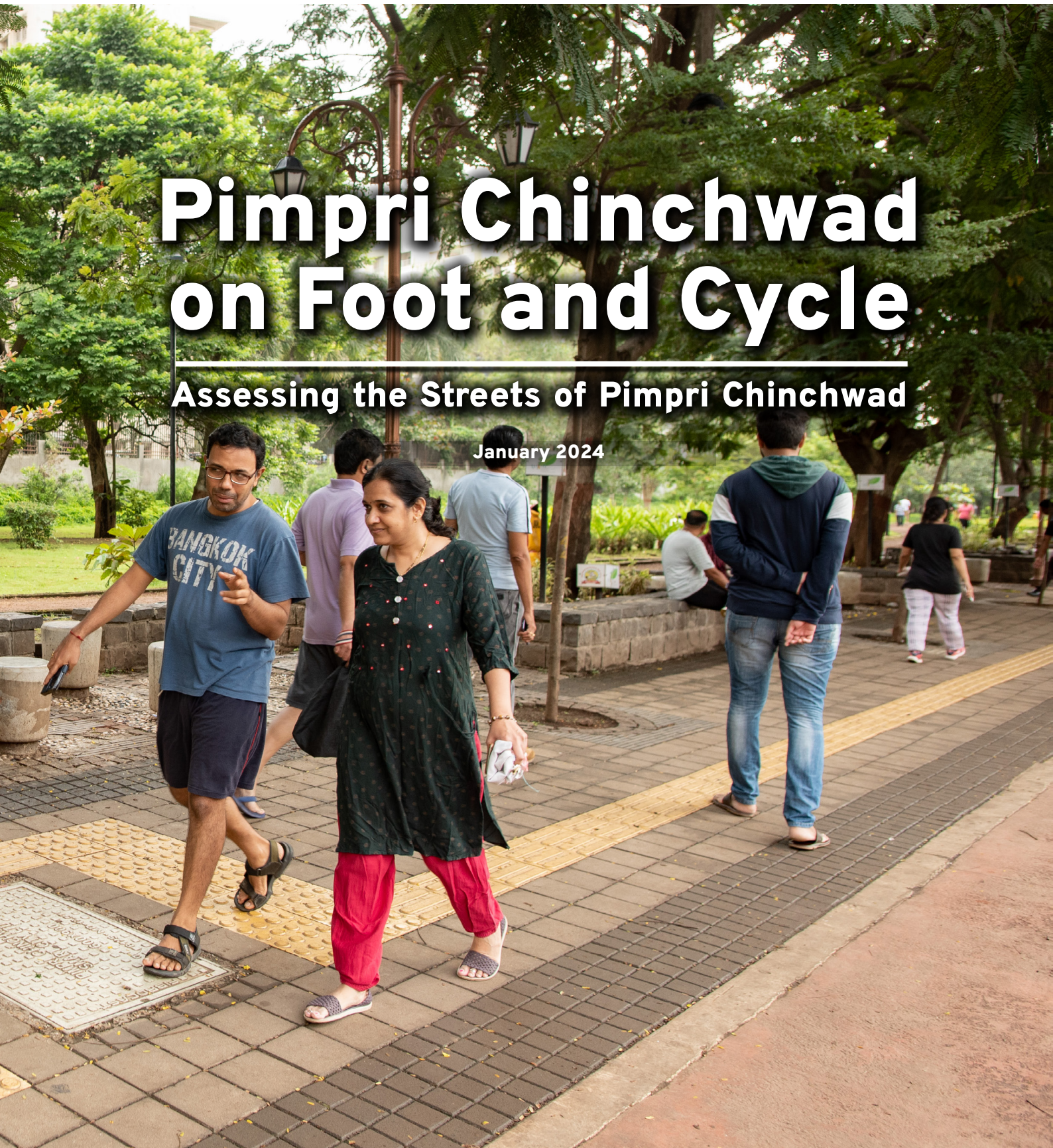

Pimpri Chinchwad on Foot and Cycle

Assessing the Streets of Pimpri Chinchwad

January 2024

Prepared for Pimpri Chinchwad Municipal Corporation by:

ITDP INDIA

The Institute for Transportation & Development Policy (ITDP) is a global organisation at the forefront of innovation, using technical expertise, direct advocacy, and policy guidance to mitigate the impacts of climate change, improve air quality, and support prosperous, sustainable, and equitable cities.

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Bapusaheb Gaikwad (Executive Engineer), and Sunil Pawar (Deputy Engineer)

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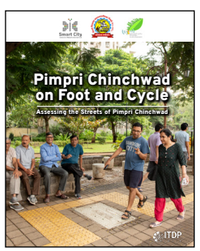

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Cover photo:
Residents enjoy a morning walk
at the Linear Garden Street

Source: Pimpri Chinchwad Smart City Ltd

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Message from the Leaders

Shekhar Singh, IAS
Municipal Commissioner
Pimpri Chinchwad Municipal Corporation

Pimpri Chinchwad is one of India's most rapidly growing cities in terms of population and area. This unprecedented development has created an exponentially increasing demand for urban infrastructure, especially for urban transport. To meet these mobility demands and create safe, accessible, convenient and seamless transit environment, Pimpri Chinchwad has provided a wide range of interventions to connect people across the city through the Bus Rapid Transit System (BRTS), Metro rail, suburban rail, and by road. The recent acknowledgement of PCMC's holistic street design initiatives at the national and international levels is a testimony of steps taken in the right direction.

One key highlight of street development in Pimpri Chinchwad is its emphasis on social equity and vulnerable populations. Today in an average Indian city, a pedestrian usually gets the lowest priority. But on any urban road, you will always find people walking or cycling for leisure or to work. In Pimpri Chinchwad, this includes a significant population of low-income groups.

Unfortunately, we still have parts of the city where we see many people forced to walk on the motor vehicle lanes, cyclists unable to ride on the cycle tracks, school children crossing streets with speeding traffic, and the elderly struggling to board buses.

As we continue developing new street infrastructure, it is essential to understand what impact these infrastructure conditions, use patterns, and citizen perspectives have on our lives, as well as how to learn from it and scale up our efforts. This study highlights the gaps in our streets and help identify the areas needing urgent improvements and course-correct our future developments. The recommendations in the report will be used to transform Pimpri Chinchwad into a more livable and healthy city.

Message from the Officials

Pramod Ombhase
Joint City Engineer, Transport and Mobility Department
Pimpri Chinchwad Municipal Corporation

In Pimpri Chinchwad, we are always experimenting with new materials, footpath designs, and junction treatments to provide safe and convenient walking and cycling experiences for our residents. The development of our streets follow the 'Test-Learn-Scale' approach where we scale up our efforts based on the learnings from such analyses.

The 'Pimpri Chinchwad on Foot and Cycle' Assessment is one such exercise by the team to understand the usage of our streets, peoples' requirements and scope for improvement. The findings of the report help to re-establish the importance of working with the experts, involving all stakeholders in the design process and maintaining infrastructure to create a people-centric walking and cycling environment.

Message from the Officials

Bapusaheb Gaikwad
Executive Engineer, Transport and Mobility Department
Pimpri Chinchwad Municipal Corporation

Pimpri Chinchwad Municipal Corporation envisions creating streets that are safe for all citizens from 8 to 80 years of age. The streets are being developed though our Streetscapes project, Smart City Mission and through ward level offices. As we begin to implement the ambitious Harit Setu project which would create such 'Healthy Streets' across the city, the 'Pimpri Chinchwad on Foot and Cycle' Assessment helps us advance data-driven decision making for the design and implementation of incoming proposals.

Such assessments need to be done annually with a fixed set of indicators to understand the impact of our efforts. We aim to make continuous monitoring a regular practice and embed it into the street development process.

Message from the Partners

Aswathy Dilip
Managing Director
ITDP India

Pedestrians and cyclists are the most vulnerable street users. 'Pimpri Chinchwad on Foot and Cycle' is a research publication that delves into their experiences on the streets of the city, highlighting the vital link between good street design, public well-being, and overall urban quality of life.

This report is an outcome of six months of meticulous investigations that have highlighted nuanced gaps and avenues for improvement of streets to transform them into safe, resilient, and thriving public spaces. The findings presented herein not only dissect the current state of Pimpri Chinchwad's streets but also illuminate a path forward with thoughtful recommendations.

I want to extend my gratitude to the Pimpri Chinchwad Municipal Corporation team, led by the honourable Commissioner, for encouraging us to undertake such a study and come out with unbiased findings. The research involved multiple sets of infrastructure assessments, one-on-one surveys with the users, video analyses, and third-party data collection.

I express profound gratitude to our collaborators—the Designshala Collaborative team and the Vishwakarma University students—for their support during the extensive surveys.

While the focus of this document centers on the streets of Pimpri Chinchwad, I urge all readers to envision their city streets anew, embracing the recommendations outlined in this publication as catalysts for creating safe and welcoming public spaces in your city.

Together let's transform our streets.

Location- Linear Garden Road

Contents

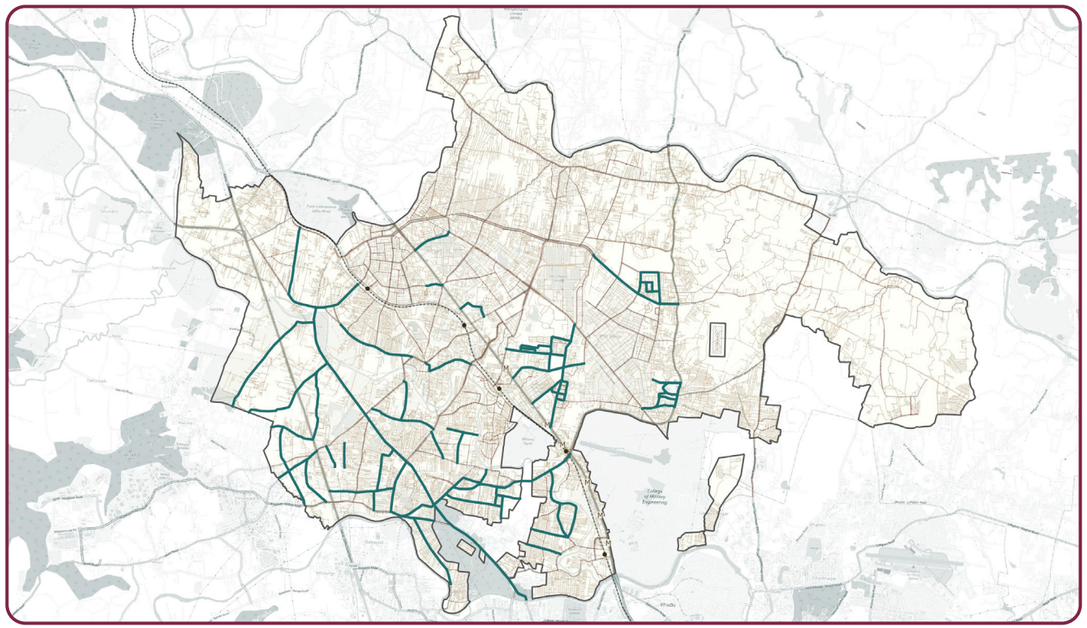
Click on title to view chapter

#1
Streetscapes in Pimpri Chinchwad

Due to Pimpri Chinchwad's nature of development and predominantly industrial land uses, personal motor vehicles such two wheelers and cars contribute to almost 40% of the daily trips. At the same time, it is also observed that walking and cycling are key modes of mobility for the workforces of Pimpri Chinchwad's large industries.

In response to this, Pimpri Chinchwad is committed to create a citywide network of inclusive, people oriented, safe and vibrant streets. To achieve this vision, Pimpri Chinchwad Municipal Corporation (PCMC) has further developed a Comprehensive Mobility Plan and a Non-Motorized Transport (NMT) Policy.

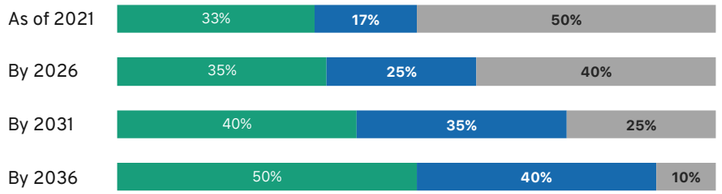
To achieve its vision of creating inclusive, people-oriented, safe, and vibrant streets, PCMC has developed a comprehensive mobility plan and a non-motorised transport policy.



Of the 4300+km of major and minor roads, 120+ km have been transformed into healthy streets in last five years

Pimpri Chinchwad Municipal Corporation's NMT Policy

Adopted in 2021, the NMT policy strives to create a statutory framework for Pimpri Chinchwad that prioritises walking and cycling in the city. By establishing the gap between the need for infrastructure and the actual provision, the policy makes provisions for proper planning, design, implementation and management of footpaths and cycleways.



According to the NMT Policy, PCMC aims to **increase the share of walking and cycling to 50% and other shared modes to 40%**, and substantially reduce the share of private mode trips in the city. To meet these goals, PCMC has adopted the Urban Streetscapes programme and Harit Setu Master Plan.

Urban Streetscapes Programme

More than **40 km of streetscapes** executed under the programme. PCMC plans to execute more than **250 km of streets** in the next five years. In addition to the Urban Streetscapes programme, Pimpri Chinchwad Smart City Ltd. (PCSCL) and the various ward offices are also involved in developing streetscapes around the city.

Harit Setu Master Plan

PCMC has adopted the ambitious city-wide 'Harit Setu' master plan to transform the city into a 15-minute cycling-and-walking-friendly haven. The plan tries to enhance existing connections, while creating new green links for residential, commercial, Institutional, and ecological campuses.

The city is currently executing a pilot neighbourhood in Pradhikaran. Analysing the learnings from the pilot, PCMC will prepare a scale-up strategy to expand walking and cycling infrastructure by transforming the city, one neighborhood at a time. The pilot implementation will transform around **37 km of streets**.

Need for Assessing Streets

As the city plans for the next five-year and ten-year scale up of street design in the city, it is necessary to understand the impact of these streets on its end-users and the environment.

With over 100km of street proposals under development in near future, it is imperative to study the impacts of street design on lives of people and incorporate the learnings as we move forward.

Pranjal Kulkarni
Deputy Manager, ITDP

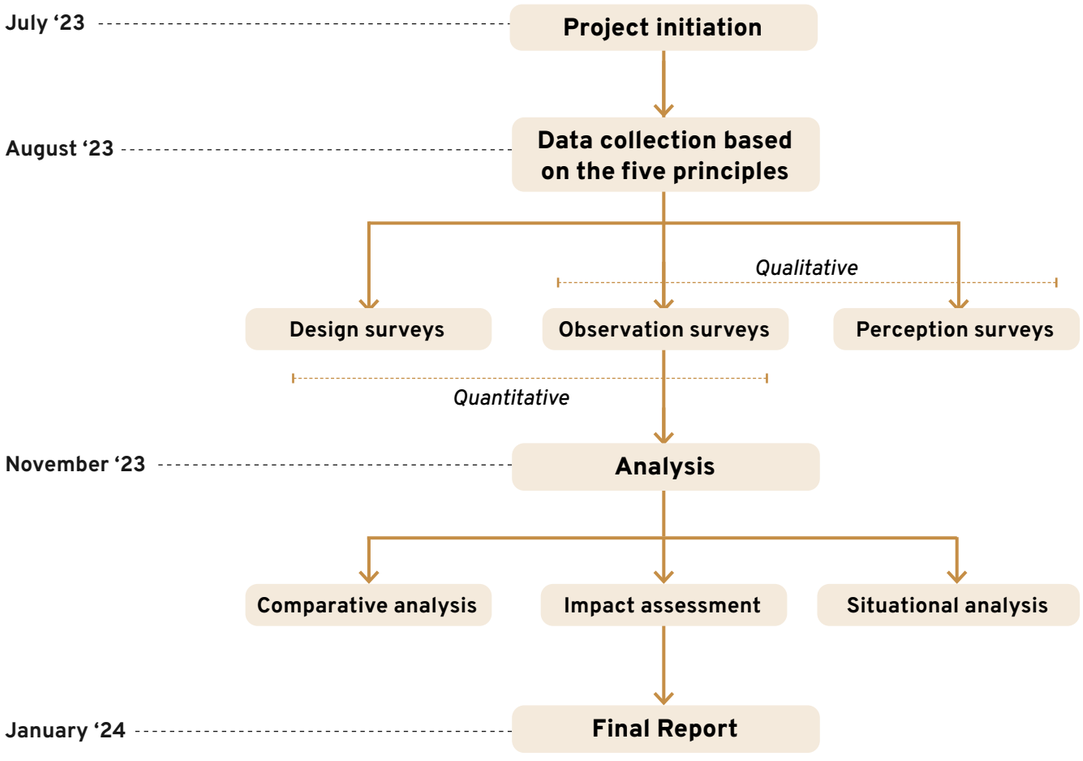
#2

Overview of the Study

Intent of the Study

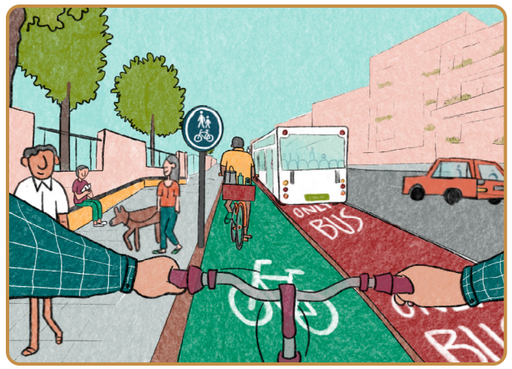
With an aim to guide future development in Pimpri Chinchwad, the study intends to understand and analyse the impact of street transformations on the city's urban infrastructure and majorly on its citizens. This study also sheds light on the infrastructural gaps in our streets and helps to identify the areas for interventions. The street assessment consists of three major components- Situational and Comparative analysis of 13 selected streets and an Impact assessment for five recently developed streets

The study intends to create an extensive database highlighting the gaps, opportunities and impacts of the street design in Pimpri Chinchwad.

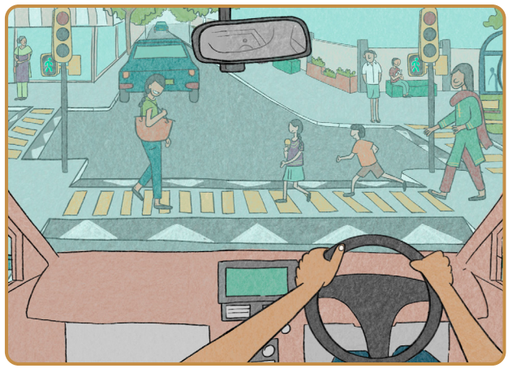


5 Guiding Principles

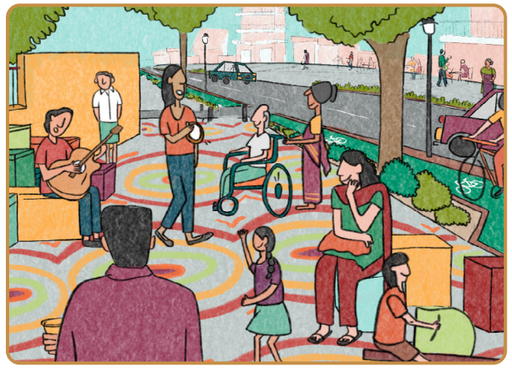
1 Ease of Movement



2 Safety



3 Liveability



4 Accessibility and Inclusivity

5 Blue-green Infrastructure

Based on Healthy Street goals, the parameters are derived from national and international guidelines like IRC Guidelines, Complete Street Design Handbook by MoHUA, UTTIPEC Street Design Guidelines and Pedestrian First Toolkit by ITDP.

Outcomes of the Study

To assess the impact of street design

To identify gaps in existing design and implementation practices

To create a standardised scoring system for all streets

To create funding provisions to improve and scale up street design

To craft an impactful narrative, supported with data and evidence

Methodology of the Study

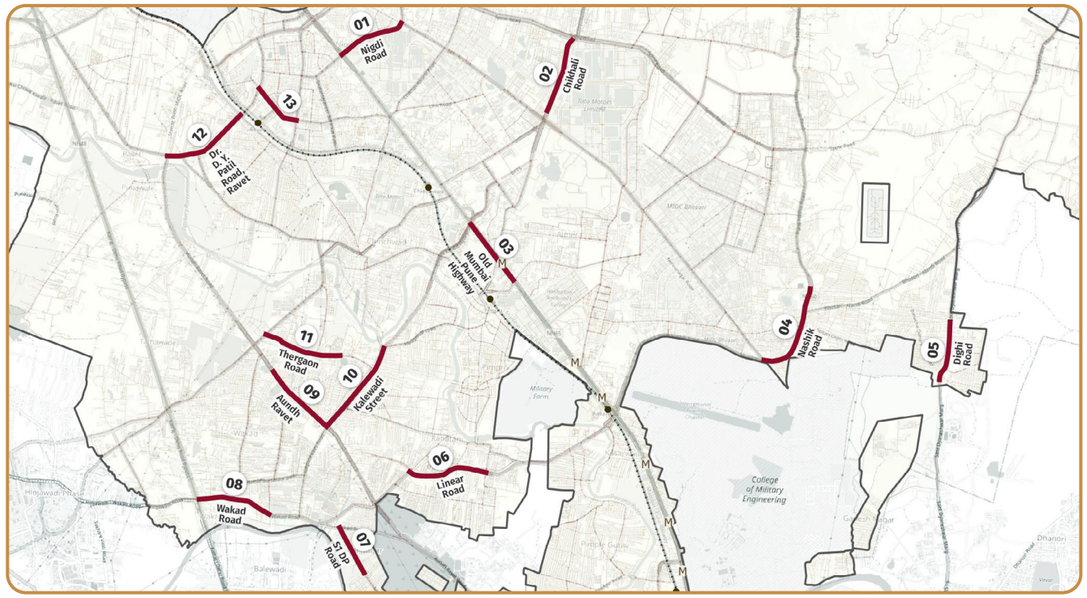
The study evaluates the streets through three types of surveys—**design, observation and perception surveys.** These surveys are each based on the five principles of the assessment framework

1. **Design Surveys;** Formulated as a design checklist, these surveys assess the design efficiency of the streets along with their adherence to international and national standards and guidelines.
2. **Observation Surveys:** These surveys use tools such as pedestrian and traffic volume counts,speed surveys, GIS-based mapping and photography to understand street usage and varied activities on the street.
3. **Perception Surveys:** Done through in-person interactions, these surveys aim to understand what different user groups segregated by age, gender and preferred mode of transport, feel about the walking and cycling infrastructure in the city. Additional set of perception surveys were conducted on five streets, where citizens who had experienced the street before and after intervention.

The study framework is designed to primarily focus on the non-motorised infrastructure and not on the carriageway conditions. The limitation of the study is the lack of primary data and documentation before the interventions for Impact Assessments.

Learnings from the various surveys are further collated into the following thematic chapters:

1. **Comparative Analysis:** To get a holistic understanding of the 13 streets in comparison to each other.
2. **Impact Assessment:** To comprehend how well-designed streets influence user behavior, road safety, environmental sustainability, and livability of the neighbourhood.
3. **Situation Analysis:** To understand the current condition of walking and cycling infrastructure on each of the 13 streets individually.



#	Street Name	RoW(in m)	Implemented by
1	Nigdi Road, Yamuna Nagar	24	Head Office
2	KSB-Kudulwadi Road, Chikhali	45	Head Office
3	Old Mumbai-Pune Highway	61	Head Office
4	Nashik Road	45	Head Office
5	Dighi-Alandi Road, Dighi Gaon	30	Head Office
6	Linear Garden Road	45	Smart City
7	Vishal Nagar DP Road, Pimple Nilakh	24	Head Office
8	Wakad Road	45	Head Office
9	Sangvi-Kiwale Road, Kalewadi	45	Smart City
10	Kalewadi Road	45	Head Office
11	Thergaon Hospital Road	24	Ward office
12	D. Y. Patil Road, Akurdi	24	Head Office
13	Sambhaji Chowk to Hutatma Chowk, Pradhikaran	24	Head Office

The above streets are selected in consultation with PCMC's engineers based on the following parameters-

1. **Above 24m Right-of-way (RoW)**
2. **Spatial distribution**
3. **Implementing authority**

13 nos
Streets Selected

32+km
NMT Infra Analysed

1,800+
People interviewed

300+
Children

570+
Adult Females

870+
Adult Males

Location- Linear Garden Road

#3
Comparative Analysis of Streets

Key Inferences

1. **Redesigned streets are safer, accessible and livable:** Linear Garden Road, Vishal Nagar DP Road and Nigdi Road scored well across all three types of surveys. While D Y Patil Road scored high in the design surveys, it scored less in the perception surveys.
2. **Distinct drop in scores observed after the top four scoring streets:** Wakad Road, KSB-Kudulwadi Road, Nashik Road, Thergaon Hospital Road and Kalewadi Road have been redesigned recently, but the designs failed to accommodate the user needs and surrounding land use demands. Lack of enforcement and maintenance is a prominent issue on these streets.
3. **Designs need to be supported with enforcement:** While Wakad Road, KSB-Kudulwadi Road and Nashik Road scored decently in design surveys, actual usage was hampered due to lack of maintenance, management and enforcement.
4. **Some streets require immediate complete intervention:** Low-scoring streets like the Old Mumbai-Pune Highway, Dighi-Alandi Road, and Sambhaji Chowk to Hutatma Chowk Road have high pedestrian activity, yet are severely lacking in basic walking and cycling infrastructure.

Rank	Selected stretch	Design score (out of 10)	Observation score (out of 10)	Perception score (out of 10)	Total score (out of 30)
1	Linear Garden Road, Pimple Saudagar	8.5	6.5	7.5	**22.5**
2	Vishal Nagar DP Road, Pimple Nilakh	7.5	6.5	7.5	**21.5**
3	Nigdi Road, Yamuna Nagar	6.5	6.5	7.5	**20.5**
4	D. Y. Patil Road, Akurdi	7.75	6.5	5	**19.25**
5	KSB-Kudulwadi Road, Chikhali	4.75	1.5	5	**11.25**
6	Wakad Road, Wakad	4.75	1.5	5	**11.25**
7	Kalewadi Road, Kalewadi	4.25	4	2.5	**10.75**
8	Nashik Road, Bhosari	5.75	1.5	1.5	**8.75**
9	Thergaon Hospital Road, Thergaon	3.5	1.5	2.5	**7.5**
10	Sangvi-Kiwale Road, Kalewadi	3.5	1	1.5	**6**
11	Old Mumbai-Pune Highway, Pimpri	3	1	1.5	**5.5**
12	Sambhaji Chowk to Hutatma Chowk, Pradhikaran	0.75	1	2.5	**4.25**
13	Dighi-Alandi Road, Dighi Gaon	1.5	1	1.5	**4**

Here are the Common Challenges Faced by Pedestrians and Cyclists

Based on 1,280 people surveyed

33% said
Obstructions by DB boxes, garbage bins

62% said
Vehicles on footpaths and cycle tracks

23% said
Uneven surface

45% said
Speeding vehicles

25% said
Poor lighting

51% said
Lack of adequate crossing infrastructure

45% said
Encroach-ment by illegal shop extensions/ vendors

Of the selected 13, only 3 streets have more than 90% clear, unobstructed footpaths

WOAH! IT'S GOING TO BE A BUMPY RIDE FOR MY BABY!

ARRE! I HAVE TO CYCLE IN THE TRAFFIC NOW!

Only one-fourth of the surveyed cycling infrastructure was continuous

THERE'S NO SPACE TO WALK!

हा रस्ता ओलांडणं किती अवघड आहे!

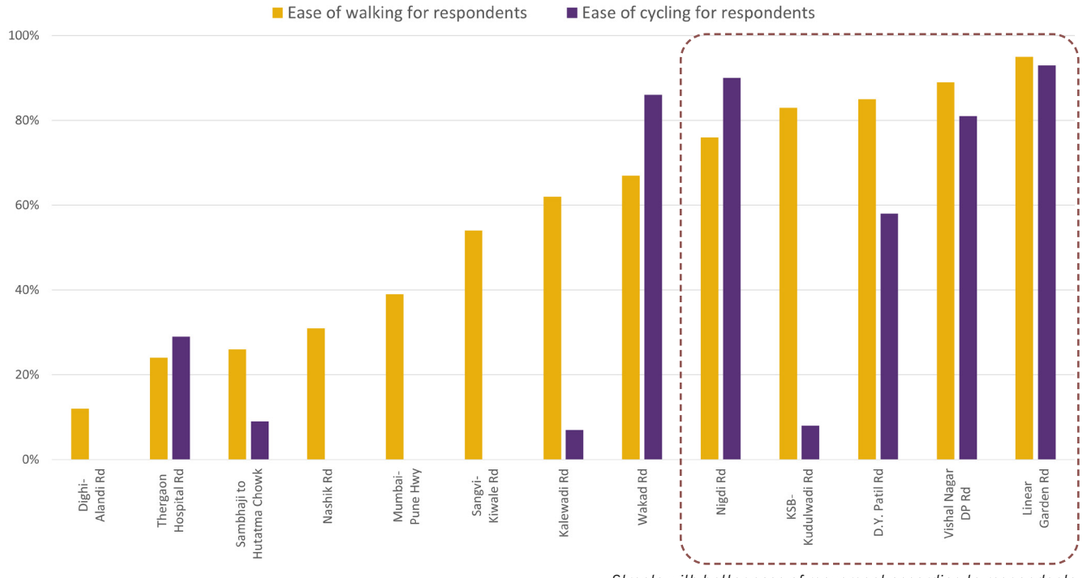
सगळी वाहने किती वेगात आहेत!

50% of users feel that crossing the street is the most dangerous part of their journeys

DUST BIN

Smart-e-bus

Respondents felt that the streets designed as per complete street guidelines have better ease of walking and cycling.



Streets with better ease of movement according to respondents

According to the perception surveys, Linear Garden, Vishal Nagar DP, D. Y. Patil, KSB-Kudulwadi and Nigdi roads were more pedestrian and cyclist-friendly. Apart from the continuous, wide footpaths and cycle tracks/lanes, the respondents have also attributed the adequate seating, lighting and landscaping to the increased walkability and cyclability on these streets. Dighi-Alandi Road is the lowest scoring street. Despite the high pedestrian and cyclist footfall, the lack of walking and cycling infrastructure has negatively affected the usability of this street.

Owing to the lack of adequate and appropriate cycling infrastructure, the ease of cycling on the selected streets is much lower as compared to the ease of walking. As a result, **around 78% of the cyclists were seen cycling on the carriageway, while around 32% of the pedestrians were seen walking on the carriageway**.

Even though most of the streets were designed well, **more than half of the NMT infrastructure along the selected 16km of streets was rendered unusable due to obstructions**.

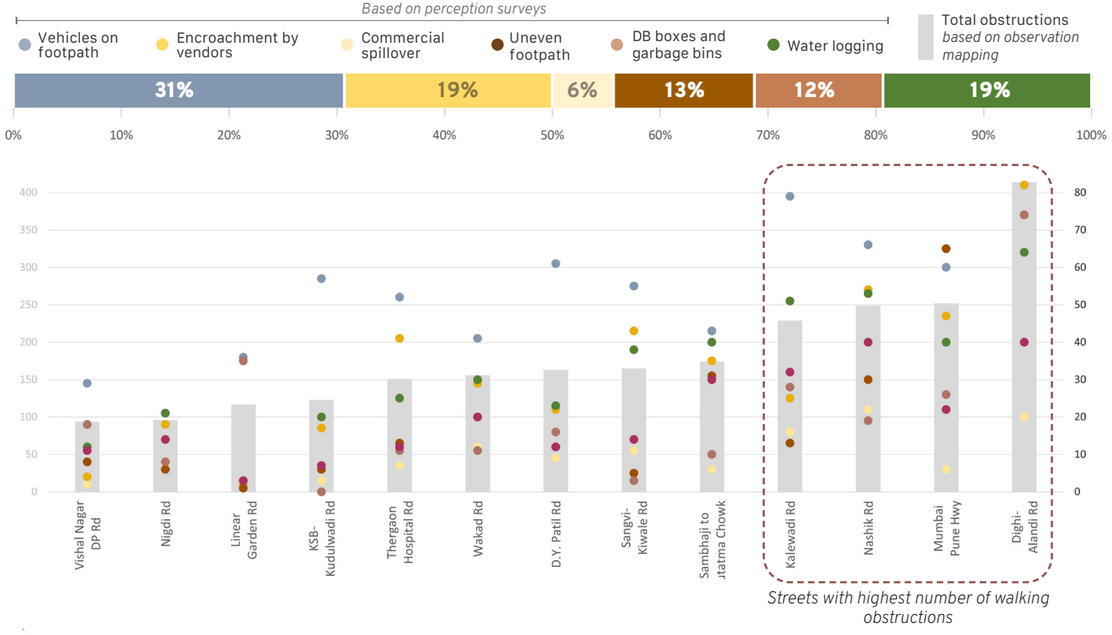
75% of kids are willing to cycle to school if provided with better cycling infrastructure!

According to the observation mapping,

39% of the 16km didn't have clear, obstruction-free walking widths.

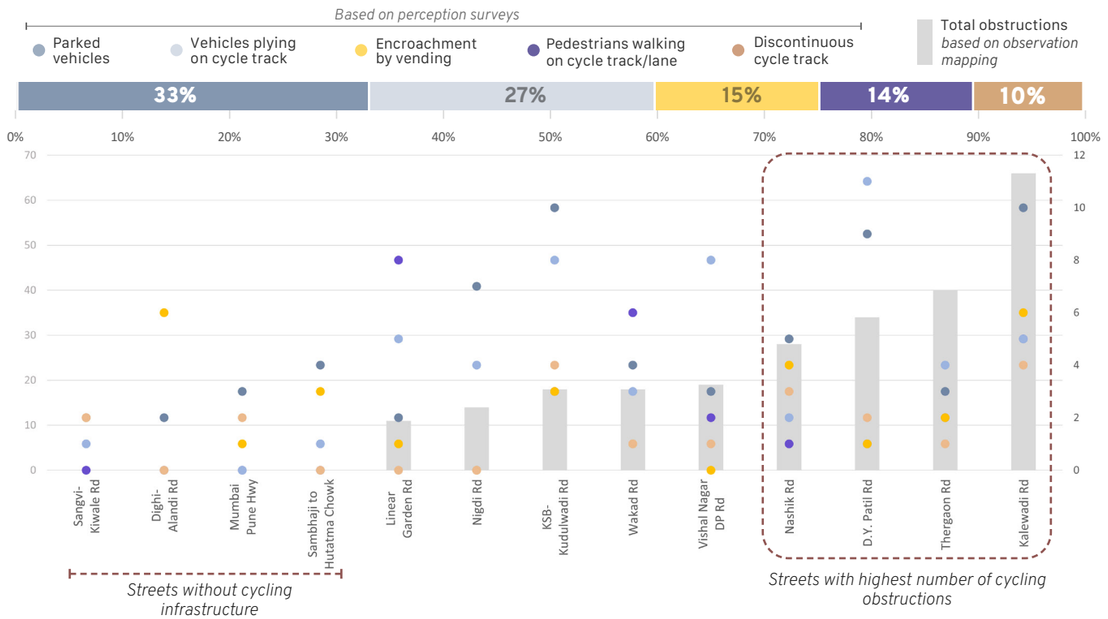
76% of the 16km didn't have clear, obstruction-free cycling widths.

Vehicles on footpath and encroachment by illegal vendors are the primary WALKING OBSTRUCTIONS among all streets studied.



Streets with highest number of walking obstructions

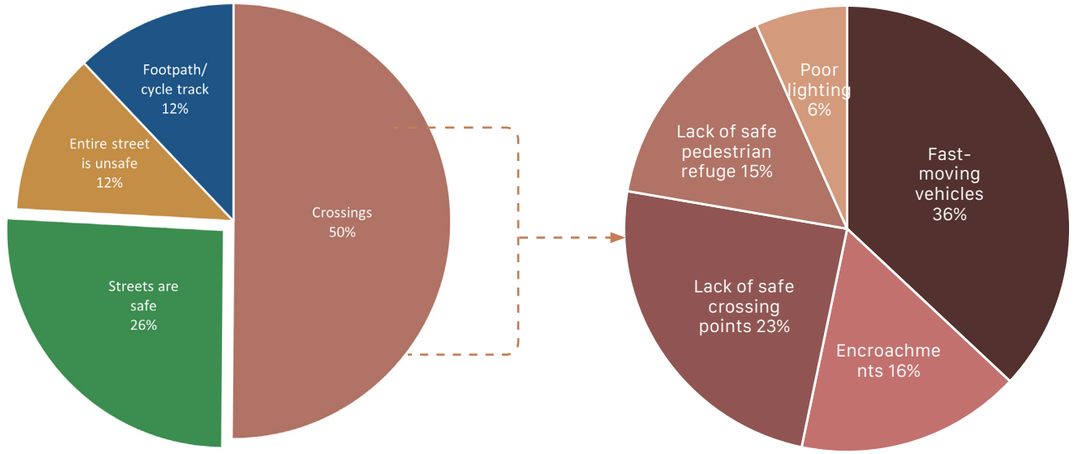
Vehicles and pedestrians on cycle tracks are the primary CYCLING OBSTRUCTIONS among all streets studied.



Streets without cycling infrastructure

Streets with highest number of cycling obstructions

CROSSINGS is the most common safety issue in Pimpri Chinchwad



"Vulnerable Locations" on the Streets

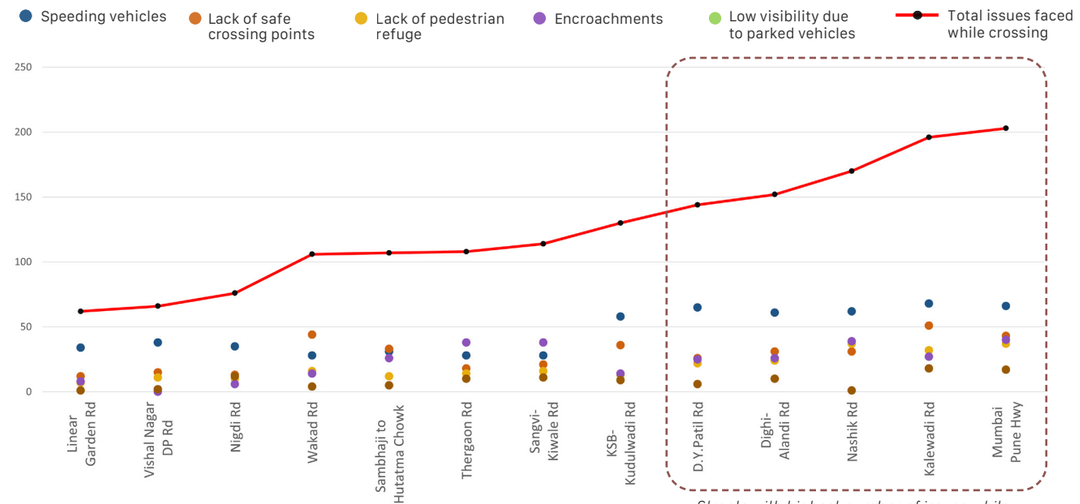
While 25% of the respondents felt safe using the streets, 50% felt that crossings are the most unsafe locations on the entire street.

Deterrents for Safe Crossing

Fast-moving vehicles and lack of safe crossing opportunities are the biggest challenges for road safety.

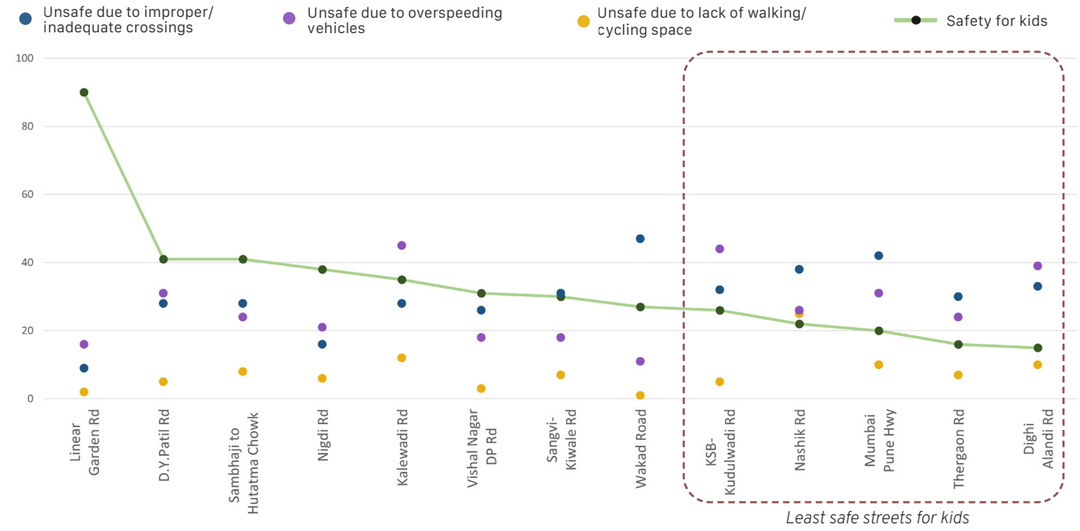
Most of the junctions like Old Mumbai-Pune Highway which according to the respondents is the most unsafe street for crossing could fit more than 30 Badminton courts! People have to cross around 50-60m at a stretch, without any safe refuges, often through speeding traffic.

Issues Faced while Crossing the Streets



Streets with highest number of issues while crossing

Safety of Kids

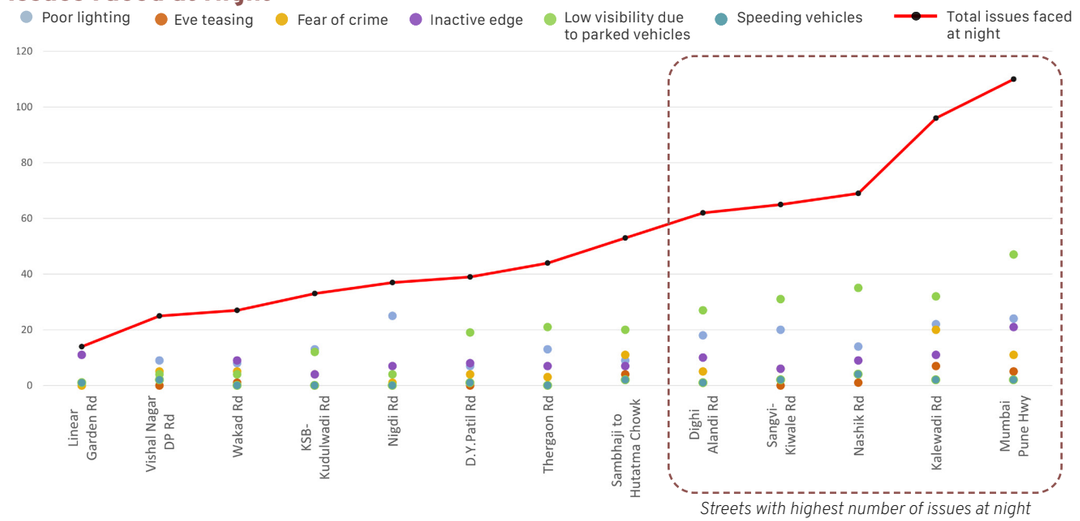


Least safe streets for kids

Linear Garden Road is the safest for kids by nearly double margin as compared to the other streets. At least 3 out of 5 caregivers felt the other 12 streets were unsafe for kids to move around unattended.

Speeding vehicles, followed poor lighting and low visibility due to parked vehicles is the largest deterrent for street usage at night. 40% of the surveyed females didn't visit the streets at night.

Issues Faced at Night



Streets with highest number of issues at night

Blue-Green Infrastructure

Given that 15-20% of Pimpri Chinchwad's land mass is under streets, street redesign project offers a great opportunity to incorporate affordable, nature-driven infrastructure solutions by harnessing blue elements like stormwater harvesting, groundwater recharge; along with green elements like shading trees, parks, and open spaces.

Observations

Addition of Shading Trees

Street redesigns are opportunities to increase tree coverage. **Sangvi-Kiwale, Linear Garden, Nigdi, and Vishal Nagar DP Roads have added trees through multi-utility zones or in other available spaces.** Meanwhile, other streets like Dighi-Alandi, Nashik, Thergaon Hospital, and Wakad Road have fewer trees.

Tree Pit Treatment

Most trees on these streets have at least 0.5m of clear breathing space around the trunks as clear. This is achieved by creating sit-outs or tree-pits and use of tree grates around trees. Streets like Sambhaji to Hutatma Chowk Road and Mumbai-Pune Highway have inadequate tree pits or complete concretisation around trees, adversely affecting their health.

NMT Area Under Tree Coverage

Given its proximity to the abutting park, **Linear Garden Road has highest tree cover (82%). Other streets that have at least 60% tree cover included KSB-Kudulwadi Road (66%) and Vishal Nagar DP Road (61%).** Dighi-Alandi, Nashik and Thergaon Roads have poor tree cover (less than 10%), demonstrating a dire need in these areas for more street trees.

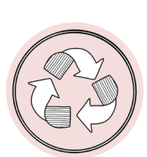
Ground Water Recharge Pits

None of the streets have any water retention techniques for inducing ground water recharge. Street redesigns are an opportunity to implement features – like rainwater harvesting, bioswales, and bio-retention basins – which are currently absent from projects in Pimpri Chinchwad.

Stormwater Utilities

Except for Dighi-Alandi Road, all selected streets have stormwater utility provisions. However, several respondents complained about waterlogging in the NMT zones, hampering the accessibility during the monsoons. Incorporating a robust stormwater system with features like permeable paving can help to reduce waterlogging.

Sustainable Practices



Sustainable practices can be incorporated in the end result as well as during the construction. **PCMC has been collecting and reusing debris through its C&D Waste Recycling Plant for street designing.** Replanting old tree saplings and reusing tree grates/pavers are a good way to reclaim materials as a **sustainable and cost-effective practice.**

• Ensuring a sustainable design approach by integrating interventions - Example- Linear Garden Road

• Concretisation around trees

• Water logging in and around NMT zone

Location- Vishal Nagar DP Road

#4
Impact Assessment of Selected Streets

Street impact assessments are evaluations conducted to measure the effects and consequences of street designs on the five identified principles. The goal is to gauge how these changes influence different aspects of the various stakeholders of varying age, gender and environment through a standard set of indicators. These assessments are comparative studies of before and after implementation of projects.

Due to the lack of data available from before the streetscape execution, a second round of perception surveys was conducted on the streets. In addition, secondary analysis was also done with the help of Google Earth and photographs collected from local urban designers. An additional 165 perception surveys—targeted towards citizens who had seen these streets before and after the design execution—were collected in November 2023.

To assess the impact of streets in Pimpri Chinchwad, five streets designed by urban designers and executed in the last five years were selected. These are-

1. Linear Garden Road, Pimple Saudagar
2. Vishal Nagar DP Road, Pimple Nilakh
3. Nigdi Road, Yamuna Nagar
4. D Y Patil Road, Ravet
5. KSB-Kudulwadi Road, Chikhali

Key learnings

1. Streets designed as per the 'Healthy streets' principles **offer more space for pedestrians and cyclists and less for car parking**.
2. As per the respondents, while the **walkability has improved; improving cyclability needs more nuanced development**.
3. Vehicular **speeds are still alarmingly high** on all streets.
4. Users also mentioned a significant **improvement in safety at night and safety for kids; road safety while crossing the streets still remains a major concern**. Even for the well-performing streets, **lack of enforcement is inhibiting the full potential of public spaces** especially with encroachment by vehicles.
5. Nearly all respondents reported **spending more time using redesigned streets and wanted more**!

Impact numbers are crucial to convince stakeholders and authorities of the need for safe, shaded, socially conscious streets. Since pre-intervention data collection is difficult, cities must mandate relevant data collection as a scope of the urban designers. There should be a formal process to carry out such assessments periodically.

Ar. Prasanna Desai
Practising Urban Designer | Professor & Director, PVP College of Architecture, Pune

Linear Garden Road, Pimple Saudagar

Before

After

Source: Prasanna Desai Architects

D. Y. Patil Road, Akurdi

Before

After

Source: Prasanna Desai Architects

Vishal Nagar DP Road, Pimple Nilakh

Before

After

Source: Prasanna Desai Architects

KSB-Kudulwadi Road, Chikhali

Before

After

Source: Arvind Patil and team

Nigdi Road, Yamuna Nagar

Before

After

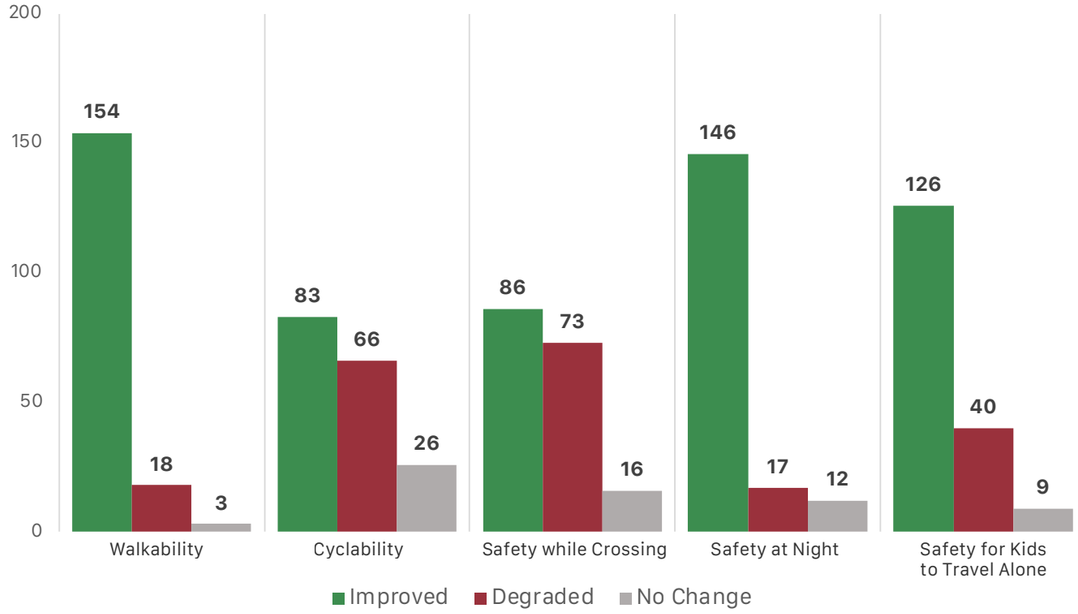
Source: Designshala Collaborative

Equitable Distribution of Street Space - Streets for All!

The reduction in car parking provisions can be attributed to streamlining the parking from inclined to parallel by creation of bulb-outs in MUZ and creating adequate space for safe walking and cycling.

#	Stretch	Per km increase in area for NMT	Increase in km of cycling infra	Change in parking provisions
1	**Linear Garden Road**	**+9,200sq.m**	**+2.56km**	**-90 ECS**
2	**Vishal Nagar DP Road**	**+4,000sq.m**	**+1.68km**	**-40 ECS**
3	**Nigdi Road**	**+1,000sq.m**	**+1.96km**	**NA**
4	**D Y Patil Road**	**+6,000sq.m**	**+2.40km**	**-70 ECS**
5	**KSB-Kudulwadi Road, Chikhali**	**+10,00sq.m**	**+0.86km**	**NA**

Walking and Safety Has Improved on the Streets; Improving Cyclability and Crossing Need More Efforts



88% of the respondents felt that the walkability of the streets has increased. They primarily attributed this to the improved, continuous footpaths. The respondents also felt that additions like an increase in shading by trees and seatings have enhanced pedestrian comfort while walking.

47% of respondents said that cycling on these streets has improved, while 38% said it has degraded. Many respondents were unaware of the provisions of cycling infrastructure on these roads. Few respondents highlighted that cycle lanes didn't work efficiently as vehicles frequently park on them. Even though the respondents appreciated the cycle tracks, they also emphasised the need for strict enforcement and citizen behavioural nudges to reduce encroachment of the cycle tracks by vehicles, vendors and pedestrians.

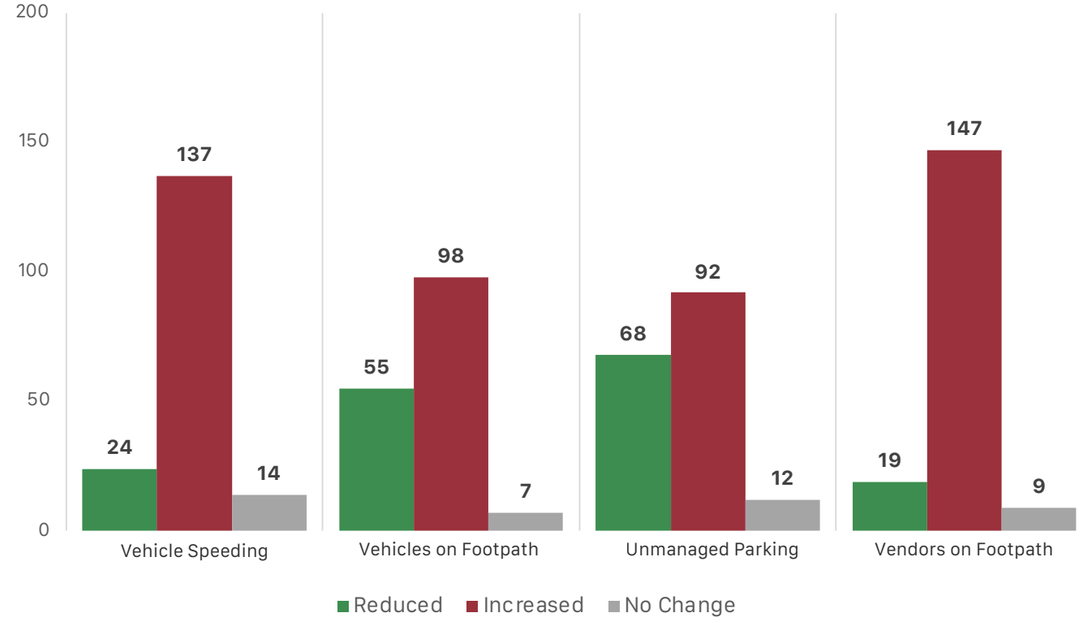
While 68% of the pedestrians felt that the overall safety on these streets has improved, 42% of the respondents also highlighted that crossings at midblock and junctions have become more dangerous due to speeding vehicles and inadequate crossing infrastructure.

89% of respondents spend more time on these streets as compared to earlier.

One-third of the shopkeepers surveyed noted an increase in footfall to their shops.

91% of the respondents also desired for more such designed streets in the city.

Lack of Enforcement and Management Still Pose a Threat



83% of the respondents felt that vehicular speeds are still high.

89% mentioned that vending and commercial encroachments affect their usage of walking and cycling infrastructure.

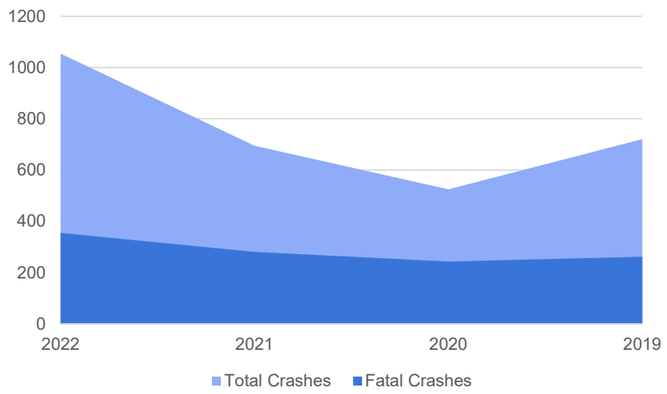
59% of the respondents also highlighted vehicular obstructions.

56% face issues with the unmanaged parking.

Other Concerns Mentioned by Street Users

1. Encroachment by vendors and vehicles was highlighted as the largest impediment to safety and comfort while walking or cycling.
2. Plying vehicles routinely use footpaths and cycle tracks as shortcuts during peak traffic and school times. Beyond design, respondents requested more enforcement, signage and public education campaigns to make better use of newly installed infrastructure.
3. Other issues that respondents mentioned included unsafe crossings spaced too far apart, overly large footpaths (which appeared to invite encroachment), mismanaged parking, water logging and lack of maintenance.

Vehicular Speeds are Dangerously High on the Streets!

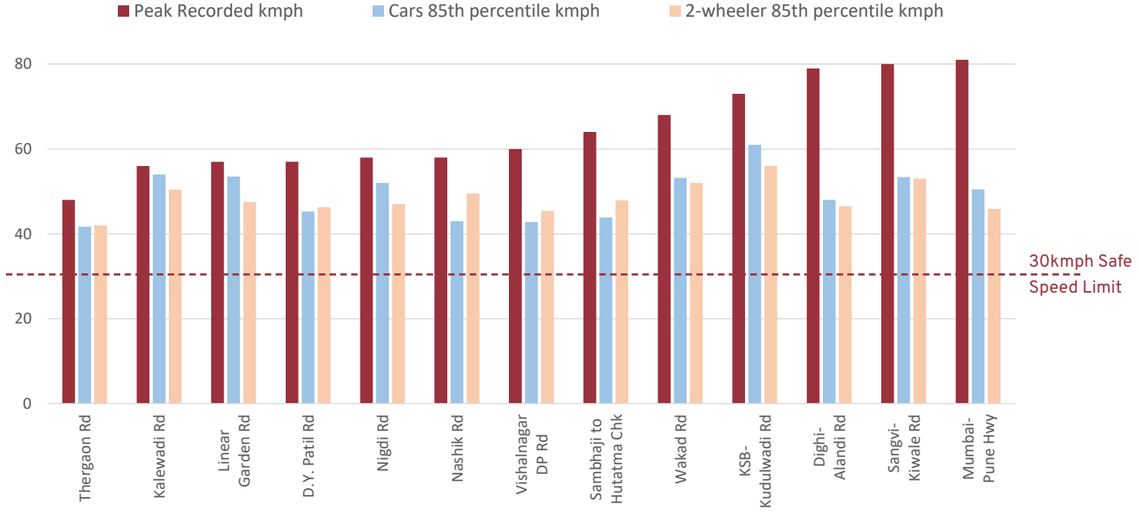


Deaths from road crashes in Pimpri Chinchwad are increasing post-pandemic. Over a third of Pimpri Chinchwad's crashes in 2022* were fatal. Fatalities disproportionately impact vulnerable users, especially pedestrians and cyclists.

Safety is a human right, whether you are 8 or 80 years old. The more we reduce speeds by design the more we can ensure safety and livability for all.

Pranjali Deshpande
Mobility Expert

** Permissible limits: PCMC's arterial roads are designed for 40 kmph speed limits, and 30 kmph for other streets.*



None of the selected streets meet the safe speed limit set by PCMC. Sangvi-Kiwale Road, Old Mumbai-Pune Highway, and Dighi-Alandi Road had the highest recorded speeds, making them alarmingly dangerous for pedestrians and cyclists.

How Effective are the Traffic Calming Measures?

Even on the newly redesigned streets, around 1 out of 4 survey respondents highlighted speeding vehicles as the largest deterrent for safe walking and cycling on the streets.

PCMC currently uses traffic-calming interventions like speed tables, cobble-stone strips, speed humps, raised junctions and transverse bar markings on the newly designed streets. However, to study the effectiveness of these interventions, speed surveys were conducted to understand the effective reduction in speed due to each intervention.

#	Intervention	Before speed (kmph)	After speed (kmph)	Reduction
1	**Speed Table Midblock** (Linear Garden Road)	53	28	48%
2	**Speed Table with Cobble-stones midblock** (Vishal Nagar DP Road)	43	21	51%
3	**Circular Speed Hump** (Sambhaji Chowk to Hutatma Chowk, Pradhikaran)	46	20	56%
4	**Raised Junction with Transverse Bar Marking** (Tilak Chowk to Durganagar Chowk)	52	35	32%
5	**Painted zebra crossing midblock** (Dighi-Alandi Road)	48	48	0%
6	**Transverse Bar Marking** (Worn-out condition) (Sangvi-Kiwale Road)	59	54	5%
7	**Painted cycle lane** (D Y Patil Road)	42	42	0%

Key learnings

1. Circular speed humps were the most effective traffic calming intervention.
2. Speed tables at mid-blocks, with or without cobble-stones have also proven to be highly effective at reducing speeds. Speed tables are recommended over circular humps as they are safe and universally accessible.
3. Some traffic calming measures used together can be more effective in reducing speeds (eg: Transverse Bar Markings, with Speed Tables)
4. Zebra crossings and painted cycle lanes were completely ineffective in reducing speeds and providing safe movement for pedestrians and cyclists.
5. Most of the transverse bar markings are not as per standards (wrt to numbers and thickness). Currently, they are not effective as standalone traffic calming elements.

Hearing from the people...

Seating should be in better and more convenient and safe locations. Street has improved, but it is still difficult to cross the road with baby pram.

Female Caregiver
Vishal Nagar DP Road

We have been living in this area for over five decades now. The street development triggered a lot of development in the area.

I come for walks on this street in the morning at 6am and even at night till 9 or 10 pm—it has made that much of a difference. Before, I could not come out late at night.

Lata Nangude, Elderly Female Resident
Vishal Nagar DP Road

The added seating is very helpful for senior citizens. Now I can walk safely and so can my kids.

Karishma, Female Caregiver
D Y Patil Road

The cycle track is good. Now my kids don't face any difficulties in going to school. Earlier, they couldn't cycle because of cars coming from both directions. Now that the street is bigger, cars at least stop. When the street was narrow, the kids were scared to cross the street.

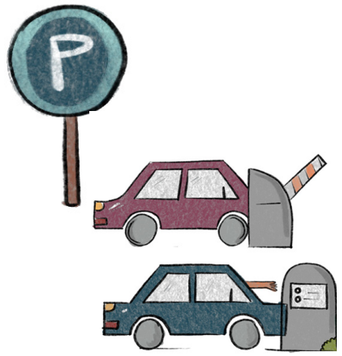
Anonymous, Female Caregiver

Because there were no footpaths before, people were walking on the road - tripping on stones, falling into potholes. Even when boarding or getting off the bus, it is no longer challenging to use the bus since there is a footpath to use to wait.

Resident
Nigdi Road

Before there was no space for parking. Now there are dedicated and free parking spaces available for people to use.

Anonymous, Male Shopkeeper
Nigdi Road



Before, the footpath surface was very uneven. After the redesign, now I can walk comfortably without any level changes.

Joshi, Elderly Male Resident
Nigdi Road

Need to plan for pedestrians, and restrict two-wheelers on footpath. Install dedicated pedestrian signal for safe crossing.

Sashikant, Elderly Male Resident
KSB-Kudulwadi Road

I like walking on this street, it makes me feel relaxed. I can come jogging here in the morning and when I get tired, I can sit down on the benches. Even for elderly people, before if they got tired, they had to sit on the floor, or continue walking even if they were tired. Now if people get tired, they can sit for 5-10 minutes on the seating.

Senior Citizen
Linear Garden Road

#5
Recommendations

Rank	Stretch	Design score (out of 10)	Observation score (out of 10)	Perception score (out of 10)	Total score (out of 30)
1	Linear Garden Road, Pimple Saudagar	8.5	6.5	7.5	22.5
2	Vishal Nagar DP Road, Pimple Nilakh	7.5	6.5	7.5	21.5
3	Nigdi Road, Yamuna Nagar	6.5	6.5	7.5	20.5
4	D. Y. Patil Road, Ravet	7.75	6.5	5	19.5
5	KSB-Kudulwadi Road, Chikhali	4.75	1.5	5	11.25
6	Wakad Road, Wakad	4.75	1.5	5	11.5
7	Kalewadi Road, Kalewadi	4.25	4	2.5	10.75
8	Nashik Road, Bhosari	5.75	1.5	1.5	8.75
9	Thergaon Hospital Road, Thergaon	3.5	1.5	2.5	7.5
10	Sangvi-Kiwale Road, Kalewadi	3.5	1	1.5	6
11	Old Mumbai-Pune Highway, Pimpri	3	1	1.5	5.5
12	Sambhaji to Hutatma Chowk, Pradhikaran	0.75	1v	2.5	4.25
13	Dighi-Alandi Road, Dighi Gaon	1.5	1	1.5	4

#	Street-specific recommendations
1	Need to add more **midblock crossing opportunities** with adequate refuge space (at every 150m). Traffic signals should have **increased time for pedestrian crossing**. **Parking enforcement should be stricter** as vehicles park on footpath and cycle track (near Shakti Sports).
2	**Need stricter parking enforcement to ensure parallel car parking**, and in-turn ensuring cycle lanes are clear.
3	**Stretch opposite Bajaj factory should be redesigned** to improve walkability and parking. **Cobble-stones should be added instead of transverse bar markings** to reduce vehicular speeds.
4	Footpath along and opposite Nisarg Misal should be made clear of parking encroachments by **effective enforcement**.
5	**Bollards should be installed on the footpath opposite Tata Motors gate**, to provide access control and restrict vehicle parking on footpath and cycle track. Signages should be installed along the stretch to demarcate cycle track, parking and pedestrian crossings. **Midblock, table-top crossing should be designed at every 200m,** with effective traffic calming to reduce speeds.
6	**Footpath should be constructed from the highway up to In-house Furniture Shop**. The whole stretch should have seaters at every 50m; and bulb-outs for more organised parking; **Midblock, table-top crossing should be designed at every 200m,** with effective traffic calming to reduce speeds.
7	**Footpath should be made obstruction free** by reconstructing uneven surfaces, and removing barricades near alcohol shop. **Lighting should be installed specifically for NMT zone**. Bulb-outs should be constructed through the stretch to streamline parking.
8	**Footpath should be constructed** from the Bhimji Londhe Pedestrian bridge to the start of flyover. **Tabletop crossings should be provided for midblock crossings** as the pedestrian footfall is very high.
9	Footpath and cycle track should be redesigned to ensure pedestrian and cycling continuity. Signages should be installed to demarcate parking.
10	**Footpath should be constructed** from Pride Purple mall to Pawana Bank. Signages should be installed to demarcate no-parking. **Traffic calming interventions (Speed tables) should be installed** to reduce vehicular speeds.
11	**Street should be redesigned** to include a footpath, cycle track and traffic calming as per IRC standards.
12	**Street should be redesigned** to include a footpath, cycle track and traffic calming as per IRC standards.
13	**Street should be redesigned** to include a footpath, cycle track and traffic calming as per IRC standards.

Location- Akurdi Station Road | Source- PCSCL

Recommendations

Ease of Movement

Streets which provide footpaths and cycle tracks as stated in IRC:103 with clear, unobstructed and continuous walkways incorporating the adjacent landuse are evidently desirable by all. The use of materials, operation and maintenance of the infrastructure add to the ease of movement.

Pondy Bazaar, Chennai

Safety

The data has shown that speed table with cobblestones have one of the highest reduction of vehicular speed along with providing safe walking space to pedestrians. Using pedestrians lights, adding buffer zones, identifying safe crossing spots will help to improve the safety on streets.

St. Mark's Road, Bengaluru

Livability

Streets which offer opportunities for other activities apart from walking and cycling help in creating a sense of place. Well shaded streets with places to sit, shop, relax, and encourage activities all through the day help create iconic streets. All the best practice examples of high quality streets across the world provide such amenities.

J. M. Road, Pune

Universal Accessibility and Inclusivity

Lack of ramps, discontinuity at junctions and uneven surfaces have been identified as key barriers for universal accessibility. Providing table-top crossings, filling the gaps in continuity, provision of safe buffer spaces, vertical and horizontal wayfinding signages and getting more eyes-on-street is the way forward.

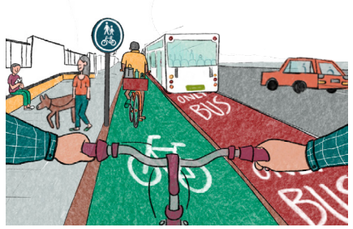
Aundh DP Road, Pune

Blue Green

Indicators under this principle have received least score for our streets. Most of the streets fail in leveraging street-design to improve the natural environment. Including garden department, landscape architects and hydrologists for street design and providing opportunities for increasing green cover, groundwater recharge and stormwater reuse can be explored.

Moti Bagh Road, New Delhi

Streets with very poor rating (below 15), should be redesigned & restructured completely. Streets with a rating of 10 to 20 would require repairs to improve continuity of footpath & cycle tracks, remove obstructions and introduce safe midblock crossing infrastructure. Street with a rating of 25 or more, can be improved through strict enforcement and minor repairs and interventions.



Streets Implementation

Currently streets are developed by various authorities (at ward level and Head office) It is suggested that, all the 24m and above streets should be developed with a common vision by the Head office.

Uniform Design

To bring uniformity and legibility in street design across all streets- PCMC should adopt and mandate 'uniform street design guidelines' for all street design work highlighting the guiding principles, elements, street templates for mid-blocks and junctions.

Material

This also implies for the standard use of materials for street development at all levels through a standard SoR.

Regular Impact Assessments

PCMC should follow the 5-year horizon outcomes as stated in the NMT policy. Assessments or performance audits such as this report should be carried out periodically.

Traffic Calming

Speeding traffic has been observed to be the greatest deterrent for road safety in PCMC. Streets should be designed for >30kmph speeds and traffic calming interventions should be introduced based on the findings of the report.

Scale-up

PCMC should introduce neighbourhood level street development as opposed to streets in isolation, this can be achieved through projects like 'Safe routes to School', 'Metro Station area development', etc for scale up in addition to the proposed 'Harit Setu' Master Plan.

Parking

Simple paint-marked parking without physical demarcation do not work. Every streets should have Bulb-outs carved for parking based on the parking policy. Streets with clear bulb-outs have performed better in parking management.

Cycling

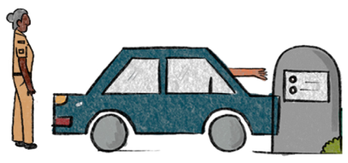
Only the segregated cycle tracks which provide long, continuous, and unobstructed cycling experience seem to be working. Cycling infrastructure still need a lot of research to encourage people for cycling. Painted Cycle lanes do not work to reduce speed or discourage parking, physical segregation in terms of kerbs or cat's eye reflectors can be tested.

Mobility Department

PCMC need to have a singular mobility department for all kinds development related to Mobility. This would help in holistic street development. The role of department should include public mobility infrastructure development, travel demand management, adopting progressive plans and policies, strategic funding and most importantly ensuring the achievement of goals set in NMT policy.

Improvements

Improvement which make sure streets and have good safety and accessibility should be done immediately.



Enforcement

As observed earlier, vehicular and vending encroachment has been biggest deterrent for ease of movement. Vehicular and vending enforcement needs to be done on priority to ensure good streets.

Communications and Outreach

Citizens are unaware of the new infrastructure being developed, and hence many cyclists still use carriageway instead of the cycle track. Citizens need to be well informed, motivated and educated to used the new street infrastructure.

Location: Thergaon Hospital Road

#6
Situational Analysis of Streets

Despite PCMC's efforts to improve safety and comfort for pedestrians and cyclists, pedestrians and cyclists still use the carriageway to walk and bike, rather than the footpaths or the cycle tracks. Despite spaces being allocated for parking, vehicles still haphazardly encroached on road space. Observational studies also showed that residents also needed help accessing the city's public transport infrastructure.

PCMC must collect data for the streets before implementing new infrastructure to enable a significant transformation reflecting the adjacent context. It can also help create a user inventory for each street, and as cities assess more streets, they can create a city-wide database to inform their priorities while making decisions.

Cities keep arguing that streets don't have enough pedestrians and cyclists to justify allocating space as per regulations—which is usually not the case. But pedestrians and cyclists have always been invisible street users, and a holistic street assessment can make them and their needs visible. It can help cities understand the needs of the most vulnerable street users and ensure that our streets work for all.

The structure of the following analysis will help the decision makers to identify precise pain points and understand the actual usage patterns and infrastructure conditions. Although most of the problems are recurring across all streets, it is also helpful to understand very localised and context-specific issues.

Conducting a situational analysis of streets helps the City analyse the current issues in street design and allows us to design better streets for vulnerable street users. It also helps highlight the problems the cyclists face, which generally get ignored.

Ashik Jain
Bicycle Mayor, Pimpri Chinchwad




#6.1

Linear Garden Road, Pimple Saudagar

Design score **8.5/10** Observation score **6.5/10** Perception score **7.5/10**

Total score
22.5
30

About the Stretch

The Linear Garden Road connects Kokane Chowk and PK Chowk. One side of the road is lined with the linear park, while the other side is lined with commercial buildings and shops. The road is popular with walkers, joggers, and cyclists, and has sufficient dedicated parking alongside the footpath. It is also a popular spot for people to take leisurely strolls.

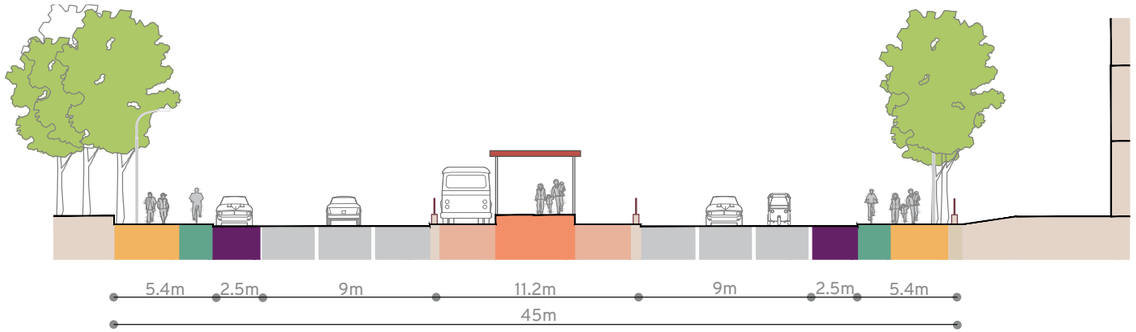
Volume Counts at Peak Hours

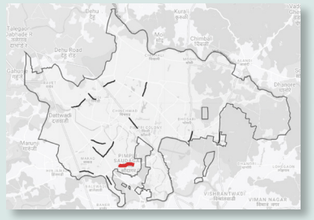
Conducted during morning and evening traffic peak hours, for both sides

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	332	24	1916	4216	404
Evening	376	20	1620	2540	440

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	8	20	36	172	84
Evening	28	0	44	76	68

Street Profile





Linear Garden Road, Pimple Saudagar

Right-of-way (RoW)
45m

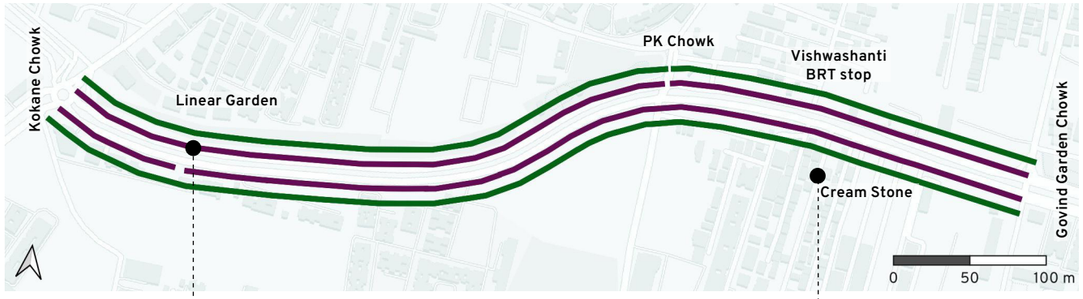
Selected length of study
1.35km

Street character
Commercial and residential

Indian Roads Congress (IRC) recommendation
Clear 2.50m footpath

Walking and Cycling Continuity

Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)



On footpath **364** / Off footpath **0** — **100%** of pedestrians were using the footpath

On footpath **336** / Off footpath **4** — **99%** of pedestrians were using the footpath

95% of the respondents feel that the street stretch is walkable.

Adequate width footpath **97%**

Absent footpath **3%**

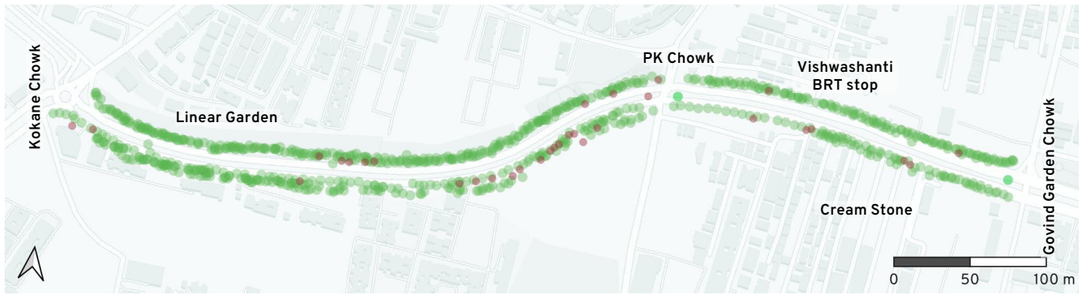
Adequate width cycle track **97%**

Absent cycle track **3%**

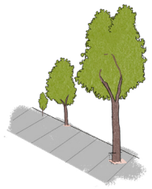
Enablers v/s Barriers

Enablers such safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.



197
Trees per km



82%
Percentage of footpath shaded by trees

188
Pedestrian lights per km

15
Hindrances per km for walking

8
Hindrances per km for cycling

Safe table top crossings leveled with footpath

Safe zebra crossings at intersections

Adequate street lighting at night

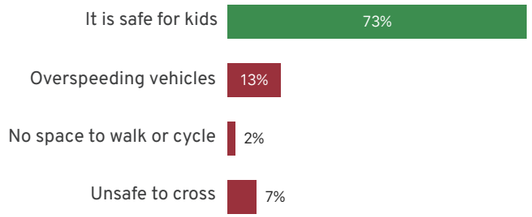
Continuous dedicated cycle track

Parked cars encroaching footpath and cycle track

Vehicles plying on the cycle track

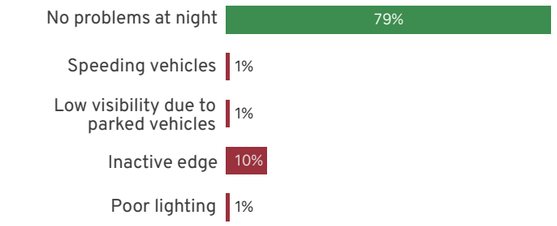
Feeling of Safety Among Street Users

72% of the respondents feel that the stretch is **safe for children.**



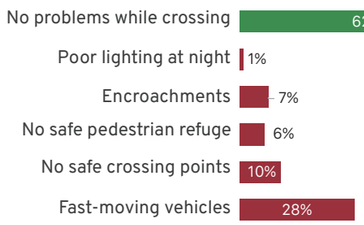
Feeling of Safety at Night

79% of the respondents **faced no problems at night.**



Issues Faced While Crossing the Street

38% of the respondents **faced issues while crossing the stretch.**



54% of the respondents **felt that speeding vehicles were a critical hazard.**

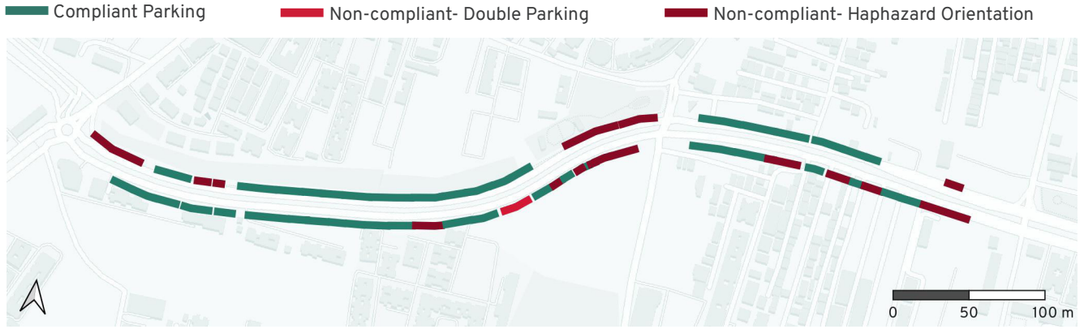
57 kmph
Highest speed recorded

54 kmph

48 kmph
Most recurring speed observed

Linear Garden Road contains traffic calming elements like speed tables, some of which have transverse bar markings like the one pictured above..

Parking Management



95% of the stretch has compliant parking.

Organised parking bays with signage

Angular parking observed in some segments

Our Observations

1. **Linear Garden scored the highest among all streets analysed, with wide, continuous footpaths and segregated cycle tracks. This was done through removing fence along the garden on one edge and opening the front margins on the other.**
2. **The street has compact junctions with continuity for cycle tracks and cycle boxes.**
3. **This BRT Corridor has fewer vehicular and pedestrian crossing opportunities. As a result, several two-wheelers were seen plying in the walking and cycling zone.**
4. **The street has raised tabletop crossings that also act as traffic-calming interventions.**

I come here everyday for morning walks. I see many people walking, cycling with their kids- enjoying the street and the garden. We need more such spaces in the city.

- User on the Street

#6.2

Vishal Nagar DP Road, Pimple Nilakh

Design score **7.5/10** Observation score **6.5/10** Perception score **7.5/10**

Total score
21.5
30

About the Stretch

The report assessed a 900m-long stretch of the Vishal Nagar DP Road, starting from Telugu Chowk to Akshay Society. It is a collector road with a painted cycle lane and designated parking bays. The newly developed DP Road connects to Baner in Pune. It is predominantly lined with residential complexes and commercial shops.

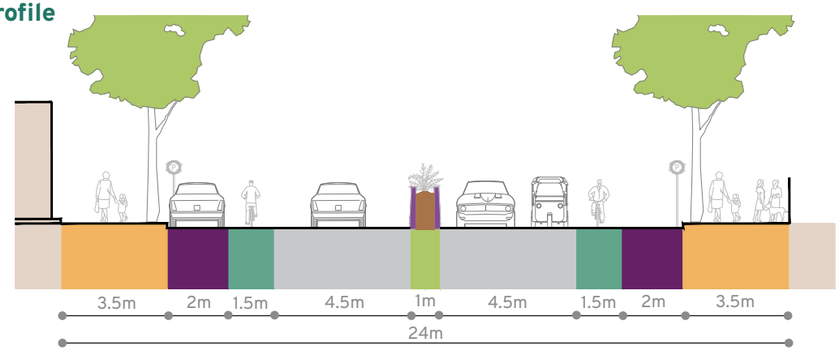
Volume Counts at Peak Hours

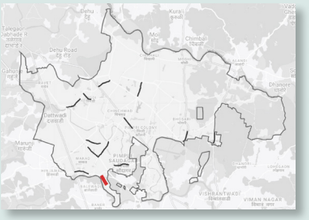
Conducted during morning and evening traffic peak hours, for both sides

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	208	20	1,040	2,360	176
Evening	280	28	1,068	2,876	200

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	16	5	10	57	32
Evening	0	12	4	40	4

Street Profile





Vishal Nagar DP Road, Pimple Nilakh

Right-of-way (RoW)
24m

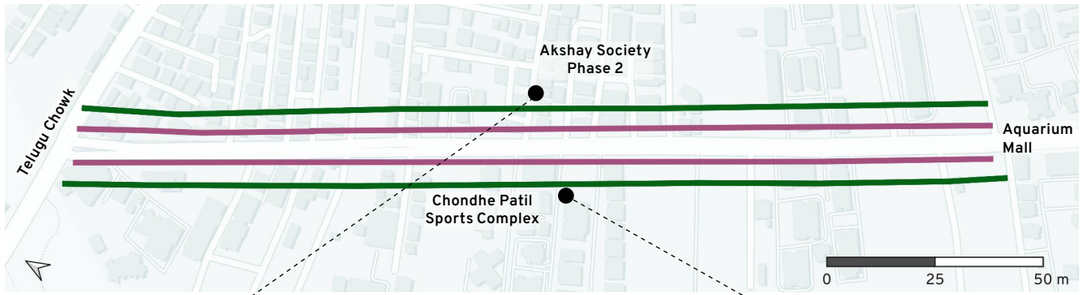
Selected length of study
0.90km

Street character
Mixed-use and residential

Indian Roads Congress (IRC) recommendation
Clear 2.50m footpath

Walking and Cycling Continuity

Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)



On footpath **708**
Off footpath **8**
99% of pedestrians were using the footpath.

On footpath **548**
Off footpath **20**
96% of pedestrians were using the footpath.

89% of the respondents feel that the street stretch is walkable.

Adequate width footpath
100%

Adequate width cycle track
99%

Absent cycle track
1%

Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.

94
Trees per km

61%
Percentage of footpath shaded by trees

126
Pedestrian lights per km

44
Hindrances per km for walking

21
Hindrances per km for cycling

Segregated walking infrastructure with seating

Unsafe mid-block crossings

Table top crossings levelled with footpath & refuge

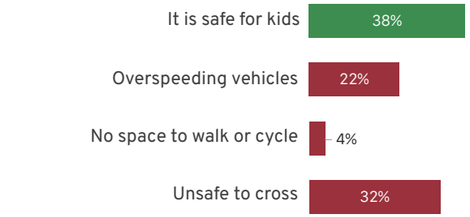
Continuous cycle lane with adequate signages

Two-wheelers plying on footpath

Parked vehicles and cyclists obstructing footpath

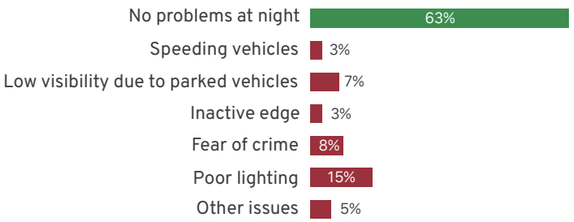
Feeling of Safety Among Street Users

62% of the respondents feel that the stretch is **not safe for children.**



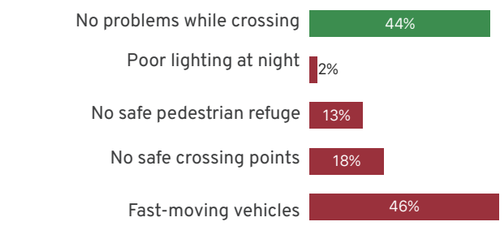
Feeling of Safety at Night

63% of the respondents **faced no problems at night.**



Issues Faced While Crossing the Street

56% of the respondents **faced issues while crossing the stretch.**



46% of the respondents **felt speeding vehicles were a critical hazard.**

60 kmph
Highest speed recorded

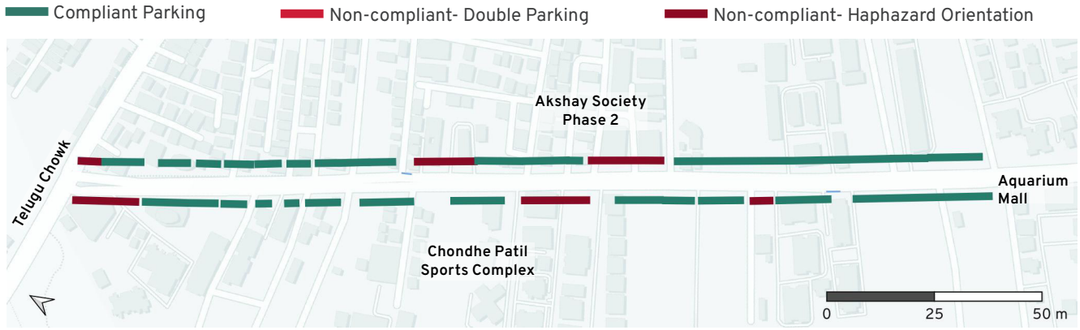
43 kmph

45 kmph

Most recurring speed observed

Speed tables with cobble stone strips have been provided as a traffic calming measure on Vishal Nagar DP Road.

Parking Management



60% of the stretch has compliant parking.

Obstructions by angular parking on the cycle lane

Parked cars obstructing footpath

Our Observations

1. The footpath along both edges is continuous and accessible.
2. The cycle lane is painted and continuous, but is not protected. Thus, vehicles often encroach and usually park in the cycle lane.
3. The seating provided is not always congruent with the adjacent land use. Respondents requested more seating near mixed use areas, where it would be better utilized. Alcohol shops also create a nuisance at night - making it unsafe for pedestrians.
4. Parking, though designed well, needs to be enforced. At some locations, angular parking hampers the usability of the painted cycle lane.

I like the newly built footpath. The seaters add to the comfort while walking. However, the cycle lane is occupied by vehicles, making it unsafe for cyclists, especially kids.

- User on the Street

#6.3

Nigdi Road, Yamuna Nagar

Design score **6.5/10** Observation score **6.5/10** Perception score **7.5/10**

Total score
20.5
30

About the Stretch

The report assessed a 1.2 km-long stretch from Tilak Chowk to Durga Nagar Chowk. It is a collector road with a painted cycle lane on both sides. The street also has designated parking bays along one edge of the street. Nigdi Road is lined with the boundary wall of the Bajaj factory on one side and residential buildings on the other.

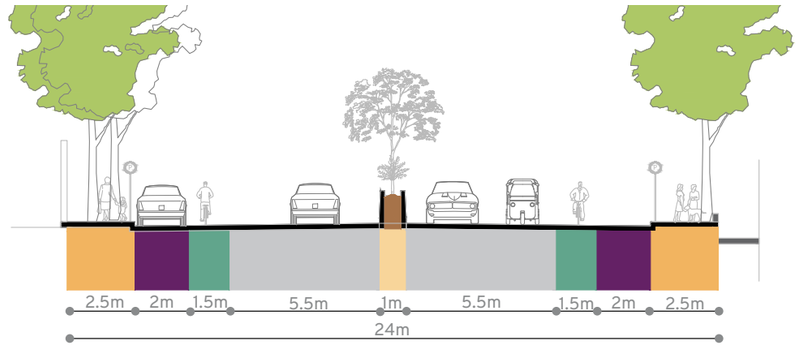
Volume Counts at Peak Hours

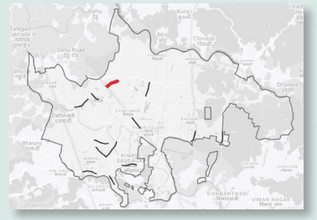
Conducted during morning and evening traffic peak hours, for both sides

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	1,768	32	584	1,604	476
Evening	4,552	36	604	2,184	516

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	40	12	8	68	13
Evening	56	4	152	84	16

Street Profile





Nigdi Road, Yamuna Nagar

Right-of-way (RoW)
24m

Selected length of study
1.20km

Street character
Industrial and Residential

Indian Roads Congress (IRC) recommendation
Clear 2.0m wide footpath

Walking and Cycling Continuity

Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)

On footpath **244** / Off footpath **92** — **73%** of pedestrians were using the footpath.

On footpath **188** / Off footpath **64** — **75%** of pedestrians were using the footpath.

76% of the respondents feel that the street stretch is walkable.

Adequate width footpath **87%**

Inadequate width footpath **3%**
Absent footpath **9%**

Adequate width cycle track **88%**

Inadequate width cycle track **2%**
Absent cycle track **10%**

Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.

98
Trees per km

54%
Percentage of footpath shaded by trees

0
Pedestrian lights per km

42
Hindrances per km for walking

12
Hindrances per km for cycling

Safe tabletop crossings on level with footpath

Safe zebra crossings at intersections

Organised parking bays with signage

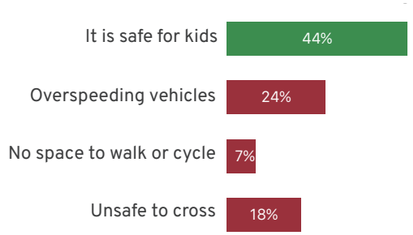
Continuous cycle track at intersections

Parked cars encroaching footpath and cycle track

Waterlogging on the cycle track

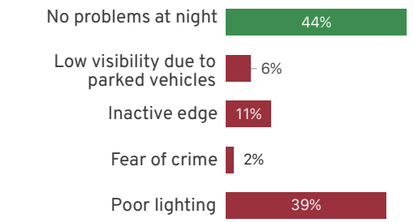
Feeling of Safety Among Street Users

56% of the respondents feel that the stretch is **not safe for children.**



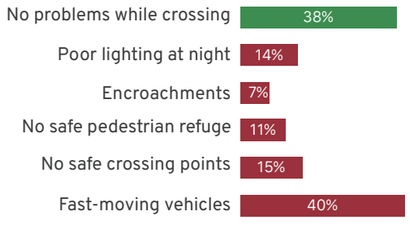
Feeling of Safety at Night

56% of the respondents **faced problems at night.**



Issues Faced While Crossing the Street

62% of the respondents **faced issues while crossing the stretch.**



40% of the respondents **felt that speeding vehicles were a critical hazard.**

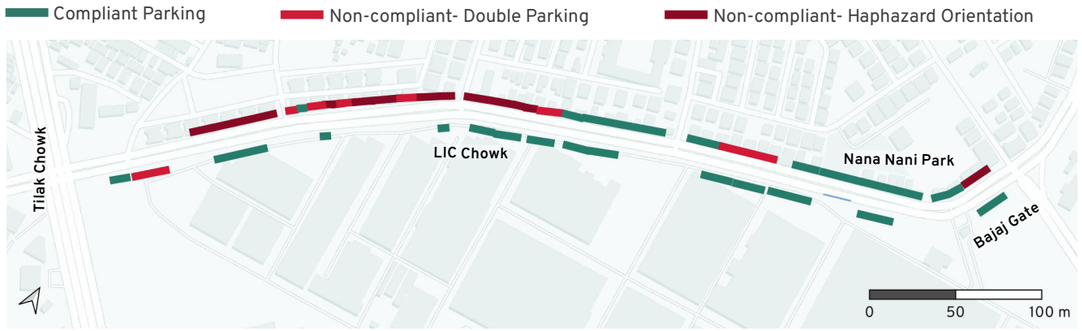
58 kmph
Highest speed recorded

52 kmph

47 kmph
Most recurring speed observed

This is the only street with raised junctions. However, the majority of junctions need to be made more compact for the raised junctions to work. In addition, transverse bar markings are also provided at some locations.

Parking Management



Only 29% of the stretch has compliant parking.

Vehicular parking on cycle lanes

Parked cars obstruct footpath and cycle track

Our Observations

1. **The footpath along Bajaj factory is wide and continuous, with well-designed bulb-outs and seating spaces. In contrast, it is narrow and largely obstructed by property entrance ramps and parking from residential land uses.**
2. **The street has a painted cycle lane. The lane is usually obstructed by parked and passing vehicles.**
3. **Despite the junctions being raised to 150mm, the observed speed of the vehicles is still very high.**
4. **The junction towards Tilak Chowk has not been redesigned, resulting in unsafe crossings, a lack of pedestrian refuge, and haphazard car parking and bus halting.**

Walking on this street has become easy and pleasurable after the redesign. The street has a lot of shade and seating. At night, vehicles speed a lot and cause safety issues.

- User on the Street

#6.4

D.Y. Patil Road, Akurdi

Design score **7.75/10** Observation score **6.5/10** Perception score **5.0/10**

Total score
19.25
30

About the Stretch

D.Y. Patil Road is a major road in the north of the city, connecting the Ravet and Pradhikaran neighbourhoods. The street is primarily mixed-use with a major institution (D.Y. Patil University). Given that the street connects Akurdi Railway Station to the College, most daily pedestrians constitute students.

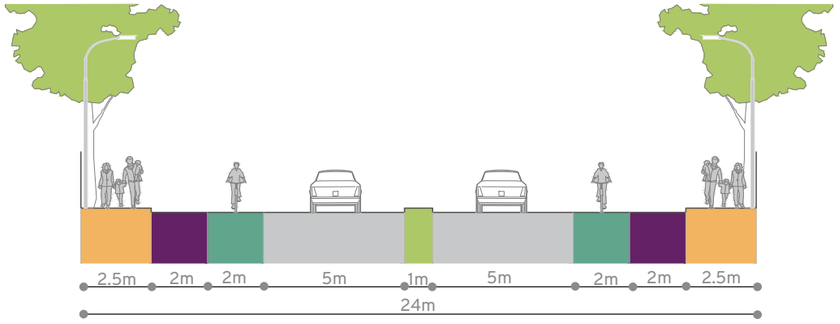
Volume Counts at Peak Hours

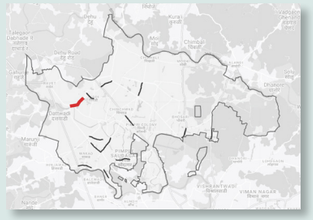
Conducted during morning and evening traffic peak hours on both sides of the road.

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	532	12	1,304	3,056	260
Evening	616	8	1,264	2,650	200

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	4	0	4	36	16
Evening	0	4	0	18	6

Street Profile





D.Y. Patil Road, Akurdi

Right-of-way (RoW)
24m

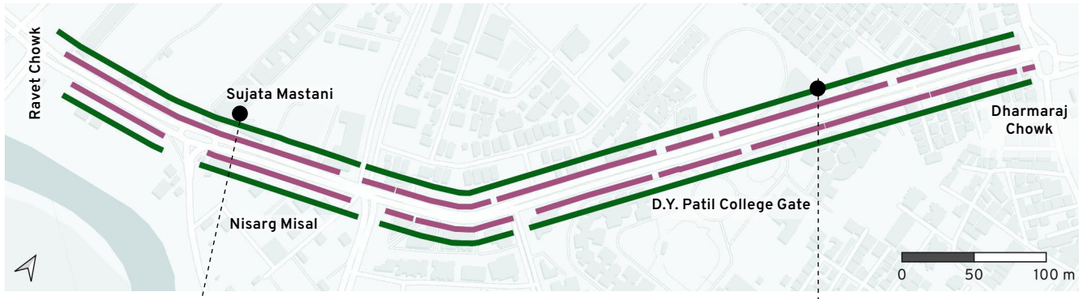
Selected length of study
1.5km

Street character
Mixed-Use and Institutional

Indian Roads Congress (IRC) recommendation
Clear 2.5m wide footpath

Walking and Cycling Continuity

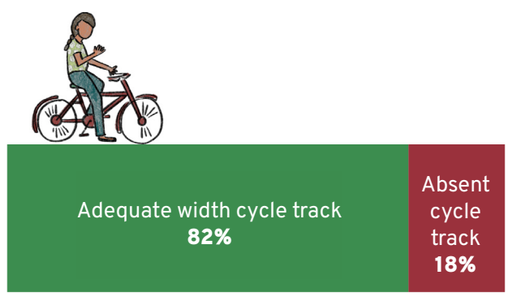
Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)



On footpath **636**
Off footpath **28**
96% of pedestrians were using the footpath

On footpath **716**
Off footpath **0**
100% of pedestrians were using the footpath

85% of the respondents feel that the street stretch is walkable.

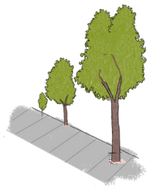


Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.

137
Trees per km



53%
Percentage of footpath shaded by trees

127
Pedestrian lights per km

34
Hindrances per km for walking

23
Hindrances per km for cycling

Safe zebra crossing with pedestrian refuge

Street used by students regularly

Cycle lane continuity at junctions

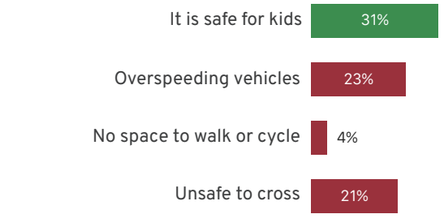
Seating and shading at regular intervals

Cycle lane designed with parking

Parking on footpath and lack of enforcement

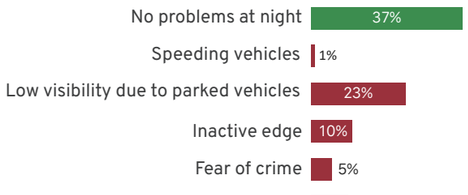
Feeling of Safety Among Street Users

69% of the respondents feel that the stretch is **not safe for children.**



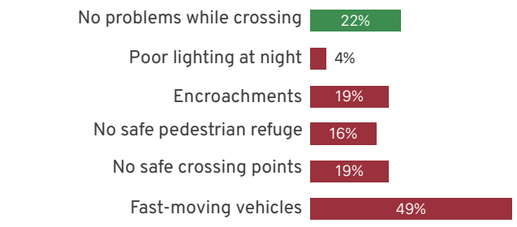
Feeling of Safety at Night

63% of the respondents **faced problems at night.**



Issues Faced While Crossing the Street

78% of the respondents **faced issues while crossing the stretch.**



49% of the respondents **felt that speeding vehicles are a critical hazard.**

57 kmph
Highest speed recorded

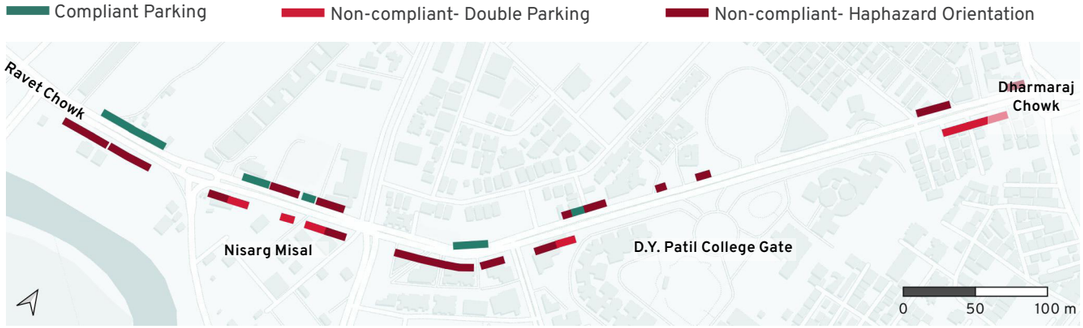
45 kmph

46 kmph

Most recurring speed observed

Traffic calming elements, like speed tables and cobble stones, are provided before junctions and crossings.

Parking Management



Only 17% of the stretch has compliant parking.

Non-complaint angular parking

Parked cars obstruct cycle-lane

Our Observations

1. **The street is well-designed for NMT continuity, safety and accessibility.**
2. **Traffic calming using cobblestones works well approaching tabletop crossings and raised junctions to reduce vehicular speeds.**
3. **Parking enforcement is poor, leading to encroached footpath parking and angular car parking spilling on the cycle lane.**
4. **Junctions are well-designed to maintain pedestrian and cycling continuity, calming traffic and safety.**

The street has a lot of shade, making walking bearable even during summer. However, vehicles are parked on some stretches of the footpath, leaving no space to walk.

- User on the Street

#6.5

KSB-Kudulwadi Road, Chikhali

Design score **4.75/10** Observation score **1.5/10** Perception score **5.0/10**

Total score
11.25
30

About the Stretch

KSB-Kudulwadi road is a major vehicular connecting corridor, and also a BRT route passing through the MIDC. It connects the Old Mumbai-Pune highway to the Spine road in the northeast of the city. Many important industries like Tata Motors and KSB pumps are situated on this road.

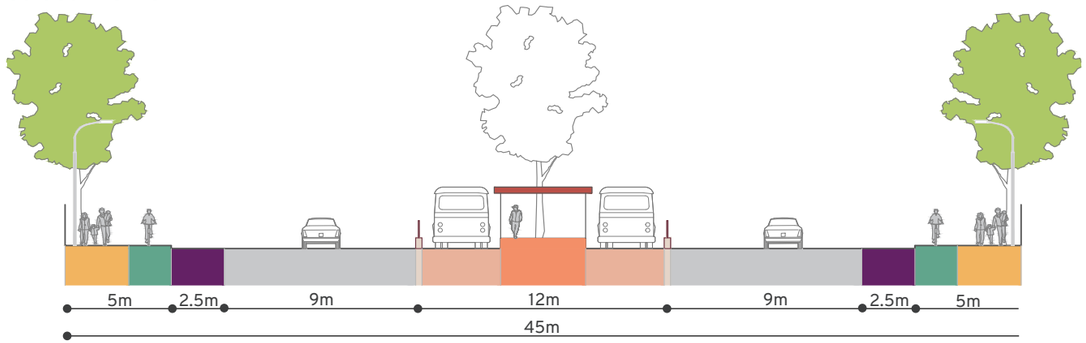
Volume Counts at Peak Hours

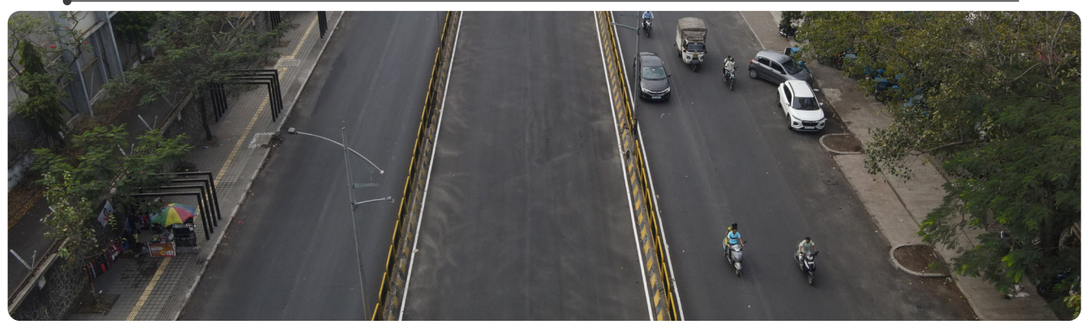
Conducted during morning and evening traffic peak hours on both sides of the street.

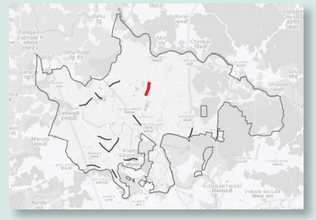
	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	292	28	1,080	2,752	345
Evening	184	40	1,372	2,320	384

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	0	352	35	264	504
Evening	16	96	96	284	228

Street Profile







KSB-Kudulwadi Road, Chikhali

Right-of-way (RoW)
45m

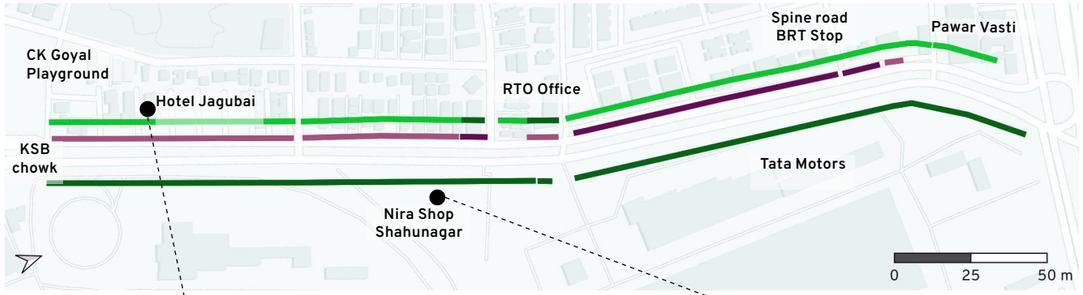
Selected length of study
1.20km

Street character
Commercial and Industrial

Indian Roads Congress (IRC) recommendation
Clear 2.5m wide footpath

Walking and Cycling Continuity

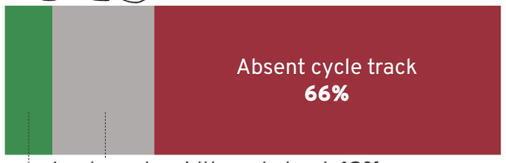
Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)



On footpath **212**
Off footpath **84**
72% of pedestrians were using the footpath

On footpath **80**
Off footpath **100**
44% of pedestrians were using the footpath

83% of the respondents feel that the street stretch is walkable.

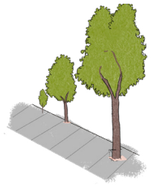


Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.

273
Trees per km



66%
Percentage of footpath shaded by trees

10
Pedestrian lights per km

76
Hindrances per km for walking

15
Hindrances per km for cycling

Tree pits obstructing footpath, people on cycle track

Parked vehicles on cycle track

Footpath and cycle track encroached by vehicles

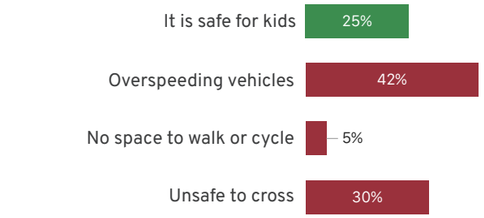
Footpath are encroached by vending spillover

Footpath & cycle track access is not well designed

Crossings are not accessible

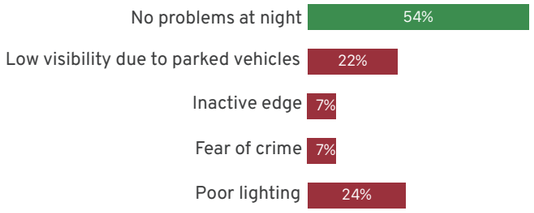
Feeling of Safety Among Street Users

75% of the respondents feel that the stretch is **not safe for children.**



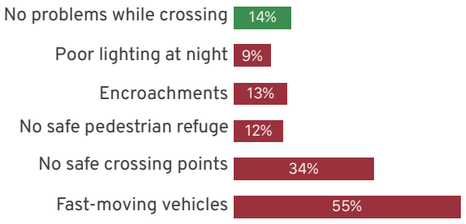
Feeling of Safety at Night

46% of the respondents **faced problems at night.**



Issues Faced While Crossing the Street

86% of the respondents **faced issues while crossing the stretch.**



55% of the respondents **felt that speeding vehicles were a critical hazard.**

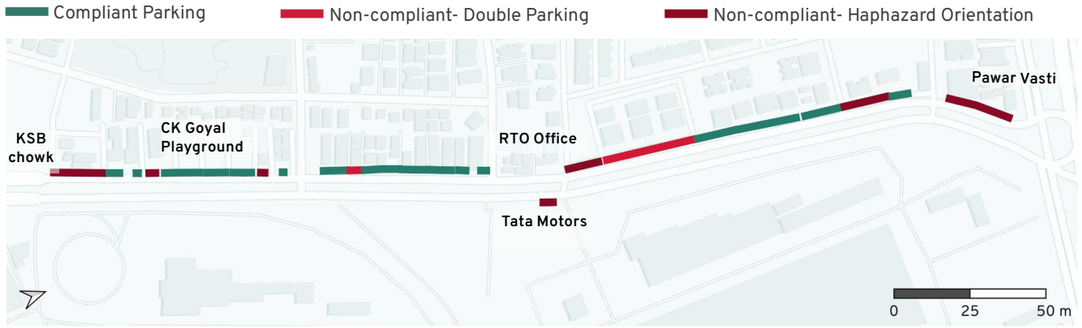
73 kmph
Highest speed recorded

61 kmph

56 kmph
Most recurring speed observed

Traffic calming elements, like speed tables and transverse bar markings, are provided on this street.

Parking Management



Only 15% of the stretch has compliant parking.

Angular parking bays provided in some segments

Parked cars obstruct footpath and cycle track

Our Observations

1. **The Pedestrian Zone is not designed well - tree pits and seatings interfere with the walking width, and people are forced to walk on the cycle track. There are also no signs nor design elements to distinguish between the footpath and cycle track. Parking is not defined properly throughout the entire stretch, and do not feature signs nor designated bays.**

2. **Bollards are not placed per standard, leading to vehicles parking in the NMT zone (especially in the stretch before the service road).**

3. **The footpath along Tata Motors is well designed, but is unsafe due to the tall compound wall and inadequate lighting. There is a need for stronger traffic calming on the street to avoid unsafe crossings.**

I wasn't even aware of the cycle track on this street. There are no signages. Parking is also very haphazard, obstructing the entire footpath at times.

- User on the Street

#6.6

Wakad Road, Wakad

Design score **4.75/10** Observation score **1.5/10** Perception score **5.0/10**

Total score
11.25
30

About the Stretch

Wakad Road is an important arterial with a BRTS route. It connects the Rahatani, Pimple Gurav and Pimple Saudagar regions to the important NH4 bypass. The street is mostly commercial.

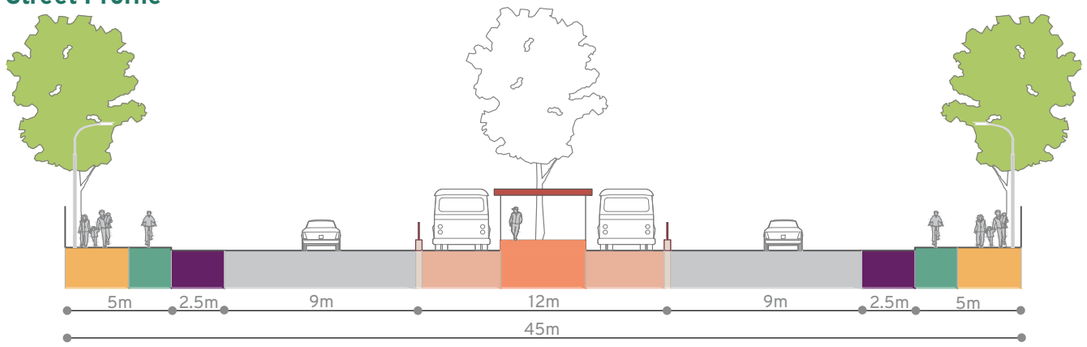
Volume Counts at Peak Hours

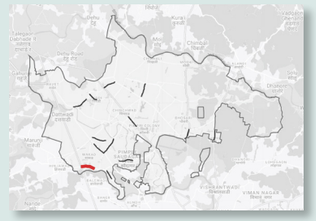
Conducted during morning and evening traffic peak hours, for both sides

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	120	28	2,680	4,748	756
Evening	232	20	3,092	6,896	628

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	36	4	20	172	164
Evening	20	6	132	228	116

Street Profile





Wakad Road, Wakad

Right-of-way (RoW)
45m

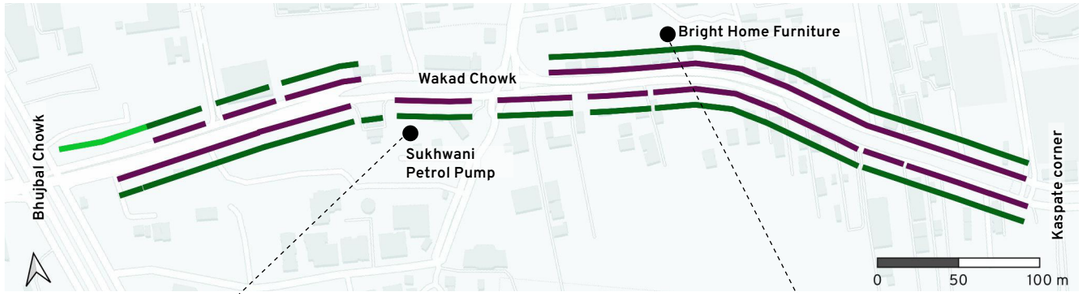
Selected length of study
1.2km

Street character
Commercial

Indian Roads Congress (IRC) recommendation
Clear 4.0m wide footpath

Walking and Cycling Continuity

Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)



On footpath **112**
Off footpath **76**
60% of pedestrians were using the footpath.

On footpath **40**
Off footpath **124**
24% of pedestrians were using the footpath.

67% of the respondents feel that the street stretch is walkable.

Adequate width footpath **56%** | Absent footpath **40%**

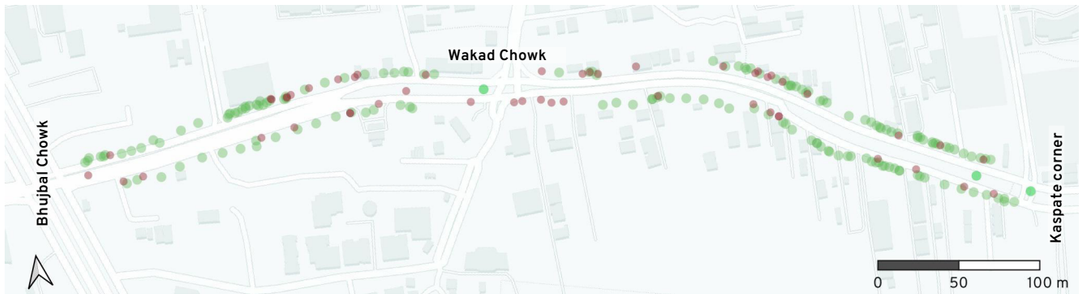
Inadequate width footpath **4%**

Adequate width cycle track **61%** | Absent cycle track **39%**

Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.



69
Trees per km

10%
Percentage of footpath shaded by trees

59
Pedestrian lights per km

25
Hindrances per km for walking

15
Hindrances per km for cycling

Lack of dedicated footpaths and cycle tracks

Large junctions that are unsafe to cross

No traffic calming before pedestrian crossings

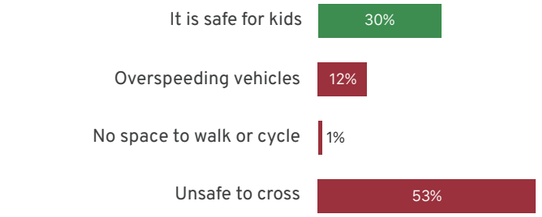
Tree pits restricting walkable space

Continuous NMT infrastructure

Informal vending creating walking obstruction

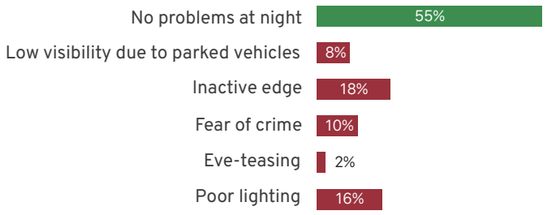
Feeling of Safety Among Street Users

70% of the respondents feel that the stretch is **not safe for children.**



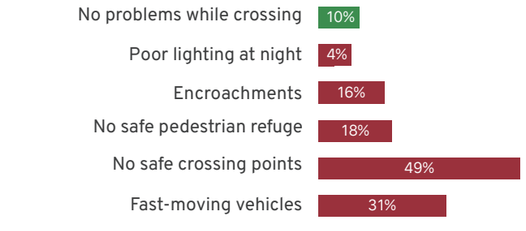
Feeling of Safety at Night

45% of the respondents **faced problems at night.**



Issues Faced While Crossing the Street

90% of the respondents **faced issues while crossing the stretch.**



31% of the respondents **felt that speeding vehicles was a critical hazard.**

68 kmph
Highest speed recorded

53 kmph **52 kmph**
Most recurring speed observed

No traffic calming interventions provided.

Parking Management

0% of the stretch has compliant parking.

Non-complaint perpendicular parking

Parked vehicles obstructing footpath & cycle track

Our Observations

1. **The stretch near the highway lacks footpath and cycle track. In the stretches with NMT infrastructure, the construction quality is not adequate, leading to broken curbs and tiles.**
2. **Parking is not managed through design nor enforcement, and has led to haphazard and encroached parking.**
3. **Vehicle speeds are very high along the road, leading to safety issues. Pedestrian crossings are missing, or if provided, are not as per standards.**
4. **The street has very few trees and low shade, making it difficult to walk and cycle in the daytime heat. Despite having enough space, there are no or very few seating opportunities.**

It is difficult to cross the street because of the speeding vehicles, especially through the BRT lane. Maintenance of the street is a critical issue and should be done regularly.

- User on the Street

#6.7

Kalewadi Road, Kalewadi

Design score **4.25/10** Observation score **4.0/10** Perception score **2.5/10**

Total score
10.75
30

About the Stretch

The report assessed a 1.60 km-long stretch from Kalewadi Phata to MM School Chowk. It is an arterial road with a BRTS corridor. The street has wide footpaths and segregated cycle tracks at the footpath level. The street has several schools and colleges in the vicinity and an active commercial shop frontage on either side.

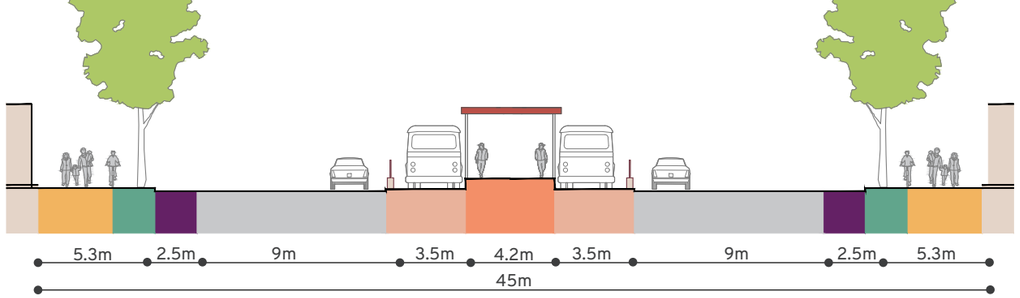
Volume Counts at Peak Hours

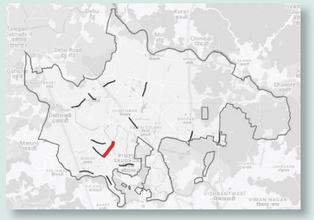
Conducted during morning and evening traffic peak hours on both sides of the road.

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	620	52	1,408	3,604	844
Evening	928	160	1,856	4,924	840

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	28	16	44	324	76
Evening	20	12	44	300	52

Street Profile





Kalewadi Road, Kalewadi

Right-of-way (RoW)
45m

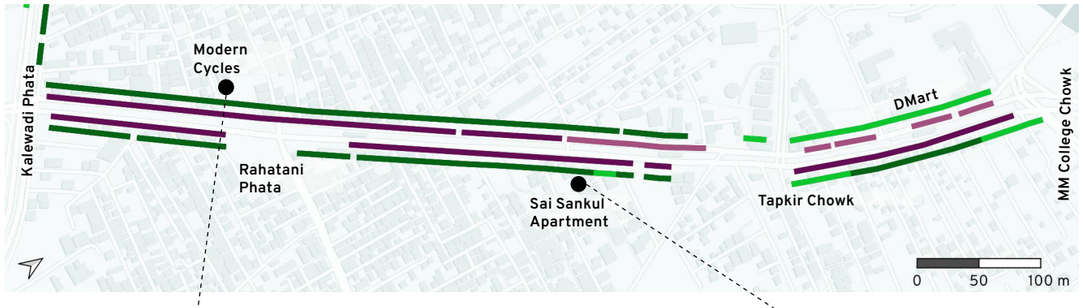
Selected length of study
1.60km

Street character
Commercial and Residential

Indian Roads Congress (IRC) recommendation
Clear 2.5m wide footpath

Walking and Cycling Continuity

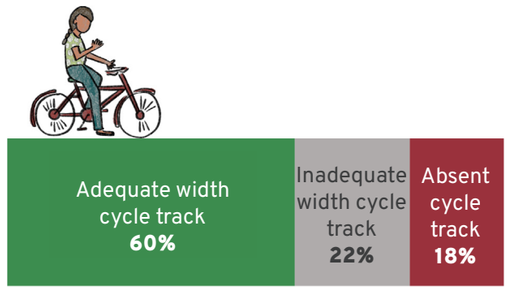
Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)



On footpath **552**
Off footpath **120**
82% of pedestrians were using the footpath.

On footpath **688**
Off footpath **388**
64% of pedestrians were using the footpath.

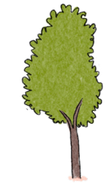
60% of the respondents feel that the street stretch is walkable.



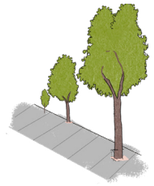
Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.



95
Trees per km



11%
Percentage of footpath shaded by trees

23
Pedestrian lights per km

66
Hindrances per km for walking

41
Hindrances per km for cycling

Poorly lit pedestrian subways

Lack of safe bus shelter

Unsafe crossings at junctions

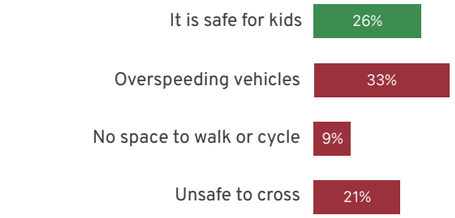
Tabletop crossing with pedestrian lights

Double parking and vehicles on footpath

Speeding vehicles

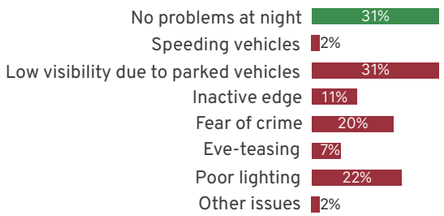
Feeling of Safety Among Street Users

74% of the respondents feel that the stretch is **not safe for children.**



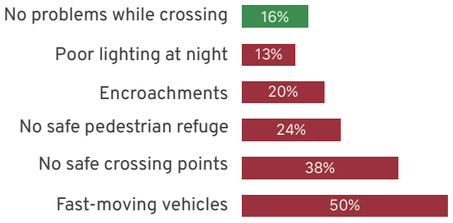
Feeling of Safety at Night

69% of the respondents **faced problems at night.**



Issues Faced While Crossing the Street

84% of the respondents **faced issues while crossing the stretch.**



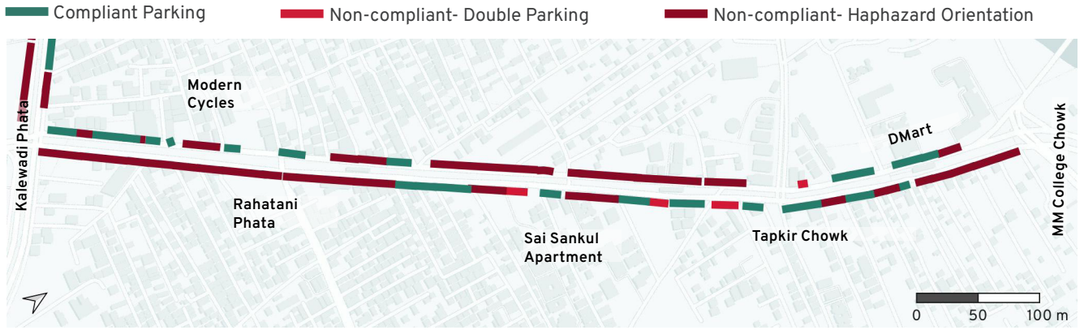
50% of the respondents **felt that speeding vehicles were a critical hazard.**

56 kmph
Highest speed recorded

54 kmph **50 kmph**
Most recurring speed observed

This street uses speed tables as traffic calming elements.

Parking Management



Only 20% of the stretch has compliant parking

Haphazard and uneven parking in some segments

Parked two wheelers obstruct footpath

Our Observations

1. **The street has numerous schools along the stretch, with huge pedestrian activity during school hours. The footpath widths are inadequate and riddled with obstructions.**
2. **Pedestrians walk on cycle tracks due to inadequate and obstructed footpaths, making them unusable. The street also has a pedestrian subway, which is poorly lit and ill-maintained, posing safety issues.**
3. **Users pointed out the anti-social activities around the liquor store, and the forceful closure of the footpath around the store.**
4. **A large chunk of the street has no bulb-outs, causing haphazard parking and vehicles parked unevenly on the footpath.**

Vehicle speeds are very high, especially in the morning when I walk my kid to school. Crossing the road is difficult. The BRT underpass is helpful, but is dark and unsafe.

- User on the Street

#6.8

Nashik Road, Bhosari

Design score **5.75/10** Observation score **1.5/10** Perception score **1.5/10**

Total score 8.75 / 30

About the Stretch

Nashik Road is an important arterial street connecting the western parts of PCMC and Pune to the Bhosari Industrial Hub and Chakan MIDC. The street is purely commercial and sees heavy through traffic. Pedestrian infrastructure on the street is well designed and well constructed, but often encroached on during the day - making it difficult to use.

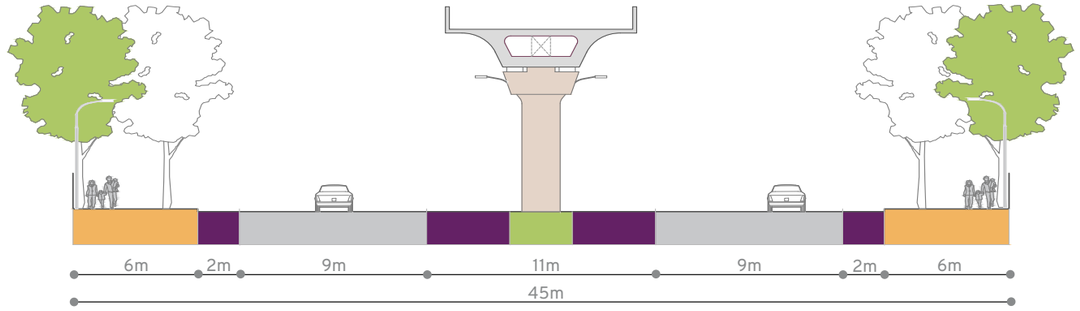
Volume Counts at Peak Hours

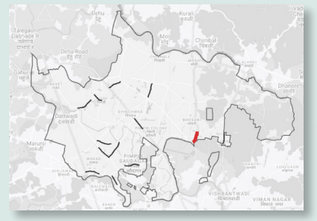
Conducted during morning and evening traffic peak hours on both sides of the road.

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	364	72	1,584	4,496	1,004
Evening	296	4	368	1740	112

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	124	12	72	316	60
Evening	4	8	12	72	0

Street Profile





Nashik Road, Bhosari

Right-of-way (RoW)
45m

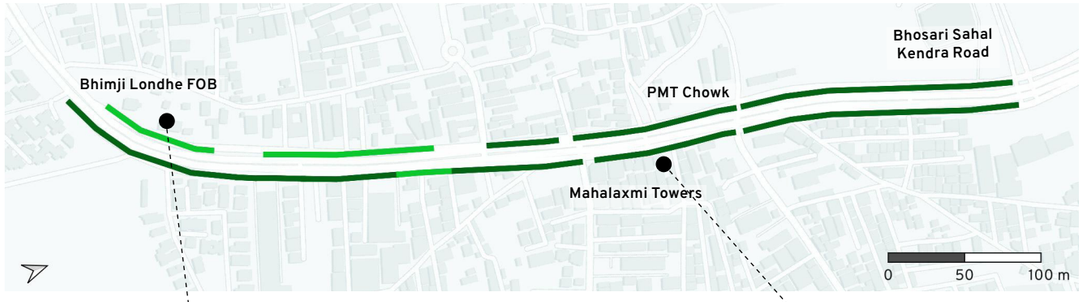
Selected length of study
1 km

Street character
Commercial

Indian Roads Congress (IRC) recommendation
Clear 4.0m wide footpath

Walking and Cycling Continuity

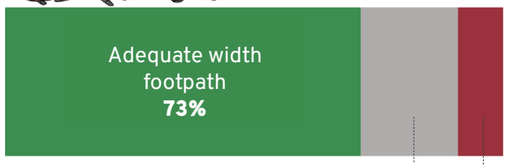
Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)

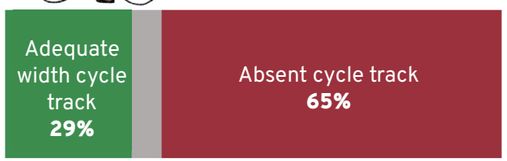


On footpath **2,356**
Off footpath **920**
72% of pedestrians were using the footpath

On footpath **1,768**
Off footpath **1,276**
58% of pedestrians were using the footpath

83% of the respondents feel that the street stretch is walkable..

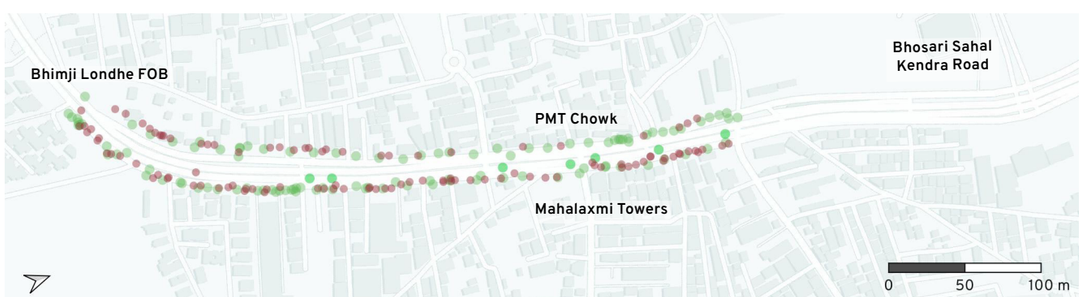




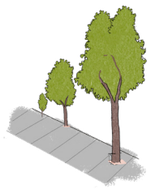
Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.



273
Trees per km



66%
Percentage of footpath shaded by trees

10
Pedestrian lights per km

76
Hindrances per km for walking

N/A
Hindrances per km for cycling

Some stretches do not have a footpath

Universal accessibility is an issue

Buses do not use bus bays

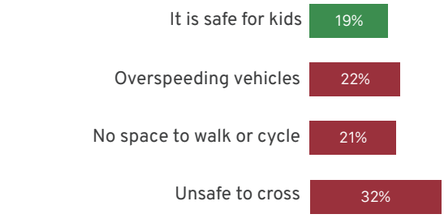
Designed crossings encroached by parked vehicles

Space under flyover used for parking

Crossing designed with pedestrian refuge

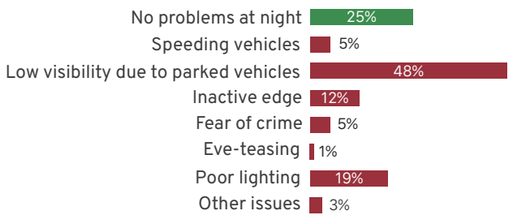
Feeling of Safety Among Street Users

81% of the respondents feel that the stretch is **not safe for children.**



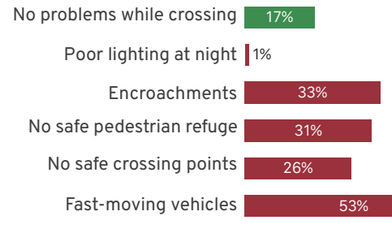
Feeling of Safety at Night

75% of the respondents **faced problems at night.**



Issues Faced While Crossing the Street

83% of the respondents **faced issues while crossing the stretch.**



55% of the respondents **felt that speeding vehicles were a critical hazard.**

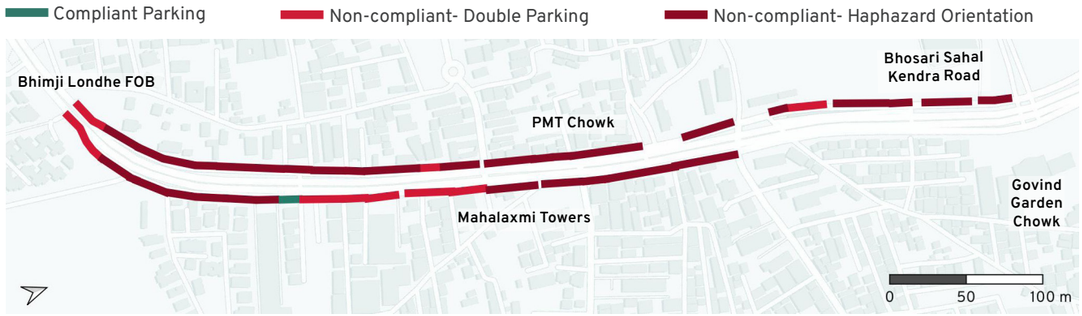
73 kmph
Highest speed recorded

61 kmph

56 kmph
Most recurring speed observed

This street uses speed tables as traffic calming interventions.

Parking Management



Only 1% of the stretch has compliant parking

Underpass space is dedicated to vehicular parking

Parked vehicles obstruct footpath

Our Observations

1. **Nashik Road experiences some of the highest footfall of all the streets studied, due to the local market and the street serving as a major connector from Bhosari MIDC towards Chakan MIDC.**
2. **Junction and mid-block crossings have been designed well with pedestrian refuge.**
3. **Although the footpath is well designed, encroachment by parked vehicles renders it useless to walk at some stretches. While the street has designated vending spaces, most vending still largely happens only on footpaths.**
4. **Spaces under the flyover are not optimally used and reserved primarily for vehicle parking.**

The street is usually crowded throughout the day. The current footpath, though wide, has a lot of parked vehicles. Vending and parking need to be organised and enforced.

- User on the Street

#6.9

Thergaon Hospital Road, Thergaon

Design score **3.5/10** Observation score **1.5/10** Perception score **2.5/10**

Total score 7.5 / 30

About the Stretch

Thergaon Hospital Road is an important collector in the city, connecting the Aditya Birla Hospital Road to Kalewadi Road. The street is surrounded by low-income residential and institutional land-uses. There is no dedicated parking on the street, leading to encroachment on footpath and cycle tracks by parked vehicles.

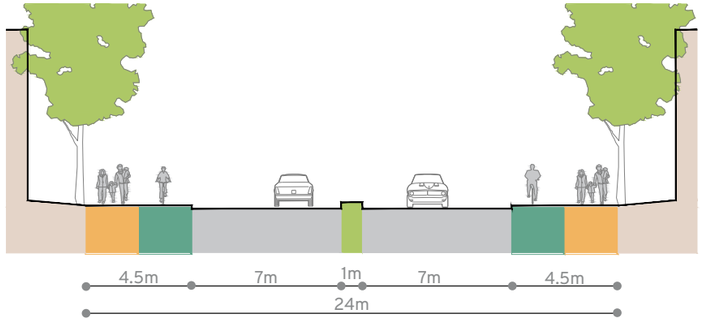
Volume Counts at Peak Hours

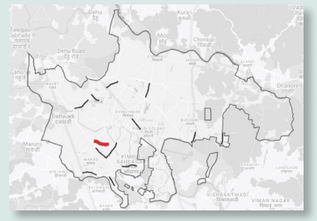
Conducted during morning and evening traffic peak hours on both sides of the road.

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	296	40	368	1,740	112
Evening	748	28	304	1,084	148

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	4	8	12	72	0
Evening	0	16	12	76	12

Street Profile





Thergaon Hospital Road, Thergaon

Right-of-way (RoW)
24m

Selected length of study
1.3km

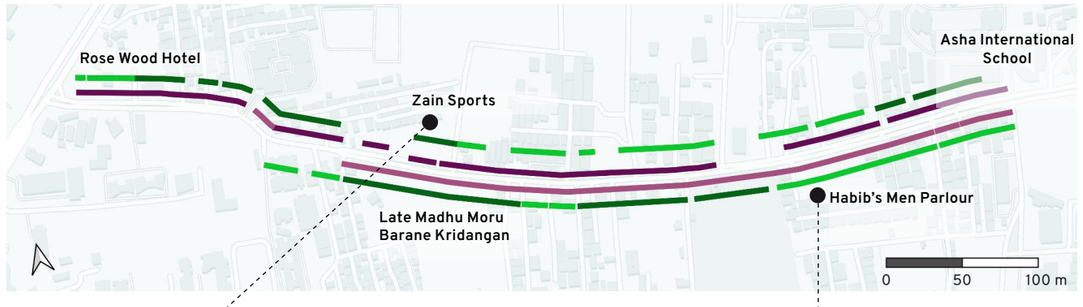
Street character
Mixed-use and Institutional

Indian Roads Congress (IRC) recommendation
Clear 2.5m wide footpath

Walking and Cycling Continuity

Not usable* footpath (FP) | Usable footpath (FP) | Not usable* cycle track (CT) | Usable cycle track (CT)

** Not usable due to encroachments or poor condition*



On footpath **60**
Off footpath **304**
17% of pedestrians were using the footpath.

On footpath **824**
Off footpath **80**
91% of pedestrians were using the footpath.

76% of the respondents feel that the street stretch is walkable.

Adequate width footpath	Inadequate width footpath	Absent footpath
32%	**32%**	**36%**

Adequate width cycle track	Inadequate width cycle track	Absent cycle track
37%	**34%**	**30%**

Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such of garbage dumping, encroachments, waterlogging, poor surface, etc.

102
Trees per km

8%
Percentage of footpath shaded by trees

18
Street lights per km

115
Hindrances per km for walking

31
Hindrances per km for cycling

Dedicated footpath and cycle track at a few locations

Tree pits used as seaters

Stormwater chambers lead to uneven surfaces

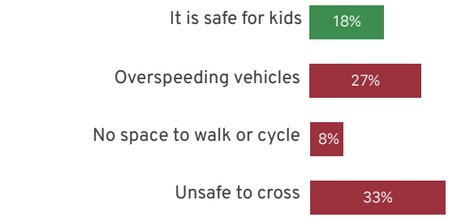
Footpath unusable due to poor design

Large junctions lead to unsafe crossing conditions

Absence of footpath at some locations

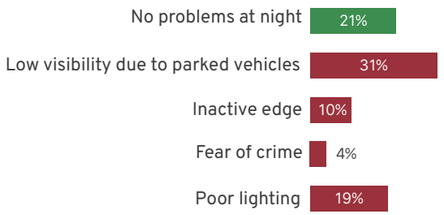
Feeling of Safety Among Street Users

82% of the respondents feel that the stretch is **not safe for children.**



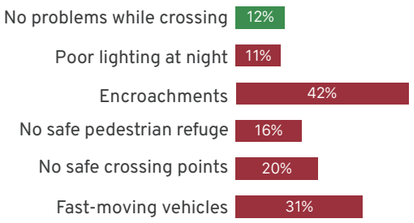
Feeling of Safety at Night

88% of the respondents **faced no problems at night.**



Issues Faced While Crossing the Street

42% of the respondents **faced issues while crossing the stretch.**



54% of the respondents felt **speeding vehicles were a critical hazard.**

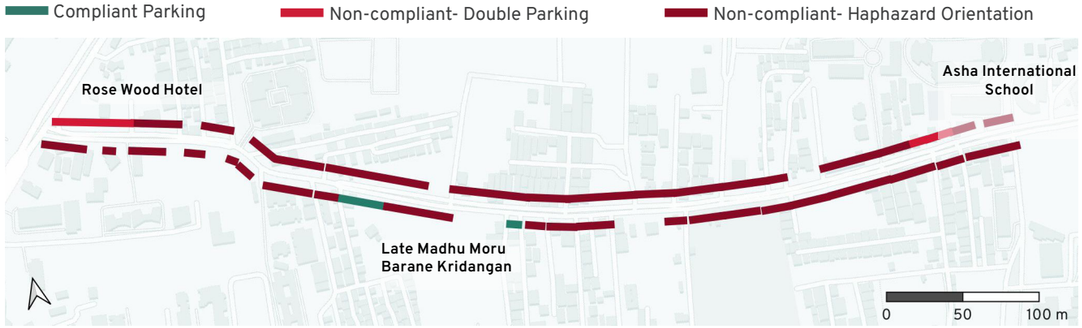
48 kmph
Highest speed recorded

42 kmph

42 kmph
Most recurring speed observed

While the street has speed tables and transverse bar markings neither have been very effective for traffic calming,

Parking Management



Only 3% of the stretch has compliant parking

Footpath and cycle track encroached by parking

Unplanned and haphazard parking

Our Observations

1. **Though the whole street has been designed with a footpath and cycle track, most of the footpath is unusable due to poor design, forcing people to walk on the cycle track.**
2. **Construction of the street is poor, as standard streetscape materials were not used.**
3. **While tree pits are provided, they cause a major hindrance to while walking. Trees, electric DB boxes, and light poles become obstacles to accessible footpaths.**
4. **Parking needs to be better managed, as currently parking is not included in the design of the street, nor it is enforced.**

The construction quality of the street needs to be improved. The footpath is broken and unmaintained in certain patches, making it useless.

- User on the Street

#6.10

Sangvi-Kiwale Road, Kalewadi

Design score **3.5/10** Observation score **1.0/10** Perception score **1.5/10**

Total score 6/30

About the Stretch

Sangvi Kiwale Road is an important arterial and BRT route passing through the city north-south. The selected stretch in a low income neighbourhood of Kalewadi, which primarily commercial and residential. The street has ample on-street vending, and high volume of pedestrians across all age groups.

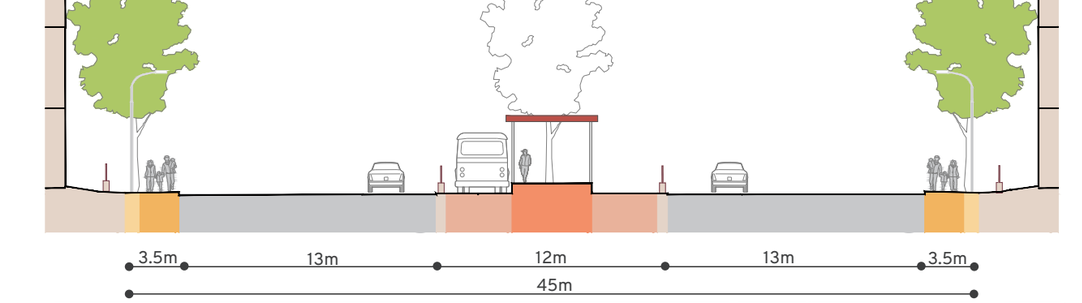
Volume Counts at Peak Hours

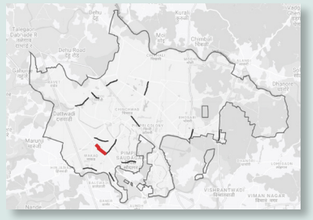
Conducted during morning and evening traffic peak hours on both sides of the road.

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	592	36	2,360	5,084	780
Evening	1,088	104	2,392	4,872	928

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	60	20	28	372	172
Evening	40	24	72	192	84

Street Profile





Sangvi-Kiwale Road, Kalewadi

Right-of-way (RoW)
45m

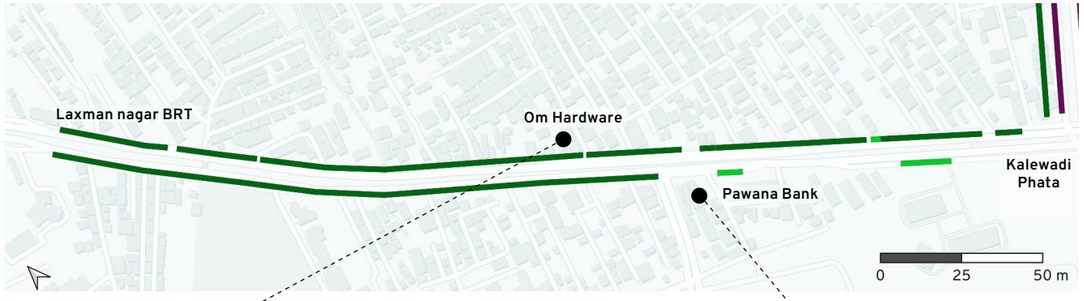
Selected length of study
1.30km

Street character
Commercial and Residential

Indian Roads Congress (IRC) recommendation
Clear 2.5m wide footpath

Walking and Cycling Continuity

Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)



On footpath **944** / Off footpath **368** — **72%** of pedestrians were using the footpath.

On footpath **44** / Off footpath **324** — **12%** of pedestrians were using the footpath.

Only 54% of the respondents felt that the street stretch is walkable.

Adequate width footpath **72%**	Absent footpath **9%**

Inadequate width footpath **3%**

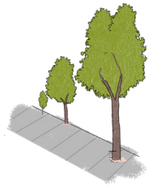
Adequate width cycle track **60%**	Inadequate cycle track **22%**	Absent cycle track **18%**

Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.

82
Trees per km



7%
Percentage of footpath shaded by trees

44
Pedestrian lights per km

97
Hindrances per km for walking

N/A
Hindrances per km for cycling

Footpath absent in certain stretches

Faded infrastructure

Haphazard parking below the flyover

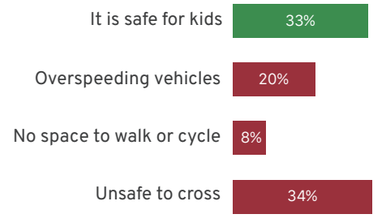
Trees encouched in tree grates

Unorganised and haphazard on-street parking

Encroached parking leading to no walking space

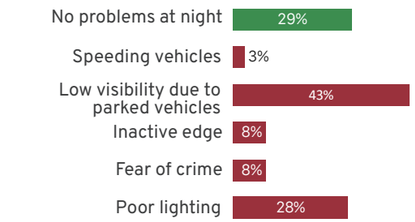
Feeling of Safety Among Street Users

33% of the respondents feel that the stretch is **safe for children.**



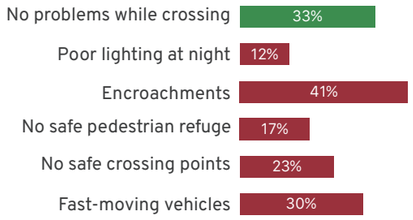
Feeling of Safety at Night

71% of the respondents **faced problems at night.**



Issues Faced While Crossing the Street

67% of the respondents **faced issues while crossing the stretch.**



30% of the respondents **felt that speeding vehicles were a critical hazard.**

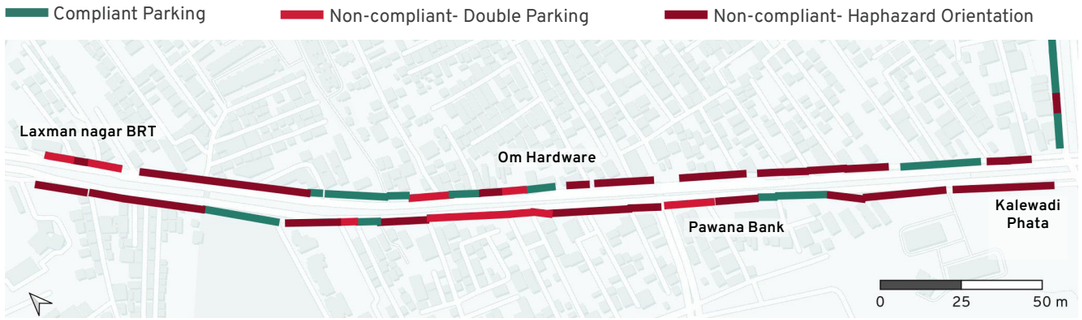
80 kmph
Highest speed recorded

53 kmph

53 kmph
Most recurring speed observed

Traffic calming elements like speed tables are provided.

Parking Management



Only 17% of the stretch has compliant parking.

Angular parking observed in some segments

Parked vehicles obstructing the footpath

Our Observations

1. **Kalewadi Junction (near Pride Purple Mall) does not have a footpath. People are forced to alongside speeding vehicles.**
2. **Vehicles speeding is a problem, and people find it hard to cross the street.**
3. **The footpath near Pawana Bank is un-maintained and hard to walk on. No cycling infrastructure is present in the stretch, forcing cyclists to share the space with speeding vehicles. The footpath near "OM Hardware" is small for a commercial edge, and is often encroached by parked vehicles.**
4. **Parking (and No-Parking) signages are absent.**

People drive vehicles as if on a highway, making it very unsafe. Clear signage of "No Parking", and "Parking" needs to be installed, as people seem to park everywhere!

- User on the Street

#6.11

Old Mumbai-Pune Highway, Pimpri

Design score **3.0/10** Observation score **1.0/10** Perception score **1.5/10**

Total score 5.5 / 30

About the Stretch

The report assessed a 1.20 km-long stretch from Empire Estate junction to Pimpri Chowk. This major arterial road contains an intercity high-speed corridor, a subway, a Metro line, and a BRT corridor. Even though the street has multiple public transport stations, most of it lacks footpaths and cycle tracks. The predominant land use is commercial.

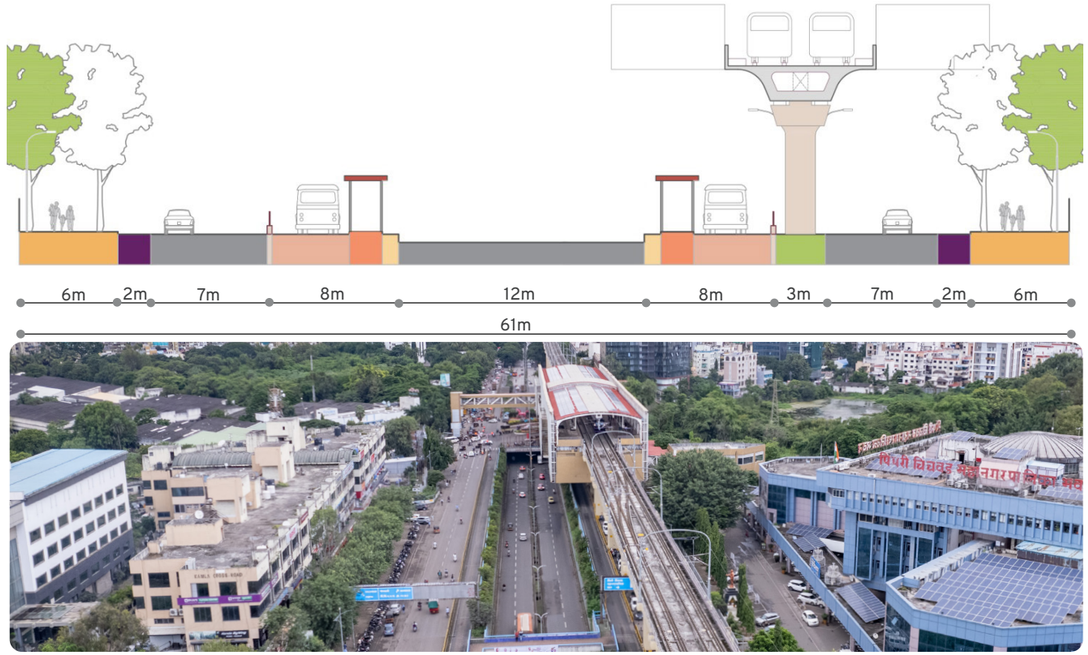
Volume Counts at Peak Hours

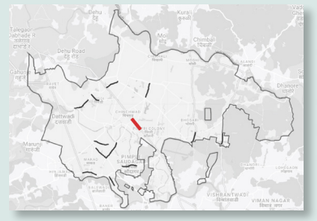
Conducted during morning and evening traffic peak hours on both sides of the road.

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	132	28	1,104	2,068	295
Evening	368	32	1076	2,184	187

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	18	6	2	101	23
Evening	12	4	4	153	32

Street Profile





Old Mumbai-Pune Highway, Pimpri

Right-of-way (RoW)
61m

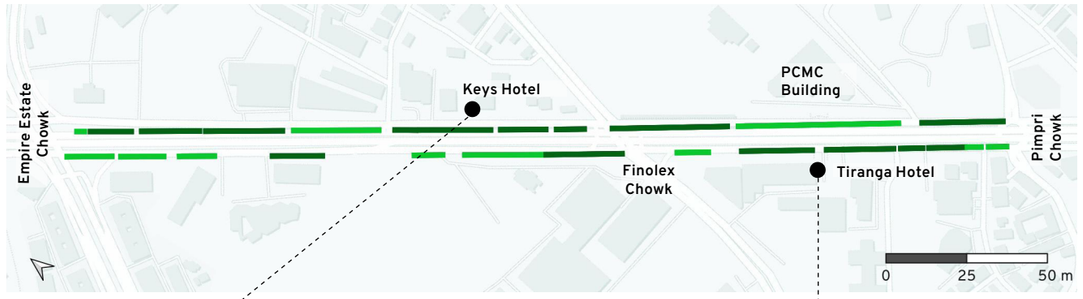
Selected length of study
1.20km

Street character
Commercial and Industrial

Indian Roads Congress (IRC) recommendation
Clear 4.0m wide footpath

Walking and Cycling Continuity

Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)



On footpath **248**
Off footpath **12**
95% of pedestrians were using the footpath.

On footpath **236**
Off footpath **92**
72% of pedestrians were using the footpath.

61% of the respondents feel that the street stretch is walkable.

Adequate width footpath **45%**	Inadequate width footpath **29%**	Absent footpath **26%**

Absent cycle track **100%**

Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.

81
Trees per km

60%
Percentage of footpath shaded by trees

91
Pedestrian lights per km

54
Hindrances per km for walking

N/A
Hindrances per km for cycling

Lack of footpath continuity

Raised crossing without safe refuge space

Vehicular encroachment on footpath

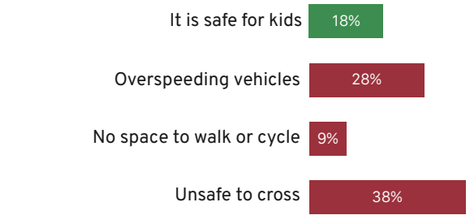
Illegal vending along the edge of the street

Cyclist on road due to lack of cycling infrastructure

Cyclists riding on footpath due to lack of cycle track

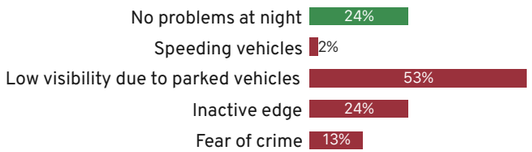
Feeling of Safety Among Street Users

82% of the respondents feel that the stretch is **not safe for children**



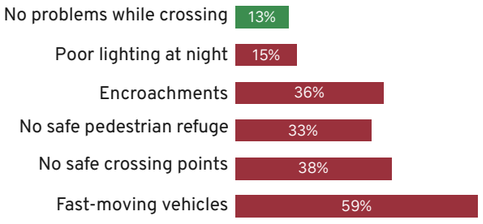
Feeling of Safety at Night

76% of the respondents **faced problems at night**



Issues Faced While Crossing the Street

87% of the respondents **faced issues while crossing the stretch.**



59% of the respondents **felt that speeding vehicles were a critical hazard.**

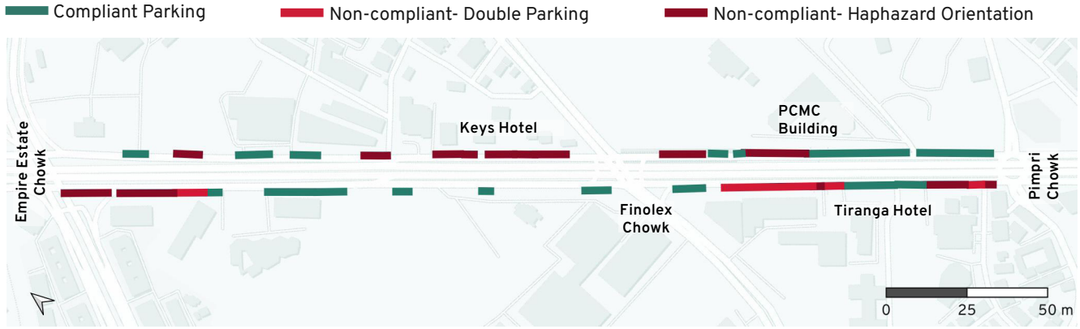
81 kmph
Highest speed recorded

51 kmph

46 kmph
Most recurring speed observed

The street has transverse bar markings and speed tables in the BRT corridor for traffic calming.

Parking Management



Only 26% of the stretch has compliant parking.

Parallel parking provisions below Metro

Parked two wheelers obstruct footpath continuity

Our Observations

1. **The road infrastructure along Old Mumbai-Pune Highway is nearly 15 years old. There is a dire need to redesign it to be more pedestrian friendly, as the footpath is broken and uneven.**
2. **The wide junctions are a cause for concern. For example, Pimpri Chowk and Morwadi Chowk are unsafe to cross because the roundabouts are small and inadequate.**
3. **In addition, there are very few safe crossing opportunities on this street.**
4. **Most of the stretch of road has at-grade or no footpath, and what is there is barely a meter wide.**

Footpaths are very old and ill-maintained, hence the surface is not suitable for walking. Vehicles speed regularly and crossing is not very safe.

- User on the Street

#6.12

Sambhaji Chowk to Hutatma Chowk, Pradhikaran

Design score **0.75/10** Observation score **1/10** Perception score **2.5/10**

Total score 4/30

About the Stretch

The report assessed a 1.10 km-long stretch connecting Sambhaji Chowk to Hutatma Chowk on Ganesh Talao Road. It is a local neighbourhood-level street proposed to be redesigned under the upcoming Harit Setu Master Plan. The overall character of the street is residential, with a few commercial shops on side of the street.

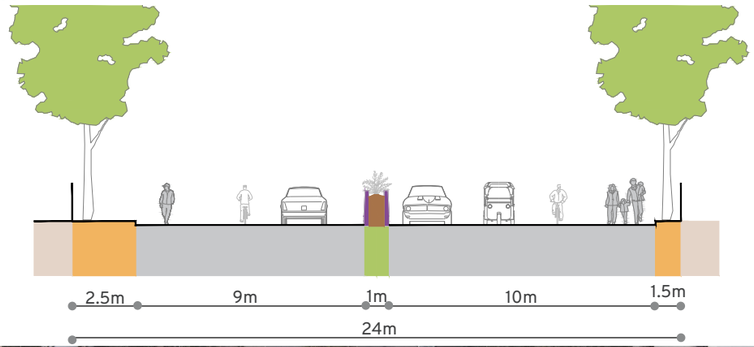
Volume Counts at Peak Hours

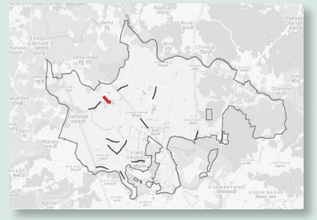
Conducted during morning and evening traffic peak hours on both sides of the road.

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	248	28	348	1,540	57
Evening	260	16	584	1,416	65

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	2	2	2	11	2
Evening	8	0	5	40	0

Street Character





Sambhaji to Hutatma Chowk, Pradhikaran

Right-of-way (RoW)
24 m

Selected length of study
1.10 km

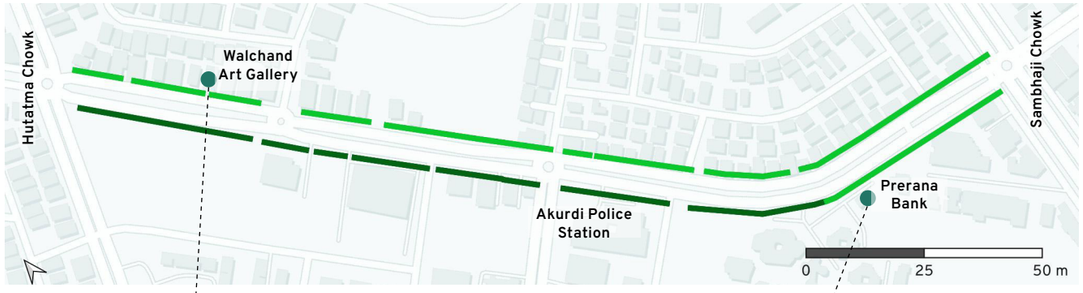
Street character
Commercial and Residential

Indian Roads Congress (IRC) recommendation
Clear 2.0m wide footpath

Walking and Cycling Continuity

Not usable* footpath (FP) | Usable footpath (FP) | Not usable* cycle track (CT) | Usable cycle track (CT)

** Not usable due to encroachments or poor condition*



On footpath **24**
Off footpath **196**
89% of pedestrians were walking on the carriageway.

On footpath **0**
Off footpath **228**
100% of pedestrians were walking on the carriageway.

Only 11% of the street stretch is walkable.

Adequate width footpath **27%**	Inadequate width footpath **43%**	Absent footpath **30%**

Absent cycle track **100%**

Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.

84
Trees per km

55%
Percentage of footpath shaded by trees

39m
Distance between pedestrian lights

146
Hindrances per km for walking

N/A
Hindrances per km for cycling

No walkable footpath

Uneven walking surface

No proper treatment for trees

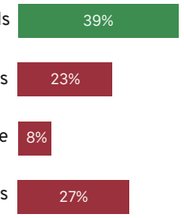
Lack of safe waiting spaces

Large and unsafe junctions

No dedicated cycling infrastructure

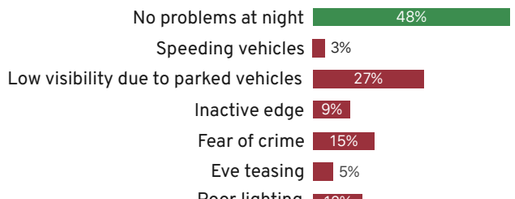
Feeling of Safety Among Street Users

61% of the respondents feel that the stretch is **not safe for children.**



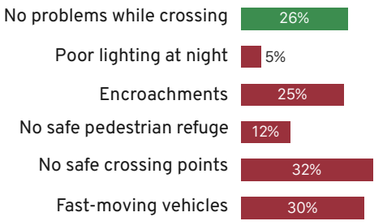
Feeling of Safety at Night

52% of the respondents **faced problems at night.**



Issues Faced While Crossing the Street

74% of the respondents **faced issues while crossing the stretch**



59% of the respondents **felt that speeding vehicles were a critical hazard.**

64 kmph
Highest speed recorded

44 kmph **48 kmph**
Most recurring speed observed

The street relies on speed humps for traffic calming.

Parking Management

0% of the stretch has compliant parking.

Perpendicular parking observed along the street

Parked cars and two-wheelers obstruct footpath

Our Observations

1. **While one side of the street has a good quality footpath, most of the stretch is encroached by either parking or vending, forcing pedestrians to walk on the carriageway.**
2. **The land use along the street is primarily residential, yet has no significant traffic calming interventions. Vehicle speeds remain high throughout.**
3. **The street feels unsafe to walk at night due to lower footfall and poor lighting.**
4. **Parking on this stretch is neither designed nor enforced. Neighbourhood residents were observed parking on the street; many instances of double parking instances were also observed.**

I like to take morning walks in the neighbourhood, but find it difficult to find my way through parked cars and speeding vehicles. It would be great if people park properly.

- User on the Street

#6.13

Dighi-Alandi Road, Dighi Gaon

Design score **1.5/10** Observation score **1.0/10** Perception score **1.5/10**

Total score 4/30

About the Stretch

The report assessed a 1.25 km-long stretch from Datta Mandir Chowk to Vitthal Mandir Chowk. The arterial road is a part of the proposed BRT corridor connecting Pune to Alandi that cuts through the urban village of Dighi. The street lacks any walking or cycling infrastructure. Most of the road has an active commercial edge.

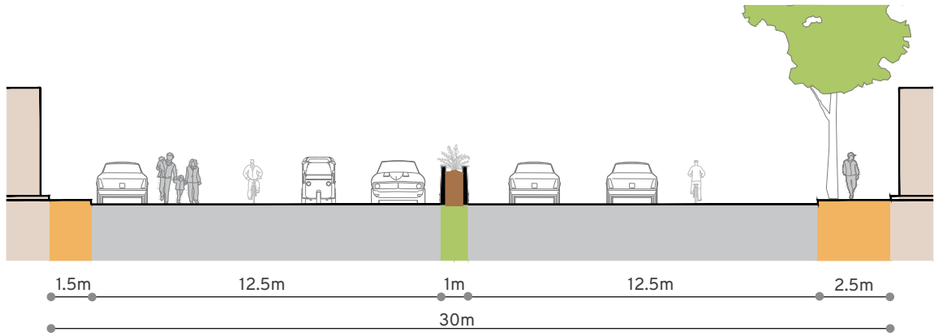
Volume Counts at Peak Hours

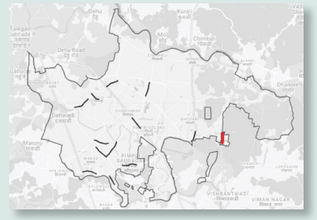
Conducted during morning and evening traffic peak hours, for both sides

	Pedestrians	Cyclists	Cars	2-wheelers	Autorickshaws
Morning	568	32	1,712	5,240	404
Evening	340	44	1,460	3,084	608

	PMPML buses	School buses	Private buses	Mini trucks	Trucks
Morning	52	12	28	156	52
Evening	76	44	88	240	56

Street Profile





Dighi-Alandi Road, Dighi Gaon

Right-of-way (RoW)
30m

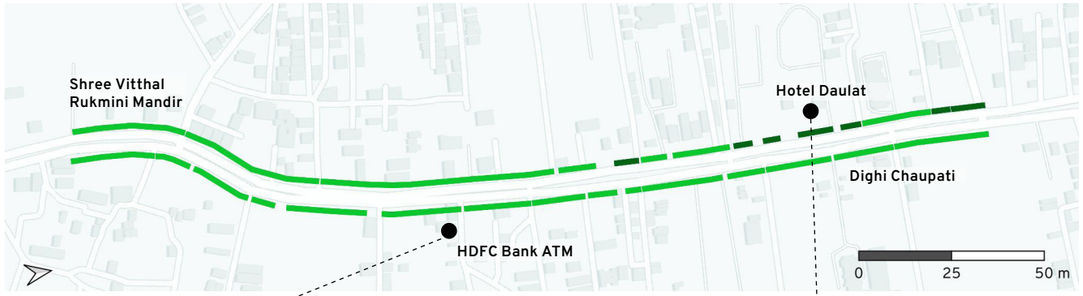
Selected length of study
1.25km

Street character
Commercial and Residential

Indian Roads Congress (IRC) recommendation
Clear 2.5m wide footpath

Walking and Cycling Continuity

Inadequate width footpath (FP) | Adequate width footpath (FP) | Inadequate width cycle track (CT) | Usable cycle track (CT)



On footpath **0**
Off footpath **556**
100% of pedestrians were walking on the carriageway.

On footpath **140**
Off footpath **436**
24% of pedestrians were using the footpath.

88% of the respondents feel that the street stretch is walkable.

Inadequate width footpath **61%**

Absent footpath **34%**

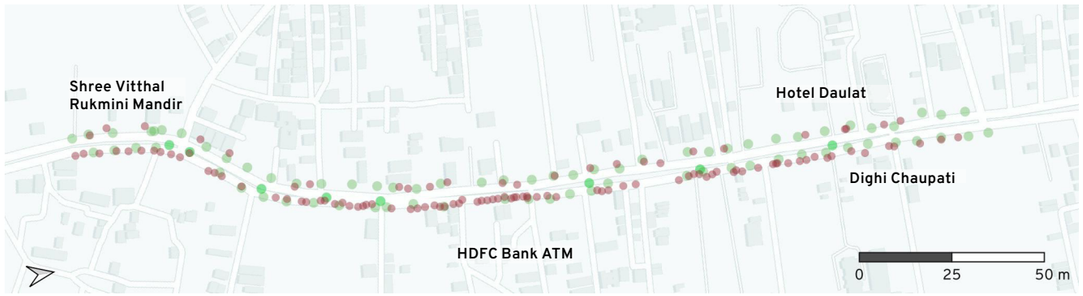
Adequate width footpath **6%**

Absent cycle track **100%**

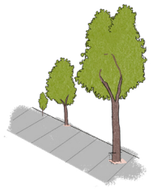
Enablers v/s Barriers

Enablers such as safe crossings, tree shade, seating, street lighting, porous compound wall, etc.

Barriers such as garbage dumping, encroachments, waterlogging, poor surface, etc.



0
Trees per km



3%
Percentage of footpath shaded by trees

58
Pedestrian lights per km

88
Hindrances per km for walking

8
Hindrances per km for cycling

Uneven footpath surface and inconsistent design

Obstructions by commercial spillover

Continuous haphazard parking along the edges

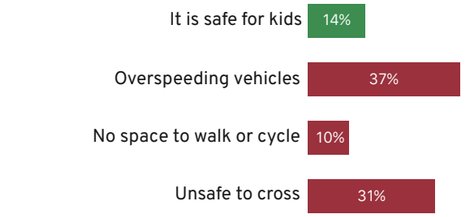
Absence of safe crossing infrastructure

No cycling infrastructure

Wide, unsafe junctions

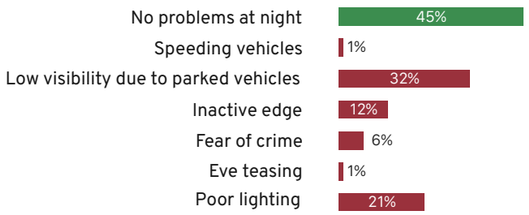
Feeling of Safety Among Street Users

86% of the respondents feel that the stretch is **not safe for children.**



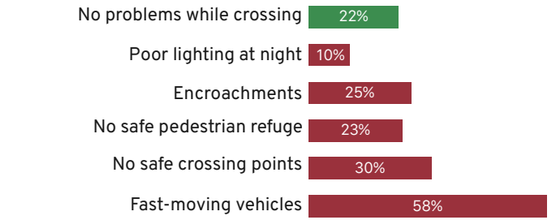
Feeling of Safety at Night

55% of the respondents **faced problems at night.**



Issues Faced While Crossing the Street

78% of the respondents **faced issues while crossing the stretch.**



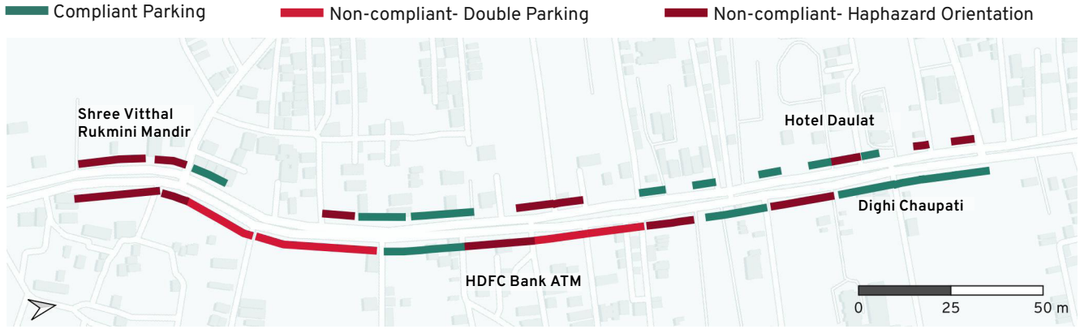
58% of the respondents **felt that speeding vehicles were a critical hazard.**

79 kmph
Highest speed recorded

48 kmph **47 kmph**
Most recurring speed observed

Lack of safe crossing infrastructure and traffic calming interventions on the street.

Parking Management



Only 7% of the stretch has compliant parking.

Double and haphazard parking

Parked cars obstructing footpath and cycle track

Our Observations

1. **Most of the stretch has no unusable footpath, even though the pedestrian footfall is relatively high. The street has a wide ROW (30m), and hence many opportunities to create safe and accessible infrastructure for people walking.**

2. **Vehicular speeds are very high and cause safety concerns while walking, cycling or crossing the road. Current traffic calming interventions (transverse bar marking) reduce speeds minimally.**

3. **Parking is very unorganised, as the street has no design or enforcement interventions for parking.**

4. **There are very few crossing opportunities (usually one in 500m), creating accessibility issues.**

I am terrified of speeding vehicles, especially buses, while cycling or crossing the street. It would be great if get a safe lane to cycle.

- User on the Street

Annexures

Summary of Key Performance Indicators (KPI) for Assessing Impact of Urban Streets

Many Indian cities have been developing streets which are safe, accessible and attractive for walking and cycling in recent years. Cities should also aim at assessing the impact of their street work, and modify their design based on the findings of such analyses.

Cities can do similar assessments of the current street infrastructure condition and their impacts by using the following key performance indicators. The indicators are based on the five principles, that are further divided into sub-principles. The indicators are primarily derived from national and international guidelines like IRC Guidelines, Complete Street Design Handbook by MoHUA, UTTIPEC Street Design Guidelines and Pedestrian First Toolkit by ITDP.

Each indicator has been assigned a 'Level of Service' (LOS), based on which the scores are computed. Out of these indicators, a few are marked as non-negotiable, which are scored entirely on the basis of the indicator's presence or absence in the survey.

Principle	Sub Principle	Indicator
Ease of Walking	Adequate & Continuous Pedestrian Zone	*Percentage of street length in a 500m segment with clear walking width available as per IRC/USDG*
	Uniform Walking Surface	*Percentage of stretch having uniform surface*
	Buffered NMT Zone	*Percentage of street length in a 500m segment having buffer between NMT and MV zone*
	Opportunity to cross the street	Instances for crossing streets (1 crossing every 150-200M)
Ease of Cycling	Adequate & Continuous cycling width	*Percentage of street length in a 500m segment with clear and dedicated cycling width provided as per IRC*
	Junction Continuity	*Percentage of junctions having cycle track continuity*
	Uniform Cycling Surface	*Percentage of stretch having/not having uniform surface*
	Cycle Parking	*Percentage of transit stations having dedicated cycle parking in 50m vicinity*
Safety	Uniform Carriageway	*Percentage of street length having uniform carriageway throughout the stretch as per IRC/USDG template*
	Safe Pedestrian Waiting Spaces	*Percentage - No. of instances having safe waiting spaces/No. of instances requiring safe waiting spaces*
	Signalised Pedestrian Crossings	*Percentage- No. of crossings with pedestrian signals/No. of signalised junctions on the street*
	Adequate Lighting	*Percentage of well-lit NMT zone having dedicated lighting on the street that are in working condition*
Accessibility & Inclusivity	Accessible Crossings	*Number of accessible midblock crossings for every 500m of the street segment. (if at-grade zebra crossing- ramps should be provided, if grade separated- table top)*
	Accessibility to Public Transport	*Percentage of BRT stop access having accessible crossing infrastructure with traffic calming*
	Accessible Information	*Signages installed at per IRC/ USDG (Including signages for all impairments)*
Liveability	Provision of Seaters	*Number of seaters provided in the 500m stretch of the street*
	Equitable Space Distribution	*Percentage of NMT zone vs MV zone in the street stretch*
	Active Frontage	*Percentage of street length having no compound wall or a transparent compound wall (above 600mm).*
Blue & Green	Adequate space for Tree pits	*Percentage of trees with adequate tree pits*
	Softscape vs Hardscape	*Percentage of softscape vs hardscape*
	Stormwater management	*Presence of stormwater drainage system*