SUSTAINABLE TRANSPORT

for a Liveable Pune

महा मेट्रो
PUNE METRO

Save
Pune
Traffic
Movement

PUNE KNOWLEDGE CLUSTER
PKC

CEE
Centre for Environment Education

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Greetings!

Every day, each of us experiences the city's transportation system — its ease, its frustrations, and its impact on our lives. This guide invites you to be part of a positive change by supporting a transport system that is inclusive, sustainable, and safe.

Walking, cycling, and reliable public transport are the backbone of a healthier Pune — for our children, elders, workers, and the environment. By making informed choices and speaking up for people-friendly projects, we can reduce congestion, pollution, and accidents in our city.

Let us rethink how we move around and reshape our streets for people, not just vehicles. Together, as active citizens, we can build a Pune where everyone can travel with dignity, safety, and convenience.

CONTENTS

01 NON-NEGOTIABLE ATTRIBUTES OF OUR TRANSPORTATION SYSTEM

Our transportation system must have 3 important attributes: It must be Inclusive, Sustainable and Safe. The major modes of commuting in any Indian city are: Walking, cycling, simple bus-based public transport, mass rapid transit (Bus Rapid Transit (BRT) and Metro), cabs + rickshaws, and motorized 2-wh and cars. Which of these modes support which of the 3 attributes mentioned above? Let us examine that! Each green cell in the table below indicates that that mode supports that attribute.

		Walk	Cycle	Bus	BRT	Metro	Cabs + Rickshaw	2 wheelers	Cars
Inclusivity	Pune's transportation system must be designed with all kinds of people in mind. A simple thumb-rule is: If women, 8-year-olds, 80-year-olds, the poor and the physically challenged can move around safely and conveniently, everyone else can.								
	Children								
	Women, Sr citizens								
	Poor								
Sustainability	The system must use as few resources as possible while providing convenient mobility to all types of people. What are the critical urban resources used for transportation? Road space, oxygen and funds. To conserve these resources, we must promote modes that consume least road space and emit least pollutants per person-km and require minimal expenditure for their infrastructure.								
	Road space								
	Emissions								
	Govt expenditure								
Safety	The more 'vehicle-km travelled (VKT)' a city has, the more accidents it will have. We must promote modes that reduce VKT. We must also encourage modes that do not cause harm to others, when involved in an accident.								
	Low VKT								
	Can harm others								

Which modes have more greens and which have more reds? You will notice that walking, public transport of all types and cycling handsomely support the non-negotiable attributes. We want a transportation system with these modes as its backbone! For short, let us call it a 'Walk-Bus-Cycle', or WBC-based system. Just like White Blood Cells keep our body healthy, this 'WBC' keeps a city healthy! The National Urban Transport Policy (NUTP) also says, "mobility for people, not vehicles", and states that cities should make it convenient for people to walk, use public transport and bicycles.

Pune's transportation system must be designed with all kinds of people in mind. A simple thumb-rule is: If women, 8-year olds, 80-year-olds, the poor and the physically challenged can move around safely and conveniently, everyone else can.

DID YOU KNOW?

Due to high usage of personal automobiles, the transport sector is the single largest contributor towards urban air pollution.

02 MOBILITY OBJECTIVES FOR THE PUNE REGION

Fortunately for Pune, the PMRDA's 'Comprehensive Mobility Plan (CMP)' states the following key objectives for 2038, which are in agreement with NUTP and also the non-negotiable attributes we said our system must support. Let us examine these objectives against the situation today, to know what our city must do to achieve our objectives.

Attribute	Situation in 2018	Goal for 2038	Notes
*Mode share: Walking and cycling	~30%	35%	1
Mode share: Public transport	~20%	50%	2
Mode share: Personal vehicles	~50%	15%	3
Pay-and-park for on-street parking	0%	30% of roads in 5 years 50% of roads in 10 years	4
Number of buses per lakh population	~25	55	5

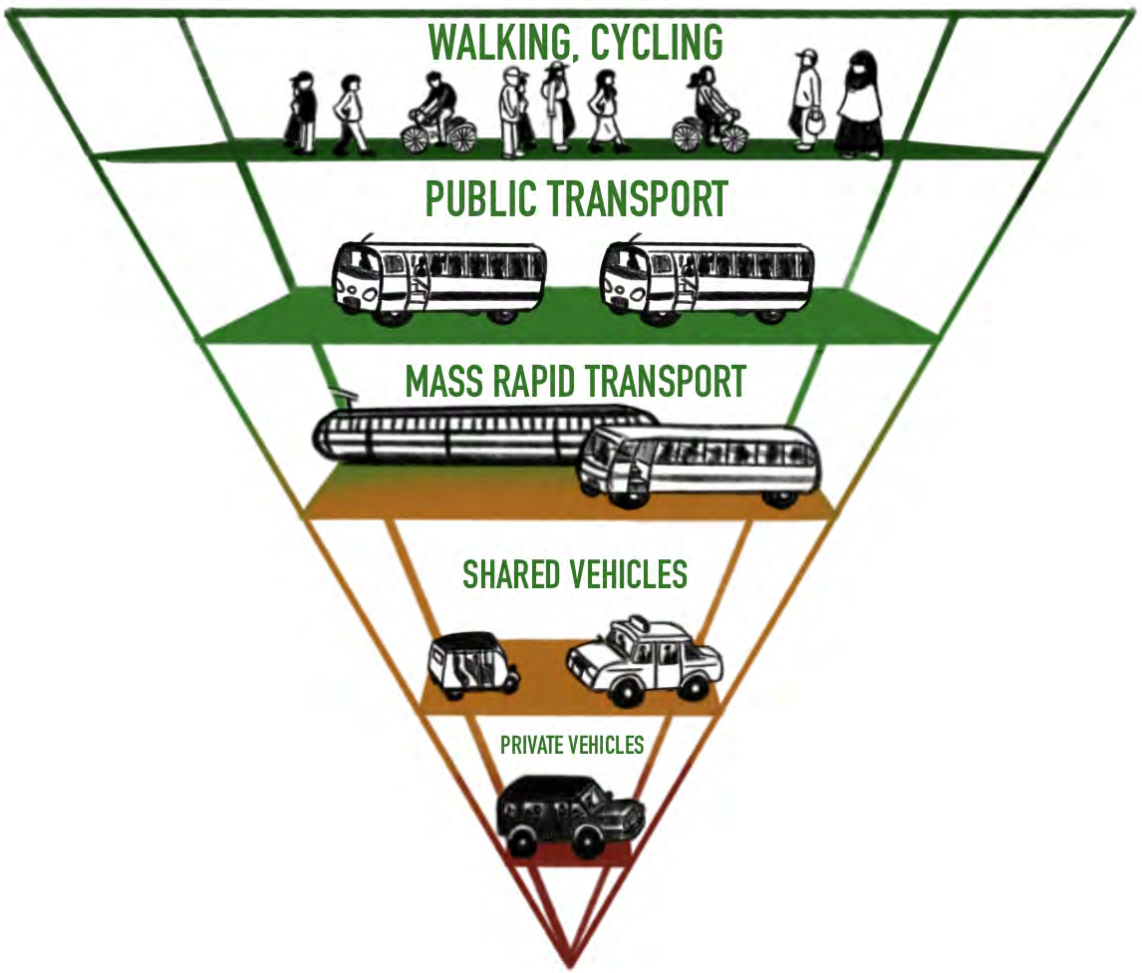
**Mode share: What % of trips in the city use that mode as the main mode.*

From PMRDA's CMP:

1. Out of this, walking modal share will be steady at about 25%. We need to double the cycling modal share from 5% to 10%.
2. This includes rickshaws and cabs (about 10%). Metro has a modal share of about 1% in 2024 and is unlikely to go beyond 7-10% even with a 100km network. Therefore, we must triple Pune Mahanagar Parivahan Mahamandal (PMPML)'s modal share from about 10% in 2024 and to about 30% in 2038.
3. Since we must reduce the modal share of personal vehicles to ~15%, we need projects explicitly designed to intentionally discourage their use!
4. We only need to implement Pune's Parking Policy, since these measures are suggested in that policy.
5. Pune is down from about 30 buses/lakh in 2008 to about 25 today. To reverse the downward trend, we must add a lot of attractive and high-quality buses, like the electric AC buses.

03 DESIRABLE AND UNDESIRABLE PROJECTS

Like many things, which projects are desirable and undesirable also changes as a city grows. Pune, as it was 30 years ago, was perhaps able to digest the ill-effects of some projects. However, the non-negotiable attributes we saw earlier dictate that this megapolis of today must prioritize walking, public transportation of all types and cycling. At the same time, Pune must also implement projects that discourage people from using personal motor vehicles. Not surprisingly, this is a worldwide trend!



Let us reimagine an inclusive, sustainable and safe transportation system, and see which projects are desirable and which are not.

Please note that the numbers in the right side column in this table refer to frequently asked questions (FAQs) about these modes, which are answered in the next few pages.

Project	Modes promoted				Desirable (Green, Undesirable (Red), Depends... (Orange) FAQ#, if any
	Walk	Public transport	Cycling	Personal vehicles	
Walkable footpaths	Y	Y			1
Buses for PMPML	Y	Y			2
BRT, bus lanes		Y			3
Metro		Y			4
Shared bicycles		Y			5
Cycle tracks			Y		6
Cycle parking			Y		
Mini-buses		?		?	7
Parking structures				Y	8
Foot overbridges, subways for pedestrians	?			?	9
Flyovers, grade separators				Y	10
Free or cheap parking				Y	11
Park-n-ride for Metro		?			12

04 Frequently Asked Questions (FAQs)

1 Walkable Footpaths

"Footpaths are encroached by hawkers!" Well, hawkers sit on roads without any footpath too! They sit where they can get customers. A well designed footpath that accommodates a controlled number of hawkers has several benefits.

"There is no space for footpaths!" We need to understand that pedestrians have the first right on road space. You need a driving 'license' to drive, which is a 'permission' and not a 'right'. Any city must cater first to pedestrians and only then to vehicles.

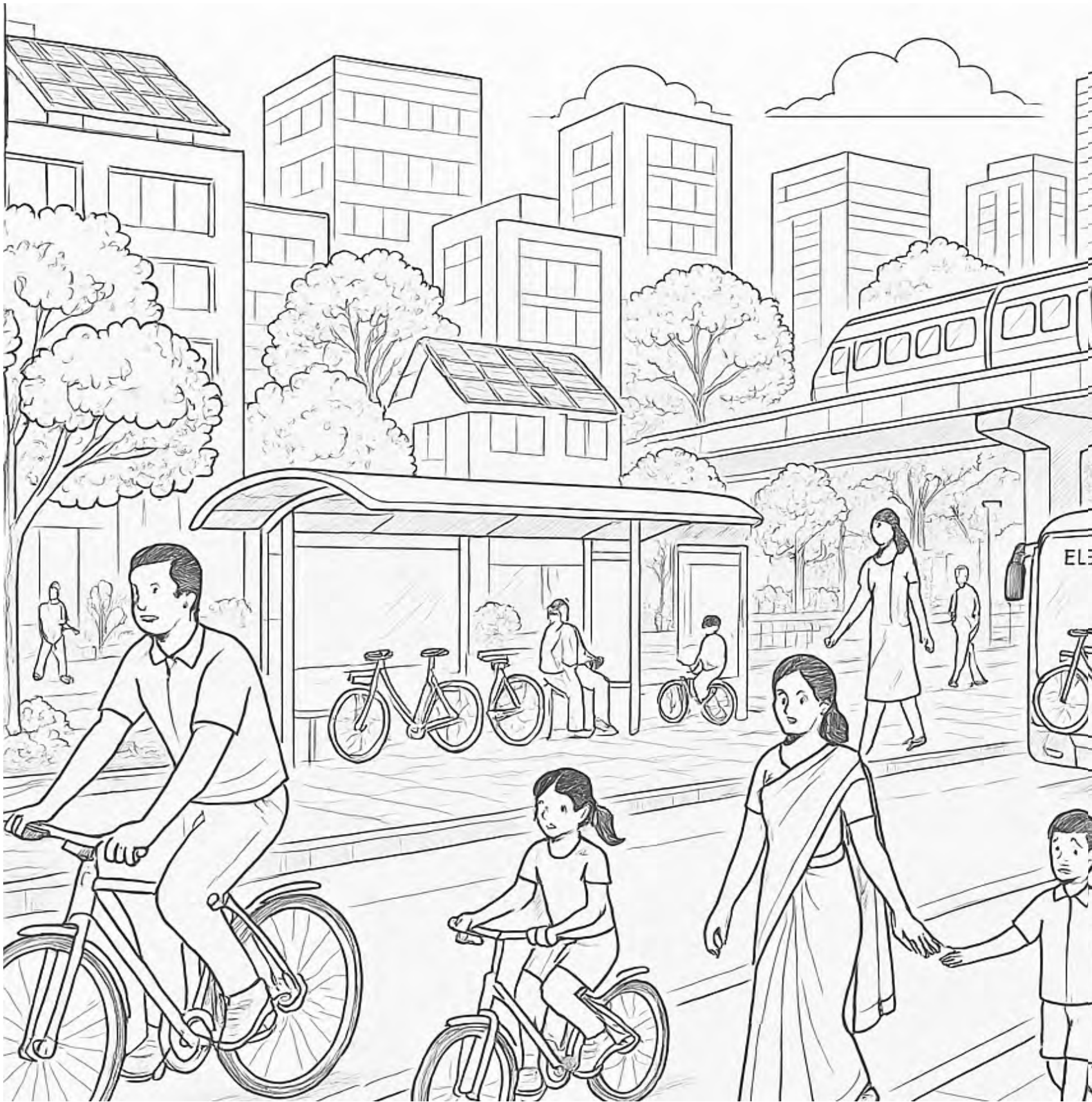
2 Buses for PMPML

- **"The bus service makes losses!"** A bus system is not supposed to be for profit. Does any flyover make profit?
- **"But there is no road space to add more buses."** One bus carries about 70 people. For the same space, two-wheelers can carry only about 10 and cars can carry only 6 people. About 500 two-wheelers and 150 cars are registered daily in Pune. Do we worry about road space for them?

3 BRT, BUS LANES

Do **"bus lanes cause congestion?"** One bus lane, if served by one bus every 30 seconds, can carry more people than even 2 lanes of mixed traffic (see the photo below). So we should demand more buses in bus lanes, instead of seeking their removal.

Did **"BRT fail in Pune?"** Multiple entities did not do their job properly. It was Pune's failure, not BRT's. BRT is successful in many cities, including many in developing countries. Does an exam fail, or does a student fail in the exam?




METRO

4. Metro

"We need a 100 km network of Metro!" Even a 100 km network can carry about 8-10 lakh 'trips' everyday. That will be only about 4-5% of the 2 Cr trips a city with 1 Cr people need to carry. In comparison, if PMPML has a fleet of 6000 buses, it can carry about 25% of the transportation load of Pune and Pimpri-Chinchwad. Therefore, although the Metro has its advantages, there is no alternative to a very strong bus service.

5. Shared bicycles

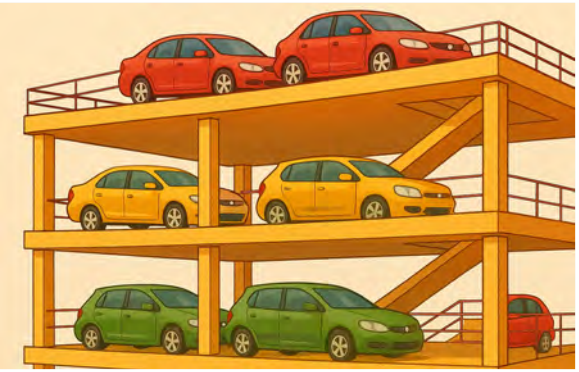
Shared bicycles can provide excellent last mile connectivity and can contribute to making public transport successful.

6. Cycle tracks

"But who cycles these days!" Pune Cycle Plan has revealed that unsafe conditions are the main deterrent to urban cycling, not the weather! And as they say, "build it and they will come!" We have built our city for cars and two-wheelers, and that's what we have got. Let us build our city for bicycles and we will get bicycles!

7. Minibuses

Minibuses can be useful on narrow lanes of the inner city, when compared with regular buses, especially as feeder buses. Feeders help people reach metro / BRT / regular services. It generally costs more per commuter to operate minibuses. However, new technologies like "tap to enter" could help reduce costs and make minibuses cost effective for the operator.



8. Parking structures

Any parking slot, whether on-street or off, encourages personal vehicle use and thus contributes to congestion. Yet, a limited number of parking structures may be useful. However, to encourage people to use those, on-street parking should be minimal and expensive. Also, the combined cost of building and operating off- and on-street parking should be recovered from people using these facilities. This cost should not be subsidized by the Pune Municipal Corporation (PMC).

9. Foot overbridges, subways for pedestrians

The fact that these are seldom used by pedestrians shows that pedestrians don't find them convenient! If vehicles need to stop anyway to let other vehicles pass, pedestrians can use that time to cross the roads without climbing stairs.

10. Flyovers, grade separators

These 'solutions' simply end up transferring the congestion to the next intersection. Though they provide temporary relief, they encourage use of personal motor vehicles, thus worsening the issue in the long run. On the other hand, buses find it inconvenient to use a flyover since a busy intersection that the flyover 'flies over' has an important bus stop

11. Free or cheap parking

Personal vehicles can many times brave congested roads, but it is the availability or lack of parking, based on which people decide whether to use a car / 2wh. Therefore, providing free or cheap parking directly contributes to congestion.

12. Park-n-ride for Metro

This is acceptable as long as people who are using 'walk-bus-cycle' to reach the Metro are not subsidizing building and operating a Park-n-ride facility. But then, cars using Park-n-ride may have to pay Rs 50 or more per hour! This shows that Park-n-ride is not feasible.

05 HOW SHOULD WE ALLOCATE ROAD SPACE?

“Great, understood! Let us promote walk-bus-cycle!”

Apart from allocating more funds in favour of these modes, our streets must also prioritize road space for these modes. Let us understand how.

How most traffic engineers see your city

How cities should be designed

Walking is the most fundamental mode. You need to walk to catch a bus or a Metro. Our footpaths must be designed to ensure that they can accommodate all pedestrians. If people are walking on the carriageway, it proves that the footpath has failed. The city must identify the reasons and improve the footpath accordingly.

Next comes the bus. Hypothetically, only the "walk + bus" combination can take anyone anywhere in the city. Therefore, we must ensure that buses get ample road space and not get stuck in traffic jams. Not every road needs to have a bus lane, but the moment we see that buses' movement is severely affected by cars and 2 wheelers, we must restrict the space that cars and 2 wheelers get.

In addition, the bus stops must also get sufficient and well-designed space so that they are not a hindrance to pedestrians, and parking is not a hindrance to bus stops.

'Mass Rapid Transit' (MRT) is needed to carry a large number of people quickly over long distances. Therefore MRT systems like BRT and Metro must have the next claim on road space. Bus lanes, Metro pillars, access to stations, their signage. Even bus depots and terminals, Metro stations and car sheds.

Cycling Though not everyone can cycle, cycling facilities do provide a very viable alternative to young children, daily wage workers. But that is a stereotype. Worldwide, safe and convenient cycling facilities have induced people from high income strata, women, even senior citizens to choose cycling over personal vehicles, for occasional as well as daily commute. Therefore, facilities like cycle tracks, cycle parking - both roadside as well as off-street structures - should get road space and financial support from the city.

Multi-Utility Zones (MUZs) Street space is also required for many other essential purposes. Street lighting, trees, benches, signage and directions, and similar uses should get the next priority. Many of such items can be given road space in what is called a 'Multi-Utility Zone' (MUZ), which is typically between the carriageway and the cycle track / footpath. On-street parking is also accommodated in MUZ but should be prioritized after the purposes listed above.

It goes without saying that road space for movement of personal motor vehicles comes only after the aforementioned purposes!

Fortunately for Pune, PMC has adopted 'Urban Street Guidelines' that follow the philosophy described above, which is also in accordance with the NUTP.

Don't we need some projects to ease the conditions for personal vehicles?

As said earlier, our objective is to bring down the use of personal vehicles from about 50% today to 15%. Let us compare these two scenarios:

Sustainable: In addition to the Metro, we focus on 'walk-bus-cycle'. By 2038, anyone can conveniently go anywhere in the city without being compelled to use personal vehicles.

Business-as-usual (BAU): We continue building flyovers, ignoring 'walk-bus-cycle'. But we have 3 times as many vehicles as today, and it is too late to realize that this 'extra road space' we have built just does not suffice. Yes, we would have built some Metro network, but that would support only 5-7% of the trips by 2038. By 2038, compared to the Sustainable scenario, the substantially high personal vehicle use in the BAU scenario could lead to

- 2.5 times more congestion
- 60% more emissions
- 2 times more road crash fatalities

Scary, isn't it? We must therefore get on with this 'diet plan' of 'walk-bus-cycle'. If a person follows a strict diet plan for 29 days of a month, the dietician would allow them to gorge on some sweets on the 30th day, right? Likewise we could indeed consider some projects primarily benefitting personal vehicles, as long as we can demonstrate that we are firmly on track with meeting our CMP objectives.

Unfortunately, today we are behaving as if every day is the 30th day!

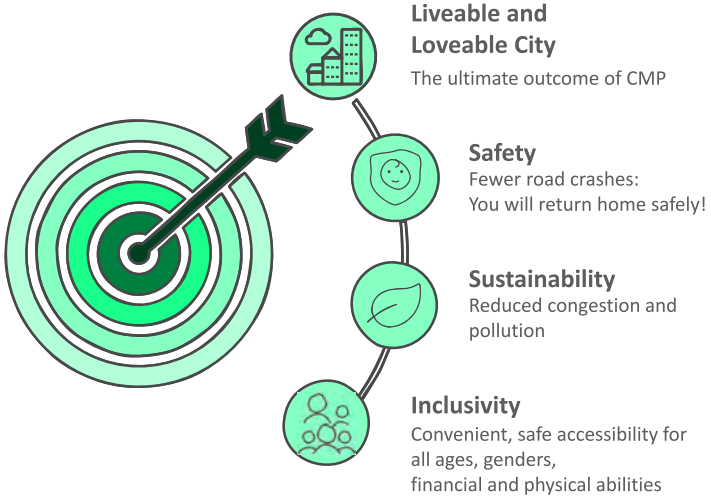
What will happen if we achieve the CMP goals

Our non-negotiable fundamentals will be achieved.

Inclusivity. Anyone, regardless of their age, gender, financial and physical abilities will be able to go anywhere in the city conveniently, safely and with dignity.

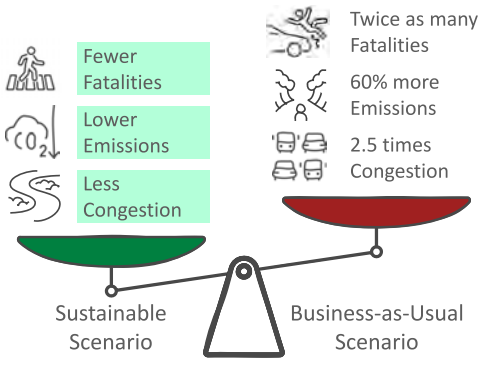
Sustainability. The city will have much less congestion and pollution. Residents will take pride in our city. The city will, simply, sustain well!

Safety. Fewer road crashes. Higher guarantee that you will return home safely!



What should we do as citizens?

Understand which modes contribute to congestion and pollution. Understand which modes make our city inclusive, sustainable and safe. Walking, public transport and cycling - that's what we want, don't we!



Choose sustainability for a better future

For any 'grand development project' that you hear being discussed, ask whether it will make it easier to commute using 'walk-bus-cycle', and at the same time discourage you from using a car or a two-wheeler. Even a tiny bit.

Demand projects that will make the bus better. Projects that will make it simpler to reach the Metro station. Projects that will encourage you to bicycle to work at least once a week. Projects that will make grandparents take their grandchildren for a walk, to 'soak in the street'.

What exactly is a ‘True BRT’?

Many people have seen the so-called ‘Bus Rapid Transit (BRT)’ in Pune, and are puzzled about the project. Their first reaction is, “How dumb these people must be, to put the bus lanes and stops in the middle of the road! Don’t you have to cross the road every time?”

Read on, to know what a BRT truly stands for.

1. The bus should be reliable. It might be ok if the bus takes 45 minutes to go just 8 km, you can start a bit early. But if the timetable says it will reach my destination at 9:45, it must do so - only then can you plan your work accordingly. This reliability is possible only if the bus doesn’t get stuck in other vehicles, therefore it must have a dedicated lane.

2. At the bus stop, an information display should tell you about the next 2-3 buses. Their route numbers and destinations. In the bus, you should get information about the next stop.

3. We need buses. Lots of excellent, classy, high-quality buses. Well maintained buses. A bus lane is capable of handling 2 buses a minute. At that frequency, a bus lane can carry more people than 2 lanes of mixed traffic, and then people in mixed traffic lanes won’t have a reason to complain about congestion.

4. A bus lane at the edge of the road (along the footpath) will cause unacceptable interference and safety issues with property exits. The bus lane should therefore be in the middle of the road. Does it mean you have to cross half a road every time? Well, consider one round trip from your home to your destination and back. You will find that you need to cross the entire road width twice, even with the normal bus! It means a bus stop in the middle of the road doesn’t add to your crossing at all. In fact, if the stop is next to a signal, you can take advantage of the signal to cross the roads more safely.

All of the above are essential components of a BRT system. If a city fails to implement any one of these, it has failed to understand and implement a ‘BRT’. Cities that have implemented all elements of BRT have immensely benefited from the system.

Remember - An exam does not fail, bad students fail in exams!

About Pune Knowledge Cluster

The Pune Knowledge Cluster (PKC) is one of the seven Science and Technology Clusters established by the O/o PSA under The City Knowledge and Innovation Cluster Initiative (CKIC). PKC aims to bring together Academic Institutions, R&D organizations, Industries, Industry Associations, NGOs, Civic Bodies, and Local and State governments to collectively work for the betterment of Pune City by leveraging its partner organisations' science and technology capabilities.

More at: https://www.pkc.org.in/

About Save Pune Traffic Movement (SPTM)

'Save Pune Traffic Movement' (SPTM) is an NGO working to promote safe and sustainable transportation in Pune, with a focus on walking, public transportation and cycling as principal modes of daily commute. SPTM is a member of PMC's 'Non-Motorized Transport Committee' as well as 'Pune Road Safety Committee'.

More at: https://savepunetraffic.org/

About Centre for Environment Education (CEE)

Centre for Environment Education (CEE) was established in 1984 as a Centre of Excellence of the Ministry of Environment and Forests, Government of India. As a national institution, CEE's mandate is to promote environmental awareness nationwide and develops innovative programmes as well as educational material and builds capacity in the field of Education for Sustainable Development (ESD). As part of its Urban Programmes, CEE works with the government, schools, colleges, and the public to promote sustainable mobility and road safety.

More at: https://www.ceeindia.org