DIGEST // ISSUE#1 ■ Bengaluru Bicycle Parking Edition



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Why are more organisations not thinking about this?

#### What is the **Active Mobility Act?**

The Active Mobility Act is the only way we can expedite transformation towards a more liveable city.

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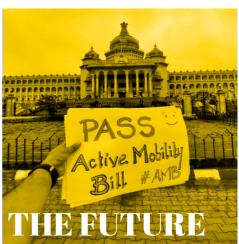
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## **FOREWORD**



The Directorate of Urban Land Transport (DULT) congratulates Council for Active Mobility (CFAM) on the launch of the AltMo Digest, a publication dedicated to the cause of cycling.

This timely initiative highlights the importance of promoting cycling as a sustainable mode of transportation and a means to enhance public health and well-being. The publication serves as a valuable resource for individuals and communities interested in embracing cycling as a lifestyle choice. The growing popularity of cycling in many cities demonstrate that behavioural change is possible, with the support of community. DULT believes in working together with all like-minded partners and organizations for promoting active mobility modes in Bengaluru and Karnataka, and looks forward to more meaningful collaborations.

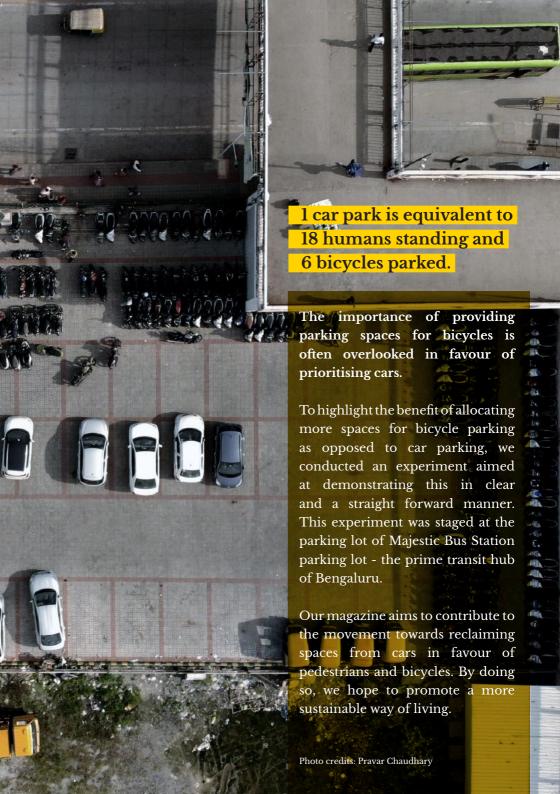
On behalf of DULT, I wish CFAM success in all its future endeavours.



Ms. V Manjula

IAS, Commissioner of DULT and E/o. Additional Chief Secretary to the Government, Government of Karnataka.





## **Editor's Note:**

# Parking is expensive.

Why talk about bicycle parking in Bengaluru?

The constant complaint about parking for cars is that, not only it is expensive and takes up space but that it is hard to find and mostly full. It is only worse in congested and dense cities in India where space is scarce and can be put to better use.

"18 bicycles can be parked in the place of **one car**, thirty of them can move along in the space devoured by a single automobile.

Every increase in motorised speed creates new demands on space and time. The use of the bicycle is self-limiting. It allows people to create a new relationship between their life-space and their life-time, between their territory and the pulse of their being, without destroying their inherited balance."

Ivan Illich in "Toward a History of Needs", 1978.

These benefits are becoming obvious to the traveling public and hence people are increasingly choosing to cycle around. There has been a global cycling boom since the pandemic.

A study conducted by Institute for Transportation and Development Policy forecasted that

cycling in the **post-pandemic** phase is set to increase by **50-60 percent** across India.

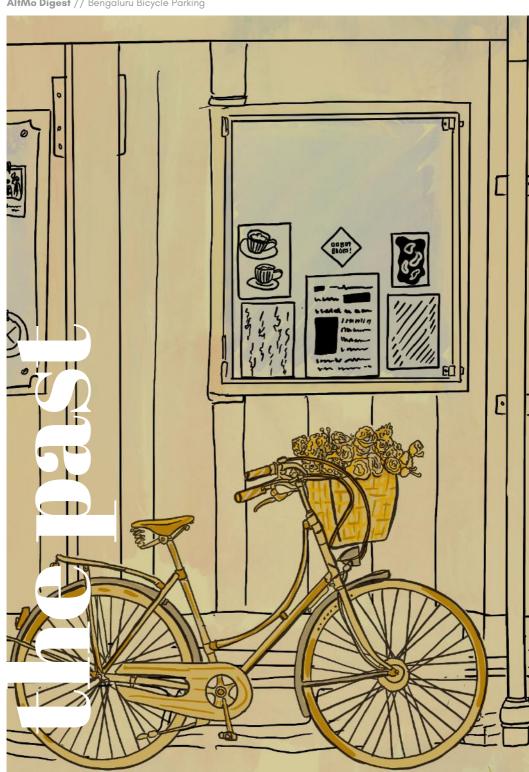
The provisioning of bicycle parking has been identified as the top measure among others to sustain the momentum. Beyond the negative impact of losing your bicycle, there are many benefits of providing bicycle parking to businesses. People are more likely to frequent stores which provide visible bicycle parking upfront as it signals progressive intent and nudges more people to arrive on a bicycle. Not only it is green brand positioning, but fosters better community engagement with the store.

This magazine is an attempt to catalyze this critical need in the move toward climate change mitigation.

We have structured this magazine to take you through the various initiatives in Bengaluru around bicycle parking. What has happened, what is going on right now, and the potential for bicycle parking to define Bengaluru as the progressive innovative global city that it is. You will notice the usage of technology has led to an increase in attention to bicycling. More businesses today need to start playing their part. We hope this magazine encourages you to take that first step to participate in creating a stock of safe bicycle parking in front of each business.

The hope is to catalyse imagination in transforming cities to be bicycle friendly by making ubiquitous bicycle parking a reality both in public and private spaces.

> **Sathya Sankaran** Bicycle Mayor of Bengaluru







## Advent of the bicycle stand

by Srinidhi S

The bike stands initiative was born as a part of the sustainable mobility initiative.

Sathya and I were a part of "Praja.in" where we connected and started working on the sustainable mobility initiative. During those days, the Airline Hotel would be our go to place for meet ups. On one such occassion while brainstorming ideas about Cycle Day, we struck up a conversation with the proprietor of the hotel who had taken quiet an interest in our discussions. The proprietor was kind enough to invest in installing a bike rack prototype at the hotel.

Thus, the first implementation of the 'Inverted U' Sheffield rack stand was executed at that hotel way back in 2013.

Praja.in is an Internet driven community that helps making the connections at local level, a networking platform for active and concerned citizens.





The Cubbon Park rack installation was a part of the first Cycle Day initiative planned with Directorate of Urban Land Transport (DULT) and other Government organizations. Regarding permissions for the same, we first reached out to Mr.Mahantesh M, the Deputy Director of Horticulture, in charge of Cubbon Park. Since this was a first-time initiative, he redirected me to the Joint Director office in Lalbagh. I got there to meet the officials and furnished all the details of the plan to install the stands. Permissions for the cycle stand installation at Cubbon Park were done by DULT.

Once we got the permission, a joint survey of the locations where the stands were to be installed within Cubbon park was conducted along with the Deputy Director. Due to the tight schedule, the fabrication was also initiated simultaneously.



The inverted U rack design was finalised due to its minimalist and efficient design. It keeps the bike upright supporting the frame at least two places. The gauge of the steel was decided based on durability as well as ease of transportation. One edge of the rack was modified to put up signages and details about usage. The fabricated stands were moved to locations decided based on the survey carried out in Cubbon park. The inauguration of the stands took place at the Hudson Circle gate of Cubbon Park by the then Bengaluru City Mayor -Mr. Satyanarayana during the first cycle day, the function was presided over by the DULT Commissioner, Ms. V. Manjula IAS.

The first Cycle Day was a grand success with hundreds of cyclists participating. Since then, cycle stands have been put up at a few other places around the city.



# Improving the Neighbourhood

The Neighborhood Improvement Partnership (NIP) is a collaborative effort by citizens.

The citizens worked alongside public officials to identify key civic challenges in their neighborhoods and voluntarily contributed time, energy, and resources to tackling them.

Increasingly around the world, cities are recognizing that a large group of problem solvers interested in the development of their city will have many more ideas and better knowledge of local conditions than public officials alone can muster.

By inviting citizens into problem-solving roles, the idea is to embed community engagement as a sustainable methodology for bringing change at neighborhood level and as a result tackle many more problems in the city.

Typically, NIPs focus on improving and maintaining public spaces in different neighborhoods, and can rapidly improve the live ability of many urban areas. At the same time, NIPs also foster a sense of ownership among citizens over the development of their neighborhoods, which itself is an important goal for cities to retain their economic and social vitality. United Way Bengaluru was the coordinating agency for this program.

Neighbourhoods that took up cycling interventions under this program.





## Sanjay Nagar

Over the past 3-4 years, there has been a significant increase in the number of cyclists in the neighborhood due to the awareness initiatives like Cycle Day and Walk to School programme.

A momentum of sustainable mobility has been established and residents of different age groups and school children are now adopting to walking and cycling more consciously.

A survey was conducted by CiFoS in 2016 in which 8 different schools (total 536 respondents) participated, and the results clearly indicate willingness to walk and cycle. Briefly, the survey results were as follows:

72% of kids are traveling within a distance of 2 Kms. Almost 80% of children reach to school within 20 minutes.

45% are already using a Non-Motorized Transport mode. The total children using sustainable transport modes comes to an average of 75%.

From the existing 18% of students who cycle to school, there is an increase of 57% students who wish to cycle to school. 74% of children wanting to cycle to school feels that cycling to school is a fun activity.

90% of parents consider cycling to school as a healthy option. Almost 75% of parents feel that their respective schools should encourage cycling to school.

Cycling in Sanjay Nagar is an encouraging urban picture where people cycle and more people are willing to cycle, if the safety level is enhanced.

There is a gradual change in people's attitude and the neighborhood is aspiring to have good Non-Motorized Transport infrastructure. There are a substantial number of cyclists supporting investment of government funds on creating cycling related infrastructure.



Bicycle parked against a cycle stand prototype.



Within an area of approximately 3.4 sq.km, there are many destination points which can be easily commuted to and fro on a cycle.

There are about 25 parks and playgrounds, 30 schools, a dense diverse collection of commercial establishments along 80 Feet Road and Sanjay Nagar Main Road. Adequate provision of cycle stands for parking ensures safety and encourages people to choose cycling. This need for infrastructure has been duly recognized by civic and public agencies.

In a neighborhood which is aspirant of being the most bicycle friendly in the city, it is very important to encourage more people to take up cycling as a mode of commute – for short or long distances.

To achieve this, certain measures can be taken:

- **1.** Encourage more residents of the community to use bicycle parking as facilities as visible infrastructure galvanizes on mode conversions.
- **2.** Providing parking around commercial hubs in the neighborhood is great for the businesses as it encourages residents to use bicycles to get to the around the neighborhood.
- **3.** An indirect effect is on the health of the community. A community that uses bicycles for short commutes rather than two-wheelers and four-wheelers will have healthier residents and lesser congestion.



Under the **Neighborhood Improvement plan** a call for projects that would better the liveability of the community residents was launched in May 2015.

The proposal by CiFoS as well as that of the SPNIT along with HSR cyclists was announced as one of the 12 winners in August 2015.

Their proposals - "Improving Mobility - Sanjaynagar Sustainable Transport Plan" and "Cycle parking spaces to promote cycling as a mode of transport for short distance commute" were awarded and implemented across Sanjay Nagar and HSR Layout respectively.



## HSR Layout

by Shashidhara K, HSR Cyclists Group

HSR Layout has been a hub of sustainability activities for the last 10 years, leading the way with the green revolution.

As a citizen of the layout, I have observed an increase in traffic congestion and pollution, which is inadvertently affecting the general liveability index. To address the traffic problems, we formed a volunteer group of active cyclists, with the name "HSR Cyclists Group" in 2014.

We began a weekly group cycle riding initiative for all age groups, to introduce them to the wide and beautiful streets of HSR and build an active cycling community. Over the years, while conducting monthly Cycle Day events, we identified specific problems faced by many cyclists. With continued discussions with cyclists, we identified the need for an integrated cycle parking infrastructure across our layout.

We participated in a contest in partnership with SPNIT Trust, for the Neighborhood Improvement Program (NIP) "Citizens for the City". This initiative was supported by United Technologies corporations, government departments and anchored by the United Way foundation. We pitched our idea of an integrated cycle stands solution across the HSR Layout, and we were shortlisted for a pilot project.

As a starting point, a comprehensive plan was prepared. We adopted a structured approach to identify requests from user groups, and cyclists to identify locations for cycle stands.

5	Cycle parking location validation
1	Is this location good and used more often
2	Does the location has maximum commuters ?
3	Do we see many cyclists using this path
4	Is there a potential to increase cyclists with a new stand at this lo
6	Parking structure type questions
1	Does this location need open or closed parking?
2	What is the public opinion on open parking ?
3	Is there a chance of vandalism for closed parking
4	Do people feel more safe if there is a closed parking
7	Utilization questions
1	Will you use cycles more if there is a parking facility
2	How often you plan to cycle use per week
3	Are you comfortable leaving cycle at bus stand, and taking a bus
4	How many cyclists do you expect will use this stand.
8	Public concerns
1	Any concern on pedestrian pathway blockage, due to stands?
2	Any concerns of vandalism
3	Additional locations recommended ?

Here is a small snippet of the surveys that were conducted: to identify commute options for work, schools, shopping, temples etc., and their preferred location for cycle stands. Based on the data-driven approach, we identified 15 locations to install cycle stands covering all sectors of HSR.

4 Any concerns on theft of cycles ?

Our goal was to facilitate cycle stands at:









areas



Cycle stands installed near eateries in HSR. Credit: Shashidhara K

The design of the stands were done by two manufacturing groups, based in Bommasandra where two types of stands were created. One set of stands was designed by adhering to the standard U-loop design as per international specifications, made using rust-proof stainless steel. We later consulted with another design firm "ARTS" and designed cycle stands as per the specific location of the installation. The theme was to cover individual sets of stands, relating to the location. For example; stands that were installed near food and beverage had themes of juice, fruits, etc. This gave us a very unique opportunity to embed art within a parking structure and to enhance the beauty of our streets.

Each stand has the capacity to park two cycles, on either side of the stand, and cyclists can securely lock their frame. The stands had bright colors so that they can be identified from a distance. Instead of bolting the stands, we ensured that they are firmly embedded inside the Earth with concrete cementing, to ensure longevity. We installed 40 sets of stands as of December 2018, with the capacity to park 80 cycles. After four years, we have 25 stands intact and used by many cyclists.

HSR Layout is the only area to have integrated cycle parking spots across many sectors.

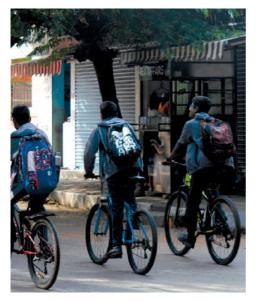
#### The installation process:

We did a site survey to identify types of surfaces such as pavement, gravel, road etc., where the stands could be installed.

As part of the project, we worked with BBMP and submitted a written request to allocate land for installation. We had site inspection visits along with the executive engineer and BBMP project engineers. During our inspection, some of the locations were modified based on variables, such as drainage system, electrical cabling, entrance to private property etc. We prepared a revised location list and received final approval for the installation.

Our installation process was very quick, and all **36 stands were installed within 24 hours**. Installation was done by private contractors and a concrete base was created to secure the stands. We also added "cycle parking only" signage in Kannada and English at these sites.

Our cycle parking infrastructure was officially inaugurated on Dec 1, 2018.





#### **Conclusion:**

Over the years, we have observed many cyclists use these stands on a regular basis.

Our most popular stands were the ones near BBMP grounds and near the 27th main shops. New projects to create pavement at the Agara bus stand, and at the stadium in Sector 2 removed some of these stands. There is ample opportunity to install a new set of stands at these locations. Many citizens use cycles for last-mile connectivity while commuting by bus and cycle stands at the Agara bus stand will play a major role.

We clearly see a need to install a minimum of 100 stands within HSR, including locations outside 22 public parks and school premises.

I believe, this will help citizens adopt cycling as a primary mode of commute within HSR, for a true multi-modal transport solution.



Left: students cycling to school Top: Cycle stands designed for parks Bottom: inauguration of cycle stand on 1st Dec 2018. Credit: Shashidhara K





## In most cities around the world, streets make up around 80% of all public space.

They are the lifeblood of urban life and can enable cultural vitality, commerce, and a safe place to meet others, dwell, or simply move through comfortably when planned correctly. However, our streets have become hostile environments dominated by cars, noise, air pollution, and they pose dangerous for the active mobility users. Cities have recently begun to take important measures to reclaim these spaces, and shape streetscapes that support the quality of life of pedestrians and cyclists.

Church Street First is one such initiative is in Bengaluru, India, led by the Directorate of Urban Land Transport (DULT) in association with IISc (Bengaluru), Catapult, (UK) and Urban Morph (Bengaluru) which conducted a pedestrianisation program under the Clean Air Street Initiative that bore highly encouraging results, both for the city itself and for the development of urban good practices.

Church Street is already one of the busiest streets in the Central Business District of Bengaluru when it was closed for vehicular traffic every Saturday and Sunday from 10:00 AM to midnight between November 2020 and April 2021. The 750m stretch of cobblestoned pavement, lush vegetation and bustling shops, bars, and restaurants became livelier than it has ever been.

During the first four months, a rigorous study of the pilot led to the publication of "Church Street First — Impact Assessment of Pedestrianizing an Urban Street in terms of Quality of Life" by Professor Ashish Verma and Ms. Hemanthini Allirani. While the results offer situated knowledge, they also reveal the value of pilot programs as a way of demonstrating the benefits of pedestrian projects for other urban areas. Their findings suggest that temporary closure improved air quality during weekends, increased foot traffic, public transport usage, strengthened urban vitality, and street user wellbeing.



In only 3 months, pedestrian footfall on Church Street increased on average by 92%, and during peak times of 5pm-9pm that number increased to 117%. As more people became more aware of the initiative, they wanted to experience pedestrianised Church Street.

78% of the visitors surveyed came to enjoy walking freely on the road. and 74% of the visitors were happy to contribute to the Clean Air initiative, as well as to experience new things on the street.

These numbers reveal a demand for such pedestrianisation projects and a desire for vibrant streets that place people first. This was confirmed when 98% of the surveyed visitors stated that they felt pedestrianisation was a good idea.

A considerable shift in public transportation usage was observed among shop owners and visitors after pedestrianisation. Nearly a 7% decrease in the motorised transport modes was observed among visitors, while an increase in active and public transportation saw a 7% increase when compared to pre-pedestrianisation.

#### A tool for increased air quality & ambient noise reduction

It has been well-studied that street closures improve air quality. During Los Angeles' open street event CicLAvia for example, a UCLA air quality study noted a reduction of 49% of PM2.5 on route and 12% on streets off-route that were still open to traffic. Other pedestrianisation initiatives such as the Barcelona superblocks have also yielded promising results. In the San Antonio district of the Spanish city, NO2 concentrations are now 33% lower in some of the intersections reclaimed by pedestrians, while noise pollution has also dropped by 4.1 decibels in the daytime and by 5.3 in the nighttime.

On Church Street, ambient PM levels were monitored using three Fixed Air Quality Monitoring Sensors (FAOMs) spread out at three locations, and observed an overall improvement in the air quality each month during weekends where streets were closed to traffic compared to weekdays where traffic was admitted.

94% of the visitors agreed that reduced traffic noise because of a pedestrianfriendly environment improved their quality of life, and noted improvement in air quality due to road closure.

For shop owners, this change was even sharper, with a 15% decrease in the mode share of private motorised modes and an 11% increase in the mode share of sustainable modes when compared to prepedestrianisation. Additionally, the MG Road metro station saw an increase of 162% more visitors on pedestrianised weekends. These numbers show how 'pedestrian-only streets' such as Church Street can thus also enable a shift towards public transit and non-motorized transport modes, and could impact travel behaviour citywide if scaled.

The pedestrianisation of a busy street to support healthy lifestyles and citizencentric environments was the first of its kind for the city. Different activities were organised along the stretch of the street to attract people to the street and promote the project. More space for outdoor dining was enabled, a free women's cycle course was organised by the Bengaluru Moving campaign, public art exhibitions, and dance and music events were held. For the first time in conjunction with Urban Morph, the pedestrianised street was also used as a test bed for electric micro-mobility vehicles to emphasise cleaner fuels should replace dirty ones where necessary.

## Church Street became a favourite place for walkers and cyclists.

It proved accessible to all age groups as many younger citizens and disadvantaged people visited Church Street during the project. While these activities attracted people to the street, they also revealed a vision of what our streets could be if space was reclaimed for communities. Many people who frequented Church Street during the weekend initiative after a few weeks reported the tendency to walk on the street without concern for vehicles even during the weekdays by force of habit. Many reported not feeling like being on the street when there is traffic.

Church Street is dominated by retail and F&B, commercial activity was also boosted because of this initiative. 70% of shop owners stated that pedestrianisation was a good idea. More than 50% of restaurant and shop owners noted an increase in customer footfall. Many new eateries opened up during the initiative and many that were planning to open later quickly reopened. The street which was desolate during the pandemic began to acquire a new life for both visitors and businesses.



#### A model for what the city could be.

Pedestrian streets are a way to showcase a future that prioritizes quality of life as well as active and public transportation. The appetite for pedestrianised streets, open streets, school streets, or car-free Sundays has grown in the last decades and can today be found in many cities; along Paris' riverbanks, Bogota's thoroughfares, Addis Ababa's neighborhoods, or Gurgaon's avenues. They can be used as a tool to expose people not just to what peoplecentric public spaces look like, but what sustainable transportation feels like. Church Street First blossomed into a healthier, and community-centric Bengaluru. The results are clear, and can provide a model for what the city could be: sustainable, active, safe, inclusive, and fun.

Can Bengaluru lead this transformation by having a "clean air street" around every transit zone and in every neighborhood?

Ministry of Housing & **Mobility India 2021** 

Article Reference:

Verma A., Hemanthini AR. (2021), "Church Street First -Impact Assessment of Pedestrianizing an Urban Street in terms of Quality of Life", Project Report, IISc Sustainable Transportation Lab (IST Lab), Indian Institute of Science, Bangalore, India.

Creative Cycle parking on Church Street Credit: Satya Shankaran





Recognition of the Church Street First project. Credit: DULT



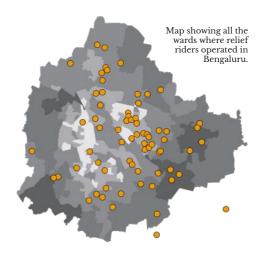
## Riding for Relief

#### Relief Riders - A COVID-19 initiative

A nationwide lockdown in India owing to the COVID-19 pandemic was imposed on 24th March 2020. During that time, the movement of vehicles had been severely restricted and only a few shops in the neighbourhood were being allowed. This caused a deficit in supply of essentials from the normal. The most vulnerable population to the infection were the elderly and people with medical conditions. Due to their higher fatality rates, they had been disproportionately affected by this lockdown and found it difficult to procure essentials that were at a distance.

Sathya Sankaran, the first Bicycle Mayor of Bengaluru launched a campaign called The #CycleToWork on 22 Sep 2018 for which he had nominated Bicycle Ambassadors in each company to scale the leadership at the company level. It is these ambassadors who came in handy during the COVID-19 crisis.

Sathya offered them a chance to put their pedals to good use by asking if they would volunteer to ferry essential supplies to senior citizens. Essentials included Medicines, Groceries, Milk, Bread etc., that can quickly be carried on a bicycle.



The very first map of volunteers started with **22 people mostly from #CycleToWork**. After one week, **66 volunteers** were on a WhatsApp group watching for requests to run sorties for the vulnerable.

There was a steady increase in the number of cyclist interested to join the team. The word spread from the cycling ambassadors to other recreational cyclists and local bike stores. From carrying medicines to loading up their bicycles, with as much groceries and medicines as they can, they performed sorties everyday and reported back with enthusiasm and motivated others. A 15 minute orientation program before onboarding each person was conducted by Sathya over phone to ensure everyone understands the rules and operates in sync without formal structures.

The motto of the relief riders

We carry supplies, not the virus.

Safety wasn't just an afterthought. Providing this in our motto established trust and ensured that we abide by it. Each volunteer was instructed to wear a mask and carry sanitizers, keep distance from the senior citizen and ensure we were not transmitting the virus.

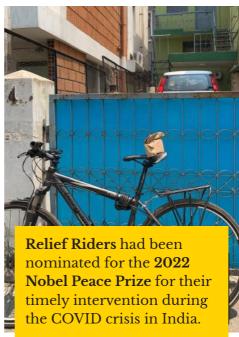
Technology had been an enabler in getting started quickly. The WhatsApp group had all the volunteers cheering each other on with pictures and status updates of sorties. After each sortie, the volunteer fills out a google sheet with the details of the trip and some even clock it on Strava (a tracking application) and tag it with #ReliefRide for further analysis. This allowed the team to figure out that, after a week, the volunteers had covered 27 of the 198 wards across the city.

Beyond doing sorties on their bicycle, the volunteers also stepped up with other tasks, three of them volunteered to channel calls so the technologically challenged elders do not have to wade through websites for numbers. Another volunteer who runs a digital marketing agency offered to help with making a poster with these numbers, so it could be circulated across the internet. Another volunteer who was a data scientist. along with his colleagues, offered to map the senior citizens in every ward so we could target our efforts better. An urban planner was helping stitch all these together from the start so that the execution in the backend remained tight - taking 6 hours every day, outside of quick sorties, to make calls, onboard volunteers, and put together critical information for the world to see.

The wards served and volunteer list was growing every day and the sorties were being completed without a single ounce of carbon emission added.

The story of the bicycle is not over, it is still being written. What we do in this crisis will dictate how the bicycle is used in the future. So far the city and the country have been ignoring it. During this crisis #ReliefRiders have proved that there is opportunity for progress through bicycle. The world's cities just need to give it a chance to be its knight in shining armor.





Thank you for everything 10:12

Hope your mom was satisfied 10:12 W

At this time someone helping is a big thing.. 10:12

God bless u 10:12

Hope your mom was satisfied

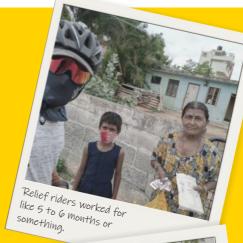
She was I hungry

. And was wanting it since 3 days now 10:12

As I am. In Mumbai I can only call and organise

Let me know if u need anything 10:13 W

Thank u 10:17 🗸





They helped out like 2000 families in 12 different cities, pretty cool huh?

The relief riders basically delivered stuff like food and medicine to people who really

Glad to know he's doing better now

Please let us know if you would want us to help some more.

Absolutely no hesitation there; we're doing this precisely to make it a bit easier and stress-free for such families!

Thank You so much...The world still has a lot of hope...whit such helpful souls like you still there 🙏 🙏

> Such words motivate us to continue doing this work 😊 thank you 🙏

The volunters recived a lot of appreciation and love recieved by the people.



Around 725 relief riders joined up to help out across India!

## **Pedal Port**

The Pedal Port is a self help kiosk offering basic tools for on-road maintenance along with manual air pump.

As part of DULT's Research and Innovation Policy, termed as Pedal Port for Cyclists' on-road assistance has been developed. It was fully designed, fabricated, and made in Bengaluru.

Bicycle infrastructure is not just about cycle lanes. The comfort and convenience of riding a bicycle extends to supporting infrastructure like safe parking stands, hydration stations, and the ability to perform quick fixes to complete one's ride safelv.

Due to the simple mechanical nature of the bicycle, most people quickly end up acquiring the basic knowledge to make quick fixes like tightening brakes, nuts and allen screws so the safety of the bicycle is not compromised during the ride. Fixing a flat tyre and having air pumped to optimal levels is one of most often performed maintenance acts on a bicycle.

Pedal Port could transform availability of quick repair kiosks and help bring more confidence to riders in the city.

Cycling gets a boost when supporting infrastructure is spread across cities."

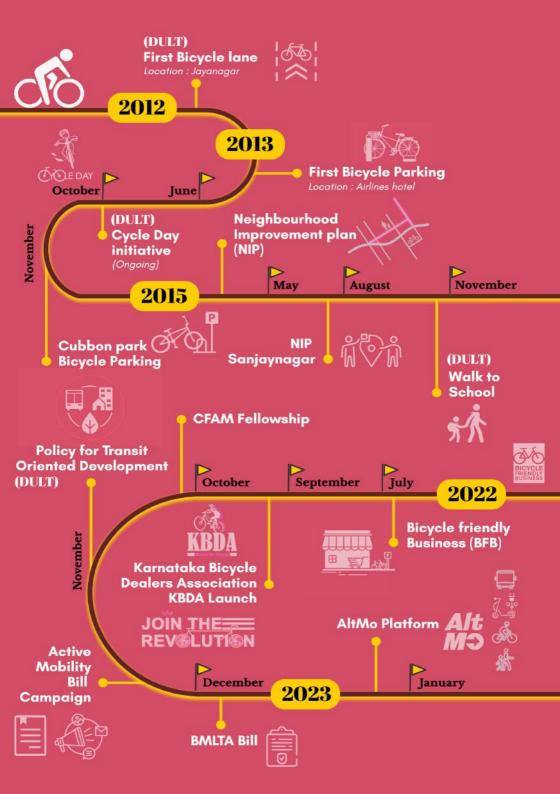
- DULT official

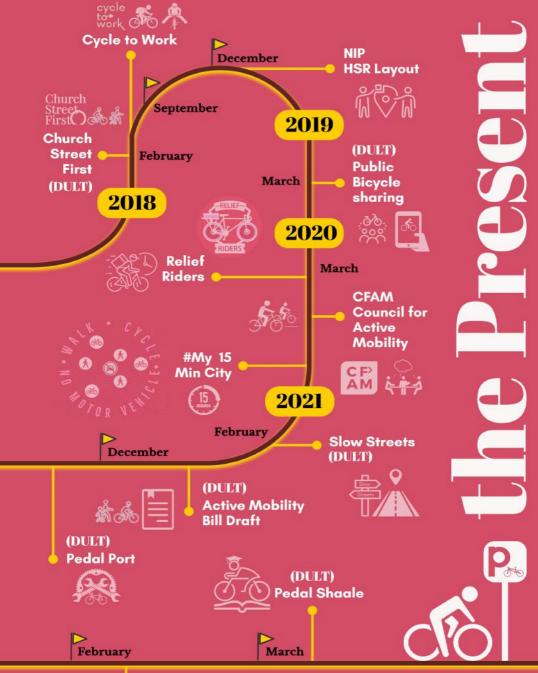


The first Pedal Port was installed near the entrance of the Cubbon Park Metro Station.

It was inaugurated by Ms. V Manjula IAS, Commissioner of DULT & E/o. Additional Chief Secretary to the Government, Government of Karnataka and Mr Anjum Parvez IAS, the Managing Director of the Bengaluru Metro Rail Corporation.

Many more such Pedal Ports are being rolled out along with secure bicycle parking stands. The second one has been installed near VV Towers as a part of the placemaking effort of DULT and more are due at different metro stations where cycle stands are coming up.





Bengaluru Bicycle Parking Magazine



Illustration by Nidhi K S



# the Bicycle, their owners, and where they park them.

by Sophia Anjum

## An ethnographic study of bicycles, their users and how they park it.

A 2020 study revealed that Bengaluru has emerged as the city with the highest traffic congestion overtaking Mumbai. According to a report released by a major global location technology specialist, drivers in Bengaluru city spend a whopping 243 hours on the road equivalent to 10 days and 3 hours extra on the road. The rise in the number of vehicles has doubled in less than a decade with the total vehicles amounting to almost 1 crore in March 2022. It is obvious that the city not only has to accommodate the vehicles while they are on a move but also facilitate the parking, we have all been aware of the vast space the parking lots take up, especially accommodating the cars has been a major nuisance in Bengaluru for both mobility and parking. There is a simple solution for all these problems - BICYCLES

The bicycle has always been an integral part of Bengaluru city among the informal community, we have all seen cyclists pedal through the traffic as it is an easy transport option for them as it helps them commute with little to no expenses. But over the years, we have seen a shift in this narrative where we don't see it as a poor person's commute but as a healthier way to commute both for the individual as well as the environment. With the cyclist community growing, the lack of rider safety and infrastructure is steadly coming to the fore front.

The city of Bengaluru has approximately 14,000 km of roads and only 2,000 km are ideal for cycling, most of which is used for auto rickshaws and two-wheeler parking.

The absence of proper infrastructure and dedicated cycling lanes is a major concern amongst the cycling community, the unruly behavior just adds to the issue and the concern of theft just tops it all.

An article in Deccan Herald by Sanjana S Megalamane emphasized the need for designated parking for bicycles in public spaces in Bengaluru. The author spoke to a cyclist who shared her experience of losing bicycle parts when she parks the cycle next to trees due to a lack of designated parking space. These are some typical inconveniences bicycle owners face on a daily basis, which is a major reason people feel discouraged to use bicycles as a mode of mobility.

Yet another issue to address is how the existing bicycle parking is being used in Bengaluru. The U-Rack has many different versions, all of which are good and elegant-looking racks. The metal arch is a simple design and the easiest to maintain. But in namma Bengaluru, these racks are mostly used for things other than bicycle parking. Yet, they are proving to be difficult to maintain and the condition of the racks are so bad it cannot be used. If by luck, there are any racks left in a good condition, there is a threat of theft as the racks are sold for their metal value.

These issues show that integrating cycles into the city is much more than creating cycle lanes and parking.

The awareness of the importance of bicycles needs to be an integral part of the process. People need to accept it as a mode of transport, only then bicycles can be fully introduced in Bengaluru.







Common Cycles sighted at their natural habitat around the city.

In 2019, the Directorate of Urban Land Transport (DULT) is working with BMRCL to install bicycle parking facilities in metro stations. DULT has also earmarked parking for cycles in the area parking plans prepared as per the approved Parking Policy of Bengaluru, and shared with the BBMP for floating of tenders. This is bound to encourage people to use bicycles for last-mile connectivity.

The authorities are doing their part, by planning and facilitating parking spaces in Bengaluru, but it all comes down to how the public reacts to it, how well does the community accept this change? Citizens of Bengaluru are used to two-wheeler and four-wheeler parking spaces, motorcycles and cars have been dominating this metropolitan city for decades, but there is a shift in this trend.

Environmental activists are vocal about emission-free commuting; cyclists demand that 10 to 20 per cent of the total parking space be allocated to bicycles. But the divide is pretty evident. The citizens of Bengaluru are still adapting to the idea of bicycles as a mode of transport.

One such incident was reported in an article in Bangalore Mirror where the cyclist was declined a parking spot at a shopping mall and was asked to park his bike at his own risk. This is not an isolated incident, whether it is shopkeepers, mall security or even big companies do not have any provision for bicycle parking for those who cycle to work.

To encourage more cyclists in Bengaluru, it is crucial to not discriminate between motorcyclists and cyclists, and encourage the citizens to see that both serve the same function to the commuters.

In the end, it all boils down to how well the authorities work collaboratively to implement the necessary changes to ensure that bicyclists feel safe to commute using a bicycle, not just for leisure but to replace a motor vehicle in their everyday life.

A city like Bengaluru is a haven for cyclists with its gentle weather and green spaces. Cycling under a seamless canopy of trees is the future I imagine for Bengaluru.

Informal parking zones created by parking cycles at street junctions tied to light poles — and verticle signages.





## Can you cycle to the metro?

by Dimpu Chindappa

A push towards cycling to the metro stations and make end-mile travel more sustainable.

Bengaluru city's Namma metro is a public mass transit system that comes under Bangalore Metro Rail Corporation Limited (BMRCL), a joint venture of the Government of India and the Government of Karnataka.

Namma metro has two operational metro lines – Green and Purple and a total of 51 stations. The Purple Line runs between Baiyyappanahalli – Kengeri for a length of 25.60 km covering 22 stations. The Green Line runs between Nagasandra – Silk Institute for a length of 30 km covering 29 stations.

The feeder system to the Namma metro is currently disorganized; addressing the same is crucial. Integrating BMTC buses, autorickshaws and non-motorised transport (pedestrians and cyclists) is the need of the hour.

The delay in multimodal integration and the lack of awareness towards cycling and walking have led to the usage of private vehicles to reach metro stations which are not sustainable. At present, 33 metro stations have parking facilities, with two-wheelers being the maximum in numbers.

Folding cycle on the metro station. Image Credit: Nidhi K S

The Jalahalli metro station sees an average number of 4-5 cycles parked during weekdays and 20-25 in Yelachenahhali and Doddakallasandra stations.

The number of cycles parked varies from station to station due to socioeconomic factors, unsafe roads, intersections, and the mindset toward cycling.

During our recent survey carried out on the Green metro line, we found that 80% of cyclists are in the age group 15-17 and 20% of the cyclist are in 40-60 yrs.

The awareness campaigns like -

"Cycle to Metro" and "Safe and Slow Streets" can push more and more people to start cycling to the metro stations and make this end-mile sustainable.

At present, Rs 1/ hour is charged for cycle parking at metro stations and a maximum of Rs 10/per day. The cycles parked will be under CCTV surveillance and it is safe.

As of now, only folding cycles as shown in the image, are permited to be carried on the metro.





We, at The Mobility Agenda plan to work towards the Cycle to Metro campaign and increase the number of cycles parked to 50-100 by the next year.

We request your support and participation to make the end-miles sustainable.



# **Economics of bicycle parking**

by Sathya Sankaran

The economics of bicycle parking is unbeatable, but why are not more organisations thinking about this?

Various studies put 40% of emissions in the city from transport and 20% more from road dust. An IISC report<sup>[1]</sup> mentioned 60% of people in Bengaluru were cWhoosing personal motor transport and 40% of those were repeated trips to and from office.

Many cities in India require around 2 car parking slots per 100 sq. m. of built up space. This translates to 2 parking spaces for every 5 or 10 people. So buildings end up spending 35% more on real estate to serve just 20 or 25% of the people.

Each car parking space can fit 10 bicycles, bring the cost down by a tenth and provide parking for 100% of the people in half the parking space with zero emissions in the bargain.

[1] Verma A., Hemanthini AR. (2021), "Church Street First -Impact Assessment of Pedestrianizing an Urban Street in terms of Quality of Life", Project Report, IISc Sustainable Transportation Lab (IST Lab), IISc, Bangalore, India.



The Cut at Waterloo, Cyclehoop's Car Bike Racks, Source: We Made This



The AltMo platform has been tracking work commute rides since the beginning of 2019.

It has employees from more than 580 organizations clocking more than 1.2 lakh trips to the workplace saving an equivalent amount of fuel.

More people are realizing their repeated work commute can be switched to a bicycle and decrease the incessant demand for more road space and idle real estate for just parking cars for eight hours of the day while they are working.

By increasing the supply of clean, secure, and shaded bicycle parking, organizations can reduce the negative impact on the city they operate out of and add positively to the employee's health and well-being. Accompanied by changing rooms and showers, the increase in numbers can put pressure on the city to also make safe cycleways for the good of the industry.

The future of the city lies in organizations adopting the example set by companies like Shahi exports and the provision of safe cycle parking for their employees.

Consultants like **Urban Morph** have been helping companies identify requirements, estimate demand and help design appropriate cycle parking.

Nominating ambassadors for cycling and using platforms like AltMo to increase the adoption of bicycling can pay rich dividends to the organization's bottom line.



Scan this QR code to join now.



# **Designing the Right Parking**

Source: Neighborhood Improvement Plan - Sanjaynagar report

The designs for cycle parking typologies were prepared by the Directorate of Urban Land Transport (DULT) in 2017. This was done based on the availability of locations identified by CiFoS under the 'Comprehensive Cycle Parking Master Plan for Wards 18 and 19' for the Sanjaynagar neighbourhood. The parameters that were used to determine the locations have been described below:



The number of footfall is largely impacted by the nature of land uses or activities surrounding the site. Educational institutes and playgrounds are the two important types of land uses that have the potential to bring hoards of cyclists to those locations. Mostly small scale commercial land uses of local nature attract more cyclists than high end shopping centers. Footfall reflects on the potential demand and determines the usability of the infrastructure.



#### Density/ spacing

Cycle stands should not be too far from activity points. Therefore, locations with high density of activities can have cycle stands at closer locations than locations with sparse activities.



#### **Security of Cycles**

Cycle parking locations should be located in secured places where visibility is high, and where there is considerable movement of people on the street. The design of the cycle stands also ensure adequate provision of secured locking system for cycles.



#### the Elements

Although cycles can withstand any harsh weather conditions, users prefer to keep them under shades, protecting them from sun and rain. The shaded areas could be natural or artificial.



#### Space availability

The second principle is the availability of space around active locations. Most of the time, locations with concentrated activities where footfalls are high, lack available space. Tn such cases, carving out space from the existing roadway is one of the solutions.

#### Cycle parking typologies:

Based on the ideations and prototyping done for Sanjay Nagar, four distinct type of bicycle parking was identified based on space availability that can be replicated in other neighbourhoods as well. They are as follows:

#### 1. Perpendicular parking

This parking type is recommended in locations where there is sufficient right of way to allocate a 2-meter space for parking. The dimensions calculated for this typology are 1m/U \* 2m width, although the actual width required is 1.5m.

#### 3. Angular parking

This type is suggested for locations where 2m width is not feasible, with dimensions of 1.2m/U \* 1.8m width.

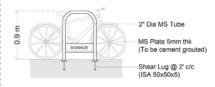
#### 2. Parallel parking

This type is recommended for locations where there is insufficient space for parking bicycles in a row on the footpath. In this case, U-bends will be placed parallel to the footpath, and the dimensions for this typology are  $3.5 \text{m/U} \cdot \text{lm}$  width.

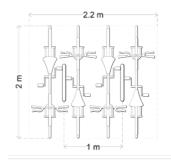
#### 4. Edge parking

This fourth typology is for parks, with cycles parked along the fence outside the park, utilizing a minimum of 0.4m of wall space adjacent to the park.

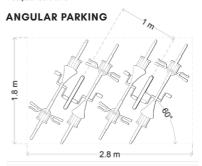
#### TYPICAL PARKING RACK



#### PERPENDICULAR PARKING

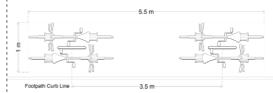


Footpath Curb Line

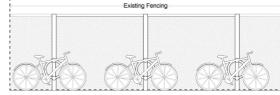


Footpath Curb Line

#### PARALLEL PARKING



#### EDGE/FENCE PARKING





# Businesses, bicycles and the role they play it in.

Bicycle Friendly Business (BFB) is an initiative by CFAM to enable businesses to participate in making the city liveable and climate resilient by encouraging active travel modes like cycling.

Through the initiative we aim to get the businesses more involved with the program and make significant commitments which include dedicated parking infrastructure, discounts for cycle commuters, event hosting, and additional support like repair stations through a multi-tiered program.

As a starting point, the focus our efforts on the issue of bicycle parking safety. This is the one factor we believe will make a significant contribution to enabling more bicycle use in cities.

#### There are three main goals of the program:

- **I.** Encourage and promote local trips by bicycle. This fits into the #Myl5MinCity pledge to reduce motor vehicle usage for shorter trips.
- **2.** Provide a safe private infrastructure for cyclists with the support of local businesses.
- **3.** Incentivize cyclists and make them feel comfortable.



Author's Note:

#### Chaitanya Deep

I'm not a leisure cyclist. I don't ride a bicycle for exercise. For me, cycling is about practicality.

In dense urban spaces like Bangalore with narrow streets, slow-moving traffic, a decent tree cover, and non-existent "regulated" parking spaces, a bicycle is the most efficient mode of commute. And so, I made a switch to using a bicycle for my daily errands.

#### But the anxiety is real.

I couldn't take my cycle comfortably to places. Near most shops, there's barely anything to tether the bicycle to. Among the sea of SUVs and two-wheelers parked outside any store, it's easy to lose sight of the cycle. The fear of losing my bicycle was so bad that I stopped taking it out to shops I spent more than 2mins at.

I wanted to do something about it and thus started actively contributing to the Bicycle Friendly Business (BFB) program by the *Council for Active Mobility (CFAM)*.

# Why should businesses invest in cycle parking?

Here are 6 benefits for business to supporting bicycle parking initiative:

#### Attract more customers

Bicycle commuting and tourism are on the rise globally. By providing riders with a place to store their bikes, they will be more likely to frequent your store. So, by simply having bike parking, you can entice and attract more customers to your front door.

#### Bike-friendly brand positioning

By providing bike parking, you position your brand as a bike-friendly business; a favorable trend that pleases a large majority of consumers. This is an added bonus if your brand wants to position itself as 'green' and environmentally friendly.

#### Foster community engagement

Cities across the globe are encouraging various alternative forms of transportation. Although local councils and stores contribute to this by installing bicycle infrastructure, businesses also play an important role in promoting bike riding, which includes bike parking.

#### Increase parking capacity and space

A wall of bike racks can accommodate more employees and customers than a single-car parking space would. It also provides a convenient place for bikes to be stored. Adequate bike parking will also ensure that bikes are not obstructing the path of pedestrian.





Stores in HSR Layout supporting bicycle parking under the BFB program Top: Chaitanya Deep Bottom: Gautam Shah

#### Healthy and happy employees

More and more people are choosing to ride their bikes to work. This comes with a number of benefits including reducing the risk of heart disease, improving mental health, and staying physically fit. In some cities, providing end-of-trip bike parking facilities for employees is mandatory. By encouraging cycling to work behavior, your business can feel good knowing that they are enabling its employees to live a healthier lifestyle.

#### Support from CFAM

CFAM supports businesses through website mentions, social media posts, and exposure on their cycling community map. This leads to loyal customers for businesses that actively support cyclists.



Source: the League of American Bicyclists

#### Similar programs around the world

The idea of involving businesses in support of cyclists is not new.

It's been tried and tested in various cities in North America and Europe but this might be the first time we're trying something like this in India. The most notable among the overseas programs is by the League of American Bicyclists with over 1500 certified businesses. They also award businesses and communities based on their level of commitment and support. States like Minnesota take pride in supporting cyclists through the League's BFB program.

In the UK, Cycling UK has a similar Cycle Friendly Places accreditation with secure bike storage, first aid kits, and a host of other amenities ranging from bike wash to electric charging facilities. It is supported by the European Union and Interreg Europe. The response to such programs has been overwhelmingly positive.

#### Progress of BFB program so far

We started implementing the program in the HSR Layout.

With the help of active members from the HSR cyclists group, we were able to onboard a few businesses on the program, but the support was half-hearted. They agreed to let cyclists park cycles outside and keep an eye on them, but were not willing to show active support by having a sticker to showcase on their storefront. In some cases, even though the business was willing to support us, the building owners were against allowing it due to liability issues in case of theft and damages to the parked bicycles. Such issues can be solved by dedicated bicycle corrals.

We hope to partner with businesses to build more permanent infrastructure soon. Our biggest challenge is the NIMBY (not in my back yard) attitude some businesses have towards change that downplays the positive impact they could otherwise be part of.

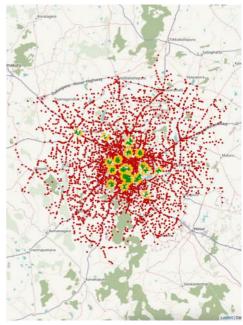
But not all news is bleak. We spoke with a marketing head from a retail chain of cafes who wanted to do more than just provide parking, through additional incentives. We're also partnering with the Karnataka Bicycle Dealers Association (KBDA) - recently inaugurated, a group of bicycle dealers to include the cycle stores in Bangalore as part of the network for not just their customers, but also visitors to nearby stores.

BFB is a recent endeavor and hence still gaining traction. But we are persistent and every small steps count.

#### Our vision for the future

Our goal is to make the city safer and more friendly for everyone. We envision that over the next decade, the micromobility revolution will become a mainstream mode. We want bicycle parking to be a default provision in every locality. Our mission is successful when cyclists could visit a place in the city and confidently park their cycles, the way car commuters now do. That requires support from businesses, government authorities, and commuters.

If I could leave you with one takeaway -Roads and public spaces are not meant for cars, they are for people. And currently, cars are the most inefficient use of that space.



Source: Council for Active Mobility



#### How can I contribute as a cyclist?

We encourage cyclists to use their bicycles for more than just early morning and weekend exercise rides. We believe that commuters should demand more initiatives that make their neighbourhoods more bicycle-friendly. If you have trouble parking your bike at a store you regularly visit, or if you are hesitant to cycle to a store due to theft concerns, please inform us. We will reach out to the store and work to get them involved in the program.



#### What can I do as a non-cyclist?

It is crucial to show empathy towards non-motorized users to create more inclusive public spaces. When a car is parked, it takes up space that could accommodate 6 bicycles. Therefore, before opting to use a car for short trips, it is essential to consider the impact on other road users. We encourage you to switch to commuting on a bicycle for your next trip, as cycling has become a more accessible and viable option for people of all ages, with the availability of electric bicycles.

# Wheels for Change

#### Karnataka Bicycle Dealers Association (KBDA)

The bicycle industry faced multiple challenges due to the pandemic.

The retailers were worst affected by the lockdown. On one hand, bicycle sales were soaring because of the advantages it offered to society during the COVID wave, on the other hand the stores had to close and not be able to service the need.

At this point, the KBDA went to the Government of Karnataka and asked to be considered a necessary service.

Karnataka Bicycle Dealers Association is an association of bicycle dealers across Karnataka and will soon have 500 bicycle dealers across the state of Karnataka as members. It aims to future proof the state and take bicycling in the state to the next level.

Thev currently support **CFAM** programmes like "Bicycle Friendly Business," where they offer free bicycle parking spaces to citizens and cyclists - "so they can leave their bicycles in front of our establishments. Twenty of our stores currently have bicycle parking spaces, and we eventually hope to have them available everywhere." They participated in Pedal Shaale. India's first free certified bicycle training programme, initiated by the DULT in association with CiFoS, KBDA) and Decathlon.

Additionally, they curate events to foster better collaborations between businesses, society, and the government like participating in Cycle Day events, conducting cycling awareness workshops and conducting tradeshows and exhibitions for cycling related products.

#### #Vision5Crore #ProPlanetBusiness

Which aims to achieve by engaging with Government and public to execute market enhancing programs.





# Cycle to Work is now AltMo!





Cycle to Work was launched on the International Car Free Day of 2018 as a tool to measure bicycle rides at a company level. In addition to serving as a motivational tool, it provided valuable insights for city planners and administrators. It also rewarded riders for doing the right thing towards getting the cities and the country to achieve climate change goals.

A few months ago, the platform began to track cycle rides to public transport stations like the metro. This allowed us to extend emission credits to people who could not do complete rides to their workplace. There is now a potential to include other sustainable modes like walk to transit. So, Cycle To Work is now Transit to Work as well. Since the goal is to shift end to end foot print to sustainable modes, provide people a choice to switch their mobility to an alternative to personal motor vehicles, we made the simplest alternate name AltMo.

# AltMo is a climate action platform for quantifying the impact of climate positive sustainable transport choices.



Commute map of Bengaluru generated from the data collected on AltMo (23rd March 2023).

#### How it works?



Data collection: Individuals can connect their AltMo accounts to Strava and view their recorded commutes with AltMo's various insights on their journey.



Leaderboard : Individuals can compete as part of their company on AltMo's leaderboard based on CO2 offset, no. of trips, and other exciting metrics!



Challenges: Gamification through challenges are designed to test people's commitment as well as increase engagement with AltMo

We are more than just a simple analytics suite.



Public transport operators can opt in for exclusive access to rich GTFS compliant dashboards that help manage first/last mile connectivity to mainline modes.



Planning agencies can opt in for exclusive access to ride Geographic information system (GIS) data that will enable you to identify priority routes for infrastructure investments.



If you are a Corporate looking for an ESG\* dashboard get in touch with us to know how you can track your employees' transportation footprint using the dashboard.

\*Environmental, Social, and Governance

#### The future of Alt Mo

#### AltMo is constantly evolving.

We have an endless amount of features in the pipeline and are prioritising on the ones that serve the community first. Collaborating with planners and public transport agencies across multiple cities to provide benefits both infrastructural and in kind to those using sustainable commutes end to end. We are trying to provide a better visual experience with deeper insights - all without having to download an app.



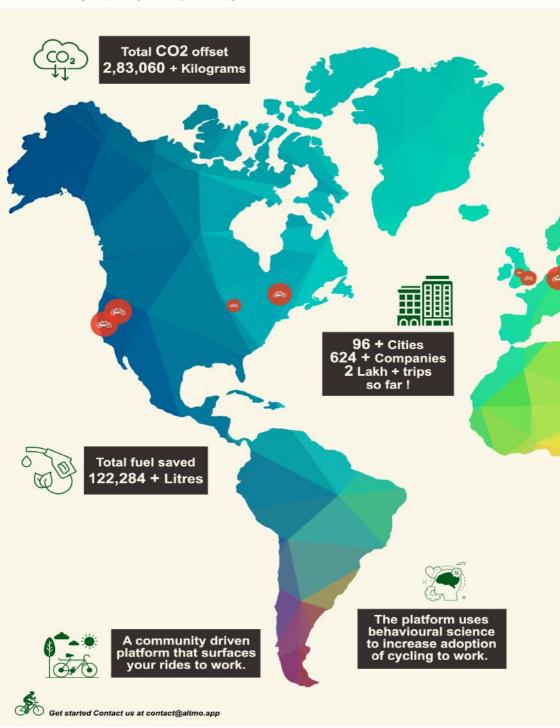
#### Naga Prakash Kammara Cycle to Work ambassador

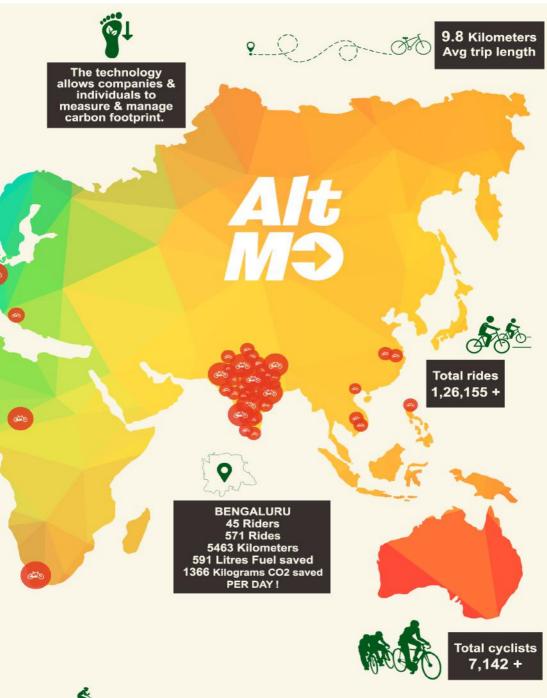
I changed to an organization 25km from home and decided to cycle despite the lack of a "cycle to work" policy. After ten days of cycling in my cycling attire and changing in the parking area, I received the necessary approvals, and the organization provided a dedicated bike parking area, changing and shower facilities. Encouraging employees to cycle can have a significant impact, and organizations can incentivize cycling and provide infrastructure support. Let's all contribute to reducing our carbon footprint and create a ripple effect.

#### The AltMo Ambassadorship

Want to promote sustainable mobility at your workplace?

Enroll now at <a href="https://www.altmo.app/">https://www.altmo.app/</a>





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The map's data as of 7 February 2023 at 11:32 AM; to view the most recent information, go to https://www.altmo.app/



# Council For CF Council For Active Mobility

A not-for-profit collective, the Council for Active Mobility is the brainchild of Bengaluru's Bicycle Mayor Sathya Sankaran, who felt the need to accelerate the transformation of Bengaluru into a healthy, futuristic, and climate-friendly city.

CFAM consists of ward-level Active Mobility Councillors, NGOs, RWAs and other volunteers who are interested in making the city pollution and congestionfree. They drive campaigns to transform the city - making it easier for its residents to become fit and healthy - both physically and mentally.

March of 2020, the application for the Active Mobility Councillor program was launched by Deputy CM Shri Ashwathnarayan. Post the second wave of Covid-19 pandemic, a first set of 30 Active Mobility Councillors were felicitated by Smt V Manjula ACS, GoK and Commissioner, Directorate of Urban Land Transport (DULT). She has built a culture of promoting sustainable mobility in planning through DULT. It is one of the few such organisations in India which plans infrastructure for the state.

The power to transform Bengaluru into a healthy and sustainable city is in the hands of every resident. CFAM exists to facilitate the exercise of that power."

#### **CFAM's Programs and Campaigns:**



#### Green Residences

Encouraging residents to avoid usage of motor vehicles for short trips in the neighbourhood.



#### Green Institutions

Encouraging students of 5th standard and above to walk and cycle to school.



#### Green Businesses

Encouraging local retail businesses to welcome and accommodate cyclists.

#### Other associated programs involved:

#My15MinCity Pedal Shaale. Slow Streets by DULT. CFAM Fellowship Program. Bicycle Friendly Business. Active Mobility Bill Campaign. Last Mile Cycling

To know more and to volunteer with us scan:



## Pedål *ଲଫ*

#### Pedal Shaale

As a part of the ongoing activities to promote cycling in Bangalore and other cities of Karnataka, the Directorate of Urban Land Transport (DULT) in association with KBDA, CiFoS, Decathlon etc., has initiated a bicycle training programme under the name "Pedal Shaale".

Its main mission is to enable you to confidently handle your bicycle on city roads. This program is to promote active mobility in Bangalore and get more cyclists on the roads. Our goal is to create enthusiasm and confidence amongst people by teaching how to safely handle the bicycle. We educate the public on their rights and responsibilities on the road.

#### Our Aim:

- 1. Improve participant's cycling skills.
- 2. Increase the participants' knowledge of traffic rules.
- **3.** Improve their health by using non-motorized transport.
- **4.** Have every participant trained by a certified/professional instructor or trainer.

Ms. V Manjula IAS, Commissioner, DULT successfully launched Pedal Shaale on 19th March 2023 with over 100 attendees from various organisations, including Bangalore Bicycling School, Decathlon, CiFos, DULT and KBDA.

To know more and to volunteer with us scan:









#### #My15mincity

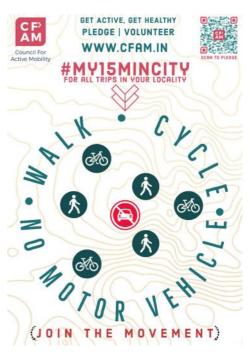
A 15 minute-city is an urban theory concept that implies having all necessary amenities within a short walk, bike ride, or public transit trip.

strategy decentralises The the local with each neighbourhood featuring all the aspects of urban living from workspaces, businesses to recreation, green areas, and housing. The key features of the theory are creating a city based on human needs and designing multi-purpose spaces that are functionally diverse to avoid commuting elsewhere for essential activities.

As part of sustainable urban design thinking, the 15-minute city model helps to reduce car usage and commute time in turn reducing carbon emissions, while generating more human centric spaces.

With no parking issues, no waiting for auto/cab/bus/metro, 15 minute urban neighbourhoods would make urban living accessible and great.









#### Slow Street by DULT

A "Slow Street" is a Directorate of Urban Land Transport (DULT) initiative to make neighbourhood streets safer for pedestrians and cyclists through design interventions. Slow street involves implementing traffic calming measures to reduce the speed of motorized vehicles and improve road safety for pedestrians and cyclists.

Speeding vehicles make it difficult for cyclists and pedestrians, especially elderly people, and children to feel safe while using the street. This initiative reinforces that streets should be safe and comfortable for all users-pedestrians, cyclists, transit users, automobile drivers.

Campaigning for Slow Streets on Cycle Day at HSR Layout.



A Slow Street is a street with a speed limit of not more than 15 kmph for all vehicles, motorised and non-motorised. Vehicular speeds may be controlled using traffic signs and or traffic calming measures Urban streets in predominantly residential areas, school zones, hospital zones, and neighbourhood market streets can be designed and notified as 'Slow Streets'.

Through Cycle Day initiatives, the residents are sensitised on Slow Street concept and then they are encouraged to identify streets that can be considered for this concept in a collective manner. Based on the parameters of Slow Street, most suitable streets are selected and then tested through different tactical interventions before finalising the permanent designs.



To know more about Slow Street https://dult.karnataka.gov.in/94/public-outreach/en

In order to facilitate better bicycle parking infrastructure in the city of Bengaluru, the Karnataka Bicycle Dealers Association (KBDA) volunteered to provide bicycle parking facilities in front of their stores for public / cyclists as part of Bicycle Friendly Business (BFB) program.

To access the most recent map, scan the QR code.



#### LEGEND

Existing bicycle lane

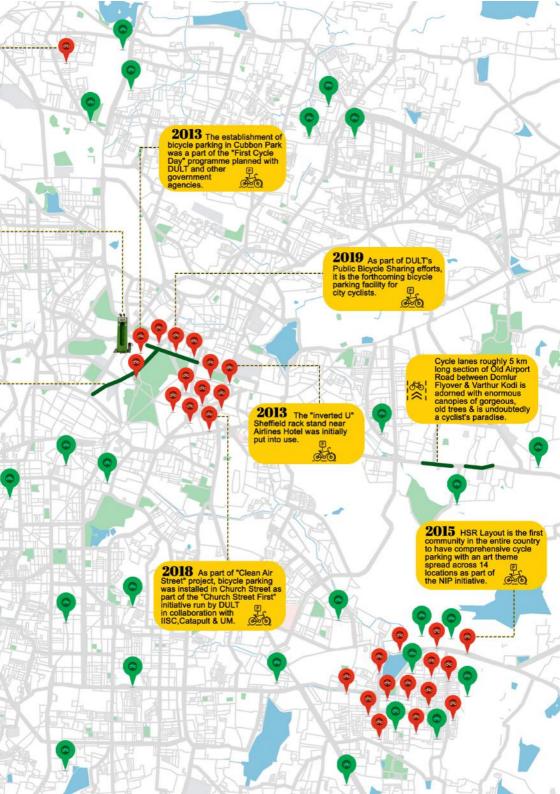
Pedal port

Public bicycle parking

KBDA Public bicycle parking

Illustration credit: Nidhi K S





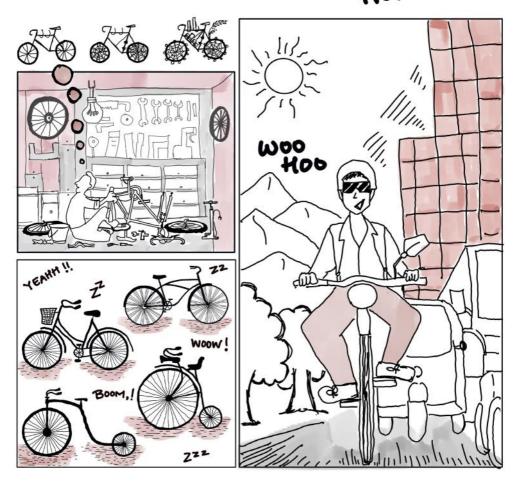
# Keep calm and bike on. by Nidhi KS

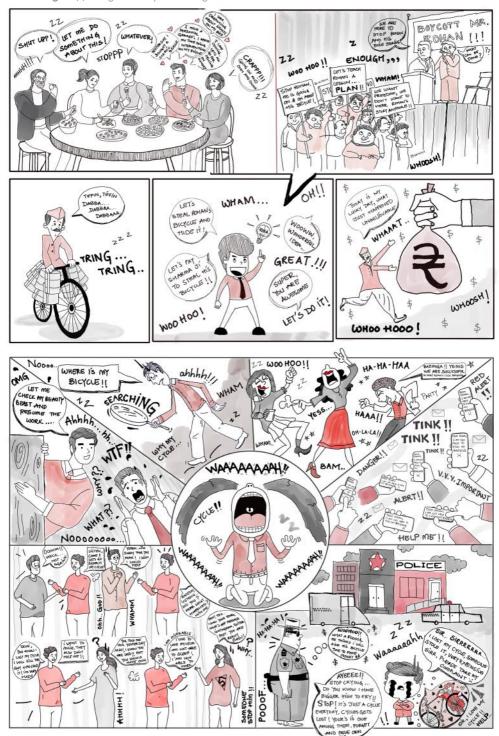
With pedals and wheels in motion, He rides with pure devotion, Through the streets and down the lane.

A funny tale, some may say, But to Rohan, it's the only way, For in his heart, his cycle reigns, A love so pure, it never waves.



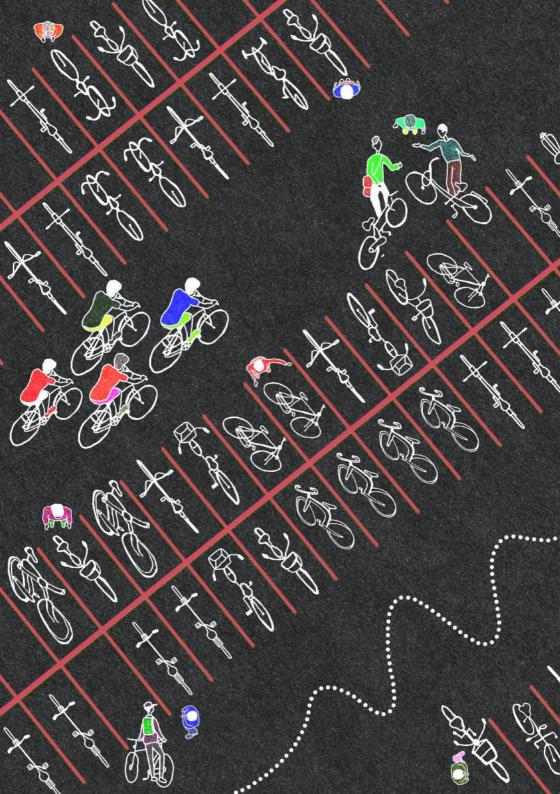
# HONK !!















## **ACTIVE MOBILITY ACT**

Keeping in view the need for promoting Active Mobility modes like walking and cycling in urban areas in the State and build healthy communities, the Draft Active Mobility Bill has been prepared by the DULT. The Bill aims to protect the rights of pedestrians and cyclists of all ages, abilities and gender to safe, accessible, connected pedestrian and cycling networks in urban areas of the State, with a view to promote sustainable urban mobility and build healthy communities.

The transportation choices we have made over many decades and continue to make, have caused pollution and congestion in India. Air pollution in the cities caused by fossil fuel vehicles is a major contributor to deaths and impairments in adults and children. Abuse of valuable commons like street, by a section of motor vehicles excludes a set of people who need to walk, cycle or take public transport from using the commons. Both are costs imposed by a certain section of the population on others. This is a classic failure of the principles of equity that holds our society together.

"A city brings mobility to all people, regardless of economic status, age, gender, or abilities - a place that respects people and their interactions."

What does this equity mean, and how does this look to you and me?

Over the years, we have built roads with asphalt that prioritises one to drive a vehicle straight out of the gate. However, the same is not true for walking & cycling. You think twice before opening your gate and start walking or cycling without feeling unsafe. Even if you do, you will not allow your kids or elderly, or the differently abled on the streets without concern. This is the manifestation of inequity for you and me.



One of the most powerful ways for the state to correct this is to enact legislation to bring back equity to the streets. It needs to prioritise building pedestrian and cycling infrastructure as an affirmative action over any other investment.

In the case of transportation, it needs to allocate space for walking and cycling in all the streets, both retroactively and in the future. This could take various forms from dedicated lanes to sharing the streets by slowing down motor vehicle traffic. Not just as a guideline from Indian Roads Congress, but also as a mandate. It also protects walking and cycling with a legal cover that penalizes abuse of these allocated spaces.

#### What would it take to make the law?

It will take lawmakers to think outside the car. We might own a motor vehicle, but we cannot think for everyone from inside it. Especially, when it is the source of failure and imposes a cost on others. It's time for a law that promotes active mobility as affirmative action.

Spreading awareness on the Active Mobility Bill Image credit: Sathya Sankaran



#### What is the Active Mobility Act?

It aims to safeguard the rights of pedestrians and cyclists to safe, convenient, and interconnected pedestrian and cycling networks throughout the State's urban areas, with the goal of fostering sustainable urban mobility and creating wholesome neighborhoods. The act is essentially a legislative sanction for affirmative action in transportation, ensuring outcomes and outputs. The outcomes ensure that walkability, cycle-ability, and safety of the vulnerable on the streets are addressed to its fullest.

#### How will it be implemented?

The goal is to speed up the transition to sustainable urban areas where all road users are considered in the design and development of streets and public spaces and everyone is aware of and respectful of one another's rights. Audits will help in assessing the situation and implement the act. Quantitatively and qualitatively measuring how safe you feel walking and cycling safely out of your gate, is the only way to establish we have reached the goal.

## Does infrastructure alone solve the problem?

No, there is a need to enshrine the rights of cyclists and walkers on the street. Any affirmative action has to transfer the burden of proof away from the vulnerable in case of conflicts and incidents. It signals the intent to protect their rights.

There is a need to define the rights of Active Mobility modes and penalties for abusing their rights. The Active Mobility Act is the only way we can expedite transformation towards a more liveable city.

## **ACTIVE MOBILITY BILL**

A bill to protect the rights of pedestrians and cyclists to safe accessible, and connected pedestrian and cycling networks in the urban areas in Karnataka, with a view to promote sustainable urban mobility and build healthy communities.



## Comprehensive Mobility Plans



Mandatory for all Urban Local Bodies within 2 years of the commencement of the act.

Policy document outlining the policies, strategies and related actions for a safe, clean, and efficient urban transport in the jurisdiction of the Urban Local Body covering all elements under an integrated land use and transport planning process.



#### Pivotal elements of the bill

Development of complete and connected streets with dedicated footpaths, cycle tracks or shared paths, that extends to transit stations for first and last mile connectivity.

People-centric design of urban streets by prioritizing pedestrians and cyclists above private vehicles.





Identification and completion of missing links to create a well connected, safe, and inclusive network for walking and cycling.

Pedestrianised zones solely for the movement of pedestrians, cyclists, and emergency vehicles.





A street on which the traffic has been slowed down, often limited to 15 kmph or less, using traffic calming measures.

#### Rights & responsibilities of pedestrians & cyclists

Right of way on footpath & its the duty of driver from crossroad to stop.

Right of way at intersections with non-functional traffic signals & it is the duty of driver to slow down.

Duty of the pedestrian & cyclists to only use the designated path to walk and cycle.

Right to safe passage by walking or cycling. Duty of the pedestrian & cyclists to only use the designated path to cross the road.

Duty of the cyclist to allow the pedestrian to safely walk if commuting on a shared path.



Penality upon the violation of the clauses for all kinds of commuters.

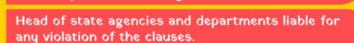




kinds of commuters.

Mandatory provisions of cycle tracks and footpaths





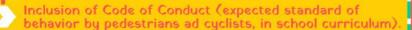
for all new streets and inclusion of all these for the





## Highlights





redevelopment of existing streets.



Maps, cycle routes, and signage on prominent locations like transit stations.



Facilitation and regulation of shared electric mobility by



Funding from the ULB development fund as well as the utilisation of CSR funds.



Part of the pavement, footpath for street vendors without obstructing the commuters.



Voluntary Active Mobility Wardens for audits apart from the ones by ULBs.



# Where should we park our bicycles?

by Nidhi KS

It is no secret that cycling has gained popularity over the past decade, with several nations favouring bikes as their primary mode of transportation.

Bicycle racks merely promote cycling. People will be encouraged to pedal to frequent locations like schools, universities, businesses, and movie theatres if there are adequate bicycle parking facilities available.

There are many factors to consider while designing and locating bicycle parking facilities.

- I. A facility should offer user and bicycle parking security, protection, and safety. The bike frames and wheels should all be locked for adequate security.
- 2. The design of the rack and appropriate protection will have to prevent any damage to the bike. Safety should be provided by placing the facility where users do not feel intimidated.
- **3.** The parking should be well-lit and maintain and easily acessible to users

With so many programmes in place in Karnataka to encourage cycling, the demand for bicycle parking is critical in promoting bicycle use. People avoid using their bicycles for several reasons, including lack of parking, lack of cycling infrastructure, and concern over losing their bicycle. Key factors for bicycle parking spaces:



Must be accessible and secure with CCTV coverage.



Must be accessible and close to public transportation hubs



Must be in well-lit space areas at night



Must have clear signage with a map of the route



After installation, maintanence is important for continued usage.

Bengaluru is gathering momentum toward environmentally friendly transportation.

In order to ensure that bicycles have a sustainable future, we are advocating for a fundamental shift in parking behavior.

# The Need for Cycle Parking Infrastructure in Bengaluru

by Sathya Sankaran

A switch to greener modes for short trips is the way to solve the last-mile options to metro/train-based transit a prime location for Commercial Bicycle Parking Infrastructure.

Cities are afflicted by traffic congestion and pollution imposing health and economic costs far beyond the benefits accrued.

Public transport is going to be the savior of mobility in large dense cities, but they lack door-to-door convenience

Everyone is talking about the last mile as an inconvenience while using public transport. Whereas once someone got into a personal transport, they were completing full trips in it and need not look for last mile options. Buses shun the last mile to trains stations as their cost recovery needs full ridership which they achieve over longer distances with people getting in and out. Auto Rickshaws and cabs have been filling the last mile requirements, but are inefficient and add to the traffic and pollution. A switch to greener modes for short trips is the way to solve the last-mile options to metro/train-based transit. This is where cycling and walking fill the gap.

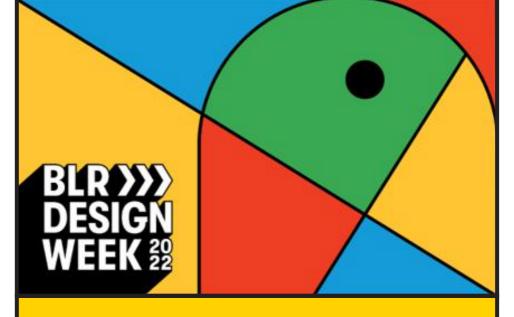
Transit Oriented Development policies adopted by mainline modes across the country have created densities within a 2 to 5 km radius of these train stations. Larger bus terminuses have also been adopting park-and-ride facilities.

AltMo began tracking rides to metro and BRTS stations across the country and realized the need to start welcoming commuters on bicycles to enable clean doorto-door mobility. In public parking lots, secure bicycle parking becomes important since it is left there for long periods of time. With buses and trains having thousands of commuters circulating in and out of their stops, the volume of bicycle parking and that type of quick turnaround required become important design constraints in public bicycle parking.

Amsterdam recently built a 7000 bicycle parking lot under its river to cater to the huge number of cyclists in that country.

The potential for bicycle parking at public transport stops is huge in Indian cities. We are just taking baby steps with DULT the Directorate of Urban Land Transport, Government of Karnataka, taking the lead in 2022, to make bicycle parking facilities in metro stations across the city.

Platforms like **AltMo** help track carbon credits to stations, and Urban Morph works with transport providers using this data to measure footfalls from cycling, walking and electric vehicle modes to stations. In such cases, adequate incentives can be provided to encourage door to door carbon friendly commuting.



It was a celebration of all things design and its growing relevance in the future of our city. It was a confluence of events that blended emergent technologies, catalytic thinking, vibrant conversations, disruptive collaborations, with hybrid aesthetics, and diverse design practices.

Blending the history and the future, the real and the virtual, the event aims to bring different individuals, with varied skill sets, attitudes, and backgrounds to come together to imagine, iterate, and *implement ideas for the future of the city*.



*Urban morph* collaborated with BDW, to conduct a design sprint on Bicycle parking prototypes for the future where students from different backgrounds and colleges participated to create innovative designs.

#### **Project brief:**

A design prototype of Bicycle parking for authorities to think about, replicate and install in the city. Safe, secure and cost effective design which encourages the cyclists to park their cycles in the public space.





#### **Smart Cycle Stand**

Cycle stand of the future

Multi-function sustainable cycle stand that gives back to the city.

Design by Anamika Puthiyothil & Aniketh Kumar





Illustration credits: Anoushka Shome



# he World



# Bicycle Parking Around the World

Showcasing some of innovative bicycle parking solutions

by Chaitanya Deep

In India, it's very rare to see a bicycle stand.

But that doesn't stop us from dreaming. Car parking spaces are usually just rectangles drawn on the floor.

Due to the size and weight restrictions, it is not practical to design innovative car parking spaces without compromising on the core functionality - safely place 2000kgs of metal and not scratch the beautiful glossy paint job.

The best use of a car parking space is everything except parking a car.

In contrast, there have been a lot of examples of innovative bicycle parkings around the world.

In this article, I want to showcase some of my favourite bicycle parking solutions from around the world and what makes them stand out from the rest.

I hope we soon see some of these, and even better solutions incorporated in the Indian urban context.







Bicycle Parking by Ector Hoogstad Architecten Photographs by Petra Appelhof

## Let's Talk Size!

#### Utrecht train station

The world's largest bike parking lot has three levels of underground space for 12,656 bicycles, along with amenities like bicycle repair service, bicycle hire outlet, and a digital system to guide cyclists to a parking spot that provides the quickest access to the platforms. It is open 24/7, free to park, and also accommodates cargo bikes and special mobility vehicles alongside regular cycles. The parking spaces themselves are the iconic Dutch two-tier system for maximum space efficiency.





Top: Users with Oonee pod installation at Atlantic street. (Source: Atlantic Terminal+Central Mall FB Group) Bottom: Oonee Mini on New York street. (Source: ooneepod instagram)



New york city is infamously known for bicycle theft. Oonee is a bicycle pod startup that houses 10 bicycles in the space of a single car. Although, it doesn't solve the fundamental problem of safer streets, it does provide a peace of mind for bicycle owners which is the biggest deterrent to people adopting cycling in urban areas. What I like is how they also paid attention to the bicycle racks inside and not just the pod as an enclosure.

## Inch for inch

#### Japan's underground bike parking

Typical to the Japanese way of adopting technology for everyday things, this beautifully designed underground parking space - Eco Cycle is like a personal valet for your bicycle and can host over 200 cycles in a tiny 57sqm space. The first Eco Cycle was built in 1998, way ahead of the times and they are now at over 50 locations in Japan.





Top: A man loads his bike at an Eco Cycle. (Credit: Keith Tsuji/Getty Images AsiaPac) Bottom: Cycles stored at an underground Eco Cycle unit (Credit: Gekkin)

## Eye candy Bike Hanger, Seoul

The Bike Hanger is a ferris wheel for your bicycle which rotates by pedaling the stationary cycle beside it. Although this is not quick and easy, it does make the parking experience fun. The design supports upto 36 bicycles and takes up minimal footprint since it can be installed adjacent to the wall.



Ferri Wheel-esque Bicycle (Credit: Bike Hanger, 2010 by Ahn Ji-yong)

Which one is your favourite? Do you know of any other bicycle parkings we could have included here?

Write your thoughts to us at councilforactivemobility@gmail.com and be featured on our Instagram page!



# Parking in the Netherlands

by Kars Bouchtreer

#### A Brief history of bicycle parking

When the Netherlands comes to mind, one thinks of beautiful canals, windmills, and flat green fields full of tulips and cyclists, many many cyclists. What one ought to forget is that a vast multitude of the cycles out on the streets are actually not being used.

## In fact, there are on average 1.3 cycles per Dutchman.

That means that even if all 17 million inhabitants would be cycling 24/7, you would still have 5 million cycles parked somewhere. The question, therefore, arises, where do the Dutch leave all their cycles?

Historically, the cycle was parked at home. People would leave their bicycles out in the front yard or create a little shed to keep the cycle safe from rain and thieves. When they would go out for work or social activities, the cycle would be parked on the street, attached to fences, or trees, or just standing by itself.

Bottom: Bicycle Parking Signage (Source: City of Amsterdam)





Over the decades, the Netherlands witnessed significant growth in population and private bicycle spacing became a luxury good. Pavements in the city became clogged with cycles and the new high rise would go accompanied with piles of cycles lying around the apartment buildings. It was at this time in the mid 50's that the government took a more active stance in regulating cycle parking. By decree, every apartment building needed to create enough space for each occupant's bicycle, and around public buildings, like sports clubs, theatres, and libraries parking facilities would rise. The design of the cycle racks placed would normally be minimalistic and made out of galvanised steel. Below you can see a standard design.



Traffic-Line Lo-Hoop Cycle Stands by Conrad





Top: Bicycle Parking at Utrecht train station (Copyright: CU2030.nl) Left: Dutch Cycle Parking (Credit: AirBete, Wikimedia Commons)

The real cycling parking revolution has, however, started in the last 30 years. All over the country, dedicated cycling parking garages have started to pop up. These 'fietsenstallingen' are normally covered, guarded, and free of charge for the first 24 hours. Their design varies depending on the location, but in general, they look like car parks where you get a ticket at the entrance and you also need to check out again. The concept of such dedicated large cycle shelters started in the 80s.

At the time city centers became unpopular places to live in with clogged-up streets and air pollution. To change this, the Dutch government started to invest in improved inter and intra-city transport.

From research, it became evident that:

it had to be easy to get to the metro, bus, and train to convince the people to leave behind the comfort of the car

'Fietsenstallingen' was created all around the train and metro station to improve the connectivity of the Dutch transport system.

The impact has been tremendous with cars being slowly phased out of city centers and public transport taking over. A study showed that after the placement of a free cycle parking garage at a station, the number of cyclists that would come to the station increased by 70%. A testimony to the success of the 'fietsenstallingen' has been the opening of the largest cycle parking in the city center of Utrecht right underneath the Central station, it is the largest one in the world, capable of housing up to 12,500 cycles and also serves as a tunnel to pass by the station.

The impact of cycle parking showcases how cycle parking can incentivize public transport and reduce the reliance on cars and also how governments can improve the liveability of their cities.

Fietsenstallingen is the dutch term for bicycle parking station





### Karthik Sarakki Krishnappa

Mobility Engineer Italy

Milan, a city renowned for its breath-taking beauty, imagine the thrill of riding a bicycle through this location steeped in history and grandeur. Yes, you can!

Milan is dedicated to making cycling safe and convenient, and has implemented a range of measures to address the needs of cyclists. One of the most notable initiatives is BikeMi, a bike-sharing program that comes with a user-friendly app. This program provides a network of self-service bike rental stations throughout the city, making it easy for riders to pick up and drop off bikes as they travel around town. In addition to this, the city also offers a range of other cycling facilities, including bike racks and lockers available at major transportation hubs and popular tourist destinations, ensuring that cyclists can securely park their rented or own cycles. Italy encourages its citizens to rely more on cycling as a zero-emission mode of transportation. Cycling around the city is not only a practical way to get around, but also a therapeutic experience.

As an international student who has lived in Milan for four years, I can attest to the fact that cycling is a true joy that enhances one's physical and mental well-being.



## **Sudhindra Gopal**

PhD Candidate/Student USA

The boom in bicycling in the USA has introduced some challenges in both commuting and storing bicycles. Unlike European countries with small streets and bike parking facilities, the US's large roads, and large buildings make it impossible for a biker to commute fearlessly. Therefore, bike parking is limited to only certain spaces such as Universities, Schools, and private companies (such as Google, Meta, and Microsoft), that have large campuses with bike-friendly lanes.

Using bikes to commute in the US is something new and the government is currently working on improving the infrastructure. Nevertheless, it all boils down to what your destination is. For smaller cities in the US, most of the places are so far apart, it is highly impossible to use a bike as you might have to cross the highways. But, shifting the focus on to the bigger cities where we are seeing the improvement, the cities are introducing bike rentals with a state-of-the-art parking facilities. These parking facilities include an automatic lock with an electric charging station. But, apart from these types of city bikes, it is hard to find public bike parking in any of the other smaller cities. One way we do it is by locking our bikes to the pole or to a small tree, or to the railings around a building to secure the bikes.

I have had situations where I park my bike in the above-mentioned spaces hoping that it will be there when I come back.

I believe it is a common fear in anyone who uses their bike to commute. Nevertheless, the US still has a very long way to go in terms of having safe biking lanes and parking facilities.



#### Nischal Ramesh

Test automation + Business analyst Ireland

Ireland has a lot to offer in terms of bicycles; one is the normal bicycle and the other one an e-scooter which is in trend and eco-friendly. E-scooters are booming here and we get tax rebates on its purchase as Europe plans to become net zero carbon by 2040. The tax rebate called Bike2work encourages people to bicvcle to office everyday. Ireland has a very good bicycle infrastructure; they have a dedicated cycle lane throughout the country and the lane discipline is strictly followed which makes it safe for travel. In cities like Dublin, Galway, or Cork, they have bicycle stands where one can rent a bicycle for a day or week or even a year. A person takes a bicycle from point A and he can just drop it at point B at a dedicated stand and for up to 30 mins it would be free of cost after which you will have to pay hourly, this works out as a cheaper alternative.

You can essentially travel to the office and back free of cost!



### Kajal Sharma

Business Analyst Germany

Cycling in Germany is so common, mostly everybody owns a bicycle.

That's the reason they have so many rules and regulations. Every cycle should have a white front light, brake light, and a bell. Germany has separate lanes for cyclists apart from the regular car lanes and pedestrian lanes. You aren't allowed to ride on a street with traffic if there is a bicyle lane.

Bicycle parking is the same as other vehicle parking but people mostly take their expensive cycles to their apartments or to the office floor. As such there are no public and private bicycle parking. There are different ramps and parking for cycles everywhere eg. supermarkets, train stations and they have shades to prevent them from rain as well.



### Priyanka Srinivasa

## Graduate Planner and Architectural Technologist Ireland

Bicycle parking systems can be distinguished based on the duration of the parking - Short Stay and Long Stay Bike Parking facilities.

Short Stay type of parking facility is provided for the general public and visitors located in areas that are highly visible with good passive surveillance, which are well-lit and accessible. They are generally provided within 25 meters of the entrance points of the development. For example: Bike Racks or Bike Bollards. Sheffield cycle stand is the most preferred type of short-stay cycle stand in the country. While Long Stay type of parking facility is generally provided for residents or employees in a secure and covered space. They are located within 50 meters of the destination. For example: Bike Lockers or Bike Lockups.

Various councils across the country set standards for the number of parking spaces to be provided for different types of developments in the area in their respective Development Plans. The Government also provides the facility of City Bikes to encourage commuters and tourists to choose a greener option. *City bike stations* are distributed throughout the city center for easy access and optimal usage. These bikes are available to rent 7 days a week, between 5 am to 12:30 am (approximately). They are parked in highly visible areas of the city and operate for free for the first thirty minutes each time.

This supports the 'Bike to Work' Scheme to encourage employees to cycle to work.

Under this scheme, the employer is supposed to buy a new bicycle (including bicycle accessories) and the employee then repays the cost in regular installments from their gross salary. However, this is not a mandatory scheme.



### **Syed Souban Dawood**

Master Scholar, Manchester School of Architecture United Kingdom

Cycling is the chosen mode of transport by most students and a fair amount of people as bus fares are slightly pricey.

Cycle oriented infrastructure in the UK is pretty well thought out and user friendly. Bus and cycle lanes are well demarcated, especially the dedicated cycle parking which in most cases is very easy to locate and use on campus and off and has ample amount of space. The heart of the city and any other place with a larger cluster of people is well equipped to support a commuter using a cycle.

Bicycle theft however is excessively common and is a huge inconvenience. Cycles are tampered with even if they are well secured.

Most individuals use lightweight and collapsible cycles and carry them around like we do our backpacks!

This is extremely convenient during longer commutes as the cycles can be carried onto buses as well as the metros. This holds the same in the city of milan, where the metro infrastructure is suitable to carry on cycles.

A good suggestion would be to more actively divide the cycle lanes as once the concern of accident safety is covered more people would consider cycling on packed roads. Footpaths could also be used to accommodate cycle parking as it requires very less space and can be done so without being an obstruction to the pedestrian, making the footpath a more multifunctional space.



Do you have any thoughts or suggestion regarding the bicycle parking in your city?

Write to us at councilforactivemobility@gmail.com



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BE A CLIMATE HERO





## Sathya Sankaran

#### the Bicycle Mayor of Bengaluru.

Sathya brings more than 25 years of experience in using technology and data to solve transportation problems.

As an advocate for sustainable transportation he has been a part of bringing in Rs. 34,000 crore Suburban Rail services to Bengaluru. He is the architect of AltMo, a gamified mobility intelligence platform for the future of climate friendly cities. The data from this platform enabled a 342% increased allocation in the Comprehensive Master Plan for cycling and walking, helped put up more than 20 kms of cycle tracks in Bengaluru and won Silvassa Smart City an award for Excellence in Innovation.

He founded Council for Active mobility, a collective of 13 organisations working towards accelerating UN SDG's. His Relief Riders initiative during the COVID pandemic won the 2021 UN World Bicycle Day Special Award and nominated for the 2022 Nobel Peace Prize. He is also an adjunct faculty teaching Urban Governance for masters students, a director at the waste management startup, Bioman.





## Nidhi K S Urban designer @ Uban Morph

Nidhi is an Urban Designer with extensive experience in designing public spaces, sustainable concepts, and mobility systems. She has led various projects, including waste management, green museums, and social change campaigns like Slow Streets and Pedal Shaale. Nidhi has also formed partnerships with organizations promoting sustainable practices. Her dedication has made her a thought leader in urban design.



## Anoushka S Designer @ Studio.SHKA

Anoushka Shome is a sustainable design architect with an interest in natural building and a desire to create impact at grassroots level. Her expertise lies in creating and designing in both physical and digital spaces. Anoushka's commitment to eco-conscious living extends beyond her work, as she actively uses sustainable modes of transportation and promotes an active lifestyle.

#### the Team

#### **Editor-in-Chief:**

Satya Sankaran Co-founder, Urban Morph

#### **Managing Editor:**

Nidhi KS Urban Designer, Urban Morph

#### **Editor and Art Director:**

Anoushka Shome Designer, Studio.SHKA

#### **Assistant Editors:**

Preya Venkatesh Juhita Varshini Venkatesh

#### Graphic designers:

Nidhi KS Anoushka Shome AltMo Digest // Bengaluru Bicycle Parking



Urban Morph is a multidisciplinary design consultancy that specializes in creating sustainable urban environments.

Urban Morph's mission is to create "liveable and resilient cities" by integrating cutting-edge technology and sustainable design practices.

Urban Morph works on accelerating ESG and SDG in urban spaces with a mix of design, technology and policy.

- **I. Data Sciences:** We use data science and analysis to measure ESG & SDG accomplishments.
- **2. Planning and Design:** We bring knowledge and create strategies that enable ESG for industry and SDG for cities.
- **3. Policy**: We provide policy inputs and guidance in order to create sustainable cities and make SDG a reality.

