



Pune Municipal Corporation Comprehensive Bicycle Plan for Pune



Bicycle Share Plan For Pune City

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A. Detailed Project Report for Public Bicycle Share System

B. Policy for Public Bicycle Share System

C. Draft MoU for Public Bicycle Share System

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1 INTRODUCTION TO PBS

Public Bicycle Share, also called “Public-Use Bicycle” (PUBs), “Bicycle Transit”, “Bike sharing” or “Smart Bikes”, bicycle-sharing schemes comprise of short-term urban bicycle rental schemes that enable bicycle to be picked up at any self-serve bicycle station and returned to any other bicycle station. This makes bicycle-sharing ideal for point-to-point trips. The principle of bicycle-sharing is simple: individuals use bicycle on an “as-needed” basis without the costs and responsibilities of bicycle ownership. There is distinction between bicycle sharing programs and bicycle rentals which is like that between car sharing programs and car rentals. Shared bicycles are intended for shorter periods of use and a larger number of daily users per bicycle than rentals. Moreover, fees for use are generally very low or use is free. But beyond these basic features, bicycle sharing schemes vary widely in nature.

Bicycle -sharing schemes have evolved dramatically since their introduction in the 1960s. The first-generation schemes that were introduced in Amsterdam (1965), La Rochelle (1976) and Cambridge (1993) provided free bicycle to borrow and return from any location. Then, a new “second generation” set of systems began in 1991, in Farsø and Grenå, Denmark (DeMaio, 2009). By 1995, the first large scale scheme (called Bycyklen or City Bikes) was introduced in Copenhagen. These third-generation systems took the form of a “bicycle lending library” (Metrolinx, 2009) with a membership or annual fee. They used custom-built “heavy duty” bicycle with non-standard components to reduce theft. Finally, introduction of smartcard technology in the late 1990s would usher in the third-generation schemes that have enabled bicycle-sharing to become what it is today. The evolution of bicycle -sharing and the different generations of bicycle-sharing programs are summarized in Figure 1 below.

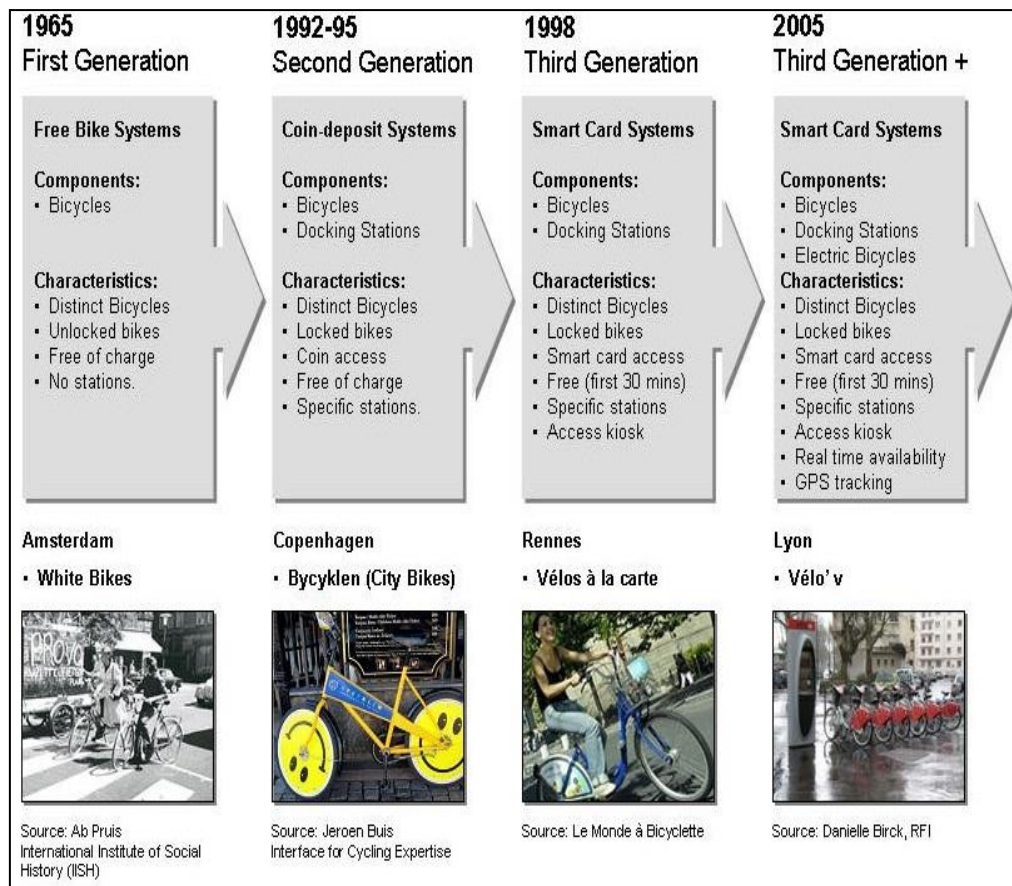


Figure 1 Evolution of PBS

Source: Adapted from Dhingra, Chhavi and S. Kodukula, 2010

1.1 PBS- THE WORLD TREND

In cities across the world, bicycles are becoming an increasingly popular mode of urban transportation. Forty years ago, a group of citizens in Bogotá invaded the streets with bicycle. This citizen initiative was the beginning of the known ciclovía that brings the streets back to the people. From the initial 5,000 citizens in 1974, the ciclovía has grown to actively move more than 1 million people every Sunday in Bogotá. Today, more than 50 cities in the world have replicated the ciclovía as a mechanism to integrate society and foster healthy cities. The growing popularity of urban cycling has led to a proliferation of bicycle infrastructure in many cities. Even governments have started to change their priorities towards more sustainable modes of transport and this has led to transformation at policy level in many cities of the world. A good example is the growth of the bicycle- share systems in the world that went from hundreds of bicycles to nearly a million in the last decade as seen in the Figure 2 below.



Figure 2 Global Trend in Growth of PBS systems

(Source : Embarq, <http://favelissues.com/2014/05/25/the-bicycle-uprising-in-cities/>)

Today, Amsterdam has more than 400 kilometres of bicycle lanes and 38% of the mobility is done in bicycle. In 2007, a bicycle sharing program was launched in Hangzhou, a city of 7 million in southern China. The program has ballooned to over 50,000 bicycle across 2,050 bicycle stations, by far the largest bicycle sharing system in the world and is planned to expand to 175,000 bicycle by 2020. There are around 136 ongoing bicycle-sharing programmes in 165 cities across the world but many more such systems are required to build more sustainable, inclusive, healthy cities in the world.

1.1.1 Multi modal integration - bicycle with public transport

Most public transit users have a chained trip-making behaviour, with a minimum of 3 segments for each trip – access trip, main line haul trip and egress trip. If the commuter uses more public transit (PT) modes like changing buses or use more than one mode for the access/egress trips, it adds that many segments to that trip. Figure 3 illustrates a typical multimodal trip chain.

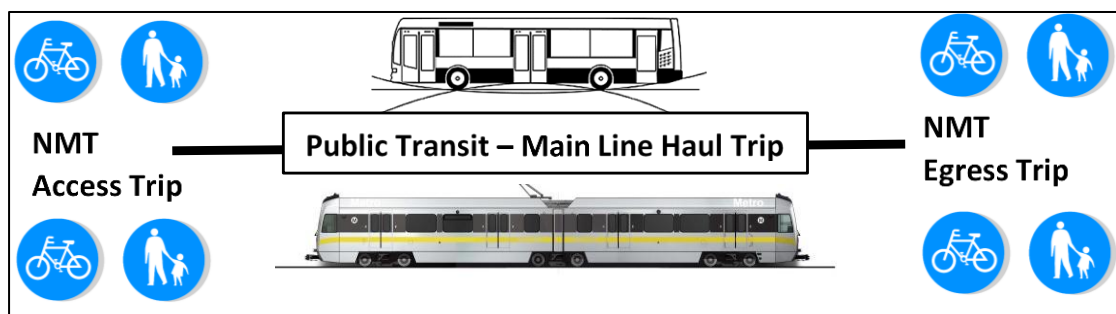


Figure 3: Multi modal trip chain

To facilitate such multi modal travel and ensure users on public transport it becomes important to integrate all modes. Therefore, to promote bicycles as access egress mode to PT and vice versa, both the system should be integrated. Several trains are bicycle friendly in different cities and countries. But different cities have different charges and criteria for allowing bicycles inside the trains. In some cities, it is mandatory that bicycles should be folding bicycles, or some trains have designated space for users with bicycle and in other you need to first book a place in advance for your bicycle which helps in easy travelling with the bicycle.

In case of Germany, if you wish to take a bicycle with you on train, you need an additional ticket for your bicycle. Prices for the carriage of a bicycle on long-distance routes (single journey): With BahnCard €6.00, without BahnCard €9.00. Similarly, one-day bike ticket in Netherlands is around €6.

1.2 PBS INITIATIVES IN INDIA

In November 2013, the two-day conference on “Sustainable Cities Through Transport” at Coimbatore, with respective city engineers from Madurai, Trichy, Tirupur, Salem and Coimbatore, stressed for improving non–motorized transport in city corporations and town municipalities and also chalked out plans for creation of transit systems, pedestrian pathways, cycling tracks, parks, pedestrian zones, etc. While presenting the same at a workshop in Chennai by concerned Corporation officials, chaired by K. P. Munusamy, State Minister of Municipal Administration and Rural Development, Law, Courts and Prisons and officials of the ministry, the Corporation Commissioner of Trichy City, V. P. Thandapani declared that about 2000 bicycle will be put to use for public use and on the infrastructure front, he stated that at an outlay of ₹150 crores (US\$26 million), 28 kilometres (17 mi) of cycling tracks, 52 kilometres (32 mi) of pedestrian pathways and 11 kilometres (6.8 mi) of green lines will be constructed, of which, 10.7 kilometres (6.6 mi) of bicycle tracks will be completed by next year.

The plan was developed in association with Institute for Transportation and Development Policy (ITDP) and International Council for Local Environmental Initiatives (ICLEI) and is being funded by Ministry of Urban Development which would create exclusive bicycle lanes with 66 “bicycle sharing stations”, besides improving the city's road infrastructure and future transport modes, which presently has narrow roads and indiscriminate encroachments coupled with booming vehicle population.

Mumbai once operated a PBS system named Bicycle Chalao but it closed due to financial issues. Apart from that, the Ministry of Urban Development is preparing to launch a 10-city public bicycle scheme as part of its “Mission for Sustainable Habitat”.

In Bangalore, the ATCAG system implements a bicycle sharing program aimed primarily to solve the last-mile problem for users of the Bangalore Metro. Namma Bicycle is a bicycle sharing system being implemented in the Indian Institute of Science (IISc, Bangalore) campus and the surrounding neighbourhood. Bicycle are made available at select locations in a community/city allowing people to have ready access to these public bicycles. Namma Bicycle is a semi-automated bicycle sharing system inaugurated on August 2012 with 100 Bicycles and 6 stations. In 15 months of operations it has completed around 16000 Trips averaging 1000 Trips in a month. Namma Bicycle uses a Free and Open Software system ECBike developed by Gubbi Labs to manage the entire bicycle rental operations.

Four case studies have been analysed for understanding the PBS system initiatives in India. A brief analysis of these is discussed in the subsequent section.

1.2.1 NAMMA cycling public bicycle sharing for communities

Location	Indian Institute of Science (IISC), Bangalore, Karnataka
Coverage	Serving to IISC campus (No formal figure of coverage known)
System Type	Manual (operated by employees at each station. However, registration and renting is online)
Operator	Ride A Bicycle Foundation (RACF)
Started	6 th August 2012
Number of Bicycle	150 Bicycle sponsored by TI Bicycles India, part of the Muruguppan Group based out of Chennai
Number of Stations	4 Stations within the IISC campus sponsored by BCIL, a biodiversity company based in Bangalore
Revenue Model	100% Sponsorship form more than one organization in lieu of advertising their names and logos at stations. Bicycle donated by BSA. Operating revenue is negligible not even sufficient to cover operating cost.
Status	Functional
Expansion Plan	Based on the success of the pilot, the project will be expanded to a 2km radius around the campus to students and faculty living in the area. This then has the potential to grow into a wider network, which would involve greater partnerships with the local municipal authorities to improve road infrastructure for cyclists. During the consultant discussion with Mr. Murali (Who is virtually the back bone of NammaCycle) he said “we are Planning to

add 100 Bicycle in 2014 depending on the sponsorships and bicycle donation from Manufacturers”.

Existing and Potential Issues

1. System alone is not able to generate enough revenue from user fee to meet the Operation and Maintenance (O&M) cost
2. Large dependability on partners to sponsor the O&M cost and expansion
3. Funds for research and development for developing customize redistribution vehicle and for on-going customization in the bicycle & stations is negligible
4. Largely depends on the volunteer or low cost personnel to run the system on daily basis which leads to situations when there is nobody to answer the problem calls. During discussion Mr. Murali quoted one example “sometimes bicycle locks don’t function so somebody has to go from the nearest station and address it but if the personnel move from the station then there will be nobody at the station”
5. Inside the campus there is no theft and vandalism problem till date but expansion outside the campus may lead to such problems.

ABOUT THE SYSTEM

The Namma Cycle Campus Bicycle Sharing is being executed by Ride a Bicycle Foundation (RACF) to promote Bicycle for hiring by faculty/staff and visitors of IISc. RACF, a Non-Profit Organization that promotes cycling in cities is looking to expand the system in other campuses and within IISc. NAMMA BICYCLE started with the aim of increasing connectivity and creating environmentally friendly modes of public transportation. The name is inspired from ‘Namma’, which means ‘ours’ in Kannada, and signifies the concept of shared ownership. Figure 6 shows one of the docking stations of the NAMMA system.



Figure 4 Namma Bicycle Station in IISC campus



Figure 5 Namma Bicycle and Rack in IISC campus

Namma Bicycle uses a simple web application for the process of renting out bicycle. The bicycles are made available for rent at a network of nodes or stations. A central stock

circulates the bicycle between nodes to ensure that bicycles are available at all nodes, at all times.

The project works on a simple Sign-Up, Select, Ride and Return system where students can sign-up via the website and get a registration ID, select a bicycle from any of the station racks, ride the bicycle to their destination and return it to the nearest station.

Partners in this initiative are Ashwin Mahesh, a public policy professor at IIM, Bangalore, and the CEO of Map unity; EMBARQ India, a non-profit that helps implement sustainable urban mobility solutions; Gubbi Labs, a private research collective; and CiSTUP, a centre of advanced research and training in transportation

engineering. Ashwin Mahesh has been instrumental in getting several sponsors on board. Sanjay Sridhar and others from EMBARQ India have contributed expertise towards implementing the project. Gubbi Labs built the software for the system, which will soon be free and open source to make it easily replicable for similar programmes around the country. Professor Sitaram, Chairman, CiSTUP, is also the chairman of the NAMMA BICYCLE board and has been the liaison between the project and the institute.



Figure 6 Namma Bicycle Stations Location Map



Figure 7 Typical Hoarding with Sponsors Names and Logos at Namma Bicycle Station

1.2.2 Automated tracking and control of green assets (ATCAG) bicycle share

Location	At Metro Stations and Near CBD in the Bangalore City, Karnataka
Coverage	Serving to Metro commuters (No formal figure of coverage known but as per official website “Registrations are limited to 300 numbers”)
System Type	Automatic (No Manual interface at any of the stations)
Operator	Automated Tracking and Control of Green Assets a Patent of Kerberon Automations
Started	18 th October 2011
Number of Bicycle	Approximately 10 Bicycle at each station (Exact Number of Bicycle not available)
Number of Stations	9 Stations (6 metro stations - MG Road Station, Trinity Station, Halsoor Station, Indiranagar Metro Station, SV Road Metro Station and Biyappanahalli Metro station. And 3 other Docking stations at War memorial, Bible Society and Utility Building complex)
Revenue Model	Mainly advertisement revenue from hoardings at stations and some contribution from user charge and subscription (Formal revenue structure is not available)
Status	Functional
Expansion Plan	This is treated as pilot project with limited subscription of 300 numbers. The launch is to make feedbacks, suggestions, and complaints a well-integrated factor to ensure a smooth operation and optimal user experience on large scale deployment.
Existing and Potential Issues	<ol style="list-style-type: none"> 1. Full Automatic system with no human interface makes it difficult for the first-time user to utilize the system and ride bicycle. 2. No marking or signage’s for station location has been displayed to guide the user while entering or leaving the metro stations 3. No personnel near stations to address small problems like card not working etc. This can be huge problem in the starting years of system in Indian context. 4. Only membership card holders can ride bicycle which may lead to less or limited utilization of the system 5. Centralized approach to run the whole system may lead to delay in addressing rider’s issue standing at the docking station.

ABOUT THE SYSTEM

ATCAG is the India’s first and only completely automated bicycle sharing platform.

Completely designed and manufactured in India by Kerberon Automations from scratch, the product is very well accepted and within a span of 18 months, the company has earned high value customers in Bengaluru and Hyderabad in both private and government sector and

soon expanding. ATCAG-Bicycle Share is a completely automated unit which automatically issues and accepts bicycle electromechanically based on digital authentication via Contact-less Smart Cards. ATCAG aims to integrate the card system with public transport system and install system at each bus stop in Bangalore in future.



Figure 8 Typical Docking station of ATCAG at MG road Metro Station



Figure 9 Locking/Unlocking Mechanism of ATCAG docking station

Anyone with valid government ID and Address proof can use the system. Each month during the pilot phase of three months 100 registrants will be authorized to use ATCAG. Registrations were closed after 300 registrations and on first-cum-first-serve basis. The number is limited to 100 every month to target totally about 300 registered users over 3 month's period to collect substantial feedback on overall operation. Figure 9 shows the

locking/unlocking mechanism of the bicycles in the system and Figure 10 shows the registration process.

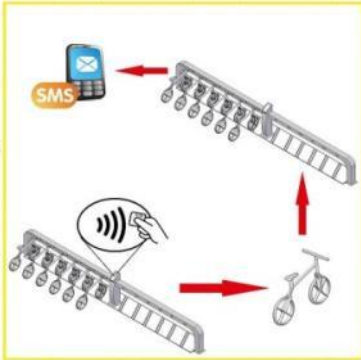
How Does It work?

Step 1: Register with us and we will issue you a ATCAG contactless smart card. Swipe the smart card at any of our ATCAG Docking stations and you will be automatically issued a bicycle!

Step 2: Take the bicycle issued to zip around the town or go to work!

Step 3: On reaching your destination if you find another ATCAG Docking Station just plug the bicycle into it! You do not have to bring the bicycle back to the same station that issued you the bicycle

Step 4: Right after you return the bicycle at any of the ATCAG docking stations, a usage summary is automatically sent to you as an SMS along with the billing details!



How Do I register?

- Submit a copy of any of your valid **Government IDs (Driving Licence/ Passport/ Ration Card/ Voter's ID card)**. For Online Registrations log into **www.atcag.in**
- Pay a **refundable Lifetime Registration Fees of Rs. 1000/-** and get your own ATCAG Contactless Smart Card!
- **Recharge your Smart card** with a usage balance available in denominations of Rs.250/-, Rs. 500/- and Rs. 1000/-
- **First One hour of usage is free per user per day**, subsequently Rs. 10/- is deducted as usage fees from your account for every subsequent hour of usage. However you have to maintain a minimum usage balance of Rs. 250/- in your smart card at any point of time to be able to use this service. **Regular users can avail special packages!**

Figure 10 Registration process for using ATCAG Bicycle



Figure 11: Advertisement Board at ATCAG station

ATCAG offers Focused Advertisement at all its nine station locations. The very purpose of Out of Home (OOH) advertising medium is to allow businesses to connect with their target audience. Every business has a unique set of audiences who form a refined subset of the public. By choosing to advertise on conventional OOH media stationed on public roads and other generic locales, the hit-rate of grabbing the attention of the intended target audience is diluted and consistently un-predictive. With Kerberon’s concept of Focussed Advertising, it makes sure that every member of the audience who would view adds is a member of intended target audience, by providing OOH infrastructure directly at the door steps of target audience that include communities, apartments, work places etc. thus exponentially increasing your “Advertising Effort: Business engagement ratio”.

1.2.3 Delhi bicycles

Location	At Metro Stations and nearby residential societies in Rohini, Delhi
Coverage	Serving to Metro commuters
System Type	Semi-Automatic (Card based)
Operator	Delhi Bicycles Private Limited
Started	February 2010 - November 2010

Number of Bicycle	5 Bicycle at each station 20, stations-4120bicycles sector 8, 13 and 14
Number of Stations	4 Stations (1 metro station – Rohini East and 3 sub stations)
Revenue Model	Privately funded
Status	Closed
Expansion Plan	This was a pilot project. It had to be expanded to 1 more metro station with 7 sub-station but was unable to financially sustain.
Issues faced	<ol style="list-style-type: none"> 1. Involvement of multiple agencies. There should be a single window clearance for all the required permissions. 2. It is being treated as commercial venture by agencies while it should be treated as public utility service. 3. Security deposit/ fees/ levies expected by agencies in lieu of land usage and advertisement permission while even service is not generating enough funds for its own. Allotment of land and advertisement rights should be without any fees/levies 4. Huge capital cost involved which is non-recoverable, Hence, the capital cost be funded by government. 5. Big operational costs involved but expected to be recovered from advertisement revenue. However, it will take time to generate fund from advertisements, thus suggested that first year operational cost be borne by Govt 6. No monitoring agency, hence allowing advertisers to exploit the concept for advt. revenues in the name of cycling. 7. Lack of cycling infrastructure

ABOUT THE SYSTEM

Reason for closing	<p>Non-sustainable permissions:</p> <ol style="list-style-type: none"> 1. No advertisement rights were given: To make it sustainable advt. revenue was the only source of funds, while rental income was negligible. Even that rental was asked to share 2. Very Short Tenure: Initially, a 6 months' permission with an extension of 3 months was given. No other financial assistance was provided. 3. Only one Metro Station was allotted which was not sufficient to leave its impression. 4. After huge efforts and private investment, a successful pilot was completed but there was no hope of financial assistance/ advertisement rights for future
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Figure 12: Parked bicycles from Delhi PBS

1.2.4 Bicycle share system for Ahmedabad city

Location	Proposed near the University area near BRTS corridor in the Ahmedabad City, Gujarat
Coverage	Propose to serve as feeder to BRTS system (Proposed to target 1000 members)
System Type	Proposed to be Semi-Automatic
Operator	Selection is being done
Started	Not finalized
Number of Bicycle	650 Bicycle proposed
Number of Stations	30 Stations proposed
Revenue Model	System Sponsors will provide operating funds against advertising rights for specified period. In addition, Name branding on bicycle to cover operating cost. During discussion, it has found that it is proposed to capture the funds under CSR from corporates to cover the capital or start-up cost.
Status	Proposal stage
Expansion Plan	Not applicable
Existing and Potential Issues	<ol style="list-style-type: none"> 1. Day to running issues will be identified when system will come in operation 2. Ambitious program with very optimistic figures of revenue from which may be successful considering success stories of public parks running on PPP mode in the city 3. Potential sources of funding have been identified. However, commitment or closure from any of the sources is pending.

ABOUT THE SYSTEM

Bicycle sharing system for Ahmedabad city is being developed by a local consulting firm known as “Centre for Green Mobility (CGM)”. CGM has conducted preliminary study to plan for the bicycle sharing system due to limitation of the data and resources it has limited to planning for University area.

The fare structure and operations schedule proposed by CGM is as under:

- First two hours free
- Next Half an Hour Ten Rupees
- One time User registration of 500 Rupees which refundable
- 16 hours of operations outside the campus and 8 hours of operations inside the CEPT campus.

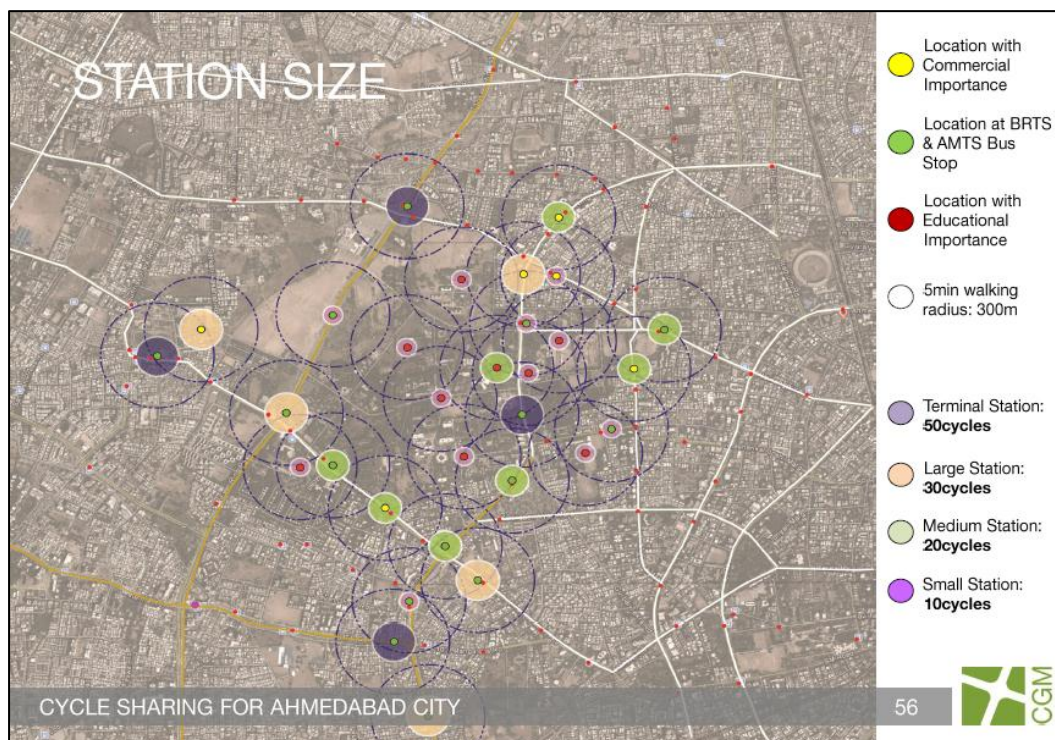


Figure 13: Proposed Bicycle Station size and Location in University Area, Ahmedabad

It was envisaged by the CGM that system will serve to daily commuters for short trips as well as feeder to public transportation. But after series of discussion with Ahmedabad Municipal Corporation (AMC) it is decided that system will be restricted to serve as feeder to existing BRTS system to enhance ridership. Later based on the success AMC may go for larger coverage. Operational Plan proposed by CGM provides the AMC monitoring power to control the quality of service. Broadly Business plan and Implementation plan has been approved by AMC but no launch date is being finalized.

2 BICYCLE SHARING SYSTEM FOR PUNE CITY

While estimating the system requirement for the PBS system it is important to decide which type of system to be used for the project. There are generally two types of system used in PBS projects i.e., manual and automated systems. The two subsequent sections provide a brief of these two types of the systems.

2.1 MANUAL SYSTEM

A manual bicycle sharing system is one where transactions related to taking out and returning a bicycle will be supervised. Supervision can be provided by a dedicated employee or by non-dedicated staff who have other primary responsibilities. For example, Namma Bicycle Sharing system in Bangalore, where bicycle sharing systems is managed and operated by the two-person team per station within the campus of Indian Institute of Science (IISC).

2.2 AUTOMATED SYSTEM

In an automated bicycle sharing system, transactions related to taking out and returning bicycle are unsupervised – the systems rely on self-service. Bicycle are either locked to special electronically controlled racks or are equipped with an electronically controlled lock of their own. In the former case, the racks are coin-, credit card-, or electronic key card-operated. In the latter case, the locks on the bicycle have a combination pad; users must call or send a cell phone text message to the bicycle sharing operator to obtain a combination to unlock the bicycle. Automated systems rely heavily on information technology for user interface, system control and monitoring. For example, ATCAG Bicycle Sharing system in Bangalore which has fully automated card based system at each select metro stations. Figure 14 represent the comparison between manual and automatic bicycle sharing system.

factor	manual	automatic
city size	small to medium	medium to large
loan duration	medium (>1 hr)	very short (<30 min)
daily users per bicycle	low (<5)	high (5-20)
capital cost (per bicycle)	low	high
operating cost (per bicycle)	medium to high	low to medium

Figure 14 Comparison of manual and automatic bicycle sharing systems, Source: Bike- Sharing Guide document, Transport Canada by Gris Orange Consultant, 2009

2.3 SPECIFICATIONS – BICYCLES AND STATIONS

As the PBS system need to be setup, the specifications of bicycle in such systems in different parts of the world need to be reviewed for providing the best design in Pune’s PBS. The review of the major bicycle sharing system has been provided as examples in the subsequent section along with the specific guidelines issued by Ministry of Urban Development (MoUD), India for Indian PBS systems. Also, in section 4.3, a station design has been prepared to accommodate the bicycles of the system. It has been prepared after doing the ground verification of the bicycle station locations which mainly includes the availability of the required space i.e., lengths and widths.

2.4 BICYCLE SPECIFICATION AS PER TOOLKIT FOR PUBLIC BICYCLE SHARING SYSTEMS, MOUD

As per the PBS toolkit provided by MoUD, the bicycle must be attractive and durable. It must have a unique design to easily identify in case of theft or vandalism. The overall appearance of the bicycle is a key element in the overall branding of a bicycle sharing system and should project a sleek, modern image. The design can differentiate the bicycle sharing fleet from regular bicycles in the city through distinctive design, colours, and graphics. The bicycle specifications for the bicycle to be used in Public bicycle sharing systems in India are presented in the Figure 15. These specifications are as per the “Toolkit for public bicycle sharing systems, Ministry of Urban Development, Government of India, Version 4, June 2012, page 10-11”.

Front basket

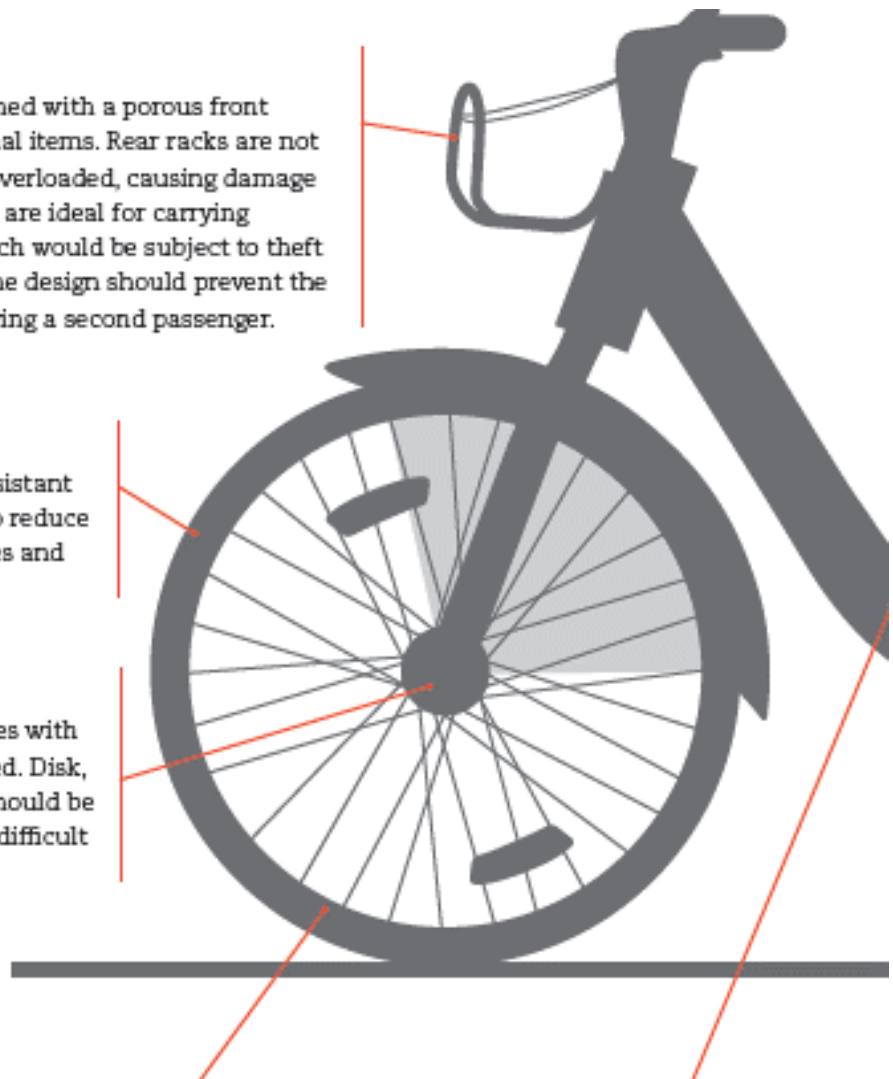
The cycle should be designed with a porous front basket for carrying personal items. Rear racks are not advisable as they can be overloaded, causing damage to the cycle. Front baskets are ideal for carrying purses and valuables, which would be subject to theft if carried in a rear rack. The design should prevent the use of the basket for carrying a second passenger.

Sturdy tyres

Solid tyres or puncture resistant tyres are recommended to reduce the frequency of punctures and increase life expectancy.

Drum brakes

Front and rear drum brakes with internal wires are preferred. Disk, cantilever, and V-brakes should be avoided because they are difficult to maintain.



Protection against theft & vandalism

The cycle should be made from unique parts and sizes to deter theft. This includes the tyres and rims: the standard 26-inch tyre size should be avoided. Nuts and screws should be designed so that they can only be opened with proprietary tools.

Step-through frame

A step-through frame design is required to ensure that the cycle is compatible with all types of clothing. The frame should allow for a comfortable upright riding position.

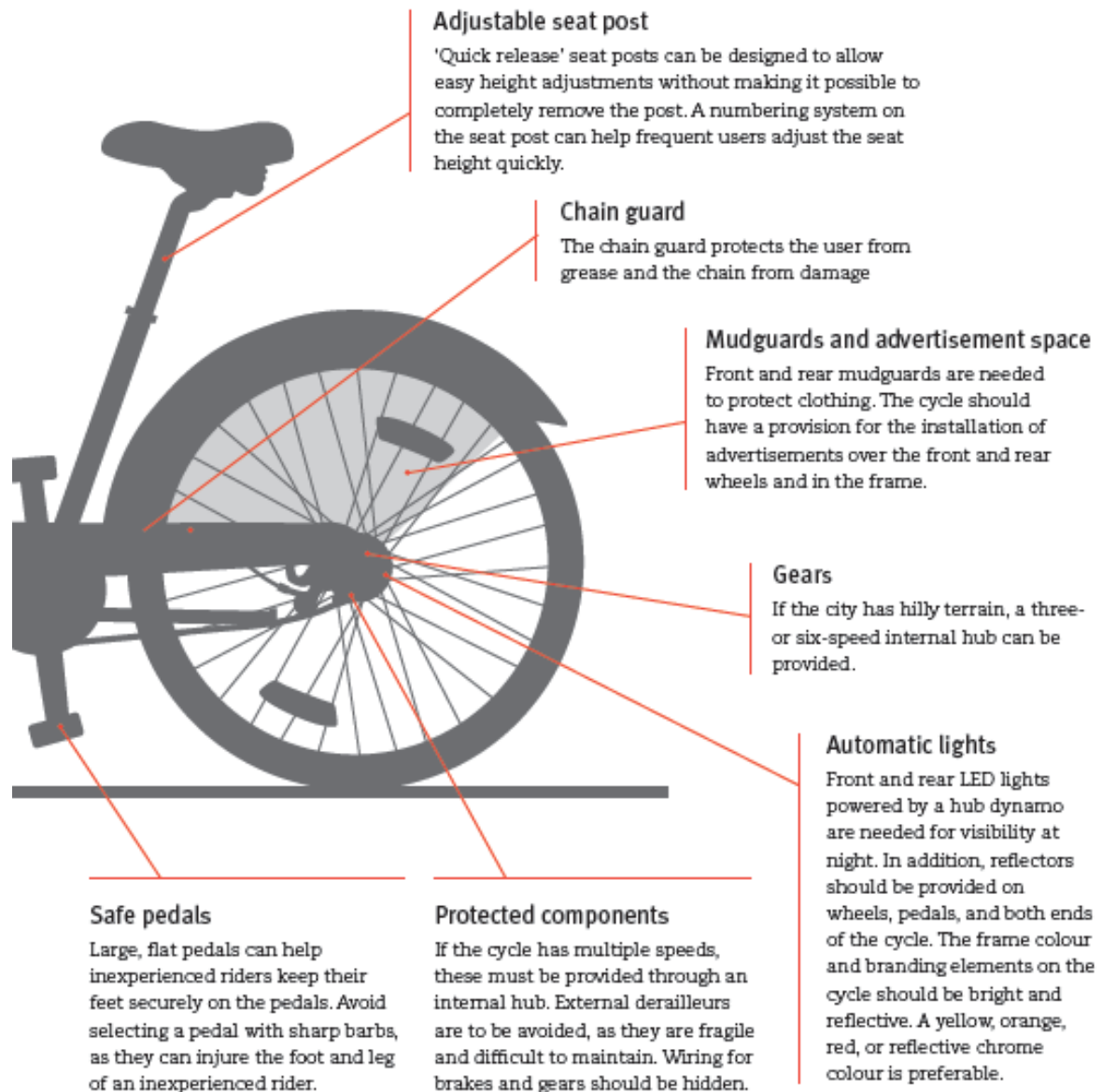


Figure 15 Bicycle Specifications, Source: PBS toolkit, MoUD

The examples of specifications of bicycle used in other countries are described as under:

Public bike sharing scheme in Denver, Colorado, USA

Chain Box: Chain Box so that the chain is not rusted.

Brakes: Rom Brakes not used, external wires absent. Hub Brakes can be seen.

Wheel and Tube Size: To set up in places that are frequently visited by the students (like Canteen)

Stand: Double Kickstand at the centre

Lights: The front and rear lights are always on when the bike is in motion, powered by a generator (“dynamo”) in the front hub. If the front wheel stops rotating, such as when you stop at a stop sign, the lights will remain illuminated, but only for a short time.



Figure 16 Bicycle from Public Bike sharing scheme in Denver, Colorado, USA

VELIB Public bike sharing scheme in Paris, France

Weights: 22.5k.

Chain Box: Chain Box not present

Brakes: Hub Brakes can be seen

Wheel and Tube

Size: 26 inches

Stand: Double Kickstand at the centre

Other features:

- Easy to use system for adjusting saddle height
- Capacious front basket
- SUPER Rear wheel chain guard to protect clothing
- Front and rear lights automatically turned on always, day or night
- Front and rear brakes built into the wheel hubs
- Wide handlebars for greater stability.
- Anti-theft device with built-in key.

Lights: The front and rear lights are always on when the bike is in motion, powered by a generator (“dynamo”) in the front hub. If the front wheel stops rotating, such as when you stop at a stop sign, the lights will remain illuminated, but only for a short time.



Figure 17 VELIB Public bike sharing scheme in Paris, France

BIXI Public bike sharing scheme in Montreal, Canada

Chain Box: Chain Box so that the chain is not rusted.

Brakes: Rim Brakes not used, external wires absent. Hub Brakes can be seen.

Wheel and Tube

Size: To set up in places that are frequently visited by the students (Canteen)

Stand: The aluminium-frame BIXI weighs 20 kilograms and has three gears. Designer Michel Dallaire opted for an enclosed chain, as well as hidden cabling to reduce the prospects of oil stains and vandalism.

The BIXI has always with a rack and bungee cord for storing a handbag or briefcase. Seat height is the sole possible adjustment by any user.

Lights: The front and rear lights are always on when the bike is in motion, powered by a generator ("stops rotating, such as when you stop at a stop sign, the lights will remain illuminated, but only for a short time).



Figure 18 BIXI Public bike sharing scheme in Montreal, Canada

Next bike – Public Bike sharing system in Glasgow, United Kingdom

Following is the detailed design specifications of the bike used in the mentioned PBS system in the U.K.



- | | |
|---|---|
| 1. nextbike advertising panel | 14. steel fork with v-brake |
| 2. aluminium cover with bike number | 15. Shimano hub dynamo |
| 3. saddle with theft protection | 16. light-alloy v-profile rims |
| 4. aluminium seat post | 17. puncture resistant tires with reflective strips from Schwalbe |
| 5. adjustable quick-release | 18. bottom bracket with aluminium crank |
| 6. nextbike aluminium frame for application of advertising | 19. aluminium pedals |
| 7. frame colour: silver-grey, powder-coated | 20. robust aluminium side stand |
| 8. aluminium handlebar stem | 21. stable chain guard |
| 9. aluminium handlebars | 22. Nirosta anti drop chain |
| 10. robust bicycle bell | 23. Shimano 3-speed hub gears |
| 11. front wheel basket (suitable for laptop cases) | 24. backlight in accordance with German traffic safety standards |
| 12. front wheel mudguard with splash guard | |
| 13. headlight in accordance with German traffic safety standards attached to fork | |

Figure 19 Next Bike bicycle specifications from Next bike public bike sharing system in Glasgow, United Kingdom

2.5 TYPICAL INFRASTRUCTURE COMPONENTS FOR BIKE SHARE SYSTEM

The major infrastructure components required in a Public Bicycle Sharing system has been mentioned in a generic manner in the subsequent sections, following which the Pune specific technical requirements have been described.

2.5.1 Bicycles

Shared bicycles need to be easy to use (refer Figure 20), adaptable to users of different sizes, mechanically reliable, resistant to vandalism or theft and distinctive in appearance. Bicycle should have the following features: an enclosed chain, an adjustable seat, mud- guards, reflective strips on the wheels, front and rear lights, a bell, a kickstand, a portable lock, a handlebar mounted bag rack or a basket; and wide, air filled tires.



Figure 20 Bicycle sample FROM Melbourne Bike Share, Source: iTrans

2.5.2 Docking stations

Where bicycles are locked to designated docks when not in service (refer Figure 21). In most cases, bicycles are attached to the dock via a specialized coupling system. The docks therefore act as “stations”. The clear majority of bicycle sharing systems across the globe feature fixed stations. Even though it’s looked at fixed stations there will be personnel at every station to help the undocking and docking for the first-time users. The docks can be controlled by push button system in the station using a totem device, used for issuing codes for undocking the bicycles.



Figure 21 Docking Stations Sample: Toronto Bikeshare(left) and Montreal Bike Share (right), Source: iTrans



Figure 22: Sample of a dock from Bangkok (left) and Toronto (right), Source: iTrans

2.5.3 System access and user registration

To access bicycle at docking stations, users need to pay the fees and undock the bicycle. As explained above undocking can be done through automatic registration terminal also called as a totem device, Refer Figure 23. However, for payment of user fee, one time online registration

can be done through PBS system specific mobile based applications or a city mobility card. This registration will also serve as the record of the user and users can also avail lucrative discounts through monthly or yearly memberships.



Figure 23 Totem Device from Toronto Bikeshare (left) and Montreal Bikeshare (right), Source: iTrans

2.5.4 Status information systems

Real time information about the availability of bicycle at stations, is necessary for the individual user as well for the operator. A web based central control room connected to information supplied by individual stations can be used to disburse the information. The information can be sent to register users via message on mobiles or to anybody who is connected to the android application of the PBS system as an alert or update.

2.5.5 Maintenance program

Maintenance and logistics are large operational issues, it is especially depended upon the quality of bicycle used in the system. One mobile repair vehicle for every 500 bicycle can be proposed for this project for monthly service and replacement of parts of bicycle.

2.5.6 Bicycle redistribution vehicles

In peak hours or even in off peak hours it may be observed that bicycles are accumulated at one station or select stations. Thus, it's required to redistribute them to other stations where it can

be made available to other users. It is proposed to deploy at least 1 redistribution vehicle (refer Figure 24) for every 50 bicycle which can be a modified e-rickshaws. Also, credit reward or incentive can be given to users to ride a bicycle from crowded stations to empty stations.



Figure 24 Sample of redistribution vehicles, Source: <http://www.geograph.org.uk/photo/3015221> (left) and https://upload.wikimedia.org/wikipedia/commons/7/71/Bike_Rio_01_2013_5436.JPG (right)

2.6 INFRASTRUCTURE COMPONENTS REQUIRED FOR PUNE CITY BICYCLE SHARING SYSTEM

After understanding the generic technicalities of the bicycle and various infrastructure components in the previous sections, various lists of minimum technical specifications have been prepared for the Pune bicycle and supporting infrastructure which are as follows:

Table 1: Minimum technical specifications for bicycle

S. No.	Part	Bicycle- Minimum Specifications
1	Frame	One-Size Fits all with Step Through Frame
2	Design	Visible difference of the bicycle from regular bicycle in the market through design
3	Seat	Seat Adjustable without any tools and non-removable.
4	Weight	Sturdy, light weight Frame with a maximum weight of 23 kgs.
5	Lock	Integrated lock to temporary lock the bicycle out of the station. It shall be operated with the smart card. The bicycle must have a double security lock when out of the station (e.g., blocking the steering wheel or similar).
6	Basket/Carrier	Front mounted Basket with a capacity up to 10kg
7	Ad space	Ad Space on basket and the sides of the bicycle
8	Breaks	Breaking and gear systems: Roller break system and rear wheel integrated gear system devoid of exposed wire brakes.
9	Gears	Simple gear system with a 3-speed gear
10	Material	Rust and Graffiti Resistant
11	Mud Guards	Front and Rear mud guards with fenders
12	Chain type	Enclosed mechanisms

13	Light	Lighting systems shall be LED based and powered by dynamo integrated in the front wheel.
14	Bell	Bicycle bell
15	Reflectors	Reflectors on front, sides and back
16	Tyre	The bicycle tyres must be puncture protected
17	Stand	A kick stand

Table 2: Minimum technical specifications for stations

S. No.	Stations- Minimum Specifications
1	Modular design- easy to construct and de-construct. Station location can easily be changed.
2	Installed in a manner that ensures safety of the stations infrastructure and bicycle
3	Covered Station- Bicycle and space for station attendants should be covered to ensure protection from the heat and rain. However, Open station (bicycle docking space) will also be accepted.
4	Accommodates gaps caused by on-street obstructions such as manhole covers
5	Space/ kiosk for display of system information like system map and nearby PBS stations, how to use the system, temporary space for station attendants to register users and assisting in undertaking MI card transactions. Manual assistance may be only for first 6 months but the person will not be involved in any transaction at the station. MC's view was that we should not make this a requirement from our side as it will add considerable cost. For putting up system information, the vendor should be required to put maps of the system and information at pre-defined places.
6	One panel for Advertisements at each station. Refer Annexure J for detailed specifications for each station type.
7	Rust and Graffiti Resistant design of docks/ locking posts and advertisement panels

Table 3: Minimum technical specifications for docks

S. No.	Docks- Minimum Specification
1	Separate docks for each bicycle
2	System Bicycle are locked on to docks/ locking posts and never to each other
3	Simple design which do not consume a lot of space
4	Rust and Graffiti free material
5	Guaranteed life of at least 7 years

Table 4: Minimum technical specifications for devices

S. No.	Device- Minimum specifications
1	Simple and non-bulky design
2	GPRS enabled. Able to communicate real time information to the Central control room.
3	Reads MI cards and indicates validity of the MI card and availability of minimum balance within 5 seconds (refer Annexure C)

4	Transmits information about bicycle id and dock id and time of check in and check out to the Central Control Room
5	Able to communicate with the control room check in and check out of bicycle at the station and number of bicycles available at any given point at the station.
6	User satisfaction/experience to be captured at the end of every trip.

Table 5: Minimum technical specifications for central control system

S. No	Central Control System- Minimum Specifications
1	Connected to all the registration centers and station check in and check out equipment at the stations
2	Able to compile information at station level and system level
3	Able to track the availability of bicycles and docks at each station of the system
4	Able to use the bicycle and dock availability information to make decision on redistribution of bicycles
5	Able to provide real time information of the system to PMC
6	Able to receive and save all records on a searchable database
7	Guarantees data security as per Indian law and international best practices.
8	All data is the property of PMC
9	Central Computer System should be upgraded and maintained daily
10	The fare system is integrated with the fare system of PMPML bus service i.e. through MI card.
11	The Contractor will provide reports to PMC in accordance with an agreed upon schedule.
12	Physically staffed Office space housing the central control system
13	Computer terminals and communications equipment allowing Bidder staff to monitor system status
14	Call center clause: The bidder shall provide a call center number for queries and feedback for the system.

Table 6: Minimum technical specifications for redistribution vehicles

S. No.	Redistribution Vehicles- Minimum Specifications
1	Designed to ensure transfer of bicycles without any damage.
2	Follows the same brand guidelines for the entire system. Should look like a part of the rest of the system
3	The redistribution vehicle shall comply with the MV act at all times of the operation, especially the emission norms.

Table 7: Minimum technical specifications for depots/workshops

S. No.	Depots/ Workshop- Minimum Specifications
1	Space to store extra/ back up bicycles for the system
2	Space to store back up check in/ check out devices and other equipment
3	Space to undertake repair of bicycles of the system
4	Space to store the required tools for repairs and maintenance

Table 8: Minimum technical specifications for registration centres

S. No.	Registration Centre- Minimum Specifications
1	Enabled to collect ID proofs and other required documents to register a user to the system
2	Enabled with the required equipment or technology to issue a new user id to new customer
3	Enabled to issue personalized MI cards.
4	Enabled to collect and return security deposits
5	Enabled to handle the MI card, mobile and cash transactions for subscription fees and top up of MI cards
6	Enabled to link the transactions to the relevant user id
7	Enabled to maintain privacy of personal data/ information of users

Table 9: Minimum technical specifications for mobile app

S. No	Smart Phone App- Minimum qualification
1	Smart Phone apps for devices manufactured in and after 2014 are provided for at least the Android, Windows and Apple operating system
2	Should be able to provide information about the system- static and real time for the ease of the user
3	Should be linked to Google maps

3 POTENTIAL DEMAND ESTIMATION

An estimation of the bicycle demand for the proposed PBS system has been done. The following sections contains the methodology and the detailed calculations for the same.

3.1 BICYCLE DEMAND ESTIMATION METHODOLOGY

The bicycle demand for the PBS system i.e. the number of bicycle required for the bicycle sharing system, has been estimated from the user survey data using the logistic regression modelling.

Whereas, for calculating the universe of the short cyclable distance trips, the household survey data has been used. The per capita trip rate (PCTR) for the city i.e. total number of trips in a household divided by the household size, has also been calculated from the household survey data. Then PCTR number has been multiplied with the total projected population¹ (for 2016) of the city to extrapolate the actual number of the trips in the city.

The household survey data has also been used in calculating the mode share of the city (refer Figure 25). This mode share has been used to extrapolate the mode wise total trips in the city. It has been calculated by multiplying the respective mode share percentages with the extrapolated actual number of the trips in the city.

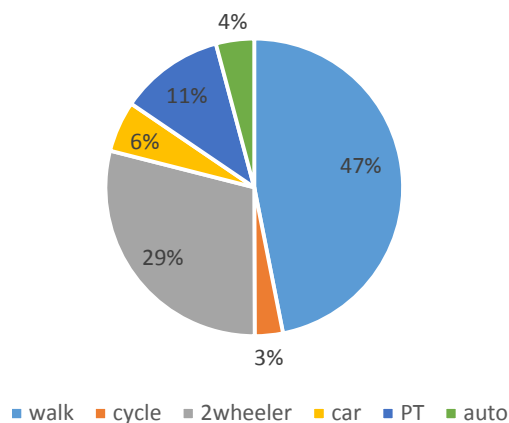


Figure 25: Mode Share

¹ The population projection has been done using various methods but the outcome of the arithmetic progression method has been finalised for the population projection of 2016 as this was showing the closest value of projected population of 2011 when compared with the actual population of 2011.

Similarly, the mode wise short distance trips have also been extrapolated. Then, this mode wise short distance trips data has been used in the logistic regression analysis.

An estimation for the overall short distance trips in the city that can be shifted to PBS has been done for a range of probabilities i.e. from 0.5 to 0.9. However, the most probable scenario values i.e., 0.9 probability have been considered for the Pune PBS demand estimation (refer Table 10).

The number of bicycles required for the Pune PBS were then calculated from these figures by dividing them by 7 which is the number of times a bicycle of bike share system is typically used every day. These were then proportionately divided in all the wards and calculations were further done for the Phase 1 area i.e. by adding the number of bicycles of Phase 1 wards. The methodology of finalising the Phase 1 boundary has been described in section 4.2.

Table 10: Mode wise trip shift and required bicycle in the most probable scenario

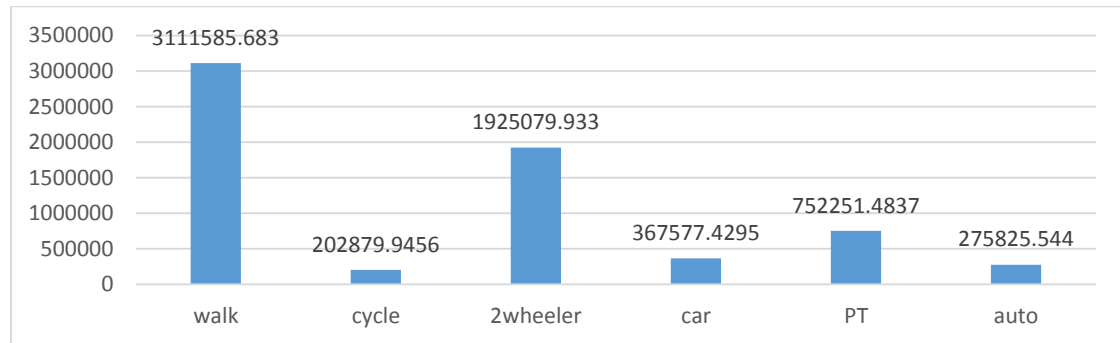
0.9 cut off		Bicycle Sharing bicycle requires at 0.9 cut off	
short trips shift from user survey model		100%	First phase
8%	1,98,354.01	28,336	10,893.57
29%	53,382.92	7,626	2,931.78
6%	59,359.74	8,480	3,260.03
0%	-	-	-
5%	17,125.12	2,446	940.51
7%	13,204.29	1,886	725.18
	3,41,426	48,775	18,751

3.2 BICYCLE DEMAND ESTIMATION

The per capita trip rate (PCTR) for the city of Pune has been calculated i.e., 1.92. It has been calculated by dividing the total number of trips (11,643) from the household survey by total number of people surveyed (6,074). Then this PCTR number was multiplied with the total

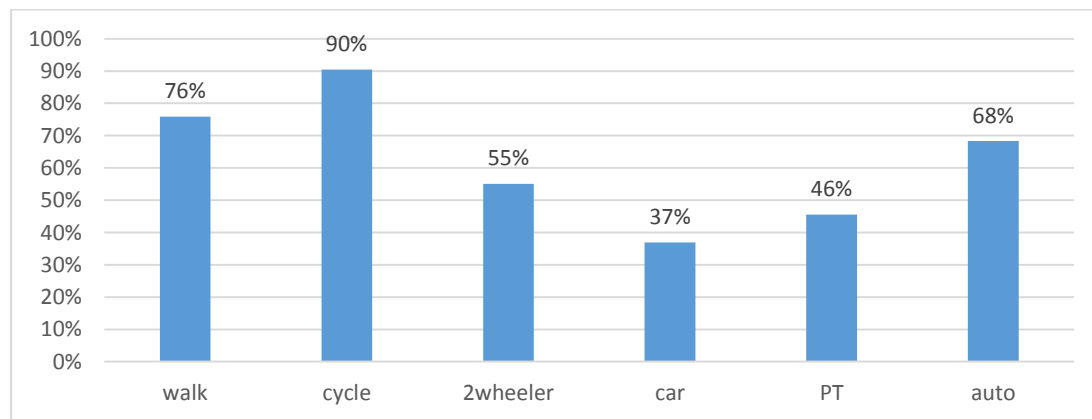
projected population i.e., 34,61,497 for the year 2016, providing the estimated number of total trips in the city, which are estimated to be 66,35,200. Table 11 shows the mode wise distribution of these estimated trips.

Table 11: Mode wise estimated number of total trips



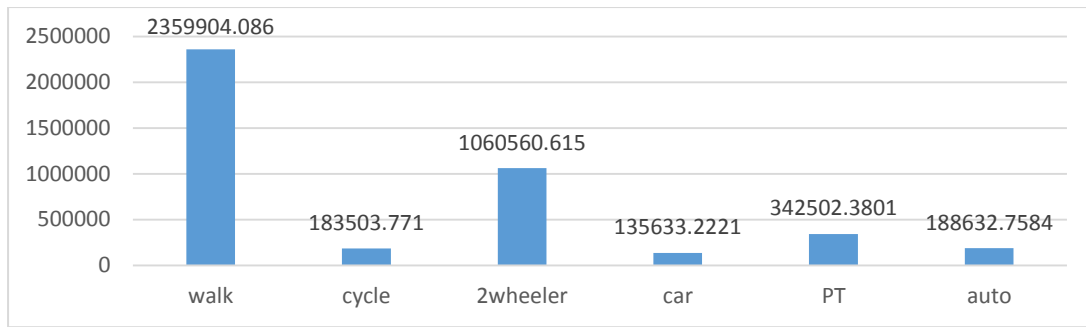
The mode wise total short distance trips were estimated from the household survey data which were about 7494 out of 11,643 i.e. 64% of the total trips for which the mode wise percentage share of these trips are given in Table 12.

Table 12: Mode wise percentage share of short distance trips



The total short distance trips have been estimated by multiplying the respective percentage share of mode wise short distance trips with the respective mode wise estimated total trips in the city. The total short trips in the city are estimated to be about 42,70,737 for which the mode wise bifurcation is given in Table 13.

Table 13: Mode wise estimated short distance trips



On these mode-wise estimated short distance trips data, logistic regression analysis has been performed for which, the most probable (0.9) scenario has been considered as mentioned in section 3.1. The total short distance trips in this scenario were found to be 3,42,426 in number. For estimating the demand of the bicycles for the bicycle share system, the estimated short distance trips i.e. 3,42,426 from the logistic regression analysis have been converted to 48,775 by dividing them with a factor of 7, which is, the number of times a bicycle is used every day. These bicycles were divided in all the wards in proportion with the ward population. The estimation of number of bicycles in the identified Phase 1 area is calculated by adding the number of bicycles estimated in Phase 1 wards. The selection criteria for the Phase 1 wards have been mentioned in section 4.2. The bicycles estimated in the phase 1 area are about 18,751. Refer Table 10.

4 STATION LOCATION METHODOLOGY

Locating the Bicycle Share stations is one of the most important aspect for the successful implementation of the bicycle share system. As, in the presence of a network of stations, it becomes easy for capturing the potential users to use the system. Moreover, such facilities become highly visible and easy to access when planned correctly. However, getting the required space to install the docking stations at specific locations becomes a challenge in Indian cities and especially in the dense areas where, even the demand of such systems is high. Following is the methodology stating the base criteria used and the verification done on ground to validate the final proposal of docking station locations, capacity and design:

4.1 PRIMARY AND SECONDARY STATIONS LOCATION METHODOLOGY

To fulfil the objective of providing last mile connectivity to the public transport modes using a bicycle share service, the first step taken was to locate the primary PBS stands at bus stops which are generally at a distance of 500-700 m. Bus stop locations have been considered for the same. Then a 3km buffer (cyclable distance) has been made for all the public transport routes (bus/BRTS) (refer Figure 26) and then, the secondary PBS stands were identified at a distance of 300-400 m to fulfil the basic criteria of a dense bicycle station network. It is for providing a walkable access to a bicycle station from anywhere in the network area. However, after locating all the primary and secondary stations, the overlapping stations i.e. stations having distance less than 300m, have been discarded to avoid repetitions (refer Figure 27). Figure 28 represents the tentative locations of primary and secondary PBS stations in the city.

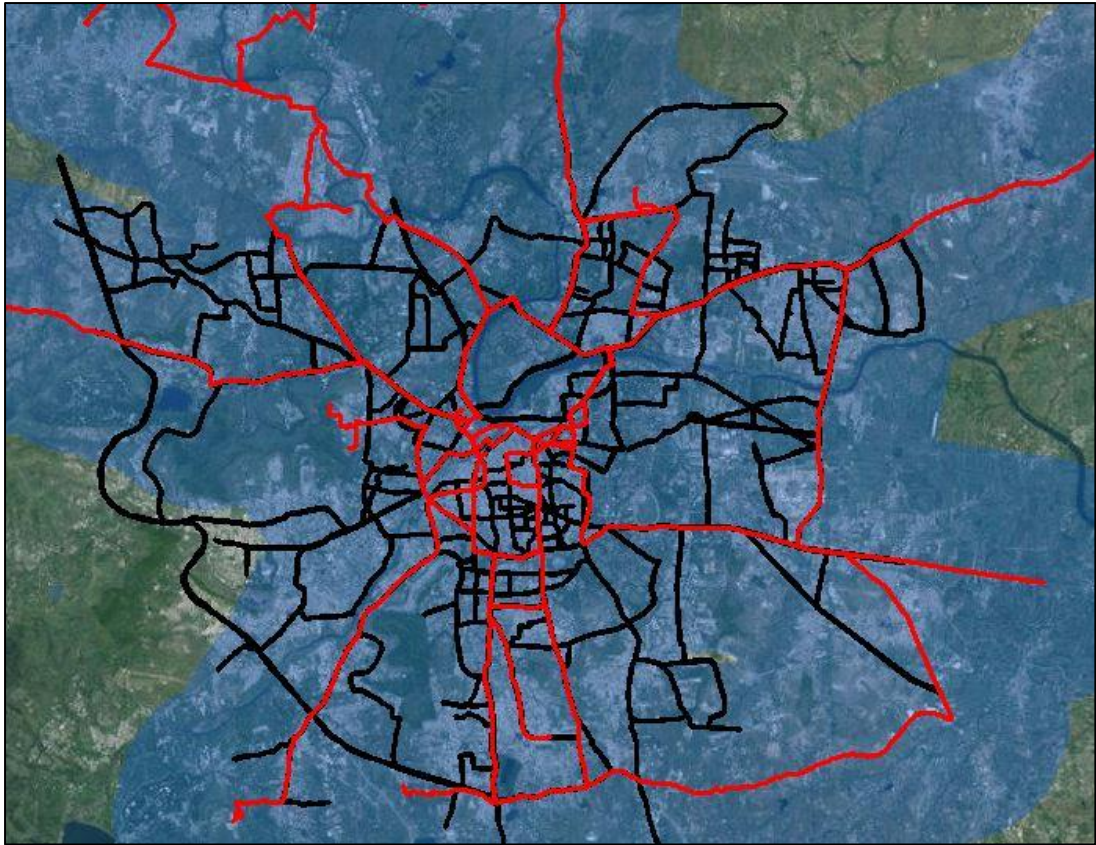


Figure 26: 3km buffer of the public transport routes of Pune

Source: iTrans

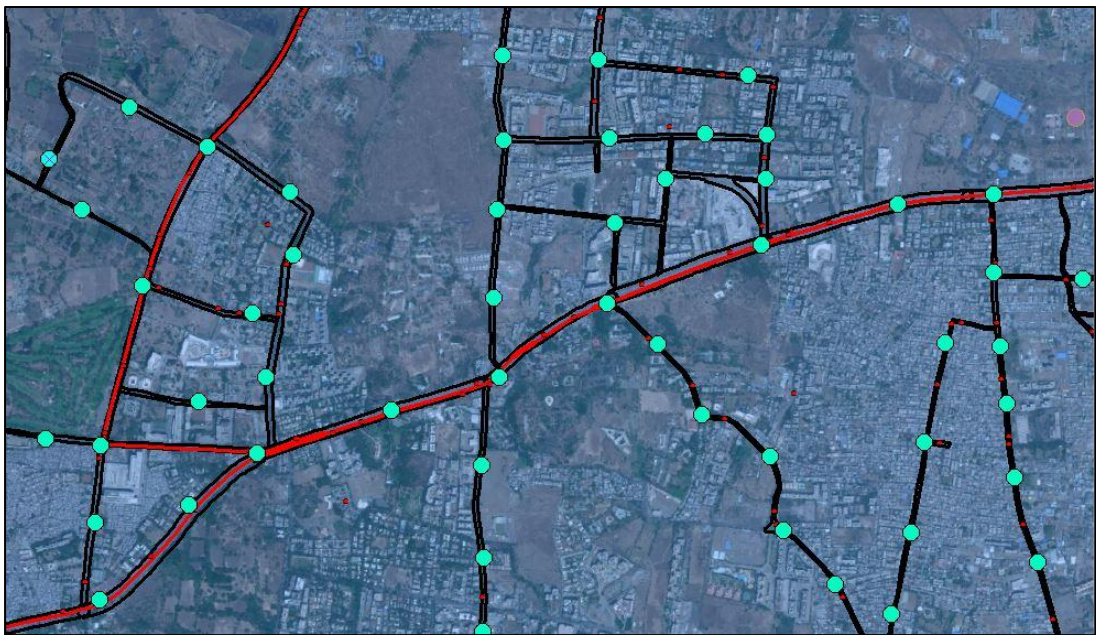


Figure 27: Sample of primary and secondary bicycle sharing station locations

Source: iTrans

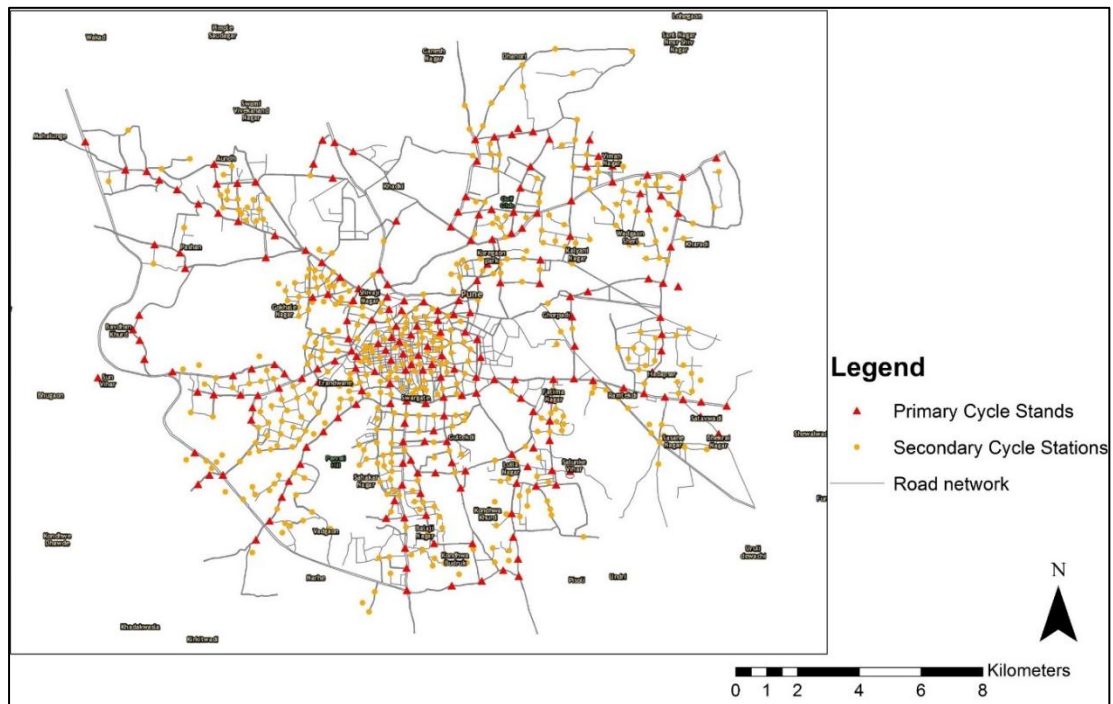


Figure 28: Locations of Primary and Secondary PBS stations

Source: iTrans

Around 220 Primary stand and 440 secondary stations were identified for the entire city by using the methodology mentioned above. The capacity of primary station was considered double as that of the secondary stations because the primary stations have been strategically placed where the demand would be high and are located mainly on the major roads or nearby commercial or institutional areas. Moreover, station locations are based on land use, major landmarks, population density and the criteria of having an average distance of 300m between two stations i.e. the walkable distance from any place in the PBS area. Section 4.2 provides the selection criteria of Phase 1 boundary with the actual number of bicycles that will be part of the Phase 1. It has been finalised after performing a thorough ground verification of the station locations with the ward engineers.

4.2 GROUND VERIFICATION AND PHASING

After estimating demand of bicycles in Pune for the PBS system and identifying the potential station locations, the ground verification of each location falling in the Phase 1 area was done considering the ease in access to the station and availability of the amount of area at specific locations as the two main criteria. Figure 29 shows few locations of the ground verification process of the station locations.

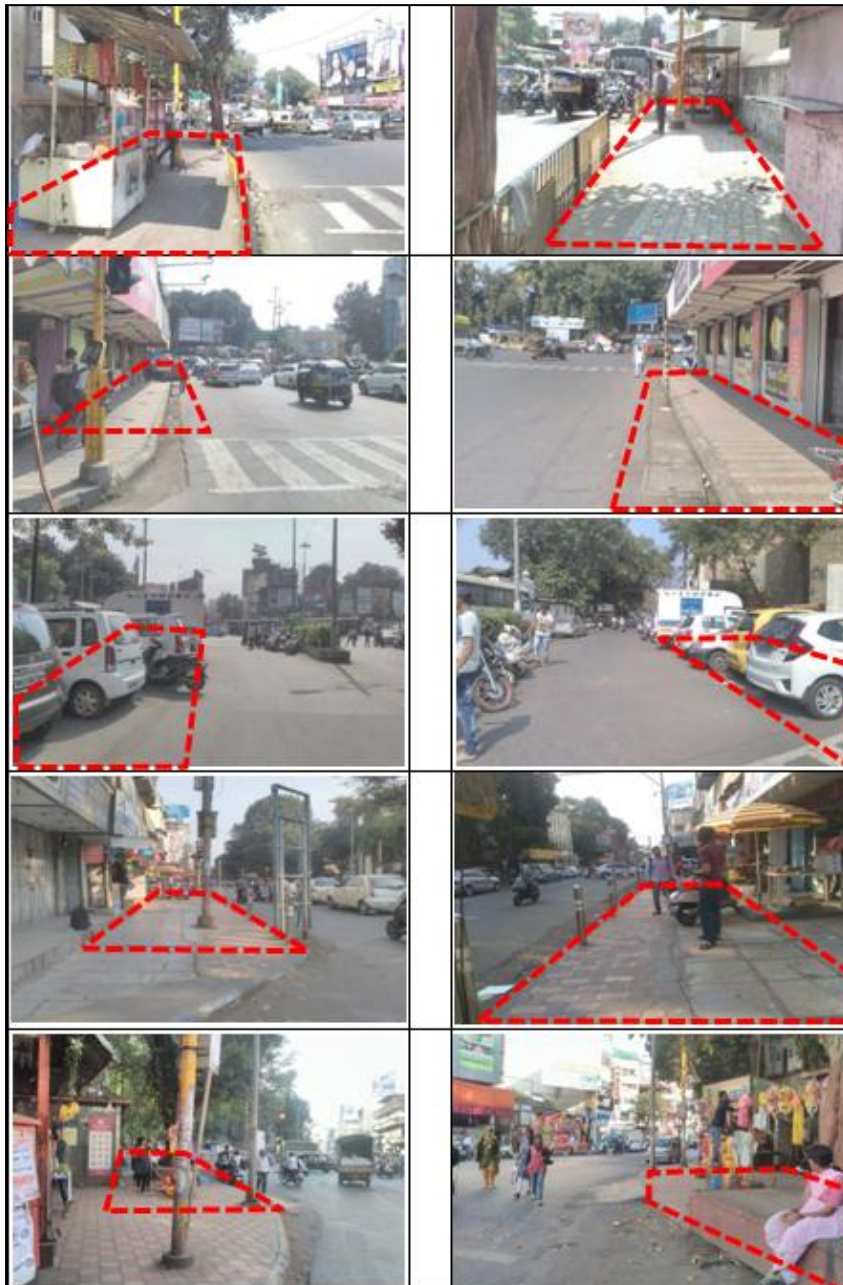


Figure 29: Various locations for PBS stations

Source: PDA

Figure 30 shows an example of the verification process in which area from the present motorised vehicles parking would be considered for placing the docking stations.



Figure 30: Parts of present motorised parking areas to be converted into a PBS docking station

Source: PDA

Phase 1 area has been finalised based on the bicycle density of the wards. Figure 31 shows the ward wise bicycle density for the PBS system and depicts the high demand areas, which are the wards having an estimated bicycle density equal to or more than 451 bicycles per sqkm.

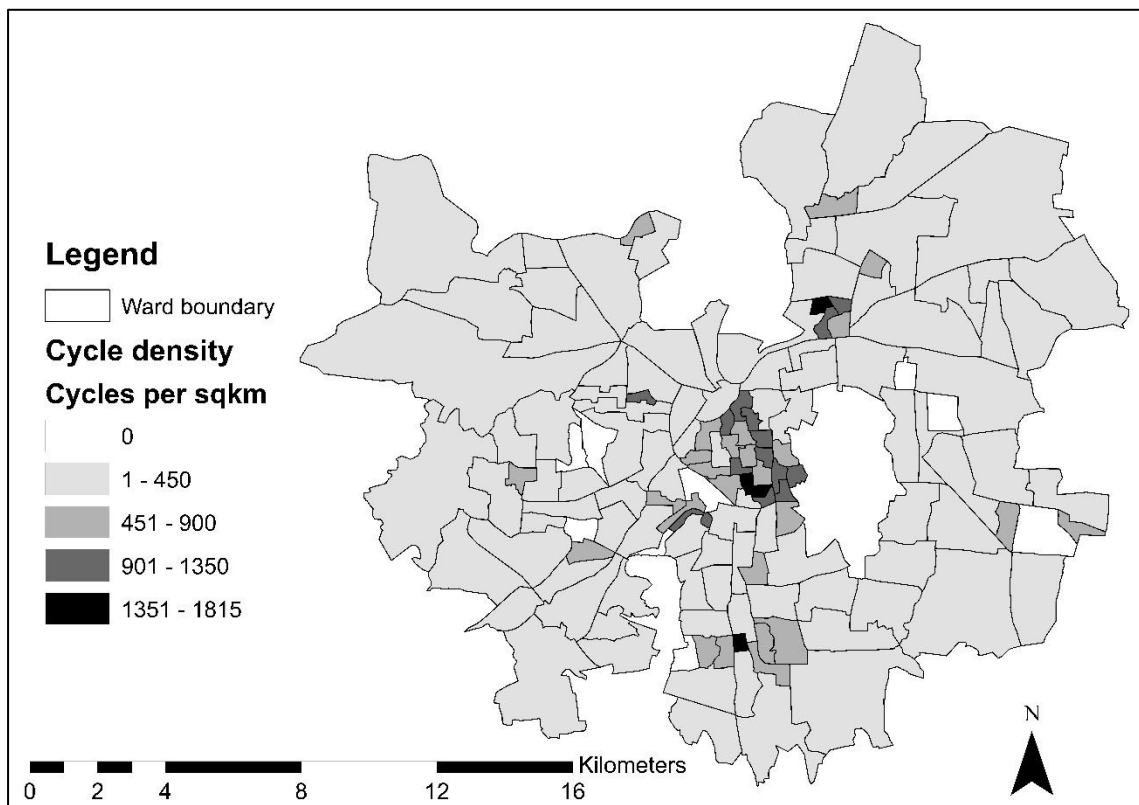


Figure 31: Ward wise Bicycle density

Source: iTrans

While performing the ground verification, most of the primary and secondary bicycle station locations were either shifted slightly from the original locations i.e. the primary and secondary station locations, or were sub-divided into two or three stations for ease in access to the station and placement of station. Figure 32 shows the Phase 1 area of PBS with the type of stations which are based on the number of modules whereas Table 14 shows the bicycle distribution.

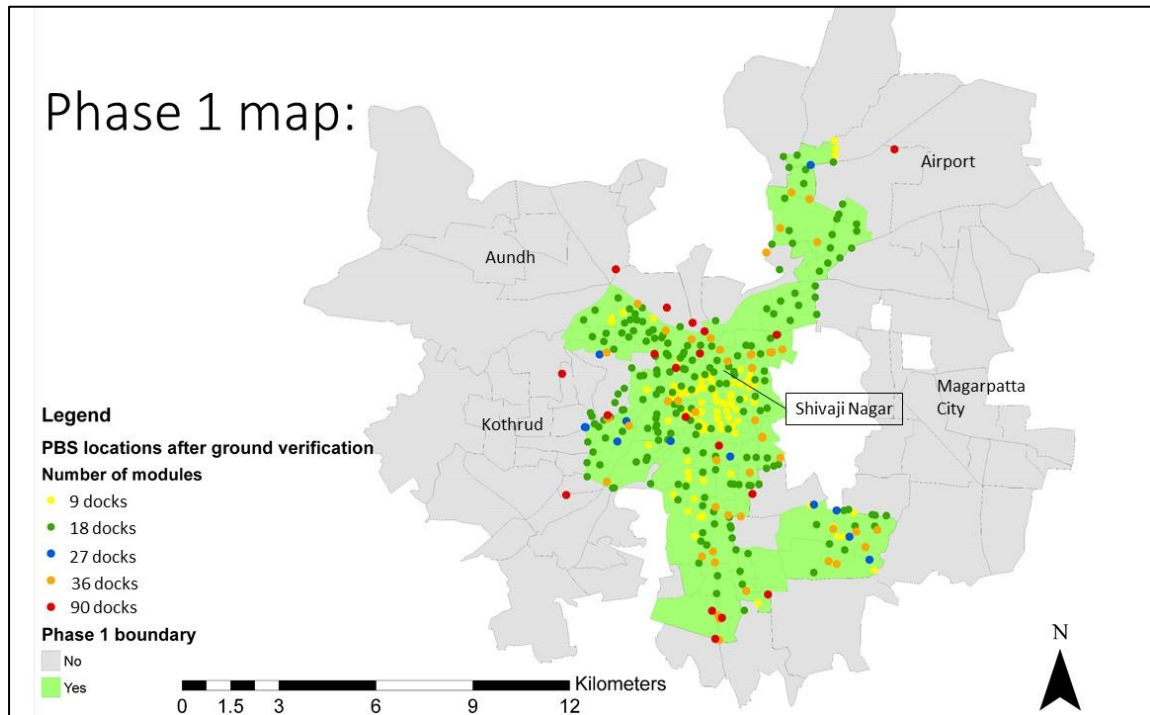


Figure 32: Phase 1 PBS area

Source: iTrans

Table 14: Bicycle distribution as per station capacity

S. No.	Number of docking station	Number of modules (5 bicycles and 9 docks each)	Number of bicycles
1	20	10	1000
2	47	4	940
3	12	3	180
4	209	2	2090
5	100	1	500
Total	388		4710

4.3 STATION DESIGN

A station space would consist of bicycle parking locking space i.e. docking points, totem- device used for issuing codes for undocking the bicycles and information cum advertisement spaces. It is proposed to have multiple number of docking stations at easily accessible locations and high density to encourage use of this scheme. The docking station shall have a maximum capacity of 30 docks in general and 90 docks at specific locations like transit hubs, universities, etc. All stations need to accommodate a fully automatic system, which will have docking and un-docking of bicycles with MI cards. This system design will improve efficiency, and provide a better user experience. Docking stations are the entry point for any user to the system and play very important role in brand building. Stations will be designed to look similar and will be either planed linear i.e. in one single row or in two rows, as per the space availability. The stations will have two information cum advertisement spaces on both the sides of 21 sqft each i.e. 42sqft of information space and 42 sqft of advertisement space, on all the stations. The proposed designs of docking stations located in Anand Nagar- Karve Paud road and Kalyani Nagar- Yerwada East Avenue road are shown in Figure 33, and Figure 34 respectively.



Figure 33 Proposed Station Shelter Design

Source: PDA

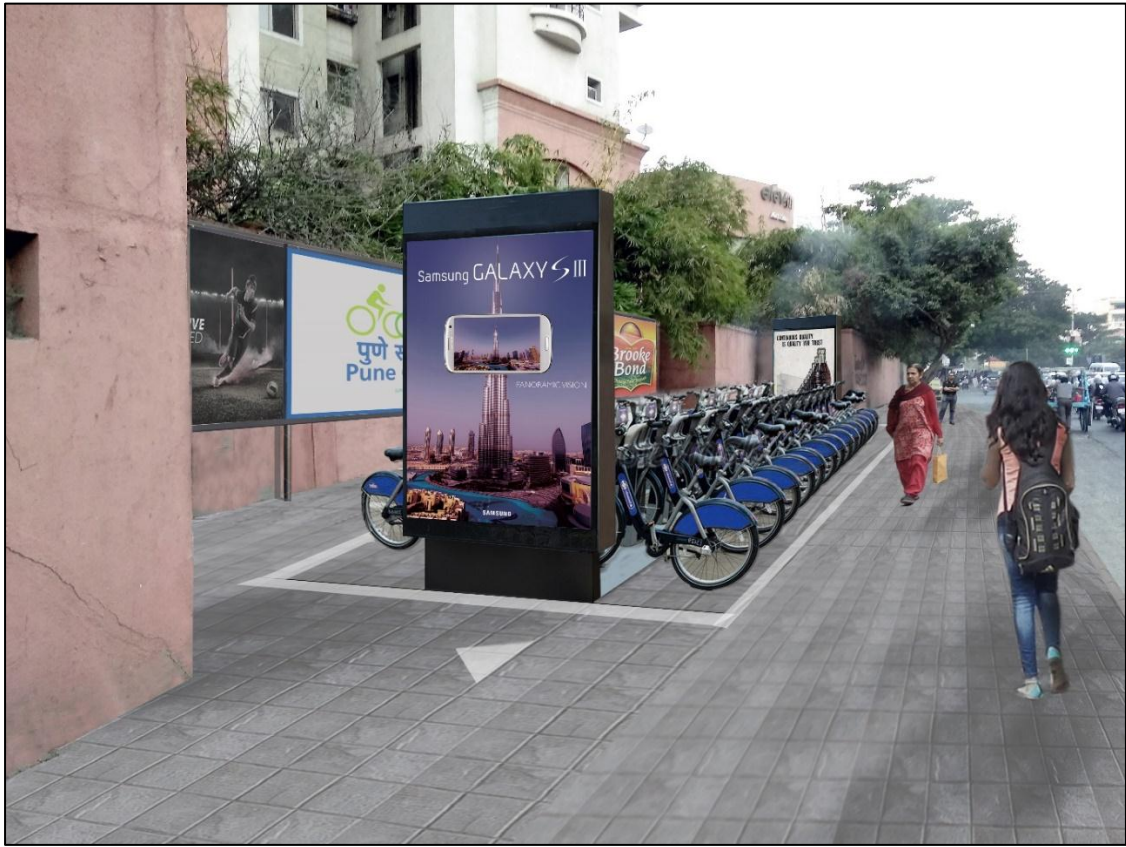


Figure 34 Proposed Docking Station Design

Source: PDA

The details about dimensions, plan view and elevation are presented in the figures below.

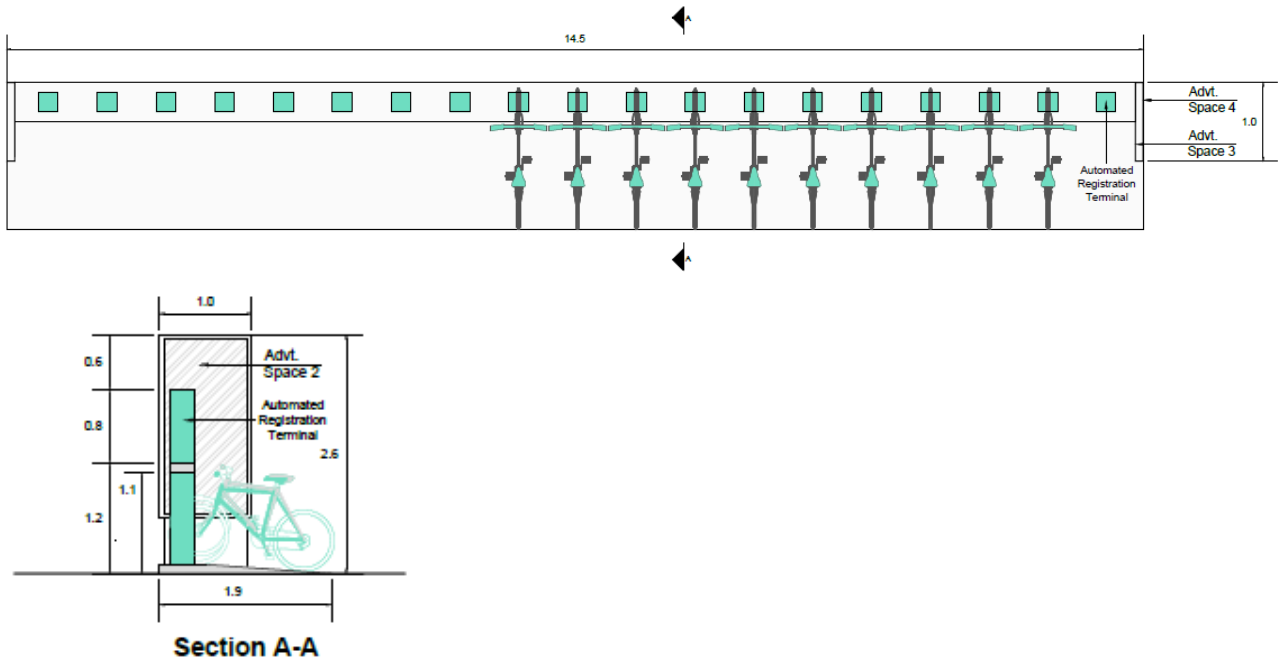


Figure 35 Proposed Plan and section of a linear station with 18 docks

Source: PDA

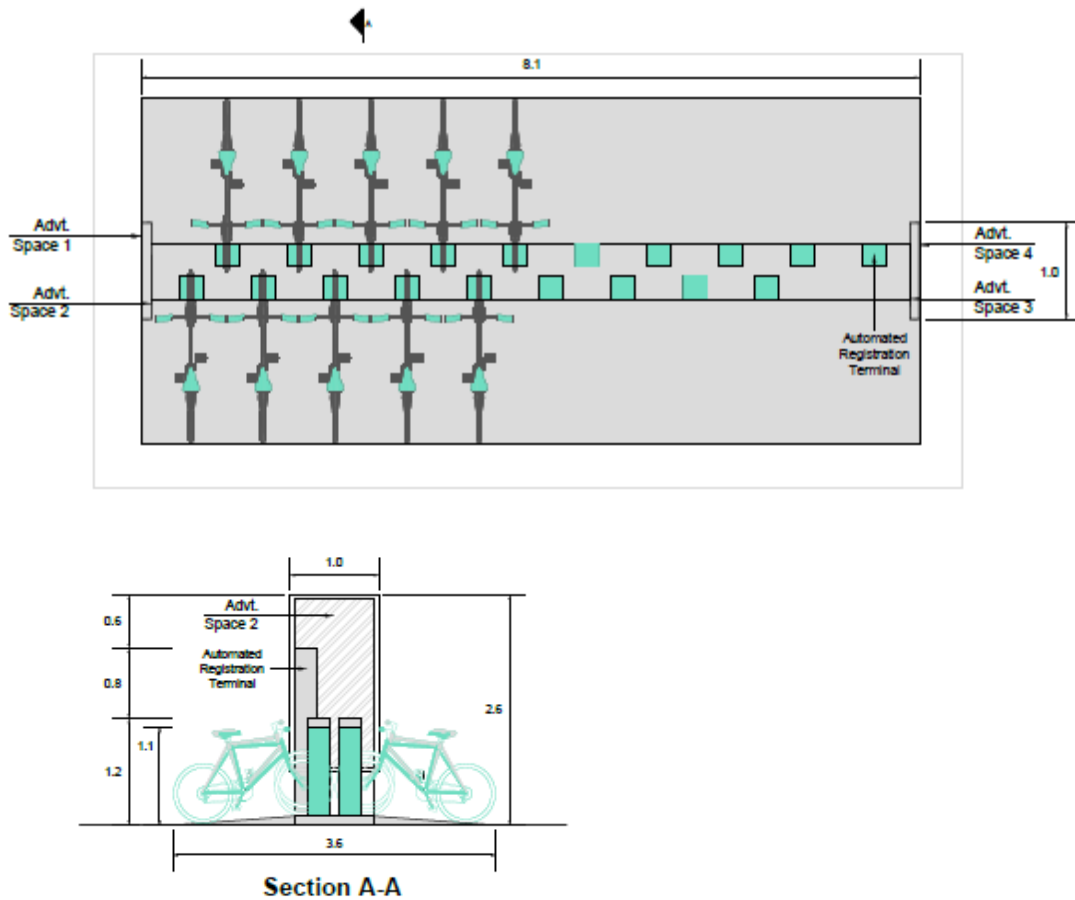


Figure 36 Proposed Plan and section of a two-row station with 18 docks

Source: PDA

The Elevation and section can be seen in Figure 37 and Figure 38

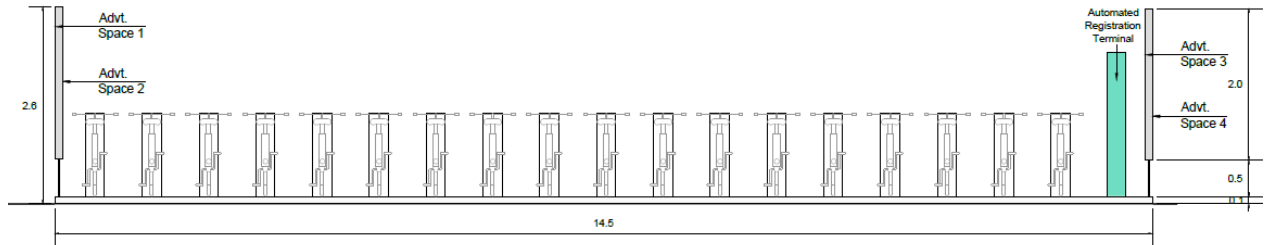


Figure 37 Proposed Elevation of the linear station with 18 docks

Source: PDA

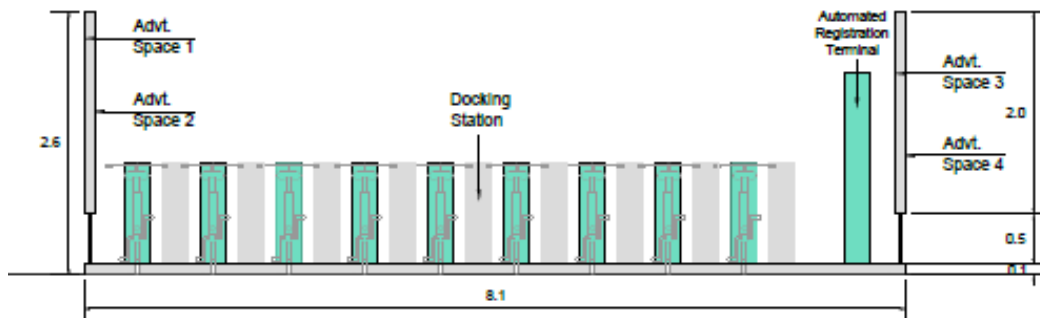


Figure 38 Proposed Elevation of a two-row station with 18 docks

Source: PDA

On both the sides of each station either, there will be a small location map with necessary information like customer help line, complaint help line and email ID displayed permanently. A small reference template for such signage map is presented in Figure 39.



Figure 39 Sample map and information to be displayed at each station

Source: iTrans

The ground truthing has been done for some areas and based on the ‘Aundh - Baner’ area, a tentative prototype of a PBS station has been prepared. Though the number of docks would be different for different locations, but a prototype of 18 docks which would be then multiplied as per requirement (refer Figure 32). Ground truthing has been done for all the areas that are finalised for Phase 1.

5 OPERATIONAL PLAN

This operational plan is based on the following model:

1. The PBS system will be capitalized by the PMC's investment and the vendor will use that capital to purchase the necessary Hardware Supplies like Bicycle, Docking Stations/Spare Parts and for necessary Software Supplies like Multi-year software license or one time procurement/development of software, Android Applications and other provision for back-end services offline & online services. The PMC will also provide the land/space for setting up the system.
2. However, the vendor will provide a Bank Guarantee of 10% of the capital project cost to PMC.
3. For the recurrent expenditure, an escrow account supported with a Project Reserve Account having 3 months of reserve for funding the recurrent expenditure will be maintained by the bicycle department of PMC. Reimbursement of recurrent expenditure to PBS vendor by bicycle department will be done using the same account.
4. The PBS system will generate a part of operating revenues from the advertisement which will be collected by the PMC (bicycle department) and will be transferred to the Escrow account of PBS. Another small share of revenue will be generated from user charge and will be collected by the PMC (bicycle department) and will be transferred to the Escrow account of PBS.
5. The bicycle department of PMC will also be responsible for the following:
 - For selecting the vendor and making the contracts with them,
 - For providing the necessary permissions and support throughout the project time,
 - For monitoring and evaluating the project, and
 - For approving the expansion plan.

Installation and O&M Agreement with PBS Vendor

To implement the PBS system Operator/Company will sign two agreements with a system vendor:

1. An initial purchase agreement for bicycle, docking stations, spare parts inventory, and initial installation services, and
2. A multi-year software license or one time procurement/development of software and operating agreement covering the provision of back-end services. In the procurement process, Request for Proposals will be issued which will essentially covers the following:

- All equipment, including bicycle, docking stations and spare parts (including maintenance vehicles)
- Initial docking stations installation
- Regular maintenance and repairs of docking stations and bicycle
- Training for local maintenance and repair staff
- Warranty on bicycle and docking stations (products under warranty could be replaced, repaired by manufacturer, or repaired locally with reimbursement)
- Bicycle share back end application and service:
 - Database of subscriber information, user agreements, usage data, etc.
 - On-line registration interface (linked to local webpage)
 - Web site (build, host, maintain)
 - Walk-up registration interface
 - Communications between kiosks, web site, and Application
 - Data Security/Privacy
 - Financial transactions
 - Real time system map (linked to local webpage)
 - Data reporting (usage, repairs needed, rebalancing needed, etc.)
 - Technical service
- Customer service for registration/financial transactions
- Demarcation of docking station (through consultation with key stakeholders); local permitting
- Marketing and promotions
- Maintenance, repair and rebalancing of bicycle
- Maintenance vehicles and equipment (including tools specific to bicycle)

The operational plan and Contractual agreements for PBS system are summarized in Figure 40 and the potential roles of the stakeholders are summarized in Table 15.

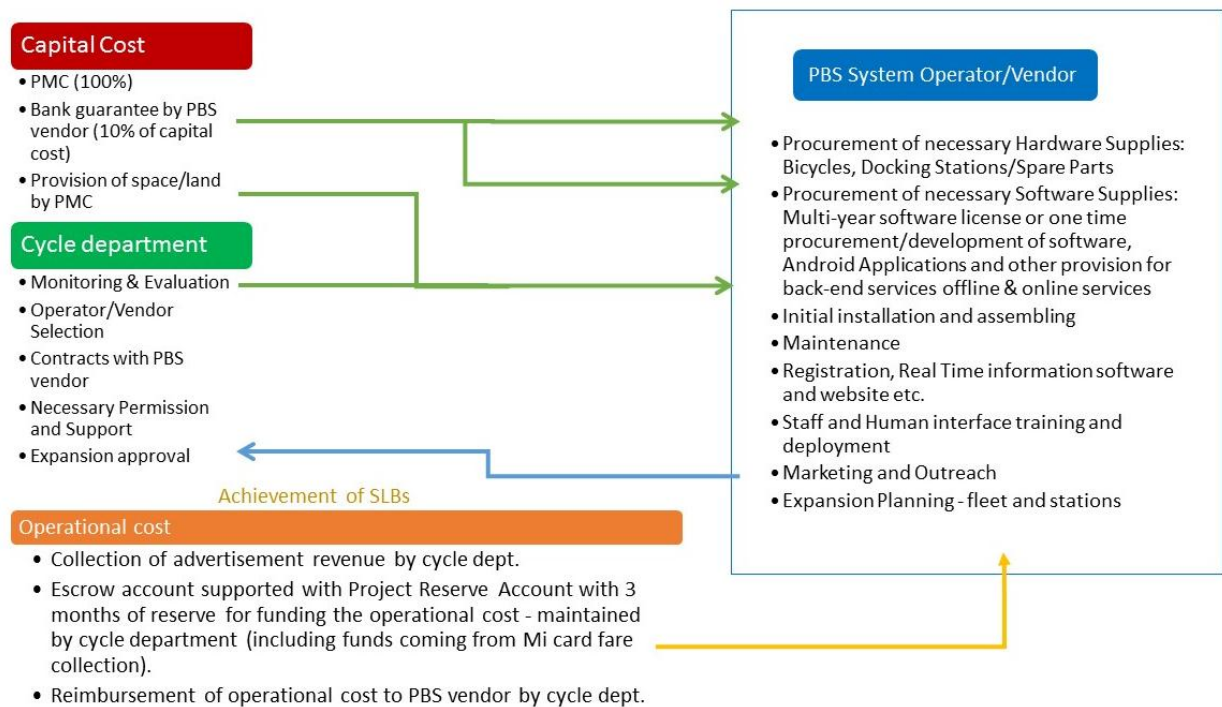


Figure 40: Operational plan and Contractual Agreement for PBS

Table 15: Potential roles of stakeholders

Stakeholder	Potential Roles
PMC	<ul style="list-style-type: none"> • Operator/Vendor selection • Expansion approval • Contract with capital investor and operator • Provide space for bicycle share station • Monitoring and Evaluation • Ensure integration of the system with bicycle Infrastructure like signage and signalling under PMC to support increased bicycle traffic volume. • Ensure installation of PBS station location maps throughout the city. Maps would provide the nearby station locations in the zoomed part of the respective areas.
PMPL	<ul style="list-style-type: none"> • Ensure integration of public bicycle infrastructure with bus infrastructure under PMPL. • Promote the use of public bicycle to current bus users
Police	<ul style="list-style-type: none"> • Maintain a safe environment for public bicycle • Enforce the safe use of public bicycle • Protect the system from theft and vandalism
Community groups, RWAs and NGOs	<ul style="list-style-type: none"> • Build support among citizens • Provide bicycle safety education • Promote the use of public bicycle

6 FINANCIAL MODEL

The next step for PBS system planning after bicycle and infrastructure demand estimation is to translate these demands in the monetary terms. This section provides the details of various cost and revenue components for the Phase 1 of Pune bicycle share. Figure 41 shows the inflow-outflow of the funds.

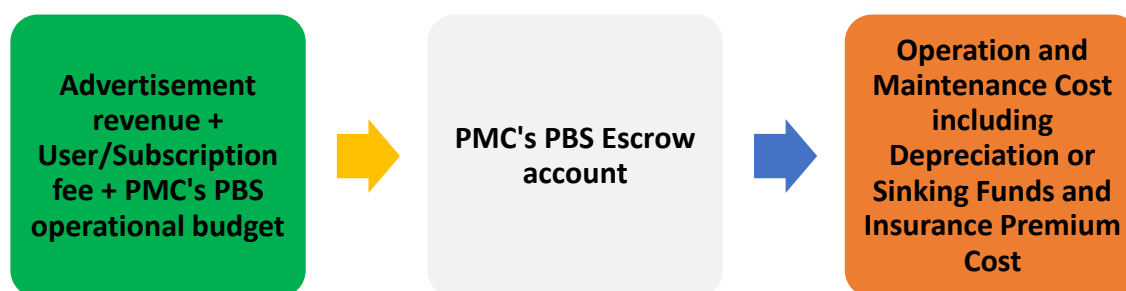


Figure 41: Flow of funds for Pune Bicycle share operations

The components based on which the final financial calculations have been done for both, revenue as well as expenditure has been explained in the subsequent sections.

6.1 COSTS

The costs for the proposed PBS system have been categorised in the two main heads namely capital expenditure and recurrent expenditure. Subsequent sub-sections show the detailed description and calculations under both the heads.

Capital expenditure

6.1.1 Bicycle and Docking Stations Cost

Following are the major cost components for establishing the bicycle share system:

- Bicycle
- Modular docking Stations/Kiosk (with locks, hardware compatible to software and software)

- access card processing fee

The total number of various items required with the detailed procurement cost for each item is given in Annexure A and Annexure B for two scenarios.

6.1.2 Other Start-up Costs

A major cost component while establishing the system would also involve the costs of the following components:

- Redistribution Vehicle Cost
- Prelaunch promotional expenses
- Mobile Maintenance Vehicles
- Pre-launch office and administrative expenses

Calculation of the expenses for the aforementioned components can be referred from the Annexure A and Annexure B.

Recurrent Expenditure

6.1.3 Establishment Expense

For running and maintaining the system after initial establishment, following is the list of the personnel who would be required to successfully implement the Pune PBS:

- 1 General Manager
- 1 Operations Manager
- 1 Manager of technical department
- 3 Bicycle Managers
- 1 Manager of parts department
- 1 Director marketing
- 1 Director call centre
- 1 I.T. Specialists and 1 supervisor for every 500 bicycle
- Support staff for initial 3 months (1 for 20 bicycle)
- 2 Redistribution and maintenance vehicle driver

The annual salaries of each personnel have been estimated and can be found in Annexure A and Annexure B.

6.1.4 Operation and Maintenance Cost

A major cost component while establishing the system would also involve the costs of the following system aspects for which the recurrent expenditure would be transferred to the vendor from the PBS escrow account:

- Bicycle and Docking Station Maintenance
- Redistribution Vehicle Maintenance
- Mobile Maintenance Vehicle Maintenance
- Administrative Expenses (Phone, Internet, Office Supplies etc.)
- On-going promotions annual budget
- Central Control and Maintenance room rental
- Website Portal and Internet Portal

This cost has been estimated to be 10% of the respective Capital Cost.

6.1.5 Depreciation or Sinking Funds

It mainly refers to the replacement costs of bicycles and docking station parts.

- Replace of Bicycle at 20% per annum of Capital cost
- Replacement of Docking Station Parts at 10% per annum of Capital cost

6.1.6 Insurance Premium Cost

Annual premium cost of the insurance of bicycles. 2% of total capital cost of Bicycle and Docking stations

6.2 REVENUE

User fee and advertisement revenue are the only potential revenue sources for the PBS system apart from the PMC's PBS funding. This revenue will be transferred in the escrow account which will be formed under the NMT cell of the PMC. Subsequent sub-sections shows the details of the two revenue sources.

6.2.1 Revenue from user fee and subscription fee

An estimate of 15% of daily users would be paying a user fee which would be charged at Rs. 20 per user per day. The estimated annual revenue generation from the user fee would be around Rs. 51.5 lakh.

A one-time subscription fee of Rs. 200 per subscriber would be charged from all the users and the total system users have been estimated to be 7 times the total number of bicycles in the system i.e. 32,900 users as it has been estimated that a bicycle would be used 7 times in a day. The subscription will provide users with unlimited number of rides, with a limit of 30 mins per ride. The estimated revenue from the one-time subscription would be around Rs. 65.80 lakh.

6.2.2 Advertisement Revenue

As per Table 22 and Table 25, 4700 bicycles with 388 docking stations have been finalised for the Phase 1 of the PBS system. Currently, an average rate of Rs. 125 per square foot per month has been considered for calculating the revenue generation from the advertisement space. The rate has been considered from Pune's present outdoor advertisement rate and has been finalised after referring rates for more than 90 locations (rate list with advertisement for 90 locations provided by Bharti Media Communications). The selected figure is the average value of all the locations but is a conservative figure as it has been crosschecked with the median and mode values of all the locations. For 388 docking stations with 42 square foot of advertisement each, the annual revenue generation would be around Rs. 24.44 crores.

Gross Receipts			
Revenue Receipts	Unit	Unit cost	Total Revenue per annum
Revenue from one time Subscriptions (Unlimited number of rides, limited to 30 mins per ride)	32900	200	65,80,000

Implementation Plan

Revenue from user fee @ 20 per day per bicycle (for 15% bicycle)	705	20	51,46,500
Revenue from Advertisement per station	388	5250	244,44,000
Revenue from Advertisement per bicycle	4700	1,000	47,00,000
Total			408,70,500

6.3 COST ESTIMATION SUMMARY

The summary of the cost estimation for the two scenarios are given in Table 16 and Table 17. The only difference in the two scenarios is the estimated cost of the bicycle docking station. Table 16 represents the cost summary of the scenario in which the cost of the modular docking Stations/Kiosk with locks, hardware compatible to software and software costs per unit is estimated to be INR 3 lakhs.

Table 16: Summary of scenario 1

Items	Units	Per unit Cost in INR	Total Cost
Bicycle	4700	40000	1880,00,000
Cost of station and other Infrastructure facilities			5435,71,400
Total capital expenditure			7315,71,400
Recurrent and personnel Cost			264,24,000
Operation, Maintenance, Depreciation, Insurance			1403,71,428
Total recurring cost			1667,95,428
Revenue			408,70,500
Gap in operational expenditure			1259,24,928
Per Bicycle Capital Cost =			1,55,653
Per bicycle operational cost first year =			35,488
Per bicycle operational cost second year =			34,947
Per bicycle revenue			8,696

Table 17 represents the cost summary of the scenario in which the modular docking Stations/Kiosk with locks, hardware compatible to software and software costs per unit is estimated to be INR 1 lakh.

Table 17: Summary of scenario 2

Items	Units	Per unit Cost in INR	Total Cost
Bicycle	4700	40000	1880,00,000
Cost of station and other Infrastructure facilities			2954,11,400
Total capital expenditure			4834,11,400
Recurrent and personnel Cost			264,24,000
Operation, Maintenance, Depreciation, Insurance			978,08,228
Total recurring cost			1242,32,228
Revenue			408,70,500
Gap in operational expenditure			833,61,728
Per Bicycle Capital Cost =			1,02,853
Per bicycle operational cost first year =			26,432
Per bicycle operational cost second year =			13,202
Per bicycle revenue			8,696

Project life bicycle cost

The project lifecycle costs for the base year and the 7 operational years has been estimated in Table 18 and Table 19 for the two different scenarios mentioned above. To project the Personnel cost consumer price index of 9.5% per annum, and the other recurring cost wholesale price index of 3% per annum for manufactured products is adopted from the July 2014 bulletin (page number 65 – economic indicators). The projection of advertisement revenue and revenue from user fee is done assuming the nominal rate of 10% per annum. These rate assumptions are made for revenue projections because of the absence of any reliable source for reference for the same.

Table 18: Project lifecycle scenario of Scenario 1

Year	Total system cost			No. of bicycle	Per bicycle cost			Total system revenue	Revenue per bicycle	Gap			
	Capital cost	Personnel cost	Other recurring cost		Total cost	Capital cost	Recurring cost			Total cost	Recurring	Total cost	Per bicycle
0	7315,71,400	179,64,000	1403,71,428	8899,06,828	4,700	1,55,653	33,688	1,89,342	304,91,500	6,488	1278,43,928	8594,15,328	27,201
1	0	196,70,580	1445,82,571	1642,53,151	5,170	-	31,770	31,770	335,40,650	6,488	1307,12,501	1307,12,501	25,283
2	0	215,39,285	1489,20,048	1704,59,333	5,687	-	29,974	29,974	368,94,715	6,488	1335,64,618	1335,64,618	23,486
3	0	235,85,517	1533,87,649	1769,73,167	6,256	-	28,290	28,290	405,84,187	6,488	1363,88,980	1363,88,980	21,802
4	0	258,26,141	1579,89,279	1838,15,420	6,881	-	26,712	26,712	446,42,605	6,488	1391,72,815	1391,72,815	20,225
5	0	282,79,625	1627,28,957	1910,08,582	7,569	-	25,234	25,234	491,06,866	6,488	1419,01,716	1419,01,716	18,747
6	0	309,66,189	1676,10,826	1985,77,015	8,326	-	23,849	23,849	540,17,552	6,488	1445,59,463	1445,59,463	17,362
7	0	339,07,977	1726,39,151	2065,47,128	9,159	-	22,551	22,551	594,19,307	6,488	1471,27,820	1471,27,820	16,064
Total		2017,39,314	12482,29,909		53,749				3486,97,382		11012,71,842	18328,43,242	

Implementation Plan

Table 19: Project lifecycle scenario of Scenario 2

Total system cost			No. of bicycle	Per bicycle cost			Total system revenue	Revenue per bicycle	Gap			
Capital cost	Personnel cost	other recurring cost		Total cost	Capital cost	Recurring cost			Total cost	Recurring	Total cost	Per bicycle
4834,11,400	179,64,000	978,08,228	5991,83,628	4,700	1,02,853	24,632	1,27,486	1851,70,000	39,398	693,97,772	4140,13,628	14,765
0	196,70,580	423,79,379	620,49,959	5,170	-	12,002	12,002	335,40,650	6,488	285,09,309	285,09,309	5,514
0	215,39,285	436,50,760	651,90,045	5,687	-	11,463	11,463	368,94,715	6,488	282,95,330	282,95,330	4,975
0	235,85,517	449,60,283	685,45,800	6,256	-	10,957	10,957	405,84,187	6,488	279,61,614	279,61,614	4,470
0	258,26,141	463,09,092	721,35,233	6,881	-	10,483	10,483	446,42,605	6,488	274,92,628	274,92,628	3,995
0	282,79,625	476,98,364	759,77,989	7,569	-	10,038	10,038	491,06,866	6,488	268,71,123	268,71,123	3,550
0	309,66,189	491,29,315	800,95,504	8,326	-	9,620	9,620	540,17,552	6,488	260,77,952	260,77,952	3,132
0	339,07,977	506,03,195	845,11,172	9,159	-	9,227	9,227	594,19,307	6,488	250,91,864	250,91,864	2,740
	2017,39,314	4225,38,616		53,749				5033,75,882		1209,02,048	6043,13,448	

7 DOCKLESS BIKE SHARE SYSTEM

One of the most promising applications of the emerging Internet of Things (IoT) paradigm is Smart Cities: the myriad sensors and actuators deployed in a modern city can provide many novel services to citizens and institutions and make the existing ones more efficient and user-friendly. Bike sharing is a perfect example of a Smart City-enabled service.

Although bike-sharing schemes have existed since the 1960s, issues with theft, vandalism and wrongful usage prevented their widespread adoption until the arrival of smart biking systems. With the possibility of electronically unlocking bicycles and identifying users, smart bike-sharing systems solved or mitigated these issues: by requesting users' credit card information before lending the bikes, bike-sharing companies can charge users for damages or theft, with a strong deterrent effect. The use of technology also allowed cities to provide a better service, embedding sensors to obtain real-time data, which can be used to plan and manage the bike-sharing docking stations and adapt to the needs of the users. Many services provide live maps of the available bikes, and ways to detect broken bikes remotely to quickly repair or substitute them are being studied.

Over the past few years, bike-sharing schemes were implemented in most major world cities, with almost universal success. Some of the biggest bike-sharing services in the world are in Barcelona, Paris, London, Hangzhou, Taiyuan and Shanghai in China, New York City, and Montreal. The usage data were easily recorded and used to improve the service and increase the number of users, reducing traffic and pollution. The abundance of data, sometimes including GPS tracking of the bikes' trajectories, has led to new opportunities for Smart City management, such as, for example, the planning of new bike lanes to cover the most common routes. The latest competitor in the bike share market is "dockless" bikes that can be parked anywhere and unlocked with a smartphone app.

7.1 WHAT IS DOCKLESS BIKE SHARE?

As the name suggests, Dockless bike share does not require a docking station — an expense that could sometimes limit the number of bikes a city could afford. With Dockless systems, bicycles can be parked within a defined district at a bike rack or along the sidewalk. Dockless bikes can be located and unlocked using a smartphone app.



Figure 42 Unlocking Spin bike with a smartphone. source: GeekWire

Dockless bike share adds even more convenience for users who no longer need to worry about empty bike share stations at the front end of the trip or full stations upon arrival. However, this convenience for users can be a problem for both system operators (who must rebalance bikes to meet demand) and cities (who must manage a clutter of bicycles on sidewalks already under pressure from competing uses). The wide, scattered

nature of operations also poses drawbacks related to maintenance, bicycle durability, economic sustainability, and potential lack of visibility that established stations provide.

Misplacement of Dockless bikes can be a real issue. To manage parking issues, cities and operators can institute incentives and disincentives as part of a regulatory framework. Several operators like oBike and LimeBike give credit points for returning to bikes to a designated parking location.

Credit points

About Credit

1. oBike was created with the mission to provide a convenient, environmental friendly transportation way to travel.
2. oBike credit system is used to encourage positive riding and responsible behaviour, and strongly reprimand the wrong ones.
3. Some of the acts below may warrant police reports being made if the bikes are found tampered with/ stolen or damaged.

Below are the credit rules.

Bad behavior	points
1.Parking at non-designated bike parking areas.	-20
2.Forget to lock but a bike is not lost	-20
3.Violation of traffic rules	Reduce to 0
4.Add private lock	Reduce to 0
5.Losing a bike	Reduce to 0
6.Moving bike illegally	Reduce to 0

Good behavior	points
1.A normal ride	+1
2.Report a broken bike	+2
3.Report an illegally parked bike at non-designated bike parking areas	+3
4.Share ride to Facebook for the first time	+2

Figure 43 Screenshot of oBike's credit system in Melbourne, Australia

7.2 COLLABORATION IS KEY TO SUCCESS

Early Dockless bike share operators did not consult with cities, but rather distributed bicycles in cities like Austin, Texas without permission (or even an early warning). Most operators now know they must work with cities to manage the launch and growth of a system. While adding complexity, Dockless bike share systems, such as Jump, Spin, and LimeBike, pose both benefits and challenges. Coordination between cities and operators is key for successful systems. Seattle, which suspended its first bike share system Pronto, is now working with Spin and LimeBike, two popular Dockless

systems that launched mid-2017, and Ofo, a third Dockless system that launched on August 18, 2017. Spin has worked with the City of San Francisco on a sequential series of launches to test and manage system growth. In Greensboro, North Carolina, LimeBike worked with the University of NC-Greensboro first on a campus, and later, with an expansion into the city. LimeBike is also working with a Business Improvement District in South Bend, Indiana. Because of the added complexity, Dockless bike share requires a planning approach that's a win-win-win for users, cities, and operators.

7.3 THE THREE PILLARS OF A DOCKLESS BIKE SHARE SYSTEM

In order to allow cities and decision-makers to effectively assess such developments it is useful to apply the three pillars framework developed by PEBSS (Platform for European Bicycle Sharing & Systems) for a smart Public Bike Sharing System.

- I. **Rider Priorities:** Shared bicycle mobility should be safe, reliable, and comfortable – with the greatest flexibility possible vis-à-vis location pick-up / drop-off, pricing, consider interoperability with other modes of public transport, and respect data privacy. Interoperability with public transport ticketing is highly valued, especially for wider service developments such as MaaS (Mobility as a Service). Any such registration system should ideally welcome both local residents, and visitors, and be available to all users.
- II. **City environments (“The Public Realm”):** Public authorities have a requirement to create conditions that encourage sustainable and effective mobility within the context of their overall transport planning system and this should be done through the optic of climate change, public health, improving air quality, reducing vehicle congestion, and enabling social inclusion. Overall, a sustainable, equitable use of public resources, be those direct, or indirect should be applied, taking into consideration all costs of any bike sharing system, and not socialising private costs while maximising private profits.
- III. **Technology / System providers:** As a part of public transport, bike sharing allows for a wide range of commercial opportunities from completely independent and competitive business models to public- private partnerships. Policy frameworks should encourage fair competition, fair market access and green public procurement. Commercial opportunities can provide sustainable shared bicycle mobility solutions to as many users as possible, driving innovation and a growing market to leverage these technological investments. A regulatory framework that is a frictionless as possible places emphasis on the creation of innovative transport options that achieve business, public, and consumer goals.

7.4 RECOMMENDATIONS FOR REGULATING DOCKLESS BIKE SHARE SYSTEM

Based on the best practices that helped different cities across the globe following recommendation can be listed to manage the arrival of Dockless bike sharing system.

I. **Registration / Licensing / Regulations:** Cities/Public Authorities must give green lights to shared bicycle operators working across their urban / suburban territory (ies) and ensure the regulatory framework governing the operations of these companies, such as against indiscriminate bicycle parking, is appropriate. Such operators must commit to providing a 24- hour local / national contact point in order to address all issues of safety or public nuisance. The city can require proof that the operator is in compliance with all relevant national or international regulations in relation to bicycles, environmental demands and business practices; such as, legal bicycles (in terms of lights and brakes to national/international standards and road rules), data protection, public liability insurance, and financial protection for consumers (e.g. deposits, refunds), etc.

II. **Orderly streets:** It is essential that public streets be orderly, as this has a positive impact on safety, tourism, the economy, and public health. Therefore, cities should develop a policy to encourage more bicycle use and provide more bicycle parking areas and safe cycling infrastructure. The number of bikes to be deployed must be determined in coordination with relevant public authorities, and cities should have the power to enforce removal or charge and fine operators for the removal costs of bicycles that are illegally parked, dumped, or discarded in case they have to do it themselves. As much as possible, the onus should be put on the bike share operators to take greater responsibility and ensure orderly streets. This could be helped through implementing measures to incentivise good parking behaviour (e.g. demerit/credit system, geofencing) and by having users report offending bikes. Cities should also consider having bike share operators provide functional public bike parking spaces to accommodate the additional bicycles and limit bike parking to specific drop zones in high-usage locations to better organise public space. Partnership arrangements can be facilitated by authorities, with various communities to provide and implement parking facilities on a symbiotic basis.

Orderly Streets in Singapore

In Singapore, one of the immediate measures taken by LTA, the organizing authority, in order to manage the arrival of Dockless bike share operators was to implement a direct feedback channel, with each bike share operator. When notified by LTA or agencies bike share operators have to remove bicycles within a specified timeframe. LTA also informed bike-share operators to implement measures to incentivize good parking behaviour.

- III. **Riding (rolling) stock:** The bicycle equipment, the “riding stock”, must be of sufficient quality, built to withstand the rigours of constant public use and exposure to the elements, meeting rider safety and comfort standards. The bicycles should have integrated lighting and reflectivity for legal and safe riding at night, and they should include smart technology with active GPS and wireless connectivity to ensure maintenance and proactive re- balancing.
- IV. **Servicing / Mechanical integrity:** The on-going servicing of shared bicycles is avital aspect of the process; prospective operators should demonstrate a robust system for ensuring that the bikes are kept in working order proactively. The use of smartbike technology allows to more easily identify mechanical failure.
- V. **Re-balancing:** Where the bicycles are located, and where they end up habitually, is equally compelling to ensure a sustainable eco-system. Without a proactive re-balancing process, bikes will likely end up in the wrong places, where demand is not met. Prospective operators must demonstrate a proactive and efficient re-balancing strategy; on-bike location technologies are essential to such a strategy.
- VI. **Cooperation:** Upfront, extensive coordination with local authorities for transport planning purposes, and cooperation with other stakeholders to ensure complementarity with public transport, both physically and digitally, is essential to the success of bike sharing operations. Cooperation with public transport operators is recommended to fully exploit the possibilities of using shared bikes as feeders through coordinated allocation, re-balancing and better organise the accessibility and area around public transport stations. Coordination with public transport operators could also enable integrated passenger information and integrated ticketing. Ideally, interoperability of all urban mobility services via MaaS (Mobility as a Service), or similar solutions, should be the ultimate goal for all stakeholders.

Setting up cooperation in Shanghai

Shanghai Municipal Transportation Commission, SMTC, decided to set up specialized management forces in each city district to maintain order on the streets and to handle bike placing. Each private bike-sharing operator must cooperate with the management forces of districts and share the management costs. SMTC took several measures to manage the Dockless bike share operators and one of them is aimed at ensuring riders' safety and protection: SMTC encouraged the Dockless bike sharing operators to buy accident insurance and third-party liability insurance, and make the rider's accident

VII. **Ensure exchange of data:** Public authorities should be able to access bike share data such as bike usage so that the city can better calibrate its urban mobility strategy and infrastructure.

Systems should ideally support bike discovery via the General Bikeshare Feed Specification (GBFS), an open data standard for bike share. If systems are not required to do so through licensing, they will not necessarily contribute to cross-sectional intelligence creation.

VIII. **Operator's ability to establish, perform and terminate operation:** Prior to granting permission to launch, cities should consider asking the operators to submit a plan for start-up, operation and possible termination of operation. The operator should be able to demonstrate capacity for operations and for possible termination.

7.5 CONCLUSION

Bike share systems work best when they are part of a city's overall transport network and vision. These systems should help cities to meet the mobility, sustainability, equity, and economic challenges of the future. Cities should ensure that any system they allow to operate within their boundaries can be the partner(s) they need to help meet their goals.

8 ADDITIONAL INFORMATION ON COMPARISON OF DIFFERENT TYPES OF BIKE SHARE SYSTEMS

Types of Bike-Share System		Station-based (Docking) System	Station-less (Dockless) System	Hybrid System
Key elements	<ul style="list-style-type: none"> Physical stations located across the service area at about 300m spacing Users pick-up and return bikes at designated stations or docks Stations are usually located on public rights-of-way or public lands 	<ul style="list-style-type: none"> Does not require physical stations Users pick-up and drop-off bikes anywhere on public or private properties as designated by the vendor A smart phone application is central to its use 	<ul style="list-style-type: none"> Users pick-up and return bicycles at bike stations or designated “zones” Designated “zones” are usually signed or marked, located on public right-of-ways or public lands and consists of hardware (i.e. public bike racks) to secure bicycles 	
Technology	<ul style="list-style-type: none"> Users can check bicycle location and availability online or through a smart phone mobile application Payment at kiosk or through mobile application Bicycles can only lock/unlock at docking stations 	<ul style="list-style-type: none"> Requires a smart phone application Users check bicycle availability and location using the mobile app Lock/unlock bicycle through an integrated bike lock feature Payment made via the smartphone app 	<ul style="list-style-type: none"> Requires a smart phone application Users check bicycle availability and location using the mobile app Lock/unlock bicycle through an integrated bike lock feature Payment made via the smartphone app 	
Pros	<ul style="list-style-type: none"> Usually owned and operated by local government Operated within rules set by the local government Visibility of docking stations and bicycles help market the program 	<ul style="list-style-type: none"> Operated by private sector, or through public- private partnership Private company to operate and administer the program Public subsidy generally not required to operate or maintain the program Requires minimal capital investment to start-up and generally lower user fees 	<ul style="list-style-type: none"> Operated by private sector, or through public- private partnership Private company to operate and administer the program Public subsidy generally not required to operate or maintain the program Higher flexibility to expand program in the future 	
Cons	<ul style="list-style-type: none"> Higher capital and operating costs related to the needs for stations Usually requires some level of subsidy from the local government; Limits private sector competition 	<ul style="list-style-type: none"> Misplacement of bicycle may cause obstruction of City’s right-of-way or public areas Public safety and public realm concerns with abandoned and damaged bikes May create negative impressions and perceptions of cycling safety and benefits 	<ul style="list-style-type: none"> Requires minor public administration at start-up and operating cost to maintain these designated zones 	

Implementation Plan

<p>Examples in practice</p>	<ul style="list-style-type: none"> • BikeShare Toronto - Toronto • BIXI - Montreal • Mobi - Vancouver 	<ul style="list-style-type: none"> • LimeBike – Seattle, Washington • Spin – San Francisco, Washington • Mobike – London, UK • Ofo – UK, Singapore, Australia 	<ul style="list-style-type: none"> • DropBike – Kingston, Toronto • Sobi - Hamilton • Zagster (PACE technology) – Florida (to be launched in April 2018)
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Station-based (Docked) System



Bikeshare – Toronto, Ontario



BIXI – Montreal, Quebec

Station-less (Dockless) System

Implementation Plan



LimeBike – Seattle, USA

Hybrid System



DropBike – Kingston, Ontario



MoBike – London, England



SoBi – Hamilton

9 COMMUNICATION PLAN

The communication strategy for the proposed Public Bicycle System is an integral element of developing and implementing the system.

9.1 CONTEXT

Public Bicycle Sharing system is a new product for Pune. There is a range of communication needs at different stages of initiating, launching and running the PBS. It is important to establish early on the benefits to the city from the Public Bicycle Systems. PBS can provide improved mobility options for the public, reduce dependence on motorized modes, and consequently help improve air quality, reduce noise, and improve road safety as well as provide personal health and economic benefits for people.

The fact that PBS systems are a form of public transport must also be communicated to policy makers and the public. Earlier attempts to set up PBS in Pune were not successful partly because of the unrealistic expectation that the PBS can be a self-financing or profit making entity. The city must invest in PBS and all the information necessary to develop an appropriate financing and institutional model must be provided to the policy makers as well as the public. Political leaders, sponsors, promoters and supporters can then help build up the supportive political and social climate.

Since PBS is a completely new system, and unlike existing bicycle rentals, considerable public education will be needed. Different types of barriers to cycling, or to trying out or accessing the new PBS may exist. The communications would need to be done using a mix of media and methods appropriate for people in different age groups, gender and socio-cultural contexts. In addition, certain groups may need assistance in overcoming barriers, such as lack of smart phones or funds for membership. Early interaction with different potential user groups should aim also to identify such barriers and help the system planners develop special schemes to overcome such barriers in accessing PBS.

An extensive infrastructure of PBS stations would come up rapidly. The support of residents and other people in each area that is expected to host PBS would be essential in siting the stations meaningfully, without inconvenience to the public. Their support is essential in the care and safety of infrastructure.

In parallel, the different types of transportation service providers in Pune would also need to understand the mobility niches that PBS fills. The complementarity between different modes/

Implementation Plan

services such as public or company buses, auto rickshaws, rental bicycles etc. would need to be brought out in discussion with the providers of these services. Communications could be jointly devised and disseminated in a mutually beneficial way to the public to present the range of mobility options available to them.

Traffic Police have a critical role in facilitating bicycle-friendly traffic management as well as in safety of users and the infrastructure. Early engagement and coordination with the Traffic Police should be done to have adequate time to prepare management guidelines/ SOPs and arrange orientation programmes for on ground personnel. Orientation events should also be done for any additional wardens deployed.

The media, NGOs and experts help shape public opinion. The communication efforts should engage with them for effective outreach and oversight of the new systems being set up.

This document outlines the likely communication needs and the institutional arrangements for carrying out IEC processes at different stages.

9.2 PURPOSE OF THE COMMUNICATION STRATEGY

The PBS Communication Strategy offers a framework and steps to be taken by PMC, in order that:

1. The public and different actors have access to adequate information about PBS
2. Potential users are facilitated to use PBS through appropriate branding, public education and promotion activities
3. The public and different stakeholders have access to mechanisms for effective engagement in the evolution of a high-quality PBS in Pune

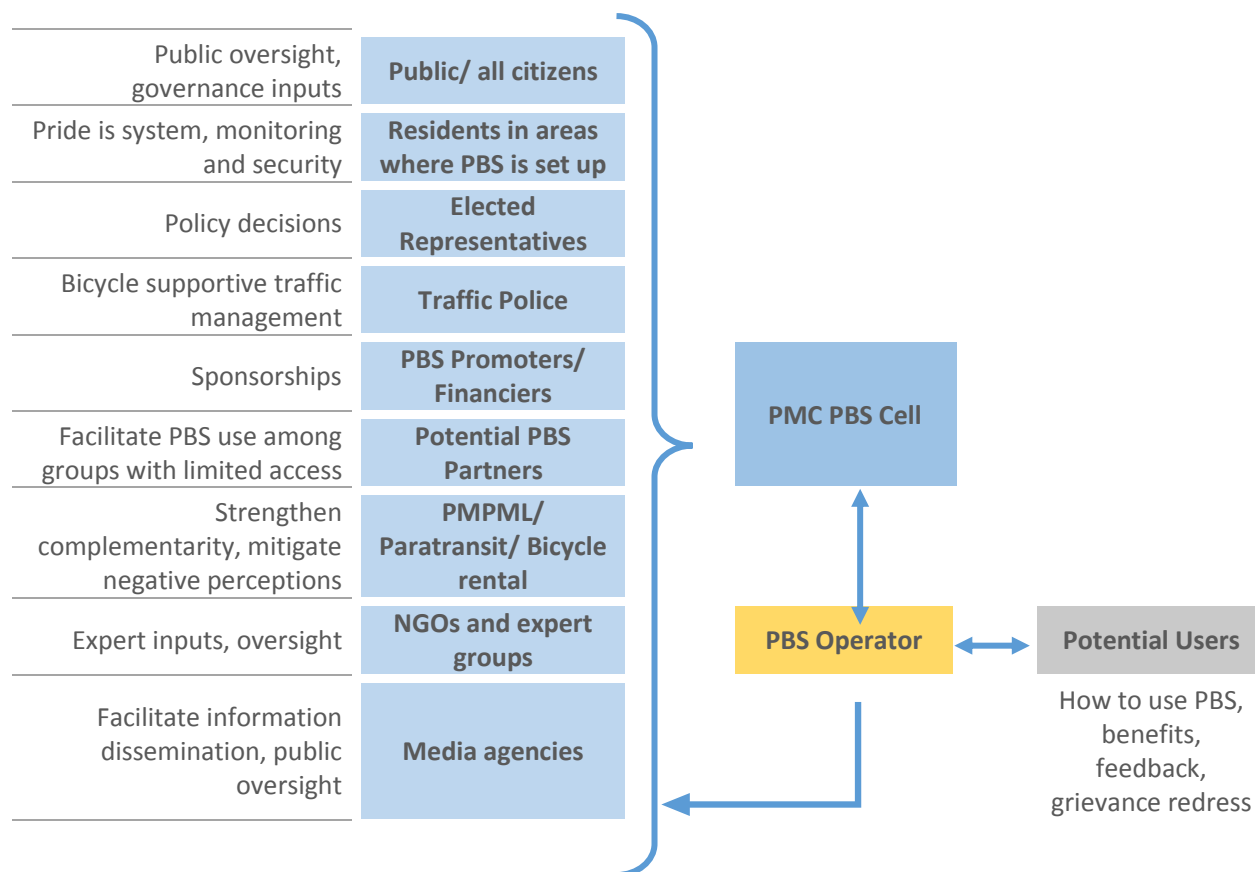


Figure 44: Stakeholder and communication links with PMC PBS cell

9.3 INSTITUTIONAL ANCHORS FOR PBS COMMUNICATION

Two types of institutional arrangements may be created for the communications functions:

1. At the Pune Municipal Corporation PBS Cell
2. As part of the PBS Operator company
 - I. All the early communications in relation to policy, administrative support, seeking sponsorship and creating a public engagement framework for the PBS would necessarily have to be done by PMC itself, as these are matters of democratic decision-making.
 - II. The communications which directly relate to product promotion, user education, user feedback and grievance redress need necessarily to be done by the PBS entity.
 - III. The communications which relate to overall performance monitoring and strategic decision-making about PBS must again be undertaken by PMC as a way of democratic control over the PBS entity.

Table 20 presents the distribution of the communication function between the PMC PBS Cell and the PBS Operator. The logic underlying this distribution is:

- IV. All the early communications in relation to policy, administrative support, seeking sponsorship and creating a public engagement framework for the PBS would

necessarily have to be done by PMC itself, as these are matters of democratic decision-making.

- V.** *The communications which directly relate to product promotion, user education, user feedback and grievance redress need necessarily to be done by the PBS entity.*
- VI.** *The communications which relate to overall performance monitoring and strategic decision-making about PBS must again be undertaken by PMC as a way of democratic control over the PBS entity.*

Table 20: Communication Functions at different stages

Phase	Communications Role at PMC PBS Cell	Communications Role at PBS Operator
Setting up the PBS	<p>All communications for setting up PBS, such as</p> <ol style="list-style-type: none"> 1. Policy clarity and political support for PBS 2. Ensure administrative and institutional actors have clear understanding about PBS and are actively supportive in setting up and operating the PBS 3. Obtain support from primary sponsors and promoters in financing the PBS 4. Create a framework for community engagement on all strategic decisions about the PBS, in a manner that is <ol style="list-style-type: none"> a. inclusive of diverse points of view b. provides adequate information to participants, and c. influential in the overall-all decision-making process 5. Conduct a community engagement process before finalizing the strategy for the PBS 	
Pre-launch and launch	<ol style="list-style-type: none"> 1. Mitigate negative impacts among those who perceive PBS as negatively affecting them 2. Oversight of grievance redress function 3. Conduct a community engagement process around the time of launch of the PBS, possibly soon after launch, to plan the next steps 	<ol style="list-style-type: none"> 1. Create public interest around PBS 2. Create the PBS brand identity 3. Set up Standard Operating Procedures for coordination among and with relevant institutional stakeholders, such as PMPML, Traffic Police and various PMC departments 4. Arrange a launch event 5. Education about use of PBS and membership 6. Systems for providing basic information to potential users, customer interaction, grievance redress, including the website, apps, social media 7. Continue political and administrative support and its visibility to the public, especially fix bugs immediately after launch 8. Support for direct promotion of PBS

		by a range of partners, such as educational institutes, workplaces and industrial zones, commercial enterprises etc., in the community groups they are engaged with
		9. Support from secondary sponsors to enhance PBS membership and use among potential users who wish to use PBS but may have difficulties in accessing it
PBS Operations	<ol style="list-style-type: none"> 1. Public information on the performance of PBS, future plans and budget allocations 2. Continue public engagement for all strategic decision-making, community engagement process at least once a year, more often as per decision-making needs 	<ol style="list-style-type: none"> 1. Service alerts and updates 2. Grievance redress mechanisms 3. Continued education and promotion of PBS among users and potential users, and membership drives 4. Improvement of PBS using feedback from customers and other stakeholders

9.4 COMMUNICATIONS EVENTS AND CAMPAIGN TIMELINE

Table 21 gives an insight of the proposed communication timeline for the PBS:

Table 21: Stage wise communication timeline

Early	Pre-launch	Launch/ post-launch	Operations and Reviews
<ul style="list-style-type: none"> • Presentations and print brochures for political leaders, sponsors and partners • Public engagement event on techno-finance options, using ‘public engagement’ framework • Workshops with partners (PMC UCD/ corporate CSR partners/ institutions) for developing promotional strategies for direct bulk promotions and support schemes for communities with limited access to PBS 	<ul style="list-style-type: none"> • Meetings and Presentations for political leaders, sponsors and partners • Coordination events for Administrative Staff and Traffic Police • PBS Promotion for the public and potential users of different age groups and contexts, through <ul style="list-style-type: none"> – Demonstrations events in all selected areas for pilots, at educational institutes, large workplaces, industrial areas, 	<ul style="list-style-type: none"> • Launch Event, preferably with a celebrity/popular leader • Launch publicity campaign through press articles, website, social media, radio, SMS and email, theatre ads • PBS Website, app, maps • Press Conference with media kit • Ensure timely fixing of bugs/ grievances in the immediate days after launch • Survey post-launch public opinion to 	<ul style="list-style-type: none"> • Keep maps, apps, website updated • Continue PBS promotions as per need and expansion plans • Continue targeted PBS promotion for groups with special needs • Organize periodic public engagement event for monitoring and review • Keep political leaders, sponsors, partners, NGOs

Implementation Plan

<ul style="list-style-type: none"> • Orientation events, SOP Manuals for Traffic Police and Administrative Staff 	<ul style="list-style-type: none"> – malls, commercial areas etc. 	<ul style="list-style-type: none"> – gauge effectiveness of outreach and refine future promotions accordingly 	<ul style="list-style-type: none"> – and experts informed through newsletter updates and review meetings
<ul style="list-style-type: none"> • Workshops with PMPML, paratransit, bicycle rental shops to arrive at complementarity in functioning, creation of joint information materials for providing customers with the range of services available 	<ul style="list-style-type: none"> – Direct promotions through partners at selected areas/ institutions/ workplaces 		<ul style="list-style-type: none"> • Organize structured feedback – online/ surveys/ events
<ul style="list-style-type: none"> • Area wise public workshops to suggest PBS station locations 	<ul style="list-style-type: none"> – Emailers and SMS campaign 		<ul style="list-style-type: none"> • Ensure that a mechanism is created for coordination between the PMC Grievance Redress system and the grievance redress system set up by the PBS Operator
<ul style="list-style-type: none"> • ‘Buzz’ events like public contests/ polls to create/ choose PBS Brand Identity 	<ul style="list-style-type: none"> – Press articles 		
<ul style="list-style-type: none"> • Press Releases, Press Conferences on PBS policy, sponsorship, public events, identity 	<ul style="list-style-type: none"> – Radio jingles 		
<ul style="list-style-type: none"> • Survey public opinion and understanding about PBS to refine communication content and strategy 	<ul style="list-style-type: none"> – Theatre ads and films 		
	<ul style="list-style-type: none"> – Website 		
	<ul style="list-style-type: none"> – Social Media 		<ul style="list-style-type: none"> • Publish monthly and annual reports on grievance redress, including number and types of complaints received, timeliness of resolution and relevant analysis

9.5 MAKING IT HAPPEN

It is recommended that PMC take the following steps:

- Appoint a Communications Officer at the PMC Transportation Dept./ Sustainable Transportation Cell/ PBS Cell
- Ensure that the Request for Proposal/ tender for the PBS includes a section on preparation of communication materials, brand identity, organization of outreach events and promotional campaign and public opinion surveys

Implementation Plan

- Ensure that the entity created for PBS operation includes a communication function and appropriate staff are appointed and mechanisms set up for carrying out the communication function,
- Ensure that an appropriate quantum of funds is clearly allocated for this function; it is estimated that about INR 2.5 Crores for promotions and outreach in the early, pre-launch and launch phases would be adequate.

ANNEXURE A: COSTING SCENARIO 1 FOR DOCKING SYSTEM PBS

Table 22: Bicycle and Docking Stations Cost

Items	Units	Per unit Cost in INR	Total Cost
Bicycle	4700	40,000	1880,00,000
Modular docking Stations/Kiosk (with locks, hardware compatible to software and software)	940	3,00,000	2820,00,000
Software Development/Procurement			-
access card processing fee	32900	50	16,45,000
Total equipment price	-	-	4716,45,000
VAT (5%)	-		235,82,250
Transportation (5%)			235,82,250
Installation and Training (10%)			471,64,500
Total Initial Expense			5659,74,000

Table 23: Other Start-up Costs

Items	Cost in INR
Redistribution Vehicle Cost	940,00,000
Prelaunch promotional expenses	282,98,700
Mobile Maintenance Vehicles	150,00,000
Pre-launch office and administrative expenses	282,98,700

Implementation Plan

Total	1655,97,400
Total Capital Cost =	7315,71,400
Per Bicycle Cost =	1,55,653

Table 24: Recurrent Expenditure

Establishment Expense – Salaries all inclusive	
Personnel	Per Annum Cost
General Manager (1)	18,00,000
Operations Manager (1)	12,00,000
Manager technical department (1)	8,40,000
Bicycle Managers (3)	25,20,000
Manager Parts department (1)	8,40,000
Director marketing (1)	12,00,000
Director call centre (1)	12,00,000
I.T. Specialists (1 Nos) and 1 supervisor for every 500 bicycle	46,20,000
Support (1 for 20 bicycle) for 3 months	84,60,000
Redistribution and maintenance vehicle driver	37,44,000
Sub Total	264,24,000
Operation and Maintenance Cost (@10% of respective Capital Cost)	
Bicycle and Docking Station Maintenance	470,00,000
Redistribution Vehicle Maintenance	94,00,000
Mobile Maintenance Vehicle Maintenance	15,00,000
Administrative Expenses (Phone, Internet, Office Supplies etc. @ 50000 per month)	6,00,000
On-going promotions annual budget	10,00,000
Central Control and Maintenance room rental	2,40,000
Website Portal and Internet Portal	2,00,000
Sub Total	599,40,000
Depreciation or Sinking Funds	
Replace of Bicycle @ 20% per annum of Capital cost	376,00,000
Replacement of Docking Station Parts @ 10% per annum of Capital cost	282,00,000
Sub Total	658,00,000

Implementation Plan

Insurance Premium Cost @ 2% of total capital cost of Bicycle and Docking stations	146,31,428
Total	1667,95,428

Total Start-up costs (Capital + Recurrent)	8983,66,828
Total Revenue	408,70,500
GAP	1259,24,928

ANNEXURE B: COSTING SCENARIO 2 FOR DOCKING SYSTEM PBs

Table 25: Bicycle and Docking Stations Cost

Items	Units	Per unit Cost in INR	Total Cost
Bicycle	4700	40,000	1880,00,000
Modular docking Stations/Kiosk (with locks, hardware compatible to software and software)	940	1,00,000	940,00,000
Software Development/Procurement			-
access card processing fee	32900	50	16,45,000
Total equipment price	-	-	2836,45,000
VAT (5%)	-		141,82,250
Transportation (5%)			141,82,250
Installation and Training (10%)			283,64,500
Total Initial Expense			3403,74,000

Implementation Plan

Table 26: Other Start-up Costs

Items	Cost in INR
Redistribution Vehicle Cost	940,00,000
Prelaunch promotional expenses	170,18,700
Mobile Maintenance Vehicles	150,00,000
Pre-launch office and administrative expenses	170,18,700
Total	1430,37,400
Total Capital Cost =	4834,11,400
Per Bicycle Cost =	1,02,853

Table 27: Recurrent Expenditure

Establishment Expense – Salaries all inclusive	
Personnel	Per Annum Cost
General Manager (1)	18,00,000
Operations Manager (1)	12,00,000
Manager technical department (1)	8,40,000
Bicycle Managers (3)	25,20,000
Manager Parts department (1)	8,40,000
Director marketing (1)	12,00,000
Director call centre (1)	12,00,000
I.T. Specialists (1 Nos) and 1 supervisor for every 500 bicycle	46,20,000
Support (1 for 20 bicycle) for 3 months	84,60,000
Redistribution and maintenance vehicle driver	37,44,000
Sub Total	264,24,000
Operation and Maintenance Cost (@10% of respective Capital Cost)	
Bicycle and Docking Station Maintenance	282,00,000
Redistribution Vehicle Maintenance	94,00,000
Mobile Maintenance Vehicle Maintenance	15,00,000
Administrative Expenses (Phone, Internet, Office Supplies etc. @ 50000 per month)	6,00,000
On-going promotions annual budget	10,00,000
Central Control and Maintenance room rental	2,40,000
Website Portal and Internet Portal	2,00,000

Implementation Plan

Sub Total	411,40,000
Depreciation or Sinking Funds	
Replace of Bicycle @ 20% per annum of Capital cost	376,00,000
Replacement of Docking Station Parts @ 10% per annum of Capital cost	94,00,000
Sub Total	470,00,000
Insurance Premium Cost @ 2% of total capital cost of Bicycle and Docking stations	96,68,228
Total	1242,32,228

Total Start-up costs (Capital + Recurrent)	6076,43,628
Total Revenue	408,70,500
GAP	833,61,728



पुणे शहरामध्ये सार्वजनिक सायकल व्यवस्था धोरण

१. धोरण

सर्वकष वाहतूक आराखडा २००८ आणि पुणे सायकल आराखडा २०१७ यामध्ये नमूद केलेल्या वाहतूक ध्येयानुसार (व्हिजन), तसेच मेट्रो रेल प्रकल्पांतर्गत भारत सरकार व महाराष्ट्र राज्य सरकार यांनी नमूद केलेल्या खालील आवश्यक बाबींना अनुसरून;

- पुणे मेट्रोतून जाणाऱ्या व येणाऱ्या प्रवाशांसाठी पूरक वाहतूक व्यवस्था निर्माण होण्याच्या दृष्टीने बिगर-स्वयंचलित वाहतूक साधनांसह विविध प्रकारच्या वाहनांची एकात्मता वाढविण्यास प्राधान्य देणे
- सार्वजनिक सायकल व्यवस्था विकसित करणे
- उपनगरी रेल्वेसह बहुविध वाहतूक साधनांची एकात्मता वाढवणे
- मेट्रो रेल्वे प्रकल्पाची सुरुवातीची व शेवटची कनेक्टीव्हिटी आणि पोहोच सुनिश्चित करणे

पुणे शहरामध्ये सायकलिंग सुरक्षित, आरामदायी, सोयीस्कर आणि संयोजित होण्यासाठी व वाहतुकीच्या साधनांमध्ये सायकलचा वापर वाढवण्यासाठी पुणे महानगरपालिका प्रतिबद्ध आहे. शहरामध्ये सायकलींचा वापर वाढवण्याच्या हेतूने आज जगातील अनेक देशांमध्ये 'सार्वजनिक सायकल व्यवस्था'चा वापर प्रचलित आहे. याद्वारे शहरात हळूहळू त्या ठिकाणी व हळूहळू त्या वेळी सायकली उपलब्ध होऊ शकते. लहान अंतरावरील किंवा एकतर्फी वाहतूक आणि सार्वजनिक वाहतुकीची लास्ट माईल कनेक्टीव्हिटी यांकरिता अशी सायकल सेवा उपयुक्त ठरते.

पुणे महानगरपालिकेचा सार्वजनिक सायकल व्यवस्थेला पाठींबा असल्याचे या धोरणातून निर्दिष्ट केले आहे. सार्वजनिक सायकल सेवा पुढील प्रकारात असू शकेल-

- संपूर्णतः महापालिकेने चालवलेली
- आर्थिक सहाय्य महापालिकेचे आणि सेवा चालवण्याची जबाबदारी खाजगी चालकांची



Policy on Public Bicycle Share System for Pune

1. Policy

The Pune Municipal Corporation (PMC), as part of its transport vision, as outlined in the Comprehensive Mobility Plan 2008 and detailed in the Pune Bicycle Plan 2017, as well as the requirement stipulated by the Government of India and the Government of Maharashtra with regards to the Metro Rail Project namely,

- To accord high priority for integration of various modes of transport including non-motorized modes, which would act as feeder/evacuation system to the Pune Metro
- Develop a Public Cycle System
- Facilitate multimodal integration including suburban railways
- Ensure that Metro Rail Project provides for first and last mile connectivity and accessibility

is committed to improving the modal share of cycling in the city by making cycling safe, comfortable, convenient and connected.

Worldwide Public Bicycle Sharing (PBS) systems play an important role in enhancing cyclability in a city by making cycles available when and where needed. They can help to cater to short, one-way and last mile connectivity trips.

The Pune Municipal Corporation, through this policy states its support for PBS systems. PBS systems may be

- Fully supported and run by the city
- Run privately without any financial support of the city
- Run privately with some aid (financial or otherwise) by the city

- सेवा चालवण्याची जबाबदारी खाजगी चालकांची आणि काही प्रमाणात पालिकेची मदत (आर्थिक अथवा इतर)

प्रवाशांची गरज आणि बाजारातील उपलब्धता या दोन्हीचा विचार करून महानगरपालिका वरील सर्व शक्यतांचा विचार करेल आणि निर्णय घेईल. सार्वजनिक सायकल सेवा शहरात सर्वत्र उपलब्ध करणे आणि ही सेवा चांगल्या गुणवत्तेची, किफायतशीर आणि सर्व स्तरातील लोकांना वापरता येईल या खबरदारी घेणे, हे ध्येय आहे.

२. खाजगी चालकांसाठी धोरण

पुणे महानगरपालिकेचे धोरण खुले आहे ('एक्स्लुझिव्ह' वा विशेष करार केले जाणार नाहीत). शहरामध्ये सार्वजनिक सायकल सेवा व्यवस्था उभी करणे व ती चालवणे या कामासाठी खाजगी चालकांचेही स्वागत आहे.

संपूर्णतः स्वयंचलित सार्वजनिक सायकल सेवा चालवण्याची तयारी असलेल्या कंपन्यांना प्रथम पुणे मनपाशी करार करावा लागेल, ज्यामुळे त्यांना इतर विभागांशी समन्वय राखून आपले काम करणे शक्य होईल.

The PMC will explore the possibility of all of the above, based on market availability and keeping in mind the needs of commuters.

The aim is to ensure that a PBS system serves the entire city, with a good quality of service at affordable rates and which is accessible to all segments of society.

2. Policy for Private Operators

The PMC will have an open policy (no exclusive contracts) and welcomes private operators to set-up and run PBS systems in the city.

Companies that are desirous of operating a fully automated PBS system are **encouraged** to sign a Memorandum of Understanding (MoU) with the PMC to ensure support for their operations and to facilitate coordination with various other agencies.

3. सार्वजनिक मालकीच्या व सार्वजनिकरित्या चालवलेल्या व्यवस्थांचे धोरण

खाजगी चालकांकडून दिल्या जाणाऱ्या सेवांची पुणे मनपाकडून वेळोवेळी पडताळणी केली जाईल. जर शहरामध्ये खाजगी चालकांच्या सेवा उपलब्ध नसतील (शहराच्या काही भागात किंवा सर्वत्र), किंवा जर खाजगी चालकांकडून दिल्या जाणाऱ्या सेवांचा लाभ समाजाच्या सर्व स्तरातील लोकांना मिळू शकत नसेल, त्यांचे दर जास्त असतील किंवा सेवांचा दर्जा योग्य नसेल, तर सर्वांची सेवेपर्यंत पोहोच सुनिश्चित करण्यासाठी, खाजगी चालकांच्या सेवेबरोबर किंवा स्वतंत्रपणे पुणे मनपाकडून सार्वजनिक सायकल सेवा उभारली व चालवली जाईल. खा

जगी-सार्वजनिक भागीदारी तत्वाने किंवा काम गतीमान होण्याच्या दृष्टीने आवश्यक अन्य स्वरूपात खाजगी चालकांना त्यांच्या सेवांचा दर्जा सुधारण्यासाठी पुणे मनपा सहाय्य करू शकेल.

4. सार्वजनिक सायकलींची शहरातील लक्ष्याधारित सेवा

पुणे सायकल आराखड्याला अनुसरून येत्या तीन वर्षात सार्वजनिक सायकल सेवांचा स्तर खाली नमूद केल्याप्रमाणे उंचावण्याचा पुणे मनपाचा प्रयत्न असेल.

1. सार्वजनिक सायकल व्यवस्थेतील सायकलींची संख्या
 - a. १०० रहिवाशांमागे ३ सायकली किंवा शहरात एकंदर १ लाख सायकली
2. सार्वजनिक सायकल व्यवस्थेतील सायकलींच्या फेऱ्यांची संख्या
 - a. प्रत्येक सायकलीच्या दर दिवशी ४ फेऱ्या किंवा दर दिवशी सार्वजनिक सायकल व्यवस्थेतील सायकलींच्या ४ लाख फेऱ्या

सदर बाबीमध्ये आवश्यकतेनुसार वेळोवेळी सुधार / बदल करण्यात येतील.

3. Policy for a Publicly owned and Operated System

The PMC will assess from time to time the services being offered by private vendors in the city in the aggregate. In the circumstances that privately-run services are not available in the city (in part or in whole), or the services provided through private operators are not accessible to all segments of society, are unaffordable or of poor quality, the PMC shall set-up and run a PBS system, in addition to existing operators or exclusively, so that these services are available to all citizens.

The PMC shall also explore the possibility of supporting private operators to enhance the level of service or a PPP or any other arrangement as deemed necessary and expedient.

4. Target Level of Service (LoS) for PBS in the city

It shall be the endeavour of the PMC to reach the following level of service by PBS, in accordance with the Pune Bicycle Plan, over the next 3 years.

1. No. of PBS cycles
 - a. 3 cycles for every 100 residents or about 1 lakh cycles in the city in aggregate
2. No. of PBS cycle trips
 - a. 4 or more trips per cycle per day or about 4 lakh PBS cycle trips per day

These targets shall be revised from time to time.

५. सायकल झोन

सध्याच्या बाजारपेठेमध्ये संपूर्णतः स्वयंचलित असलेली 'डॉकलेस' यंत्रणा उपयुक्त ठरेल, ज्यामध्ये स्मार्टफोन किंवा तत्सम तंत्रज्ञानाच्या वापराने वापरकर्त्या / सदस्य ग्राहकास सायकलीचे कुलूप उघडता येते, सायकल घेऊन हव्या त्या ठिकाणी गेले की त्या ठिकाणी सायकलला कुलूप लावून ती ठेवून देता येते, कुलूप लावले की सायकल फेरी संपल्याचीही नोंद होते.

कोणत्याही ठिकाणी सायकल सोडण्याची व्यवस्था करणे दूरगामी दृष्ट्या जिकिरीचे जाईल. म्हणूनच पुणे मनपाने शहराच्या विविध भागात 'सायकल झोन' निश्चित करावेत.

- i. पुणे मनपाने पादचारी मार्ग किंवा तत्सम सार्वजनिक ठिकाणी जमिनीवर रंगांच्या सहाय्याने हे झोन चिन्हांकित करावेत. या झोनमळे इतर वाहतुकीला अडथळा येणार नाही याची खबरदारी जागा ठरवताना घ्यावी.
- ii. हे झोन सायकल मार्गाचा एक भाग असावेत, म्हणजे त्याठिकाणी स्वयंचलित गाड्या उभ्या केल्या जाणार नाहीत, आणि केल्या असता त्यांच्यावर मुंबई महापालिका अधिनियम आणि मोटार वाहन कायदा याखाली पुणे मनपाने किंवा वाहतूक पोलीस किंवा आरटीओ यापैकी योग्य यंत्रणेकडून दंडात्मक कारवाई केली जावी.
- iii. या झोनाचा वापर सार्वजनिक सायकल व्यवस्थेतील सायकली किंवा खाजगी सायकली पार्किंगसाठी सामायिकपणे व्हावा.
- iv. या झोनमध्ये सायकली पार्क करण्यास शुल्क आकारले जाऊ नये.
- v. आवश्यकता असल्यास सार्वजनिक सूचना फलक लावावा, ज्यामध्ये सार्वजनिक सायकल व्यवस्थेची माहिती द्यावी, आणि त्याची संरचना व आकारमान निश्चित करण्याचे अधिकार महापालिका आयुक्तांवर सोपवावेत.
- vi. महानगरपालिकेकडून जोवर संरचना उभी केली जात नाही, तोवर आणि महापालिका आयुक्तांच्या मंजूरीने व परवानगीने सार्वजनिक सायकल व्यवस्था चालकांना झोनलगत तात्पुरते माहिती फलक, किंवा महापालिकेची परवानगी असल्यास, विहित नियमानुसार विशिष्ट आकारमानाचे कायमस्वरूपी माहिती फलक लावण्याची परवानगी

5. Bicycle Zones

The current market favours a "dockless" system, wherein the cycles are unlocked (usually by a smartphone or such technology, which is vendor-specific), ridden by the user/subscriber, and left at the destination and locked by the user to signify the end of the trip. The entire system is "automated".

The ability to leave the cycles at any location may cause nuisance in the long run. To address this issue the PMC shall designate "bicycle zones" throughout the city.

These zones –

- i. Shall be marked by simple paint marking on the pavement or other such publicly accessible area determined by the PMC which shall not pose an impediment or obstruction to other commuters
- ii. Shall be designated as being part of the "cycle track", so that no motorized vehicle shall be legally allowed to occupy this space and in such case, shall attract penal provisions and actions under both the Maharashtra Municipal Corporations Act and Motor Vehicles Act by the PMC or Traffic Police or RTO as appropriate
- iii. Shall be for the shared use for parking of cycles belonging to the PBS Operator or privately-owned cycles
- iv. Cycles parked in these zones shall not be levied any parking charges or fees
- v. Shall have a public display board, if necessary, which shall contain exclusively information about the PBS systems, and shall have such dimensions and structure as shall be determined by the Commissioner
- vi. The PBS vendor shall be allowed to temporarily place any information board, until such time that the Corporation does

दयावी.

- vii. पुणे मनपा आवश्यकतेप्रमाणे या झोनचे स्थलांतर करू शकते.
- viii. स्पष्टपणे नियुक्त केलेल्या सायकल झोनमध्ये सायकल पार्कींगची सोय करण्यास प्राधान्य असावे, मात्र जिथे अशा प्रकारचे पार्कींग झोन निश्चित केलेले नसतील, तिथे रस्त्यांलगत सायकल पार्कींगला परवानगी द्यावी. यामुळे जोवर इतर वाहतुकीला / वाहनांना अडथळा निर्माण होत नाही तोवर ही परवानगी दिली जावी.
- ix. या योजनेचा प्रसार करण्यासाठी पुणे मनपाने रहिवासी संघटना, सोसायटी, व्यापारी संघटना, कार्यालय संकुले, मेट्रो प्राधिकारी, बस डेपो, मॉल इत्यादींसोबत समन्वय साधून त्यांच्या सहाय्याने शहरामध्ये विना-शुल्क सायकल पार्कींग झोन नियुक्त करावेत.

या सायकल झोनमधूनच बहुतेक सायकली घेतल्या व दिल्या जातील याची खबरदारी चालकाने घ्यावी. परंतु, 'डॉकलेस' पद्धतीने सायकल व्यवस्था राबवताना काही वेळी झोनव्यतिरिक्त अन्य ठिकाणीही सायकली ठेवल्या जाऊ शकतात. अशा वेळी सायकली ठेवताना त्यामुळे इतर वाहतुकीला गैरसोय वा अडथळा होणार नाही याची काळजी घेतली जावी. असे झाल्यास त्याची माहिती मनपाकडून संबंधित चालकाला दिली जाईल, आणि माहिती मिळाल्यानंतर विशिष्ट वेळेत या सायकली दुसऱ्या योग्य त्या ठिकाणी नेण्याची जबाबदारी चालकाची असेल.

जर सूचना देऊनही चालकाने सायकली हालवल्या नाहीत, आणि त्यांचा वाहतुकीला अडसर होत राहिला, तर त्या उचलून नेण्याचे आणि चालकाला योग्य तो दंड आकारण्याचे अधिकार महापालिकेला राहतील. परंतु अशा दंडात्मक कारवाया शक्यतोवर केल्या जाऊ नयेत आणि महापालिकेने चालकाशी सौहार्दाने या समस्यांचे निवारण करावे.

शहरातील सायकल झोनच्या जागांची माहिती पुणे मनपाने अद्ययावत ठेवावी आणि त्याची सूचना वाहतूक पोलिसांना वेळोवेळी पाठवावी.

not affix a structure, with approval and permission of the Commissioner

- vii. Shall be relocated if required or deemed necessary by the PMC
- viii. While the designated bicycle zone shall be the preferred parking space in the city, in locations where there are no such identified parking zones, the bicycles shall be allowed to be parked off-road ill such time the same does not pose an impediment or obstruction to other commuters / vehicles.
- ix. To promote the scheme Corporation shall work with Resident Welfare Associations, Societies, market associations, office complexes, metro authorities, bus depots, malls etc. in the city to encourage provision of designated bicycle parking zones at no parking fees to promote adoption of the scheme.

The PBS vendor shall endeavour to ensure that most cycles are picked up and dropped off at these bicycle zones. However, given the nature of the "dockless" system, it is possible that cycles may also be placed in outside these zones. In such cases, the cycles should not be placed in such manner as shall cause inconvenience or obstruction to other commuters. The Corporation shall intimate the Operator in such cases, who shall, within a specified time period, re-locate such cycles.

The Corporation shall also have the power to remove such cycles in the event the Operator has failed to do so despite intimation, if they cause a continued obstruction to other commuters, and levy an appropriate charge on the vendor. However, the Corporation shall as far as possible, avoid such actions and work amicably with the operator to address such issues.

The PMC shall maintain the location of all such bicycle zones in the city and which shall be updated and provided to the Traffic Police for notification from time to time.

६. सुरक्षा

विविध देशात जिथे सार्वजनिक सायकल सेवा कार्यरत आहेत तिथे सर्वत्र जाणवणारी एक समस्या म्हणजे सायकलींची चोरी किंवा मोडतोड. आपल्या व्यवस्थेतही या समस्या येण्याची शक्यता गृहीत धरावी लागेल. तसेच सार्वजनिक सायकल व्यवस्थेच्या सार्वजनिक जागेत असलेल्या मालमत्तेला, 'सार्वजनिक मालमत्ता' मानून, त्याचे रक्षण होईल याची खबरदारी पुणे मनपाने पोलिसांच्या सहकार्याने घ्यावी. मनपा आणि पुणे यांनी संयुक्तपणे दक्षतेच्या उपाययोजना करून अशा दुर्घटना होणार नाहीत याची काळजी घ्यावी, घटना झाल्यास गुन्हेगारांना शासन करावे, आणि सार्वजनिक सायकल व्यवस्था ही आपल्या शहराची शान आहे, महत्त्वपूर्ण सोय आहे हा संदेश जाणीवजागृतीतून समाजामध्ये रुजवावा.

मनपा व पोलिसांनी चालकांशी वेळोवेळी समन्वय साधून चोरी व मोडतोडीच्या घटनांची वेळोवेळी पडताळणी करावी, आणि समस्या निवारणासाठी आवश्यक कारवाई करावी. चालक व स्थानिक प्रशासन यांच्याशी समन्वय साधून सुरक्षा योजनेचे व्यवस्थापन करण्यासाठी पुणे मनपाने एका नोडल अधिकाऱ्याची नेमणूक करावी आणि सदर काम करणारी स्वतंत्र टीम तयार करावी.

सार्वजनिक सायकल व्यवस्थेसारख्या नाविन्यपूर्ण उपक्रमाबद्दल समाजात जागृती निर्माण करणे, या योजनेला पूरक सामाजिक वर्तन व्हावे यासाठी लोकांचे प्रबोधन करणे अशा स्वरूपाचे कार्यक्रम या टीममार्फत राबवले जावेत.

७. विमा

शहरातील सायकल चालकांसाठी विमा सुविधा उपलब्ध करण्याची शक्यता पुणे मनपाने तपासावी आणि याबाबत आवश्यक निर्णय घ्यावेत.

८. जाहिरात

सार्वजनिक सायकल व्यवस्था चालकांना सायकलींवर जाहिराती लावण्यास परवानगी द्यावी, मात्र या जाहिराती सायकल सांगाड्याच्या बाहेर येतील अशा प्रकारे लावलेल्या नसाव्यात. सामाजिकदृष्ट्या अनिष्ट अथवा तंबाखू वा दारू सारख्या उत्पादनांच्या जाहिरातींना परवानगी

6. Security

One of the key concerns worldwide for PBS systems is the occurrence of theft or vandalism. While the PBS system must take into account some levels of both, the PMC with the cooperation of the Police, shall endeavour to ensure the safety of PBS system assets that are in public spaces, by treating them as "public property".

The PMC and the Police shall work together to control such incidences by being vigilant, nab and prosecute offenders, and inculcate a sense of pride and ownership for PBS in the city through outreach and awareness campaigns.

The PMC and Police will coordinate with PBS vendors on a regular basis to assess incidences of theft and vandalism and take such steps as necessary to address the issue.

7. Insurance

The PMC shall explore the possibility of insurance coverage for all cyclists in the city and take appropriate decision in this matter.

8. Advertisement

PBS system vendors shall be allowed to place advertisements on the cycle, but which do not extend or protrude from the body of the cycle. Advertisements that are offensive to the public or which display tobacco or alcohol shall not be permitted. The Commissioner shall be

दिली जाऊ नये. कोणकोणत्या जाहिराती / आशय अमान्य असतील हे ठरवण्याचे अधिकार आयुक्तांना असतील, यावर ते वेळोवेळी निर्णय घेतील.

९. सुरक्षितता

चालकांनी शहरामध्ये सेवा सुरू करताना व राबवताना योग्य त्या सुरक्षा उपाययोजनांचे पालन करावे. सुरक्षेची खबरदारी घेणे सर्वोच्च महत्त्वाचे असले पाहिजे. यादृष्टीने सायकली योग्य दर्जाच्या आणि मान्य मापदंडांच्या असल्या पाहिजेत, विशिष्ट कालावधीने त्यांची दुरुस्ती देखभाल केली गेली पाहिजे आणि सायकल चालकांच्या सुरक्षेला कोणताही धोका संभवणार नाही अशा प्रकारे काळजी घेतली गेली पाहिजे.

१०. योग्य वापर व्हावा यादृष्टीने वापरकर्त्यांना मार्गदर्शन

सायकलीचा वापर व पार्किंग शिस्तशीर होण्यासाठी सार्वजनिक सायकल व्यवस्थेच्या चालकांनी विविध माध्यमातून माहिती प्रसार करावा. सायकलीचा वापर, हाताळणी व पार्किंग याकरिता योग्य पद्धतीचा अवलंब केला जावा याकरिता नागरिक व सायकल चालकांना प्रोत्साहन द्यावे.

empowered to determine list of non-permissible content from time to time.

9. Safety

PBS system vendors shall ensure that they implement and follow appropriate safety and security measures while rolling out and managing the programme in the city. Safety is of prime importance and accordingly the operators need to ensure that the bicycles used are of the right quality and in compliance with the standards; and there is periodic maintenance carried out to ensure safety and user experience of the riders.

10. User Guidance on right usage

PBS system vendors shall actively promote disciplined bike parking and usage through their platforms/other media and incentivise users/citizens to adopt right practices in terms of parking, riding and bike handling.



पुणे महानगरपालिका आणि सार्वजनिक सायकल व्यवस्था पुरविण्यास इच्छुक संस्थांसाठी नमुना करार (एम.ओ.यु.)

पुढील दोन पक्षांदरम्यान
महापालिका आयुक्त,
पुणे महानगरपालिका,
शिवाजीनगर, पुणे ४११००५

महापालिका

आणि
XYZ प्रा. लि.
नोंदणीचा प्रकार (कंपनी . . .)
पत्ता

चालक

ज्याअर्थी पुणे सायकल आराखडा २०१७ मध्ये निर्धारित उद्दीष्टानुसार शहरामध्ये वाहतुकीसाठी सायकलींचा वापर वाढविण्यासाठी पुणे महानगरपालिका वचनबद्ध आहे, आणि ज्याअर्थी पुणे शहरात, परिशिष्ट 'अ' मध्ये नमूद केलेल्या तपशीलांप्रमाणे, संपूर्ण स्वयंचलित सार्वजनिक सायकल व्यवस्था चालवण्याची चालकाची इच्छा आहे, त्यानुसार, वरील दोन्ही पक्ष खालीलप्रमाणे सदर करार — या वर्षातील — महिन्यात — तारखेला करत आहेत:



Model Text of Memorandum of Understanding between PMC and Public Bicycle Share System Providers

Between
The Municipal Commissioner,
Pune Municipal Corporation,
Shivajinagar, Pune 411005
the CORPORATION

And
XYZ Pvt Ltd
registered as (company . . .)
At address
the OPERATOR

Whereas the CORPORATION is committed to increasing the mode share of cycling in the city, in accordance with the objectives set in the Pune Bicycle Plan 2017 and
Whereas the OPERATOR is desirous to operate a fully automated dockless PBS system in the city of Pune of specifications given in
Annexure A

Therefore, the above stated parties enter into an agreement on the _____ day of _____ in the year _____ as follows:

कलम १: जबाबदाऱ्या

- 1.1 पुणे मनपा खालील गोष्टींसाठी जबाबदार राहिल,
 1. चालकाच्या कामाच्या कक्षेत सायकल पार्कींग साठी सार्वजनिक जागा नियुक्त करावी, सदर जागा चालकाच्या सायकली तसेच खाजगी सायकली या दोन्हीच्या पार्किंगसाठी सामायिकपणे वापरली जाईल.
 2. निवडक जागांवर सार्वजनिक सायकल व्यवस्थेचे माहिती फलक लावण्यासाठी व्यवस्था पुरवेल.
 3. चालकाच्या मालमत्तेची चोरी व मोडतोडीपासून संरक्षण करण्यासाठी पोलिसांच्या मदतीने चालकाला सहाय्य करावे.
 4. विविध पातळ्यांवर चालकांच्या सेवांचा प्रसार करावा, मनपा वेबसाईट, फेसबुक व सोशल मिडियाच्या माध्यमातून नागरिकांना सदर चालकाच्या योजनेचा लाभ घेण्यासाठी व सायकल चालवण्यासाठी प्रवृत्त करावे
 5. आपल्या विविध कार्यालयांच्या द्वारा चालकांच्या सेवांची माहिती नागरिकांपर्यंत पोहोचवावी.
 6. पुणे शहरातील नागरिकांना चांगल्या दर्जाची सेवा उपलब्ध करून देण्याच्या दृष्टीने चालक, अन्य स्टेकहोल्डर्स आणि सार्वजनिक प्राधिकारी यांच्या नियमित बैठका घेऊन चालकाला भंडसावणाच्या समस्यांचे निराकरण करावे अथवा जागा उपलब्ध करून देण्याच्या शक्यता पडताळून पाहाव्यात.
 7. व्यवहार्य असल्यास, चालकाच्या सेवांचे शुल्क आणि पीएलपीएमएल बस सेवा, पुणे मेट्रो रेल्वे इत्यादी सार्वजनिक वाहतूक सेवांचे शुल्क एकत्रितरित्या आकारण्याची पद्धती अवलंबावी.
 8. चालकाच्या सायकली अनावश्यकपणे ताब्यात घेतल्या जाणार नाही याची काळजी घ्यावी, तसेच जर सायकलीमुळे वाहतुकीला अडथळा होत असेल तर तशा सूचना चालकाला देऊन सायकली हालवण्यासाठी वा दुसऱ्या ठिकाणी नेण्यासाठी चालकाला सहाय्य करावे.
 9. ज्या सायकलीमुळे सतत गैरसोय होत असेल अथवा वाहतुकीला अडथळा येत असेल अशा सायकली हालवाव्यात व ठरलेल्या जागी न्याव्यात, याकरिता जसे ठरले असेल त्याप्रमाणे आकारणी करावी.
 10. चालकाच्या सायकली वापरात असताना सार्वजनिक जागांचा वापर केल्यास शुल्काची

CLAUSE 1: RESPONSIBILITIES

- 1.1 The CORPORATION shall,
 1. Designate publicly accessible spaces for parking of cycles at locations within the area of operations of the OPERATOR for the shared use of cycles in the city, either privately owned or operated by any PBS system operator in the city
 2. Install frames/poles for display of information about the PBS system at selected locations as required
 3. Assist the OPERATOR in dealing with incidences of theft and vandalism, including coordination with the Police and other relevant authorities but the CORPORATION shall not be liable for any theft or vandalism of OPERATOR assets
 4. Promote the services of the OPERATOR on various platforms and encourage residents to cycle and avail of services, including mention/link to OPERATOR services from the PMC website, Facebook page and other social media
 5. Provide information to residents about the services offered by the OPERATOR at its various offices
 6. Conduct meetings with the OPERATOR and other stakeholders and public authorities on a regular basis to help mitigate any issues or problems faced by the OPERATOR or to explore the feasibility of providing access to spaces, in order to provide good quality service to Pune residents
 7. Facilitate, if feasible, integration of payment for services provided by the OPERATOR with other Public Transit modes such as the city bus service (PMPML), Pune Metro Rail, etc.
 8. Ensure that cycles belonging to the OPERATOR are not unduly confiscated and assist the OPERATOR to ensure cycles are removed or relocated from any location that cause inconvenience to commuters by informing the OPERATOR
 9. Remove and place cycles that cause continued inconvenience or block other commuters at an agreed

आकारणी केली जाणार नाही.

11. सार्वजनिक सायकल व्यवस्थेच्या कामाला पाठबळ देणारी धोरणे व तरतुदी कराव्यात.
12. चालकाशी संपर्क व समन्वय करण्यासाठी नोडल अधिकाऱ्याची नेमणूक करावी.
13. शहरामध्ये उभारण्यात येणाऱ्या नियोजित सायकल पायाभूत सुविधांची माहिती चालकाला वेळोवेळी किंवा त्याच्या विनंतीनंतर दिली जावी.
14. सायकल पायाभूत सुविधांबद्दल चालकाने दिलेल्या सूचना विचारात घ्याव्यात, आणि सुविधांचे नियोजन वा विस्तार करताना चालकाने दिलेल्या माहितीचा वापर करावा.

1.2 चालक खालील गोष्टींसाठी जबाबदार राहिल,

1. स्मार्ट सायकल आधारित डॉकलेस संपूर्ण स्वयंचलित सार्वजनिक सायकल व्यवस्था चालवणे व त्याचे व्यवस्थापन करणे
2. संपर्क व समन्वय करण्यासाठी प्राथमिक संपर्क व्यक्तीचे नाव व संपर्काचे तपशील मनपाला देणे
3. मनपाला पुढील माहिती दरमहा देणे
 - a. प्रत्यक्ष वापरातील सायकलींची संख्या
 - b. झालेल्या नॉर्दीनुसार सायकलींच्या फेऱ्यांची संख्या
 - c. सेवेचा लाभ घेणाऱ्या सभासदांची संख्या
 - d. चोरी वा मोडतोड झालेल्या सायकलींची संख्या व घटनेचे ठिकाण
 - e. नागरिकांना चांगल्या दर्जाची सेवा देता यावी आणि सायकलिंग पायाभूत सुविधांचे नियोजन करता यावे यासाठी पूरक ठरेल अशी अन्य माहिती
4. सायकल खरेदी करणे, वापरास देणे, देखभाल करणे यासाठीचा तसेच डॉकलेस सार्वजनिक सेवा चालवण्यासाठी लागणारे तंत्रज्ञान, कार्यवाही, मनुष्यबळ, संसाधने यासाठीचा आवश्यक सर्व खर्च करणे.
5. स्वतःची कार्यक्षम तक्रार निवारण यंत्रणा उभारणे, चालकाच्या सेवेबाबत मनपाकडून

upon location for such charges as are agreed upon mutually
10. Not levy any fees or charges for public spaces used for cycles of the OPERATOR when in service
11. Bring in periodic policy provisions to support the operations of Public bicycle sharing

12. Provide a nodal officer for communication and coordination with the OPERATOR
13. Periodically or upon request, update the OPERATOR regarding the cycle infrastructure planned to be executed in the city
14. Take under advisement any suggestions from the OPERATOR regarding the cycling infrastructure and use information provided by the OPERATOR to plan and expand the cycling infrastructure in the city.

1.2 The OPERATOR shall,

1. Setup, run and manage a fully automated, smart bicycle enabled bicycle sharing system in the city
2. Provide to the CORPORATION contact information and a primary contact person for communication and coordination
3. Provide to the CORPORATION the following information on a monthly basis
 - a. No. of cycles operational
 - b. No. of trips recorded
 - c. No. of subscribers to the system
 - d. No. and location of cycles stolen or vandalized
 - e. Any other information that is required to plan for cycling infrastructure and ensure good quality services to the public
4. Bear all costs associated with respect to procurement, deployment, maintenance, Technology, operations, manpower resources to run and manage the dockless bicycle sharing programme.
5. Have its own robust Grievance Redress system and shall

आलेल्या तक्रारींचेही निराकरण करणे, आणि तक्रार दूर केल्यावर त्याची माहिती मनपाला कळवणे.

6. तक्रार निवारणासाठी परस्पर सोयीने आयोजित केलेल्या समन्वय बैठकीला हजर राहणे
7. सेवांचा नियोजित विस्तार करणे (किंवा सेवा कमी करणे) आणि शुल्काच्या आकारणीतील बदलांविषयीची माहिती व पूर्वकल्पना मनपाला देणे
8. सेवा खंडित करणार असल्यास त्याची माहिती व कारणे मनपाला देणे, शक्य असल्यास किमान 3 महिने आधी सूचना देणे
9. ग्राहकांनी सार्वजनिक ठिकाणी ठेवलेल्या सायकली ज्यांच्यामुळे वाहतुकीला अडथळा होत असेल असे मनपाने निदर्शनास आणून दिले, तर सूचना मिळाल्यानंतर एका तासाच्या आत अशा सायकली हालवणे, किंवा अन्य ठिकाणी ठेवणे.
10. सामाजिकदृष्ट्या अनिष्ट अथवा तंबाखू वा दारू सारख्या उत्पादनांच्या जाहिराती केल्या जाणार नाहीत, तसेच सायकल सांगायच्या बाहेर येतील अशा जाहिराती लावल्या जाणार नाहीत, याला मान्यता असणे.
11. शहरातील नियुक्त केलेल्या सायकल झोनमध्ये सायकली परत ठेवण्यासाठी ग्राहकांना प्रोत्साहन देणे.
12. वाहतुकीचे नियम, सायकल सुरक्षितपणे चालवण्याचे नियम आणि सायकल वापर व पार्किंग यांच्या योग्य पद्धती याविषयी सायकल चालकाचे प्रबोधन करणे.
13. सार्वजनिक सायकल व्यवस्थेचा वापर कसा करायचा याची माहिती नियुक्त सायकल झोनच्या ठिकाणी इंग्रजी आणि मराठी भाषेत आणि मनपाने सांगितलेल्या पद्धतीने उपलब्ध करावी.
14. मनपाकडून माहिती प्रदर्शित करण्यासाठी जोवर काही संरचना बांधली जात नाही, तोवर माहिती प्रसारणासाठी सायकल झोनच्या ठिकाणी तात्पुरती माहिती प्रसारण व्यवस्था करावी.
15. शहरामध्ये सार्वजनिक सायकल व्यवस्थेचा प्रचार व वापर व्हावा यासाठी मार्केटींग व डिजिटल माध्यमातील जाहिरातींचा उपयोग करावा.
16. सेवेची कार्यवाही कार्यक्षमपणे केली जाईल आणि ग्राहकांना आवश्यक सहाय्य मिळेल यांची खबरदारी घ्यावी.
17. इतर चालकांच्या सेवेचा दर्जा दासळेल अशा प्रकारच्या कोणत्याही गोष्टी करू नयेत. इतर

- also resolve any grievances about its services that are received by the CORPORATION and which are communicated to the OPERATOR, and shall thereafter intimate the CORPORATION about their resolution
6. Attend any coordination meeting arranged in a mutually convenient manner to resolve any issues
7. Provide information about planned expansion (or retraction) of services and changes in rental rates
8. Intimate the CORPORATION about cessation of services and reasons thereof at least 3 months in advance
9. Agree to remove or relocate any cycles that are placed by customers in such locations that cause inconvenience or obstruction to other commuters as soon as intimated by the CORPORATION
10. Agree to not place upon the cycles any advertisement that is offensive to the public or depicts products such as tobacco and alcohol and which shall not protrude or extend from the body of the cycle
11. Encourage users to drop off cycles at the designated bicycle zones in the city
12. Educate users of their system about traffic rules, safe cycling habits and proper etiquette about use and parking of cycles
13. Place information about how to use the system at designated bicycle zones, in English and Marathi, in such manner as shall be communicated by the CORPORATION
14. Be allowed to place temporarily information about their system at locations, until such time as the CORPORATION does not provide the structure for display of information
15. Undertake marketing and digital advertising activities to promote usage and adoption of Bicycle sharing in the city.
16. Ensure efficient City operations and provide adequate customer support to riders for efficient operations
17. Not engage in any activities that shall be directed towards impacting the quality or provision of service of other

चालकांच्या सेवा ताब्यात घेण्याचा वा खंडित करण्याचा प्रयत्न केल्याचे निदर्शनास आल्यास चालकासोबतचा सदर करार रद्दबातल केला जाईल.

18. देण्यात येणाऱ्या सायकली सुरक्षा व सोय या दोन्ही दृष्टीने योग्य मापदंडांची पूर्तता करणाऱ्या असाव्यात. नादुरुस्त / निकामी सायकली वापरातून काढून टाकल्या जातील याची खबरदारी चालकाने घ्यावी. सायकल चालकाची सुरक्षितता लक्षात घेऊन वापरातील सायकलीची वेळोवेळी देखभाल करावी, नादुरुस्त भाग बदलावेत आणि सायकली कार्यक्षम ठेवाव्यात.

कलम २: कालावधी

सदर करार त्यावर स्वाक्षरी केलेल्या दिवसापासून ५ वर्षे कालावधीसाठी लागू राहिल.

कलम ३: दुरुस्ती करणे आणि भर घालणे

सदर करारातील शर्ती व कलमांमध्ये दोन्ही पक्षांच्या मान्यते व स्वाक्षरीखेरीज कोणतेही बदल केले जाणार नाहीत.

कलम ४: करार रद्द करणे

करार रद्द करण्यासाठी चालकाला ९० दिवसांची नोटीस द्यावी लागेल व त्यामध्ये रद्द करण्याची कारणे नमूद करावी लागतील.

मनपाच्या धोरणातील बदल किंवा चालकाकडून करारातील अटीचे पालन न होणे किंवा सेवेचा निकृष्ट दर्जा या व अशा कारणाने पुणे मनपाला ६ महिने आगाऊ सूचना देऊन चालकासोबतचा करार रद्दबातल करता येईल. यापैकी सेवेच्या दर्जाचे कारण असेल तर मनपाकडून चालकाला करार रद्द करण्याची अंतिम नोटीस देण्याच्या आधी किमान ३ महिने सेवेतील त्रुटीची कारणे नमूद करून पूर्वसूचना दिली जावी, आणि संबंधित सुधारणा करण्यास अवधी द्यावा.

कलम ५: मतभेद निवारण

दोन्ही पक्षांमध्ये काही मतभेद निर्माण झाल्यास ते सौहार्दपूर्वक मिटवले जातील.

operators. Any attempt by the operator to sabotage / halt the operations of other operators could lead to cancellation of the MOU for the OPERATOR.

18. Ensure that the bicycles deployed adhere to certain standards of safety and comfort. Further the OPERATOR shall ensure that the damaged / non-functioning bicycles are removed from the operations there is periodic maintenance undertaken of the bicycles / parts replaced for improved rider experience and safety.

CLAUSE 2: DURATION

This Memorandum of Understanding shall be in force for a period of 5 years from its signing.

CLAUSE 3: ALTERATIONS AND ADDITIONS

Any alteration of the conditions and clauses in this MoU must be agreed to and signed by both parties to this agreement

CLAUSE 4: RESCISSION

This MoU can be cancelled by the OPERATOR with a 90-day notice which shall include the reasons for cancellation.

The CORPORATION can cancel the MoU by intimating the OPERATOR 6 months in advance due to either a change in policy adopted by the CORPORATION, due to non-adherence by the OPERATOR to the terms of this MoU or due to poor quality of services. In the case of the latter, the CORPORATION shall have intimated, by serving a notice to the OPERATOR, at least 3 months prior to the final notice, its intention to cancel the MoU for reasons stated and giving a time-period for the OPERATOR to resolve issues.

CLAUSE 5: DISPUTE RESOLUTION

Any dispute between the parties shall be settled amicably

कलम ६: अधिकारक्षेत्र

या करारासंबंधाने काही मतभेद / विवाद निर्माण झाल्यास ते पुणे, महाराष्ट्र, भारत या ठिकाणी स्थानिक स्तरावर लागू असलेल्या तत्कालिन कायद्यानुसार सोडवले जातील.

करिता: पुणे महानगरपालिका
नाव: XYZ प्रा. लि.
पद: नाव:
स्वाक्षरी: पद:
दिनांक: स्वाक्षरी:
दिनांक:

On behalf of: The Pune Municipal Corporation
By: XYZ Corporation Pvt Ltd
Name: The XYZ Corporation Pvt
Title: Ltd
Sign: By
Date: Name:
Title:
Sign:
Date:

परिशिष्ट अ

सार्वजनिक सायकल सेवा व्यवस्थेची माहिती:

- सेवेचे नाव
- पुण्यातील कार्यालयाचा पत्ता
- संपर्क व्यक्ती, पद, संपर्कासाठी माहिती
- वेबसाईट
- सदस्यत्वाचे स्वरूप
- वापरकर्ता कराराची प्रत
- सायकल डिझाईन तपशील
- शहरामध्ये प्रस्तावित सेवेचे तपशील

कालावधी	सायकलीची संख्या	कामाचे क्षेत्र	स्थानांतरासाठी वापरायच्या वाहनांची संख्या
सुरुवात करतवेळी			
पहिल्या वर्षाच्या अखेरीस			
दुसऱ्या वर्षाच्या अखेरीस			
तिसऱ्या वर्षाच्या अखेरीस			

CLAUSE 6: JURISDICTION

All disputes arising out of this MoU shall be settled within India at Pune, Maharashtra as per prevailing laws.

On behalf of: The Pune Municipal Corporation
By: XYZ Corporation Pvt Ltd
Name: The XYZ Corporation Pvt
Title: Ltd
Sign: By
Date: Name:
Title:
Sign:
Date:

ANNEXURE A

Information about Public Bicycle Sharing system:

- Name of Service
- Office address in Pune
- Contact Name, designation and contact information
- Website
- Subscriber model
- Copy of User Agreement
- Description of cycle design
- Proposed service in the city

Time Period	No. of Cycles	Area of Operation	No. of Vehicles used for relocation
At Launch			
End of Year 1			
End of Year 2			
End of Year 3			



PDA Prasanna
Desai
P U N E Architects

CEE
Centre for Environment Education