

HOW TO bike library —

Lessons from the
NTA/SEAI/UCD pilot



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The Idea behind a Bike Library is to provide local communities with the opportunity to run their own bike sharing scheme focusing on their specific needs.

Think of it as a traditional book library where, instead of books, families can borrow different types of e-bikes, e-long tail bikes, e-foldable bikes and e-cargo bikes for a long period of time. The participants get first-hand experience of the benefits of e-bikes and understand, over the 3-4 months they are using the e-bikes, how these are effective in replacing many car trips. So not only car trips to bring and collect children from school, but also trips to the shops, commuting to work, leisure trips during the weekend, etc. The extended period of time fosters a long-term behavioural change: in the last 2 years over 600 families took part in our Bike Library and around 50% of them purchased an e-bike at the end of the pilot.

The pilots we have run since 2023 are the following:

- A pilot in 25 schools in the Greater Dublin Area with over 100 e-bikes engaging around 300 families in 2023;
- A pilot in St James Hospital and Ballymun Community Centre with around 30 e-bikes engaging around 100 participants running since 2023;
- A pilot in a public library in UCD involving 25 e-bikes with over 100 participants in 2024;
- A pilot in 12 GAA clubs in the Greater Dublin Area and Kildare with over 100 e-bikes engaging around 300 families in 2024;
- A new pilot in 16 companies in Dublin and Limerick with around 100 e-bikes which will start in September 2025.

Headlines

- Bike libraries require a capital outlay – e.g. a bike library of 20 e-bikes costs around €40,000;
- Bike libraries require an operational budget – e.g. a bike library of 20 e-bikes costs around €20,000 a year;
- Bike libraries require organisational resources – these can be found within existing community groups such as the GAA;
- Bike libraries can work really well in the right scenarios - The extended period of time fosters a long term behavioural change: in the last 2 years over 600 families took part in our Bike Library and around 50% of them purchased an e-bike at the end of the pilot;
- The Audience for this guidance – e.g. its expected the audience for this guide are Local Authorities, government organisations or larger NGOs.

5 Step Guide to Bike Library

STEP 1: Scope out your project

The first step is to get a better understanding of who is going to use the bikes in your Bike Library. This will allow you to select the mix of bike types for your fleet.

If the bike library is for a school or a GAA/ sport club, which are more family oriented, it is recommended to have a ratio of 6/3/1 for e-bikes/e-longtail bikes/e-cargo bikes. E-bikes should also be equipped with a child seat. E-longtail bikes should be equipped with a bench with monkey bars and rain cover. E-cargo bikes should be equipped with benches and seat belts, and a rain cover. This will allow to have e-bikes with child seats for families with 1 child below 7 years, e-longtail bikes for families with 1-2 children of ages between 5 and 12 years, e-cargo bikes for families with more than 2 children. Bike libraries may vary in size according to the specific location, but on average around 15-20 e-bikes per location would guarantee a good engagement of the local community.

If the bike library is for a community centre or a public library, it is recommended to have mostly e-bikes and e-foldable bikes to cater for single users who might predominantly use the bike to commute to work.

All the bikes should be branded to increase the visibility of the Bike Library, which will foster participation and engage more families in the initiative. The increased visibility in the pilots in the schools in 2023 and in the GAA clubs in 2024 generated an uptake of active mobility also in families which didn't have a bike from the local Bike Library.

Additional details about the equipment and other costs related to the Bike Library is in Appendix 1.

FAQ STEP 1

Q1.1: What's involved in setting up a bike library in a school?

A1.1: It can be difficult to set up a bike library in schools as you will have to get the principal onboard. This might require multiple phone calls. It would be better to have an internal contact in the school, such as a teacher or a parent. It is important for the success of the bike library that the initiative is not only disseminated through school news emails, but most importantly on parents WhatsApp groups. Setting up a bike library in a school generally requires a lot of contact with individual families, so it would be beneficial to interact with the Parent Teacher Association in each school, who could take charge of the internal communication activities for the bike library and support the delivery and collection of the bikes.

Q1.2: What's involved in setting up a bike library in a GAA?

A1.2: Setting up a bike library in a GAA is simpler than in schools. GAAs have a structure of volunteers (which are generally more engaged/have more time than school secretaries etc..) It is recommended that each GAA puts forward a volunteer to champion the initiative. Our experience with the GAA clubs has been extremely positive

as the volunteers managed all the internal communication with the families and reduced the amount of effort required to kick start and run the bike library.

Q1.3: What's involved in setting up a bike library in a Community Centre?

A1.3: Community Centres are similar to GAAs in terms of requirements. Again, it is important to identify a champion within the volunteers and staff in the community centre.

Q1.4: What's involved in setting up a bike library in a Public Library?

A1.4: Public Libraries are already set up to distribute items to the general public, so the integration of a bike library is quite simple. Public Libraries will however require a storage place for the bikes to manage them while they are not borrowed by participants. A bike bunker operated with an app could provide a seamless way to temporarily store the bikes, so the Library would have only to provide a code to the participants to open the bunker. This approach has been tested at the UCD James Joyce Library.

Q1.5: How will I select suitable participants?

A1.5: it is important to ask participants to guarantee a safe storage of the bikes overnight because of insurance requirements, so this is the first criterion to select participants.

It would be important also to ask participants for a deposit, to ensure they take proper care of the bikes. It is critical to define deposits in a way that they don't become a barrier for some participants. We initially set a deposit to 10% of the value of the bike, but this became a barrier for many participants. So we reduced the deposit to 5% of the value of the bike. This increased the uptake from participants, but it was still a barrier in disadvantaged areas. As such, we set a €50 deposit for e-bikes and €100 for e-longtails and e-cargo bikes in those areas, which improved the uptake.

STEP 2: Understand how you will operate the bike library

Bike Libraries take a considerable amount of effort to operate, so it is recommended to partner with for example with a bike sharing scheme operator to take over the operational side of the bike library. In the pilots in schools in 2023 and in 12 GAA clubs and 2 Community Centres in 2024, we partnered with Bleeper who took care of the operational side of the bike libraries.

The operational side included:

- Delivery of bikes at the pilot;
- Periodic maintenance of the bikes: bikes were collected every 3-4 months, completely serviced and then brought back to the pilot for the next family, this could possibly be reduced to once every 6 months;
- Ad-hoc maintenance: sometimes bikes have problems so maintenance is provided to fix them;
- Customer care: participants have always a lot of questions regarding???, so Bleeper provided a customer service;
- Insurance: all the bikes need to be insured;
- Tracking: all the bikes need to be instrumented with a GPS sensor. This will allow to recover the bikes if stolen and provide exceptional data for policy purposes. This service comes at a cost in terms of GPS sensor and data fees, but it is worth the price.

FAQ STEP 2:

Q2.1: How much will it cost to run the operations?

A2.1: An indication of the costs for operations and for bikes is provided in Appendix 1.

Q2.2: Who will manage the interactions with the families?

A2.2: I would recommend having a champion in each school, GAA, etc. who will liaise directly with the bike sharing scheme operator. This will allow to take away the operational efforts for the bike library. I would recommend monthly calls with the bike sharing scheme operator to check on the status of the activities.

STEP 3: Get in touch with a local supplier to order your bikes

We purchased the bikes through Bleeper, so we could get a comprehensive costing including both capital and operational costs. Ordering the bikes through Bleeper also made the purchase of the assets easier as any bike sharing scheme operator would have direct contacts with e-bike suppliers.

Details about the recommended items to include if it is decided to go ahead with procurement are included in Appendix 2.

If you want to go ahead with supplying the bikes yourself, you should bear in mind that you will need to then arrange for someone to fit the GPS sensors, prepare and deliver the bikes to the participants in your bike library. We decided to go for a more streamlined approach and have one supplier managing both the acquisition and operation of the bikes.

FAQ STEP 3:

Q3.1: How would I procure both the bikes and the services?

A3.1: A pre-filled Tender document is provided in Appendix 2.

Q3.2: Do I have to order both the bikes and services from the same company?

A3.2: No, but using one provider makes things simpler—from purchase to logistics. If using different companies, ensure they work well together and have a clear, coordinated process.

Q3.3: Why do all bicycles in a bike library typically have GPS trackers?

A3.3: Bikes have GPS trackers to meet insurance requirements, prevent theft, and collect anonymized usage data. This helps track routes, frequency, and distance, supporting impact analysis and CO2 savings estimates.

Q3.4: What if a bike gets stolen?

A3.4: You should get the participant to report it to the police and get a formal report, so it can be used for the insurance.

Q3.5: What if a bike has minor or mechanical issues?

A3.5: It would be better to include in the terms and conditions that the participants look after minor issues (e.g. lose chain, flat tyre) themselves to reduce the operational costs. Repairs for mechanical issues should be included in the contract with the company supporting the operations (See Appendix 2)

STEP 4: Set up a strategy to monitor the impact of the activities

It is important to monitor the performances of your bike library and to assess its impacts. We put in place a strategy to collect both qualitative and quantitative data to monitor bike libraries and assess their impacts, in order to provide evidence-based data for future sustainable mobility policies.

The monitoring strategy consists of the following elements:

1. Pre- and post-pilot questionnaires: The primary objective of the questionnaires is to gain insights into the primary reasons for enrolling in the Bike Library, the participants' expectations, perceived benefits, barriers and challenges of cycling and intentions to continue cycling after the end of the trial period. In addition to this, data on gender, age, nationality, education level, household income, car ownership, and related factors such as distance from school/work and usual modes of transportation were collected to facilitate a comprehensive analysis.
2. GPS sensors on e-bikes: GPS sensors have to be installed on each bike for insurance requirements. They can be used to collect granular data on usage patterns, preferred routes, frequency of trip, travelled distance, etc. The data collection from the GPS sensors needs to be set at a resolution of 2-5 seconds in order to provide meaningful data for the proposed analysis. The GPS sensor data can be also used to estimate the CO2 savings of the initiative in terms of avoided car trips.

FAQ STEP 4:

Q4.1: How would you ensure that participants complete the questionnaires?

A4.1: In order to avoid many follow up emails and missing responses to questionnaires, it is important to do the following: 1) don't give the bike to the participant until he/she has completed the pre-pilot questionnaire; 2) don't return the deposit until the participant has completed the post-pilot questionnaire. As all these interactions might be time-consuming, we got the Bleeper customer care to carry them out.

Q4.2: How will the collected data be used?

A4.2: The data is used to monitor the program's performance, improve future initiatives, and support research that informs sustainable mobility policies.

Q4.3: Will GPS data be used to identify individual participants' routines?

A4.3: No. All GPS data is anonymized by the analysis team to ensure that individual users, their routes, or routines cannot be identified.

Q4.4: Will participant data be shared or published?

A4.4: No. All data is anonymized and only shared or published in aggregate form, with no information about individual participants.

STEP 5: Begin to share the bikes with your local community/participating group

The delivery of the bikes to the bike library should be managed by the supplier in charge of the operations. Bleeper delivered this service for our bike libraries in 2023 and 2024, including the management of the deposits.

If you don't want to rely on a supplier and would like to manage the operations of the bike library yourself, there are some things you need to be aware of:

The delivery of bikes to participants needs to be properly planned. I would recommend delivering the bikes only when all the deposits have been paid. I would also recommend organising a pick up day with all the participants so the bikes can be delivered at one location (e.g. school, GAA, etc.) and collected by the participants at a given time there. Even if properly organised, there might still be some inconveniences. Some participants didn't show up at the pick-up day in our school bike libraries in 2023, so we had to organise other pick up days and in some instances we had to deliver the bikes at home. GAAs and Community Centres were easier to manage because the volunteers supported these activities.

When the bikes are delivered to the participants, you should be prepared to answer many questions related to the bikes, such as how to charge them, how to remove the batteries, how to change the gears, etc. Our supplier ran demonstration sessions during the delivery of the bikes and answered any questions from the participants.

FAQ STEP 5:

Q5.1: What if a participant doesn't collect the bike?

A5.1: That can happen quite often, even if participants paid a deposit. It is recommended to organise one collection date at the premises of the pilot and then get the participants to collect the bike from the service provider, in order to reduce operational costs.

Q5.2: What other partners can I consider besides GAA clubs, schools, and community centres?

A5.2: Look for community-focused partners with volunteers who can support promotion and bike distribution—such as local charities, church, residents' associations, or youth groups.

Q5.3: Who is responsible for bike maintenance?

A5.3: Ideally, the supplier should handle routine maintenance. If not, we recommend partnering with local bike shops to provide this service. It is recommended to perform a routine maintenance every time the bike is moved from a participant to the next one. Routine maintenance will increase the bike's lifespan.

Q5.4: How long can participants borrow the bikes?

A5.4: It depends on the target group, number of bikes, and budget, but we recommend a borrowing period between 2 and 6 months.

How to end a project?

It is important to manage the expectations in terms of duration of the bike library from the very outset. We clearly communicate that each participant would have a bike for 3-4 months and that the bikes will stay at the pilot location (e.g. the school or the GAA club) for 6 months or 12 months at the very beginning of the onboarding process. This allows to have a very defined deadline for the pilot and to move the bikes to a new location, in order to maximise the use and impact of the bikes.

Appendix 1: Indicative costing of equipment, operations and other costs

Approximate Costs		(per bike)		
A	CAPITAL COST	e-bike	e-longtail	e-cargo
	Bikes	€1,500	€3,000	€4,000
	Rain tents	n/a	€150	€250
	Benches and seat belts	n/a	€300	€250
	Locks	€100	€100	€100
	GPS Tracker + platform + 1 year data	€200	€200	€200
	Child seats	€100	€100	n/a
B	THEFT INSURANCE	e-bike	e-longtail	e-cargo
	Insurance	€250	€450	€450
C	BIKE DISTRIBUTION & SERVICING COSTS	e-bike	e-longtail	e-cargo
	Bike parts (tyres, tubes, oils)	€50	€100	€100
	Mechanics time	€60	€60	€60
	Lost & broken chargers + damaged batteries	€15	€15	€15
	Travel to schools/bike storage	€15	€15	€15
D	PROJECT MANAGEMENT			
	project management supplier			
	Customer Care Agent			
F	TRACKER DATA RENEWAL COSTS			
	12 months data fee	€80	€80	€80

Appendix 2: tender document

The following items should be included in the tender document.

E-bikes:

- City / Trekking style e-bike with front and rear mudguards, front and rear led lights, carrier and kickstand
- **Motor / Electrical System:**
 - Mid-motor system from Shimano, Bosch.
 - Removable battery for easy charging and replacement.
 - Integrated battery with a capacity of no less than 400 Wh for extended range.
- **Tyres:**
 - Schwalbe Marathon Plus or similar specification tyres with equivalent puncture protection.
 - Tyres must feature a high level of puncture resistance, such as a 5 mm thick protective layer, to ensure durability and safety.
- **Stand:**
 - Equipped with a kickstand for stable parking.
- **Lighting:**
 - LED lights installed at the front and rear for enhanced visibility and safety.
- **Carriers:**
 - Equipped with carriers for transporting goods.
- **Mudguards:**
 - Full front and rear mudguards to protect against splashes and debris.
- **Braking System:**
 - Must have hydraulic brakes on both front and rear wheels.
 - Preference for brake systems from Shimano or Tektro.

E-long tail bikes:

- Longtail E-Bike with front and rear mudguards, front and rear led lights and centre kickstand.
- **Motor System:**
 - Mid-motor system from Shimano, Bosch.
 - Removable battery for easy charging and replacement.
- **Cargo Capacity:**
 - Capable of carrying two children or converting to carry diverse cargo.
 - Must accommodate two child seats for children under 23 kg each or have seat pad options for larger children.
 - Minimum payload capacity of 200 kg (including rider and load or passengers).
- **Additional Features:**
 - Must be capable of attaching foot decks and protection/hold-on bars.
 - Frame-mounted brackets for an optional front rack are required.
- **Braking System:**
 - Must have hydraulic brakes on both front and rear wheels.
 - Preference for brake systems from Shimano, Tektro, or Magura.

➤ **Mudguards:**

- Front and rear mudguards to protect against splashes and debris.

➤ **Stand:**

- Equipped with a centre stand only for stable parking.

➤ **Lighting:**

- LED lights installed at the front and rear for enhanced visibility and safety.

E-foldable bikes:

- Folding City Style E-Bike with front and rear led lights with carrier and stand with a wheel size of no less than 20”.

➤ **Motor / Electrical System:**

- 250W Bafang, Bosch or Shimano.
- Removable battery with a capacity of no less than 250 Wh

➤ **Braking System:**

- Hydraulic Disc Brakes.
- Preference for brake systems from Shimano or Tektro.

➤ **Lighting:**

- LED lights installed at the front and rear for enhanced visibility and safety

➤ **Tyres:**

- Schwalbe Marathon Plus or similar specification tyres with equivalent puncture protection.
- Tyres must feature a high level of puncture resistance, such as a 5 mm thick protective layer, to ensure durability and safety.

➤ **Bike Weight:**

- Max 25kgs

E-cargo bikes:

- Front loading mid motor e-cargo bike capable of carrying a minimum of 2 children.

➤ **Motor / Electrical System:**

- 250W Bosch – Bafang or Shimano Mid-Motor with a minimum Torque of 75Nm.
- Minimum of 400wh removable battery.

➤ **Gears:**

- NuVinci Enviolo or Shimano Alfine gears

➤ **Braking System:**

- Hydraulic Disc Brakes.
- Preference for brake systems from Shimano or Tektro.

➤ **Lighting:**

- LED lights front and rear for enhanced visibility and safety.

➤ **Stand:**

- Equipped with a centre kickstand for stable parking.

➤ **Mudguards:**

- Full front and rear mudguards to protect against splashes and debris.

➤ **Lock:**

- Café lock with key hold necessary.

E-bike special needs:

- E- Tricycle with back support and low step thru.
- **Braking System:**
 - Hydraulic Disc Brakes.
 - Preference for brake systems from Shimano or Tektro.
- **Payload:**
 - Must be capable of holding up to 130 kg for individual riders.
- **Gears:**
 - NuVinci Enviolo or Shimano Alfine gears
- **Tyres:**
 - Schwalbe Marathon Plus or similar specification tyres with equivalent puncture protection.
 - Tyres must feature a high level of puncture resistance, such as a 5 mm thick protective layer, to ensure durability and safety.

GPS Sensors & Data Acquisition:

- **Tracker Installation:**
 - Must include provisions for installing Powunity 4G trackers.
 - Installation should allow for easy access to the tracker for maintenance and battery replacement.
 - Ensure proper cable management to avoid interference with other components.
 - Tracker should be installed in a concealed location within the motor housing to prevent tampering.

Warranty, Maintenance and Insurance:

- **Frame:**
 - The warranty must be covered for two years against manufacturing defects.
- **eBike System Components:**
 - The warranty must be a minimum of 12 months.
- **Non-Consumables:**
 - Minimum of one year (includes front fork with shock absorber, saddle, seat post, shift lever, front derailleur, rear derailleur, main shaft, front/rear hub excluding free hubs, handlebar, brakes mechanism, front fender, rear fender, pedals).
- Manufacturers must ensure their e-bikes meet these requirements and affix the CE marking to indicate conformity.
- **Delivery, maintenance and customer support:**
 - Supplier must deliver the bikes to [to be specified] different locations in [specify the area].
 - Supplier must run full check-up and maintenance of bikes every 4 months
 - Supplier must collect deposit from participants to the pilot
 - Supplier must have in place a customer care to liaise with queries from participants
 - Supplier must administrate and collect questionnaires from participants

Lead Time for Delivery:

- Please give full details of the lead time from contract signing and receipt of purchase order and delivery plan.
- [add a deadline for delivery in the specifications of the tender document]