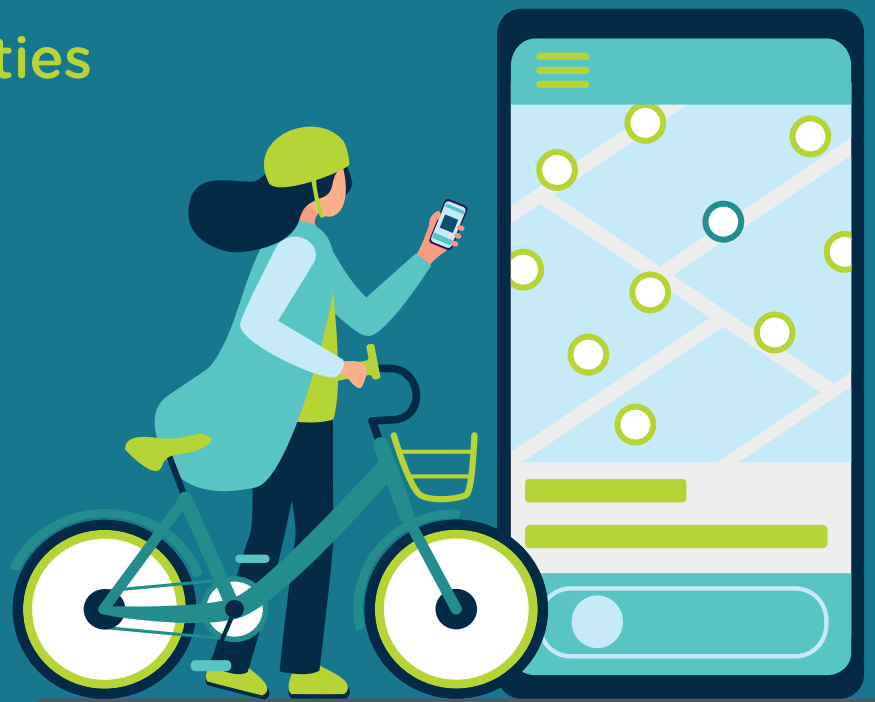


May 2020

# Success Factors for Sustainable Bike Share

A CoMoUK review  
focusing on hub-based  
systems for UK cities



# Contents

---

<b>Summary recommendations</b> .....	<b>4</b>
a. Scale and density of bikes .....	9
b. Strategy.....	10
c. Specification.....	10
d. Opportunities to secure revenue funding via sponsorship and other sources .....	11
e. Reducing costs and partnership support.....	12
f. Implementation and bike management.....	13
<b>Measures to minimise criminal damage</b> .....	<b>14</b>
a. Planning considerations.....	14
b. Physical and digital technological interventions .....	15
c. Community engagement interventions .....	15
d. Legal and policing interventions.....	16
e. Responsibility.....	16
<b>Capital funding ranges</b> .....	<b>17</b>
<b>Operational funding ranges</b> .....	<b>18</b>
<b>Conclusions</b> .....	<b>19</b>
<b>Appendix</b> .....	<b>20</b>
<b>Definition of terms</b> .....	<b>20</b>

**Antonia Roberts**  
Antonia@como.org.uk

# Introduction

---

Cities have an exciting opportunity to capitalise on a resurgence of interest in cycling. The evidence for the contribution to policy goals on activity levels, air quality and climate change is clear. As well as providing space through cycle lanes there is a strong case for the benefit of offering people convenient low-cost access to bikes through bike share schemes.

---

The CoMoUK annual bike share user survey results show that schemes act as a catalyst for lapsed or new cyclists (46% of respondents in 2019) and attract a wider demographic than traditional cycling with associated physical and mental health benefits. Shared bikes support last mile travel from public transport and Park and Ride sites. 17% of users in the latest survey had used bike share to replace car trips.

As of May 2020, there are around 35 schemes live or in the pipeline, most enjoying strong use rates. However, bike share development has faced challenges in UK cities in recent times. Time was lost with unfulfilled agreements from operators and some cities have had difficulties with criminal damage and finding the right approaches to procurement and funding.

This guidance outlines all the influencing factors, financial and non-financial, behind the strongest schemes and assesses the minimum and priority areas of support required. The review also makes recommendations about the resources and approaches required to minimise criminal damage. The work draws upon extensive interviews with UK operators including looking at advice on enhancing the procurement process itself.

The report is written with a focus on hub/bay or docked bike share schemes, the assessment of the relative merits of different systems is not part of the remit of this work. It provides a framework for creating strong schemes which can provide a key component to creating liveable, sustainable environments.

---

BIKE SHARE  
REDUCES CAR USE



27%

OF BIKE SHARE COMMUTERS  
HAD PREVIOUSLY TRAVELLED  
BY CAR (DRIVER OR PASSENGER)  
OR TAXI

---

BIKE SHARE IS A TOOL FOR  
RE-ENGAGING CYCLISTS



46%

OF BIKE SHARE USERS SAID  
THE BIKE SHARE SCHEME WAS  
A TRIGGER TO CYCLING AGAIN

## Summary recommendations

---

- **Consultation:** Structured pre-procurement consultation interviews support efficient collection of industry expertise.
- **Procurement:** The route to selecting a supplier should be tailored to the funding available with recognition that the less public subsidy available, the more the operators will wish to have control and work flexibly to manage operating costs and the risk they are absorbing.
- **Specification:** This should be flexible, and outcome focused except for the core non-negotiable factors to allow operators to develop the strategy they believe can be successful. Definitions of terms must be spelt out with description to avoid ambiguity.
- **Funding:** Some form of revenue support is required for the majority of schemes and can take many forms; this can sometimes be achieved through flexible allocation of capital funding. The amount required can be partly offset by practical support from an authority.
- **Density:** The density of bike docks or hubs is a key factor to the success of a scheme, while also being a driver of cost. Users of the scheme need to feel bike share is quick and easy to use, with a choice of places to pick up and drop off bikes easily conveniently placed in all the directions around their trip origins and destinations.
- **Exclusivity/profitability in small to medium cities:** It is unlikely that more than one operator is likely to be able to be profitable in medium or smaller scale cities. This may also apply to the expanding range of micro-mobility products which could compete with bike share.
- **Service Level Agreements:** Contractual SLAs can make a critical difference to operational costs, for examples through increased redistribution costs and hence the success of a scheme. It is more important to link minimum standards to objectives and outcomes than outputs. Joint working to address issues should come before blanket penalties.
- **Ebikes:** Careful thought is needed to get the right percentage of e-bikes to satisfy demand in area without adding too much to capital, rebalancing or battery swop costs.
- **Council staff support:** It is vital for the scheme to be embedded into all council work with a senior “sponsor” to ensure it is automatically included in transport strategy, funding proposals, built environment development and cycle infrastructure plans, outreach and communications work.
- **Long term funding:** A very important factor to be considered in the development of the scheme is the replacement of bikes as they come to the end of their lifespan. The contract length should where possible to be linked to the likely expected duration the bikes can be used for in order to secure further funding for a refresh of bikes.
- **Deployment of schemes:** The mobilisation period from signing the contract to launch needs to be at least six months and possibly up to 9 months. Speed will be affected by support in the planning process.
- **Criminal damage:** A multi-pronged partnership approach is need addressing vandalism through planning considerations, physical and digital technological interventions, community engagement and legal and policing measures.

## Defining success

---

The following list has been compiled to define the characteristics of a successful scheme. These are points to bear in mind when designing the specification, choosing a supplier and setting up performance measures.

---

- **Addressing local objectives:** Evidence of impact on key identified local objectives eg modal shift, increase leisure cycling levels, seamless multimodal travel etc.
- **Utilisation by target groups:** High awareness of and utilisation by identified target groups.
- **Customer satisfaction:** High rating of the service and repeat use by users plus lack of complaints from non-user members of the public in particular.
- **Longevity of service:** Ability of operators to fulfil contract agreements and provide service for the full length of the contract.
- **Financial sustainability:** A long term plan for balancing operational costs with reliable income streams without the need for price rises (which reduce utilisation).
- **Satisfactory density & coverage:** Bikes available where they are needed and hubs to return them to in convenient locations or strategy to move towards this in phases.
- **Minimal damage:** Recognising eliminating all criminal damage may be impossible but keeping the level low enough to be manageable and not cause financial difficulties.
- **Positive publicity:** Supportive media coverage for the scheme locally and nationally from public and private sectors.
- **Added value:** Activities which involve working with charities, or local groups on issues such as road safety, cycle training, inclusion.

## Procurement routes

---

It is generally agreed that local authorities should carry out some form of consultation before the procurement process starts. This helps operators feed in their expertise to the design of strategy and for them to be used to draw out city specific advice.

---

Consultation could take the form of an industry engagement day to test aspirations, gauge interest and try out bikes. To make the most of the opportunity it is useful to hold detailed, structured market testing interviews where everyone is invited to answer set questions in advance. However, it is important to avoid cherry picking all the best ideas assuming that it is feasible to deliver them in combination.

A formal Competitive Dialogue process has many benefits, although it can take many months. Planning ahead to consider the launch date is critical given this should ideally be in Spring to maximise the chance of building a substantial user base during better weather. If this route was taken, a shorter two stage process may be preferable which allows for feedback on a draft tender specification through initial submissions and /or meetings. This would reduce the chance of final procurement documents including issues which cause problems for those tendering and thereby make it a more cost-effective process.

Where there is an investment in the scheme from the local authority a full tender process is required, most often advertised in the Official Journal of the European Union. Some authorities are also taking this route even where there is no grant support as they deem the opportunity to use the public space as having a significant value and wish to run a competitive process. Other authorities are choosing to use Requests for Proposals to structure selection in an open and transparent way.

Where schemes are launched without financial support from the city a Memorandum of Understanding can be used but many authorities prefer the reassurance of a contract. As a contract has to be for a consideration this may involve a £1 nominal exchange. The contract can be for the award of a Concession which differs from a standard contract as it refers to the rights to exploit the service for commercial gain.

As the price of systems can vary considerably it may be useful to create an initial qualification round looking at matching specification and quality followed by a second to compare prices.

As far as possible items included in CoMoUK accreditation should not be repeated in the tender form. CoMoUK is also exploring the potential to develop template documents to reduce council and operator time.

## Procurement routes

---

	Strengths	Weaknesses
<b>Competitive Dialogue</b>	Hones the final service & contract. The multiple rounds enable stronger understanding of the authorities' needs, operators' services and increases likelihood of aligning objectives.	Time consuming
<b>Requests for Proposals</b>	Similar to competitive dialogue with less formal structure so simpler and faster to implement	This initial round typically leads to tender or MOU
<b>Traditional tender process</b>	Route most authorities are used to and provides strong contractual framework	Can be too rigid and slow which can mean delays and lost opportunities.
<b>Memorandum of Understanding</b>	Fast to implement and allows maximum flexibility	Lacks teeth to enforce any KPIs No binding contract durations of service so operator can leave any time
<b>Concession contract (possible outcome of a concession contract via a competitive dialogue)</b>	Provides a contractual agreement for contracts without funding	Limited scenarios

It is recommended that the contract should be open to some degree of negotiation post tender in order to fine tune details which could be of significance.

## Influencing factors

The key factors which have had the most influence on the development of bike share are explored below. In consultation with operators and authorities, each has been examined in terms of the minimum and ideal circumstances required to create a success scheme as defined above.

Bike share schemes fall into different categories from fully funded to non-funded with associated impacts on the management of the specification and sharing of risks. The table below illustrates how different funding scenarios affect how a scheme is managed.

Generally, where the local authority procures services, it sets out exactly what is required, and a price is set for delivery of that specification. Alternatively, the council may invite a supplier to provide a service in the area without funding, in which case the business would not expect to be restricted in making key business and operational decisions which are important to financial sustainability.

Where there is partial funding the area becomes more complicated. Ideally the risks of creating a viable scheme as well as potential profit would be shared between the operator and the local authority. Given the current funding climate the report is written to examine the scenario where revenue funding to support a scheme is either not available or very minimal. The less public support available the more the operators will wish to have control and work flexibly to manage operating costs and the risk they are absorbing.

Figure 1: Funding scenarios for bike share

100% funded	Capital funding & revenue subsidy	Capital funding only, no revenue	No funding
LA full control, takes all income and takes all risks	LA influences strategy, changes are negotiated as risks are shared	LA sets minimum expectations, operators lead on strategy with flexibility required to manage the risk	Operators sets strategy, tariffs, and takes all the risks
Operator paid fee for operating scheme	Income from trips and other sources covers costs then reinvested in growth / cycling	Operator takes all income (possible profit share at % above costs)	Operators takes income



## a. Scale and density of bikes

The density of bike docks or hubs is a key factor in the success of a scheme. Users of the scheme need to feel bike share is quick and easy to use, with a choice of places to pick up and drop off bikes easily conveniently placed in all the directions around their trip origins and destinations.

It is important for operators to lead on strategy with the aid of local council knowledge. The city should set minimum expectations and identify priority areas to serve but then request proposals which fit the funding available. Taking a phased approach may be important as the long-term potential for bike numbers may be very different from that which may be sensible as a first launch.

Assessment of optimum density is often calculated as a percentage of population. Typical figures quoted by UK operators are around 1 bike per 700 people to 1 bike per 300 if the scheme had high demand. Examples are illustrated in the table below. This approach may cause difficulties if there

are different interpretations of the area being served or if a phased growth plan is chosen. In these circumstances, it may be useful to work bottom up and ensure hubs /docks with an average of 10 bikes are placed every 3-400m with additional capacity at areas of high demand. In North America where bike share is often developed as part of the wider public transport system, the ITDP Bike share Planning Guide suggests such higher volumes of bikes at closer to 1 bike per 100 people with stations placed every 250-300 meters.<sup>1</sup>

Figure 2: Range of bike numbers for different sized cities.

100% Pedal bikes

	A city with a population of around 250,000	A city with a population of around 300,000	A city with a population of around 750,000
Lower range number of bikes	350	500	1000
Higher range number of bikes	800	1000	2500

<sup>1</sup> <https://www.transformative-mobility.org/assets/publications/The-Bikeshare-Planning-Guide-ITDP-Datei.pdf>

## b. Strategy

---

It is useful if the city can carry out specific research on areas which may be successful for bikes share. Alternatively share generic data on areas such as trip analysis, population centres and employment sites.

---

Where there is a good understanding of how the bike share scheme can best support local objectives, then it is useful to state these with as much detail as possible. Where there is more uncertainty over likely trip behaviour it is advisable to take views from operators on the local factors and opportunities.

It is important not to list all possible strategies which bike share might be able to support without a plan of how to match the scheme to objectives and which of these are priority.

However, it is useful to ensure bike share is referenced in relevant council and regional strategies where there is a complement of objectives particularly if these may lead to further support.

Exclusivity is also a key factor to consider; it is unlikely that more than one operator is likely to be able to be profitable in medium or smaller scale cities. This may also apply to the expanding range of micro-mobility products which could compete with bike share.

## c. Specification

---

As when looking at the scale of operation, the specification should be outcome focused except for the core non-negotiable factors to allow operators to develop the strategy they believe can be successful.

---

Definitions of terms must be spelt out with description to avoid ambiguity especially with terms which refer to operating models such as docks, tethered, “lock-to.” Suggested definitions are provided as an appendix. The latest innovations, and differences in style and quality of the bikes, should be compared in the assessment phase of procurement.

Minimum expectations need to be very specific so that they can be costed. This is particularly important for technical integration of systems with regional ticketing systems. Most operators are cautious about making such integration mandatory, especially without a fully costed and funded plan or where smart card integration could soon be replaced by digital apps.

One key area which may require specific mention is the security and theft proof aspects of the bike and back office systems. Given criminal damage has been a difficulty it may be necessary to ask for extra protection for the lock and two factor authentication to avoid fraudulent activity.

Prescribing the percentage of electric bikes to be deployed is another area which needs careful thought. Including e-bikes can increase the number of users and trips but can also involve additional capital and operational costs. It may be hard to judge where the e-bikes will best be deployed before launch and so it may be useful to put aside an allocation of funding for e-bikes to test their use. A maximum percentage should also be avoided as this rules out suppliers who only use electric bikes and limits future choice.

## d. Opportunities to secure revenue funding via sponsorship and other sources

There are a range of strategies used by operators to ensure the financial sustainability of schemes.

Rider income alone is seldom enough to cover costs, at least not in the first year or two while the scheme develops and beds in. It is therefore recommended that one or more of the following strategies must be in place to make bike share viable in the long term in UK cities.

In some cases, capital funding has been converted into revenue either to be used flexibly as required or to create a specific fund for spare parts. Some operators build in a margin to cover revenue support into the cost of the initial equipment with higher prices.

As well as maximising the opportunities from capital funding, there are a range of other options to raise further income or reduce costs. An important strategy is to ensure bike share is a central part of guidance for new developments to generate S106 funding for expansion of services and membership / rider credits for residents or businesses.

Where there are policies in place to generate revenue from curtailing car use such as a Workplace Parking Levy or a Clean Air Zone, this may be explored as an option to support the bike share scheme.

Securing sponsorship has been less successful recently than it has been in the past. Caution should be exercised about relying on this option to make up income and ensuring the size of the contribution was worth the significant additional effort and costs of supporting the agreement, e.g. additional specific marketing.

Measures to increase income
Build in support to capital funding
S106 developer contributions
Clean Air Zone / Workplace Parking
Sponsorship / corporate memberships
Advertising
Grant funding

However, it can be a useful option to support bike share. The city is best placed to make contact with potential leads rather than all bidders making contact separately but that the terms of any agreement should be negotiated in partnership to avoid overly onerous conditions.

Corporate memberships are another way to provide a predictable income if the servicing conditions are not too demanding. The council can play a valuable role in making links through existing networks. Some cities promote corporate membership of the bike share scheme as an option in campaigns around sustainability or health.

Advertising has been an option to raise income in some schemes, particularly on hub /dock signage although it also raises other difficulties as there will then be a need to secure planning permission.

There may be opportunities for local authorities to apply for restricted grants funding which the operator isn't eligible for directly. The recent DfT programme to support electric cargo bikes is one example which could provide bikes for use by maintenance crews or the public. Councils may also be able to use available funding for "smart subsidies" - for example supporting reduced tariffs for poorer communities.

Operators are typically open to the idea of profit sharing in theory. This would be set as a percentage of revenue once all costs are covered including the management of risks and shortfalls in earlier non profitable years.

## e. Reducing costs and partnership support

---

Turning the problem on its head, there may be ways to reduce costs which will ensure the financial viability of a scheme in the long term.

---

As well as helping to maximise income, the scale and density of a scheme will also heavily influence costs. Allowing operators to take a lead on designing the scheme will help ensure there is a dense core with manageable operating cost. Expansion out to less dense areas can only happen when demand is there to ensure that there isn't a burden from high redistribution costs and potentially lower utilisation. The ability to be flexible and move docks/ hubs in response to local conditions was also key.

It should be stressed that Service Level Agreements (SLAs) can make a critical difference to operational costs and hence the success of a scheme. It is more important to link minimum standards to objectives and outcomes than outputs. It may be sensible to negotiate some measures of performance in terms of bike availability and docks/hubs being empty particularly at priority spots, however penalties should only be applied if there are ongoing issues rather than on each occurrence. There may be underlying issues to work on collectively, e.g expanding provision, storage of extra bikes at places of high demand, station position, or vandalism. Another option is to link performance to the right to extend a tender.

As part of further work CoMoUK is planning to explore the potential to develop template procurement documents including the creation of acceptable, meaningful SLA wording.

As outlined above, the deployment of e-bikes will have an impact on operational costs as well as capital costs which can to some extent be recouped by higher

fees. However careful thought is needed to get the right percentage of e-bikes to satisfy demand in area but not to overload a scheme with high capital, rebalancing or battery swap costs. For a mixed fleet it may be useful to begin with a lower percentage and a set aside extra funding to either increase the e-bike or pedal fleet once the needs are better understood.

Another influential factor is the time of the council officers. In the mobilisation phase there should be the equivalent of a full-time staff member who can link the operators through to key people e.g. planning officers, business networks, marketing and PR. After launch it is vital for the scheme to be embedded into all council work with a senior "sponsor" to ensure it is automatically included in transport strategy, funding proposals, new development and cycle infrastructure plans, outreach and communications work.

If a sponsor is brought on board, there may also be the option of reducing marketing cost by working in partnership with them to utilise their expertise in this area as well as maximising links to council activity.

There may be a range of other measures which councils could be put in place to provide practical support to a scheme which can be identified through discussion, e.g. the use of council space for a workshop or support of a fleet contract for operation vehicles.

Reducing cost through tackling criminal damage is addressed later in this report.

## e. Reducing costs and partnership support

Measures to reduce capital costs	Measures to reduce operational costs
Council lead on planning process	Scale and density operator led
Minimising the % of e-bikes	Correct setting of Service Level Agreements
Council contractors for groundwork electrical supplies.	Council officer time
	Being strategic about % of e-bikes, comparing increased revenue with operational costs
	Partnership approach to areas such as marketing and tackling criminal damage
	Provide bike depot space but only if it is in the right location with enough space / parking
	Access to fleet contract for support vehicles

## f. Implementation and bike management

There are many factors in the contract set up and implementation which can have a critical impact in success.

Most operators are flexible about who owns the bikes. They can be owned by the council and leased back to the operator with clauses within the contract to cover scenarios where the service is forced to end early. The key issue is where the responsibility sits for replacement of bikes due to either wear and tear or criminal damage. Routine replacement of bikes best belongs with the operator and needs to be factored into expenditure plans. For criminal damage, some factors which influence the volume of criminal damage are managed by the operator such as protection of vulnerable bike parts, but others are beyond their remit alone and need a partnership approach. It is recommended that an agreement is put in place to share the financial impacts whilst working jointly on a strategy with the police and community groups. Further detail in the section below on measures to minimise criminal damage.

A very important factor to be considered in the development of the scheme is the replacement of bikes as they come to the end of their lifespan. The contract length should where possible be linked to the likely expected duration the bikes can be used for. Operator report this is between 5 to 8 years. Funding for a refresh of bikes can then be linked to the next contract cycle. This may be from sponsorship or grant funding but needs to be planned for during the first contact period.

The mobilisation period from signing the contract to launch needs to be at least six months and possibly up to 9 months. Speed will be affected by support in the planning process.

Being able to launch in April or May is very important to help the scheme to be successful, providing a longer period of better weather for the scheme to build ridership.

## Measures to minimise criminal damage

---

Vandalism of bike share schemes is unfortunately not a new phenomenon. The London Cycle Hire scheme was subject to attacks, particularly in the initial period after launch; most schemes have suffered vandalism

---

With the arrival of more dockless-type schemes there has been an increase in incidents, which has in turn been reported, possibly then leading to a rise in copy-cat crimes.

Vandalism has been linked to both docked and dockless schemes. It is unclear at this point whether the model of bike share i.e. how a bike is locked or tethered makes any difference to incidence rates. Outright theft of the bike or stripping it for parts does not seem to be as motivating as damage for the sake of “fun / kudos”, with some incidents being filmed for social media. In any case, shared bikes typically have zero resale value, and most of their parts cannot be re-used.

In some cities vandalism has been limited to the first few months, in other areas it has been sustained. There is no doubt that it is a serious issue which is hampering the ability for schemes to ensure there are sufficient bikes to meet demand and thereby provide the many benefits which bike share can offer. In some cases vandalism can even be fatal to a bike share scheme.

### a. Planning considerations

---

- When choosing sites, it is important to consider the immediate environment in terms of how well it is overlooked, whether it has a reasonable footfall, good lighting or CCTV (and ensuring there is access to the footage).
- Has the operator engaged with the local police Designing Out Crime Team(s)? Building relations with local police and other public authorities more broadly on the specific issue of vandalism: see section c below.
- Could the site be integrated with other services to support its management and surveillance? Mobility Hubs are a new tool being used to house transport and related services; the co-location can help to improve natural surveillance.
- It is likely that a city will have hotspots and known high risk areas. These will feed into the planning / design considerations. Operators should also consider proactively checking and moving bikes out of these areas. There is sometimes a conflict between the desire to ensure the scheme is inclusive and covering all neighbourhoods with the practicalities of managing stations or bikes in areas of multiple indices of deprivation. This can be helped with greater community engagement

## b. Physical and digital technological interventions

---

Good quality, robust technology will also help to deter or delay activity:

- Some operators have added a GPS system with on-board computer to cry for “help” if bike believes it is being tampered with or stolen.
- Others have added extra “armour” to bikes in vandalism hotspots (such as metal casing around wiring).
- Some operators have also introduced airless tyres.
- The use of camera technology has been considered on docking stations or bikes in some locations as general CCTV does not always deter vandals, there may be GDPR considerations.
- Incidents of bikes being taken for misuse after registration using a fake accounts and non-payment, have been reduced by introducing extra steps of verification such as an in-app credit checks and payment gateways.
- In addition, it has helped in some cases to increase fines for improper use and shut down accounts after a certain threshold of poor behaviour has been reached.

## c. Community engagement interventions

---

Reports suggest that a significant proportion of the vandalism is carried out by younger people in the summer months which possibly points to a link to a lack of support in communities for these groups.

Various approaches have been tried by operators such as getting community groups involved in bike maintenance or creating artwork for stations. Such activities can, however, require a great deal of resources and may only have an effect for a limited period.

Wider community engagement has been used to encourage a greater sense of ownership of the scheme which then provides local support and surveillance.

The Bikes for All Scheme that CoMoUK has developed in Glasgow encourages use of the bikes by low income groups through engagement activities and mechanisms to take away payment barriers. By working in a sustained way through existing neighbourhood groups a network of champions for the scheme can be created. This approach can ensure there are not sections of the community who feel disenfranchised from the scheme as well as encouraging the community to report suspicious activity.



## d. Legal and policing interventions

---

Police intervention has had a positive effect on vandalism. There appears to be a deterrent where the authorities are able to identify the culprits and a prosecution takes place. Operators have reported that incidents have reduced as the word seems to get around.

Inevitably it is difficult for the police to follow up on reports, but it is recommended that:

---

- A dialogue is established between the operator, authority and police early on as the scheme is being developed and as an ongoing process to improve understanding.
- Way of reporting crimes should be agreed, ideally individual crime reports should be submitted for each incident as this will affect police bike crime figures to triggers action.
- In some instances, the operators have been able to help the police by tracing bikes and linking a person to stolen property, thus also helping police crime statistics.
- Some operators have given the police free passes for the bikes, so they have a better understanding of how it works and when activity looks unusual. Operators wish to work with the police, for example to provide information on which bikes are stolen and avoid approaching legitimate users who might be on a bike which has been vandalised previously.
- In many cases bikes are kept within private property by users, particularly with dockless bikes. This makes the legal retrieval from private land difficult, even with GPS coverage. This is a complex issue for a private company to resolve and is worthy of discussion as these are often readily solvable crimes.

Collaborative working has been found to be beneficial for all sides as often capturing those responsible for bike share damage can uncover more serious organised crimes.

## e. Responsibility

---

Currently the responsibility for the bikes and other assets normally rests with the bike share operators.

---

City councils should be actively involved from the start along with other key stakeholders. There is a precedent in Oxford, where a multi-agency cycle crime working group including British Transport Police, Thames Valley Police, bike hire schemes and local retailers was set up.

CoMoUK is now a member of the recently-formed national cycle crime steering group, led by Inspector Mark Cleland as the national police lead in this area. With only one meeting held before the Covid-19 pandemic, there are nonetheless to be regular meetings to explore practical measures via joint working, and to also explore setting up more local working groups where these would be effective.

---



## Capital funding ranges

These latest figures were obtained from operators as the cost of their whole system, (bike, dock and back office systems) installed with the price quoted per bike.

The tables below illustrate the range of options for:

- Lower and higher scales of settlement
- Lower and higher prices quoted by operators
- Different percentages of electric bikes

### 100% Pedal bikes

	A city with a population of around 250,000	A city with a population of around 300,000	A city with a population of around 750,000
Bike numbers	350 - 800	500 - 1000	1000 - 2500
Lower range of prices for pedal bikes - £1500	£0.5 - 1.2m	£0.75 - 1.5m	£1.5 - 3.7m
Higher range of prices for pedal bikes - £2500	£0.85 - 2m	£1.5 - 2.5m	£2m - 6.25m

### 100% Electric bikes

	A city with a population of around 250,000	A city with a population of around 300,000	A city with a population of around 750,000
Bike numbers	350 - 800	500 - 1000	1000 - 2500
Lower range of prices for ebikes- £3000	£1 - 2.4m	£1.5 - 3m	£3 - 7.5m
Higher range of prices for ebikes £4500	£1.5 - 3.6m	£2.25 - 4.5m	£4.5 - 11.25m

## Capital funding ranges

### 30% Electric bikes

	A city with a population of around 250,000	A city with a population of around 300,000	A city with a population of around 750,000
Bike numbers	350 - 800	500 - 1000	1000 - 2500
Lower range of prices for mixed fleet Ratio 70:30	£0.7 - 1.5m	£1 - 1.7m	£2 - 4.8m
Higher range of prices for mixed fleet Ratio 70:30	£1 - 2.5m	£1.5 - 3m	£3.1 - £7.75m

## Operational funding ranges

It is difficult to be accurate when estimating revenue income shortfalls as there are so many factors which will affect costs as well as ridership income.

The figure required will also be impacted by whether it is factoring in things such as expansions, new initiatives, depreciation, HQ overheads.

Figures range between £200-300 per bike per annum with a subsequent gap in income of between £70,000 and £300,000 depending on scale. Illustrations are outlined in the table below.

Figure: Typical range of income shortfall after ride income considered

Shortfall per bike pa	350 bikes	500 bikes	1000 bikes
£200	£70,000	£140,000	£200,000
£300	£105,000	£205,000	£300,000

## Conclusions

---

Bike share can help to address many difficulties cities face, from congestion and air quality to inactivity and transport poverty. As far as possible bike share should be seen as a key part of the public transport system and be integrated into strategy and funding plans.

---

Developing schemes which are financially sustainable takes careful consideration of many factors. Often systems will require a secondary source of income to cover operational costs, particularly in the first few years or if there are ambitions to serve less dense areas. This can partially be mitigated by strategies to reduce expenditure however councils are recommended to put in place one or more of the suggested strategies for securing additional income.

The single most important factor is to ensure that the requirements of councils do not restrict operators from having the flexibility to make key business and operational decisions which are important to financial sustainability.

# Appendix

---

Benefits of bike share

## TfL Santander Cycles Survey

<http://content.tfl.gov.uk/santander-cycles-casuals-css-q2-2017-18.pdf>

## City Verve

<https://cityverve.org.uk/how-a-bike-sharing-scheme-benefits-everyone-in-manchester/>

## The economic contribution of public bike-share to the sustainability and efficient functioning of cities

<https://www.sciencedirect.com/science/article/abs/pii/S2210670716303080>

# Definition of terms

---

As terms have been used with different interpretations and there is a blurring between models, it is recommended that the specification includes detail to explain exactly which systems will be considered or are preferred. For example, the term station based could be used for any of the first three operating models described below.

- **Docked hub or station:**

Each dock forms a part of a station with an automated locking mechanism that physically locks the bike to the dock. Systems sometimes offer a combination of fully docked and hybrid tethered operations to create flexible bays or overflow options.

- **Hybrid technology:**

Hybrid systems either allow for some returns away from stations. Technology is housed on the bike, locking is via usually via a Dutch style lock on the back wheel which can be deployed with or without additional cable to attach to a specially branded cycle hoop, or traditional cycle parking. The out of hub is either freefloating or geo fenced using with a blue tooth communications box in the hub or remotely to the cloud.

- **Geo-fenced dockless hub or station:**

All technology is housed on the bike and locking is on the bike itself only. The parking area is defined on the ground with a marked-out area and signage and in the app using a geo fencing technology. Ending a hire outside of the area can result in higher charges / or a fine depending on how the system is configured.

- **Free-floating dockless:**

Bike hire can be ended anywhere in an operational zone, there are no hubs. The bikes communicate with smart phones and remotely to a cloud to register and unlock bikes. A set of guidelines are provided on how to safely park a bike without causing obstructions.