SHARINGCITIES

Mobility Islands

A new mobility future

A SHARING CITIES PLAYBOOK

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This playbook is produced by Sharing Cities, a major international smart cities project. It addresses how cities can stimulate the transition to new mobility future.

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WHAT IS THIS PLAYBOOK?

This guide gives an overview of how Sharing Cities brought together a variety of tools and solutions to support the transition from traditional transport infrastructure and habits, to more sustainable and inclusive emobility services. This guide aims to help cities accelerate this transition.

This playbook will:

- Help you understand what solutions were tested in Sharing Cities, the urban challenges and ambitions they address, and how these relate to mobility islands.
- Help you understand what a mobility island is – its components and its social, economic, environmental and financial value.
- Offer practical guidance on where mobility islands might be located in your city to help it transition to new mobility habits.
- Offer practical guidance to help your city progress from planning to implementation:
  - Strategic planning and technical design.
  - Demand side considerations.
  - Stakeholder engagement.
  - Business models and financing.
- Answer common questions and offer recommendations to help you tailor this material within your own city context.

TOOLS & RESOURCES

The playbook also includes references to a range of tools to support your development and delivery plans. If you'd like the source files for these tools, email: Sharing Cities **pmo@sharingcities.eu** or tweet us **@CitiesSharing**

Sharing Cities tested a range of technologies across various sectors, including mobility, data platforms, infrastructure, and energy systems. Many of these technologies complement each other. Some even directly work together to produce better results. This table shows how different Sharing Cities technologies relate. You may find it useful to cross reference materials in other playbooks, which can be found on the Sharing Cities website.

RELATED TECHNOLOGIES TESTED IN SHARING CITIES

	MOBILITY ISLAND RELEVANCE	WHY IT'S RELEVANT
e-Bike Sharing Schemes	High	An essential first solution for Mobility Islands
e-Car Sharing Schemes	High	An integration point for a city-wide or community e-car share scheme
e-Vehicle Chargers	High	Chargers that cater for all mobility modes; priced to incentivise behaviours
e-Logistics	Medium	Potential to incorporate small light logistic service integration
Smart Parking	Medium	Integration into city parking system to optimise revenue from spare bays
Digital Social Market	Medium	A platform to support behaviour change and incentivise commerce / SMEs
Building Retrofit	Medium	Potential for housing estates and developers to integrate mobility islands into re-designs
Sustainable Energy Management Systems	Medium	Mobility Island PV panels interoperate with community renewable systems & energy grid
Smart Lampposts	Medium	Lighting levels adjusted to enhance safety e.g. smart sensors 'push-to-talk'
Data Platforms	Medium	Integration with sector or city-wide platform(s) to enhance the Mobility Island network

WHO IS THIS GUIDE FOR?

We created this guide with three key audiences in mind:

1

Planners, policy advisors, and city officers who want to accelerate the transition to green, healthy, shared and inclusive mobility services at pan-city, regional or district and community levels.

2

City officers in Lighthouse and Fellow cities in the EU / UK that are implementing smart city solutions and multi-sector stakeholders in the EU / UK smart city marketplace.

3

Public service partners like utilities and transport providers as well as developers, investors, industry suppliers and academic partners involved in the mobility ecosystem.

LIGHTHOUSE CITIES


LISBON


LONDON


MILAN

SHARING CITIES: A TESTING GROUND FOR INNOVATION

Sharing Cities aims to change forever how we think about the role of digital technology in our cities. We want to demonstrate how we all can benefit from and contribute to this transformation process.

Led by the Greater London Authority, we have run 10 smart city projects in each of our lighthouse cities of Lisbon, Milan, and London (together with the Royal Borough of Greenwich). Our aim is to test how innovative technological solutions can address some of the most pressing urban challenges cities face. These include in mobility, energy efficiency, data management and citizen engagement.

Our vision is of a more agile and collaborative smart cities market. This would dramatically increase both the speed and scale at which we can rollout smart solutions across European cities. We wish to engage citizens in new ways too, so they can play an active role in transforming their communities. We want to share solutions, practices, experiences and results, and improve the way we manage city data and infrastructure. By doing so, we will co-create a better living environment and reduce our energy costs.

About Sharing Cities

The Sharing Cities 'lighthouse' project is a testbed for finding better, common approaches to making smart cities a reality. By fostering international collaboration between industry and cities, it will develop affordable, integrated and commercial-scale smart city solutions with high market potential. Project partners also work closely with the European Innovation Partnership on Smart Cities and Communities (EIP SCC01 – Lighthouse Projects).

In addition, Sharing Cities offers a framework for citizen engagement and collaboration at a local level. This strengthens trust between cities and communities. The project draws on €24m in EU funding. It has triggered €274m in investment, leaving a lasting impact on the smart cities' marketplace.

Part of the European Horizon 2020 programme, Sharing Cities includes 34 European partners from across the private, public and academic sectors. Together the group works to deliver near-to-market solutions, such as:

- **Smart lampposts** – integrated smart lighting with other smart service infrastructures (e-vehicle –or EV – charging; smart parking; traffic sensing; flow data; and wifi).
- **Shared e-mobility** – a portfolio of linked initiatives supporting the shift to low carbon shared mobility solutions. Specifically: EV car-sharing; e-bikes; EV charging; smart parking; and e-logistics.
- **Sustainable energy management systems** – rollout systems to integrate and optimise energy from all sources in areas of cities (and interface with the city-wide system). This includes demand response measures.
- **Urban sharing platform (USP)** – a way to manage data from a wide range of sources including both sensors and traditional data. The platform uses common principles, open technologies and standards.

- **Digital social market (DSM)** – an approach to encourage citizens to engage with and use sustainable smart city services. The aim is to shift perceptions and change behaviours through rewards in exchange for continued and improved citizen engagement.
- **Building retrofit** – install energy efficient measures in existing public, social and private building stock. This will link to other solutions like the integrated energy management system to optimise energy performance.

Packaging tested smart city solutions across Europe

Sharing Cities has captured the experiences from deploying these solutions and lessons learned along the way in a series of playbooks. Our programme partners and other cities can use this research to reduce barriers, speed up processes and ensure a consistent approach.

We want to provide a set of 'packaged' smart city solutions and document the replicable parts of a smart city solution. This will help cities and suppliers better navigate the challenges of delivering fresh, cross-sectoral solutions to improve the urban environment. Making these solutions both cheaper and quicker to come to market will boost the confidence of buyers and investors alike.

Our playbooks use the EU Smart Cities Cluster's emerging 'packaging concept'. This captures (i) societal needs (ii) technical components (iii) business models and financing options. This one is concerned with Mobility Islands. To find out more about the EU Smart Cities Clusters projects, visit EU Smart Cities Marketplace.

1. Mobility islands: What are they?

The benefits

Mobility Islands aim to provide affordable access for citizens travelling in and around a city, all within less than a 5-minute walk. They establish a network of attractive facilities based on a common functional design that can be adapted to specific conditions in each individual location. By offering convenient, sustainable mobility options and related services, citizens can undertake their desired journey within less than a 5-minute walk. Mobility Islands consist of five major components, each equipped with elements such as:

- **Physical infrastructure** – land, vehicle bays, charging infrastructure, furniture, shades, smart lighting, green space.
- **Mobility assets** – electric cars, bikes, scooters, buggies.
- **Ancillary services** – storage, conveniences, waste bins, safety & public health facilities, and cafes.
- **Renewable energy** – photovoltaic cells, battery storage.
- **Digital platform** – travel planning, reservations, pricing and payments, incentives and push notifications. They are interoperable with other city operating platforms.

Because Mobility Islands are physical places, they should be pleasant, interesting, approachable and recognisable. They contrast with conventional models in various ways:

	MODEL		MODEL
CONVENTIONAL	• Transport engineering • Heavy / hard infrastructure • Charging for e-vehicle owners • Individual cars • Elite • Transport services	**MOBILITY ISLAND**	• Demand Shaping • 'Soft' Light infrastructure • Sustainable mobility for all • Shared multi-modal • Inclusive • Overall experience

Transitioning to a new mobility model

BROAD BENEFITS

ANCILLARY SERVICES
Concessions for café, storage lockers, light logistics (pick-up) services, and offers revenue potential.

RENEWABLE ENERGY
PV panels on shelters with power storage.

ACCESSIBILITY
Accessible for all parts of the community.

OPERATING PLATFORM
Discrete Mobility Island platform, inter-operable with energy and city operating.

PUBLIC TRANSPORT
Convenient access to and from public transport to provide seamless connectivity.

DEMAND SHAPING
Travel information (mode options and availability, weather-informed, pricing, booking, potential shared travel), booking

Mobility Islands aim to provide affordable access for all those travelling in and around a city; a choice of convenient sustainable mobility options and related services, all within less than a 5-minute walk.

E-BIKES / E-SCOOTERS / E-BUGGIES
Managed micro-mobility for citizens, from young people to older people.

E-CAR SHARING
Bookable vehicles with incentives for group use

CHARGING INFRASTRUCTURE
Differential pricing for private charging bays and power.

PUBLIC GREEN SPACE
Attractive landscaped areas where people want to be, whether they are travelling or not e.g. seating, tables, litter bins and water fountains to improve public realm.

2. The challenge

Cities need to transform their mobility infrastructure and services if they are to successfully meet net zero targets and sustainable development goals to address climate change. This includes fundamentally changing the social habits of how their citizens move in and around urban areas.

How do we accelerate the transition towards a green and healthy shared mobility service that is convenient, inclusive and affordable? There are a number of challenges to address:

1. **Crowded light mobility modes.** City footpaths are often crowded with e-scooters and e-bikes left in locations that risk obstructing footpaths, walkways and other travel routes. This presents a safety hazard for users and pedestrians. While these modes should be welcomed, they need to be factored into city planning. Smaller cities that would benefit from light e-mobility modes are often not an attractive market for private operators, while public authorities need to accelerate the uptake of these modes.
2. **Understanding demand and changing user behaviour.** Traditional transport engineering focuses on infrastructure and mobile assets. Less attention is given to individual user needs. New mobility models are dependent on understanding user needs, and with increased trust between providers and users there is considerable scope to change transport habits and behaviours.
3. **e-Vehicle charging facility locations**. e-Vehicle charging points are often located where utilities have available power equipment, or where e-car owners live, and have campaigned for; but these are not necessarily optimal locations.
4. **Equal opportunities for all**. Many city neighbourhoods are disadvantaged by poor access to services, public transport and economic opportunities. These localities also suffer from poor air quality due to a lack of greenery and their proximity to major road arteries. New light mobility solutions have potential to improve access in these communities.
5. **Managing stakeholders**. The stakeholder system for new mobility models is complex. With many stakeholders involved in the deployment of mobility islands, strategies and goals do not always align.
6. **Interoperability**. New mobility solutions bring multiple digitalisation features. Open standards in relation to data and technologies will deliver an agile and connected solution.
7. **Data privacy**. By design, a multi-modal mobility system involves considerable data management. To optimise and personalise these services, personal data will need to be shared, and individuals need to be given a choice in how they share their data. The challenge of balancing privacy, service quality and security is critical.
8. **Access to investment**. Although new mobility solutions require less capital than traditional modes, they still need significant investment. With more stakeholders involved, investors are likely to perceive a higher level of risk.

In cities, transport represents between 40 to 60% of energy consumption. Public Health is also of growing concern; making cities more walkable or open to non-motorised transport has potential to create healthy cities and deliver quality of life and economic benefits.

3. Value of mobility islands

Mobility Islands can support the transition to a shared and low carbon mobility future. Their integration within urban landscapes supports inclusive access to mobility services for all, reduces congestion and air pollution, uses energy more efficiently, creates an intermodal mobility system, and generates economic, social and environmental benefits. Like a "Lego structure", Mobility Islands can be built up from basic technical components and assembled in different ways to suit varying urban contexts and deliver varying value. Although benefits will vary city to city, there are some commonalities outlined in the table below:

MOBILITY ISLAND IMPACTS	SOCIAL BENEFITS	ENVIRONMENTAL BENEFITS	ECONOMIC BENEFITS
IMPROVING ACCESS TO MOBILITY SERVICES FOR ALL	• Reduces commuting times • Inclusive affordable access • Improves public safety • Fosters a sense of place • Removes EV 'range anxiety'	• Reduces ownership of private vehicles	• Increases attractiveness of neighbourhoods • Increases property value
REDUCING CONGESTION	• Improves physical and mental health • More time to be productive	• Reduces carbon emissions	• Improves productivity
REDUCING AIR POLLUTION	• Improves health and wellbeing	• Improves air quality	• Reduces burden on health services
CREATING AN INTERMODAL MOBILITY SYSTEM	• Reduces dependence on private cars • Encourages physical activity • Reduces car accidents • More choice around travel mode	• Reduces dependence on private car trips • Improves air quality	• Physical activity improves wellbeing, reduces stress, increases productivity • Improves perceived attractiveness of a city
EFFICIENT ENERGY CONSUMPTION	-	• More efficient use of natural resources	• More efficient use of money
GENERATING ECONOMIC OPPORTUNITIES	• Increases access to services offered to the community		• Opens new market segments • Creates more local jobs

Who benefits?

Mobility Islands aim to revolutionise the habits of how we move within urban contexts. They provide short and long-term benefits to a range of different stakeholder groups in different ways. The table below highlights the potential values of Mobility Islands for main user groups:

So far, the project has remarkably improved the air quality of the city and saved 1,147 tonnes of CO2, 1.05 tonnes of NOx, and 0.08 tonnes of PM10.
In Milan, the city could save 259,262 tons of CO_2 annually.

STAKEHOLDER	VALUE
CITY HALL	• Ensure a more attractive public realm. • Support delivery of sustainability targets (air quality, safety and equality). • Make the city more attractive to residents, visitors, businesses and investors. • Provide a quick and reliable asset to support the strategic transition to a low-carbon society.
RESIDENTS	• Ensure safer, affordable, healthier, convenient and dependable travel. • Offer choice for any resident and every journey, and provide information to support that choice (e.g. weather, cost, time, safety and comfort). • Deliver more attractive neighbourhoods.
COMMUTERS / EMPLOYERS	• Potential for partnerships with employers to sponsor the scheme and allow their employees to take advantage of it.
SHARING MOBILITY BUSINESSES	• Reduce the cost of logistics operations, which represent 70 per cent of sharing services' costs. • Ensure a cost-effective and more sustainable sharing mobility services that will help cities become carbon neutral.
YOUNG PEOPLE	• Offer modern and fun choices to get around the city in absence of private solutions.
SENIOUR CITIZENS	• Increase the choice and ability to move around the city. • Improve opportunities to integrate with, and enjoy public realm and society.
UNIVERSITIES	• A green and efficient mobility service can boost the image of a city and attract human capital.

4. Sharing Cities Mobility Islands

1. Lisbon's mobility policy is based on ambitious targets for electrification and decarbonisation.

Over the last decade, Lisbon has witnessed a cultural revolution in urban mobility, moving away from a dependence on private vehicles to public and private mobility services based on sharing and electrification components.

The city's commitment to high quality public transport services as well as its provision of alternatives to the 'last mile' have paved the way for the arrival of private entities with services rooted in providing shared vehicles such as e-bikes, e-scooters, e-cars and e-motorcycles.

Accessibility has been an essential element in determining the location of mobility islands in Lisbon, supporting inclusive mobility services for its citizens.

LISBON / MOBILITY ISLANDS

- By selecting an area that allows users/commuters to best access different services, the city was able to explore the potential for complementarity between the means of transport on arrival and departure.
- Initially, the city focused its Mobility Islands concept on aggregating services, but local planning constraints and current infrastructure configurations resulted in the city focusing on high throughput mobility areas with adjacent facilities rather than co-locating in one area.

Shared Infrastructure

A wide range of chargers were made available for citizens/ commuters to charge their private vehicles. In order to facilitate accessibility, all islands were in areas close to roundabouts, allowing access to services regardless of the vehicle's direction of travel.

Private Sector Vehicle Shared Services

A set of shared mobility services existing in the city and provided by private entities, including electric scooters, cars and motorcycles. Dedicated parking bays are

Train Station

Access to commuters that perform longer journeys, including from the city and suburbs.

Bus Stops

For commuters from the city's outskirts and who travel to/ from the city centre.

Auxiliary Services

Infrastructure for concession to private entities for the provision of services supporting mobility islands, including coffee shops and other small outlets.S

Metro station

Access to the metro network available in the city and allowing for cost-effective and fast travel to a wide range of areas of the city.

e-Bike Docking Stations

Allowing access to the shared ebike scheme operated by the city, which provides more than 2,000 bikes and 100 docking stations available across the city.

Green Space

A space for citizens and commuters' leisure, also improving the visual impact of the mobility island.

2. MILAN'S MOBILITY AREAS

Mobility Areas are part of a wider mobility strategy in Milan which aims to reduce carbon emissions and the use / ownership of private cars by promoting more electric and shared mobility options.

Early planning for Milan's mobility areas began in 2016, evolving from the Digital Islands concept (charging stations for electric quadricycles) which aimed to transition simple charging point stations for specific electric and shared vehicles to comprehensive sharing mobility hubs. The hubs were created to support car-sharing operators with electric vehicle operations by providing on-road charging points distributed throughout the city and making charged cars immediately available to users.

The criteria for mobility area planning and localization were:

- Proximity to a local public transport interchange node (including underground stops).
- Proximity to other nodes of sharing and electric mobility, namely:
  - station-based bike-sharing and car-sharing parking slots
  - charging points for electric quadricycles (Digital Islands)
- Fair and balanced distribution of Mobility Areas over the entire urban area of Milan.
- Availability of public space (no impact on sidewalk accessibility or on parking spaces for local residents).
- Mobility Areas are visible and recognisable.

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ENERGY & MOBILITY COMMUNITIES

Energy communities refer to a wide range of collective energy actions that involve citizens' participation in the energy system (European Commission). Along with citizens, these communities might include SMEs, local authorities and private companies. They are vital to the clean energy transition because they bring a host of benefits to energy systems, including social, environmental, and economic. They can support energy system operations by providing flexible services locally and helping to alleviate the need for traditional network upgrades. Customers may also benefit from lower energy prices and access to private capital from investments in renewables through citizen participation.

For cities, e-mobility plays an important role in the de-carbonisation of the transport sector, and mobility communities are a good example of an energy community. For example, e-vehicles have a strong interdependence with energy systems; by exploiting renewable energy sources, recharging infrastructure can be made ecologically and economically efficient. Benefits to the community are long-lasting, in particular, thanks to the varying applications that e-mobility offers – e-vehicle charging points, e-car and e-bike sharing schemes, smart lighting and many more. Companies or entities and citizens also become prosumers (individuals who consume and produce), actively participating in the management of essential goods and services for the community, sharing physical and digital structures and systems to promote sustainable behaviour among their local community.

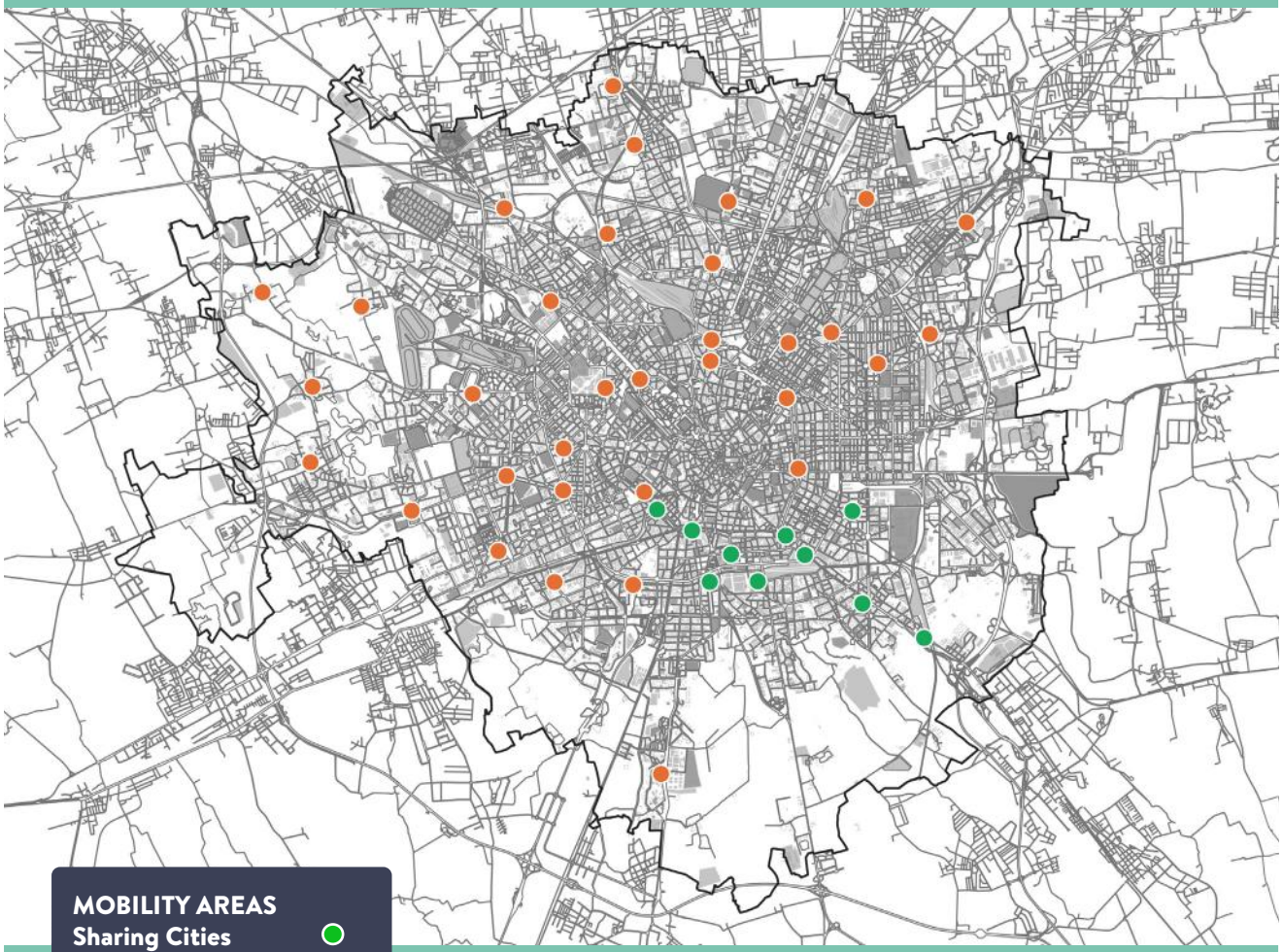
MILAN'S MOBILITY AREAS

Sharing Cities mobility areas have been a testbed for Milan's solution, specifically testing administrative procedures, service and business models and the technology and integration of advanced control systems (e.g. smart parking sensors and avatar cameras).

Thanks to their flexibility and scalability, Mobility Areas have evolved together with new forms of mobility in Milan: where possible, stalls for free-floating services (shared bikes, mopeds, and scooters) have been co-located next to existing Mobility Areas.

Milan's model for Mobility Areas - a place to experiment with innovative mobility services and last-mile logistics - will also be enriched with other services under development with the municipality.

MILAN'S PLANS TO SCALE-UP



3. WARSAW 'PARK & RIDE' RETROFITS

Thanks to lessons learnt from Sharing Cities, Fellow city Warsaw initiated an ambitious scheme to retrofit Park & Ride facilities across the city under its 'Park & Ride for Climate' programme. There are currently 15 locations equipped with 26 charging points that can accommodate 4,500 cars and 800 bikes.

The pilot project was initially implemented at existing Park & Ride locations along Polczynska Street, Warsaw. Currently, these can accommodate 500 cars and 20 bikes, covering 31,807 square metres. The retrofit comprises various upgrades and new developments. The Polczynska Park & Ride will become an almost self-sufficient and resilient energy island through the installation of:

- an energy storage unit with capacity below 100 kWh
- efficient photovoltaic micro-installations, mostly located above parking spots and on building roofs – with capacity of 100 kW
- an energy management system
- LED lighting
- a heat pump in the main building.

Thanks to these solutions energy consumption for the whole facility will be reduced by approximately 94 tonnes yearly (e.g. the technical building will be powered with 98% renewable energy).

Polczynska Park & Ride will feature climate change mitigation solutions, specifically through:

- significant unsealing of the surface – both the parking spots and road surfaces, in total 14,332 square metres will become partially permeable, allowing rain and meltwater to infiltrate the ground.
- an extension of greenery, including green walls and roofs.
- implementing rainwater retention solutions, such as underground reservoirs with volumes of 40 cubic metres, which will be fed with water from roofs; this water will then be used for watering greenery and for utility purposes.
- development of bioretention basins, which will collect excess water to mitigate torrential rains.
- innovative architectural solutions – the roof of the main building will be constructed to let in less light and heat during warm months when the angle of light is higher, while it will let in more light during the cold months, reducing the consumption of energy necessary for cooling and heating the main building.

3. WARSAW ‘PARK & RIDE’ RETROFITS

The Polczynska Park & Ride retrofit will be not only focus on cars and other vehicles. During weekends it will be closed to vehicles so that the area can be used for educational and social purposes. Educational programs will focus on green transportation, bio-diversity, renewable energy and water retention. The facility will accommodate an experimental greenhouse with a permacultural garden which will have an area of 100 square metres. The retrofit is a pilot investment.

Currently, the City of Warsaw has also been looking into the modernization of ‘Park & Ride Młociny’. The planned investment will include further innovations and smart solutions including the use of electric buses as energy storage (vehicle to grid) and the use of heat from the metro ventilation system.

4. INSIGHTS FROM SHARING CITIES' LIGHTHOUSE CITIES

CRITICAL INSIGHT	LIGHTHOUSE CITIES EXPERIENCE	RECOMMENDED ACTIONS
The convening role of City Hall	The role of policy makers in convening / influencing the transition to a shared e-mobility model is crucial, as this transition cannot depend solely on the changing habits of citizens.	City Hall should take a leadership position, identifying and organising stakeholders to galvanise action.
Make a start	Innovation requires action in order to support learning and improvement.	There are likely a number of ideal 'no regrets' Mobility Island locations across your city.
Multi-tier spatial planning	Transitioning from the current model requires consideration and alignment at hyper-local, pan-city and metro area / regional levels.	Bring together transport providers and related stakeholders at all levels in the early stages of planning to consider the new model and agree where and how to make a start.
'Smart City' thinking is crucial	The Municipality of Milan has a Smart City Department with a clear and long-term strategy for urban transformation, as an essential foundation for coordinated cross-cutting action.	A central cross-cutting 'smart' perspective should be the aspiration of every local municipality.
A new perspective on urban mobility	Traditional transport mindset and tools can present blockers to new models; demand shaping, data management and multiple new light asset mobility solutions are central to the service.	Ensure that capacity development plans are in place to support the transition. Find suitable benchmark cities and learn from them.
Cross-partner collaboration & planning	Cross-partner collaboration and planning helped to meet local infrastructure regulations and develop ad hoc legislation for new smart services. It also helps to align technology and services while streamlining administrative processes to get the service running.	Cities should identify and engage stakeholders early and emphasise alignment actions. Also consider how best to attract e-vehicle shared asset operators, and incentivise e-vehicle diffusion more generally.
Enabling conditions	Regulation should be in line with new business models and technologies, to effectively support the implementation of smart city measures.	Establish rigorous policy and regulatory tests to affect necessary change early.
Community involvement	Include community stakeholders in decisions on design and implementation to deliver better outcomes focused on citizens' needs, and solutions that are used by the local community.	Consult early and openly. Use new tools and approaches to ensure trust in the consultation process, potentially leading to some co-design. Establish (digital) incentive mechanisms to 'nudge' the necessary behaviour change.
Financial challenges / broader societal benefits	A lack of understanding around financing / investing in innovation is often linked to significant investment costs. Price driven procurement decisions exacerbate this, discounting important non-fiscal factors. Although solutions may be costly, it is essential to understand the indirect non-fiscal benefits in social and environmental terms which translate into cost reductions.	Ensure a comprehensive and inclusive analysis of value; and ensure a clear logic for monitoring and evidencing gains. Review procurement criteria to ensure a balanced perspective; and consider pre-competitive procurement processes for such innovations.

5. Rolling-out Mobility Islands: Toolkit

Sharing Cities has developed and applied a variety of methods, tools, resources and information over the course of the 5-year programme which will help cities that wish to deploy mobility islands within their own local contexts.

Strategic context & roadmap

- Exploring opportunity
- Setting within a logical transition roadmap
- Profiling your city
- Applying Mobility Islands in scale-up cities

User co-design

- Identifying user needs and practical use cases
- User participation

Functional & technical design

- Planning considerations
- Matching locations to components
- Specifying to model

Stakeholder engagement

- Clarifying motivations
- Mobilising & aligning resources

Business models & financing

- Clarifying cost & value
- Selecting best model
- Accessing funds

Monitoring value & optimising performance

- Establishing a logical and practical framework
- Assuring returns

Strategic context and roadmap

Exploring the opportunity

Many cities are installing smart mobility applications such as EV charging points, while many also have a growing number of light e-mobility users. But fewer cities are taking a more strategic and planned approach to bundling mobility and non-mobility infrastructure. The Mobility Island solution will help cities move towards greater connectivity, resilience and sustainability in their urban transport systems.

The Leadership Guide has been developed as a step-by-step guide to support decision-makers to understand how to implement mobility islands within their own city contexts.

Setting mobility islands within a logical transition roadmap

Many cities have developed SUMPs or equivalent strategies which provide a good foundation for implementing Mobility Islands.

Transitioning a city from more traditional transport modes to new mobility modes is a major undertaking. An early step-change, such as implementing a portfolio of

mobility islands within a city or urban area, can stimulate and accelerate the overall transition for cities. Mobility Islands are the 'acupuncture pins' that will help to transform the transport system.

Many areas covered in SUMPs – such as social engagement, regulation, operations, financing, primary and secondary impacts and digitalisation – should be considered as interconnected when delivering Mobility Islands. Building these into a roadmap provides the basis for discussion, alignment and management.

Profiling your city

Every city has its own unique character. From its architecture to its streets and public realm. But all cities share similarities or common DNA. By focusing on similarities and profiling against a common framework, cities can maximise their potential to adopt or adapt common functional solutions.

They can also compare, learn and better understand how to adapt a solution to their needs. This sits at the heart of the packaging concept and addresses the concern as a one-size-fits-all solution.

Cities can undertake three steps to help build understanding launch this innovative approach within their own urban contexts and stimulate the transition to a new model of urban mobility:

❍ **Step 1: Engage politically** – Political buy-in, support to address blockers of innovation, and visible leadership provides validation for cities and their stakeholders. You may consider the following approach:

- Identify where a set of testbed Mobility Islands would help your city advance.
- Consider how the Mobility Island concept aligns with current strategic plans for your city.
- Consider which stakeholders to engage, and test the idea with a sample group.
- Analyse and research different business models, ownership and governance structures and potential operating models.
- Develop goals and targets.
- Seek how your city can best learn with others.

- **Step 2: Identify likely locations** – Use this playbook to brief experts ahead of a short (virtual) workshop. With a map of the city, participants can identify a strong set of locations for Mobility Islands.
- **Step 3: Undertake a discovery project, align stakeholders and forward plan** – Undertaking a discovery project will increase understanding and support your justification and forward plan for implementing a Mobility Island.
  - Develop an initial proposal of Mobility Islands locations.
  - Outline the scope, services, user experiences, costs and public value potential.
  - Build momentum within the city and agree the forward plan.

Delivery should seek to involve a wide variety of stakeholders convened by the local municipality so that full understanding is built within the principal stakeholders and capacity is retained where it needs to be.

The table to the right outlines why certain 'no regrets' locations such as university campuses or park & rides will likely be ideal locations for Mobility Islands.

LOCATION	BENEFITS
University campus	The spatial configurations of many university campuses are ideal locations to deploy mobility island infrastructure.
Parks, Culture, & Tourist Destinations	These locations may include heritage sites where streets are narrower, and vehicles are discouraged. Mobility Islands in these locations may include safety and medical emergency features, alongside benches, cafes and storage lockers etc.
Public Transport Hubs	Public transport hubs are likely to already have some existing facilities for bikes. Many cities seek to transform their rail stations from undesirable public places, to places that are pleasant and enjoyable for people.
Shopping Malls	Parking and transport options at shopping malls are often serviced by more traditional technologies. Here, Sstorage lockers may be convenient, and shared light eMobility options present a welcome change.
New Developments	New developments offer developers a financial advantage to reduce car usage and spaces, and a brand and marketing advantage to design sustainably. Quick decision making and implementation are feasible.
Park & Ride	Park and ride locations encourage commuters to consider shared e-cars, should they prefer that to bus transport to and from the city. These locations could prompt people to share clean transport on inbound runs to the park & ride too.
Large housing estates	Housing estates offer dense living locations where car ownership is lower, and residents can access shared inclusive micro-mobility. Placeshaping features of Mobility Islands (e.g. green space), and incentives to encourage behaviour change can also be explored at these locations. Offering community benefits like new shared facilities such as a childrens' playground can encourage behaviour change.

Applying Mobility Islands in scale-up cities

Sharing Cities' €500 million investment goal stimulated the development of the DG Research Innovation award-winning "packaging" approach.

It motivated Sharing Cities partners to identify other cities that would benefit from its portfolio of smart city assets that continue to develop in collaboration with the EU Smart Cities Marketplace and fellow 'Lighthouse' programmes.

With the sponsorship of the UK Government and its 60-city Central and Eastern European (CEE) Smart City Network, Sharing Cities partners are collaborating with a handful of CEE cities to explore smart city and Mobility Island potential, and demonstrate the value of this playbook. For example, Piatra Neamt is attracting tourism to its beautiful scenic and historic 'small giant' city.

PIATRA NEAMT

In Piatra Neamt, the Pearl of Moldovia, steps were taken as part of a Sharing Cities workshop to clarify a concept suitable for its city context and to identify nine locations for Mobility Islands.

Priority locations that were identified include:

- A park (formerly a Zoo), which was converted with community participation.
- The historic 15th Century city centre which offers a convenient, sustainable means of access for all residents and tourists alike - in close proximity to the clock tower, museum, theatre, restaurants, a park and a hotel.
- A large housing complex.
- A major tourist activity park.

User co-design

Identifying user needs and practical use cases

Who are the end users that will champion a new economically sustainable mobility service centred around mobility islands? Who are the excluded or disengaged groups? How could they be included in the participatory process?

Modern smart cities need to be built around the needs of their citizens. Public participation throughout the planning and implementation phases is vital to delivering an efficient and effective mobility island solution. By identifying user needs and engaging them in a participatory process (such as co-design), the solution will best meet the needs of end users (or the citizen / community). Implementation stakeholders such as city officers and innovators will also have ample opportunity to adapt solutions and solve challenges.

An effective participatory process needs to be inclusive and open. By transferring some responsibility to the citizen, communities develop awareness about public policy and feel a true sense of ownership of a solution.

All cities have social insight and methods for building knowledge about user demand to design better services. Digital techniques have moved forward over recent years; so too have societal expectations about services such as mobility; both put considerable strain on city service providers. There are considerable challenges to overcome, such as public trust, to encourage behaviour change. Urban mobility services are in urgent need of transformation to meet global net-zero targets.

We recommend the following steps to help cities engage end-users:

A STEP-BY-STEP APPROACH

- **Research**. Analyse social research in relation to broad social trends and needs in the vicinity of your mobility island location, and mobility trends in and around the city. Analyse results from recent mobility planning (e.g. SUMP) or other city services.
- **User profiling**. Segment the user base and develop typical personae. Personae should consider the high-volume user group and any excluded user groups. By addressing this spectrum of users, a sustainable and inclusive service is more likely.
- **Digital insights**. Use social media analysis tools to understand the wants and needs of users. Various tools are available that offer geo-location insights to strengthen system and service design.
- **Use cases**. Develop a list of potential use cases, and map these use to personae to help identify which use cases to prioritise.
- **Engage**. The initial portfolio of Mobility Island locations and uses cases provide potential scenarios to engage people in productive discussions. They will challenge, validate, augment, and identify new locations, use cases, and personae.

A STEP-BY-STEP APPROACH

- **Co-design**. We recommend co-design as the preferred methodology of engagement. It builds enthusiasm among users and communities as it involves them meaningfully throughout the engagement process, and lends considerable support to adoption of the solution. The process should be convened by the local municipality, and run by city staff or facilitators / experts. Design competitions involving schools and universities supplement this important participatory process.

This may include:

- Target communities, key stakeholders such as developers, utilities, transport service providers, innovation labs, local businesses (employers or commercial enterprises) and investors.

- **Adoption**. Reaching the broader community is also an important step in this process and will help with early adoption of new services. It is an important information and feedback loop that will help to refine and course correct. Digital Social Markets (community engagement and incentivisation mechanisms) were tested as part of the Sharing Cities programme in all lighthouse cities, and a playbook is available that outlines this approach.

User profiling

A list of potential personae is indicated below. The profiles can help to inform users, or potential user numbers, and service design and pricing decisions:

Office commuter. Looking to get from A to B. Will make similar journeys during weekdays / peak travel hours. May combine several modes of transport on a regular basis and will often travel to central or more busy areas.

Retail user. Travels to and from retail areas on a weekly basis. Need for comfort and more space for shopping. Will be travelling from residential areas to central retail areas.

Student. Uses public transport to make similar journeys regularly, likely centred around a campus and also to local shops or entertainment venues. May travel out-of-hours. Regularly travels in groups. Needs affordability, safety, and responds to concessions.

Elderly. Desires travel options but experiences a variety of inhibitions and constraints. Needs additional facilities. Requires safe and secure travel options.

Tourist. Centred around hotels and tourist attractions in a city. Non-repeat user. Tends to maintain a familiar route within a central area of the city. Likely to have money to spend on services and concessions. Information is vital.

Facilities user. A group that sporadically use the non-transport-related features of a Mobility Island e.g. a local wanting to make a phone call, dispose of trash, store a bag, pick-up a package, address a safety issue or medical emergency, have a coffee or meet a friend.

Non-office commuter. Often having less money than office-based commuters, and not generally heading to a central area. Could be seen to be more likely to come from social/low-income housing.

Low-income. Seeks inclusiveness and low-cost and convenient travel.

Family / group. Need for convenient space for multiple users in a group. convenience is a priority in order to keep all the group satisfied. Potential need for family-oriented features (e.g. kids seats).

Use Cases

To effectively plan for a Mobility Island deployment, it is essential to understand how it will be used. A use case is a specific situation in which a product or service could potentially be used. Developing a set of use cases can help identify different user types and their reasons for engaging with the technology. This will enable a city to design a service that considers all the necessary functions and technical specifications to fulfil user needs.

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Identifying links between the different Mobility Island components and elements is usually a challenge, commonly resulting in overlaps that are not sufficiently exploited, or a duplication of effort and costs.

One of the most common mistakes is to start with the different technologies available and then focus on what needs they might serve. Outcomes may be much more positive if considering the opposite way of thinking – placing needs at the core of this assessment and exploring the best way to address these needs and ensure efficient implementation, regardless of the nature or number of the solutions to be considered.

In Sharing Cities, we followed a city-needs-led, user-centric 'Use Case' approach for this purpose. In practice, this is the primary method by which the needs, goals and vision are elaborated and captured, in the form of an engagement mechanism. For this reason, while creating 'Use Cases' a direct dialogue with the end user is often required, to determine and ensure capture of the specific needs to be addressed.

- Initially, project partners responsible for delivering the products and assets drafted Use Cases, capturing specific technical issues to resolve, including details of the basic functions required from equipment, products, data, interfaces and communications.
- Based on the Use Cases drafts, project partners leading on community engagement focused on providing details on how the infrastructure and data was intended to be used by citizens.
- Based on interactions with stakeholders, Use Cases were augmented and additional ones were developed, which in turn had to be validated by project partners delivering the products.
- With the Use Cases validated, they were then used to derive system requirements, and inform the design process.
- Responsibilities were assigned to partners responsible for implementing solutions, addressing the requirements defined and agreed within the scope of the Use Case.

EXAMPLE PERSONAE / USER PROFILE

PERSONAE / SARAH / MILAN

“I have a great sense of duty.” Part of her morning routine is to drop her son at school by car. If she has time she uses a foldable bike or bus to travel to work. If she doesn’t have time, she travels by car.

Sarah is an ideal candidate to use Mobility Islands. She travels frequently, engages in the community, enjoys using ‘soft’ mobility solutions, seeks choice of mode (sustainable), and travels both alone and with her child. She will benefit enormously from multi-modal choice, features like storage lockers, and will resond well to various incentives. Sarah may need to be ‘nudged’ around the potential to share assets and will seek information to demonstrate that the alternative model provides greater confidence for a fast journey with options if the weather changes or upsets occur.

GENERAL INFORMATION

AGE
34

GENDER
Female

MARITAL STATUS
Married

PROFESSION
Researcher

USE OF DIGITAL & TECHNOLOGY
Fairly confident using the internet and digital devices

HOUSEHOLD TYPE

Private renting ○ Private owner ● Public ○ Other ○

NO. OF PEOPLE IN HOUSEHOLD
3

TIME LIVED IN DISTRICT
24

BEHAVIOURAL MEASURES

DIGITAL

TRANSPORT / MOBILITY

ENERGY AWARENESS

London, Royal Borough of Greenwich

Sharing Cities Lighthouse city Greenwich tested a borough-led electric bike sharing scheme and a rental model to encourage the uptake of e-bikes. The scheme allowed residents to borrow an e-bike for a month for just £10 (to cover insurance). Residents then had the chance to buy the e-bike at a discount after their loan period ended.

E-bike loan sessions were held every month (operated and managed by the local community group CACT) with a fleet of 30 bikes available on site. These gave local residents the chance to pick-up or return a bike (before it is then serviced and passed on to the next resident). Priority was given to car owners who did not currently cycle. This maximised the opportunity to encourage modal shift away from cars.

To understand how the bikes were being used, riders tracked their journeys via a travel diary, and the bikes were fitted with GPS units. The scheme was also integrated into the borough's cycle training programme.

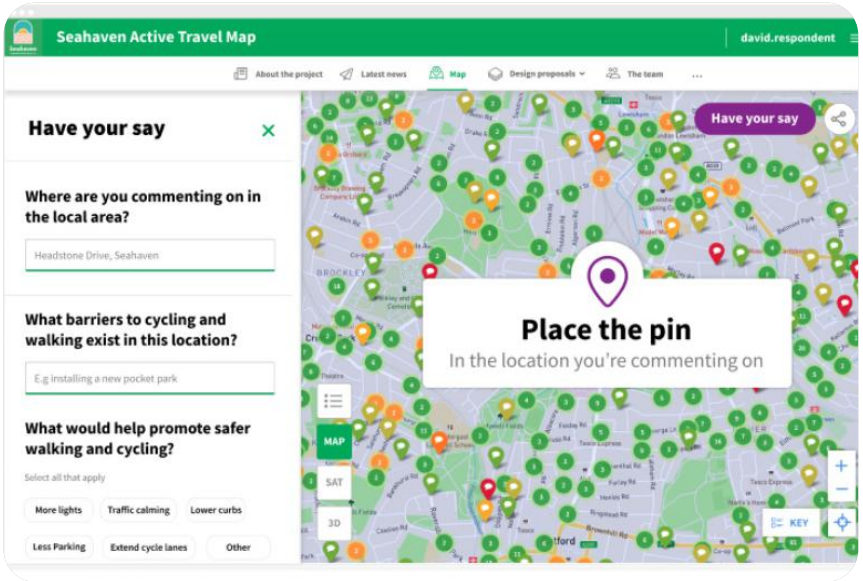
Greenwich explored the local community's demands and needs, and whether these could be met by an e-bike scheme. Greenwich carried out extensive demand analysis before rolling out any measures. This meant local people were engaged and the solution was appropriate for their needs. The councilCommonplace platform, which allows residents to have their say on local schemes and projects.

Commonplace

Commonplace is a community engagement platform designed to help reach communities, engage them in conversation, analyse their feedback and collaborate on future ideas.

Commonplace can be used as an online community engagement hub to build trust and transparency with local people and make the changes that they really need.

By simply dropping a pin on a map, answering some simple questions and adding their comments, they can share targeted local knowledge.



Functional and Technical design

Planning and urban development considerations

Below is a guide of the parameters to consider when integrating mobility islands into urban mobility landscapes. We recommend these are addressed as part of the discovery, planning and design phase.

Policy, Strategy, Regulatory

- Sustainable Urban Mobility Plan (SUMP) or equivalent.
- Review pedestrian strategy addressing safety, comfort, and convenience of movement for pedestrians.
- Planning and development policies – e.g. transitioning to non-motorised transport etc.
- Review freight transport strategy.
- Intelligent Transport Systems (ITS) strategy including current/ planned systems.

Demand considerations

- Analysis of principal and current travel flows which have origins or destinations inside the city. This should include counts and surveys (including household), public transport surveys, traffic counting surveys and data. Consideration of the city's role within a region (e.g. a place of employment).
- Demographic and social changes – past/forecast population (city & surrounds), commuters, tourists, ethnic changes, socio-economic change and resulting forecast needs.
- Mode choice data – car ownership, bike ownership, e-vehicle take-up, walking / NMT data.
- Safety Statistics – city-wide, mode-based and hot spots.
- Issue Areas – specific localities, nature of data & feedback (e.g. social media and sense of safety).
- Existing multi-modal transport demand modelling.

Freight and logistics

- Availability of freight logistics data (infrastructure, ownership, types / volumes and key routes).
- Current light 'last mile' delivery activities.
- Urban fabric and street scene e.g. creating walkways and bike paths.
- Current/planned power system configuration and asset ownership.
- Current and planned e-vehicle charging point dispersion.
- Review land-use changes over past years and future plan (e.g. including new residential growth areas and other developments).

Financial considerations

- Review of public & private transport fares / pricing.
- Integrated smart solutions for ticketing.
- Financial incentivisation (taxes, discounts and usage benefits).

Desired end points of activities

- Outline design of an integrated user-friendly transport network serving present and future mobility needs.
- Cost-benefit considerations, prioritisation of actions, recommendations for short / medium / long-term actions, capital improvement programme and financial plan.
- Consideration of business model options for new mobility operations consistent with local context (economic, social and political).
- Define Transition Roadmap with a portfolio of phased and prioritised projects.
- Capacity building needs of stakeholders.

Matching location to components

Each Mobility Island location will require a specific design treatment. Applying our packaging concept to the design phase, with its common, component-based approach, will help cities scale up and downsize the number of components and elements for each location. It also provides a useful mechanism for evaluating how locations and facilities can be matched with ease.

Specific district types (e.g. business districts or suburbs etc.) and specific location types (e.g. malls or universities etc.) will have typical characteristics that lend themselves to a particular use case, facility and/or service. The scale of these will be location-dependent.

The generic district typology applied in the packaged smart lamppost approach can also provide a useful base-lining tool to address 'asset landscaping' and 'asset allocation' for Mobility Islands.

With pre-planning, space can be allocated for future extensions, deferring full investment, de-risking redundant facilities, and enabling an agile approach to the progressive development of the city's Mobility Island network.

The table on the following page (Page 30) matches anticipated user groups (personae), use cases and mobility island types and facilities to the identified candidate locations.

Each high impact use case can be developed in greater detail to more deeply understand user needs. This can be accomplished with initial desktop research and validated in co-creation workshops with the user community.

A table outlining this approach is provided on Page 31.

DISTRICT / LOCATION TYPE	TYPICAL USER GROUPS	HI-IMPACT USE CASES	MOBILITY ISLAND TYPE / FACILITIES
UNIVERSITY CAMPUS	• Students	• Get to lectures on time • Social outing off-campus	• Type I/II – with bias towards e-bikes / e-scooters. Exploit green space and mobile charging and target branding at a 'green' agenda.
PARKS, CULTURE, & TOURIST DESTINATIONS	• Residents • Tourists • Visitors	• Tourism (Museums and sights) • School learning outing • Lunchtime snack and relax • Exercise (running and walking) • Weekend family outing • Event / entertainment	• Type II – with a heavy focus on additional services. Design sensitivities matter considerably. Where existing facilities are lacking this can become an important draw for people.
PUBLIC TRANSPORT HUBS	• Commuters (high percentage) • Residents (high/med) • Tourists (modest)	• Daily commute into work • Occasional group or individual trip	• Type III – high-end. The requirements are mostly about speed, scale, efficiency and security.
SHOPPING MALLS	• Local Shoppers • Families (entertainment) • Visitors	• Weekly shop • Family outing • Shopping experience	• Type II/III – Mall or shopping centre size dependent. Storage and e-logistics delivery service is an interesting option.
NEW DEVELOPMENTS	• Construction team • New residents • Visitors & family	• Daily commute	• Type II – clear potential to shape demand for new residents to shift behaviours from the outset and reduce car ownership.
PARK & RIDE	• Businessperson (80%+)		• Opening new market segments • Creation of local jobs
(LARGE) (SOCIAL/MIXED) HOUSING ESTATE	• Residents (80%+) • Visiting family and friends • Deliveries & workers	• Daily commute to work • Shopping trips • Family	• Type I/II – design to attract. Communication and incentive schemes to 'nudge' behaviour change.

Mobility Island configurations

Mobility Islands are configured with five major components along with additional sub-components – or elements. Each Mobility Island location will require a specific design treatment. However, by applying the overall packaging concept, with its common, component-based approach, a city can scale up and downsize the number of elements for each location.

COMPONENT	ELEMENT	TECHNICAL REQUIREMENTS
PHYSICAL INFRASTRUCTURE	LAND	Land cost and availability is a non-trivial consideration. Land ownership will vary, and public ownership is essential – at least for the majority of the initial portfolio. In a built-up environment consideration should be given to access (by foot, bike and car) particularly for local residents where it may involve change. Land value impact should be evaluated.
	CHARGING BAYS	Plot space for parking whilst charging represents a major portion of the layout. Where feasible, flexibility should be built in for expansion. Charging infrastructure will be dependent on a number of factors (power capacity, anticipated usage, vehicle type and mix). Ultra-fast chargers may be beneficial for Mobility Islands close to major transport routes, however, are not anticipated in the majority of cases. Fast (~40-50kw) and normal (~20kw) charge rates for e-cars will generally suffice. Commercial market experience suggests that faster rates result in a more economically sustainable model. Micro-mobility vehicles require specific plugs and lower charge rates (10kw). Plug configurations are presently non/multi-standard and vary by region.
	SHADE / SHELTER	This is an important visual signal for the Mobility Island, so design and look-and-feel will be important to the mid-term brand. Design should be attractive and inviting to the public, recognising that relaxation and services provide an important part of the overall service offer. This offers opportunity for stakeholder engagement through design competitions and community feedback / judging.
	BENCHES & TABLES	Design and choice matter, along with functionality (e.g. digital services such as charging plugs for smart phones).
	LOCKABLE MICRO-MOBILITY PARKING	Users may well access a Mobility Island with personal light mobility, so space and lockable fixtures should be provided.

COMPONENT	ELEMENT	TECHNICAL REQUIREMENTS
PHYSICAL INFRASTRUCTURE	SMART LAMPPOSTS / LIGHTING	Lampposts offer scope to include dimmable lighting which may be triggered by movement or absence of use or alarm (e.g. a local emergency button). They can also feature additional sensors (CCTV or water level etc.). Some of these may be built into the overall Mobility Island facilities. A city may wish to consider smart lampposts as a design feature for the Mobility Island.
MOBILE ASSETS	E-CARS	At launch, a city may wish to ensure a consistent style and functionality for e-cars which could be influenced through its public fleet. E-car concessions or other means should also be considered.
ANCILLARY SERVICES	E-BIKES	A city may wish to establish an initial inventory of publicly owned e-bikes to stimulate use depending on existing uptake. This ensures initial control of pricing, design, branding, features (e.g. kids seats and navigation) and incentives for uptake. E-scooters, and e-mobility buggies follow a similar choice.
	WASTE BINS	An attractive public realm is litter free. Location dependent smart bins are a useful and sensible complement to a Mobility Island.
	STORAGE LOCKERS	Storage lockers within / adjacent to the shelter of different sizes can provide invaluable facilities for users. These may integrate with concession / last-mile / online ordering services.
	CONCESSION SPACE	For larger Mobility Islands, or those servicing tourist or park locations (or locations with limited local services), the provision of concession space (built in or plot space with utilities) for café or small service businesses offer scope to enhance user experience. This has the added advantage of potentially ensuring safety and up-keep of other local facilities (through employing the concessionaire to perform set duties).
	PUBLIC CONVENIENCE	Basic human functions may present an opportunity for a toiletry service to the public. Other features that may be relevant include the likes of a known location for defibrillators in the case of medical emergency or a push-to-talk feature to connect with a manned control room.

COMPONENT	ELEMENT	TECHNICAL REQUIREMENTS
ANCILLARY SERVICES	PUBLIC INFO / ADVERTISING	A Mobility Island can provide a very useful service to inform users of public information: wayfinding, weather, local sites or services. This can also be mixed with advertising. Digital low-power e-Ink screens (energy conscious messaging), or more elaborate screens may be chosen.
RENEWABLE ENERGY	PHOTOVOLTAIC PANELS	Vehicle shelters provide an excellent structure to locate solar PV panels.
	BATTERY STORAGE	Local battery power storage complements the above. This offers a useful role for second life batteries (e.g. old batteries from public e-bus fleet).
DIGITAL	OPERATING PLATFORM	An ICT platform is a fundamental element of the Mobility Island. It helps to manage energy systems, booking and payments, asset scheduling, status monitoring and maintenance. This will require collection and management of data from multiple public, private and social sources, from in-field sensors to public and commercial databases.
	APPLICATIONS AND INTEGRATION	Convenient, functional, trusted and well-branded online and smart phone interfaces complement operating platforms and offer all users a quality service. Cities may well have existing digital services (e.g. smart cards etc.), so any solution for the Mobility Island must be suitably interfaced with / integrated into existing digital services to provide a seamless overall user experience. Given Mobility Islands are central to a shift of societal habits and behaviours, a digitally-enabled incentive mechanism for individual and/or community change is worth considering for a later phase of mobility island roll-out.

The above considerations offer the basic foundations to commence the process of technical requirements definition and functional specification. Further design considerations are included in annex, and in the referenced Sharing Cities playbooks.

Technology standards

Interoperability between different systems and components is one of the challenges of rolling out Mobility Islands. This can be addressed to a certain extent through the uptake of common technology standards – be they from recognised formal standards organisations or industry consortium standards, where they exist. The procurement and commissioning process provides the essential point at which such requirements are set, and cities should ensure that basic principles are established and monitored, recognising the innovative nature of the solution. Data principles and standards form an important element of this.

Stakeholder engagement

Clarifying the goals of your stakeholders

There is a wide range of stakeholders that may be involved in delivering Mobility Islands, from concept through to implementation and delivery. Each stakeholder brings nuanced views and motivations as well as different levels of power and influence on the development and operation of Mobility Islands.

An important step is to localise the generic statements provided on Page 33. It identifies what each stakeholder group is typically motivated by.

Mobilising and aligning stakeholders and resource

The initial and iterative process of determining the scale of deployment, basic ownership and business model structure, and financing mechanisms; together with the exercise above to identify stakeholders and their level of involvement will provide a good foundation to move forward with stakeholder management.

Because Mobility Islands are a relatively new concept, limited understanding of the concept may result in short and long-term implications. Open and productive collaboration will be essential.

Given this context, a more rigorous approach to stakeholder management will reduce project development and implementation risks, and improve the solution.

A relatively simple and effective method for stakeholder management is to consider the relevance of the stakeholder to the solution (VIP, influencer, resource), and the position that such a stakeholder is taking (drive, support, watch, resist).

The method can be used to consider individuals (e.g. Mayor), departments, or whole organisations. And typically, it would involve a mix.

There is a 'zone of critical influence' within which sufficient momentum must be generated to ensure a project will move forward and endure. This is necessary to overcome any influential resistance. By removing certain actors (e.g. a political change), or introducing others (e.g. additional service providers) the picture can change. Influence will also differ at different stages of a project.

This picture will change over time, so it is beneficial to revisit it regularly, at major milestones in the development, and / or as significant issues emerge.

Where necessary it is useful to consider the rational / emotional / political motives at work.

A table on stakeholder motives and influence through the lifecycle of a Mobility Island project is provided on Page 36.

STAKEHOLDER	MOTIVES	LIFECYCLE INFLUENCE
CITY HALL	• Public value and sustainability goals • Inclusive transport city-wide • Affordability, convenience for user • Safety and efficiency operations • Public realm, quality of place and impact on economy • Optimised overall capital and operating costs • Strategic (long-term) influence on mobility system	**High**. The selected business model and ownership structure will significantly influence what City Hall can and cannot do. However, there are multiple powers of direct / indirect influence that the city can take at different stages depending on circumstances. Significant influence to stimulate transition is best.
PUBLIC TRANSPORT	• Safe, efficient, cost-effective operations • Infrastructure and asset budgets • (Financial) Implications across modes	**Moderate and indirect, unless involved in delivery**. Local market, mode coverage, and ownership / governance of providers will have a marked influence on their engagement.
REGIONAL GOVERNMENT	• City-metro-hinterland connectivity implications • Socio-economic impact and benefits	**Moderate**. Ex-urban travel patterns, infrastructure, facilities, and services will determine involvement and influence.
UTILITY	• Revenue potential • Power availability and cost of supply • Alignment with overall network	**High in design and implementation stage**. Publicly owned and privately owned utilities, and also competitive context will have a marked impact; as will commercial involvement in solution/service.
DEVELOPER	• Strengthening of overall development offer • Speeding sales and increasing revenue • Differentiation / brand / ESG	**High in specific settings**. Developers may be able to move swiftly so select ones can bring positive overall benefits to the overall network as early adopters. Land and property value may benefit.
COMMERCIAL INVESTOR	• De-risking investment (governance, business model, returns streams) • Financial Returns	**Moderate/High at project decision, and later scale-up stages**. There are a wide variety of investors that may back solution providers (e.g. e-car company) or support public value / impact investment (e.g. pension fund). Blended financing and early involvement in initiative is beneficial.
LOCAL BUSINESS	• Impact on business (financial) operations • Impact on staff	**Modest or low**. This diverse category may include potential product or service providers; adjacent businesses that receive co-benefits; large employers that consider staff implications.
MICRO-MOBILITY PROVIDER	• Commercial • De-risking operating exposure • ESG / brand / differentiation	**High in operation. Moderate in planning.** Car, bike and scooter operators; and the local density of such providers in the city/region are a major factor, particularly in early set-up

Business models and financing

The electric mobility market is fairly new and could develop in many different ways thanks to varying revenues sources.

An integrated approach can unlock all the potentials of emobility and validate a business model that can be scaled up quickly, thanks to the increase of incomes coming from new opening markets for mobility areas.

eMobility benefits could be accounted, merging all the benefits of sustainable mobility measures of Sharing Cities, especially in Mobility Areas, where different physical services are located in a single area and synergies among different technologies are available.

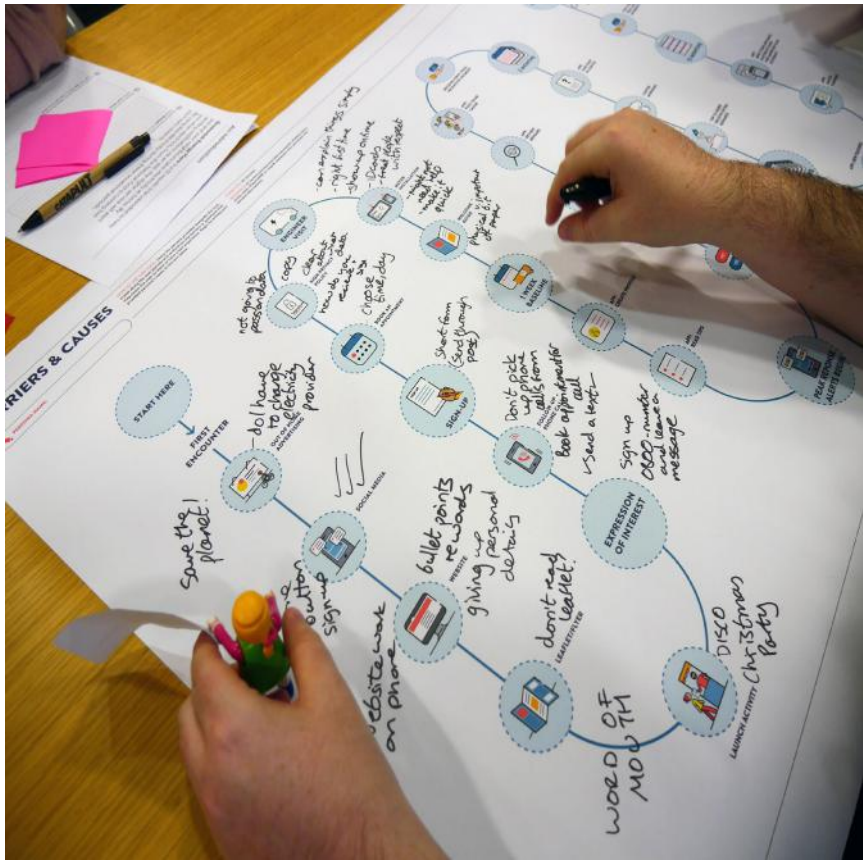
EV charging point services could take advantage of smart parking sensors for reservation and parking space management due to double check, guaranteed both by charging point and parking sensors. Moreover, the “Smart Humble Lamppost” can provide Wi-Fi and LoraWAN access and security, while an ICT platform could enable innovative services, integrating information and access to public and private transportation services present in the intermodal node.

Each element of the Mobility Island brings with it relative cost, and different forms of value to different stakeholder groups; some in financial form and many in ‘softer’ forms of value.

Important examples of secondary benefits that will emerge over time include:

- improved air quality.
- less congestion and faster cross-city travel.
- improved access to work.

It is the nature of these costs and different forms of value (some financial, others non-financial) that make the task of justification both important and complex; evaluating different business model options and selecting an appropriate model is therefor essential.



How to use this playbook
Challenge
Value
Examples
Toolkit
Stage 1 Strategic context & roadmap
Stage 2 User co-design
Stage 3 Functional & technical design
Stage 4 Stakeholder engagement
Stage 5 Business models & financing
Stage 6 Monitoriing value & optimising

MODEL	Typical locations	E-Cars	Light mobility	Scooters	PV & Storage	ICT Platform	Related services	Budget cost
'Light' / Pilot / Test – low investment, swift return	Outcome Trial sites; Towns/ Villages; Holiday locations; ex-urban	3-5	5-15	2-3	20KW – 150sqm	20KW – 150sqm	Water fountain, smart bins, lockers, ancillary power	€60-80,000
'Norm' – the city-wide 'standard'	City-wide application; large housing complexes	6-10	10-25	3-5 Building, City	As needed	+ Smart parking	+ environmental sensors, eBike battery swap...	€75 - 125,000
High-End Specials – high-capacity locations	CBD; Rail Hubs; Shopping Malls; High Street; Campus	>10	20-75	5-7 Building, City	Landmark	+ other synergistic urban digital services	+ CCTV surveillance, info commercial...	€150,000+

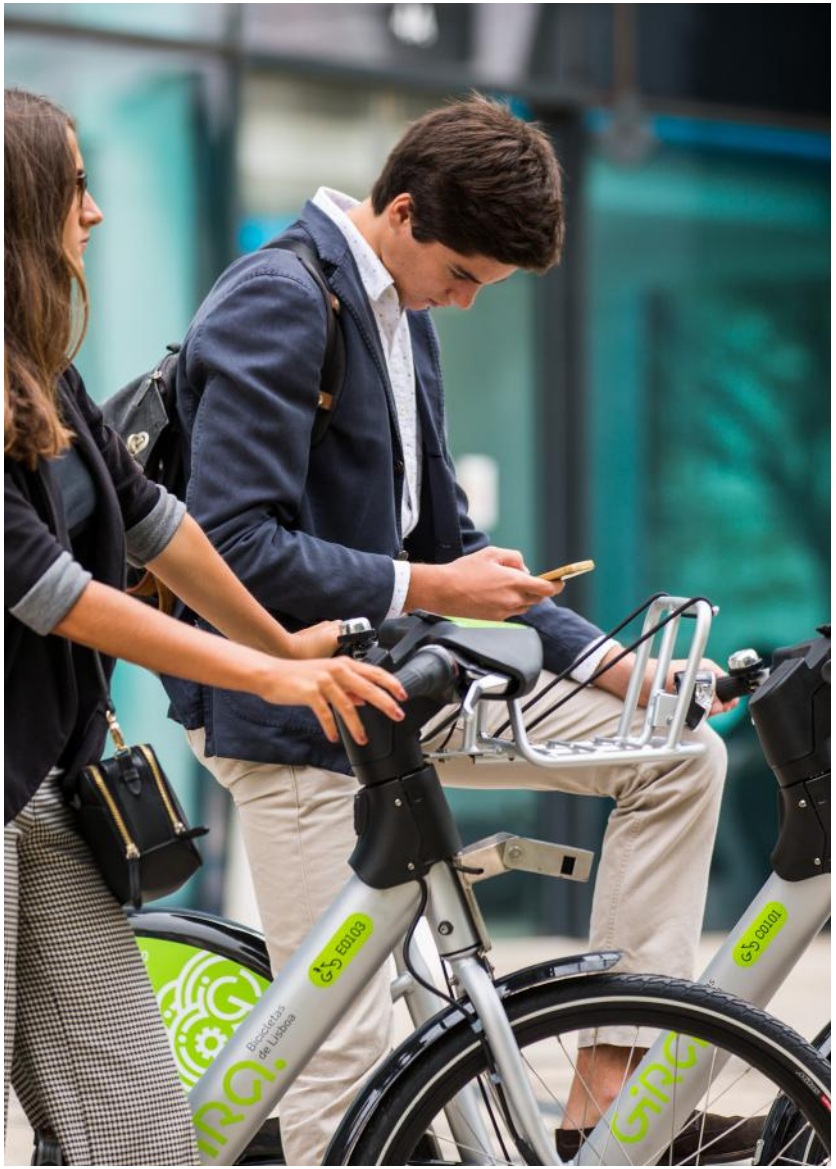
The cost of a Mobility Island is of highly dependent on scope and scale, however an approximate budgetary range is €75,000 - €150,000. Three configurations are indicated above with approximate ranges of assets and types of services. These exclude land value and local labour and material rates, overall numbers of planned Mobility Islands, and sophistication of design will also affect pricing.

These costs may also be carried by different stakeholders dependent on the business model selected. It is important to remember that the concept of a functionally-standard, component-based design, lends itself to flexibility in installation (i.e. less risk of redundancy; more options for lower-cost expansion); and consistency in quality and look-and-feel. Such parameters are important to the overall transition that a city seeks to make.

There are a number of important control points in developing a portfolio of Mobility Islands that should be considered. And it is notable that City Hall has considerable influence over many – in terms of ownership, governance, planning, financing, and operations. The table on Page 39 outlines how to select the best business model.

Selecting the best business model

Land & placemaking	Mobility Islands that lie on public land will be more controllable in achieving overall goals and ambitions of the city towards a new mobility model. Other potential owners include universities and commercial developers.
Critical Utilities – Power Supply	Most cities will require a major review of power systems as the overall shift to electrification progresses. E-cars represent a significant draw on energy so the number of e-cars (and charge rates) will require alignment with current/anticipated grid capacity. In-built or nearby renewable (PV) can support the majority of micro-emobility needs.
Asset Ownership – Fixed & Mobile	Fixed asset ownership clearly influences the overall nature of the Mobility Island – design, capacity, service basket, appearance. Functional and service parameters can be set (by public sector) as to help establish a base-line. Transitioning a public fleet to electric or public micro/light emobility assets can help influence the overall service proposition and operation.
Service Orchestration	The Mobility Island concept is component based and flexible (services and location). Some attract revenue; some add cost. The service basket must be balanced between what the community may want or need, and what the direct/indirect financial and non-financial model allows. Regular review is vital.
Revenue Principles	Considering each revenue-attracting component of the Mobility Island and setting principles and parameters for pricing/revenue to service end goals is vital; and re-visiting these.
Governance & Organisation	Park and ride locations encourage commuters to consider shared eCars and could prompt people to share clean transport on inbound runs to the park & ride too.
Contracting Structure	Housing estates offer dense living locations where car ownership is lower, and residents can access shared inclusive micro-mobility. Placeshaping features of mobility islands (e.g. green space), and incentives to encourage behaviour change can also be explored at these locations. Offering community benefits, like new shared facilities such as a childrens' playground, can encourage behaviour change.



Accessing funds

In all cities transport is delivered with a mix of individual, private and public funds. The transition to a new model will be no different.

However, transformational change will require purpose-based / impact investment (i.e. public value driven). Public budgets are constrained in many cities, so a targeted use of public funds to reduce risk and assure non-financial, longer-term value is increasingly important.

Cities that work well together to create demand by identifying common solutions for shared needs will benefit through positively influencing the market. This is particularly pertinent for smaller cities that typically have poor market access and it is an opportunity for larger cities too. Collaboration helps cities in tackle common challenges and maximise available resources and capabilities. There is also a high degree of system interdependencies involved in deploying Mobility Islands.

Fund sources will vary.

- **Public domain**: city funds, public transport operator budgets, government or other grants, research funds and treasury loans.
- **Industry**: developers, automotive industry, commercial businesses.
- **Investment community**: pension funds, impact investors, institutional investors and development banks, equity investors and commercial banks.

To mobilise these funds, cities and partners need to demonstrate:

- A credible roadmap
- A bankable proposition
- Competent public leadership
- Sufficient scale to attract the target investors / parties
- Demonstrable capability and competent performance monitoring model.

Initial stimulus of public funds, or blending public and private funds can play important roles for cities innovating and leading the way.

Monitoring value and optimising performance

Establishing a logical and practical framework

To measure the implementation and impact of mobility islands, a monitoring framework should be designed to address:

- all forms of value.
- recognise different types of indicators / clearly define the logic of indicators to help align all stakeholders.

There are several stakeholders involved with different levels of influence and control, and with this comes varying and often conflicting goals.

There is also likely a variable quality of underpinning data to support monitoring. This is common in city performance monitoring, and is particularly prevalent for innovative multi-sectoral solutions like Mobility Islands.

Assuring returns

All cities will have some form of established monitoring system in place, perhaps focused more on traditional transport services and systems. The current system should be evaluated to assess the extent to which it can inform and support the new and more dynamic multi-modal system. The overall Mobility Island programme should have some overarching targets and goals established which will typically be blended with the city's mobility (and wider) development plans. This should provide overall short, medium, and longer-term targets from which to monitor. Each Mobility Island (or cluster in a geographic area) can then have more specific targets and metrics in place. It is important to establish some form of base-line metrics to monitor from. And these should extend to cover all forms of value (prosperity, planet, people, governance). This offers a means to establish improvement in a financial and non-financial sense. The former of which will be an important foundation, particularly for private sector investors and involved commercial partners.

The sophistication of the indicator system should match the ability of various parties to provide quality data. A focus on accuracy, clarity and ease of understanding will deliver both efficiency and effectiveness.

A regular multi-stakeholder review process should be established at the outset to manage the flexible and agile deployment of Mobility Islands.

Incentive mechanisms should be considered throughout deployment to test out means by which uptake and behaviour change can be positively influenced and value maximised.

For more information about the steps mentioned in this toolkit, please contact Graham Colclough.

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Resources

The Leadership Guide, Graham Colclough, Urban DNA. For a copy of this guide please contact Graham Colclough.

Sharing Cities Playbooks, Sharing Cities. https://www.sharingcities.eu/sharingcities/resources

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