Resident First

A better quality of life

GUIDELINES ON **SUSTAINABLE MOBILITY**

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Local Councils' Association
Assoċjazzjoni Kunsilli Lokali Malta

GUIDELINES ON **SUSTAINABLE MOBILITY**

ResidentFirst

This document has been authored by
Dr. Antoine Zammit for studjurban, in collaboration
with the Local Councils' Association Malta.

Published by:
Local Councils' Association
Local Government Building
Local Government Road
Marsa
Malta

T. +356 25968000 E. lca@lca.org.mt
www.lca.org.mt

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This publication is dated March
2025 and being produced as part
of the Local Councils' Association's
ResidentFirst vision 2024, under
the pillar of Sustainable Mobility.

The examples of EU funding programs
and events mentioned in this book were
relevant at the time the study was conducted.
As policies, funding opportunities, and events
may change over time, readers are encouraged
to consult official EU sources for the most
up-to-date information.

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Foreword

As our urban areas face increasing pressure from population growth and environmental challenges, the need for sustainable and efficient transportation solutions has never been greater. This consolidated document is the result of four years of studies commissioned by the Local Councils' Association Malta, as the first of four pillars of its Resident First vision launched in 2020, and undertaken by local architectural and urban design office, STUDJURBAN

The document provides key insights into critical aspects of mobility in Malta, focusing on strategic measures to address pressing issues such as the transition to electric vehicles (EVs), parking management, walkability, shared transport, and last-mile connectivity. By identifying current challenges and outlining actionable steps, these insights aim to guide Local Councils, policymakers, key stakeholders, and residents toward a more accessible, eco-friendly, and efficient transportation system. It is to be noted that each of the five sustainable mobility documents collated within this publication are correct as of the time when they have been formulated, and are being presented in the order that they were issued, between the period 2021 and 2025. This summary serves as a foundational guide for policymakers, local councils, and urban planners to adopt a holistic approach to sustainable mobility.

Dr Antoine Zammit
Founder and Director, STUDJURBAN
March 2025

Integrated and Executive Summary:

Key Insights from the Five Documents

Document 1: Walkability and Accessibility

(A) Benefits:

- Walkable localities enhance public health, reduce environmental impacts, and improve urban liveability.
- Key advantages include equitable transport access, reduced transportation costs, and increased local business activity.

(B) Steps to Implementation:

- Ensure well-designed pavements with adequate width and accessibility.
- Integrate shade, greenery, and seating for comfort.
- Redistribute space to prioritise pedestrian and cyclist safety.

Document 2: Last Mile Transportation

(A) Definition and Benefits:

- Covers the final segment of a journey, connecting transit stops to destinations.
- Promotes reduced car reliance and lowers emissions.

(B) Approaches:

- Expand micro-mobility options like e-scooters and shared bikes.
- Enhance infrastructure for seamless integration with public transit.
- Support initiatives for urban freight sustainability.

Document 3: Parking Management

(A) Key Challenges:

- Over 400,000 vehicles in Malta require substantial parking space, leading to urban congestion.
- Lack of data on existing parking capacity hinders strategic planning.

(B) Proposed Solutions:

- Develop data-driven parking strategies.
- Promote reduced car ownership via shared mobility incentives and improved public transport.
- Prioritise space for pedestrians and cyclists over parking.

Document 4: Shared Transport

(A) Core Features:

- Enables shared use of vehicles, reducing the need for private car ownership.
- Includes carpooling, bike-sharing, and mass transit options.
- Frees up urban space, lowers transportation costs, and improves air quality.

(B) Steps to Implementation:

- Incentivise shared transport adoption through public-private partnerships.
- Ensure access-for-all policies to enhance inclusivity.

Document 5: Electric Vehicles (EV) Changeover

(A) Highlights:

- The transition to EVs is critical for reducing greenhouse gas emissions and meeting air quality goals.
- Infrastructure needs include widespread EV charging stations and upgrades to power grids.
- Challenges include addressing particulate emissions from non-exhaust sources and the high initial costs of EVs.

(B) Future Steps:

- Promote incentives for EV adoption.
- Encourage renewable energy integration for EV charging.
- Foster collaboration among government agencies and Local Councils.

An Integrated Vision for Sustainable Mobility

The synergy between EVs, parking management, walkability, shared mobility and last-mile transport, forms a comprehensive framework for sustainable urban environments. A combined approach ensures reductions in emissions, improved public health, and enhanced urban liveability while addressing diverse mobility needs.

Representative Statistics
• Malta's urban density supports the adoption of micro-mobility and shared transport, with over 50% of daily trips being under 5 km, making them ideal for alternative transport solutions.
• Target of 65,000 EVs by 2030 aligns with national and EU climate goals, contributing to a projected reduction of 40% in transport-related emissions.
• Walkable streets can reduce vehicle trips by up to 30%, addressing congestion and pollution issues, while improving public health outcomes through increased physical activity.
• Studies show that effective last-mile solutions can enhance public transit usage by 20%, encouraging a modal shift away from private vehicles.
• Shared transport initiatives have been shown to decrease traffic congestion by 15%, creating safer and more efficient urban environments.
• Parking optimisation strategies can potentially free up 25% of urban space, which can be repurposed for green areas and pedestrian-friendly zones.

Resident-Centered Approach: Enhancing Quality of Life:

Foreword Message by the President of the Local Councils' Association

Introduction

The Local Councils' Association (LCA) has long advocated for policies that put residents at the heart of urban development. Since 2019, following an extensive public consultation in 2018, the LCA has championed the Resident First vision, emphasizing sustainable, liveable, and technologically integrated communities. This vision is built on four core pillars: sustainable mobility, urban green, open spaces, and smart cities. These priorities reflect the LCA's commitment to creating a high and Better Quality of Life for residents through forward-thinking governance and sustainable urban planning.

The LCA has commissioned comprehensive studies on these four pillars to support this vision, gathering data-driven insights to guide policymaking. This publication brings together five key sectors under the pillar of sustainable mobility: Last-Mile Transportation, the Switchover to Electric Vehicles, Walkability and Accessibility, Guidelines on Parking Management, and Shared Transport.

1. Sustainable Mobility

One of the fundamental elements of the Resident First vision is sustainable mobility. The LCA recognizes that modern cities and villages must move away from traditional, car-centric transportation models and embrace alternatives that are efficient, eco-friendly, and accessible to all. Sustainable mobility reduces traffic congestion, lowers carbon emissions, and improves the commuting experience.

Key initiatives include:

- **Last-mile transportation:** Providing convenience for the final leg of a commuter's journey, whether through e-scooters, bike-sharing, or improved pedestrian routes.
- **Changeover to Electric Vehicles:** Promoting infrastructure to support electric vehicles (EVs), including charging stations and incentives for adoption.
- **Walkability and Accessibility:** Designing pedestrian-friendly infrastructure to

ensure safe and efficient walkways for all, including those with mobility impairments.

- **Guidelines on Parking Management:** Implementing structured parking policies to reduce congestion, improve space utilization, and promote alternative transport methods.
- **Shared Transport:** Encouraging carpooling, ride-hailing services, and public transport to reduce reliance on private vehicles.

The LCA has consistently advocated for policies that make urban mobility cleaner and more accessible, ensuring that transport solutions align with environmental sustainability and the needs of residents.

2. Urban Green*

Urban greenery is essential for maintaining the ecological balance in cities. As urban areas continue to expand, the importance of integrating green spaces into city planning cannot be overstated. Green areas improve air quality, mitigate urban heat effects, and contribute to the physical and mental well-being of residents.

Key initiatives include:

- **Urban Reforestation:** Planting trees in urban areas to increase biodiversity, provide shade, and absorb pollutants.
- **Vertical Gardens and Green Roofs:** Encouraging businesses and residents to integrate green elements into building designs to enhance sustainability.
- **Sustainable Landscaping:** Utilizing drought-resistant plants and smart irrigation techniques to maintain greenery efficiently.
- **Green Corridors:** Creating interconnected green spaces to enhance urban biodiversity and provide residents with scenic walking and cycling routes.

Since 2019, the LCA has promoted policies mandating increased green infrastructure in urban developments. The goal is to transform cities into healthier, more resilient environments that prioritize environmental sustainability and well-being.

3. Open Spaces*

Public open spaces foster a sense of community and enhance social interactions. The Resident First vision emphasizes creating and maintaining accessible, safe, and inclusive public spaces that cater to all demographics, including children, elderly citizens, and individuals with disabilities.

Key initiatives include:

- **Revitalization of Public Parks and Plazas:** Upgrading existing spaces to include modern amenities, seating areas, and recreational facilities.
- **Community-Centered Design:** Involving residents in the planning process to

ensure that public spaces meet their needs.

- **Heritage Conservation:** Protecting and restoring historic sites to preserve cultural identity while integrating them into modern urban landscapes.
- **Multi-Purpose Spaces:** Designing parks and squares that serve multiple functions, from social gatherings to fitness activities and artistic performances.

The LCA has strongly advocated for urban design that prioritizes people over vehicles, ensuring that every resident has access to well-maintained and engaging public spaces.

4. Smart Cities*

The fourth pillar of the Resident First vision is the adoption of smart city technologies to enhance efficiency, security, and convenience in urban life. A smart city integrates digital solutions to optimize urban services, improve energy efficiency, and enhance overall quality of life.

Key initiatives include:

- **Smart Traffic Management:** Using AI and IoT-based traffic lights and monitoring systems to reduce congestion and improve road safety.
- **Smart Waste Management:** Implementing sensor-based waste collection systems to optimize garbage disposal and reduce environmental impact.
- **E-Government Services:** Facilitating digital access to government services, reducing bureaucracy, and improving transparency.
- **Energy-Efficient Infrastructure:** Promoting using smart grids, LED lighting, and renewable energy sources for urban infrastructure.

The LCA has been at the forefront of advocating for integrating technology-driven solutions to improve urban living while ensuring that these advancements remain inclusive and accessible to all.

A Commitment Since 2019

The Resident First vision did not emerge overnight. The Local Councils' Association engaged in a nationwide public consultation in 2018, gathering insights from residents, experts, and stakeholders. Since 2019, the LCA has been actively lobbying for policies that reflect these four pillars, ensuring that urban development aligns with community needs and sustainable progress.

To strengthen this vision, the LCA has commissioned studies on these pillars, ensuring that policies are backed by solid research and practical solutions. The studies have provided key insights that guide the implementation of sustainable and resident-friendly urban policies.

Through partnerships with government bodies, private sector players, and community organizations, the LCA continues to drive change by:

- Encouraging local councils to prioritize resident-centric policies.
- Providing training and resources to urban planners and municipal leaders.
- Advocating for legislative changes that support sustainable urban development.

Conclusion

The Resident First vision is a testament to the Local Councils' Association's unwavering commitment to building sustainable, resilient, and inclusive urban environments. By focusing on sustainable mobility, urban green, open spaces, and smart cities, the LCA ensures that urban development is guided by principles that prioritize people and the planet.

Since 2019, this vision has shaped municipal policies, urban planning decisions, and infrastructure projects, leading to meaningful improvements in residents' daily lives. As the LCA continues to advocate for these priorities, the hope is that cities will become greener, smarter, and more connected, ensuring a high quality of life for future generations.

Mario Fava
President, Local Councils' Association

These studies will be published in the coming months.

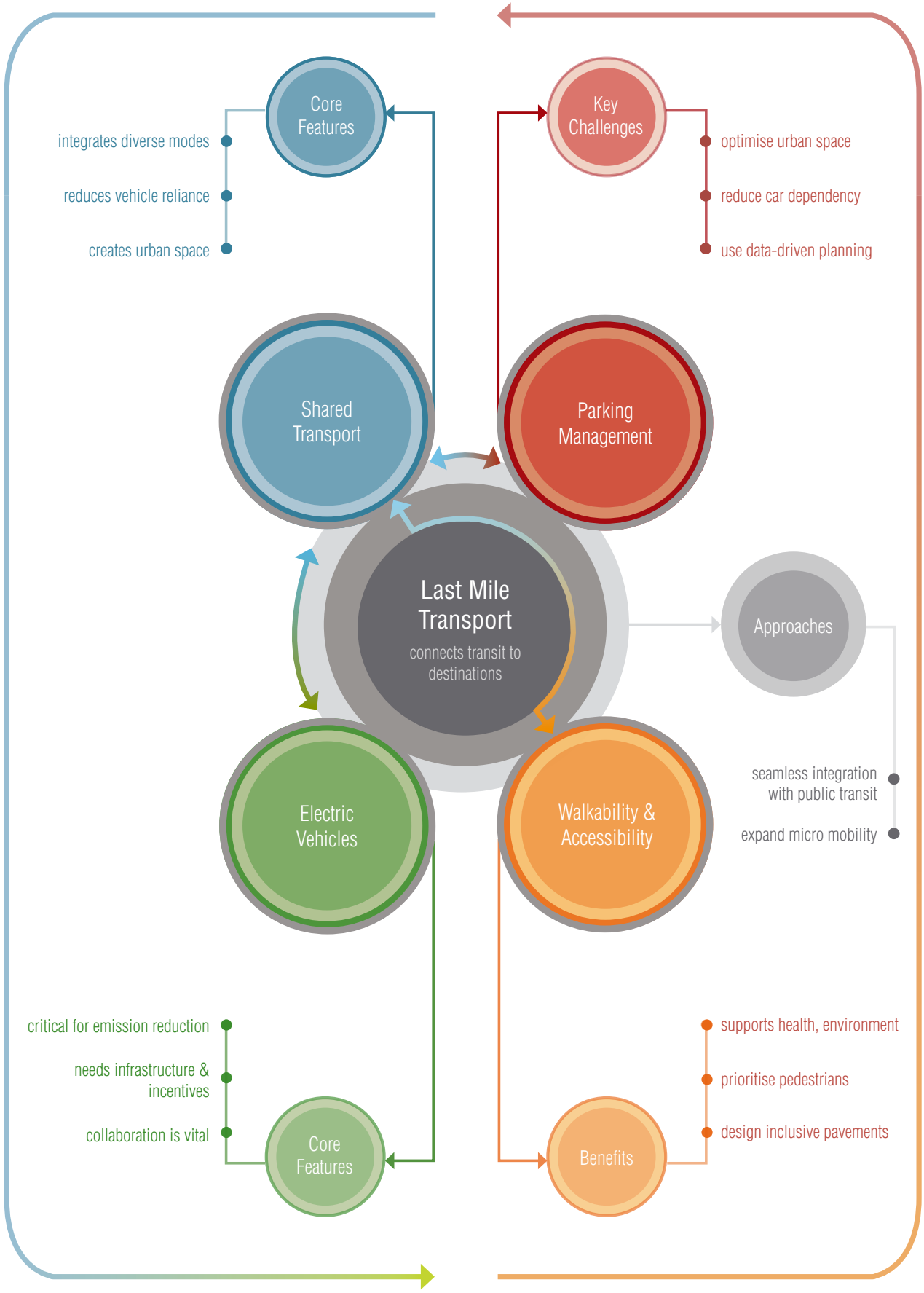


Illustration by Studjurban

Photo by Georg Clerk on iStock

GUIDELINES ON SUSTAINABLE MOBILITY

WALKABILITY AND ACCESSIBILITY

ResidentFirst

Contents

1. Walkable Localities in a Car-Dependent Society

1.1 Introduction

Walking is the most fundamental mode of human transportation. Walking and cycling provide an alternative and sustainable method for short-distance travel beyond driving. It is free, good for our health and for some of us, especially for youngsters and the elderly, a necessity.

Today, the overbearing and increasing presence of vehicles has replaced the much-needed space for pavements, trees and leisure spaces, leaving an urban environment that is fragmented, visually unpleasant and unsafe for those other than the drivers. Walking through a few blocks or crossing a street in our localities has become inconvenient and unsafe. It is not that we don't have the desire to walk, but our built environment does not allow us to do so.

Streets are more than movement corridors for vehicles and parking spaces. They are first and foremost part of the public space network, a social space where people gather, interact, move, play and socialise.

The COVID-19 pandemic changed our habits, questioned our lifestyles, distorted our day-to-day priorities and limited our freedom that seemed unquestionable. Now, people want a fundamental change in the way streets and public spaces are designed and constructed in order to promote walking and reclaim space for people, especially for those of us living in confined spaces, including the elderly, children and people with reduced mobility.

Even though the pandemic fueled people's desire to have walkable societies, designing for walkability is neither rare nor new. In fact, there are multiple examples of cities that work towards the goal of increasing walkability. Additionally, there are several well-established concepts concerning walkability, for example the concept of a 15-minute city.

Local Council members, who are democratically elected by their residents, are expected to safeguard and improve the quality of life of every resident in their respective locality. It is every Mayor's and Council member's duty, and responsibility, to protect their residents' right of walking safely in all localities. Practical enough, this document provides Local Councils with information and tools to ensure walkability and accessibility for all residents.

All this to give back our localities to their residents.

1.2 The Advantages of Walking

The creation of more walkable localities has significant positive impacts on the overall wellbeing of the community:

For individuals, walkability:

- contributes to a better quality of life;
- results in less spending costs for transportation; and
- provides a cleaner environment which may be enjoyed by all.

For society at large, walkability:

- serves as an equitable and inclusive form of transport at no cost;
- increases social interaction and diversity of public life;
- enhances collective security and safety with more active streets;
- encourages local businesses; and
- results in less congested streets.

For private businesses, walkability:

- creates less demand for parking spaces;
- generates an active workforce; and
- provides more business opportunities as more people enjoy easy access to commercial uses.

For governments, walkability:

- improves public health, which implies less strain on the health sector;
- reduces air pollution and carbon emissions; and
- creates more connected, and therefore stronger communities.

Photo by Kevin Schmid on Unsplash

1.3 This is a Walkable Locality

A walkable society has a lot of advantages. Generally, these include:

- A connected walking and cycling infrastructure;
- A defined centre, whether it is a main street or a public space;
- Mixed income and mixed use, such as affordable housing located near businesses;
- Public places for people to socialise and do outdoor activities;
- Attractive active frontages;
- Streets designed to cater for pedestrian and cycling safety, and public transport; Schools and workplaces located close to residences; and
- Activity and people for businesses to flourish and for public transit to run frequently.

Well-designed streets and public spaces give priority to pedestrians instead of private vehicles, and encourage walking and cycling and use of public transport services. Before redesigning our streets, we need to first know if our localities are walkable, and to what degree. This assessment would clarify what needs to be improved. Therefore, we need to be asking the following questions in every locality:

Connectivity

- Does the pavement provide a continuous network for pedestrians?
- Are crossings always available at intersections?
- Are pavements connected well to public transport stations?
- Are there any obstacles on the pavement that disturbs the flow of people?

Accessibility

- Are entrances to stores wide and clear of barriers?
- Are public transport stations clearly seen and easy to get to?
- Are stairs and gentle gradients available where they are needed?
- Can people with visual and physical disabilities get around easily?

Comfort

- Are paths wide enough for all pedestrians?
- Are pavement surfaces even and non-slippery?
- Is there shade and shelter at frequent distances?
- Are there enough seating benches?
- Are there areas subject to excessive noise and pollution?
- Are pedestrian spaces enjoyable and clean?

Convenience

- Are there enough litter bins on every street?
- Is signage clear enough for both residents and visitors?
- Are there enough public facilities, such as drinking fountains and public bathrooms?
- Are services and facilities located within easy walking distance?

Safety

- Is there signage for road speed limitation?
- Are there clear markings for pedestrian crossings?
- Does the walking environment discourage antisocial and criminal behaviour?
- Is there sufficient lighting at night?

Photo by Jan Antonin Kolar on Unsplash

2. Steps Towards Walkable Localities

This section introduces and discusses eight steps which Local Councils can adopt to enhance and promote walkability within their localities. It is important to note that planning for walkability is part of a larger vision, which also plans for sustainable alternative modes of transport, shared transport, parking management and open space networks. They are all interlinked and should be studied together for better and more sustainable city planning. Therefore, to have walkable neighbourhoods, issues like on-street parking, provision of public transportation and alternative modes of transport have to be tackled simultaneously.

It is also important to note that all the tools presented in this document are general, however, design must always be specific.

After answering the questions on pages 7 and 8 to see if their locality is walkable, each Local Council would be able to address specific issues related to walkability and accessibility that are present within their locality. Understanding the context is the main key to implementing the most effective measures.

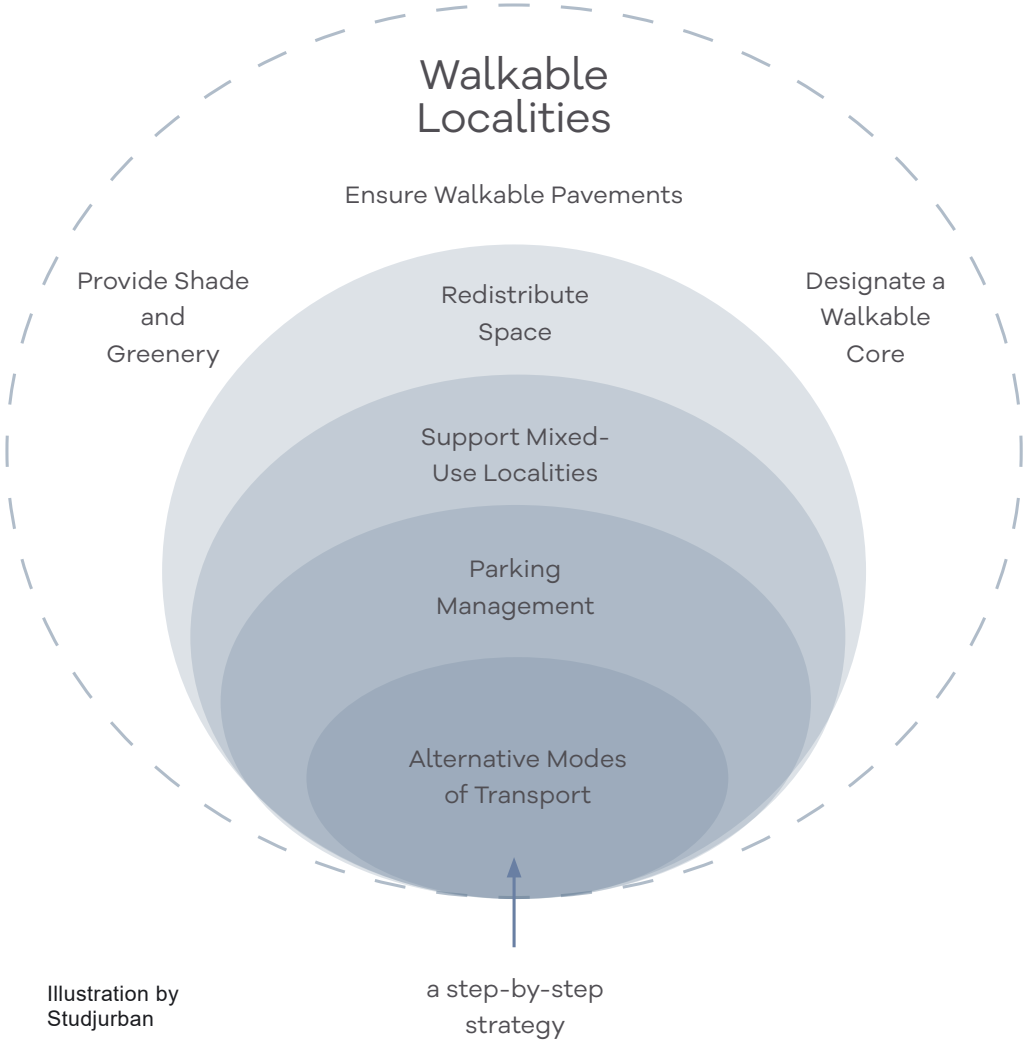


Illustration by Studjurban

Step 1

Ensure Walkable Pavements

Photo by Gordon Chaffin on Unsplash

Guidelines on how pavements can be made to encourage people to use them, be comfortable to walk on, promote the walking experience, ensure safety, be comfortable, convenient, well-connected and accessible for all

Protecting pedestrians is perhaps the most seemingly obvious thing to do. Most often than not, pedestrians do not feel safe walking in most areas. Pavements should be redesigned to promote the walking experience and ensure pedestrian safety. These should not only be safe to encourage people to walk, but also comfortable, convenient, well-connected and accessible for all.

Despite its apparent simplicity, achieving a sense of safety amongst pedestrians requires considerable planning. Most local streets in Malta are not designed to withstand the volume of cars that use them. Pedestrians' perceived safety is affected by the size of buildings, speed limit, carriage and footpath widths, the direction of flow and turning motions, traffic and wayfinding signage and several other factors. Pavements are dedicated spaces to pedestrians, so they should promote safety and encourage them to walk.

There are a few design elements that should rightfully be discussed regarding pedestrian pavements. On larger streets, pavements should be distinctly separated from other vehicular traffic to ensure safety, while on narrower streets the safety of pedestrians can instead be ensured by slower traffic or no vehicular traffic. STEP 1 concentrates on pavement-design, where the distinction between vehicular traffic and pedestrians is expected to be clear. Under this heading, the following pavement features will be discussed: zones and width, accessibility, waste management, furniture, other vehicles, construction sites, surfaces, shade, lighting, bus stations and crossings.

Zones and Width

Pavements have three basic 'zones', of which the width should differ depending on the use of the street. For example, pavements in commercial areas will normally need more space than the ones in residential areas. The three zones are as follows:

- The Frontage Zone: It consists of the facade of the building facing the street and the immediate adjacent space, which functions as an extension of the building as entryways or sidewalk cafes, and generally varies from 0.5 to 1.5 metres in busy commercial areas.

- The Walking Zone (also referred to as the Pedestrian Zone, or the Pedestrian Clear Zone): the area dedicated to walking that should have the minimum unobstructed width for two people to walk next to each other (approximately 1.8 to 2 metres). Wider pedestrian zones are required in areas with busy pedestrian traffic, where the width should be at least 4 metres.

- The Furniture/Landscaping Zone: accommodates street furniture and facilities such as benches, bins and waste containment, lighting, bicycle racks, landscaping and charging stations. It also provides a barrier between the pedestrians and the road. This zone should have a minimum width of 0.5 to 1.5 metres.

In Malta, the often narrow pavements constitute all of these zones, making it difficult for pedestrians to have a clear path to walk to their destination. Generally speaking, pavements are simply not wide enough. Where possible, street sections should be rethought and reconfigured in order to enable pavements to be enlarged, such that the walking path may be clear of any obstacles, and thus increasing pedestrian safety.

A number of these situations have been studied within the Slow Streets strategies prepared for a number of localities in Malta and Gozo, with proposals that seek to redistribute space in order to prioritise it for pedestrians and cyclists, as opposed to vehicular traffic.

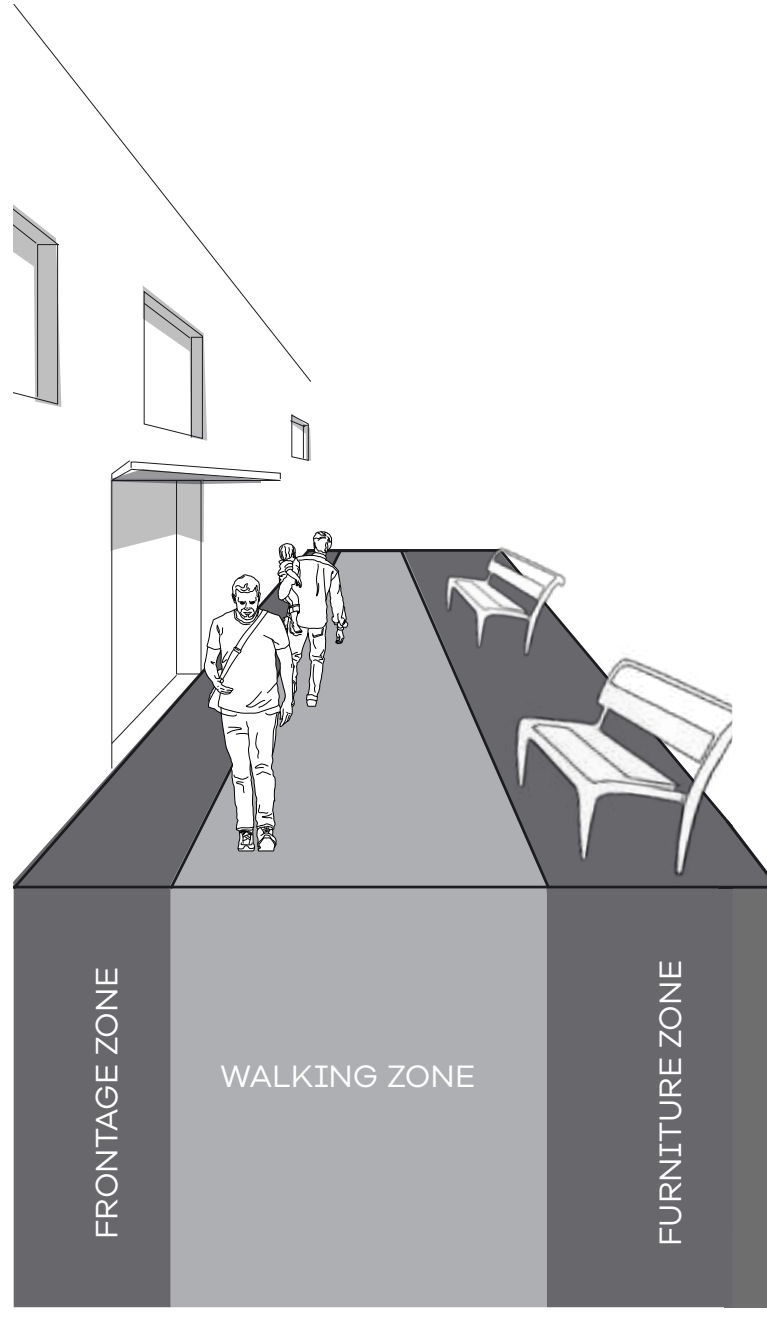


Illustration by Studjurban

Accessibility

Streets are for people, and therefore our streets should be for everyone. Streets should allow for accessibility for all of the public and safety for all users. A few design elements and strategies can be followed to guarantee access for all. These include:

- wide walkways that guarantee space and access for all users;
- an even walking surface;
- non-slip finishes for pavements;
- low-grade ramps and low kerbs at intersections;
- auditory systems and Braille directions to help the visually impaired, and/or textured finishes on pavements to alert a change in level or an upcoming crossing;
- mobile applications that allow pedestrians with limited mobility to plan accessible routes (for more information: Read access for all design guidelines issued by the CRPD); and
- wide entrances to shops, restaurants and public transport stops.

Surface

As mentioned, accessible pavements have a level walking surface. Concerning entrances to buildings and garages, a ramp should be added within the furniture zone for the walking zone to be uninterrupted and accessible for all. Often In Malta, pavements have uneven surfaces causing inconvenience for pedestrians. Not only are they locally damaged at certain places, they are also intentionally uneven by garage entrances where the lowered surface interferes with the walking zone. This issue needs to be addressed in order for us to have walkable localities.

Furniture, lighting and shade

Furniture elements should also be studied, in terms of how they might coincide with important pedestrian paths, such that they may not interrupt the Walking Zone. This includes seating and lighting elements, wherein creative solutions should be sought for placing them in specific areas. It also includes bus stations/shelters, which would otherwise hinder the walking routes because of the large number of passengers waiting to board. Since pavements are usually quite narrow, street furniture design should be rethought to combine more than one function. Multifunctional street furniture would therefore provide more space for pedestrians and improve walkability within localities. Such examples include integrated CCTV; charging infrastructure and lighting poles; seating areas integrated within planters; and bus signs integrated with bus shelters.

Lighting provision is critical – well-lit streets increase visibility at night, enhancing their security, and contribute significantly to individuals' perception of safety within the street environment. Street lighting is furthermore an important crime deterrent. Pavements that are properly illuminated therefore encourage more residents to walk instead of using other means of transportation.

Furthermore, providing shade along walking paths on the islands of Malta and Gozo is a necessity, especially during the summer time. When shade is guaranteed by adding street trees, it will additionally upgrade the scenery. Read more about street trees in a forthcoming chapter of this document, STEP 3 (Provide Shade and Greenery).

Bus Stations

Bus stations should be designed in a way that allows pedestrians to walk uninterrupted behind it. In cases where that is currently not the case, consider broadening the pavement locally, or even better, along the full street. The bus station could also be located closer to the kerb. Making sure buses are always able to park close to the kerb (avoiding situations such as the one illustrated below), additionally makes public transport more accessible.

Photo by Miguela Xuereb on Newsbook

Crossings

Further, pavements must be well connected with safe pedestrian crossings to ensure safety during the full journey as well as a flow of movement for the pedestrian. The frequency and position of pedestrian crossings should be considered, which will differ depending on the street and local need. The design of specific crossings should be context based, meaning that not all crossings should look and function the same way.

Other Vehicles

To ensure safety, comfort and connectivity for pedestrians while they are in any of the pavement zones, it is crucial that vehicles do not drive where they are restricted to do so. This is a topic that has become urgent after the entry of shared e-kick scooters since the scooter-drivers often tend to drive on the pavement, despite the regulation against it. Regulations on micro-mobility will be further discussed in a forthcoming document entitled Last Mile Transportation.

Waste Management and Other Appropriations of Pavements

Locally, the current waste management is a big issue concerning walkability. Placing waste bags out on the pavements highly deprives the walking experience and the overall street environmental quality. It not only smells bad, causing uncomfortable walking, it also risks interfering with the walking zone. This issue will be addressed in a future publication as part of Pillar 2 (Green Environment, Cleanliness).

Another pressing issue is the appropriation of outdoor catering areas, particularly where they occupy significant pavement space and at times further impede pedestrian flows along the pavements.

The administration of pavement appropriation (refer to image on the right), including outdoor catering areas together with other related issues such as the integration of street furniture elements and amenities, such as public convenience facilities and open spaces, will be discussed in more depth in forthcoming publications. These will include Historical Heritage, Urban Cores (Hubs) and Piazzas, Outdoor Sports and Open Markets.

Construction Sites

In cases where the existing pavement is temporarily inaccessible, a provisional replacement should be considered. Normally, this would be needed when the pavement is occupied or unsafe due to construction on site. Note that regulations concerning construction must still be followed and, in some cases, enforced. For example, whenever there is a front garden, the boundary walls should be placed along this edge and not out on the pavement. Naturally, there should always be clear signage. The temporary pavement is only meant as an option when the occupation of the existing pavement is inevitable, and it must always be considered based on the context.

Photo by Sarrace on Unsplash

Step 2

Redistribute Space

Photo by Phan Bach on Unsplash

Redistrubution of Street Space Via the Reconfiguration of Vehicular Space

When talking about space within our urban areas, the equation is simple. Space is limited, while all transportation modes are in need of space. Today, too much space is taken up by vehicles and at the same time pedestrian-oriented design suffers from a lack of space. This must be changed in order for us to have walkable localities.

Malta has no trams and trains. Apart from the public bus service, private vehicles are considered the most convenient transportation form for many residents. But our complete reliance on cars has become problematic. We need to put the private vehicle back to its intended function.

It is clear that a redistribution of street space is necessary, not least to support the first step presented in this document (STEP 1 Ensure Walkable Pavements). When designing and redesigning our streets, pedestrians should be prioritised as well as cyclists and public-transport riders. Private vehicles convey a great sense of freedom and movement, especially on an island like ours where the choice of mobility is limited, not to mention style and status. But due to their ever-increasing demands for space, speed, and time, private vehicles have reshaped our localities and lifestyles around their own needs and distorted how decisions are made. Placing the car back to its intended function is essential to reclaiming our open public spaces for our communities.

A concrete example of how car-space is being prioritised over pedestrianised space and how it has influenced the design of our localities, is how the pavements are, in several places, uneven to support private car-owners to access their garage easily. This causes inconvenience for people on foot, while it creates comfort for the drivers. Another example would be the lack of pedestrian crossings which disrupts the pedestrian flow while it supports cars to move continuously. The last example concerns on-street parking. All vehicles require somewhere to be parked, and parking spaces for cars are space-consuming. Naturally, the more vehicles on the road, the more parking spaces will be needed. When discussing redistribution of space in favour of pedestrians, on-street-parking is a significant issue that needs to be addressed.

Redistribute Space with the Street Width in Mind

In order to offer alternative modes of transport as well as ensure walkability, we need to assess how space in our streets is being used, and how it can be redesigned to cater for these modes. The pavement width is related to the road width and, most importantly, the street use. Each driving lane generally requires a minimum of 3 metres (with the passage of a fire tender generally requiring a minimum clear width of 3.7 metres), and a pavement is always necessary on both sides of the road. The following are examples of different potential street designs according to some commonly occurring street widths:

Available width (Building-to-Building, or front garden/s as applicable)	Recommended strategic decisions to favour walkability	Provision of other elements
Up to and including c. 6m	No on-street parking Recommended shared space Potentially one-way routing of vehicular activity	None
c. 6.1 - 8m	No on-street parking to enable designated pavements of (min.) 1.2m on either side and the passage of emergency vehicles Potentially shared space if on-street parking retention is neccessary Potentially one-way routing of vehicular activity to liberate road space for sidewalks and retain on-street parking	Potential for low-lying landscaping Potential for seating within wider streets Public transport transit shelter within wider streets
c. 8.1 - 10m	Formal walking zone Intermittent on-street parking Potential bicycle lane Potentially one-way routing of vehicular activity Public transport transit shelter	Potential for landscaping scheme including trees Potential for on-street benches Potential for lighting posts
c. 10.1 - 13m	Wide formal walking zone On-street parking possible (one side) Bicycle lane possible Public transport transit shelter Bike or scooter stations possible Landscaping scheme including trees On street benches and lighting posts	Potential for parklets* (as illustrated below) Potential for frontage zone *A parklet is defined as being ''a small seating area or green space created as a public amenity on or alongside a pavement, especially in a former roadside parking space.''

Source: Studjurban

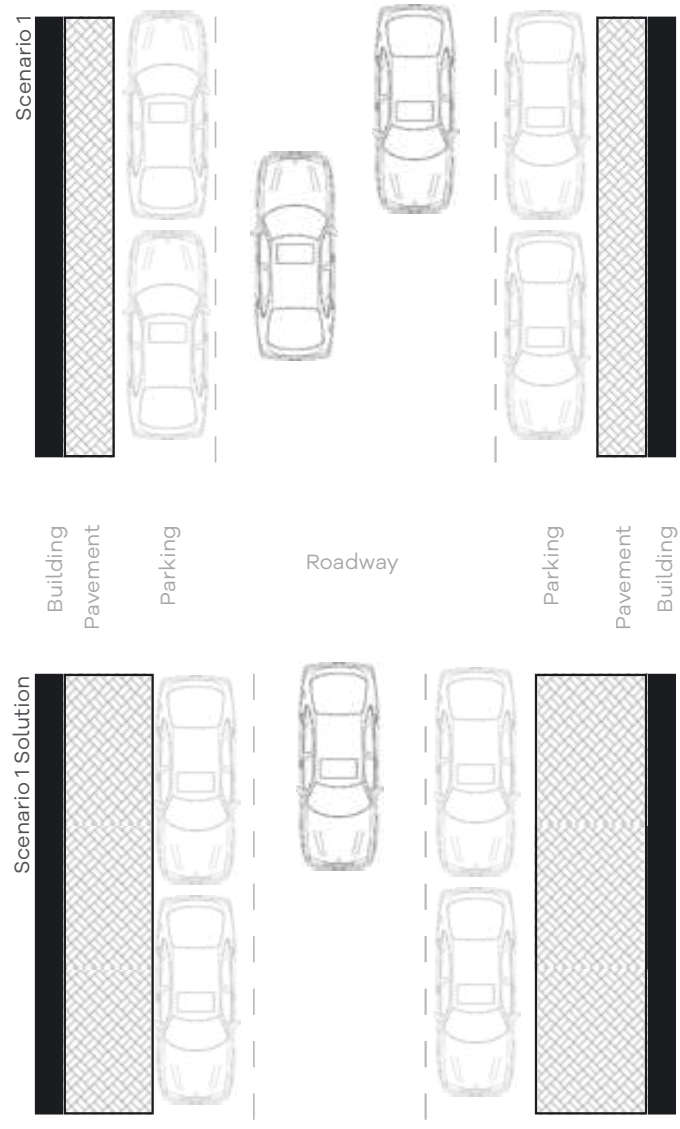
Parklet Photo by Tim Barnes on shiftspacedesign

Available width (Building-to-Building, or front garden/s as applicable)	Recommended strategic decisions to favour walkability	Provision of other elements
c. 13.1 - 16m	Wide formal walking zone Potential dedicated bus lane On-street parking possible Bicycle lane possible Public transport transit shelter Bike or scooter stations possible Landscaping scheme including trees On street benches and lighting posts	Potential for wider frontage zone Potential for other street furniture elements to be included Potential for parklets

Since a number of local roads in Malta and Gozo fall under the narrower roads category (with available widths of 8 metres or under), consider the following transition solutions until more permanent parking solutions may be planned at a strategic level. A number of these proposed measures may be found within the Slow Streets strategies prepared for different localities throughout Malta and Gozo, as Level 2 (rerouting) and Level 4 (reconfiguration) interventions.

Scenario 1: Two-way local residential road with on-street parking
Solution: Limiting traffic to one direction

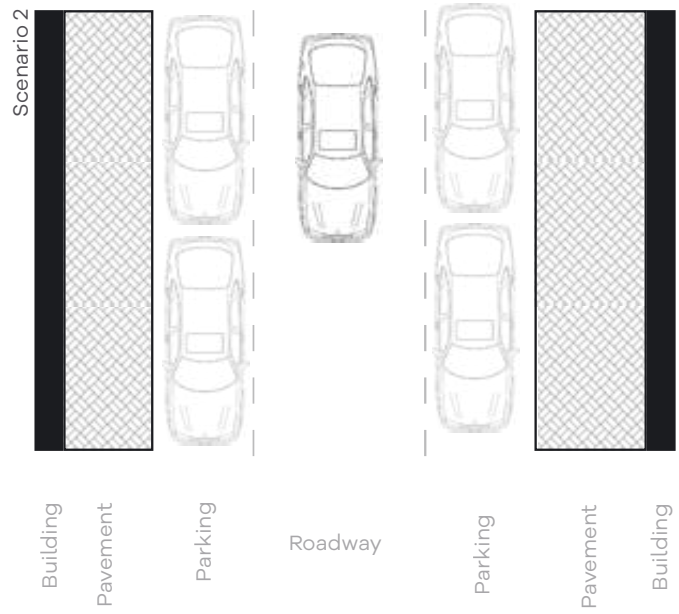
In streets with two-way routes and on-street parking on both sides, consider making the road a one-way only (if the nature of the street and the surrounding street network permits). The gained space could be used to expand the pavements and narrow the roadway.

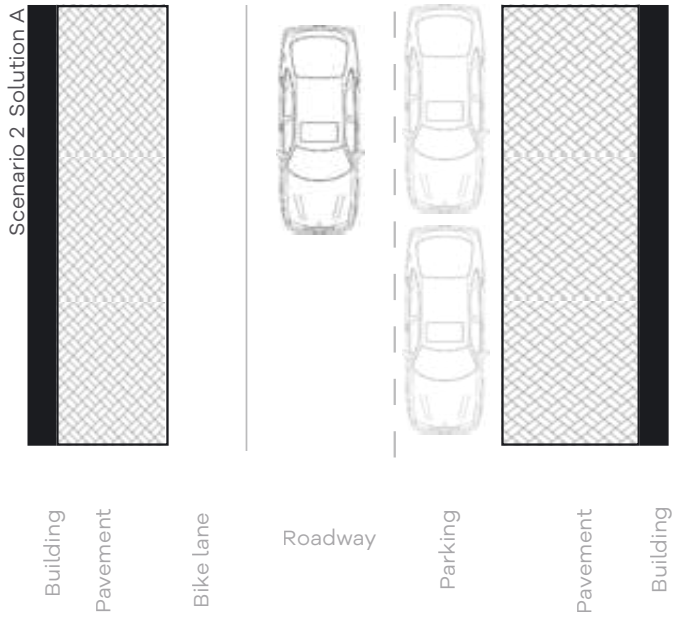


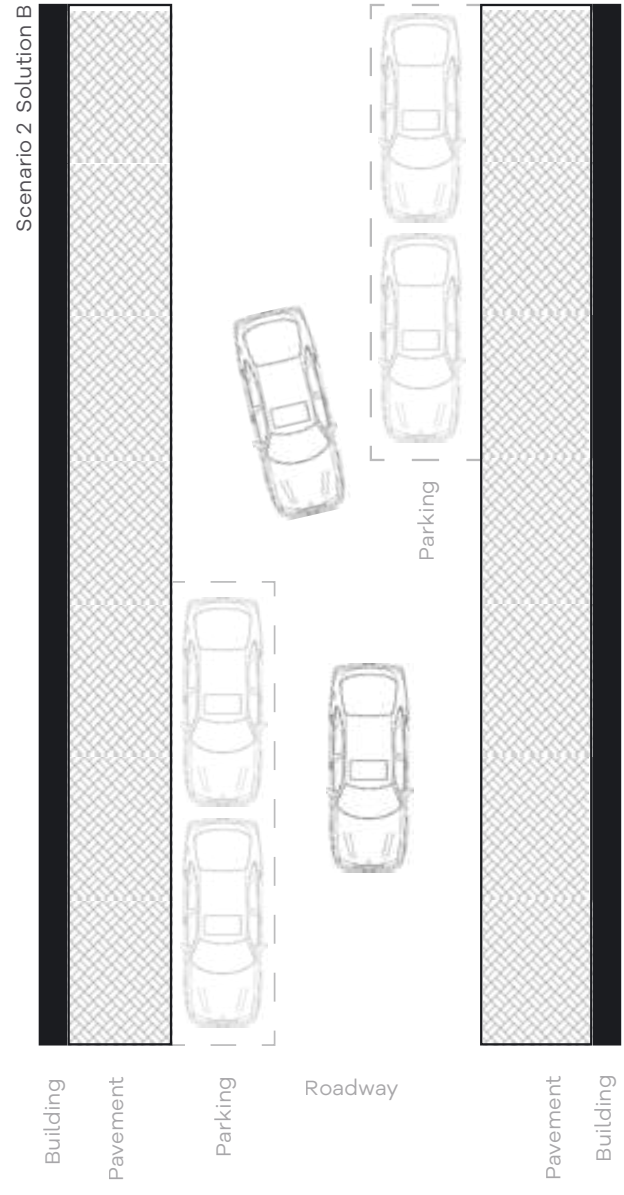
Illustrations by Studjurban

Scenario 2: One-way local residential road with on-street parking
Solution: Reducing on-street parking

In streets with only one-way traffic direction and on-street parking on both sides, consider removing one side of the on-street parking and instead widen the pavement. In longer streets, this parking scheme could alternate on either side of the street so as to slow down speeding cars and provide a safer environment for pedestrians.





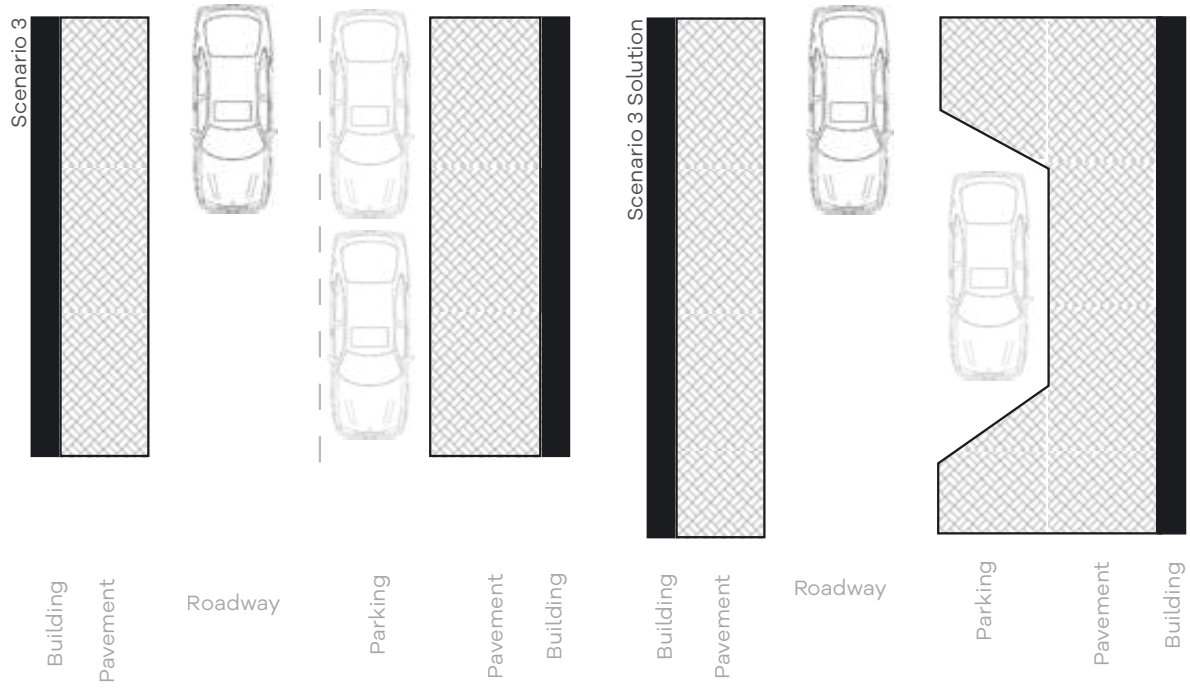


Illustrations by Studjurban

Scenario 3: One-way local residential road with on-street parking (one side only)
Solution: Implementation of parking pockets

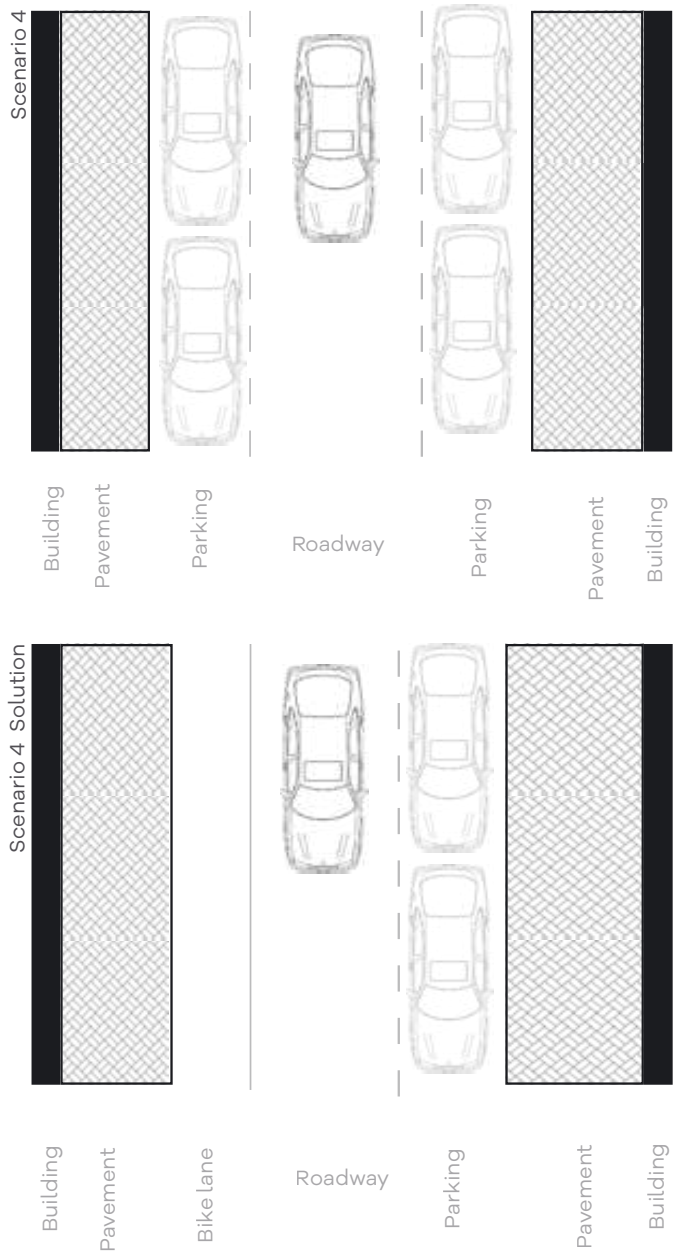
In streets with only one-way traffic direction and on-street parking on one side, consider widening the pavement and providing some parking pockets such that the majority of the space may be released for pedestrians rather than for on-street parking.

Illustrations by Studjurban



Scenario 4: One- or two-way local residential road with undesignated on-street parking
Solution: Clear, designated spaces for parking

In streets where on-street parking is not formally designated within the road, but occurs nonetheless, consider designating on-street parking on one side only in order to be able to release space for widening the pavement and, if possible, the introduction of a dedicated cycle lane, to be studied within a broader cycling strategy for the locality in question.



Illustrations by Studjurban

The previous potential scenarios need to be studied in tandem with the considerations made for parking management, discussed briefly in Step 6, and more comprehensively in the LCA's previously published doucment (Guidelines on Parking Management), so as to simultaneously ensure adequate parking provision, especially for local residents.

Photo by Linus Ekenstam on Unsplash

Step 3

Provide Shade and Greenery

Photo by Quan Le on Unsplash

Lining our walkable paths with trees providing shade is probably the best investment in a city's infrastructure

We all know the positive contribution trees give to the urban landscape. They provide shade, clean the air, and give an enhanced aesthetic quality to their surroundings. Surprisingly, few are willing to commit to a long term investment for proper infrastructure and suitable indigenous trees as our localities deserve.

One of the most basic benefits that trees bring is shade and lowering temperatures for their surrounding environment. Shade, and its resultant cooling benefit, are an important element of a good walking environment, particularly in hot climates. In countries where walking is not seen as desirable because of the sun and heat, tree lined walkways are essential for encouraging people to walk.

Landscaping not only improves a street's aesthetic, but cools down the immediate environment, especially when using wide canopy trees. Landscaping also serves as a protective buffer from the road, and cleans the environment from pollution caused by vehicles. Planting native trees and vegetation furthermore ensures minimal maintenance and water consumption.

If we really wish to enhance the walking experience, it is crucial that we dedicate appropriate space within our pavements.

Step 4

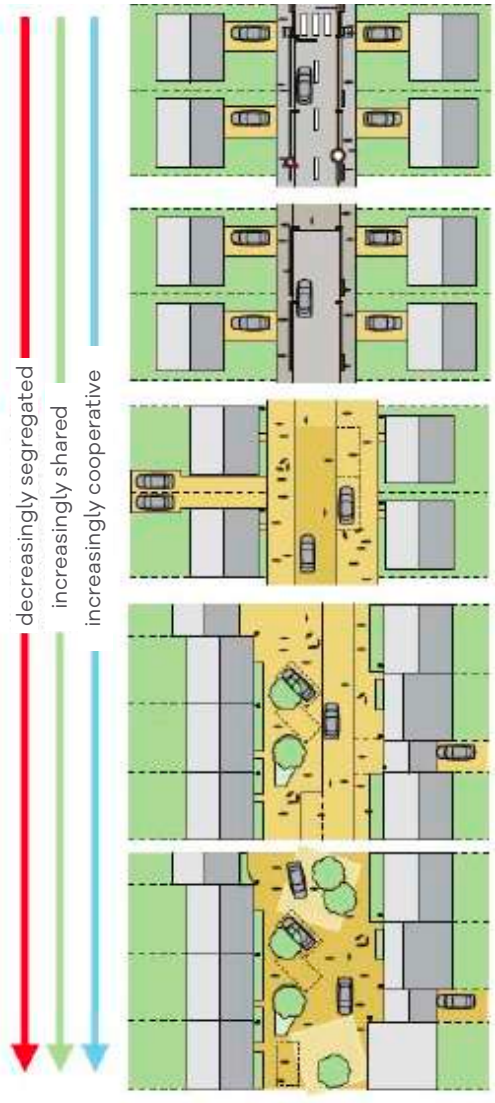
Designate a Walkable Core

Moulding walkable routes to fit the narrative of the locality

Photo by Ostap Senyuk on Unsplash

This step is about choosing and designating streets for walking within localities, while giving due regard to local identity and authenticity. By following what is suggested here, the Local Councils will have the opportunity to make the heart of their localities an even more attractive place for everyone

After identifying the scenario that best resonates with the locality in question, is is then important to understand the different degrees of pedestrianisation that may be possible. What has been mainly tackled so far in this document is the typical street which is semi-pedestrian, as both cars and people have access to their own space. However, pedestrianisation can happen to varying extents, where wider pavements allow more social life and active frontages. A shared space is a semi-pedestrian concept where all traffic control barriers and kerbs are removed to blur the line between pavement and roadway. Therefore, space is shared between all users. Taking this typology of space further, and prioritising the pedestrian, a fully pedestrianised street would in turn prohibit car accessibility or permit it at specific times, therefore completely dedicating the street to people.



Guard railing
Excessive road markings and signs
Conventional kerbs
Intrusive lighting columns
Vehicle movement and parking dominant

No roadmarkings or signage
Informal crossing

More dominant pedestrian area
Low kerbs
Common material for footway area carriageway
Reduction in vehicle parking impact

Reduced carriageway width
More informal street compositioning
Sensitive soft landscaping

Level surface - no deliniation between street user zones
User hierarchy favours pedestrians

Image by gov.scot

On the ground solutions should be sought based on the character of a place, town, neighbourhood or street. There are many factors that determine different character areas, such as density, users, land use diversity, and connectivity. Therefore, no single design guideline or feature can ensure the resolution of traffic issues and the attraction of pedestrians. Every case must be seen within its specific context.

Designate a walkable core

Select your best streets to be semi- or fully pedestrianised, and accept that some roads will need to serve as vehicular corridors.

No walkable town or city can become totally and exclusively pedestrianised. Most streets will remain principally reserved for vehicular traffic, and therefore, every locality must make a conscious choice of its walkable core. These must have the potential of becoming spaces that pedestrians love to walk through. Naturally, this core could start off from a street or a place that people already tend to visit, for example the church and its surroundings, a popular square or other urban pocket. From there, walkable routes should spread out creating a walkable core.

The best places for walking combine many design elements to create streets that feel comfortable to pedestrians and create a sense of place rather than just for movement. A successful inclusive design places all people at the core of the design process, and includes them in the decision-making process. Inclusive design will be discussed further in a later step.

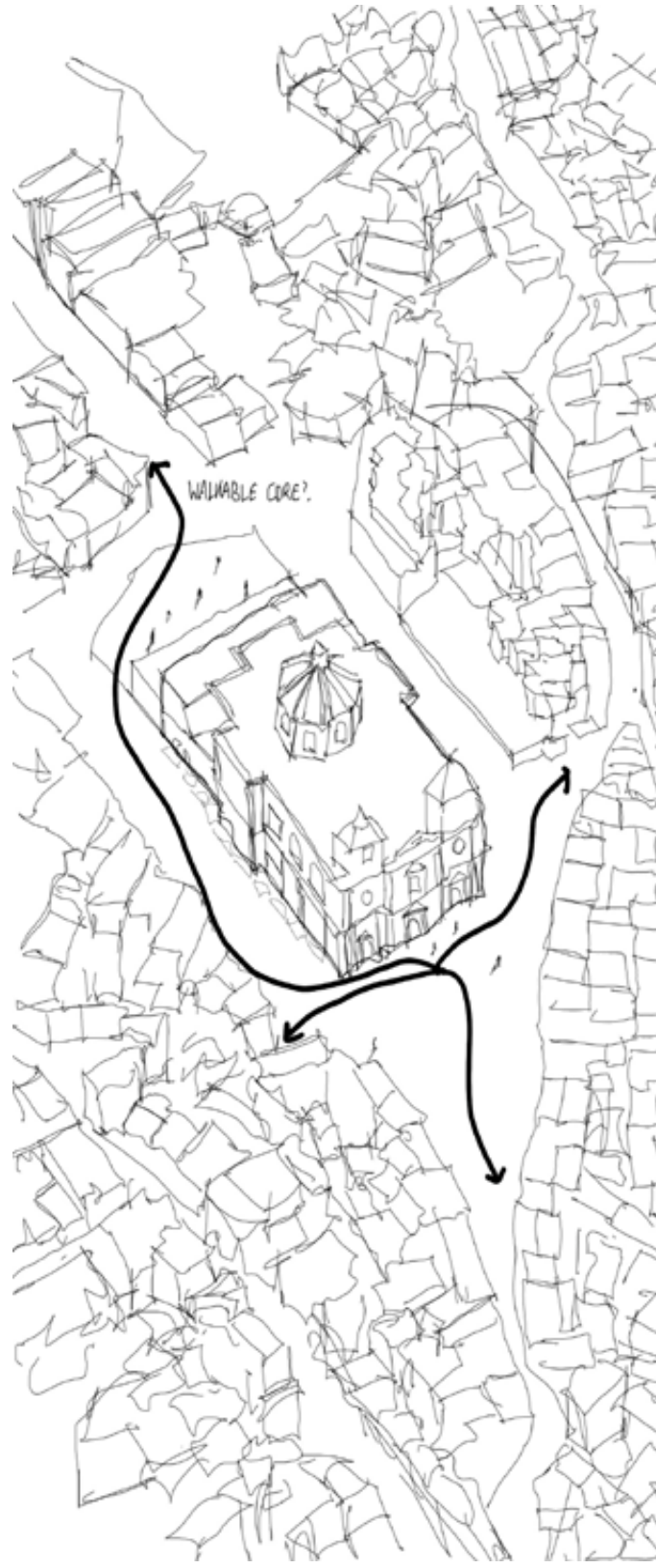


Illustration by Studjurban

Tell a story through walkable routes: The Narrative

Create a walking experience that tells the story of your locality, including historical landmarks and places of interest.

Perhaps not all is lost in most of our town and village cores. Pedestrians need to be entertained, and there is nothing worse than garage doors, blank walls and characterless apartment blocks. Besides designing a route that passes characteristic places, it is of importance to add vibrant elements that enhance the walking experience. It will all be a part of the story about the locality. Therefore, planning policies and architectural design guidelines need to promote facades that invite walking.

Each locality should define its own public realm framework — an integrated package of public realm improvements, including parks, plazas, heritage trails, and streetscape improvements. The public realm framework should:

- emphasise complete communities, providing a mix of walkable streets, gathering spaces, natural areas and open spaces; and
- establish safe, comfortable and continuous pedestrian access connecting transit facilities, major uses, activities and amenities.

People experience the built environment at human scale. Local streets should meet and engage people at that scale, with interesting facade elements, lighting, signage and other features along pavements. These elements contribute to a total 'sense of place'. Sense of place is about residents' relationship with their neighbourhood as well as each other.

Walkable environments are a key way of enhancing a sense of place as they help increase social encounters, which can be encouraged and facilitated through walkable distances. This provides opportunities for residents to meet at shops, parks, or bus stops, and strengthen the social ties of the local community.

Step 5

Support Mixed-Use Localities

Photo by Bannon Morrissy on Unsplash

A minimum parking provision requirement to address the lack of parking space for our ever-increasing number of registered private vehicles has rendered our towns uninteresting and pushed our small community businesses and services out of our urban cores. We need a better mix of uses

People choose to walk when convenient. Convenience is achieved through proper planning and balancing of activities within walking distance to each other. Most of our localities are built around a dense urban core and are less than 2 square kilometres. While there are exceptions, most village and town cores have an imbalance of uses that can be overcome only by revising planning policies.

Compact cities consist of short distances with high density of residences and mixed services. It is based on an efficient public transport system and a layout which encourages walking and cycling. Therefore, a compact city is denser and brings together all the residents' needs, from housing, work, and services, within a short walking distance. By offering healthier mobility opportunities, making land use more diverse and shortening trips, the city becomes more compact, increasing the quality of life.

Compact cities re-balance the use of streets in favour of pedestrians and the local community. Roads of compact cities are built to discourage fast vehicular traffic, wherein parking is not the dominant element.

Considering the reality imposed by the pandemic in 2019, walkable cities have become an urgent goal. To provide a safe environment, cities have to provide residents' needs within walkable distance through good infrastructure to guarantee safe access for all. It is critical to eliminate long distance commutes and travels, while creating space and conditions for active transport modes, especially walking.

Image from SPUR.org

Step 6

Manage Parking

Photo by Eduardo Soares on Unsplash

Parking management and national parking policies will relieve the pressure on parking requirements. We need to use parking provisions to benefit our towns and villages rather than a driver's right to open public space. Walking will bring our localities back to life

Many of our local roads are typically narrow, either with on street parking on one or both sides of the roads. Achieving walkability will inevitably put more pressure on the current on-street parking demand. So how would we manage to liberate space for wider pavements or cycling lanes? We need efficient parking management schemes that would use existing resources to better organise car parking in a way that vehicles would stop dominating our streets.

As amply discussed in the LCA's previously published document 'Guidelines on Parking Management', in order to better understand the parking reality in their respective localities, Local Councils should undertake surveys that take stock of parking opportunities (on- and off-street), possibly contributing to a broader upgrade of current GIS data in this regard. It is crucial to note that without better management of on-street parking, transforming existing roads to more walkable streets will not be a realistic goal.

With the right policies and incentives, targeting parking projects, and good parking management strategies, the use of private vehicles as the primary mode of transportation is discouraged. Hereunder are some key targets that Local Councils may aim towards achieving:

- Provide strategic car parking on the outskirts of towns, or where the town intersects with the arterial road network.
- Restrict parking in the core and town centres, with priority for resident parking and managed (timed) parking in the more active commercial centres. In tandem, encourage the use of public transport and alternative modes of transport.
- Provide incentives for parking reduction programmes, such as shared parking, and introduce technology such as VMS (Variable Message Signs) systems within localities, possibly in partnership with the private sector, to better manage parking opportunities.
- Organise PARK(ing) Day, which is an international annual event in which citizens transform parking spaces into temporary public parks and other social spaces.

Step 7

Promote Alternative Ways of Transport

Photo by Gabriella Clare Marino on Unsplash

Walkable cities rely on a well designed, efficient and cheap transit system that moves people and goods fast and on time. A well-designed system improves the urban quality and increases real estate value. Well designed networks implemented through proper public consultation processes often result in surprising public support

It is expected that alternative ways of transport will support walking for several reasons. Primarily, it would reduce car use which as we know is a necessary basis for increased walkability. Walking cannot replace the use of cars by itself, especially for longer journeys, meaning it would need to be supplemented with other alternative modes of transport. This step discusses public transport and cycling, however there are several other modes of alternative transport. More options are discussed in the LCA's forthcoming publications, Shared Transport and Last Mile Transportation.

Improve public transport

In order to reduce the frequency of cars on our streets, having a developed public transport system is a necessity. Public transport is much more efficient than private cars in terms of transporting people per amount of space.

When travelling longer distances, walking will normally not be the only transportation mode. Instead, it is likely that walking is the first or last mile option, combined with other transportation options to complete the journey. In this case, the question of walkability must be viewed in a wider perspective. A developed public transport system is of utmost importance for the full chain of urban transport to be effective. It is proven that, for people to choose a sustainable mode of transport, the option must be close to being equally convenient and effective compared to car-driving.

Needless to say, if people choose to travel door to door by car instead of travelling by public transport, no first or last mile transport will be needed, meaning that walking will be erased from the chain of transport. This puts high pressure on the development of our public transport system in order for it to support walking as a first or last mile option. Last mile transport will be discussed further in a forthcoming publication.

Cars are popular because they are the most reliable and convenient transportation. Public transport services need to be improved in order for residents to prefer taking the bus over driving their own private vehicle. When talking about public transport in Malta, buses will be the main focus. However, it should not be forgotten that ferries are an important part of the public transport system in localities where they can be used. Strategies for improved public transport include:

- increasing the frequency of buses and ferries;
- adding more bus and ferry stops where needed;
- making sure technology is up-to-date;
- having separate bus lanes when possible;
- introducing controlled and/or restrictive parking on the roads.

Having less vehicles on the road would greatly enhance the walking experience on the island.

Actively promote, welcome and invest in cycling infrastructure in the localities

Walkable cities are also cities where cycling becomes second nature. Bikeability promotes walkability because it makes driving less necessary. If walking and cycling were made more accessible, localities could reuse some car parking spaces for bicycle parking and even micro-gardens or terraces for people to enjoy the outdoors. Cities designed for cyclists and pedestrians are cities designed for people.

Street space in most cities disproportionately favours vehicles. This imbalance would be resolved when streets in localities are redesigned to also cater for cyclists and pedestrians, and to discourage car use. Compared to the car, pedestrian and cycling spatial demands are minimal. The most important factor to consider for increasing walking and cycling uptake is safety. Localities should consider introducing a combination of the following:

- Pedestrianised streets and widened pavements.
- To make walking an attractive option, pavements need to be in good condition and well lit at night. Streets should promote traffic calming measures.
- Designated cycling lanes. Protected cycling lanes are proven to be far more effective at encouraging cycling and improving safety than cycle lanes painted on the street.
- Bike share infrastructure. This includes bikes, docking stations and vehicles to transport them.
- Secure bike parking infrastructure.
- Traffic light signalling that prioritises pedestrians and cyclists. This allows shorter waiting time for pedestrians to cross the road.
- Intersections redesigned to maximise safety for pedestrians rather than traffic speed.

These suggestions are simple, fast and cheaper solutions to implement than alternative transportation investments, and should be complemented with schemes to incentivise walking and cycling. Designing localities that promote walking and cycling need to have a comprehensive transportation strategy.

Cycling as an alternative mode of transport is discussed in depth in the LCA's forthcoming publication, Last Mile Transportation.

Photo by Danique Veldhuis on Unsplash

Step 8

Let People make a Difference!

Testing Pedestrianisation through Tactical Urbanism

Photo by Jamshed Khedri on Unsplash

In the long run, the goal is to transform our urban centres to partially car-free, walkable and liveable places where people can meet and thrive. However, this needs to be established gradually and over time. Testing pedestrianisation in a small scale, and redesigning streets temporarily, can be implemented directly as a way of prioritising pedestrians, not tomorrow, but today

Test pedestrianisation

As residents become increasingly aware of the harmful effects cars have on our health and overall quality of life, cities are shifting away from the dominance of cars, and towards pedestrianisation and more human scaled city development. Therefore, streets are being reclaimed for residents by gradually removing private cars from the roads. This can occur by closing the central roads for certain periods. This is already done during the religious festivities and can be implemented more frequently on weekends to promote more activities such as local markets, sports and music events. In the long-term, locality centres could be restricted to buses, taxis, pedestrians and cyclists, with restricted access for service traffic and people with disabilities. Reconfiguration of car circulation within the centre should be complemented by upgrading street furniture and material.

Other streets can also be temporarily pedestrianised at certain times of the day. For example, prohibiting car access for two hours in the afternoon might encourage residents to walk and do their local errands during that period.

The transition to pedestrianisation is achieved by shifting perceptions about the benefits and necessity of private car use. Most local governments face stiff opposition when introducing pedestrianised projects, but the successful examples of car-free policies in several European cities have changed public opinion in favour of such initiatives.

Slow Streets - Tactical Urbanism in Zejtun
Source: studjurban

Tactical Urbanism

If a pedestrian area is thriving, it will succeed due to its location, demographics, surroundings and infrastructure. Tactical urbanism can help test pedestrian spaces, allowing residents to experience what the change could be like. The idea is to shape spaces temporarily and then invest in the permanent infrastructure at a later stage.

Tactical urbanism involves using temporary materials in order to repurpose places and transform them into more dynamic public spaces, with pedestrian safety as a primary concern. The strategy adopts a phased approach, with short-term commitment that eventually leads to more permanent solutions. Such experiments are carried out inexpensively, and with flexibility, in order to assess the potential success of an idea and to enable making adjustments before committing significant capital expenditure.

Tactical urbanism can push existing ideas to move closer to implementation in the quickest manner. Some examples of tactical urbanism strategies are:

- temporary signage and bollards to close off some streets for different uses, such as play streets or the setting up of markets;
- use of planters to define a boundary, especially at important pedestrian entrances;
- use of temporary movable furniture to turn a parking space into public space;
- use of painted markings on pavements to highlight priority for pedestrians; and
- added signage to help minimise vehicular traffic and prioritise walking and/or cycling.

Selected materials will likely involve some level of trial and error before reaching the optimal design for the particular context. The flexibility of tactical urbanism initiatives provides an opportunity for creative thinking, and is the starting point for real change.

Tactical urbanism has become a global movement. It can involve anyone, and is intended to improve the lives of all residents. Tactical urbanism provides a community-focused platform and is geared towards the development of sustainable practices.

Slow Streets - Tactical Urbanism in Zejtun
Source: studjurban


Photo by Victor Macedo on NACTO

3. Concluding Thoughts

We have seen how, during the COVID-19 pandemic, streets also served as extensions to people's homes. Local streets are the connectors between residences and commercial and business areas. By providing more walkable local streets, residents would be encouraged to walk more frequently, and might also choose to walk to work or school. More residents on the street will enhance the liveability of the entire locality.

Once local streets are addressed, they can serve as catalysts for wider roads and intersections with other localities, which may be easier to manage given the available physical space on such roads.

In Malta, streets are the primary public spaces, used daily by everyone. In order to improve the liveability of our localities, therefore, we need to start from our streets. Having pedestrian-friendly streets implies more equitable access to the outdoors, active transportation, opportunities to exercise, and the support of both physical and mental health.

Resource Section

Potential Funding Opportunities & Kickstarting

The main and biggest funding instruments can be found below for EU Member States:

Connecting Europe Facility Funds (CEF):
https://cinea.ec.europa.eu/programmes/connecting-europe-facility/transport-infrastructure_en

Horizon Europe:
https://cinea.ec.europa.eu/programmes/horizon-europe/transport-research-horizon-europe_en

Interreg Europe:
http://www.interregeurope.eu/

Funding Opportunities

Initiatives	Project Themes	Participants
Urban Innovative Actions	Supports pilot projects that test innovative solutions to modern urban challenges. It targets the following topics: • air quality; • circular economy; • culture and cultural heritage, and; • demographic change	• Any local authority comprising at least 50,000 inhabitants • Any association of urban authorities; this can include cross-border associations or groupings
URBACT:	The programme supports actions in these areas: • environment and biodiversity; • integrated urban development; • governance; • economy; and • inclusion	• Local/city authorities: Cities, municipalities, towns

An interesting URBACT programme that is worth looking into is the Walk'n'Roll:
https://urbact.eu/knowledge-hub/mobility

Some other helpful links that can provide important advice and technical assistance on funding and investment opportunities are:

European Investment Advisory Hub (EIAH):
http://www.eib.org/eiah

Joint Assistance to Support Projects in European Regions (JASPERS):
http://jaspers.eib.org/

Guide to EU Funding - 2023 Edition:
https://op.europa.eu/en/publication-detail/-/publication/9e6c7c9b-1a11-11ee-806b-01aa75ed71a1/language-en/format-PDF/source-search

Awards

Local Councils should not miss out on the opportunity to participate in the following European awards:

CityStar (RegioStars):
https://regiostarsawards.eu

European Mobility Week Award:
https://mobilityweek.eu/emw-awards/

Sustainable Urban Mobility Plan Award:
http://www.mobilityweek.eu/sump-award/

Local and European Legislative and Policy Context

The EU supports cities in developing a sustainable urban mobility policy, including efficient public transport systems. The EU also promotes active mobility solutions and ensuring good accessibility for all users, thereby improving the quality of life in cities.

The following initiatives propose actions and provide information to encourage and help local, regional and national authorities in achieving their goals for sustainable urban mobility:

- Urban Vehicle Access Regulations (UVAR) (see Portal of all Urban Access Regulations in Europe/: http://urbanaccessregulations.eu/

- Keep Europe Moving – 'sustainable mobility for our continent': https://ec.europa.eu/transport/themes/strategies/2006_keep_europe_moving_en

- White paper 2011 - 'Roadmap to a Single European Transport Area': https://transport.ec.europa.eu/white-paper-2011_en

European actions for active mobility namely include:

Partnership on Urban Mobility (PUM) (FUTURIUM):
https://futurium.ec.europa.eu/en

The main objective is to seek solutions to improve the framework conditions for urban mobility across cities in the EU. The final action plan began the implementation phase after the approval of the directors in November 2018. Several actions target increasing active modes of transport and the development of European guidelines and encourage Member States to develop their own guidelines on this basis. It also aims at supporting more European investments in walking and cycling infrastructure.

Graz Declaration:
https://www.eu2018.at/latest-news/news/10-30-Graz-Declaration.html

Under the theme: "Starting a new era: clean, safe and affordable mobility for Europe", the Graz Declaration (October 2018) details how active mobility should support Europe achieve its climate goals for 2030, set out in the Paris Agreement of 2016. It specifically discusses integrating active mobility in the current and future European funding plans to:

- extend and improve infrastructure
- develop a Trans-European Cycling Network (TEC)
- support Member States' programmes

Other Charters:

Other significant charters that identify the needs of pedestrians and provide a common framework to help authorities centre their existing strategies and policies on creating a walking culture include:

The European Charter of Pedestrians' Rights (adopted in 1988 by The European Parliament);
International Charter for Walking Creating healthy, efficient and sustainable communities where people choose to walk; and
International Walking Data Standard

Road Safety:

Road safety is mainly detailed within the General Safety Regulation (EC) No 661/2009 and Pedestrian Safety Regulation (EC) No 78/2009. The following manuals highlight how to develop and implement comprehensive measures to improve pedestrian safety:

EU Road Surfaces: Economic and Safety Impact of the Lack of Regular Road Maintenance

Pedestrian Safety: A Road Safety Manual for Decision-Makers and Practitioners - World Health Organization

EU Road Safety Policy:
https://road-safety.transport.ec.europa.eu/eu-road-safety-policy/priorities/safe-road-use/pedestrians_en

Mobility & Transport - Road Safety:
https://road-safety.transport.ec.europa.eu/eu-road-safety-policy/priorities/safe-road-use/cyclists/walking-and-cycling-transport-modes_en

More information with regard to EU legislation, policies, strategies, studies, funding, project examples on the topic of Urban Mobility can be found at the One-Stop-Shop.

Legislation:

In 2016, the European Commission approved the Malta National Transport Strategy 2050 and the Malta National Transport Master Plan 2025, which encompasses a National Cycling Action Plan. The National Cycling Strategy also falls within the current Government's policy to promote healthier lifestyles and become a walking and cycling nation by 2025.

The following articles and documents further examine road infrastructure and mobility initiatives in Malta:

Directives for the Standardisation of Pavements for Traffic Areas:
https://www.transport.gov.mt/Volume-7-Directives-for-the-Standardisation-of-Pavements-for-Traffic-Areas.pdf-f3955

General Document References

Pedestrian Planning and Design Guide:
https://nzta.govt.nz/assets/resources/pedestrian-planning-guide/docs/pedestrian-planning-guide.pdf

Principles for public space design, planning to do better:
https://link.springer.com/article/10.1057/s41289-018-0070-3

World Class Streets: Remaking New York City's Public Realm:
http://www.nyc.gov/html/dot/downloads/pdf/World_Class_Streets_Gehl_08.pdf

Global Public Space Toolkit:
https://unhabitat.org/global-public-space-toolkit-from-global-principles-to-local-policies-and-practice

Planning and Designing for Pedestrians:
https://www.sandag.org/uploads/publicationid/publicationid_713_3269.pdf

UN HAbitat - Streets for walking and cycling:
https://www.itdp.org/wp-content/uploads/2018/07/Streets-for-walking-and-cycling.pdf

Urban Street Design Guide:
https://nacto.org/publication/urban-street-design-guide/

Manual for Streets - UK Department for Transport:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/341513/pdfmanforstreets.pdf

Energy Cities - Superblocks in Barcelona:
https://energy-cities.eu/best-practice/superblocks-free-up-to-92-of-public-space-in-barcelona/

Steps to a Walkable Community A Guide for Citizens, Planners, and Engineers:
http://cfgis.org/hostedcfgis/srtsweb/Documents/ResourceDocuments/StepstoaWalkableCommunity.pdf

The first and last mile – the key to sustainable urban transport (2019, EEA):
https://www.eea.europa.eu/publications/the-first-and-last-mile

Oxford Languages:
https://languages.oup.com/

Shiftspace Design:
https://www.shiftspacedesign.com/

Scottish Government:
https://www.gov.scot/

SPUR:
https://www.spur.org/

ARA:
https://en.ara.cat/

Unsplash:
https://unsplash.com/

NACTO
https://nacto.org/

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GUIDELINES ON SUSTAINABLE MOBILITY

LAST MILE TRANSPORTATION

ResidentFirst

Contents

1. The Last Mile

1.1 Introduction

Perhaps contrary to what many would believe, the first and last mile of our travel route have a serious impact on the sustainable footprint of the overall journey. Together with walking, discusses separately in another Sustainable Mobility publication published by the Local Councils' Association (LCA) (*Walkability and Accessibility*), many transportation options are available on the market that allow for sustainable and accessible transport modes for travelling shorter distances. In this document, those modes of transport will be discussed as gap-fillers within our current transport system. The goal is to achieve sustainable mobility on the islands of Malta and Gozo, in view of addressing numerous challenges being faced and to improve the country's liveability and quality of life conditions.

The 'last mile' is a universally agreed term that refers to the movement of people and goods from an origin - usually a hub - to a final destination. The term 'first mile' can also be used, depending on the direction of movement: going out (first mile) or reaching the destination (last mile). Within a journey, the last mile has been studied to be the least sustainable stage as it comprises a relatively large percentage of cost and time. This gap opens up opportunities for shared and alternative modes of transport to be considered, such as bicycles and electric scooters, together with improved walking conditions.

Even though the last mile is mainly a conceptual distance, this concept might become more comprehensible when the distance of a mile is visualised.

The last 'mile' is equal to 1.6 km, which is also measured as, approximately:

- a 20 minutes walk at an average walking speed of 5 km/hr on a flat (or

Ilustration by Studjurban

Local Example: A mile is equivalent to the entire length of Triq D'Argens, from the Msida bus station at the bottom to the intersection with Triq l-Imrabat and Triq Rodolfu at the top. This distance can be travelled in 20 minutes on foot or 10 minutes by cycling. While the average car ride is around 7 minutes long, in heavy traffic this may easily take 15 - 20 minutes – approximately the same time as walking and potentially longer than cycling.

moderately shallow) terrain
- 10-15 minutes cycling at an average cycling speed of 15 - 20 km/hr

Even though last mile transportation is crucial to discuss as a separate subject, it must be noted that this is always part of a larger mobility strategy and it should work in tandem with a well-developed public transport system. Indeed, a good last mile transportation strategy may increase the attractiveness of travelling by public transport and encourage people to do so more often. Well-functioning public transport thus remains equally important in areas where last-mile transportation is efficient and convenient. Public transport is discussed further in another LCA document entitled ***Shared Transport***.

Similarly, although walking is naturally the most fundamental, flexible and accessible last mile transportation alternative, which should be prioritised, it is not dealt with directly in this document given that it is the subject of the LCA's prior publication ***Walkability and Accessibility***.

Local councils should propose actions designed to reach the objectives of The National Transport Strategy and Transport Master Plan and forthcoming Sustainable Urban Mobility Plan (SUMP) at a locality level, which reflects the European Union's aim to 'cut carbon emissions in transport by 60% by 2050. Local councils have a major role to play in focusing on the priority of the collective well-being of their respective locality's residents. Alternative modes of transport require highly prioritised conditions if they are to succeed as means of transport. Local councils can therefore encourage a modal shift through the eight STEPs presented in this document.

Furthermore, this publication introduces different last-mile transportation options as well as a myriad of approaches and actions to ensure that the last and first part of people's journeys occur in a sustainable way. Following the discussion of the individual STEPs, a methodology is introduced to support the local councils' planning procedures.

1.2 Commonly Used Terms

As a starting point, it is important to differentiate the following commonly used terms:

Micro mobility/Micro transit: These terms describe on-demand transport that can be used by anyone and everyone. It is also known as Flexible transit as the route varies according to who requests it and involves using smaller, lighter vehicles such as electric scooters, bicycles and skateboards, amongst others. These vehicles can either be human powered, partially human powered or non-human powered (often electric). Micromobility has introduced the opportunity of utilising personal shared transport, which is designed for short journeys, usually targeting the last mile.

Flexible Transport: Describes the occurrence when the system allows the passenger to choose the route, time and mode of travel as well as the payment method. This makes it a flexible mode of transport. Often, it operates on demand, for example, a shuttle bus that moves tourists between the airport and the hotel.

Micro mobility can be considered as a flexible mode of transport.

Intermodality: Can be described as the combination of different modes of transport in one journey. Trips or shipments are carried out by a different carrier in each of the route's stages, from origin to destination. Intermodality measures often involve public-private cooperation.

Multimodal: Can be described as the transport operation that uses several modes, using a single provider (and a single contract) through the entire trip from origin to destination.

1.4 Variations of Last Mile Transport

The Last Mile in Freight and Deliveries

Freight transport refers to the movement of consumer goods, which can be transported in different ways. In this segment, the focus will be on freight transport within the urban realm, as well as into and out of specifically designated areas. According to the Alliance for Logistics Innovation through Collaboration in Europe (ALICE), urban freight greatly contributes to traffic, emissions and noise pollution. As a result, freight transport impacts residents' quality of life in our localities.

Due to its inefficiency, the last mile of delivery can be operationally expensive. Companies need to re-evaluate their existing logistics processes and find an effective last mile strategy that meets both consumer satisfaction and business efficiency.

The Local Councils' Association, with Regional Councils, may provide a good channel for re-evaluation, such that unified and strategic solutions may be discussed with key stakeholders, including delivery companies,

Locally, Maltapost has been proactive in securing an efficient fleet to enhance its postal service

associations such as the Malta Chamber of SMEs, and important policymakers, most notably the Planning Authority (PA) and Transport Malta (TM). Together, new, efficient, and sustainable improvements in urban freight and delivery strategies may be found, which could include immediate solutions such as loading more goods and parcels into each delivery truck and replacing conventional vehicles with electric vehicles and cargo bikes, to longer-term solutions that are naturally found in a Sustainable Urban Logistics Plan (SULP, defined later in the document).

Types of Micro mobility

Different types of micro mobility are defined in the ***Preliminary Abridged Guidelines for the Regulation of the Micromobility Class*** by Transport Malta, as the following:

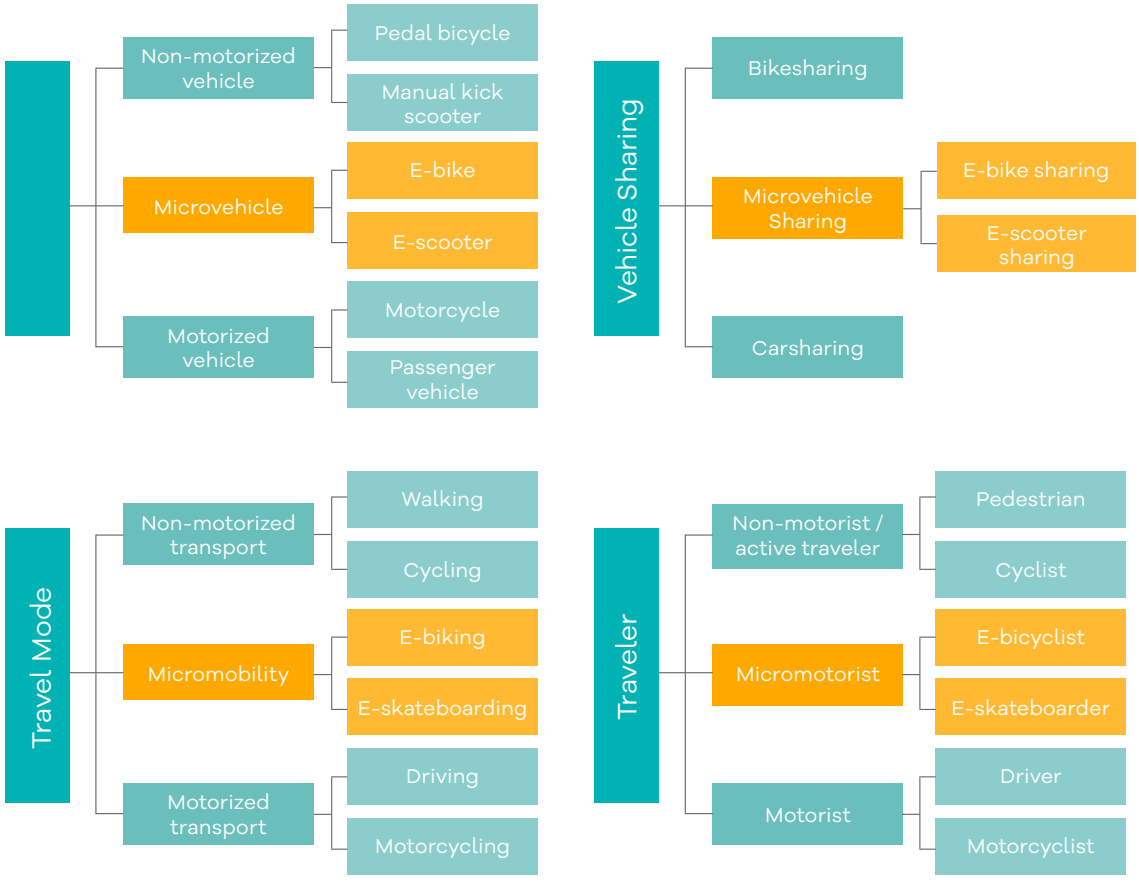
PLEVs (or Personal Light Electric Vehicles), including:

- pedelecs or e-bikes;
- e-kick scooters;
- e-skateboards;
- hoverboards; and
- monowheels.

PHPVs (or Personal Human Powered Vehicles), also known as non-motorized vehicles, such as:

- bicycles;
- skateboards; and
- kick scooters

It is useful to visualise some of the most common terms in use when dealing with passenger transport.



Ilustration by Studjurban - Map of Terminology in Passenger Transport

Types of Flexible Transport

A flexible transport system could be especially useful within rural and unserviced areas, complementing (or in some cases replacing) public transport. There are various types of flexible transport systems, which include:

Car/bike/scooter sharing

An organised collective use of one or more vehicles for a limited time, usually by hours. They often require the use of online platforms where registered members can book their trips. They are especially useful at public transport hubs or at arrival/departure terminals.

Seasonal/temporary lines (e.g. bus/train)

Temporary routes established for certain seasons, to alleviate traffic in areas with high tourist frequency that face variations in demand.

Shuttle services

A bus or a coach operated on a short or medium distance and trips taking less than an hour between two fixed points. Shuttle buses usually link transport hubs (e.g. airports, stations) and city centres or main tourist destinations.

Dial services

Transport services that operate on call instead of regular scheduled routes. They involve fixed tariffs on either fixed or flexible routes.

Autonomous vehicles (AVs)

Self-driving vehicles that can operate all day and are well-suited for short-range loops, including being in mixed traffic with other vehicles.

Carpooling

A private agreement among a group of car owners wherein they alternate using their ''car-pool-registered vehicle'' to give rides to others in the same carpool who also have such registered vehicles.

Some interesting foreign examples:

Uber in St. Petersburg, Florida USA:

Rides are being offered at half price to reach public transit stops. Research carried out by the American Physical Therapy Association (APTA) shows that people who use ride-share are in turn more likely to use mass transit.

Bummelbus in Luxembourg:

An on demand transport system that provides flexible transport services for short-distance journeys. The buses are booked by dial service. The Bummelbus complements public transport and offers door-to-door service. The main beneficiaries are children, elderly people and citizens deprived of public transport.

Seasonal bus line no. 209 in Varna, Bulgaria:

A fast tourist service connecting the city centre with tourist resorts on the Black Sea coast. It was launched in 2016 by the municipality of Varna and is mostly used by tourists and tourist sector employees.

1.4 Existing Challenges

There are currently a number of critical challenges in adopting sustainable solutions. These include:

- a separation from the public transport information service, as a result of which potential users do not receive all appropriate information that could help them plan their journeys;
- lack of knowledge regarding the availability and advantages of alternative modes of transport, from both authorities and the users themselves;
- the insufficient and/or missing legal framework for new modes of transport which complicates their implementation and operation;
- ahe exclusion of user groups, notably the elderly and disabled;
- inclusive safety of all users and pedestrians;
- the allocation of appropriate space for all the different street users within the localities; and
- equality of access for all residents.

It is important for Local Councils to promote transport policies so as to incentivise people to switch to more sustainable forms of transport, whether human powered or electrical. Further to becoming familiar with the concept of the 'last mile', an awareness of these challenges would enable Local Councils to intervene appropriately at the level of their respective locality.

1.5 The Need to Regulate Micro-Mobility

As a last-mile solution, micro-mobility has the potential of increasing the efficiency and convenience for the full trip, from door to door. However, many types of micro-mobility options are relatively new, meaning that complete legal frameworks concerning such modes still need to be introduced.

For different modes of transport to coexist peacefully and safely, it is crucial that there are clear traffic and mobility regulations to be followed by everyone. In Malta, some traffic regulations exist concerning micro-mobility, for example the regulation against e-kick scooters driving on the pavement. Nevertheless, the regulations need to be enforced and the introduction of more safeguards for various street users, especially the more vulnerable ones, must be considered.

Furthermore, if we are to rely on micro-mobility as one of our foremost last-mile options, there should be regulations ensuring that this option is available to everyone and not only to those living in the densest areas. Regulations on the spread of micro-mobility vehicles would need to be included in the initial stages of agreement between the provider of vehicles (the private company offering sustainable transport solutions) and the respective Local Council. This tool should be considered by the authorities, as a way of ensuring that all localities are catered for.

Additionally, shared transport providers should ensure that their vehicles are useful and up-to-date, so that there is a beneficial outcome from them reserving valuable space in our streets. Opting for micro-mobility transportation would essentially mean that the individual is making use of a shared mode of transportation. This has been discussed in further detail in another LCA publication entitled ***Shared Transport*.**

Local Councils should actively contribute to local policies regarding new alternative modes of transport. They could do this by:

- using data from pilot projects to identify best practices;
- monitoring and evaluating the results of plans and investment decisions; and
- coordinating with authorities and potential partners.

Given that regulations and the legal framework for some new versions of micro mobility in Malta are still not defined, such local input and knowledge would be crucial to set policies that correspond to residents' needs. Local Councils can contribute to the formation of new policies by acting as the connectors between their communities, private or public mobility agencies and local authorities.

Micro-mobility-driver interfering with pedestrian walkway

2. 8 Steps Towards Sustainable Last Mile Transportation

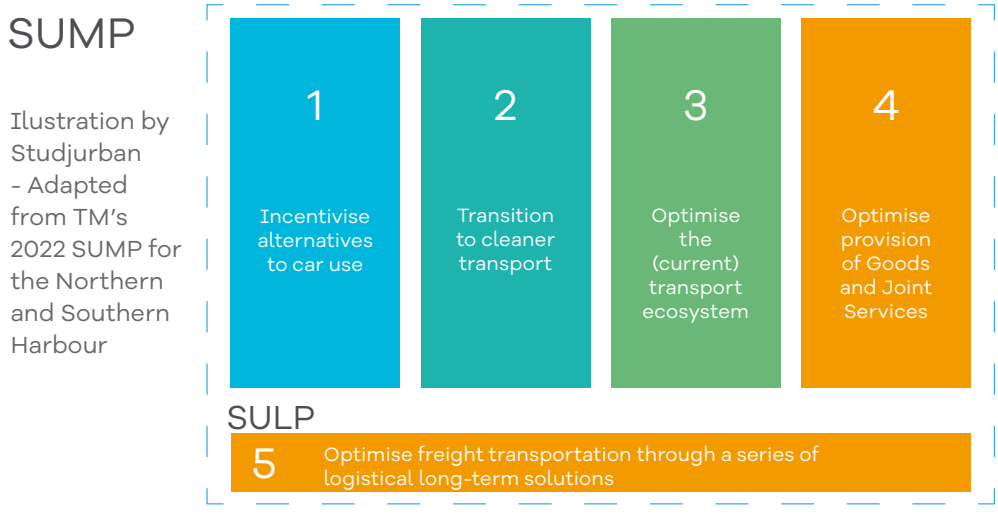
Localities have significant responsibility in planning for sustainable transport. However, they need holistic, long-term and regional-scaled strategies as a base of departure and continuous guidance when shaping more detailed and locally based plans for their localities.

The concept of Sustainable Urban Mobility Plans (SUMPs) has been introduced in order to provide cities with an efficient tool for the development of sustainable mobility strategies. The primary goal of a SUMP is for a city's urban area to become more accessible, and for the transport used within it to be sustainable. It consists of long-term strategies with concrete action plans that are established at a governmental level. Residents should be invited to proactively participate in the development of SUMPs for them to be positively engaged in the change towards sustainable mobility.

As a subplan to the SUMP, one also typically finds the Sustainable Urban Logistics Plan (SULP) which focuses entirely on freight transport. Both SUMP and SULP for the Maltese Islands are currently being completed by the TM. Some long-term solutions for logistics could include:

- Developing dedicated roads for shipments
- Merging loads in specialised urban distribution centres, which integrate multiple modes of transport with smooth transition
- Integrating freight and passenger transport to optimise the use of space and time

Once the SUMPs and SULPs for the regions within the Maltese Islands are issued in the near future, Local councils should prepare for working in accordance with those strategies. The provisions within these plans are expected to help Local Councils assess their needs and propose relevant and specific solutions to be implemented for local development. Local Councils should be forerunners in encouraging more sustainable modes of transport in their respective localities, with a focus on improving the infrastructure for pedestrians and cyclists, increasing the provision for intermodality and framing movement strategies in view of wider environmental targets. In addition to the guidance that the SUMPs and SULPs will provide, the following eight-step action plan aims to support the Local Councils as they individually plan for the development of sustainable transport within their localities.



Ilustration by Studjurban - Adapted from TM's 2022 SUMP for the Northern and Southern Harbour

The SUMP and SULP provide the starting point for more detailed locality (or even neighbourhood) plans.

Step 1

Bring Data Together

Photo by UX Indonesia on Unsplash

Data needs to be collected, updated and brought together for a proper understanding of the context in which sustainable transport is to be implemented. That is the starting point for any last mile transportation action plan.

Collecting data is vital for several reasons but essentially it supports having a correct understanding of the current mobility situation, which is an important prerequisite needed to suggest relevant solutions. In earlier documents within this series on sustainable mobility, the need for collecting data has been consantly emphasised, notably discussed in the LCA's document entitled ***Shared Transport***. When discussing last-mile transportation, collecting data is equally important. Data is needed in order to know if there is enough space for a certain amount of micro mobility vehicles to be parked within a specific area, or even to know if there is a demand for another micro mobility option.

Beyond data collection, it is absolutely necessary to subsequently bring the various data sources together for a comprehensive and accurate understanding of the reality on the ground. What the data describes is never isolated, but part of a larger and more complex system and should be viewed as such. Local Councils should demand and ensure proper data management framed within such a holistic approach. A more in-depth discussion about data collection is included in the latter Methodology section of this document.

SUMPs and SULPs are intended to be well-rounded documents that are developed through viewing all relevant mobility aspects together, resulting in far-reaching and comprehensive strategies. Bringing together data provides a strong basis for such holistic strategies to be developed at the regional level, as well as for more specific local mobility plans that are contextualised within the bigger picture.

Ilustration by Studjurban

Step 2

Improve the Infrastructure

Photo by Infrastructure Maltra

We need safe and well-connected roads as means to encourage walking, cycling and other micro-mobility options, and lessen our dependence on car usage.

A well-connected locality will encourage the use of alternative modes of transport. Among the most useful and cost-effective first and last mile strategies is providing the necessary infrastructure for pedestrians to move safely and conveniently around the locality. This will improve street network connections that make walking to transit hubs easier, more direct and more accessible. New improved pathways and strategic connections shorten travel time, making public transit a more attractive option. A positive local example is the footbridge at Blata l-Bajda that was inaugurated in mid-2020, and which addresses pedestrian and cyclist connectivity needs. For a deeper discussion on planning for pedestrians and cyclists, view the LCA's publication Walkability and Accessibility.

Furthermore, ensuring that there is a safe and connected infrastructure for cycling will not only encourage people to cycle more, but it will be beneficial for users of other modes of micro-mobility as well, such as drivers of e-kick scooters. More information on cycling and its infrastructure is provided in Step 4.

Evaluating the connectivity of your locality is the first step towards introducing alternative methods of transport as preferred last mile solutions. To evaluate the connectivity of your locality, start by asking the following questions:

- How many modes of transport are available within my locality (including, if applicable, ferries)?
- Are all transport stations well connected by continuous pavements, and are they adequate for walking?
- Are street connections for pedestrians direct, convenient and safe?
- Where are street connections interrupted by poor infrastructure (such as uneven pavements, poor lighting, barriers and street furniture)?
- Are there designated bicycle lanes? If so, are they continuously connected even at intersections?
- Are all modes of transport well known, and easily accessible, to local residents and visitors?
- Is there clear signage to transit and parking stations?
- Does the bicycle infrastructure link residential areas with primary cycling destinations such as educational institutions and public transport stations?
- Where are supplementary off-road tracks for pedestrians and cyclists located?
- Is there potential to introduce new transit routes (including ferry routes) for faster, efficient transit?


Photo by Infrastructure Malta

Step 3

Manage Parking

Photo by Anne Nygard on Unsplash

Getting more cars off our local roads will allow for more space for other modes of transport and wider walkways. It is important to manage on-street and off-street parking so that priority in street design is given to residents themselves rather than their cars.

Parking takes up valuable public space and causes congestion in our streets. Consistency between parking policy and public transport infrastructure is necessary to encourage the use of other forms of transportation. Parking is discussed in more depth within another LCA publication, Parking Projects.

Parking management must aim to reduce car dependency while increasing the use of alternative modes of transport, including walking. Car parks with connections to transport services are known as Park & Ride facilities, aimed at encouraging car users to leave their cars and transfer to other modes, such as bus or bicycle, to travel to their final destination. The park-and-ride should therefore be viewed as a part of the larger transportation network, designed to shift users between multiple means of transport. Planning for Park & Ride facilities next to public transit stops means planning for intermodality (discussed further in STEP 5). Park & Ride facilities could thus form part of mobility hubs (or intermodal hubs, see STEP 5 for further insights into this concept) and they could be a good solution for relocating parking from the most valuable urban centres (in turn given back to pedestrians) to the peripheral areas, while offering cost effective and healthier alternatives for people. For them to be successful, however, they must be well managed and supported by an efficient infrastructure that prioritises travel to and from such hubs using sustainable modes.

Parking for alternative modes of transport needs to be managed as well, essentially to promote the use of such transport modes. First and foremost, there must be enough parking spaces


Photo by Zachary Staines on Unsplash


Photo by Mika Baumeister on Unsplash

for sustainable vehicles, including micro mobility. The location of such parking spaces should be considered to support intermodality, in the same manner as Park & Ride. Having dedicated parking spaces is also crucial in order to ensure that people park vehicles in suitable places, where they do not interfere with pedestrians or other transportation modes. This was an issue with the e-kick scooters, often left parked in inappropriate places. As mentioned in the previous LCA document on Shared Transport, providers of such alternative modes should be obliged to ensure that there are available parking facilities for their provided vehicles.

At the scale of your locality, it is crucial to start planning by asking the following questions:

- Where are mass parking areas located in my locality? If there are none, could a strategic site (or sites) be identified?
- Where are the most congested streets in my locality, in terms of street parking? How does this affect other modes of mobility, especially for the more vulnerable street users?
- Are there public transport stops/ stations located next to existing mass parking areas? If not, is there potential to connect strategic parking areas with bus transit?
- Are there bike stations located next to existing parking areas? If not, is there potential to integrate such stations within strategic parking areas?
- Are there opportunities to place parking areas at the periphery and connect them to the centre by direct and convenient walking routes and/ or alternative modes of transport? Could this be part of a wider strategy wherein centres may be made more pedestrian in nature?
- What would be the key stumbling blocks with implementing such strategies and how could they be overcome?

Photo by Josh Bean on Unsplash

Step 4

Promote Cycling

Photo by Beeline Navigation on Unsplash

Cycling is a popular and affordable way to get around, but many people are concerned with their safety on the current narrow and busy roads. More residents would be willing to cycle to their last destination if there are designated cycling lanes and proper bicycle facilities.

Cycling is an efficient urban transport mode, especially for short journeys, and requires less space than cars. Bicycle infrastructure is inexpensive when compared to building more roads and motorways, and would likely not only support cycling but other forms of micro mobility as well. Costs are also paid off in a short time due to the benefits cycling has on the community, which include:

- reduction of health costs;
- reduction in household costs dedicated to cars, parking and fuel;
- reduction of working hours lost in traffic jams;
- reduction in economic dependence on non-renewable resources;
- reduction in negative impacts on the environment; and
- provision of equal access to mobility for all in the local community.

Strategies to plan attractive and safe cycling infrastructure include:

- enhanced cooperation/coordination in cycling infrastructure - notably, with Rota;
- planning and supporting cycling events;
- increased awareness and traffic education;
- development of new outreach opportunities, including appropriate means;
- use of more traffic calming measures; and
- effective enforcement of safety regulations.

Transport Malta's National Transport Strategy sums up the opportunities succinctly, when stating that: "some cycle lanes have been implemented in


Photo by Local Council Association


Photo by Local Council Association

Malta, but improvements should be made in terms of connections, integration with other transport modes and penetration in urban areas. Given that the average car commuting journey length is only 5.5km and the average journey times during the peaks of around 20 minutes, cycling, if seriously developed as a mode, could offer a faster, more environmentally-friendly alternative to the car for many commuters".

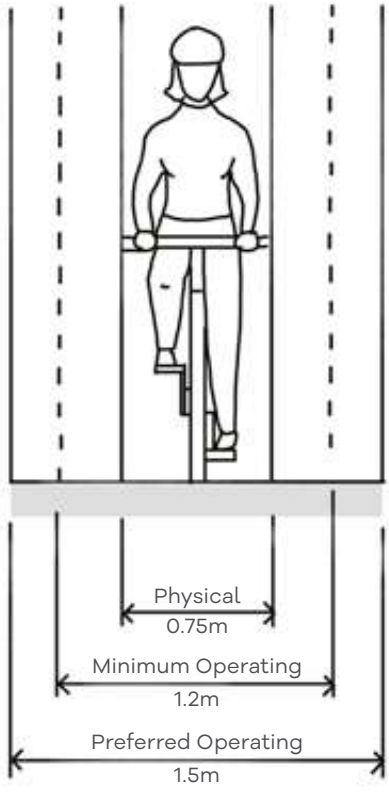
A proper balance of roads and paths that meets the needs of all users creates more liveable, social communities. In this respect, Local Councils should note some important design considerations when it comes to bicycle lanes, discussed next.

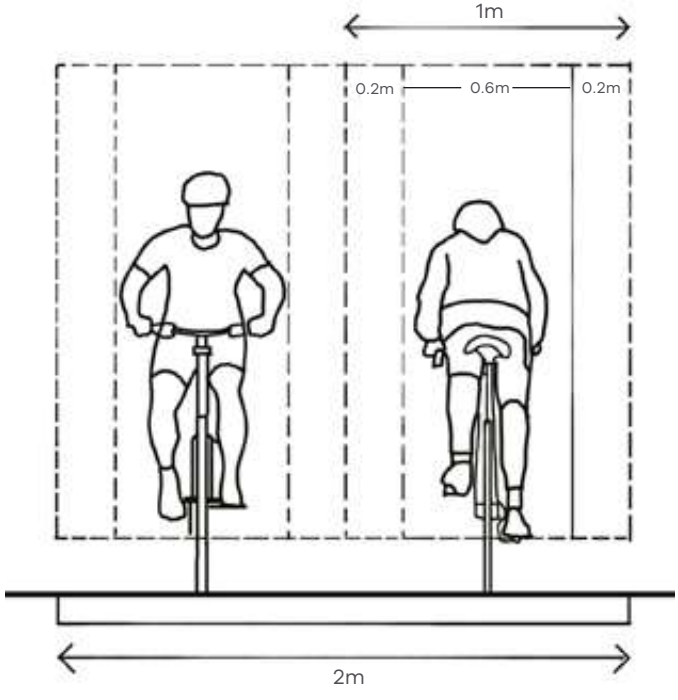
Designing good bicycle lanes

A bicycle lane is a segment of the roadway for the exclusive use of cyclists. For roadways with no curb and gutter, the minimum width of a bike lane is 1.2 m. The minimum required width for a two-way cycle track is 2 m, but a width of 3.0-3.5 m is required for high cyclist volumes.

Road treatments provide separation between bicycles and motor traffic, which increases cyclist comfort and safety, especially in fast moving traffic. The feeling of safety in turn increases ridership. Separation treatments can be:

- conventional lane markings;
- marked bicycle lanes with a buffer space separating the bicycle lane from the vehicle lane, referred to as buffered lanes; and
- a bicycle lane that is physically separated from vehicle traffic by raised medians, on-street parking, or bollards, known as a cycle track.



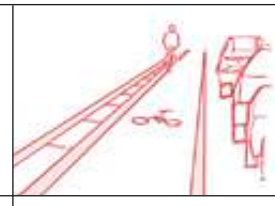
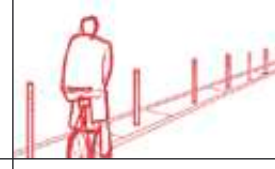


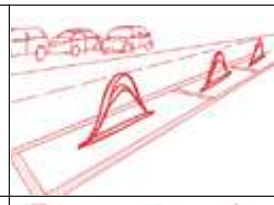
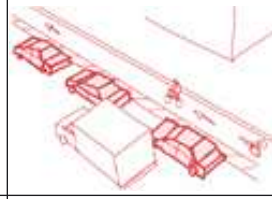
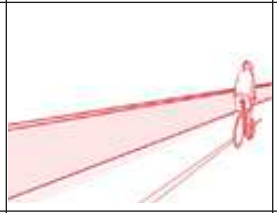
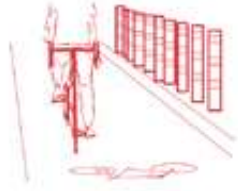
Ilustration by Studjurban

Consult the tables below when deciding on the treatment of the bike lanes for your locality:

Roadway Context		Treatment
Motor Vehicle Speed	Key Considerations	
< 20km/h	Pedestrians share the roadway	Shared Street
≤ 30km/h		
≤ 40km/h	Low pedestrian & traffic pressure	Conventional or Buffered Bicycle Lane
> 40km/h	Low pedestrian & vehicular traffic	Buffered Bicycle Lane or Cycle Track
	Busy pedestrian & vehicular traffic	Cycle Track
High-speed limited access roadways, natural corridors	Can have both high or low pedestrian volumes	Cycle Track

The following table clarifies different barrier treatments for cycle tracks, highlighting pros and cons on the basis of protection, cost, aesthetics and durability:

Barrier Type		Protection Level	Installation Costs	Aesthetics	Durability
Striped Buffer		Low	Low	Medium	Medium
Delineator Posts		Medium	Low	Low	Low
Bumps		Medium	Medium	Medium	Low

Barrier Type		Protection Level	Installation Costs	Aesthetics	Durability
Linear Barriers		Medium	Low	Medium	Medium
Parked Cars		High	Low	Low	High
Concrete Barriers		High	High	Medium	Medium
Planters		High	Medium	High	Medium
Rigid Bollards		High	High	Medium	High
Precast Curb		High	High	High	High
Raised Bikeway		High	High	High	High

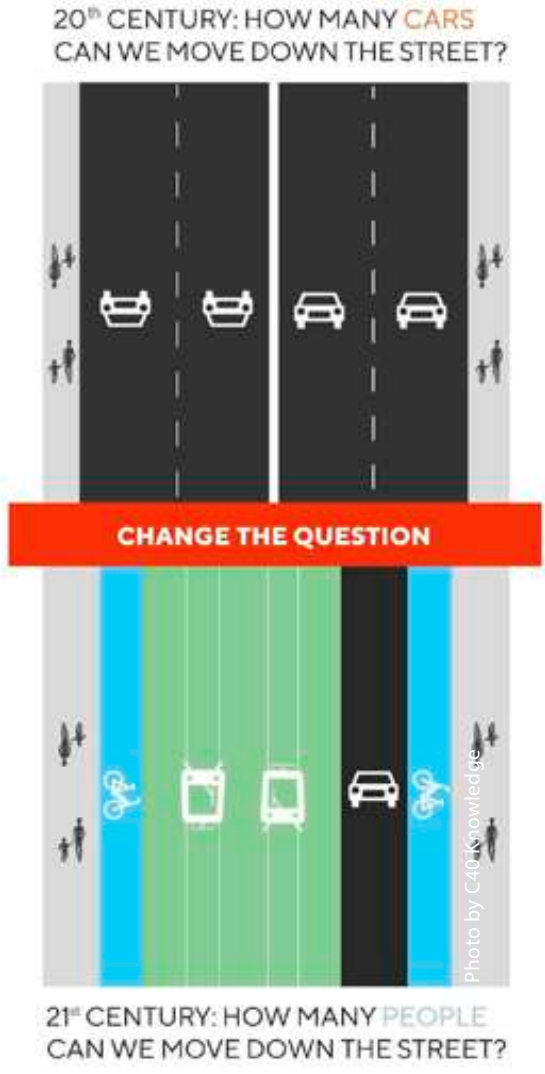
Bicycle Stations

The location of bicycle stations is key in ensuring that it could be used by the public. Consider the following recommendations when deciding on the location of such stations:

- locate stations for pedestrians and cyclists to easily find and use at any time in busy, well connected and well-lit areas;
- place stations within the pavement's furniture zone to maintain a pedestrian clear path, while also keeping utility access points unobstructed (discussed further in the LCA publication Walkability and Accessibility);
- ensure that stations are accessible by maintenance vehicles, especially in unpaved areas;
- mark stations by visible delineators, planters, or other street treatments; and
- consider bicycle sharing stations as traffic calming treatments to separate pedestrian space from moving traffic.

Consider cycling as a valuable addition to your locality's transportation needs. Examine giving priority to primary routes rather than side streets and local routes. Begin by asking the following questions:

- Are there designated cycling tracks or lanes on primary roads? Where are the missing links?
- Are the existing bike lanes continuous and well connected to town centres?
- Are there secure bicycle crossings at intersections?
- Are there biking stations in main centres or commercial areas?
- Does the cycling infrastructure link residential areas with primary cycling destinations such as educational institutions and public transport stations?
- Are the residential locations well linked?
- Is the cycling network flow interrupted by poor and/or badly maintained infrastructure (including poor lighting, barriers and street furniture)?
- Are there recreational bicycle routes? Is there potential for introducing cycling tourism?
- Can existing bicycle lanes be upgraded to actual bicycle tracks?
- Are supplementary off-road tracks included in the plan?

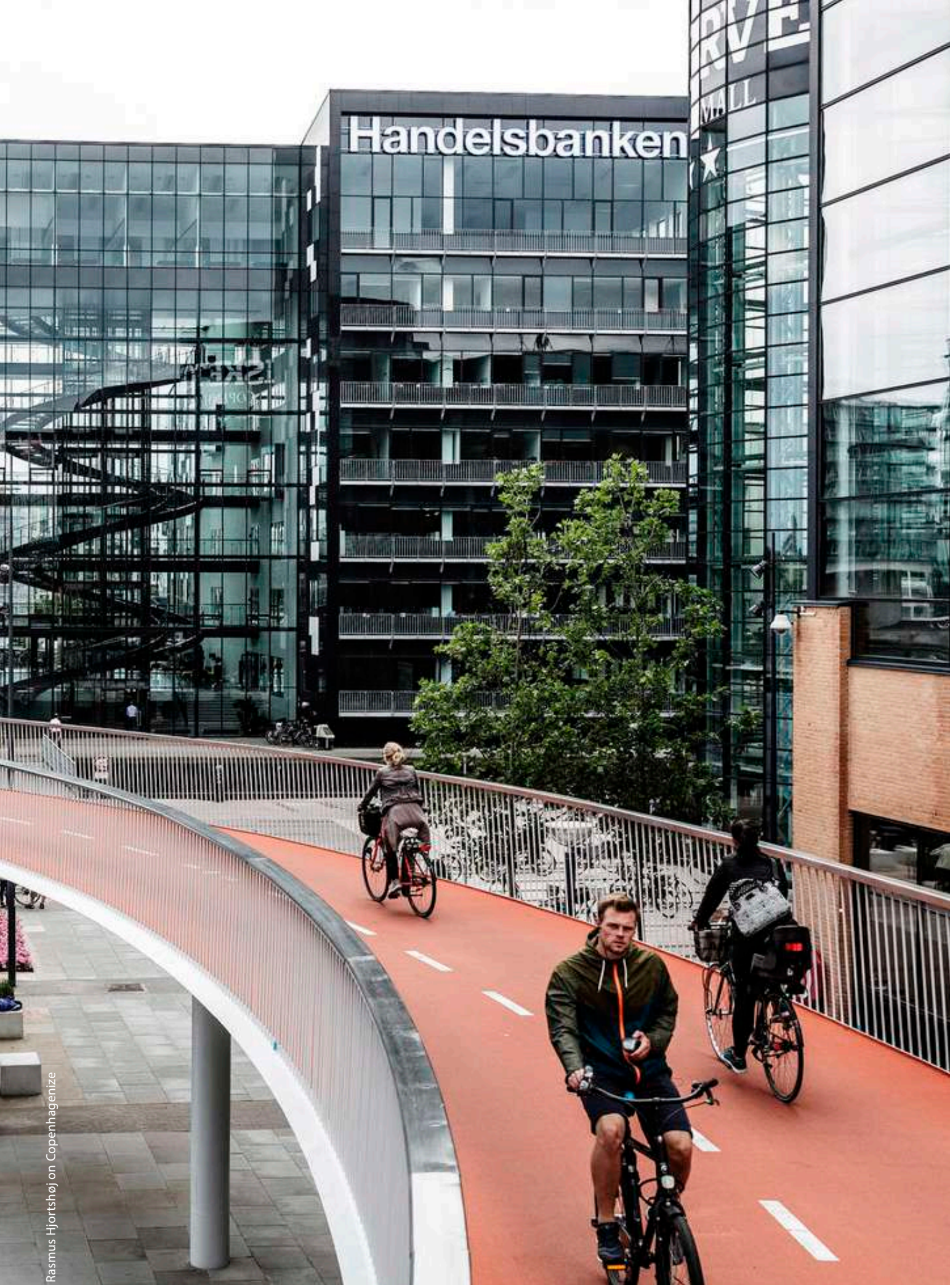


The change in mindset, spurred by the change in infrastructure

Case Study - Superhighways for Bikes in Denmark

27 municipalities and the The Capital Region of Denmark have joined to create a network of cycle superhighways, dedicated wide lanes that prioritise cyclists' needs. The project aims to offer a mode of transport equal to public transportation and the car, by creating direct and safe routes that will increase the number of cycling commuters.

The Office of Cycle Superhighways that facilitates the collaboration is funded by the municipalities and The Capital Region of Denmark.



Rasmus Hjortshøj on Copenhagenize

Step 5

Support Intermodality

Photo by Vitor Paladini on Unsplash

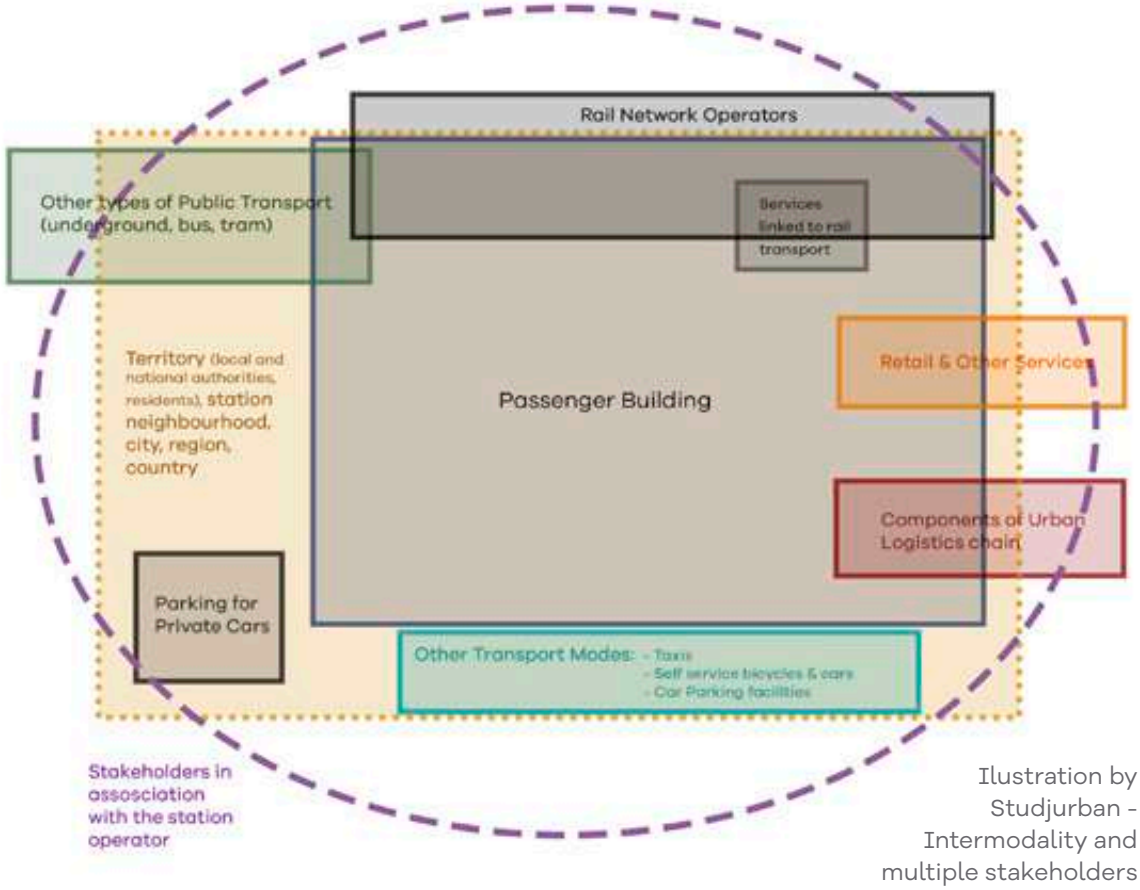
Integrated stations that make it easy to switch between different modes of transport, especially to public transit, should be established and promoted.

Intermodal hubs would:

- offer a sustainable and attractive alternative for private car users;
- add flexibility to users of public transport;
- increase the catchment area around public transport;
- increase the potential destinations available for cyclists; and
- extend recreational and touring opportunities for cyclists.

An intermodal hub can naturally originate from a high-frequency transit stop that has the potential to encompass multiple facilities. The goal of the hub is to encourage people to travel with alternative modes of transport by offering easier connectivity and better convenience when switching between different transport modes. For example, intermodality could be supported when the transit stop is located next to one, or a number of, the following facilities:

- parking for shared mobility options such as shared bicycles, shared e-kick scooters, shared cars
- bicycle parking for private bicycles
- taxi stops
- park-and-ride (discussed previously in STEP 3 Manage Parking)
- other public transport options (for instance ferry stations)
- Malta International Airport



Ilustration by Studjurban - Intermodality and multiple stakeholders

Furthermore, the hub should be accessible to all, well-connected to infrastructure for pedestrians and cyclists, and it should offer an efficient, convenient and comfortable service. Signage and on-site information on connections, transport information directed to users, possibilities of purchasing transport tickets, as well as comfortable and weather protected seating are some examples of what a hub should include.

Strategies to create and optimise an intermodal network include:

- the development of incentives and partnerships for shared mobility providers to engage in the local transport plan.
- choosing a central hub where a main station can offer multiple choices of transport.
- the inclusion of first/last-mile micro mobility connection to supplement on-demand mobility transit.
- incentivising shared transportation to enable integration of multiple modes of mobility.
- Investigating users' transport of choice for hub implementation at crucial point.

After studying the connectivity of your locality, continue by assessing the locations of public transportation:

- Are public transport stops/stations well placed in servicing the local community?
- Do public transport stations offer more than one mode of transport? Are biking stations adjacent to public transport stations (including ferry terminals)?
- Are biking stations well located in the locality? Where can new stations be potentially introduced?
- Do all transport stations offer clear information and time schedules in real time?
- Is this information available for people with visual and hearing disabilities?
- Where are the best centrally located bus stops with the potential of becoming intermodal stations? Is there enough space and infrastructure to develop a hub without interfering with the pedestrian and cycling networks?
- Can new bus stops be introduced at ferry points?


Photo by Josh Bean on Unsplash


Photo by M.R. on Unsplash

Case Study: Intermodal Hub in Clermont-Ferrand, France

Clermont-Ferrand railway station in central France is the city's most important transport hub. The city decided to improve its connections with other forms of transport in its 2011 urban mobility plan. The project was completed in January 2015.

Action Plan:

- co-ordinating better the different forms of public transport through better communication;
- creating or improving Park-and-ride (P+R) car parks;
- establishing secure bike-parking at the hubs, P+R car parks and stations of regional lines;
- providing free parking for users of public transport;
- developing integrated pricing;
- creating a Mobility Centre that provides regional transport information;
- optimising the physical links between intermodal infrastructure;
- co-ordinating the timetables of each transport mode;
- providing complete on-site multimodal travel information on display panels; and
- making this information accessible online and in the Mobility Centre.

Results:

The new hub now features direct, accessible and safe links between the local and regional public transport, a bike-sharing depot, bicycle parking and a taxi stop directly in front of the station. More specifically, the improvements consisted of:

- A redesigned pedestrian forecourt
- Screens with real-time travel information on the scheduling times and locations of trains, intercity buses, and coaches
- New signs to help locate interchanges
- An underground pedestrian passage linking platforms to surrounding streets
- A dedicated bus line and bus stops directly in front of the station
- Reducing the speed limit in the area around the station to 30 km/h
- Installing facilities for passengers with disabilities

The main challenge was co-ordinating the large numbers of organisations involved in the redevelopment of the station. The public transport authority has been responsible for the implementation of urban public transport policy, financing and service contracts.

Step 6

Exhibit and Endorse Temporary Pedestrianisation

Photo by Jan Antonin Kolar on Unsplash

Plan events of temporary pedestrianisation to encourage the use of bikes and scooters so that people can experience and test out their spaces without vehicles.

Within the Slow Streets project, spearheaded a few years ago by the LCA, temporary pedestrianisation through tactical urbanism is discussed as a possible strategy for a number of urban spaces within localities. Such small-scale projects can be cost-efficient, and provide the authorities with information and experience for future implementations of permanent large-scale pedestrianisation projects, while allowing residents to experience the urban space and experimenting with different iterations and possibilities, before deciding to implement such strategies more permanently. In that sense, temporary pedestrianisation projects are a smart investment for any locality and should not be underestimated.

Tactical Urbanism engages people to be involved in designing their streets and squares and is discussed further in LCA's previously published document Walkability and Accessibility. Local Councils should encourage residents to use their creativity and engage in co-designing streets that are attractive, safe and appreciated by their residents. The active involvement of residents increases the success of such projects in the long-term, as they effectively become co-owners of their spaces, with a heightened sense of responsibility towards ensuring pedestrian and cyclist priority, observance of laws and regulations and continued upkeep.

Photo by Tom Hill on Unsplash

Photo by Furkan Vari on Unsplash

Step 7

Explore Possible Public-Private Partnerships

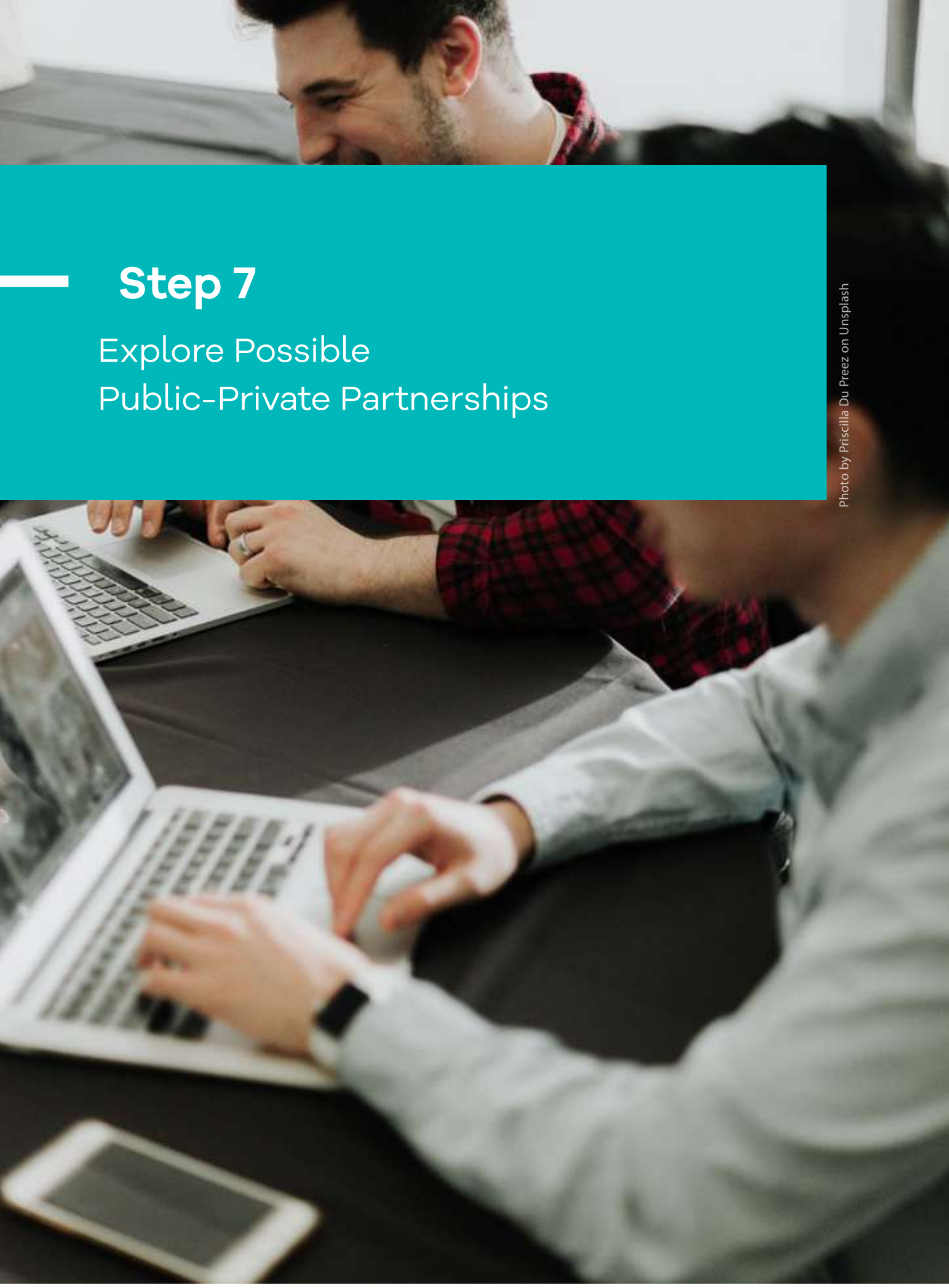


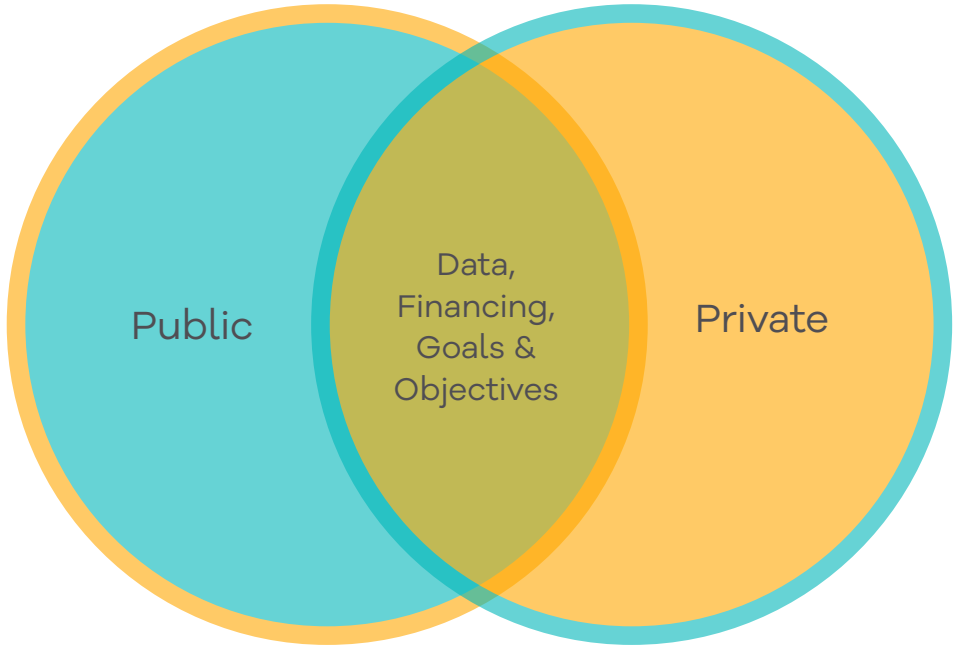
Photo by Priscilla Du Preez on Unsplash

Public-private partnerships in shared transport provide significant opportunities for private investment while also catering for residents' needs and should therefore be explored.

Public-private partnerships in shared transport increase the capacity of financing new transport related projects. The contract between the two sectors can take on different forms, depending on the circumstances and the goals of the specific project. These partnerships should also be explored and considered during the planning process, within which the private sector could be invited to engage.

Furthermore, these partnerships provide a possibility of sharing collected data between parties, which is crucial for the stakeholders from both the public and private sector. As the first STEP of this document indicates, data is indeed needed to plan our localities' future mobility.

Shared mobility partnerships can first be treated as pilot projects. Local Councils can study how they work and whether they are successful in meeting the community goals and objectives.



Ilustration by
Studjurban

Step 8

Create Awareness and Educational Campaigns

Photo by Jason Goodman on Unsplash

Educating your locality about the benefits of alternative modes of transport for their last-mile journey is the catalyst for its use and adoption.

To move away from the usage of cars as our primary means of transport and towards sustainable options, residents must shift their mindset concerning transport. In order to succeed, Local Councils should work towards creating awareness and educating residents about last mile transportation options and their advantages.

As discussed in the previous LCA document Shared Transport, there are several possible approaches to creating awareness among the residents of our localities. It could be done in various ways, from the development of workshops, organised in a bottom-up manner with the active participation of street users, to the launching of appropriate advertisements in the media. Such initiatives should be encouraged and supported, even through appropriate financial instruments.

Creating awareness is a continuous process that should always be complemented with other actions which incentivise travelling sustainably. Notably, one may single out an efficient and overall well-functioning public transport system, as well as well-studied parking management – both essential prerequisites for people to be able to choose, or even consider using, alternative modes of transport.

Photo by Jason Goodman| on Unsplash

3. REACH - a proposed methodology for effective last mile planning

The long term goal for effective last mile planning is to integrate sustainable modes of transport and micro mobility within the public transportation system. To properly intervene in any field of action, a methodology is necessary for ensuring a successful outcome. Consider implementing the following 'REACH' methodology for your locality:

RESEARCH
EDUCATE
ADVOCATE
COOPERATE
HYPOTHESISE

Research - the preparation stage

Becoming familiar with alternative modes of sustainable transport, at locality-level and beyond, is a crucial stage. This includes studying the existing legal framework and barriers, taking into account existing measures that could be implemented for the last mile, and framing the discussion within wider strategies such as the National Transport Masterplan, the National Cycling Strategy and the SUMP/SULP. Well-executed research is the best asset to be able to propose successful solutions for your Local Council. Proceed with commissioning data collection to properly assess the needs of your locality when catering for multimodal transportation options. Collect data in your locality by:

a. conducting surveys on current methods of transport for the last mile;
b. studying how visitors (including tourists, where significant) get around in your locality and inquiring how they would prefer to move around;
c. organising local meetings with residents to gather qualitative information on how they view micro mobility – ask them what they use and what solutions they would like to have in the future; and
d. actively engaging shared mobility providers in the region, coordinating data collection efforts, and working to integrate this data into the wider travel demand model and related planning tools. Particularly, a primary purpose for supporting the use of shared mobility services would be to obtain data on carpooling behaviour.

Mapping is a useful tool, especially within early research stages. Use mapping to:

a. study new potential lanes for both existing and new forms of micro mobility, concentrating on routes that connect to public transportation;
b. analyse potential hub locations for micro mobility sharing stations;
c. identify unserviced areas in the public transport system; and
d. study circulation routes and patterns of different users (i.e. routes of visitors/tourists as opposed to routes of residents).

Public engagement is important to the strategic planning process, as it is the best source to collect data, in order to develop project ideas, define performance measures, and synthesise results into plans. These findings would indicate how best to manage the investment of available transportation funds and the types of planning

interventions and implementation actions to pursue.

Educate and Advocate

Educating your locality about the benefits of alternative modes of transport for the last mile journey is the catalyst for its use and adoption. The residents of your localities also need to know what services are available to them. Consider proposing the following:

- Education programmes about using micro mobility in schools and other educational institutions within the locality.
- An education programme for private companies operating within the locality to educate their staff on micro mobility.
- Regular mobility awareness workshops and campaigns carried out with the local community.
- Production of concise and user-friendly publications that share data collected in your research phase with the public at large.
- Development of pilot projects within the locality and sharing successful outcomes therefrom.

You may also consider organising technical advisory committees to inform Councillers and administrative staff on particular mobility topics, with the active involvement of shared mobility providers.

As discussed the LCA publication ***Walkability and Accessibility,*** you should advocate for walking as a primary solution for the last mile.

Cooperate

Pilot projects and partnerships provide important cooperation opportunities to experiment with shared mobility business models and include:

- Organising awareness campaigns with active groups such as Rota (a member of the European Cyclists' Federation).
- Liaising with other authorities on mobility measures that may be implemented.
- Planning events for temporary pedestrianisation of urban areas, to encourage the use of bikes and scooters, such that people may experience and test urban spaces without vehicles.
- Inviting private entities and providers to carry out trial projects within the locality.
- Exploring the possible formation of public-private partnerships for the provision of mobility services and/or strategic projects such as intermodal hubs, Park & Ride facilities, and the like.

Hypothesise Future Needs

Our localities have developed, over the past decades, with a car-centric approach that is outdated – the future will belong to intermodal systems redesigned for shared mobility. New technological improvements are already resulting in new forms of transport. It is important to predict future needs in your locality, such as new electric charging stations (discussed further in LCA's document Electric Vehicles changeover), by monitoring projects and keeping the data collection and analysis going even after implementation. This may inform future interventions and investments related to shared mobility and, in turn, the way this may influence travel behaviour and overall performance of the multimodal system.

4. Concluding Thoughts

This document states that ensuring that people have access to sustainable last-mile transportation is crucial in light of the fact that the last mile has been proven to be the most inefficient – costly and time-consuming – part of an intermodal journey. The local starting point must be clearly defined through the collection and analysis of data for Local Councils to then be able to take correct decisions in terms of which direction should be pursued.

Shared micro-mobility is a growing mode of transportation that is key within this discussion since it is a very flexible and popular last-mile option. It is sometimes referred to as future mobility and should definitely be included in Local Councils' long-term planning processes for sustainable mobility. At the same time, well-established micro-mobility options such as cycling, together with walking, should be equally integrated and supported.
option. It is sometimes referred to as future mobility and should definitely be included in our long-term planning processes for sustainable mobility. At the same time, well-established micro-mobility such as cycling, together with walking should be equally integrated and supported.

Finally, Local Councils should seek to engage residents in this transformation process, to provide them with the opportunity to make a difference through their creativity and feedback.

Resource Section

Local & European Legislation Context

The 2017 Smart Mobility and Services Expert group report states that the first/last mile logistics can be key to improve efficiency of urban mobility systems, increase the preference for sustainable modes of transport and efficient demand management:

"Individual mobility services can be integrated (in first/last mile and supplementary function) with public transport systems while Autonomous vehicles could eventually supplement or substitute current rigid-line public-transport systems in particular in first and last mile journeys"[1]

Enabling multimodal travel chains based on main public transport lines for residents to improve their accessibility in public transport within their places of residence and of the centres/cities where they find workplaces is a key requirement.

The European Union has recognised that improving urban transportation can contribute to a number of its long-term political objectives, including socio-economic and climate related targets, and has therefore sought to support urban transitions. From 2001's Gothenburg Strategy, the European Union has aimed to develop an integrated and sustainable transport sector. The 2011 White Paper, Roadmap to a Single European Transport Area set European transport policy in motion with long-term goals, including that by 2050 carbon emissions from transport should be reduced by 60%, with conventionally fuelled cars no longer used in cities. The strategy was followed up by the Urban Mobility Package in 2013 setting out procedures and support mechanisms for developing SUMPs[2]. The Commission released guidance on how to devise such plans, taking account of the complexities of overlapping planning and management competencies within cities. The guidelines encourage policy-makers to tackle the entirety of an urban area, and bring together policy-makers from a number of different policy-areas and governance levels, with different stakeholders involved in urban transport.

The European Strategy for Low-Emission Mobility highlights the areas on which Commission initiatives focus, including: digital mobility solutions; fair and efficient pricing in transport (which should better reflect negative externalities of transport); promotion of multi-modality; framework for alternative energy; roll-out of infrastructure for alternative fuels; interoperability and standardisation for electro-mobility; improvements in vehicle testing; post-2020 research and investment strategy for all means of road transport.

Malta's National Transport Strategy 2050 and Transport Master Plan 2025, published some years ago, has the form of a hybrid national transport plan and sustainable national urban mobility plan. It also sets the framework for regional or local mobility plans that are expected to be developed in the coming years.

The Transport Master Plan prioritises active mobility, but also takes public transport, ferries and freight transport into account. Since Malta is a tourist destination, apart from resident commuters, it considers the mobility needs for infrequent users such as tourists. The Transport Master Plan is the first 10-year plan of an expected series of Transport Master Plans that will strive to achieve the goals established in the National Transport Strategy for 2050. The upcoming SUMP is expected to build on the objectives originally set out in the strategy, further prioritising sustainable travel through various modes.
Another good local document, Micromobility in the Maltese Transport System, addresses Micromobility technologies, particularly e-kickscooters, which are available on the market and their popular use throughout major cities worldwide, including in Malta. Currently EU Member States are drawing up their own regulatory framework as deemed fit and according to their particular specificities. It is to be noted that, while this policy document will be updated over time, it currently only addresses e-kickscooters, which are the most widely available and used among all other technologies falling under the Personal Light Electric Vehicles (PLEV) classification. Hence for the purpose of this policy document in most of the cases, PLEV will stand for e-kickscooters, and the proposed regulations therein are only addressing e-kickscooters. This means that all other technologies falling under PLEV shall still be regulated by the existing regulations.

[1] https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=34596&no=1

[2] Currently being developed by TM for the various regions within Malta and Gozo.

Funding & Kickstarting

The European Union provides financial support for sustainable urban mobility through the European Structural and Investment Funds (ESIFs) and the Connecting Europe facility. From the ESIFs, sustainable transport can be funded through both the European Regional Development Fund (ERDF) and the Cohesion Fund.

One of the four most important target areas for the ERDF is Investment Priority (IP) 4 'supporting the shift towards a low-carbon economy in all sectors', with the sub-priority 4.4 of 'promoting low-carbon strategies for all types of territories, in particular for urban areas, including the promotion of sustainable multimodal urban mobility and mitigation-relevant adaptation measures.'

EU Urban Mobility Observatory:

To support regions with their SUMPS, the EU Mobility Package set out a uniform methodology for local and regional authorities to foster low carbon mobility strategies, and established a dedicated information hub. The Eltis platform, financed by the Directorate General for Mobility and Transport of the European Commission, is a one-stop shop for regional authorities looking to develop a SUMP. The website is divided into three themes:

- The Case Studies section provides a range of information including successful examples of sustainable urban mobility initiatives and strategies, statistical data, and a summary of relevant EU legislation and policies.
- In Sustainable Urban Mobility Plans, urban mobility professionals are given access to tools, guides and references for the production of SUMPs, together with a state of affairs regarding such plans within EU Member States.
- Finally, Get Involved provides contact with the EU Urban Mobility Observatory helpdesk.

Other support tools and activities are funded by the European Union, to help regions to integrate sustainable mobility planning and solutions. The URBACT programme supports knowledge exchange and capacity building on sustainable urban development, including urban mobility. The initiative is funded by the European Regional Development Fund and EU Member States involving 550 cities across Europe.

In turn, the CIVITAS initiative supports local partnerships to implement and test novel urban mobility approaches in real conditions. The network is co-funded by the European Commission and supports demonstration projects of urban transport solutions, and operates working groups on the topics of planning and mobility management. The platform provides access to numerous good practices for regions to explore.

https://urban-mobility-observatory.transport.ec.europa.eu/index_en

URBIS:

URBIS is a dedicated urban investment advisory platform within the European Investment Advisory Hub (EIAH). URBIS is set up to provide advisory support to urban authorities to facilitate, accelerate

and unlock urban investment projects, programmes and platforms. URBIS has been developed in partnership by the European Commission (DG REGIO) and the EIB in support of the ambitions defined in the EU Urban Agenda.

https://citiesclimatefinance.org/project-preparation-resource-directory/urban-investment-support-urbis#:~:text=URBIS%20is%20a%20new%20dedicated,projects%2C%20programs%2C%20and%20platforms.

Open Calls:

2024 CEF Transport MAP calls for proposals:

The 2024 CEF Transport MAP calls for proposals was published on 24 September 2024 with a total budget of €2.5 billion to build and modernise European transport infrastructure, in support of the European Commission's vision of a future sustainable transport system, with smart and resilient solutions implemented to interconnect Europe. Projects funded under these calls will help make the trans-European transport network (TEN-T) more sustainable, smart and resilient and contribute to the EU's goal of becoming climate neutral by 2050. The call is split into – Projects on the Core Network, Projects on the Comprehensive Network, Smart and interoperable mobility, Sustainable and multimodal mobility and Safe and secure mobility.

https://cinea.ec.europa.eu/funding-opportunities/calls-proposals/2024-cef-transport-calls-proposals_en

Horizon Europe:

Horizon Europe is the EU's key funding programme for research and innovation. Following the Multiannual Financial Framework Midterm Review (MTR) decision, the indicative funding amount for Horizon Europe for the period 2021-2027 is EUR 93.5 billion.

Cluster 5: Climate, Energy and Mobility focuses on making the energy and transport sectors more climate and environment-friendly, more efficient and competitive, smarter, safer and more resilient. Relevant areas of intervention include industrial competitiveness in transport; clean, safe and accessible transport and mobility; and smart mobility. Funding programmes include support for research and innovation in transport, including multimodal travel, defined as an important objective due to its potential to decarbonise transport and reduce air pollution and congestion in cities.

More information regarding research and innovation for multimodal travel opportunities may be found here:
https://research-and-innovation.ec.europa.eu/research-area/transport/multimodal_en
Other Supporting Networks and Tools:

ELENA:

ELENA is a joint initiative by the EIB and the European Commission under InvestEU. ELENA provides technical assistance for energy efficiency and renewable energy investments targeting buildings and innovative urban transport.

Cluster 5: Climate, Energy and Mobility
https://www.eib.org/en/products/advisory-services/elena/index#:~:text=A%20team%20of%20experts%2C%20consisting,(as%20of%20end%202023).

POLIS:

POLIS is the network of European cities and regions cooperating for innovative transport solutions. Its aim is to improve local transport through integrated strategies that address the economic, social and environmental dimensions of transport. To this end, it supports the exchange of experiences and the transfer of knowledge between European local and regional authorities. It also facilitates the dialogue between local and regional authorities and other mobility stakeholders such as industry, research centres and universities, and NGOs.

POLIS members meet regularly in working groups to exchange best practices and share knowledge on sustainable urban mobility.

https://www.polisnetwork.eu/

EIT Urban Mobility

EIT Urban Mobility is an initiative of the European Institute of Innovation and Technology (EIT). Since January 2019 they have been working to encourage positive changes in the way people move around cities in order to make them more liveable places. They aim to become the largest European initiative transforming urban mobility. Co-funding of up to € 400 million (2020-2026) from the EIT, a body of the European Union, will help make this happen.

https://www.eiturbanmobility.eu/about-us/

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Photo by Claude Gabriel on Unsplash

GUIDELINES ON SUSTAINABLE MOBILITY PARKING MANAGEMENT

ResidentFirst

Contents

1. The Parking Crisis and the Need for Urgent Solutions

1.1 Introduction

Almost every locality in Malta suffers from some kind of parking issue – often a cause of headache for Local Councils and frustration for residents. With over 400,000 registered vehicles and 270,000 licensed drivers, the issue tends to centre on the need for space to park these vehicles when not in circulation. Occupying anything between 10 to 20 square metres per parking bay, in theory the country would need to provide 4 to 10 Million square metres of car parking space. In addition, vehicles are not static and potentially utilise an average of three to four different parking spaces daily.

The present critical parking issues go beyond space limitations for residents. The availability of car parking often influences whether or not individuals would use their private vehicles for journeys, even in those locations that are well served by public transport. Managing parking spaces essentially means managing the demand for car use, which directly affects road congestion. Few of us might stop to think about the fact that a significant contributor to congestion and unnecessary pollution within our local roads is vehicles driving around in search of vacant parking spots. In turn, this directly impacts the quality of our streets and their enjoyment. With proper parking management, fewer vehicles would navigate around roads to solely seek parking, liberating road space that could be rethought and restructured in order to accommodate other uses, such as cycle lanes or wider pedestrian routes, as the experience of the Slow Streets project has shown. In those streets that are part of established bus routes, less vehicular presence would enable smoother and faster public transportation, which in turn may become more appealing as an alternative mode of travel.

Central to the parking problem is the lack of a proper, up-to-date stock-taking of all available parking spots in Malta and Gozo, including on-street parking bays, off-street garages, public and private parking lots. This is a measure on which Transport Malta is working and, for which, the collaboration of all other parties, including Local Councils, is required. The data should additionally be analysed in tandem with the number of registered vehicles and licensed drivers. It is only with such an inventory that we may truly comprehend the magnitude of the problem and envisage the most appropriate solutions. The data should be collected for each and every locality in order to understand the particularities of parking issues in a truly contextual manner since there is certainly not a one-size-fits-all solution to parking. Such an inventory is critical in order to determine whether or not parking spaces should be reserved for specific purposes and/or users, such as electric vehicles and shared vehicles. Parking availability for micro-mobility vehicles, such as e-kick scooters and bikes, should also be included within potential parking solutions.

A parking strategy that considers the possibility of better thought-out parking projects is required so as to reduce the unnecessary presence of vehicles in our streets and better urban quality within our localities, with a direct influence on residents' quality of life. Such a strategy needs to move beyond simply increasing the provision of on-street parking,

which ends up assigning more space for car use rather than for recreational purposes – valuable urban space that could encourage opportunities for social interaction. The identification of such strategic parking areas is not to be seen as an ultimate 'solution'. The long-term objective should remain that of shifting to alternative modes of travel, and the provision of parking facilities does not contribute to the reduction of car dependence – indeed, it might actually incentivise further personal vehicle use. At the same time, however, urban space may be better articulated and allocated for better purposes with the possibility of a more strategic outlook to parking projects. This is discussed further in Step 5 of this document.

1.2 Why are Cars the Preferred Mode of Transport?

With so many cars on the road, it is amply clear that cars constitute the most popular mobility choice for most commuters on the Island. There are a number of factors that contribute to this reality, not least the available stock of cars at a relatively low cost (particularly the used cars market) with easy payment plans, which is appealing for residents as a primary choice of travel. Licences, particularly for those vehicles registered before 1 January 2009 as per the Annual Circulation Tax (ACT) provisions, are also relatively low, making the process of owning a private vehicle the easiest option that may cater for individuals' needs and furthermore going contrary to the 'polluter pays principle'. This reality has caused the number of privately owned vehicles to rise exponentially over the years. While the introduction of shared transport is in principle a very positive move that helps contribute to the reduction of vehicles on the road and, consequently, congestion and air and noise pollution, it has nonetheless inevitably resulted in the importation of further vehicles to Malta and Gozo, contributing to the increase in vehicle numbers (and, therefore, to more traffic congestion). Instead of having space for sustainable and qualitative infrastructure and activities, such an increase in vehicle numbers result in a further uptake of street space for parking.

At the end of September 2022, statistics indicated that there were 422,576 licensed motor vehicles in Malta, of which 74.9% were passenger cars[1] – a figure that has been increasing exponentially since the 1990s. In turn, at the end of 2021 there were 413,019 licensed motor vehicles and a corresponding number of 272,333 licensed motorists in Malta,[2] resulting in a high rate of motorization of around 1.5 passenger cars for each licensed motorist. The above statistics have a significant implication on urban space management, which in turn becomes an essential consideration from policy and decision-making points of view.

1 https://nso.gov.mt/en/News_Releases/Documents/2022/10/News2022_190.pdf

2 https://nso.gov.mt/en/publicatons/Publications_by_Unit/Documents/02_Regional_Statistics_(Gozo_Office)/2022/Regional%20Statistics%20Malta%202022%20Edition.pdf

Our local streets rarely promote walkability as a mode of transport, often characterised by narrow pavements which are not continuous, lacking adequate street furniture or landscaping that could provide proper shade during hot summer months. Such unsafe and disconnected pavements and crossings deter residents from walking who often opt to use their private vehicles instead. Poor air quality and noise pollution from motorised traffic further discourage people to choose walking or cycling ahead of travelling with their private vehicle. This subject is discussed further in another of our upcoming documents entitled Walkability and Accessibility.

Even though the advent of shared transport vehicles has led to an initial increase in vehicles on the island, shared transport has several benefits compared to privately owned mobility options and should therefore be encouraged and prioritised. Measures to improve car sharing facilities could be promoted and implemented in such a way as to make it more convenient to use one's own car. As an additional example, there is an issue with buses often having to share the same road space and infrastructure as that of other modes of traffic, public transport ends up being equally slow due to traffic congestion and overcrowding with passengers, especially during the summer tourist season, becoming less appealing for residents. This subject is in turn discussed further in our upcoming document entitled Shared Transport.

The parking problem is complex and multifaceted and stems from different reasons – the emphasis of road design policies on cars and the facilitation of car usage, as opposed to effective street design policies and guidelines that focus on higher quality pedestrian and cyclist-oriented streetscape environments; the planning approval and construction of further private and public housing


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Photo by Tchoutchou Dantine de Thier on Unsplash

without an acceptable delivery of parking requirements; not enough awareness about the environmental consequences of traffic congestion and the health benefits of walking and cycling; and last, but not least, decisions taken by residents themselves to purchase and use private vehicles rather than opting for alternative, more sustainable modes of transport such as walking or cycling.

There is therefore a collective responsibility to work in unison towards reversing this trend and finding possible solutions. A concerted effort involving all stakeholders is required – not only as being part of entities that may influence and incentivise different modes of transport but also ultimately as individuals and decisions related to their mobility patterns.

1.3 Planning for Parking Provision in View of the Shift to EV

As mentioned previously in this document, managing parking requires an up-to-date understanding of the current parking situation to be gained through data analysis. Future planning needs to take into account upcoming realities, notable of which is the shift from fuel-driven vehicles to electric ones, and it is crucial that the parking planning that is undertaken today supports such developments.

While reducing the number of vehicles on our roads remains a priority, electric-drive vehicles (EVs) has the potential to ease some of the environmental problems caused by the transport sector. However, in order to be effective, the transition to EVs needs to be more significant. Government has already committed to having 370 electric busses and a fully electric Government fleet (around 1,800 cars) by 2030.[1] This initiative aligns with the Paris Agreement and emissions reduction targets, for which city bus fleets should be fully zero-emission by 2030. Additionally, taxis and shared rides should be encouraged to shift to EV. The Maltese Government has targeted 65,000 plug-in hybrid electric vehicles (PHEV) and EVs on our roads by 2030.[2]

The shift to electric vehicles is therefore at a critical point, with them becoming a need rather than a choice. The country needs to anticipate and plan for the introduction of thousands of EV charging points and the effect this will have on the current road infrastructure and urban space, including parking provision.

More detailed information regarding the shift to EVs may be found within the document previously released by the Local Councils' Association, entitled Electric Vehicles Changeover.

1 As per the Low Carbon Development Strategy (LCDS) published by the MEEE: https://meae.gov.mt/en/Public_Consultations/MECP/PublishingImages/Pages/Consultations/MaltasLowCarbonDevelopmentStrategy/Malta%20Low%20Carbon%20Development%20Strategy.pdf (p46)

2 https://www.maltatoday.com.mt/news/xtra/113419/government_targets_65000_electric_cars_on_the_road_by_2030#.Y8UC3i0w2J8

1.4 The Need for Parking Management

Parking is a crucial part of transportation management and spatial planning, for both the short and long term, and a key transport policy issue that is becoming more pertinent as both car supply and demand keep increasing rapidly.

Parking management refers to strategies that aim for efficient use of parking resources. Effective parking management begins by identifying the various causes of parking problems that affect various stakeholders in order to arrive at feasible and sustainable solutions. Such problems can be identified through the process of collecting and analysing data, which is discussed further in STEP 1 of this document. Parking management in Malta is often only implemented as a reaction to specific problems arising in certain locations, such as the provision of more multi-storey car parks without having studied the available parking stock. Such a fragmented approach to the issue does not help to curb car use and indeed often ends up facilitating such use further.

Even though privately owned cars are often in the centre of attention when discussing the parking issue in Malta, it is important to note that parking management includes different types of vehicles, such as private and commercial (delivery) motorbikes, hawker trucks, large vehicles, car rentals and car dealer vehicles and other vehicles (such as campers and caravans), all of which are often parked in available bays for long stretches.

Parking management further includes strategies that address parking issues at different scales, from the standardisation of parking bay markings (ensuring a more efficient use of space) to understanding the provision of parking bays for an entire locality.

Among other issues, the absence of well-planned and efficient parking management leads to:

- inefficient land use due to misaligned parking supply with demand;
- less available space for alternative transport modes such as public transport, cycling, walking and shared rides; and
- negative environmental impacts due to cars driving around for parking; and
- negative environmental impacts due to vehicles using non-designated parking areas such as fields, with consequences including soil erosion, pollution in natural areas and disturbance to biodiversity

While it is clear that the reduction of on-street parking would make way for better walking infrastructure, possibilities for pedestrianisation schemes and the implementation of more open spaces, this cannot be implemented without parking management.

There is no simple solution that will address all parking issues. All key stakeholders should be involved in taking appropriate planning and movement-related decisions at both strategic and local levels.

1.5 Reducing the Number of Licensed Vehicles

As discussed previously, vehicle licences are currently relatively affordable. As a result, many residents do not think twice about purchasing a private vehicle or of retaining a vehicle even not frequently in use or, worse still, simply remaining parked on the street for indefinite periods of time. This phenomenon further means that individuals and families purchase more than one vehicle, which in turn requires more parking space on the local streets. If licences were to become more expensive and not all parking bays had to be free of charge, this would impact individuals' decisions before purchasing another vehicle. For instance, a resident could be guaranteed one free parking bay only. If more vehicles had to be purchased, then the resident would be required to purchase or rent a garage or pay for on-street parking. Furthermore, any second licence under an individual's name should be significantly more expensive than the first, so as to further discourage unnecessary vehicles on the streets.

Residents may also be encouraged to give up their vehicles, for instance after reaching a certain age, obtaining a sum of money in exchange for relinquishing their licence, in tandem with the grants currently in place for vehicle scrappage. Such a scheme should only be introduced if parallel affordable schemes are implemented to ensure that these residents do not become house-bound, and a service is in place to enable them to carry out their needs and leave their homes. This could be implemented through subsidised cab rides that may further be paid for by the Local Councils. This is an important consideration as numerous residents own cars that are parked on local streets without them being in use for prolonged periods.

Another important factor to consider is the importation of vehicles and the need for more controlled regulations. Importation of vehicles should be prioritised for fleets of shared transport and EVs over conventional fuel-based private vehicles. Capping the number of imported cars annually may also be a consideration, after having created an inventory of existing parking facilities.

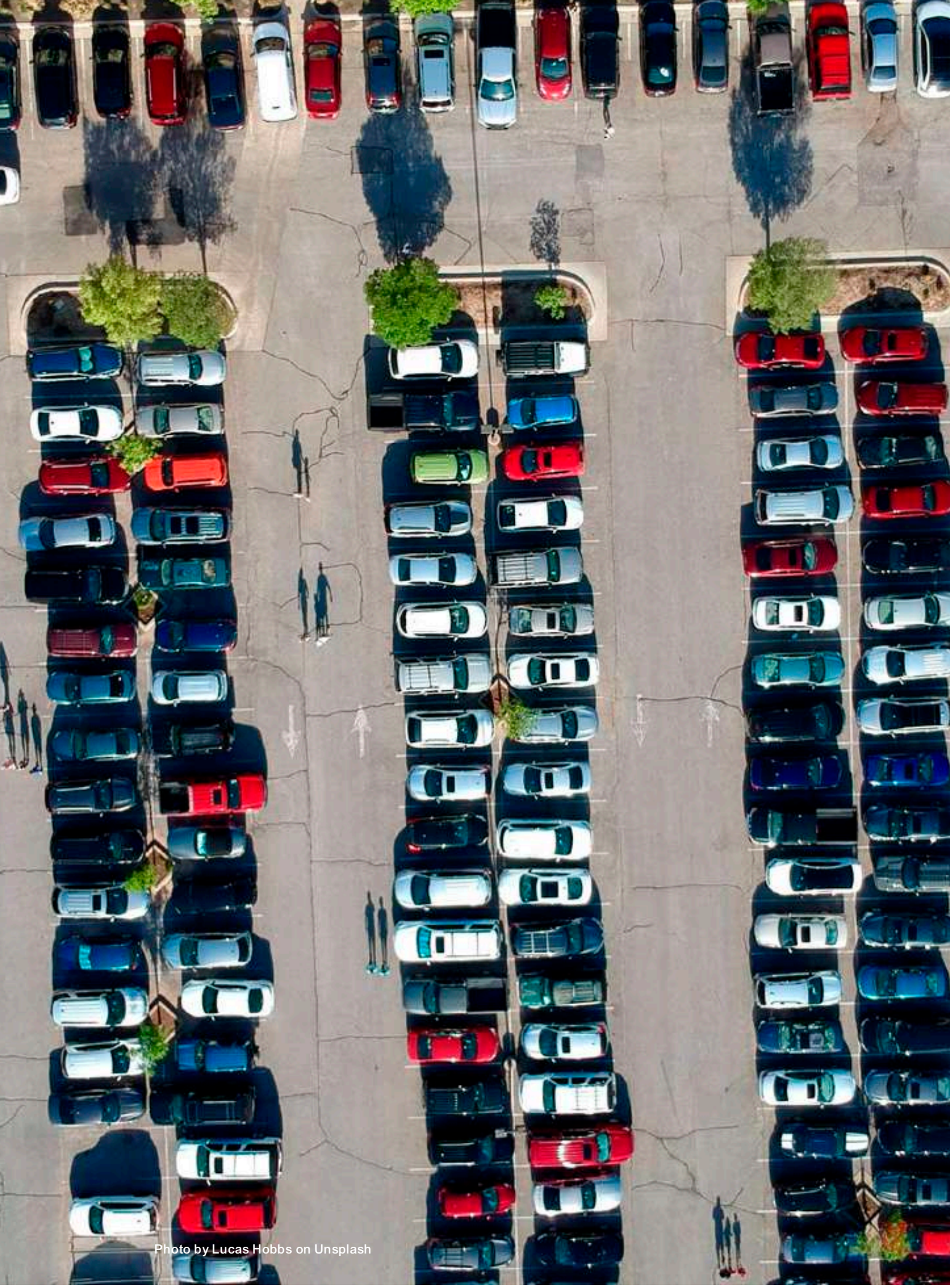


Photo by Lucas Hobbs on Unsplash

2. Steps Towards Strategic Parking Projects

In order to propose successful solutions, there needs to be a strong collaboration amongst all localities, especially for sharing parking information and data and driving behaviour. Data with regard to commuting residents should be studied in depth in order to determine parking patterns and capacities of future infrastructure projects. There should also be good communication between different Regional Councils, to identify successful strategies that other localities could implement.

Since the problem is multifaceted – including urban, political and social issues – it follows that potential solutions would have to address all these diverse issues simultaneously. Such a multidisciplinary approach would require that socio-economic studies are carried out to comprehend the full feasibility of such solutions. Providing isolated solutions would not yield successful outcomes. For example, introducing a paid parking scheme without enhancing pavements and infrastructure for other modes of transport would likely cause more resistance as residents would feel that no viable alternatives to driving are being provided.

Policies should be introduced in phases instead of being implemented all within a short time frame. This would provide the residents an opportunity to get accustomed to them, which may result in a better chance of success. This process of phasing introduces small measures along a long-term period with specific target goals. Such incremental short- and medium-term targets, framed within longer-term objectives, characterise the Slow Streets Malta proposals that have been prepared for a number of Local Councils and that are in the process of implementation.

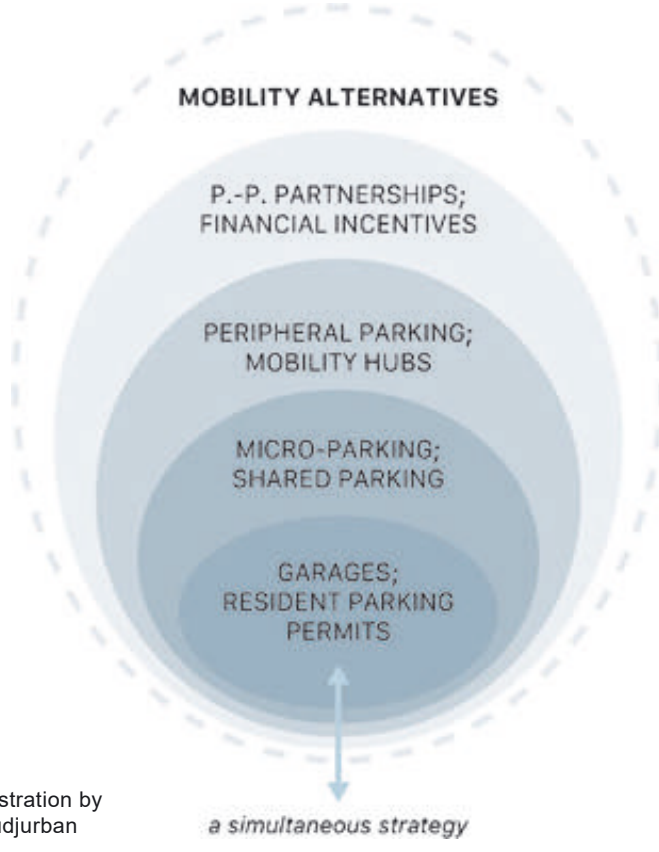
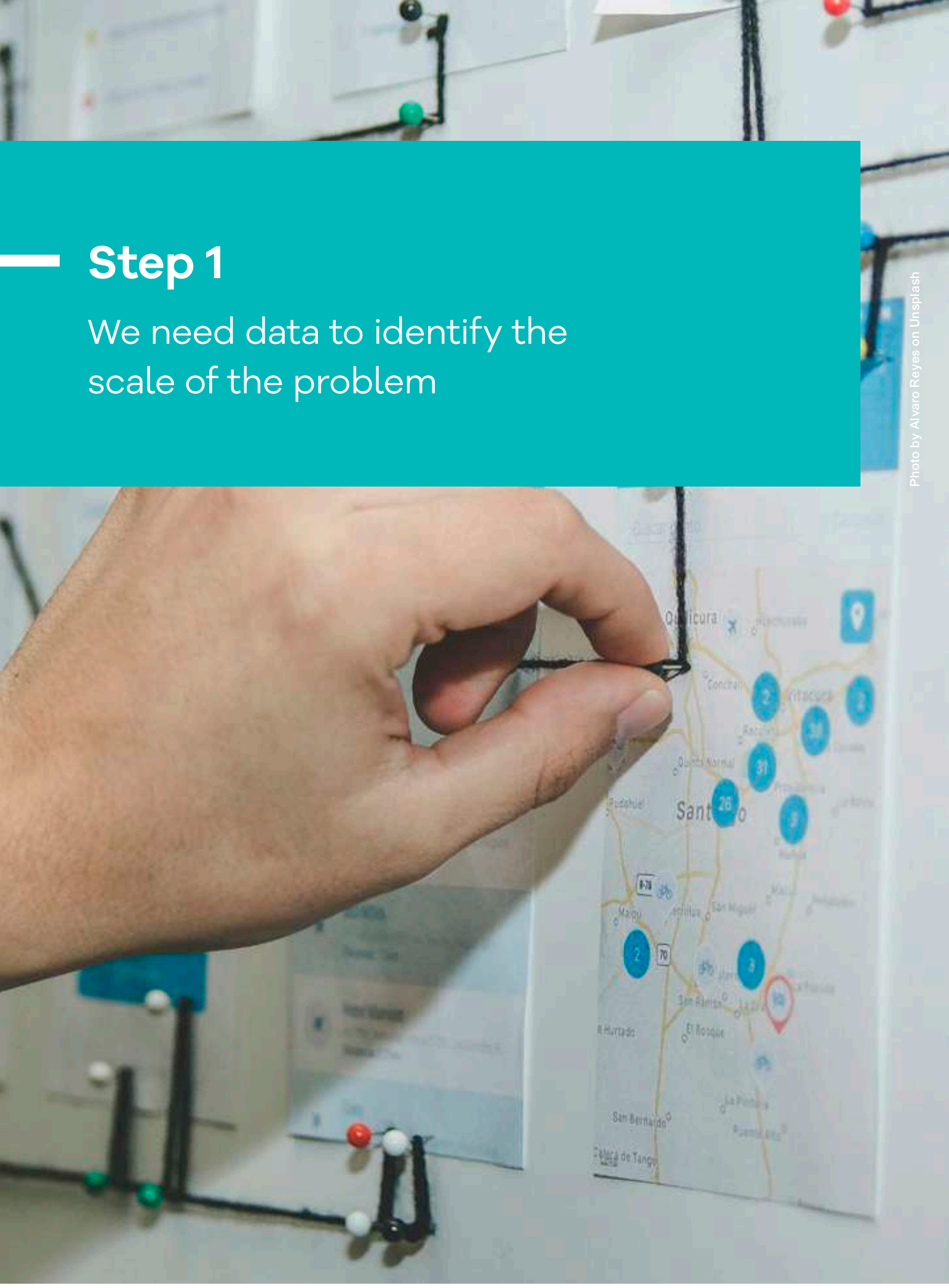


Illustration by Studjurban

Step 1

We need data to identify the scale of the problem



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Carry out an up-to-date parking inventory in every Local Council which may reveal how much on- and off-street parking is provided within a specific locality; how parking is being utilised, and if demand exceeds the capacity.

Having an updated parking inventory constitutes a critical component of good parking management, which would be able to provide solutions with available resources and minimal infrastructural projects. This implies that urban space may be used more efficiently for social and community-related, or educational and recreational purposes rather than being dedicated to parking lots that end up being wasteful and scarring our urban environment. Local parking surveys thus become important tools as they would typically aim to understand:

- how much parking is provided within a specific study area;
- how and when parking is being utilised; and
- if demand exceeds capacity.

When studying different causes of parking issues, specific attention should be given to different time and day realities for which the issue in question may be occuring. Collecting data on the supply of existing on- and off-street parking, Park and Ride (P&R) facilities, demand for parking spaces and turnover is important to be able to know which specific solutions to provide and at what scale. It enables planners to understand when new developments actually need to provide parking spaces and when the available inventory is sufficient. Recording existing data is also crucial to be able to plan and propose public space improvements, such as adding cycle lanes or widening pavements. New parking possibilities provided using Smart Parking Technology may also double up as important data collection points and should be taken into consideration as part of a wider potential solution to parking issues.

An inventory of parking spaces may also shed light on whether there are spaces that are not being utilised on a continuous basis. If this is the case, such parking spaces could be made available to residents thereby making available other parking spaces being taken up by residents. The said inventory can also provide more information on the use of reserved parking bays.

Considering the complexity of sustainability and its multidisciplinary nature, infrastructure projects including the planning of parking spaces and cycle lanes must be planned with respect to the bigger picture. This specific parking data needs to be understood in correlation with other fields of research to be able to reach a sustainable balance between efficient transport and healthy ecosystems.

Step 2

Viable mobility alternatives

Photo by Zackary Staines on Unsplash

Reduce private vehicle dependency by encouraging transportation alternatives such as reliable public transport and micromobility.

Shifting the daily commute from cars to sustainable transport modes, both using public transport and, more notably, through walking and cycling, incorporates physical activity into everyday commuting and improves health and happiness, as discussed in another of our documents entitled Walkability and Accessibility, which includes strategies to achieve a more walkable and accessible society. Besides ensuring that there are viable mobility alternatives and generally pedestrian-friendly streets, people need to be encouraged to make the shift from using their private vehicles as the main means of transport to other sustainable modes of transport. That would generally include a mix of 'push and pull' strategies, such as:

- Continue improving the existing public transport service, including more efficient, faster and more reliable time tables and rethinking existing road infrastructure to introduce dedicated bus and cycling lanes as well as better pedestrian infrastructure;
- improving stops and stations including an improved component of green infrastructure, better shelter (enclosed waiting areas, with heating in winter and cooling in summer), seating facilities, real-time transit user information and better wayfinding;
- introducing more integrated transport policies and planning, including more integrated services, fares and ticketing, user information, infrastructure provision and management, transport and land use planning, and other public policies such as parking and fuel pricing;
- financially incentivising transit use and shared mobility, and funding such incentives from paid parking schemes;
- evaluating the possibility of introducing paid parking in specific zones, notably locality centres and busy commercial areas, while introducing measures to ensure that the affected vehicles would not shift to parking in adjacent residential areas; and
- providing discounted bike-share or car-share memberships.

One such strategy that has already been introduced allows for all Maltese residents to travel for free with the public transport.

In parallel with producing and introducing such strategies, there needs to be a continuous search for other possible improvements, new transportation modes and systems and their feasibility on the Island. It could for example be examined if the ferry services can be improved so as to attract more passengers and alleviate traffic from the roads further. Large-scale mass transportation systems, such as rapid transits, should continue to be assessed in terms of feasibility.

Step 3

Garages and resident parking schemes

Photo by Isaac Struna on Unsplash

Incentivise residents to use their garages rather than on-street parking through strict enforcement measures and subsidising electrical charging points for EV vehicles, while simultaneously introducing resident parking permits issued by the Local Councils for use of local streets.

Many residents choose to park on the street rather than use their own garages, either because it is easier or because the garage has undergone a change of use. Garages are an important asset in solving the current parking problem, as they can significantly lessen the number of parked cars on our local roads. Therefore, schemes that encourage residents to park in their garages should be implemented, such as financial incentives or subsidising EV charging points. This scheme would encourage the use of EVs and simultaneously remove more parked cars from the streets. The planning requirement for new residential developments to cater for a minimum number of vehicles should be stricter, in order to ensure that the parking needs of all new residents are addressed. Additionally, developers may be encouraged to provide a surplus of parking provision in new developments which could be leased out to the residents within the immediate vicinity.

While Local Councils might wish to consider timed parking spaces for non-residents, residents could be prioritised further by the introduction of resident parking schemes. Such parking schemes are already in place in a number of localities, whereby parking priority is given to residents through the introduction of resident permit holders and defining various parts of local streets where parking may only be permitted if a valid permit issued by the Local Council is displayed on the vehicle. Permits are normally only issued to residents living in a street within the zone and are under the control of, and issued at, the discretion of the Local Council. Resident parking schemes are generally developed following discussions with residents, businesses and other stakeholders to address parking problems, improve road safety for all road users, improve access and parking for the disabled and prioritise residents within busy residential streets, and may be diffused further.


Photo by Valentin Salja on Unsplash


Photo by Viktor Bystrov on Unsplash


Photo by Aidenbarker on Unsplash

Step 4

Micro parking projects

Photo by Faisal Waheed on Unsplash

Identify potential micro parking projects at a neighbourhood scale (serving 20-30 cars) prioritised for residents in the immediate vicinity, carefully drawn up to ensure that the building's character and visual impact on the streetscape are not adversely affected.

While parking areas located at the peripheries of localities could be beneficial in terms of accommodating large vehicular volumes (discussed further in Step 5), their location may not be convenient for most local residents, particularly those living within the central parts of a locality. Residents may be less inclined to use peripheral parking than neighbourhood parking areas that are within walking distance of their homes. Micro parking projects that are more centrally located and distributed outside of the Urban Conservation Area of a locality, could therefore be more successful in this respect. More often than not, however, the more central the location the less available the space, especially in dense localities. For this reason, such parking proposals will need to be studied on a case-by-case basis and will differ from one locality to another. The intention is for these projects to be off-street when possible and developed on committed land so as to retain open, green and/or social areas.

Photo by Jaanus Jagomagi on Unsplash

In addition to smaller open parking lots, discussed in Step 8, developers and landowners could be incentivised to build smaller parking projects that serve their immediate neighbourhoods. These off-street facilities would accommodate a smaller number of cars but could potentially relieve local roads from on-street parking, thus liberating space for other recreational uses. The locations of such micro-projects should be studied in-depth to understand how many residents they could potentially serve and what their impact would be on local roads in terms of both traffic generation and streetscape implications.

Furthermore, as micro-projects are smaller in size, they are easier to fund and manage, also operating at lower maintenance costs. Therefore, developers and landowners could be incentivised to construct small car parks rather than residential blocks, especially if they are provided with financial support and fiscal incentives. Planning policies would ensure that the facades of such micro-projects do not impact the streetscape negatively but instead are sympathetic to the rest of the street where they are located, or even provide architectural interest which complements the local street character. These small garages could also incorporate active frontages at first floor, potentially providing small commercial spaces. Their structure should be designed in a way to be easily repurposed into another use in the future when an improved public transit system would reduce the need for extra parking.

The proposed micro-projects should also incorporate bicycle and/or scooter facilities, as well as EV charging points, thus serving as small multimodal hubs. When possible, micro-projects should also provide pedestrian connections through the building from one street to another, enhancing pedestrian connectivity within the locality. One of the most evident advantages of these smaller-scale parking projects is that they may be less risky investment projects than large multi-storey car parks or P&R projects.


Photo by Michael Fousert on Unsplash


Photo by Jordan Brierley on Unsplash

Step 5

Strategic parking projects

Photo by Vitor Paladini on Unsplash

In tandem, consider peripheral parking projects as mobility hubs to partly replace on-street parking within the locality centres with the potential of having liveable open and green spaces within the cores. Such hubs could potentially serve multiple localities, located off the arterial/distributor road network and be well connected to the locality centres.

In addition to smaller parking projects closer to the locality centres, more congested localities could also plan for more off-street parking such as peripheral parking facilities which allow commuters to avoid a stressful drive along congested roads and a search for scarce central parking. These hubs are similar in concept to Park and Ride facilities, generally characterised by a location that is:

- away from major activity centres;
- at the end or along an existing major transit route; and
- at the edge of a locality and connected to the centre by a frequent shuttle service and other first and last mile solutions, preferably using EVs.

Peripheral parking induces motorists to park and travel to the locality centre using another mode such as public transit, or more active mobility. These facilities decongest local roads for other uses, as there is sufficient place to park at the periphery of the urban area and relieve traffic in the locality's centre. This option would work well for smaller localities where travel time from the periphery to the centre is also short. Additionally, neighbouring localities with a shared periphery could potentially plan a joined parking facility that would serve all localities simultaneously. It is important to note that such parking projects would be located at the edge of development, not Outside Development Zone (ODZ) and their intention would be to replace existing dysfunctional on-street parking with more strategic parking hubs rather than ensuring the availability of parking.


Photo by Local Councils' Association Malta


Photo by Local Councils' Association Malta

Photo by Studio NAB

Photo by Studio NAB

Step 6

Partnerships

Photo by LinkedIn Sales Solutions on Unsplash

Promote private and public partnerships for various infrastructural projects, such as larger multi-storey car parking projects.

A public-private partnership means a contractual agreement between public and private sector partners to construct, operate, finance, maintain, and/or manage a parking facility or system. The public sector ensures that residents and taxpayers are best served in the long run while private investment provides the capital needed to build or maintain parking assets, which drives economic development. In order to mobilise private sector investments that may fill funding gaps for parking projects, certain conditions need to be put in place to attract and capture such investments. This occurs when (1) markets for parking projects are created, (2) there is an opportunity for good return on investment and (3) limited risk. Partnering up with the public sector may help significantly with regard to such risk limitation.

At the same time these public-private partnerships (PPP) may reduce the public sector's cost burden while also providing much-needed infrastructure. In order to further help such an investment, the Malta Development Bank (MDB) offers loans for public infrastructure at favourable rates. In turn, the Planning Authority's Urban Improvement Fund may be tapped into for the eventual project execution. Benefits of partnerships include accelerated project delivery time frames and the creation of economic development benefits and social impacts.

Well-planned shared parking schemes may provide a revenue-generating opportunity for investors while helping to alleviate the shortage of parking spaces, which in turn helps save travel time, and reduce fuel consumption, emission and road congestion. Such schemes may therefore be very effective and should be supported by Local Councils and potentially incentivised by the central government, even through the establishment of PPPs whereby private investment in urban parking facilities could be encouraged through subsidised land costs and /or rebate on registration tax, VAT refunds, planning fees and public funding schemes. The ability to significantly reduce operating costs through automation and technology could further attract investment in such parking facilities, particularly in relation to car lifts that reduce the circulation space needed within the parking area, often a significant component of the floorplate of a garage.

In terms of the design of such larger parking projects, it would be recommended that they would be located at appropriate locations (that are already committed for development) and that they would be designed to blend effectively within their surroundings. They could also integrate other facilities such as roof gardens, and/or the installation of PV panels.

Step 7

Fiscal and financial incentives

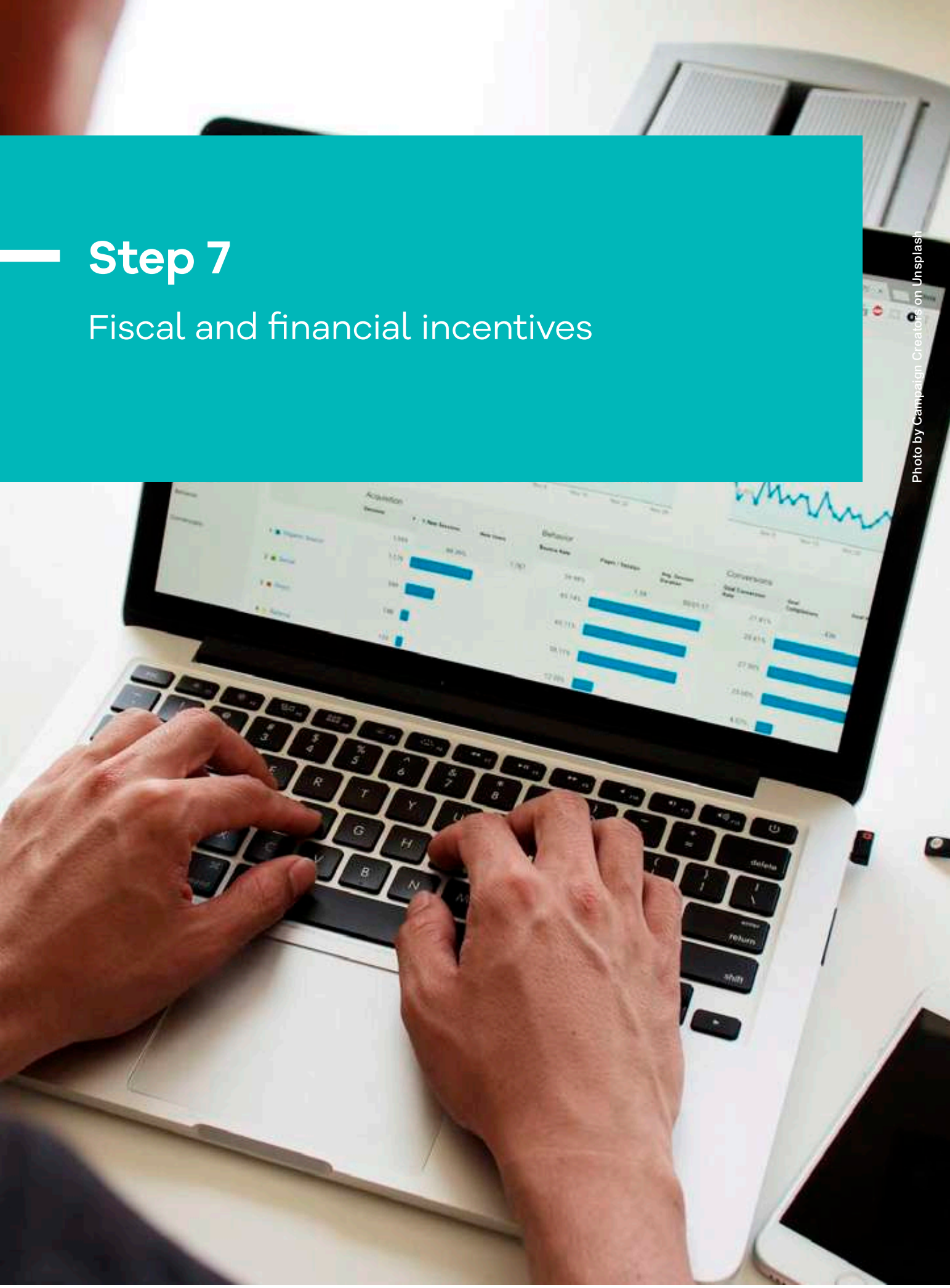

Photo by Campaign Creators on Unsplash

Encourage the development of parking projects through financial incentives, notably fiscal-related.

It is evident that parking projects are currently needed in order to address the on-street parking problem. Fiscal and financial incentives can encourage the implementation of such projects and incentivise land owners and/or developers to choose parking projects over more residential developments. Incentivising parking development projects serves to add amenities that improve the quality of life and provide long-term benefits to the community, such as opening up new commercial opportunities. Such incentives should favour and prioritise parking projects that have a clear environmentally friendly approach, such as projects that include a strong element of green infrastructure.

Tax incentives could be key to stimulate private investment in such parking infrastructure. Developers could benefit from tax breaks or refunds in terms of VAT and property tax, investment tax credits, and loans having better interest rates and repayment terms, such as those available through the MDB.

In order for fiscal incentives to work properly, there must be a strong and clear planning regulatory framework and thorough studies must be carried out in order to properly assess how these parking projects would improve our urban environment, when seen at a strategic level.

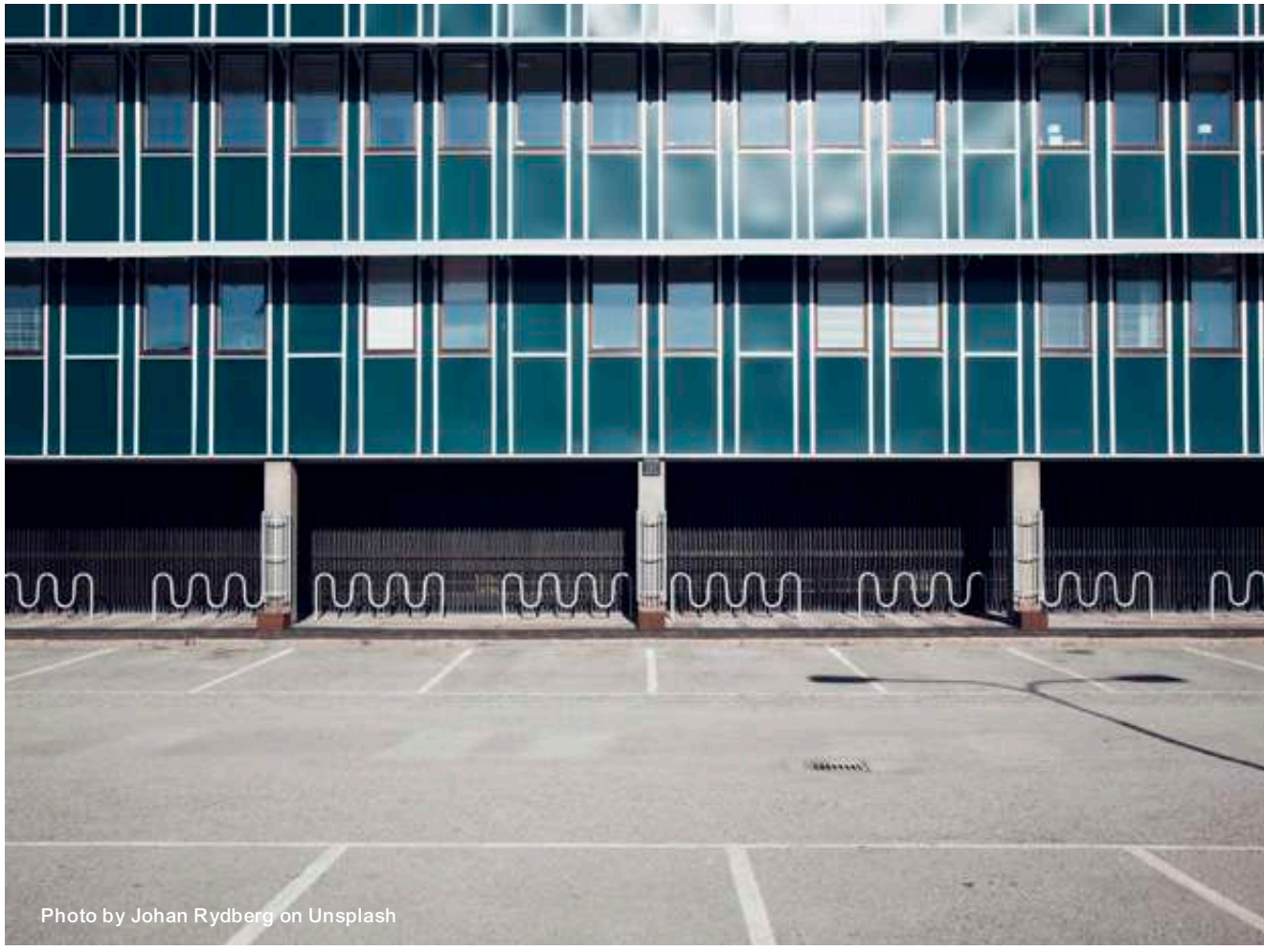

Photo by Johan Rydberg on Unsplash

Step 8

Land banks and utilisation of existing surface car parks ancillary to commited land uses

Photo by Brydon McCluskey on Unsplash

Incentivise the use of publicly- and privately-owned undeveloped land as temporary parking areas in the interim period (until more permanent infrastructure is introduced) and the reutilisation of committed surface car parks ancillary to other land uses that lie idle during certain days and/or times.

Shared parking is a land-use strategy to optimise parking spaces, particularly within congested areas. Private parking owners of land uses such as supermarkets, industrial areas, malls, hotels, offices, schools, universities and hospitals, as well as individuals, may rent out their parking spaces during the hours of non-operation, therefore extending accessibility to other drivers. These parking spaces may be better priced in comparison to regular parking tariffs and could for example be used on a membership basis.

Parking demands have peak and off-peak periods depending on related land use. Such distinct, but complementary, patterns – such as office parking and parking within the school, college or university grounds, which is generally empty in the evenings and on weekends and residential parking, which is generally fuller within such times – offer an opportunity for localities to better satisfy their residents and commuters without increasing parking supply. The concept of different strategically located shared parking options helps to avoid vehicles having to navigate around local streets in search of an empty parking space. Naturally this requires proper management in order to ensure that the land use to which such a parking area is ancillary is not disrupted or compromised in any manner.

In tandem, land that might have development potential but that, for various reasons, might lie idle for a certain amount of time (possibly even years, as is the case with numerous pockets of land) may be defined as a 'land bank', doubling up as a potential surface car park within a specific locality that may be managed privately. Temporary permits may be issued in this respect, which would be renewed annually and which would automatically cease once a development planning application is approved for another permitted development.

Through technology, private parking sharing could be enabled through an online platform or phone application, which directly connects a private parking slot owner who shares his parking property when not in use with public users who are looking for a place to park for a certain amount of time.

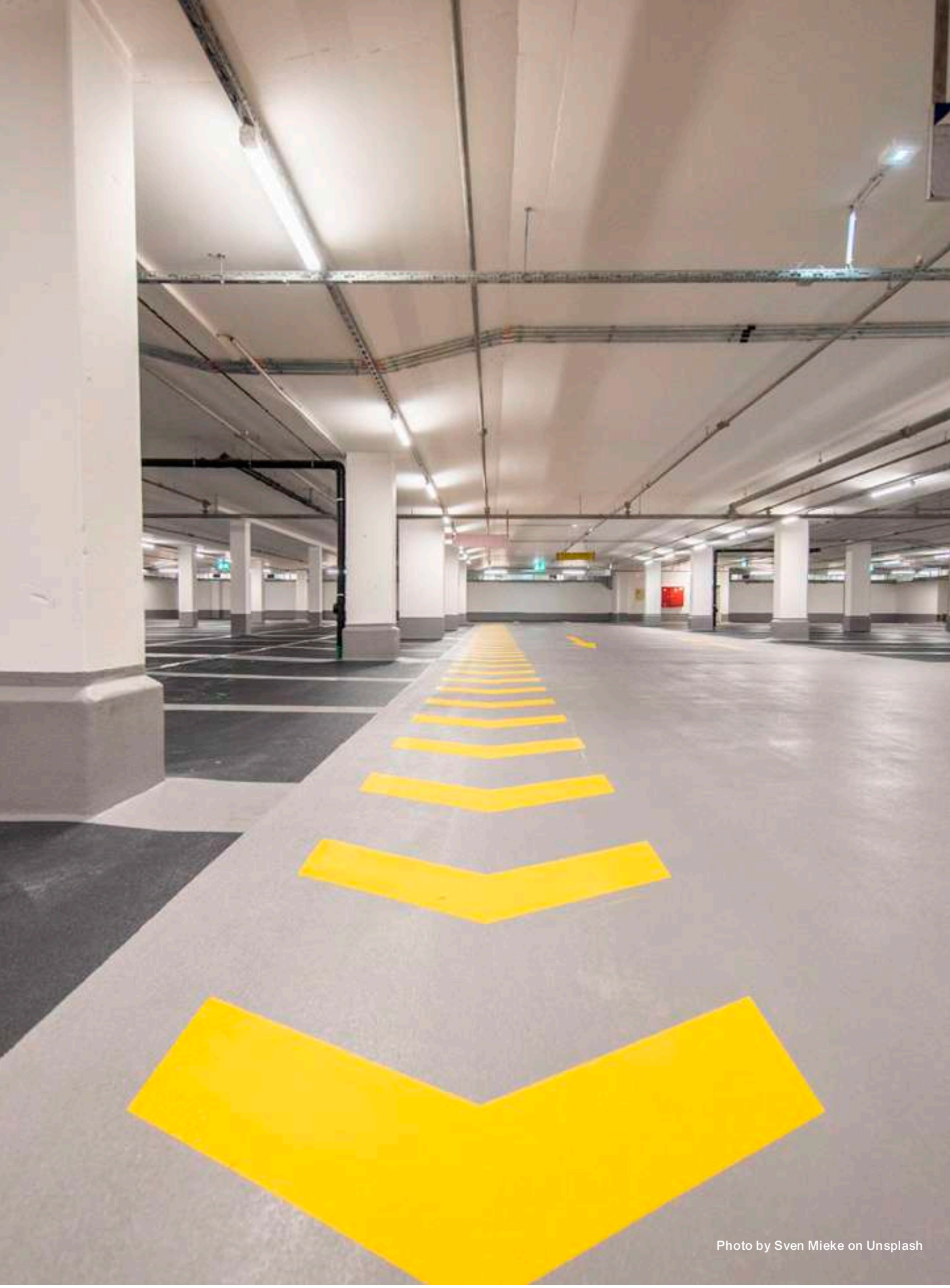

Photo by Sven Mieke on Unsplash

3. Parking Policies for On-street Parking

The outdated strategy of simply providing more supply for general demand has become unsustainable. Local authorities should establish comprehensive parking policies that may include the management of the total parking demand, the selection of the location of parking facilities, a potential tariff policy, including the access for certain categories of users.

Essentially parking policy comprises a set of measures that are used to support and enforce parking management, so as to control user demand for free parking which impose limitations on urban space and developments. Parking policies do not usually require large investments, such as new infrastructure, and therefore may be implemented in a relatively short time.

The table below demonstrates some different parking management strategies that could be taken into consideration, each having potential effects:

Strategy	Description	Effect
Shared Parking	Parking serves multiple users based on various peak parking demands	Better use of existing parking
Increase capacity of existing facilities	Increase parking capacity by using otherwise wasted space, smaller stalls, valet parkers, angle parking, and revise time restrictions	More spaces in existing facilities
Remote Parking	Provide additional off-site or urban edge parking facilities (ensuring no further land take-up, soil sealing, biodiversity loss or further disturbance and degradation to the natural environment)	Increase spaces available
Overflow Parking Plans	Establish plans to manage occasional peak parking demands during special events, etc.	Increase spaces available

Strategy	Description	Effect
Address Spillover Problems	Use management, enforcement, & pricing to address spillover problems	Reduce parking impacts
Walking & Bicycling Improvements	Improve walking & bicycling conditions to expand range of destinations served by parking	Reduce parking demand; park once
Bicycle & Other Micro Mobility Facilities	Provide bicycle storage & employee changing facilities	Reduce parking demand
Intermobility Management	Encourage more efficient travel patterns, including changes in mode, timing, destination, & vehicle trip frequency	Reduce parking demand, spread peak demand
Parking Regulations	Regulate in favour of uses such as customers requiring quick errands, special needs, service vehicles and deliveries	Increase turnover of most convenient spaces
Parking Pricing	Charge motorists directly & efficiently for using parking facilities to recover parking facility costs and/or raise revenue to fund improvements. Such funds could additionally support environmentally friendly initiatives within the locality	Reduce demand, increase turnover of most convenient spaces. Ideally, funding to be used for environmentally friendly projects
Improve Pricing Methods	Use better charging techniques to make pricing more convenient & cost effective (pre-payment incentives, change machines, credit card, time limit extensions)	Increase resources for access and parking improvement

Strategy	Description	Effect
Financial Incentives	Provide financial incentives to shift mode such as parking cash out (financial incentives for carpooling, transit use, etc.)	Reduce employee parking demand
Unbundle Parking	Rent or sell parking facilities separately from building space (residential units may charge residents for individual parking spaces to "free up" other spaces increasing parking capacity)	Reduce resident parking demand
Parking Taxes	Implement/increase parking tax	Increase revenue for access and parking especially in high-demand areas
Improve Enforcement	Ensure that regulation is efficient, consistent & fair. Use license plate recognition technology, parking space sensors	Increase turnover in most convenient spaces
Reform Time Limits	Replace time limits with escalating time-based rates, e.g., increased rate beyond 2 hours	Increase turnover of parking spaces
Commercial Loading	Replace unpaid commercial loading parking with meters with escalating rates	Increase turnover of loading spaces, making them more productive, reducing double parking
Employee Parking Enforcement	Remote parking programmes during peak periods	Increase supply available to customers

Strategy	Description	Effect
Improve Information & Marketing, Smart Parking Technology	Provide convenient & accurate information on parking availability & price, using maps, signs, brochures & the Internet. Real-time guidance to available spaces, parking reservation coordinated with special events	Increase utilisation and improve customer satisfaction and convenience, while reducing cruising for parking
Payment Technologies	Multi-space meters, in-car meters, pay by phone, parking reservation system	Increase customer convenience

Adapted: https://www.vtpi.org/park_man.pdf

The use of Smart Parking Technology as part of wider smart city strategies, may go a long way in achieving multiple parking objectives for individual consumers and car park operators alike. Built into smart initiatives, these technologies may be integrated within last-mile mobility solutions (notably car-sharing programmes, park and ride projects and EV-charging opportunities, among others) and double up as important data collection points as discussed in Step 1 of this document. Parking areas that are equipped with smart parking meters could be linked to individuals' phones via an appropriate app that may direct residents to the next available car parking location and avoid unnecessary navigation within local streets in search for available parking opportunities.

The above strategies may be discussed at a locality-level and may be chosen for the short-, medium- and long-term resolution of specific parking realities. They are not mutually exclusive and multiple strategies may indeed be implemented in parallel according to each locality's needs. Once each locality has been able to address its specific parking context and issues related to it, a priority list could be set up including strategies on how to tackle the parking issue. Neighbouring localities could benefit from cooperating with each other if their priorities are similar. In this manner, the outcome could be even more successful and beneficial for the residents.

It is recommended that Regional Councils be kept in the loop for better cooperation. Furthermore, commercial areas and specific roads which cater for large commercial hubs should be prioritised when it comes to implementation of new measures.

4. Concluding Thoughts

As discussed, the parking problem is complex and multifaceted and stems from different reasons – road regulations and road design policies that are centred on the car and that facilitate car usage as opposed to higher quality pedestrian and cyclist-oriented streetscape environment; the planning approval and construction of further private and public housing without an acceptable delivery of parking requirements; not enough awareness about the environmental consequences of traffic congestion and the health benefits of walking and cycling; and last, but not least, decisions taken by residents themselves to purchase and use private vehicles rather than opting for alternative, more sustainable modes of transport such as walking or cycling.

The current parking crisis requires immediate change in both policy and awareness. Cars are the preferred choice of mobility both because of the ease with which one may procure a car and the unappealing current alternatives. The first objective of new mobility policies should therefore be to make cars the less appealing choice for transport, and when possible to reduce the need to travel altogether, as amply discussed in other documents within the LCA's Sustainable Mobility series. This document has identified some possible, critical steps that would be required to manage the reality of parking. At the same time, as stated earlier and in other documents issued by the Local Councils' Association, we must remember that there is a collective responsibility towards reversing the phenomenon of car dependence and moving towards better and more sustainable mobility options.

Proposed strategies should rely on combining incentives and disincentives to cause changes in commuters' travel behaviour (the 'push and pull' method discussed in this document). Car drivers may lean towards more sustainable transport with measures such as paid parking and reducing parking supply. Simultaneously, providing efficient and less costly alternatives would pull users towards public transport, walking, cycling and other sustainable modes, potentially funded by income generated from parking space management. The effect of 'pull' policies cannot be fully achieved without the complementary 'push' policies, and the two methods are inseparable.

Residents and other stakeholders should be involved in the decision making process, which would lead to better policies catering for the entire community's needs. A bottom-up approach ensures that residents' voices are heard in policy making and planning of the future development of the localities. This should be followed with top-down enforcement and monitoring to make sure all new policies are effective and achieve long-term goals. In tandem, all measures should be accompanied with education plans in order to inform younger generations on alternative modes of transport.

Defining a Potential Parking Strategy

As shown throughout this document, there is no single parking solution. It is more realistic to consider that there would be a combination of solutions and strategies that address both design- and management-related objectives. In all cases, solutions would have to be context-dependent, however some general possibilities may be identified.

Any parking strategy is to first identify the different types of users within a locality, comprising local residents, who should be allowed within the local streets and visitors, who would have a restricted access to such streets. In general, visitors should not be allowed to navigate around local streets, to the detriment of street quality and resident safety, for the sole purpose of seeking on-street parking. One may identify three sub-categories of visitors — workers, tourists and consumers (various retail, catering and/or leisure amenities). Even here one should distinguish between solutions targeted at different individuals who are visiting the locality for different purposes.

The Town Centre (which could be partly or fully designated as an Urban Conservation Area) should restricted the entry of extraneous vehicles and prioritise streets for local residents, the passage of emergency vehicles and that of service vehicles (at designated times only), with the possible introduction of Controlled Vehicular Access in such cores. At the interface between the core extents and the development zone/ scheme, in turn, one could envisage parking management in the form of short-stay (timed) parking areas (if on-street) and peripheral off-street parking areas. Different stay periods may be identified depending on the degree of commercial activity of the locality in question, with the possibility of payment for parking beyond certain times of stay. Within the general development zone, beyond the extents of the inner town or village core, one may incentivise the development of small-scale communal parking areas that are centrally and conveniently located, within walking distance of, key amenities and community facilities, primarily for the local residents.

Existing amenity space of various sizes, such as existing parking areas within school grounds and supermarkets, and located within various locations throughout the development zone, may also be used for specific purposes, such as during envisaged closures of main squares, or to provide ancillary parking amenity space when the spaces are not in use (that is, after the hours of operation). This would require strict management and enforcement with the introduction of effective fines, due to the required use of these spaces at specific times (largely during the morning hours).

A managed parking scheme may also be accompanied by a final typology located towards the edge of the development zone. This may be convenient as it may allow larger volumes to be contained, and ensure that non-resident vehicles would be limited, or even stopped, from entering the local street network. These areas should also double up as intermodal hubs. They would therefore be accompanied by the likes of Park and Ride facilities, bus interchanges, the availability of bicycles and e-scooters that may be rented, and so forth, in order to ensure that entry into the centre of the

town/village would not only be restricted to fewer vehicles but would furthermore occur through more environmentally sensitive means.

The above is brought together in the final illustration that schematically shows how such various solutions could together contribute to a strategy that balances the needs of residents and visitors alike, ensuring the amenity of the inner core and the local street network and balancing parking needs in a more equitable manner.

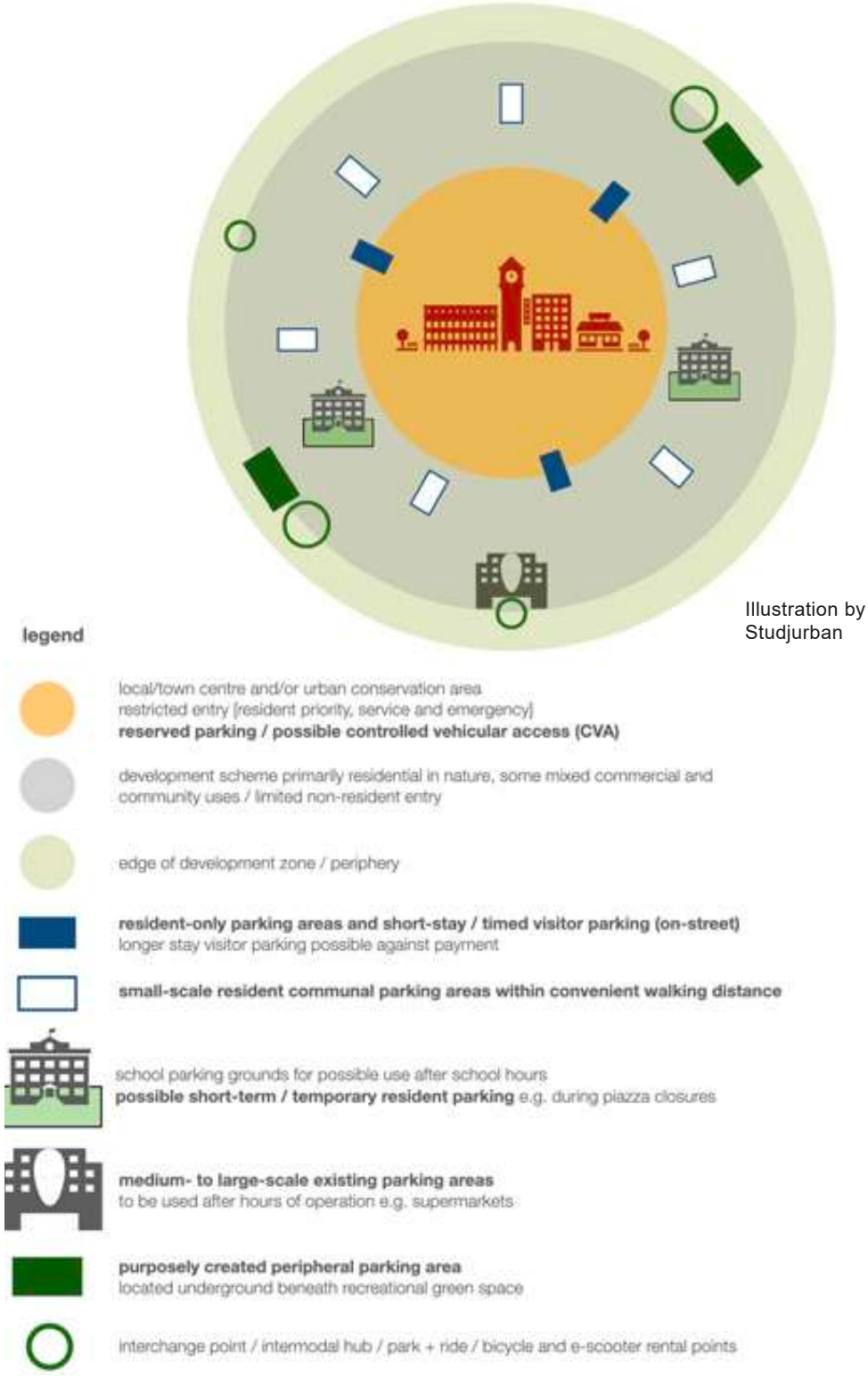

Illustration by Studjurban

Resource Section

Publications

In order to propose successful solutions, there needs to be a strong collaboration amongst all localities, especially for sharing parking information and data and driving behaviour. Data with regard to commuting residents should be studied in depth in order to determine parking patterns and capacities of future infrastructure projects. There should also be good communication between different Regional Councils, to identify successful strategies that other localities could implement.

Since the problem is multifaceted – including urban, political and social issues – it follows that potential solutions would have to address all these diverse issues simultaneously. Such a multidisciplinary approach would require that socio-economic studies are carried out to comprehend the full feasibility of such solutions. Providing isolated solutions would not yield successful outcomes. For example, introducing a paid parking scheme without enhancing pavements and infrastructure for other modes of transport would likely cause more resistance as residents would feel that no viable alternatives to driving are being provided.

Policies should be introduced in phases instead of being implemented all within a short time frame. This would provide the residents an opportunity to get accustomed to them, which may result in a better chance of success. This process of phasing introduces small measures along a long-term period with specific target goals. Such incremental short- and medium-term targets, framed within longer-term objectives, characterise the Slow Streets Malta proposals that have been prepared for a number of Local Councils and that are in the process of implementation.

Improving parking standards for sustainable mobility

(Civitas, European Commission)

— examines how parking requirement in new urban neighbourhoods should be designed to reduce building costs while also promoting sustainable mobility (part of the European Horizon 2020 project Park4SUMP, exploring parking management across 15 European countries)

https://park4sump.eu/news-events/news/improving-parking-standards-sustainable-mobility

Good reasons and principles for parking management

(Civitas, European Commission)

https://park4sump.eu/news-events/news/good-reasons-and-principles-parking-management

Practitioner briefing: Parking and sustainable urban mobility planning

(Civitas, European Commission)

— a guide on how to make parking policies more strategic, effective and sustainable

— a guide on how to make parking policies more strategic, effective and sustainable

https://www.eltis.org/sites/default/files/parking_and_sustainable_urban_mobility_planning.pdf

Urban Mobility in the EU – Public contributions to the consultations

(European Commission)

— main stakeholders include cities and their networks, stakeholders active in urban mobility and road safety fields, national and local administrations, citizens living in cities as well as the Committee of the Regions

https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/1995-Urban-Mobility-in-the-EU/public-consultation_en

Planning for more resilient and robust urban mobility

(European Commission)

https://civitas.eu/sites/default/files/sump_topic-guide_planning_for_more_resilient_and_robust_urban_mobility.pdf

Position Paper The European Parking Association

(EPA)

https://www.europeanparking.eu/media/1565/epa_position-paper.pdf

The European Mobility Atlas 2021

(Heinrich Böll Stiftung)

The European Mobility Atlas: Facts and figures about transport and mobility in Europe covers a multitude of transport-related aspects relying on evidence-based research and highlighting concrete, tangible mobility solutions from across the EU. For further information or to download the European Mobility Atlas for free, please visit the Heinrich Böll Stiftung website

https://eu.boell.org/en/European-Mobility-Atlas

Current and Past Projects

VARCITIES

(September 2020 — February 2025)

Malta is one of eight VARCITY pilot locations that will implement integrated and sustainable initiatives to increase the health and well-being of citizens.

https://www.varcities.eu/about-varcities/

SPROUT

SPROUT aims to provide a city-led innovative policy response to harness the impacts of new mobility solutions.

https://sprout-civitas.eu/

Innovacity 3.0

A novel design thinking workshop focused on urban mobility, focusing on the most pressing mobility challenges of five innovative cities — Barcelona, Munich, Helsinki, Paris and Debrecen.

https://www.eiturbanmobility.eu/projects/innovacity-2-0/

REVEAL (Regulating Vehicle Access for Improved Liveability)

A project designed to add Urban Vehicle Access Regulations (UVAR) to the standard urban mobility transition approaches of cities across Europe.

https://civitas-reveal.eu/

Msida Parking Detection Live Stream (MCAST)

View a recorded version of the live stream from this YouTube recorded link:

https://www.youtube.com/watch?v=zrtWvYz7PfI

Park4Sump

Park4SUMP aims to help cities integrate innovative parking management solutions into Sustainable Urban Mobility Plans (SUMPs) for a better mobility and quality of life.

https://park4sump.eu/index.php/

ITS (Intelligent, connected and cooperative transport systems)

ITS allows local and regional authorities to manage more efficiently and safely the transport network and to influence travel behaviour through the provision of static and real-time information services and integrated payment schemes.

https://www.polisnetwork.eu/topic/intelligent-connected-and-cooperative-transport-systems-3/

Tools

PUSH & PULL Case studies and Good Practise implementations

(Civitas, European Commission)

https://park4sump.eu/index.php/resources-tools/pushpull-tools

Good Practices (parking)

(Covenant of Mayors for Climate & Energy Europe)

https://eu-mayors.ec.europa.eu/en/home

The Green Parking Index in Stockholm

https://park4sump.eu/sites/default/files/GoodPracticesExamplesCaseStudies/Standards/CIVITAS_PARK4SUMP_Good_Practice_The_Green_Parking_Index_in_Stockholm_v2.pdf

The PARKPAD tool

— a locally applied audit process that helps cities to review parking policies, achieve consensus on improvements and finally develop an action plan that fits the cities' SUMPs

https://park4sump.eu/index.php/resources-tools/parkpad-tool

Urban Roadmaps Transports Tool

— an on-line tool to help develop the first scenarios of a SUMP using a simplified approach

Intertraffic webinars

— a knowledge-sharing online platform and free webinars organised on a regular basis

https://www.intertraffic.com/webinars/

Case Studies

Sweden's one minute city' experiment is redesigning parking space: Learn more

https://park4sump.eu/news-events/news/swedens-one-minute-city-experiment-redesigning-parking-spaces

Vitoria-Gasteiz receives the ParkPAD certificate:

https://park4sump.eu/news-events/news/vitoria-gasteiz-receives-parkpad-certificate

The Parking Ambassadors of La Rochelle

The municipality tries to offer people the experience of life without the car. By showing parking solutions and the different purposes public space can have, the city aims to implement a sustainable behavioural change.

https://park4sump.eu/news-events/news/parking-ambassadors-la-rochelle

Parking space management (European Commission Civitas initiative)

Krakow - View video:

https://park4sump.eu/resources-tools/videos/parking-management-krakow

Sofia - View video:

https://park4sump.eu/resources-tools/videos/parking-management-sofia

Sint Niklass - View video:

https://park4sump.eu/resources-tools/videos/parking-management-sint-niklaas

From on-street to off-street parking in Rotterdam

Rotterdam's efforts to encourage people to use off-street parking is mainly achieved through pricing policies. Besides a simple shift the city also reduces the number of on-street parking places in order to use public space better for people than only for parked cars. View video:

https://park4sump.eu/resources-tools/videos/on-street-to-off-street-parking

Funding Opportunities

EIT Urban Mobility KIC

EIT Urban Mobility is an initiative of the European Institute of Innovation and Technology (EIT), aimed at encouraging positive changes in the way people move around cities in order to make them more liveable places, co-funding up to €400 million (2020-2026).

https://www.eiturbanmobility.eu/

EIT Urban Mobility Malta Hub

Established on 22 September 2020, the EIT Urban Mobility Malta hub aims to inspire positive change to ensure accessible and sustainable mobility for all, facilitating networking between all the stakeholders and developing opportunities for local players representing industry, academia, research, innovation and cities. For more information on the Malta Hub and to get involved please follow: https://www.facebook.com/groups/161788548949933

Photo by Local Councils' Association Malta

GUIDELINES ON SUSTAINABLE MOBILITY

SHARED TRANSPORT

ResidentFirst

Contents

1. Increasing Liveability Via the Use of Shared Transport

1.1 Introduction

When shared transport flourishes, it has a vital role in increasing liveability within cities. Together with other qualities, such as walkability and cycleability, it may contribute to the achievement of sustainable mobility, with its countless benefits such as improved public health. It furthermore implies equal access to transport, while increasing access to urban centres.

New transportation options, accompanied by changes in travel behaviour, are changing today's mobility dynamics in some localities. More people are adopting the mentality of sharing different modes of transport so as to reduce the negative impacts on the environment (most notably due to traffic congestion), while simultaneously reducing personal costs associated with private mobility. If provided with proper alternatives, more people would be encouraged to leave their cars at home, generating less traffic on the roads that may give back valuable urban space to pedestrians and cyclists.

Sustainable and inclusive localities depend on transport that facilitates safe, efficient, and pollution-free flow of people and goods, while also providing affordable and accessible mobility for all. New mobility services should complement, not replace, high-quality, frequent public transport and safe, walkable streets.

We need to ensure beneficial conditions for the shared transport system in Malta to reach its full potential. To date, there are a number of available shared transport options for residents and tourists alike. We have also seen some local initiatives to improve shared transport options, some of which are addressed later on in this document.

There is significant potential for developing this field of transport further and, for this to happen, Local Councils have a central role to play in enhancing their respective localities.

1.2 Shared Transport and its Advantages

In terms of transport, 'sharing' could mean:

- the same asset being used by multiple users simultaneously along a route; or
- the independent use of shared assets, wherein users obtain temporary personal access.

Simply stated, shared transport is the shared use of vehicles or other travel modes among multiple individuals, allowing users short-term access to transport according to personal demand. The main objective (and outcome) of shared transport is the reduction in private car ownership and usage. Shared transport offers:

- more mobile choices (flexibility);
- last and first mile solutions;
- reduction in traffic;
- reduction in transport costs;
- improved efficiency;
- access to underserved areas;
- reduction in carbon emissions through shared use and increased efficiency;
- provision of mobility during off-peak hours; and
- accessible mobility options for those with limited physical ability and limited income.

Cars are significant space-consumers in relation to how many people are transported per amount of physical street space. When shared transport replaces usage of private cars, it has the ability of freeing up valuable space in our streets.

The same argument applies for walking and cycling, which is addressed in the LCA's previously published document on Walkability and Accessibility. The following diagram illustrates the spatial capacity of different modes of travel.

Image by Cycling Promotion Fund

In turn, in the image on the previous page also shows the degree of freed-up space among the space occupied by 50 people on a typical road when walking, cycling, using public transport and using private vehicles.

A key advantage of shared mobility (other than public transport), when public transport is unavailable, is its ability to ensure that people have other, more efficient and sustainable options before they resort to their private vehicle. Different modes of sharing transport (refer to illustration on the right) may be arranged, notably:

- Informal: sharing takes place casually without a formal arrangement, at a household or at a community level.

- Organisational: sharing is typically arranged for a specific group of people by an organisation. An example is the workplace or institution ride-sharing scheme, for instance at the University of Malta.

- Non-organisational, formalised: does not necessarily take place within a defined group, but is organised through a formal scheme (via an application, online platform, etc.).

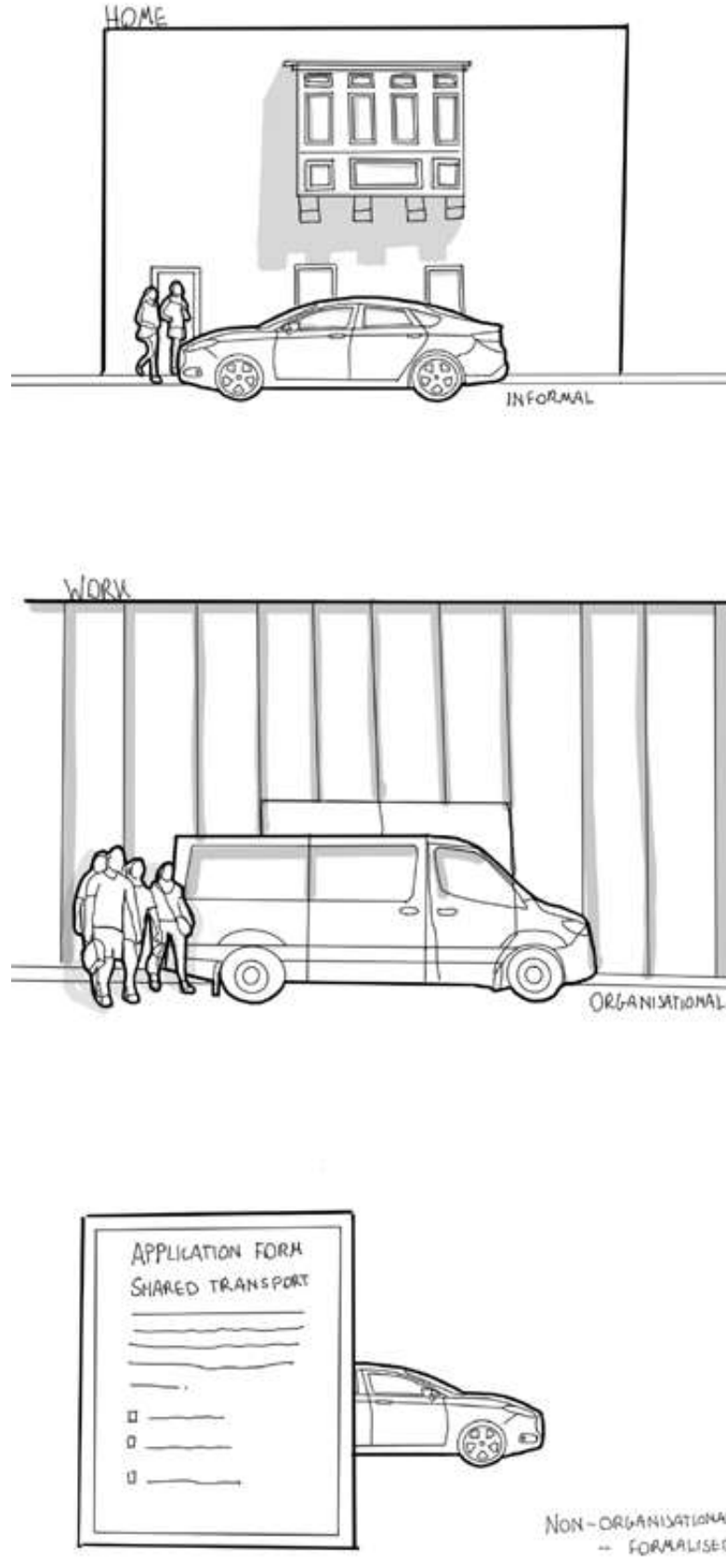

Illustration by Studjurban

1.3 Types of Shared Transport

Shared mobility includes numerous forms of transport, some of which are discussed in this section.

Mass Transit

Mass transit includes buses, metros, ferries and trains that are operated by public agencies or the private sector for the public agencies. These modes efficiently and affordably move people along fixed route lines and timetables.

New modes of shared mobility could both complement and substitute public transport. They may serve as a substitute when public transport is inefficient or unavailable. Wherever shared mobility complements an existing service, it may be an effective tool to bridge the last and the first mile in a travel journey (the LCA's upcoming publication entitled Last Mile Transportation provides further insights in this regard).

Bike and Scooter Sharing

Bike sharing is a low-cost option for mobility, especially for first and last mile connectivity, possibly to get to and from public transit and other modes that are used beyond 'the mile'. Users may rent bikes, scooters, or e-kick scooters from fleets operated by private companies. Bike sharing comes in a variety of forms:

- dock-based systems, where users can pay to obtain and return bikes at docking stations throughout the service area;
- dockless or GPS-based systems, where users simply leave the bikes at the terminal point of their trip, and the bike locks with its own system; and
- peer-to-peer bike sharing, where users rent, or borrow, bikes from owners.

E-kick scooter sharing is a newer alternative mode of transport within the shared mobility market. It is considered to be flexible transport since the vehicles can be picked up and left anywhere within a specified area, and technology-wise they are user friendly for people who have a smartphone. Even though scooter riding or e-kick scooter riding might not have the same immediate health benefits as cycling, it is nonetheless a sustainable and popular transport option. These new services are referred to as 'microtransit', as they provide transit on a smaller, more flexible scale. Examples of such established microtransit services include Whizascoot or Bolt (scooters).

Given the lack of scooter-parking infrastructure, users of this specific mode of transportation must always ensure that these vehicles are parked in a location which does not obstruct pavements or other forms of traffic within the specified area. Alternatively, Local Councils, in discussions with Transport Malta, should strive to provide organised designated spots wherein these scooters may be placed.

Car Sharing

There are different types of car sharing, each with their own unique features.

It is not only possible to use a car from a car sharing provider, but also to share privately owned cars via online platforms or decentralised community groups.

Car sharing is a type of short-term car hire and refers to a cost-per-minute rental service for transport. Once the user has registered, that user may utilise a number of vehicles which are publicly available. The same user may also park in designated parking spots which are reserved for shared vehicles only. Once the user has arrived and parked the shared vehicle, another person can make use of the same vehicle. This means that fewer vehicles are left parked and unused during the day and therefore less parking space is required to accommodate the same number of commuters.

Car sharing allows users the choice of pick-up and drop-off locations:

- Station based or round-trip car sharing requires customers to pick up and return vehicles at the same location or from dedicated spaces.
- One-way or point-to-point car sharing allows customers to pick up a vehicle at one location and drop it off at another, with no dedicated parking lots.
- Decentralised peer-to-peer car sharing allows existing car owners to make their vehicles available for others to rent for short periods of time.

Car-Pooling

Carpooling occurs when car owners share their vehicles with other people to travel to and from the same, or a similar, destination. The idea behind carpooling is to stop multiple commuters from having to make the same trip in their own separate, private cars, thus reducing the number of vehicles on the road. Online Applications are available to facilitate communication between interested carpoolers and to help organise their trips (applications such as Lyft and Uber pool). One does not need to own the vehicle in question to carpool – it may be possible to share rented, pay-per-use vehicles or even taxis (which may be pre-booked via a phone call or app).

Photo by Tom Morbey on Unsplash

1.4 Shared Transport for Delivery

Shared-use mobility also has significant potential for the commercial delivery sector. Shared trucks, electric vehicles and light electric-assist cargo bikes may deliver goods at a lower cost than trucks in many situations (this is further discussed in the LCA's upcoming document entitled Last Mile Transportation). Sustainable strategies in freight include:

- collaborative warehouses in which multiple manufacturers store their products;
- shared transport which could deliver to locality hubs and regional consolidation centres; and
- final distribution to stores, pick-up points and homes that could make use of consolidated deliveries.

Such strategies could naturally be included in a Sustainable Urban Logistic Plan (SULP) that is currently being prepared by Transport Malta on a national scale for each of the different SUMP (Sustainable Urban Mobility Plan) regions throughout Malta and Gozo.

Photo by Ivan Bandura on Unsplash

1.5 Shared Transport in Malta

Transport Alternatives	Description
Tallinja Public Transport	Public transport in Malta comprises a system of route buses. Generally, the bus routes operate in Malta and Gozo between 5:30 am and 11:00 pm. A night service runs on Friday and Saturday nights and on public holidays, but does not service all areas and does not run as frequently as the day service.
Tallinja Bikes	Malta Public Transport has installed bicycle stations in Valletta and the University of Malta, making it easier for people to commute between the Capital and University. The easy-to-use Tallinja Bikes offer a convenient and affordable solution for students and visitors alike. Other Tallinja Bike stations may be found in St.Elmo, near the Barrakka Lift, Valletta Waterfront, Marsamxett, Pembroke P&R, Bombi bus interchange station, St. Julian's, and Mgarr, Victoria and Marsalforn in Gozo. Users set up a one-time registration at the station itself and may then unlock a bike and dock it back when they reach their destination. The introduction of Tallinja Bikes is a practical measure to ease traffic congestion. Stations are located at the University of Malta, the Valletta Bus Terminus, the Barrakka Lift, Valletta Waterfront, Fort St Elmo, Marsamxett Ferry Terminal and the Floriana Park and Ride.
Ferry Service	Valletta Ferry Services operates regular ferries between Valletta's Marsamxett Harbour and Sliema, as well as from near Valletta Waterfront to the Three Cities. Another option to get from Valletta to the Three Cities is on a traditional wooden boat, operated by private companies. There are also regular boat services between each island, notably the Gozo ferry provided through the Gozo Channel, Gozo Highspeed, and the fast ferry services and Comino.
Hop on Hop off Tourist Bus	The private company offers set touristic routes where passengers may embark or disembark to visit certain touristic landmarks and destinations. It is more expensive than public transport due to additional commentary and information offered for the passengers. Such routes may be preferred by tourists and the service alleviates pressure on public transport lines which become extremely busy in summer.

Source: Studjurban

Transport Alternatives	Description
E-powered Taxis	There is limited public transport in Valletta due to the steep and narrow roads and general issues of accessibility. However there are eco-friendly electric-powered taxis, providing a well-priced service that runs from 07:00 am to 8:00 pm, seven days a week.

oto by Viktor Keri on Unsplash

1.6 Local Shared Transport Initiatives

Initiatives to improve sustainable transport should always be encouraged. In this section, some existing local initiatives are introduced.

Shared car rides for the University of Malta

The University of Malta and the Vodafone Malta Foundation have collaborated on an application for shared transport aimed for students. The Vodafone Malta Foundation part-funded the project, coordinated by the Institute for Climate Change and Sustainable Development. The aim of this project wasis to provide multiple travel options, thereby reducing the dependence on private car use.

Promotion Campaign by Transport Malta

Transport Malta has embarked on an information and awareness-raising campaign to promote transport sharing services as well as cycling safety, so as to encourage their use and make their added value known with the overall aim of encouraging a modal shift towards sustainable transport practices. The campaign targets both tourists and residents. Tourists are presented with sustainable alternatives to rented vehicles while residents are presented with viable, less costly transport options than the private car.

STEP 8 of this document addresses the need for such awareness and education campaigns further.

Controlled Vehicular Access in Valletta

The Controlled Vehicular Access (CVA) in Valletta was introduced to try and restrict the entry of vehicles into the capital city and improve walkability therein by introducing a system of automated paid parking. The CVA uses cameras for vehicle registration plate recognition in order to assess whether the vehicles entering and leaving the city belong to licensed Valletta residents or otherwise, and in this manner monitor time spent within a set area bound by the city walls. Predetermined fees, set by Transport Malta, are automatically issued according to the time period vehicles spend inside this CVA boundary. At the same time, designated street parking distinguishes between general (white bays), resident-only (green bays) and reserved parking for residents within certain hours (blue bays).

This system is a key part of enhancing accessibility and improving both pedestrian and driver experiences in Valletta and has proved successful, supplemented by the neighbouring Park and Ride facility provided in Floriana.

Photo by beatsnoops

Photo by Tadas Petrokas on Unsplash

2. Steps Towards Improved Shared Transport

As previously discussed, there are several existing efforts of shared transport in Malta. Local Councils may be directly involved in several areas of mobility management, including, among others:

- suggesting improvements in bus routes, schedules/timetables and type of public transport fleet to be deployed, based on resident feedback and travel patterns;
- liaising with offices and schools present within their localities to adopt transport plans;
- creating online information services wherein different modes of mobility may be highlighted;
- launching of awareness-raising campaigns;
- organising training workshops for local residents;
- developing urban mobility plans in consultation with TM and other local stakeholders;
- securing access to locality centres, favouring more sustainable means of mobility; and
- promoting the creation of walking buses and cycling train schemes.

It is crucial for any Local Council to first ask some important questions, and collect relevant data, namely:

How many people in my locality use public transport?

What other methods of transportation do my residents prefer, other than the private vehicle?

Which public transport routes are running efficiently and which are inefficient? If the latter, why?
Are existing shared transport options well advertised and easily accessible to all residents?

How may the Local Council further market new mobility initiatives to reach the target users?

An eight STEP action plan follows, suggesting tools for developing a sustainable and effective shared transport system.

Step 1

Collect and Share Information

Photo by Alvaro Reyes on Unsplash

Photo by Firmbee on Unsplash

Local stakeholders need information to be able to plan for future conditions so that urban settlements may grow in desirable and sustainable ways. Therefore, the current lack of data needs to be addressed.

Information obtained from transport research or from private or public data systems should be published and shared so that multiple stakeholders may utilise them to further improve the existing transportation system. As new transportation technologies emerge, they create data streams with vital information for management, proactive planning and policymaking.

Collecting data is an essential basis for any individuals actioning towards sustainable mobility, including improvement of shared transport. For example, when private companies invest in shared transport, it is necessary to have available data that states the amount and accessibility of parking spaces within the specific area. That information is required to make informed decisions regarding how many parking spaces can be taken up for the shared vehicles provided, and consequently for the public-private partnership to have a successful outcome.

Information should also be collected on how the private suppliers of shared transport maintain their vehicles, to avoid having broken down or unsafe vehicles taking up valuable space on local streets. This information needs to be kept up to date and assembled by the authorities for them to ensure the availability of useful and sustainable mobility options.

Furthermore, Local Councils should actively take note of successful shared transport initiatives that have been implemented around the world. These examples could help guide the Local Councils and provide them with ideas when developing context-based solutions for each locality. Although it is imperative that solutions are context-based, there is no need to reinvent the wheel – good practice may be modified and updated according to specific circumstances. There are numerous examples to learn from by studying them closer. Some case studies are also included within this document and could be used as important references. Similar to collecting data, analysing case studies is also a very good basis for taking informed future decisions.

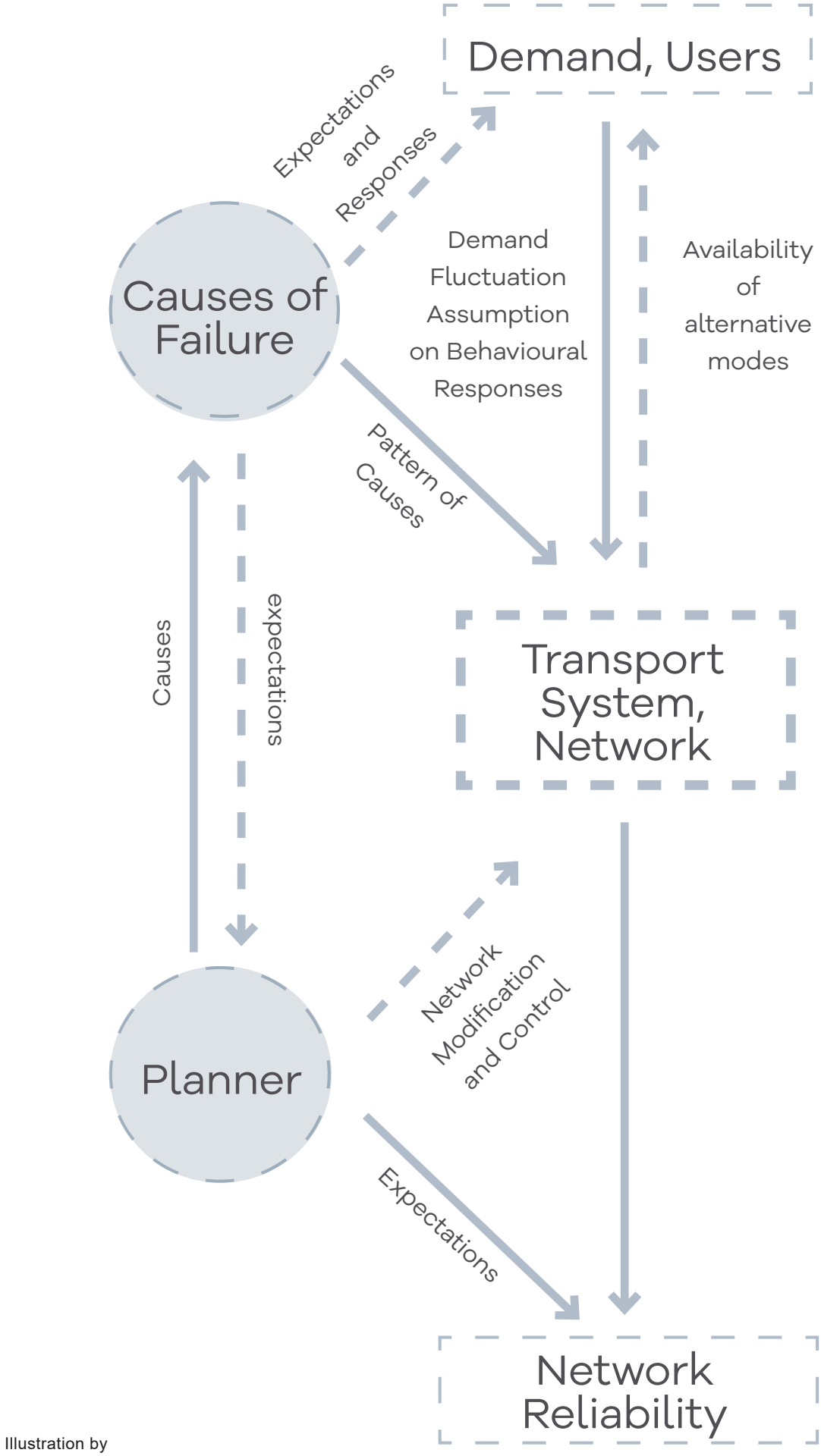

Illustration by Studjurban

Photo by freepik on Freepik

Step 2

Improve Public Transit

Photo by Benjamin Nijs on Unsplash

People will use public transport provided that it is a good alternative to the convenience of utilising their private cars.

After carrying out observations on the ground and consulting their residents, Local Councils should assess the efficiency of the public transport route in their respective locality and propose recommendations for its improvement. Current public transportation routes must be assessed in terms of:

- minimising overlap and ensuring as comprehensive coverage across the locality as possible, in line with demand;
- looking into the possibility of dedicated bus corridors/lanes when possible;
- having well positioned and well designed bus stops within an acceptable walking distance and facilitate access to and from such stops;
- ensuring access for all;
- ensuring real-time information through the use of up-to-date technology;
- designing easy-to-read bus maps;
- in seaside localities, exploring and adding new routes for ferries to further alleviate traffic from local roads; and
- providing frequent, reliable services – in this respect, bus routes on main locality arteries and roads used for longer distance travel will require a high frequency service. On local routes, a less frequent service may be sufficient, depending on demand and punctuality. Alternatively, a rethought public transportation fleet using smaller vehicles at a higher frequency might provide a better solution for some localities, particularly towns and villages characterised by narrower streets and that might be currently under-served in terms of public transportation due to accessibility issues.

Some of the above aspects were already introduced in the LCA's publication Walkability and Accessibility as ways to improve public transport in Malta. Mobility decisions should be planned with input from all affected stakeholder groups and the public at large, to ensure inclusive problem-solving.

Additionally, public transport, along with other shared transportation systems, should prioritise the achievement of environmental targets, with the possibility to shift to EVs. The gradual elimination of conventional (fuel-based) vehicles from urban areas will contribute significantly to the reduction of oil dependence, greenhouse gas emissions, local air pollution and noise pollution. The benefits of electric vehicles are explored in more detail in a previously published LCA document entitled EV Infrastructure and shared transportation systems could help accelerate the transition to electric vehicles.

Step 3

Promote and Incentivise Car Sharing

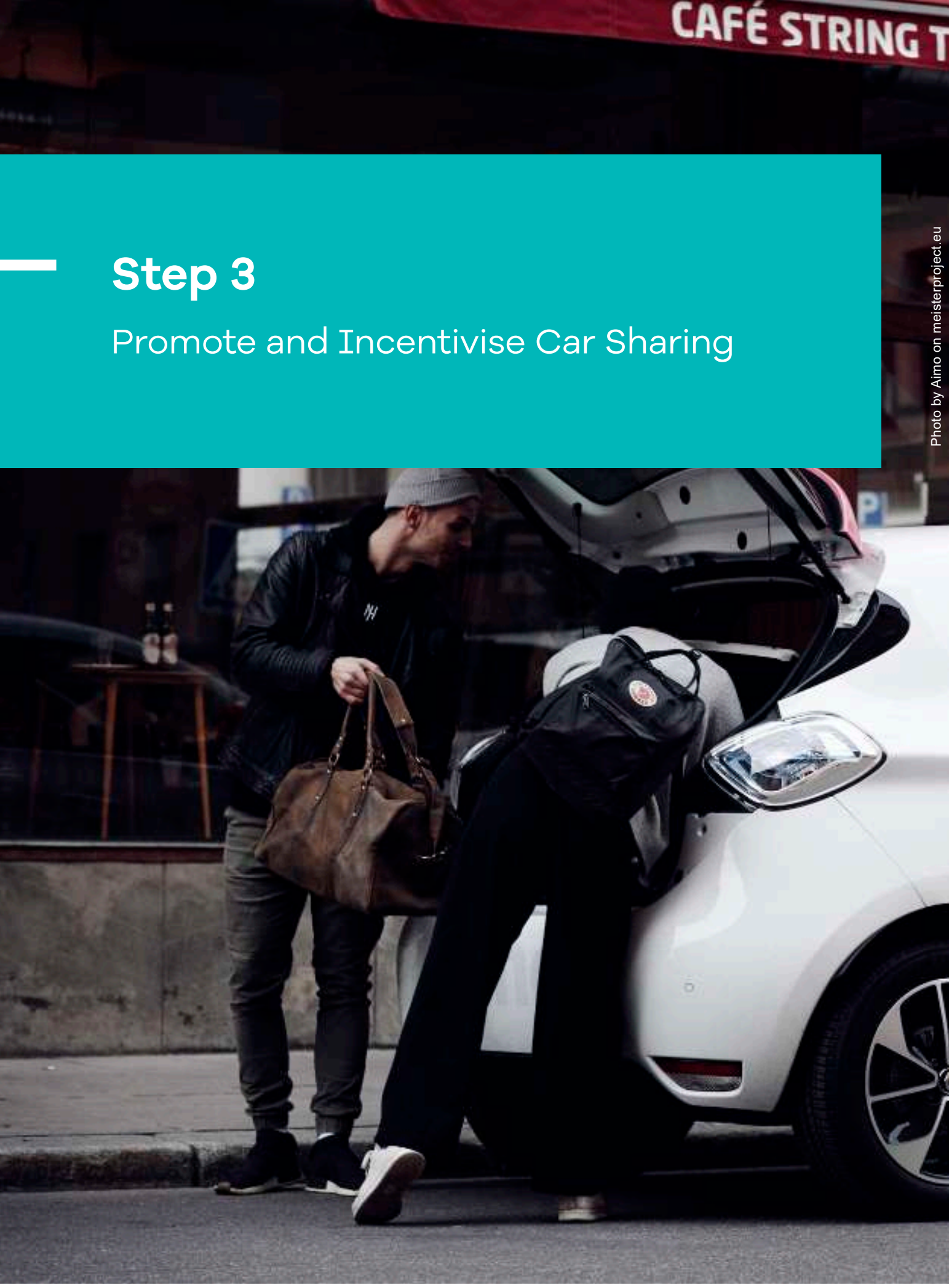

Photo by Aimo on meisterproject.eu

Car sharing should be subsidised to offer low tariffs that would appeal to people more than using their personal vehicles, and potentially given priority within our street design.

In order to achieve a broad social transition towards shared mobility, it is important to embed sustainable solutions for private car ownership in policy papers, at different governance levels. An action plan for car sharing, containing ambitious and achievable goals in the short and medium term, could be a first important step, especially if it is part of a broader Sustainable Urban Mobility Plan (SUMP, further discussed within the LCA's forthcoming publication entitled Last Mile Transportation) rather than being a self-standing initiative outside of ordinary transport planning activities.

An action plan for car sharing would contain, among other measures, the integration of car sharing in new, redeveloped or renovated projects and the establishment of mobility hubs, within which car sharing options could constitute an important component, together with the monitoring of the use of space by such shared vehicles. In this way the inclusion of car sharing could maximise social, environmental and economic benefits.

As stated in the previous chapter, shared transport should prioritise being electric which would of course increase the environmental benefits from car sharing even more. See more on electric vehicles in the forthcoming LCA document entitled EV Infrastructure.

Furthermore, car sharing should be subsidised or in other ways directly beneficial. To encourage the use of shared transport, prices should be low enough to attract people from using their personal vehicles. Parking for shared cars should be free or offer lower tariffs so that it may appeal to commuters. Dedicating parking bays for shared transport would also incentivise commuters, instead of having to search for private parking spaces. Beneficially, this is already a reality in many cases. Providing high-occupancy vehicle lanes (see STEP 6) would as well make car sharing even more beneficial in comparison to riding private cars.

Step 4

Oblige Shared Transport Providers to Take Responsibility for Their Vehicles

Photo by NYC Dot on Brooklyn Eagle

To ensure shared transport that is beneficial to all, the providers of such vehicles should be obliged to take responsibility for their vehicles and any negative impacts associated with their use. Shared transport providers should:

- Assume responsibility to collect relevant data, and ensure that it is shared with the authorities for them to have the possibility of managing shared transport;
- Ensure that their vehicles are useful, maintained, and upgraded with time;
- Upgrade their technology continuously, in accordance with new inventions and standards, in order to ensure maximum efficiency and sustainability;
- Ensure that there is available infrastructure to support the implementation and use of the provided transport; and
- Be obliged to ensure the availability of vehicles in all localities, and not only in the denser or more touristic areas (view the discussion on regulations on micro-mobility in Last Mile Transportation).

These responsibilities and obligations should all be agreed upon in the initial stages of agreement between the shared transport provider and the local council. In regard to infrastructure, the provider of the shared transport in question could, for example, collaborate with local retailers to find the space for dedicated parking spaces and, if needed, charging stations for their vehicles. This has the potential of being beneficial for the shared transport provider, the retailer in question, as well as the users and even the non-users of the specific transport.

Step 5

Consider Hubs for Intermodality

Photo by Illiya Vestica on Unsplash

Changing between different transportation modes during a given journey should be efficient and easy, since many journeys consist of more than one such mode.

Often, travellers use more than one transport mode during a single journey, which may be described as intermodal transport. Thus, designing hubs for intermodality means gathering numerous transport options together, at or close to a transit stop and with potential dedicated parking spaces in close proximity. Intermodality and its advantages will be discussed further in LCA's forthcoming document Last Mile Transportation.

Promoting an intermodal approach to transit planning, fares and operations, encourages the use of public transportation and other shared modes. Easily changing between travel modes can be done by studying travel patterns and strategically locating stops and stations, providing clear signage and information, and consistently improving the public transit experience.

Multiple cities abroad have experienced positive outcomes from designing mobility hubs to support intermodality and the use of alternative transport modes. In Bremen, for instance, the intermodality approach has decreased the dependance on cars and is an international case study that is discussed at a later stage in this document. In Malta, a number of discussions with TM in relation to the SUMP have centred on the potential to develop regional and district hubs, in tandem with a rethought public transport network that could allow both the creation of dedicated public transport routes and the inclusion of other shared transportation modes. Allowing vehicles to terminate within mobility hubs, early on during the journey, could liberate them from the local roads, instead permitting this road space to be used by dedicated modes of transport that would, in turn, prioritise them.

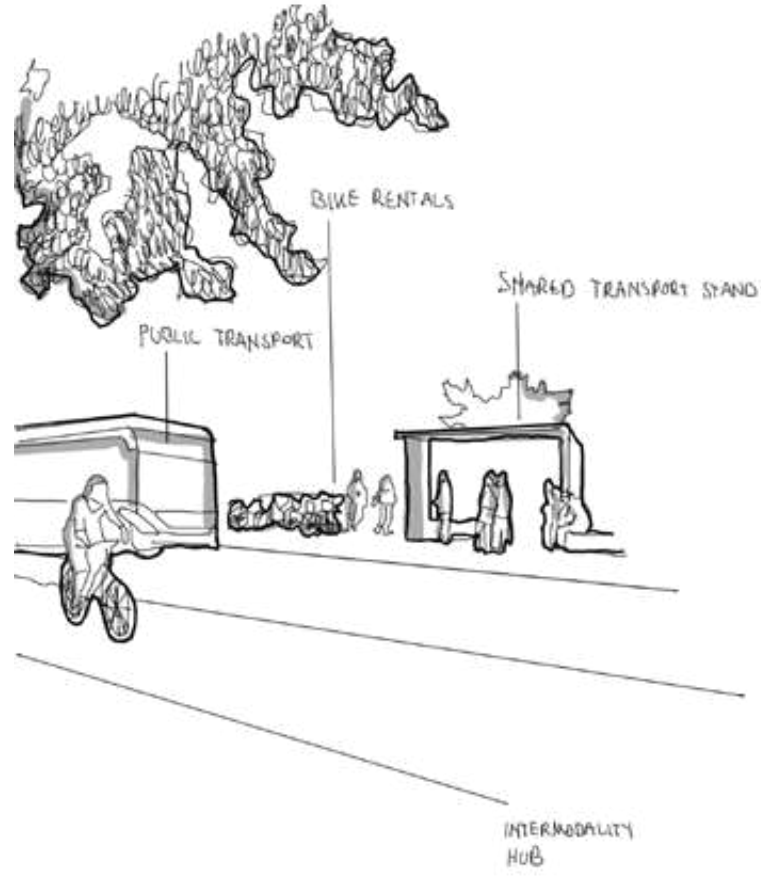

Illustration by Studjurban

Step 6

Redistribute the Space on the Street

Efficient use of space on our streets must be re-evaluated to be used by shared transport, such as the introduction of bus lanes, and dedicated parking bays for shared transport.

Shared transportation options can only be used safely and efficiently if proper space is dedicated to them on the streets. The potential liberation of road space has been discussed earlier in this document, and several Slow Street proposals that have been proposed for different localities around Malta and Gozo look into the possibility of rethought street sections. Lessening vehicles from the roads may permit such spatial rethinking to occur, allowing space to be occupied by, and dedicated to, other modes of transport. Spatial redistribution could, for example, take into account dedicated lanes for both public transit and car sharing so as to incentivise their use further, which would naturally support previous steps discussed within this document. Street widths, street use and redistribution of space is also discussed in the LCA's document entitled Walkability and Accessibility. In this document, it is further discussed to continue emphasising the need to allocate and encourage the efficient use of space.

It is of utmost importance that new mobility services do not take the place of high-quality, frequent public transportation, or safe, walkable streets. Decision makers should embrace the potential for new options to enhance public transportation, but it should never be a substitute for the essential basics of good community design and access to transit. In all decisions, user safety should always be prioritised.

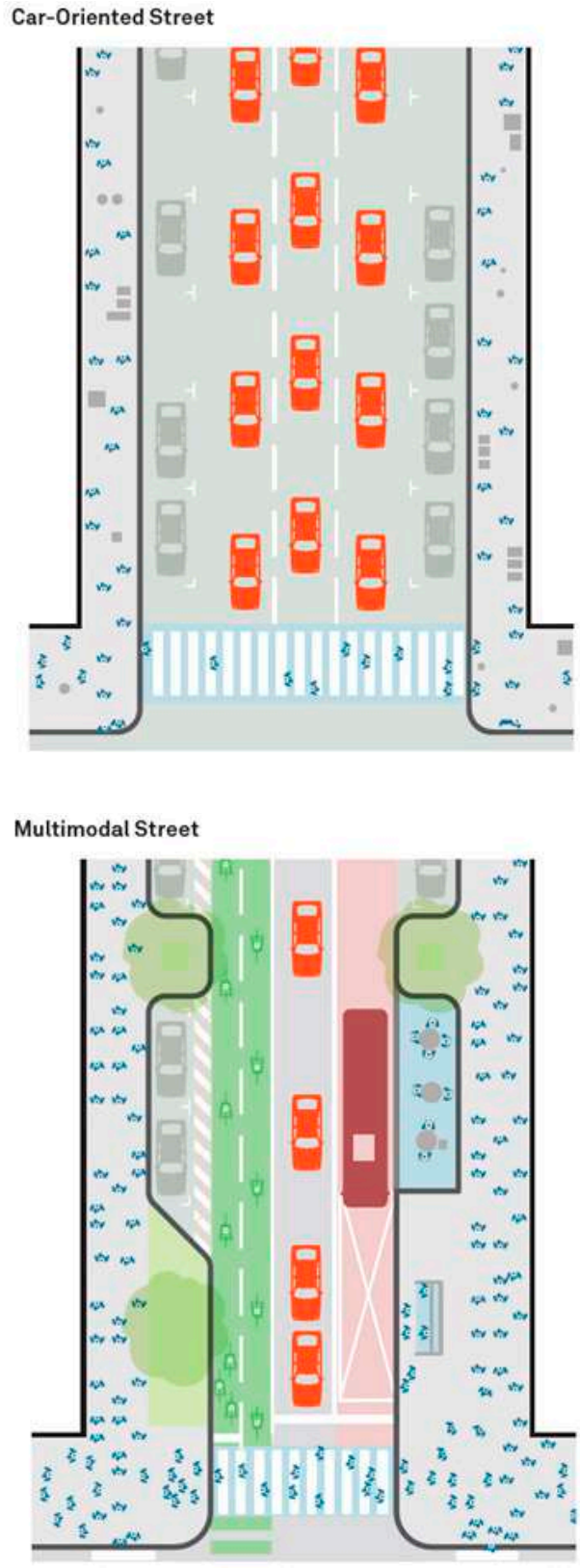

Image by Global Designing Cities Initiative

Space Allocation for Shared Transport

Street users and vehicles occupy different amounts of space depending on their size and speed. Lane design should accommodate transit vehicles at a speed that is safe within the overall street context, supporting consistent and reliable operations. Dedicated bus lanes are typically 3m – 3.3m wide, and 3.3m – 3.6m when adjacent to an opposing lane of bus traffic.

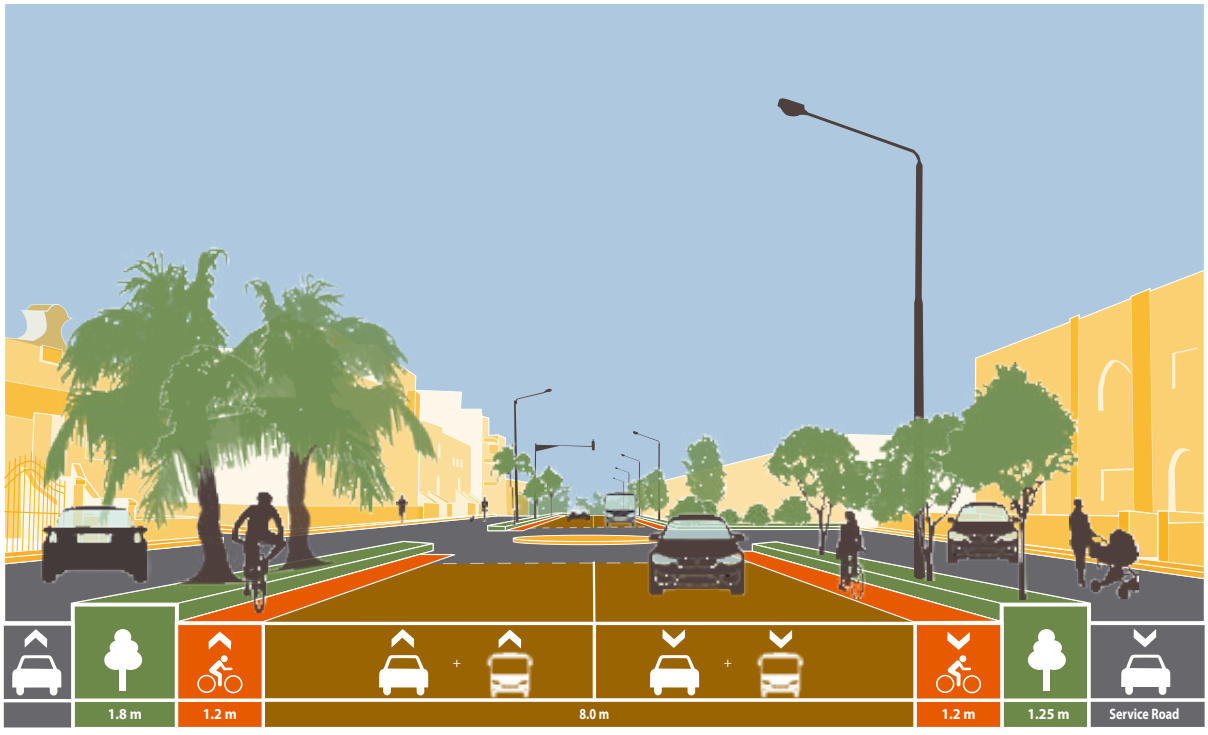

Illustration by Studjurban - Slowstreets Proposal in Qrendi

A bus lane may potentially act as a buffer zone between cyclists and car traffic. Buses drive at a lower speed and run less frequently than cars. However, a cycle lane should never be between a bus lane and traffic but immediately adjacent to the footpath/pavement. In this respect, a 3m-wide bus lane may protect a 1.5m – 1.8m cycle lane.

The ideal scenario is demonstrated in the figure found on the next page:

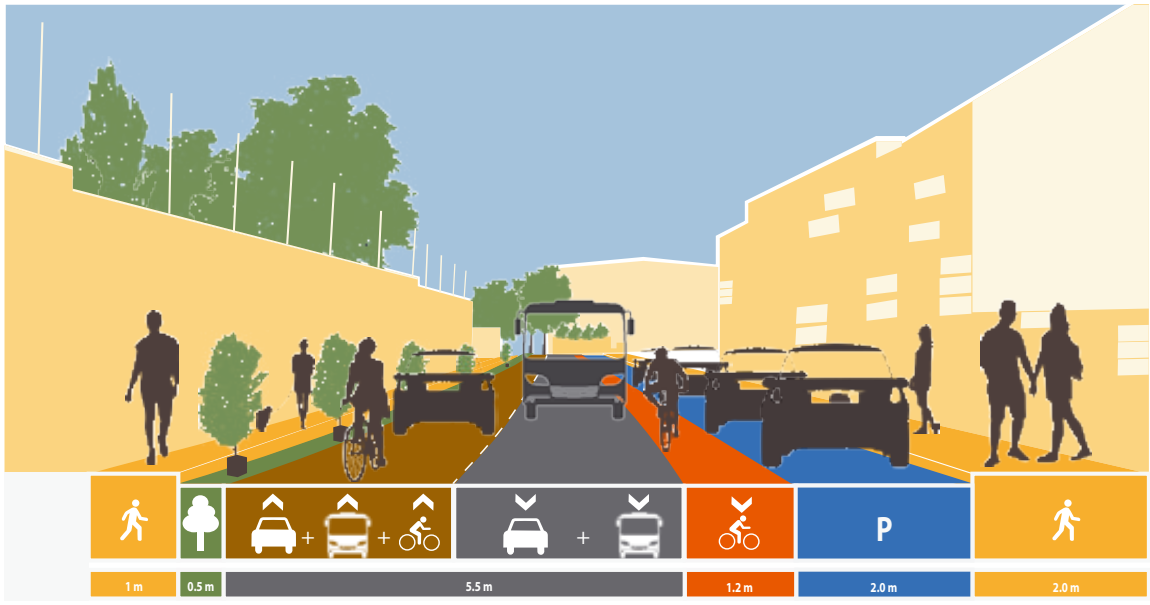

Illustration by Studjurban - Slowstreets Proposal in Birgu

Shared Bus Lane

A shared bus lane can be described as a bus lane that also allows cyclists to use the same lane. Many urban settlements with narrow streets and dense bus networks increasingly use bus/bicycle lanes as a compromise to accommodate both modes of transport. Research carried out by the Transport Research Laboratory describes shared bus cycle lanes as being popular with cyclists. They may provide several advantages, namely:

- Bus/bicycle lanes may provide continuity to a cycle network when space is restricted.
- Links along public transport routes often in turn create strong links to urban destinations.
- Bus/bicycle lanes are easy and inexpensive to implement.

Shared lanes should not be used to avoid allocating specific space for bicycles. The ideal scenario would be one that creates a separate bike track – which is always safer, more comfortable, and will attract more cyclists (this is further discussed in the LCA's forthcoming document Last Mile Transportation). Another disadvantage of shared lanes is the proximity of cyclists to bus exhaust, which would naturally be solved if such buses were to be replaced with electric ones (discussed further in the LCA's document Electric Vehicles Changeover). It is important to note some further recommendations to ensure cyclist safety:

- Use bus/bicycle lanes on short stretches (less than 200 m) to ensure that buses' speed remains low.
- Avoid overly wide lanes (the recommended width is usually around 3.3m; widths of around 4m or higher are normally not recommended) as buses may try to overtake cyclists, creating an unsafe scenario.
- Use appropriate markings and signage, such as cycle symbols and arrows at entry and exit points and at regular intervals throughout the extent of the lane.
- Train public transport drivers to be aware of, and respect the presence of, cyclists, and follow a code of conduct for any potentially conflicting situations.

Image by Denver Public Works

High-Occupancy Vehicle Lane

A high-occupancy vehicle lane (also known as a HOV lane, carpool lane, and transit lane) is a traffic lane reserved for the exclusive use of vehicles with a driver and one or more passengers, including carpools and buses. These restrictions may be imposed during peak hours or at all times. These lanes are designed to discourage single or low occupancy car use, and encourage shared transport by allowing users to reduce their journey times. An HOV lane may be generated from an existing road lane, for the entire day or part of it, or by adding an extra lane inside or outside of an existing road, if the space allows for it.

Step 7

Consider Access-for-All

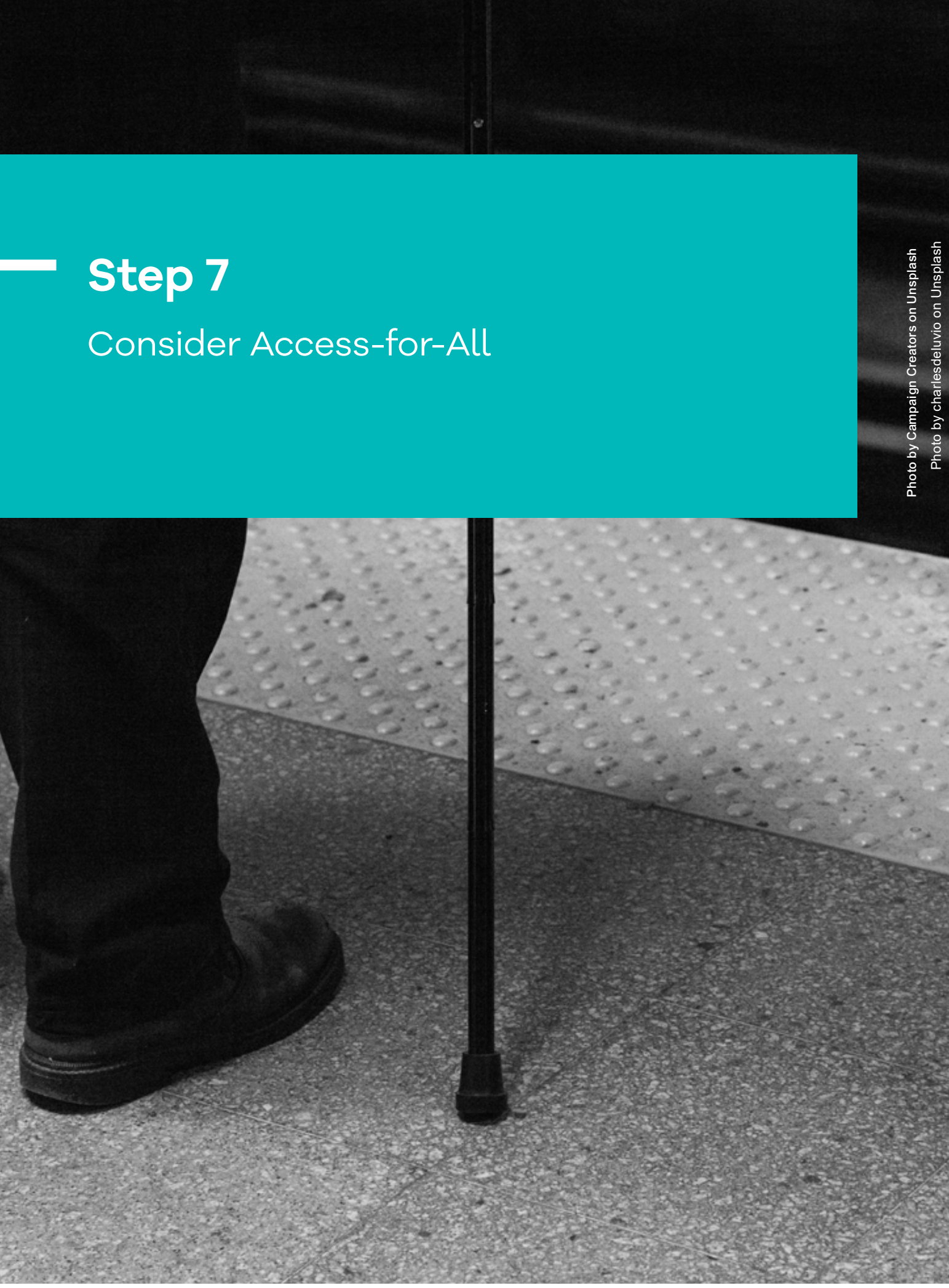

Photo by Campaign Creators on Unsplash
Photo by charlesdeluvio on Unsplash

There needs to be equal and inclusive access for all residents, including the elderly and the disabled.

Local Councils should work with their residents to alleviate discriminatory circumstances related to transportation and land use. Everyone should have equal access to all modes of shared transport. A core aim will be to improve outcomes so as to promote equality for people of all socio-economic backgrounds and people with disabilities.

There are several solutions that should be studied and implemented to realise the goal of guaranteed access-for-all. The solutions could include:

- ensuring that people with disabilities can access the bus easily from all bus stations; and
- regulating the spread of shared mobility so that people living in rural areas can have equal access to sustainable mobility.

More solutions should be considered based on the specific context and residents' needs.

Photo by Marco Testi on Unsplash

Step 8

Create Awareness and Educate

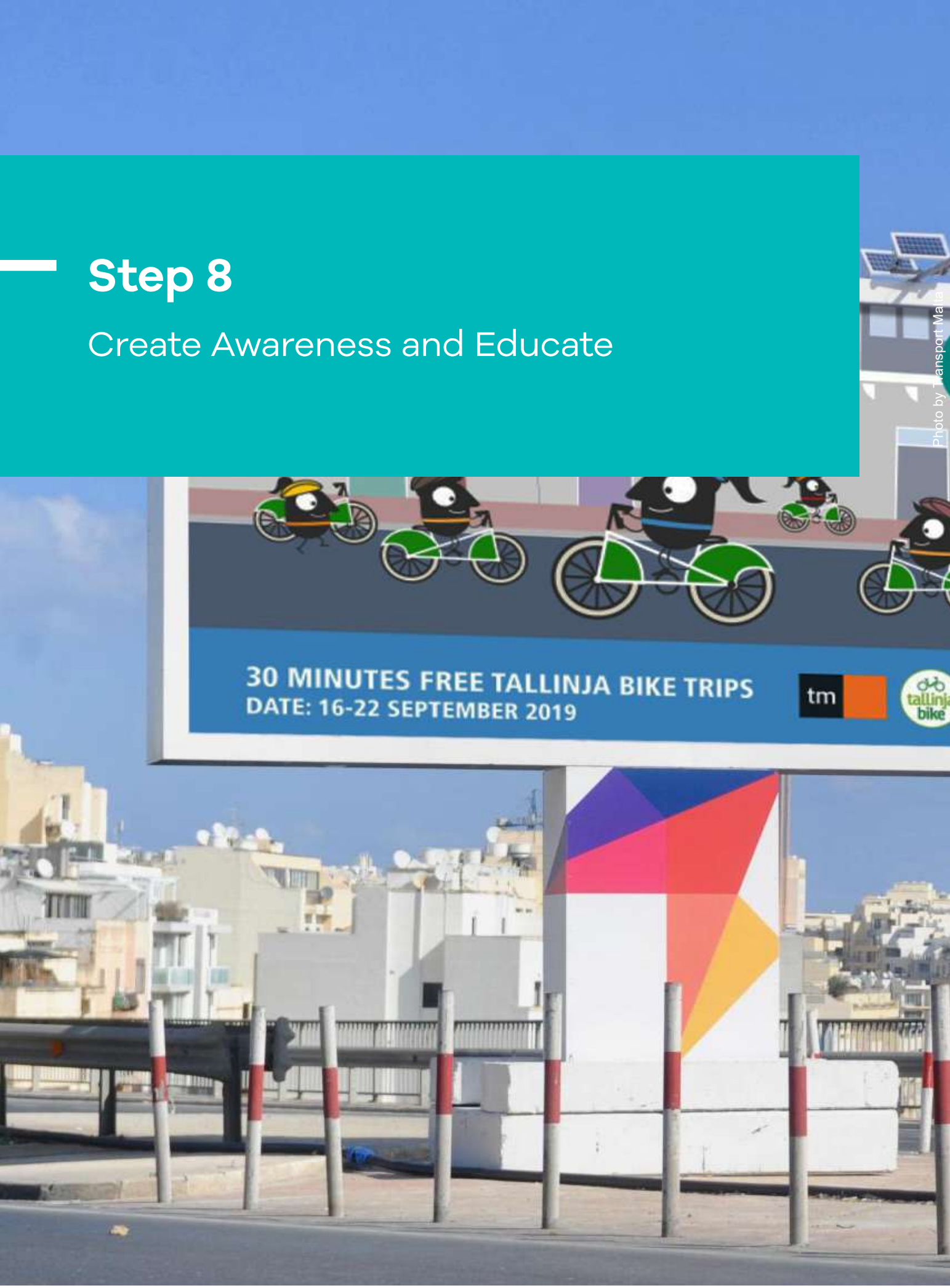

Photo by Transport Malta

Residents need to know more about shared transport and the benefits it presents to the future of the community.

Residents need to know more about shared transport and the benefits it presents to the future of the community.

There are several initiatives that could contribute to increased awareness on available modes of shared transport, as well as knowledge about its advantages. Such initiatives could include:

- arranging workshops;
- creating incentives for people to travel by shared transport;
- rewarding people who travel sustainably;
- advertising available modes of sustainable transport; and
- launching awareness and education campaigns on sustainable mobility.

While it is of importance that residents are well educated, it is a necessity that the previously mentioned actions take place simultaneously for sustainable transport to be an attractive and competitive option.

Local Examples

The following are examples of local initiatives to educate and create awareness on sustainable transportation as well as to reward those who travel sustainably. Local Councils should support and encourage similar initiatives.

Through the collaboration of Project Aegle Foundation (PAF) and Greenroads Limited, commuters are able to learn about sustainable mobility and be rewarded for using the bus, walking, cycling or getting the ferry, on the platform www.Greentrips.eu. The platform also rewards individuals who may not own a bicycle but rent it out from different potential sources and for those carpooling.

The University of Malta is also developing a mobile application with the aim of promoting sustainable mobility among tourists by providing useful information related to public transport and tourist attractions. Currently, only the Tallinja application provides travellers with information about the bus services, routes and schedules. However, no App exists which integrates different intermodal transport opportunities, including information on scheduled bus services and the ferry network. The application would be useful in promoting new tourism mobility patterns, as well as gathering data on how tourists move around in order to plan long term tourist-specific transport infrastructure.

3. Case Studies

As the first STEP of this document suggests, case studies are important sources of information and should be analysed in depth. Some pertinent case studies are described below.

Local case study: Valletta

Several traffic control regulations have been applied to enhance pedestrian accessibility, discourage increasing congestion, and protect the heritage of the Capital. From May 2007 vehicles have been paying to enter the locality, with strict parking regulations. Valletta remains well connected through a main bus terminal and a bike sharing station at its entrance, ferry services that connect the two harbours on either side, and private operators that offer small vehicles to access its narrow streets.

Valletta provides a good case study for the potential implementation of similar policies that may be adapted to other localities. Conducting regular surveys among the general public, may help to improve policies and implement better strategies catered for local residents.

London Transport System

London's transport system is known to be well-connected and frequently used, especially compared to other areas in the UK. This is due to an integrated transport system in which a single transport card may be used on all transport services in the locality. This system further allows the collection of commuting data, such as commuting patterns, and may better inform investment decisions. The Transport for London (TfL) model is characterised by five main qualities:

1. Sole control over bus services and prices.
2. The availability of long-term funding due to the presence of integrated, strategic plans.
3. The ability to raise local funds to reinvest in transport, such as through Congestion Charging. In the first year of congestion charging, London saw a 30% reduction in traffic congestion and raised approximately £150 million in revenue for transport investment.
4. Single management of most public transport modes.
5. Integrated transport strategy in other policy areas.

For example, TfL produced a transport action plan for health which sets out plans to promote walking and cycling, improve health and reduce costs for the National Health Service in London.

Fellow Traveller program, Debrecen (Hungary)

The City of Debrecen in Hungary launched a low cost pilot project called "Fellow traveller program", where they introduced the concept of sharing private cars to a limited target group of students who leave the city frequently on weekends. To ensure that the system matched the needs and wishes of the target group, the student organisation at the University of Debrecen was also involved in the development of the system. The success of this project has been due to, namely:

- the involvement of students in the development of the system;
- the support of the University, allowing access through its private network; and
- proper promotion among students.

Mobility hub, Bremen (Germany)

The reduction of vehicle numbers on the streets of Bremen has allowed more space to be reclaimed for other uses. The creation of integrated mobility hubs combines multiple modes of transportation in one physical location, thus making it easy to access a wide range of transport options for different trip types. This includes carshare stations, bike parking and scooters, with payment occurring via a smartcard or mobile app. Mobility hubs are located at high-frequency public transit stops. The convenient connection therefore helps reduce the reliance on private vehicles and support multimodal lifestyles.

Free public transportation, Luxembourg city

Luxembourg is a small country, which may be crossed in only two hours. However, traffic congestion around Luxembourg city has become a major issue due to the high number of private vehicles. In efforts to encourage residents to favour shared public transport, authorities announced that all public transport inside the country would be free as from March 2020, including trains, trams and buses. It was the first country to have free public transportation for all age groups, residents and non-residents.

Last year, Malta introduced free public transportation for the holders of a personalised Tallinja Card, who may travel for free on Day Routes, Night Routes and Special Services.

Flugs e-carsharing, Lienz (Austria)

The lack of a modern flexible public transportation fleet spurred the initiative of the Flugs e-carsharing system in the city of Lienz. Flugs is an electric car sharing system that offers sharing mobility so as to reduce the number of cars in households and, subsequently, within public spaces. It has high accessibility with easy online reservations done via a webpage or mobile phone app. The service ensures a high standard of flexible mobility with a relatively low workforce, as staff are trained to undertake multiple functions. The current tariff system is made up of a membership fee, kilometre-costs and hourly costs. The carsharing system is regularly used by locals, private companies and the public service sector, and was supported by state funding.

Photo by Hem Poudyal on Unsplash

4. Concluding Thoughts

This document has discussed the concept of shared transport in depth, presented locally available shared transport options and introduced some local shared transport initiatives. The principles, and pertinent examples, illustrate that we have slowly commenced a process of developing our shared mobility system. However, there are many possibilities to improve shared mobility in order for mobility in Malta to be increasingly sustainable.

The actions for development are presented in this publication as 8 steps contributing towards improved shared transport. None of those steps will solve the mobility issue alone, but solutions are often integrated with, and sometimes dependent on, each other. This implies that the steps should be considered together with the steps present within other documents on Sustainable Mobility that have been published by the Local Councils' Association.

There are several examples of shared transport initiatives from around the world that could be referenced. These examples illustrate the potential of shared mobility and the implications on improved mobility patterns and, ultimately, broader quality of life objectives. Together with their residents and the relevant authorities, Local Councils should prioritise the most efficient and suitable actions in the local urban context.

European Actions

There are a number of European actions in support of sustainable urban mobility:

- The Urban Mobility Package
- Urban Vehicle Access Regulations (UVAR) (see Portal of all Urban Access Regulations in Europe)
- Urban public transport and shared mobility

Publications, Projects & Tools

Publications

- 'The Future of Cities' report (European Commission)
- Shared mobility models (European Commission)
- The role of car sharing in low carbon mobility (European Commission)
- The role of 'willingness' in car sharing (European Commission)
- What users think about mobility as a service (European Commission)
- STRIA Roadmap on Smart Mobility and Services (European Commission)
- Guidelines on reversing car dependency (The International Transport Forum)
- Bike sharing and car sharing schemes (CIVITAS)
- Develop a smart choice of mobility services Factsheet (CIVITAS)
- Planning for a more Resilient and Robust Urban Mobility (European Platform on Sustainable Urban Mobility Plans)

Projects

- New EU Urban Mobility Framework Roadmap (European Commission)
- New European Coalition to promote micromobility
- Citizen and stakeholder involvement in mobility planning and new mobility services (CIVITAS)
- Shared Elba Mobility Agency, dedicated to planning, managing and coordinating the different ride-sharing services, mobility information services for users, and other types of mobility planning support available on the island.

Tools

Public transport innovation and management centre Madrid (CITRAM)

Funding Opportunities

EIT Urban Mobility KIC

EIT Urban Mobility is an initiative of the European Institute of Innovation and Technology (EIT), aimed at encouraging positive changes in the way people move around cities in order to make them more liveable places, co-funding up to €400 million (2020-2026).

Horizon Europe

Horizon Europe is the new EU Research and Innovation programme which succeeds the previous programme, Horizon2020. Horizon Europe has been allocated a budget of approximately €95.5 billion of funding to be made available over 7 years (2021 to 2027) in areas including energy and transport.

Horizon Europe incorporates different research and innovation missions. The most pertinent mission area which is relevant for urban mobility is Cluster 5: Climate, Energy and Mobility, including specific opportunities in relation to Transport research and innovation.

Events

ConnectingEurope Days

2-5 April 2024

Connecting Europe Days will bring together politicians, financial institutions, industry representatives, transport stakeholders and the European Commission to discuss concrete measures and exchange good practices on creating a fully decarbonised, resilient, seamless and digital transport and mobility network in Europe.

General References

CIVITAS Cleaner and better transport in cities: Valletta
https://civitas.eu/sites/default/files/civitas_destinations_second_brochure.pdf

Shared Mobility Principles
https://www.sharedmobilityprinciples.org/

Transport in the European Union Current Trends and Issues
https://ec.europa.eu/transport/sites/transport/files/2019-transport-in-the-eu-current-trends-and-issues.pdf

CIVITAS INSIGHT Car sharing: New forms of vehicle use and ownership
https://civitas.eu/sites/default/files/civitas_insight_car_sharing-new_forms_of_vehicle_use_and_ownership.pdf

Controlled vehicle access in Valletta (Malta)
https://www.eltis.org/fr/node/44096

TfL is a model for transport investment and management in other UK cities
https://www.centreforcities.org/reader/delivering-change-making-transport-work-for-cities/tfl-model-transport-investment-management-uk-cities/

Best Practices in Cycling Infrastructure
https://eira-si.eu/wp-content/uploads/2022/09/KfV_Sabrina_Report_A4_online_RZ.pdf

PRESTO Cycling Policy Guide Cycling Infrastructure
https://bicycleinfrastructuremanuals.com/wp-content/uploads/2019/02/presto_policy_guide_cycling_infrastructure_en_European-Union.pdf

Sustainable Urban Mobility Plans – EU
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Denver Public Works
https://www.denverpost.com/2019/09/24/denver-bus-bike-lanes-15th-downtown/

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cyclingpromotion.com.au

Unsplash:
https://unsplash.com/

Transport Malta
https://www.transport.gov.mt/


BUS 1

GUIDELINES ON SUSTAINABLE MOBILITY

EV INFRASTRUCTURE

ResidentFirst

Contents

Introduction

Our country must reduce its greenhouse gas emissions from transport faster to reach its climate goals and air pollution targets. One of several measures is the electrification of mobility of people and goods.

For this to happen, we need to install a carefully planned charging infrastructure across our towns and cities. Residents may need to change their mobility habits, and battery production needs to become more ecologically and socially sustainable. Local Councils may contribute to reaching climate goals as well as increasing social and economic sustainability. Other measures include increasing the availability of, and providing safer infrastructure for, more diverse multi-modality. These include walking, the use of micro-mobility, cycling and public transport (see the other documents produced by the LCA, including Walkability and Accessibility, Last Mile Transportation and Shared Transport), and a shift to private electric vehicles on the roads.

Many local and national authorities worldwide support and promote the conversion to EVs by providing financial and fiscal incentives, developing specific regulations, and complementing policy to reduce their emissions and reach air quality goals. As technology improves and costs slowly decrease, the transition to EVs will become increasingly feasible for residents and governments alike.

A well-planned infrastructure requires significant public financial investment in tandem with quality urban planning, the planning of incentive schemes and cost projections upon national targets, and a timing programme of how charging infrastructure will grow and when and where it is best installed. Planning also involves producing and distributing electricity, the environmental friendliness of the energy generation, and the electric grids' power capacity to achieve a dynamic charging infrastructure master plan that can adapt to growth and accommodate new technologies as they are developed.

The amount of stakeholders involved in this process makes it necessary to look at the whole picture while the individual parts are still studied sufficiently. The involvement of Transport Malta, Infrastructure Malta, the Planning Authority and Local Councils, coordinated by the Ministry for Energy, Enterprise, and Sustainable Development, is essential for this changeover's success.

Step 1

We need to identify the challenges that EV will solve and those that it will not.

photo source: Christian Lue, Unsplash

EVs will reduce carbon dioxide emissions from our towns and cities but do nothing for traffic congestion and the lack of public parking spaces. We, therefore, require a broader and more holistic policy so that the total number of vehicles may be reduced, centred around active transport policies, prioritizing walking and cycling.

The increase in EVs will also bring a general improvement in ambient air quality through the removal of pollutants generated from exhaust emissions. EVs still emit particulate matter (predominantly the coarser fraction: PM size ranging from 2.5 to 10µm) from non-exhaust emissions, produced from the wearing down of brakes, tyres and road surfaces, as well as the resuspension of road dust. Moreover, because of their increased weight due to the battery, EVs may contribute to more PM10 emissions. Despite these emissions, the benefits of EVs are particularly relevant for Malta. Distances are short and many urban areas suffer from toxic air and noise pollution, which severely affects the health of local residents and their quality of living.

Local data shows the direct relationship that air and noise pollution levels have with traffic congestion. The inner harbour area, which is also the most densely populated, recorded elevated levels of nitrogen dioxide, an air pollutant which can be directly associated with road traffic emissions. With respect to noise, the results of the strategic noise mapping and the population exposure assessment carried out by the Environment and Resources Authority (ERA) indicate that the predominant source of noise exposure across Malta is from road traffic sources and this can also be linked to the steady increase in the number of daily registered vehicles on the roads. EVs will contribute to a cleaner and quieter environment for residents.

Challenges that are not solved via EV

Traffic remains a challenge that EV will not change. The main solutions here lie in prioritising walkability within our urban areas and moving towards a modal shift, through shared transport and other more sustainable modes, particularly within the last mile of travel and of freight. This becomes more pertinent when considering issues of obesity in Malta, a serious health concern due to both dietary patterns and the lack of an active lifestyle – 2020 statistics released by NSO reveal an obesity rate in the Maltese population of 25.5%, which greatly exceeds the EU-average (14.9%); in turn, the more recent Eurostat statistics, albeit for 2014, show over 55% of Maltese women and over 65% of Maltese men being overweight and/or obese. A corresponding study by PwC carried out in 2017 indicated that over 25% of the Maltese adult population over 15 years was obese in 2015. The push for sustainable mobility and the reduction on the reliance of private vehicles will necessitate the identification of a hierarchy of travel modes, wherein walking and cycling prevails over other modes. This discussion is expanded upon in a number of other upcoming documents produced by the LCA – Walkability and Accessibility, Last Mile Transportation and Shared Transport.

Parking is another challenge that EV will not solve. In March 2021, NSO statistics indicated that there were 404,303 licensed motor vehicles in Malta, of which over three quarters were passenger cars (a motorisation of around 700 passenger cars for every 1,000 inhabitants). In turn, as of April 2021, there were 270,000 licensed motorists in Malta – an even higher rate of motorisation, implying around 1.5 passenger cars for each licensed motorist. These statistics have a significant implication on urban space management, which include parking pressures, in turn becoming an essential consideration from both policy and decision-making points of view. A number of solutions may be envisaged, discussed in the LCA document Parking Projects, such as incentivising households owning one car by leaving the current cost of single car ownership and increasing the road license from the second car upwards. The excessive importation of vehicles that are furthermore idle for most of the time, as well as minimum parking standards imposed by the PA that have increased building development requirements, have in turn both contributed to the reduction in available open spaces and walkable paths, as every little public available space has been exploited to create parking spaces, reducing our pavement widths and occupying large open spaces which would be better served as gardens and play spaces for children and adults alike. In spite of this, the lack of public parking spaces is still a problem felt by many individuals, especially in areas that have experienced redevelopment and are characterised by higher building densities. Solutions here, again discussed further in the LCA documents Parking Projects and Shared Transport, would be financial and fiscal incentives that reward residents who choose not to purchase a car (in the form of measures such as free public transportation and the subsidisation of car-pooling and other shared schemes).

photo source: Local Councils' Association Malta

The shift to EV

EVs are generally more expensive to purchase than conventional fuel-based vehicles (although the cost of batteries is decreasing), as when deciding which vehicle to purchase consumers usually account for the upfront price more heavily than for future fuel savings. Nevertheless, and despite such capital outlay, the total cost of ownership might be reduced when considering the contribution of Government tax incentives for higher-purchase agreements.

Another obstacle to a rapid changeover is the expandability of electrical supply from the national energy grid, providing pressure on an already-challenged energy network which will continue to increase. The national electricity service provider will need to handle increased variation in supply and demand in the electricity grid as well as changing consumer needs, that add to increased volatility. The use of technology may help to achieve more efficient power consumption in the grid, keeping the costs down for customers, companies and society alike.

The change-over to rechargeable vehicles can be accelerated by an increase of solar cells and other renewable electricity generation within private households. When households generate their own electricity, there should be financial incentives to store self-generated energy. Electric vehicles can make use of the renewable, self-generated electricity, through local battery storage, hot water heaters and other electricity appliances. Residents should be encouraged to become energy self-sufficient and actively contribute to achieving sustainability.

Additionally, according to Malta's Low Carbon Development Strategy, "given the assumed increase in energy demand over time, and in order for the energy grid to decarbonise by moving away from the use of gas over time, the proposed scenario considers the installation of an additional interconnector as an alternative source of supply". This additional interconnector may hence provide a solution for the future national electricity scenario.

Step 2

Soon, transportation will be increasingly multi-modal and more shared. We need to look at EV as part of the sustainable mobility puzzle.

photo source: Vince Jacob, Unsplash

Our means of transport will vary from day to day, as we can use technology and smart algorithms that will optimise our journey on that particular day to arrive quicker, cheaper and in an environmentally aware manner.

The rapid conversion to rechargeable vehicles is challenging. In a highly competitive and mature market, the automotive industry has invested heavily in today's internal combustion engine and car design to obtain the best possible value. Most drivers are used to the current refuelling system, and know how far they can drive on a full fuel tank, how long it takes to refuel and what they get for the cost of fuel. Electromobility means changes in both behaviour and costs. Batteries take up space in the vehicle, take considerably longer to recharge compared to combustion engines and require a higher capital outlay. Despite all the possible efforts, in the end, it is the customers who decide whether the value of EV is high enough to choose one instead of the combustion engine types that today dominate the market.

Transportation fleets, of both people and goods, can accelerate the roll out to rechargeable vehicles. The greatest advantage of such fleets is that routes are mostly predictable, the use falls within an established schedule and vehicles are parked at the company's depot when not in use. Thus, concerns of battery range, charging points and charging duration are less of a determining factor here.

With today's accessible technology, fleets can become shared mobility tools to transfer people and goods efficiently and more cost effectively. These sharing concepts are key to reduce our reliance on private motor vehicles and as a result reduce the number of vehicles from our streets. The younger generation find it easier to accept such concepts but it is important that we make it attractive to older generations too. Mobility-as-a-Service (MaaS) becomes more mainstream if it provides cheaper, quicker journeys.

Paving the way for EV shared fleets, that consists of electrified micro-mobility (Scooters and Bicycles), shared self-driven vehicles shared chauffeured or automated driven vehicles, circular city loops, public transportation and last mile goods transportation requires a solid and comprehensive strategy from the fiscal and financial incentive side to a well planned charging infrastructure. Shared and designated charging hubs, last mile goods warehousing depots, and other measures are included in the LCA's Shared Transport and Last Mile Transportation documents.

A number of European cities have current regulations in place to make shared mobility providers reduce carbon emissions across fleets. Car-sharing providers are also proactively complying with increasingly strict emissions regulations because they want to secure long-term access to city centres. Madrid has banned conventional vehicles from crossing the inner-city area and is now only accessible for electric cars and hybrids with an electric range of more than 40 km, known as the low-emission zone concept. This is one of the reasons why the city has become an EV-sharing hotspot. Cities like Hamburg provide free on-street parking or reduced parking fees for electric cars, for car-sharing providers. Paris is offering between 15-20% off parking permits for electric car-sharing providers. Even Malta has launched a national car sharing scheme, which is discussed in the LCA's Shared Transport.

Charging of large EV fleets is one of the challenges cities and shared mobility providers have to cope with. In large cities, the public charging infrastructure is an integral part of the setup for charging the vehicles within the active commercial area. Additionally, partnerships between shared mobility providers and private companies that install and operate charging infrastructure are vital. WeShare, for example, formed an alliance with retailers like Lidl or Kaufland. Both chains are providing charging stations on their parking lots, which customers can use during business hours while the e-car-sharing provider will use the chargers at night.

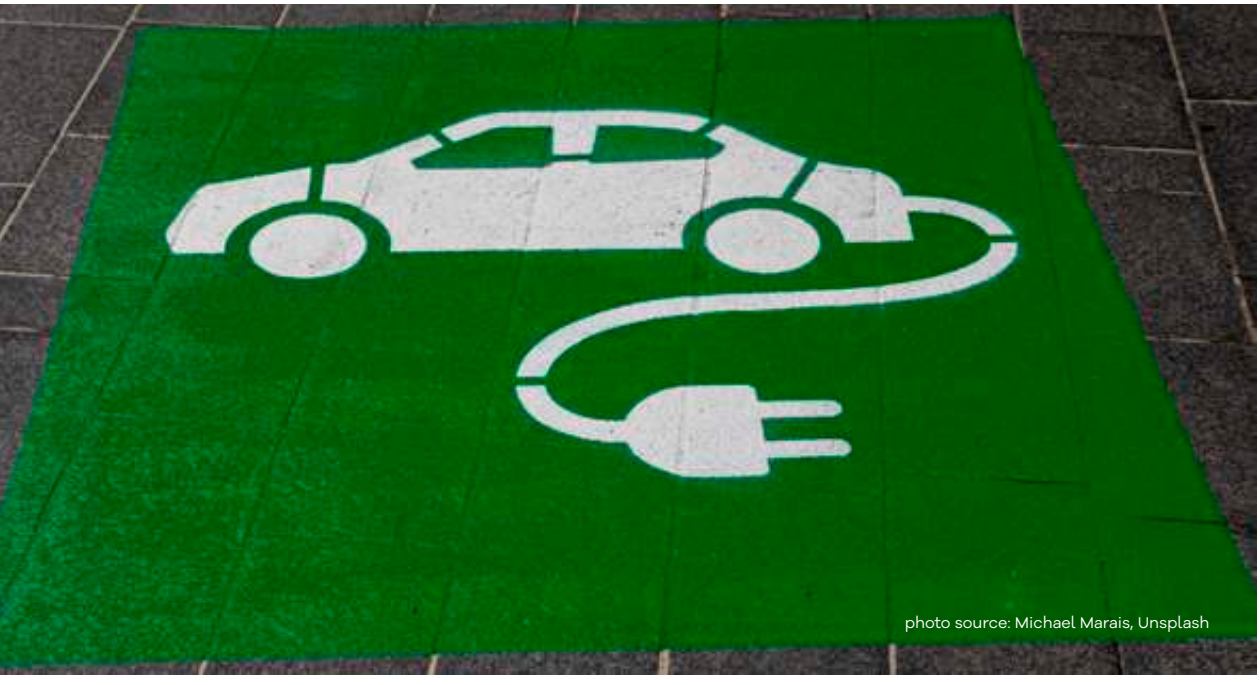

photo source: Michael Marais, Unsplash

Step 3

Setting up a national sustainable mobility policy and a clearly communicated roadmap with all stakeholders is critical to the speed of this transition. Local adaptation by region, local councils and by neighbourhoods is crucial for success.

photo source: Local Councils' Association Malta

Attaining a fossil fuel-independent vehicle fleet in Malta is a government objective that generates necessary investments into vehicle electrification. A mass-market of electrified vehicles presents benefits, such as reduced greenhouse gas and air emissions, less oil dependence and less noise. Together with self-driving buses, electric scooters, mobility-as-a-Service and other revolutionary technologies related to the movement of people and goods all have great potential to improve mobility in our cities and communities. But it will not happen automatically. National authorities need to work with Local Councils who, together and in consultation with their communities, adapt these plans to improve their residents' overall quality of life.

The creation of a highly skilled team of stakeholders, joining efforts and sharing knowledge and expertise is necessary to build a high-level design strategy which would lead to the establishment of a charging network roadmap and installation guidelines. The team would also have the responsibility to set targets together with the necessary fiscal and financial incentives plan. It is important that the setting up of these targets take into consideration environmental objectives, which then lead to health benefits. These would lead to the formulation of policies and good practice guidance that eventually serve as a basis for permits and inspection. The development of a national educational campaign strategy will also be within this team's remit.

The following stakeholders should be represented in this team:

- Policy makers within the Ministry for Energy, Enterprise and Sustainable Development and the Ministry for the Environment, Climate Change and Planning
- Finance Ministry
- Other Authorities, including Transport Malta, Infrastructure Malta, and the Planning Authority
- Local Councils, resident groups and other related NGOs.
- Enemalta plc
- The Foundation for Transport

Other consultative stakeholders include: Charging station operators, Electric Vehicles car importers, Malta Public Transport, public utility companies, the business community through their representatives and shared mobility operators.

Local Councils should play an important part in drafting an inclusive and holistic National Policy as they have the potential to contribute significantly to more public involvement, acceptance and implementation. Running the project is costly and should be given weight too.

Through the involvement of Local Councils, master planning may take place from a local perspective. This process would enable the much-needed transfer of local knowledge onto a GIS system – this includes projects such as Slow Streets, a combination of walkable and cyclable paths connecting the services of every individual town and city, available parking stock, gardens and other open spaces, lighting and urban street furniture. This information will be valuable to strategically place public chargers. Furthermore, Local Councils can play an active role in ground research to keep tabs on the existing travelling patterns of residents from, to and within their localities.

photo source: Local Councils' Association Malta

Step 4

The correct data, at the right time and in the right way, should guide our decisions. Clearly communicated national targets and timely data collection and analysis will keep us in line with ever-evolving technologies and market realities.

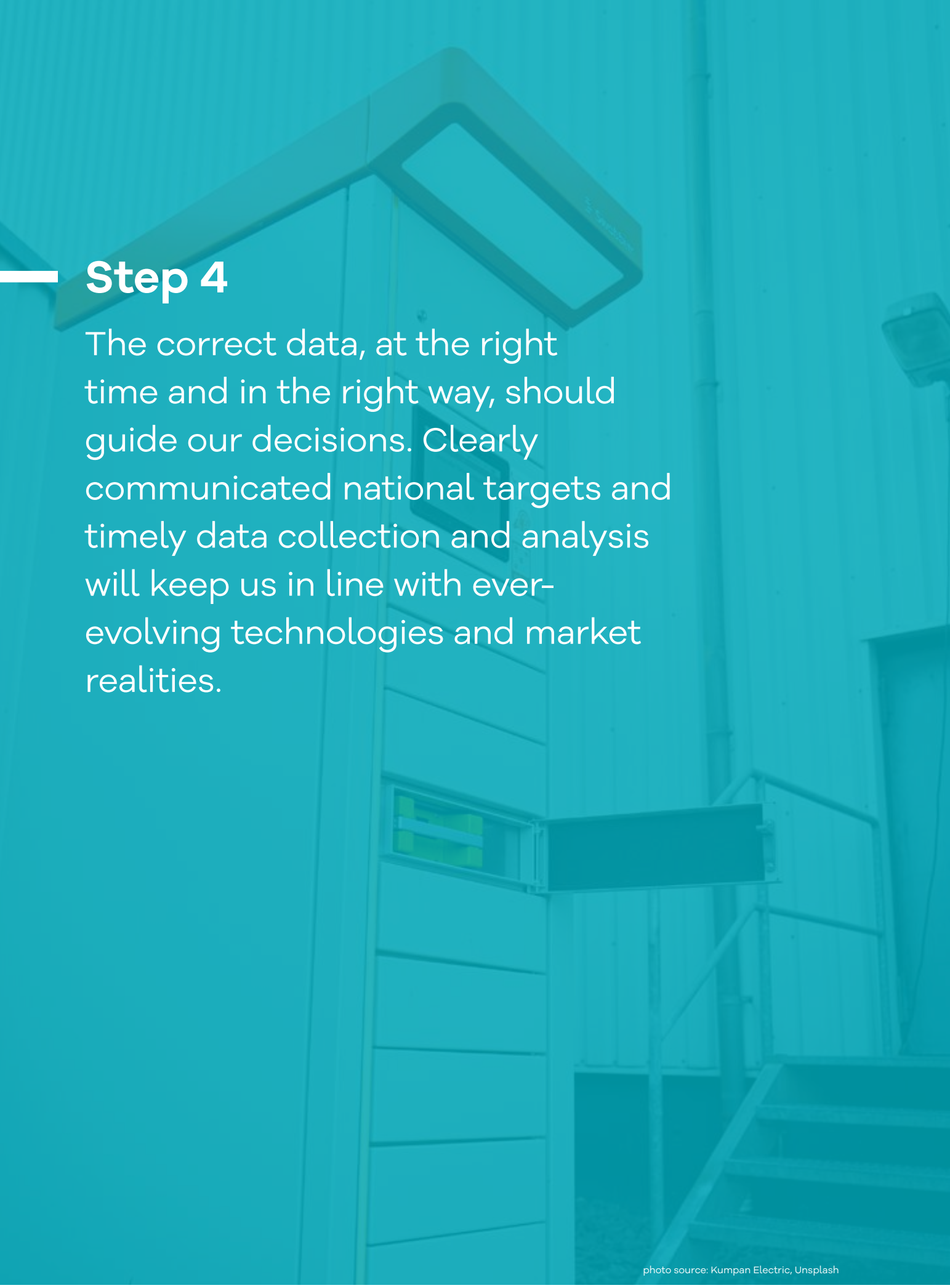

photo source: Kumpan Electric, Unsplash

The access to data from the various stakeholders will empower policymakers to plan, manage, and continuously optimise incentives to increase electric vehicle adoption at the lowest cost and in the shortest time. Incentives and other activities designed to promote and reach our national electromobility Key Performance Indicators (KPI) should be continuously monitored.

Research into electromobility that is focused on the evolving technologies such as battery technologies, energy conversion, energy management and charging infrastructure, user behaviour and new business models, should guide our decisions. The duration of terms of service agreements and government concessions should be short in order to enable the government to introduce new technologies and realities as the market evolves swiftly and effectively.

From publicly available international data, it is clear that there is no one-size-fits-all solution to the successful and sustainable shift to electromobility. In all probability, Malta will have to have its own learning curve and needs to rapidly react to the market signals. Some key indicators should guide our strategies with regard to the number of public chargers, the mix of charging technologies and the rollout timing programme. For example, having the least road space per household with one of the highest number of registered cars per population in Europe should strongly suggest that we need to make use of the more rapid charging technologies to have the best public space management. The ratio of EVs to public chargers reveals differing charging infrastructure development across markets. Other data such as the number of private car park spaces, in residential, commercial and institutional developments, in relation to the volume of public on-street parking, are all important variables that should directly influence our charging stations installation targets.

Nevertheless, the analysis of up-to-date international data of the most successful rollouts may give us insight on the best practices that our country could adapt, or possibly adopt. The table hereunder identifies the strongest policies and practices in the cities of London, Oslo and Amsterdam according to different categories related to EV targets. Other cities could use and follow this list of actions and regulations for the purpose of their own policy development, with necessary adjustments according to local market conditions, local EV demand and available government budgets.

The two types of charging – AC and DC – differ in terms of (a) cost, (b) impact on the grid and (c) placement for optimal locations. As a result, many European cities have different strategies for the distribution of charging points. Two examples are worth singling out briefly, Amsterdam and Paris, due to the different approaches towards EV charging adopted therein.

Case Study 1
Amsterdam

The city has already developed a dense public charging infrastructure network, focused on slow to fast residential chargers. Amsterdam first provided a basic charging infrastructure network in 2009 to spur electric vehicle uptake and is now relying on an approach that is triggered by EV drivers' requests for charging stations – that is, a 'Demand-driven approach'.

Case Study 2
Paris

Paris has adopted a city-led planning-oriented business model for the development of its public AC regular charging network. The city is responsible for finding the right location for the charging station and then outsourcing the implementation of the charging point to an operator. To incentivise EV uptake in the entire city, Paris has opted to select charging station locations based on providing an even coverage across the city, as opposed to relying on driver demand – this may be termed as a 'Planning-oriented approach'.

Category	Comprehensive policy element	Example
Electric vehicle target	Targets for electric vehicles in 2025, 2030	Amsterdam
	Planned zero-emission area covering city by 2030	Amsterdam
	Strong targets for taxis, private-hire vehicles, and government fleets	London
Electric vehicle charging infrastructure goal	Charging infrastructure demand modeling aligned to electric vehicle target	Amsterdam
	Neighborhood charging gap analysis based on housing and transport needs	Oslo
Electric vehicle charging infrastructure action plan	Coordination among transportation, energy, local districts, and other city departments	London
	Consultation with private stakeholders including utilities, charge point operators, major fleet operators	London
	Identification of priority public charging locations	Oslo
Public charger promotion	Provide public right-of-way for private charging investments	Stockholm
	Data reporting requirements for stations receiving public support	Amsterdam
	Dedicated chargers for taxis and fleet vehicles	Amsterdam
Private and workplace charger promotion	Cost-sharing for charging infrastructure at housing cooperatives and public housing	Oslo
	Subsidies for home charging for taxi drivers	Oslo
	Outreach and education to help promote national government home charging subsidies	Stockholm
Curbside and lamppost charging	Dynamic demand assessment for curbside chargers	Amsterdam
	Add charging to lampposts in residential areas	London
EV-ready building codes	100% EV-ready requirement for new parking facilities	Oslo
	EV-ready requirements for retrofits and major modifications	Amsterdam
	Clear, streamlined permitting and guidelines for charging	London
EV charging interoperability requirements	Requirements for interoperability and open payment standards (OCPP) at all public chargers	Amsterdam

Source: Efficient planning and implementation of public chargers: Lessons learned from European cities - International Council on Clean Transportation

photo source: Fortune

Step 5

The speed of transition to emission-free vehicles is closely linked to the attractiveness of financial incentives and other benefits. Electric charging at home, when possible, is the most viable option for all stakeholders. However, it needs to be managed and supported through national policy.

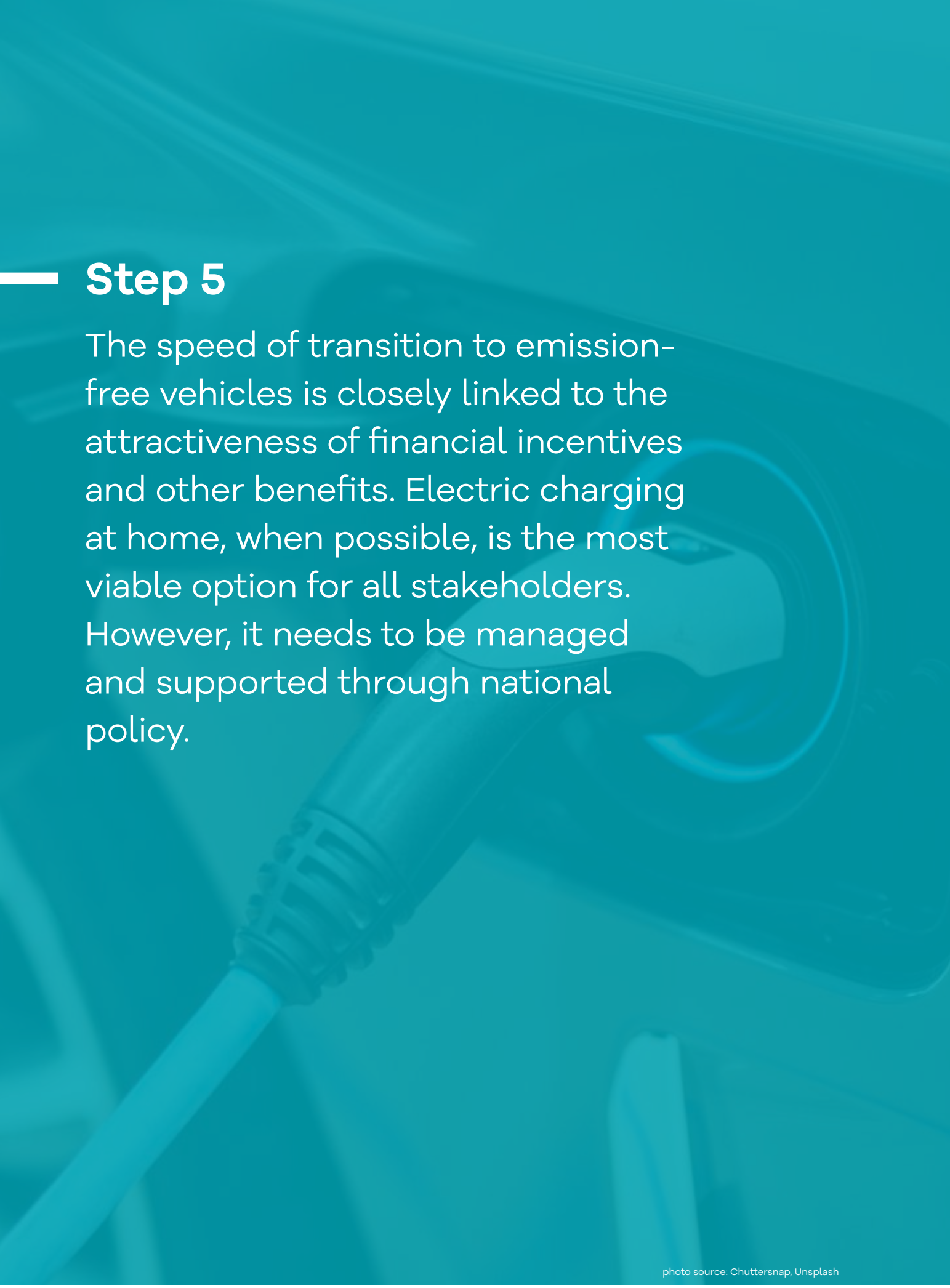

photo source: Chuttersnap, Unsplash

Private charging is the most convenient and preferred method of charging amongst most electric vehicle drivers with access to privately owned car parking spaces. Public charging, therefore, should primarily provide a solution for those without a car park space. The successful adoption of domestic charging will ease pressure and demand on public charging.

Cars are usually parked for the longest duration at home and the workplace. Most charging can happen overnight when off-peak electricity prices are lower. Across the most advanced EV markets worldwide, the most common place for charging is in residential and commercial buildings and is predicted to remain so in the future. Consequently, many governments are focused on facilitating and maximising the availability of charging at homes, workplaces and destination car parks.

Private charging stations are therefore the most important elements for enabling EV adoption. Cities with a mature EV market are seeking to gain control and more insight through their schemes and electric chargers operators to improve efficiency in energy use. As mentioned in Step 1, private charging can also decrease the load on the main distributing power-grid by incentivising households to invest in technology to store self-generated power. The private charging definition includes single residential, multi-residential, fleet and workplace charging stations, as illustrated in the pyramidal figure below.

Source: Argonne National Laboratory, 2012

Gaining an understanding of the potential numbers of private charging and the eventual level of success in the uptake of charging schemes is critical to planning the overall public charging distribution network. In most cases, upgrading buildings' electrical infrastructure will be necessary to satisfy EV charging demand, especially in multi-residential buildings. Furthermore, large-scale EV charging requires careful planning of a building's electrical distribution system as well as local electric-grid infrastructure. To make the most of private charging potential and make it more accessible and affordable, urban planners, architects, developers and electrical suppliers must integrate charging infrastructure into standard building design plans. Charger penetration at work will predominantly reflect employer choice and/or regulatory requirements.

Policies and regulations will play a crucial role in this process, promoting and facilitating private charging EV installation through clear guidelines, financial and fiscal incentives.

Local Councils believe private charging should be an integral part of a national policy in order to ensure the success of its implementation. The Local Councils also see a unique opportunity to improve the management of private parking as a holistic national policy on parking provision. An advantageous private parking scheme would be an incentive to residents and building owners to make better use of their private parking facilities, thus relieving the pressure on the limited on-street parking facilities to the advantage of drivers who do not own a private parking space as well as to the business community who would have more spaces dedicated to shoppers. In this respect, there should be schemes that promote the use of a garage if one has access to it. There is currently no way of enforcing the use of a licenced car space as a designated space for cars. Most drivers still choose to make use of the free on-street parking facilities to the detriment of others who have no access to a car park space.

Building and land owners, supermarkets and shopping centres, schools and other public buildings should be encouraged to turn their spaces into mobility hubs and generate further revenue by utilising their car parks into a 24-hour operation. Such encouragement could be accompanied by financial incentives, as discussed next.

Once again, as highlighted in step 4, priority should be given in real time. Data collection on private charging would subsequently inform government and other stakeholders about the largest gaps in charging infrastructure and provide targeted and effective solutions and policies to bridge these gaps.

Financial incentives for private residential charging

Barriers to installing and efficiently using private charging stations may vary, and include financial, information- and coordination-related, and policy challenges.

In order to encourage the use of private charging, the government could provide tax credits for residential consumers and for businesses for alternative fuelling infrastructure, including electricity charging stations. In addition to providing incentives to consumers and businesses for private charging station installation, Local Councils, via specific central government schemes, could also directly fund public charging infrastructure installations.

Financial incentives for residential charging are key drivers to increasing the adoption of EVs amongst drivers with access to a garage space, as the installing charging point is costly. The Local Councils' Association believes however that such incentives and subsidies should not be discriminatory against anyone who does not have access to private garage spaces and who, by choice or as a matter of affordability, does not own a car.

The charging rate should be calculated on a sustainable model which would ensure a commercial return on investment. Subsidies on the rate should be in the form of one time fixed credit upon the purchase of a new electric vehicle, which value would lower the total cost of ownership when compared to combustion engine vehicles based on the average cost of electric vehicle and the average efficiency. This credit may be utilised as a percentage subsidy on the charging rate when using public chargers and public commercial chargers or as a refund for the installation of private charging infrastructure for licensed garage car park spaces being either privately owned, collectively owned or through condominiums or other third parties.

Residents who opt to give up their vehicle driving license for a number of years should receive the same subsidy credit that may be used against public transportation costs, shared transport and sharing schemes of micromobility which does not require a driving licence (such as a scooter, bicycle, etc).

In turn, owners of licensed car parks should benefit from interest-free and/or subsidised interest loans through Malta's development bank to be able to invest in electric charging infrastructure. Rate subsidies may be also utilised when using these public facilities.

At the end of the day, any electric charging business model must be viable. Society should not be subsidising the private ownership of vehicles, which remains an unsustainable form of mobility, and related costs. The Government should ensure such financial viability of new investments in electric vehicles, over combustion vehicles, using the total cost of ownership comparison based on the average cost of vehicles with an average efficiency rate. In line with the principle of social subsidiarity, an adequate form of transport may be found, based on the approach of 'polluter pays'.

The Local Councils' Association will be issuing a similar document on parking, one of the 24 technical documents under the 'ResidentFirst' project. The document will be proposing creative solutions to car parking mostly through car parking management, better parking planning through data, proposals for sustainable parking business models through community-funded projects and others. Local Councils are uniquely placed to promote and manage the implementation of private electric charging for a faster changeover.

Step 6

With the transition to electric vehicles come new concerns and challenges for stakeholders in transportation and infrastructure, as well as urban planning. These questions can be addressed by the drafting of local master plans.

photo source: Denys Nevozhai, Unsplash

An urban city is made up of pedestrian paths, slow, recreational and green spaces and parks, schools, health centres, urban cores, community service hubs and residential areas. The provision of vehicular traffic paths, parking, public transportation networks and the integration of sharing transportation hubs needs to be designed around these urban elements and the way residents and visitors alike navigate through these elements. The location and volume of public charging units should be the result of this exercise and should seek to address the gaps resulting from the private provision of charging infrastructure.

Planning of the locations and the spatial setup of EV charging infrastructure should also consider distances from one station to another in order to provide adequate infrastructure promoting the widest EV adoption.The efficiency of the charging technology should also be considered according to location. Whilst slow public chargers can be adequate in exclusively residential areas, faster chargers are required for city centres and commercial hubs. Every individual Local Council must undertake appropriate studies with regard to the locations it chooses for EV charging points and subsequently choose highly visible and strategic locations for the placement of new charging infrastructure. The Association also believes that fast chargers, usually appropriate for long distance driving, could make sense in the most dense urban areas where space management is essential.

The choice of charging stations should favour models that can accommodate the different plug types in order to reduce the amount of charging stations on public areas and increase the investment viability. Charging technology with the ability to be integrated within existing urban structures and street furniture, such as utility poles, should be given preference. The Local Councils are seeking ways to reduce clutter from our sidewalks to improve walkability.

After having established a high-level national policy, containing policies and targets which provide direction to all stakeholders, Local Councils, supported by urban planners and other technical engineers, could proceed to create a master plan for their locality. This includes mapping future locations of charging stations in line with the national policy and with the prospect of achieving national targets. Local Councils should be incentivised to take on this active role and be remunerated according to set KPIs.

All the ground research accumulated to contribute towards a local masterplan, together with the masterplan itself, should be then passed on for approval to the relevant authority who will be able to view the resultant plans holistically. The charging network master plan should include information related to the existing stock of parking provision, walkable pavements, potential cycling lanes, and intermodal hubs and public stations. The overall master plans should reflect the intention of enhancing walkability within the locality and decreasing private vehicular access in towns and city urban cores in favour of residents' safety, increased open spaces and the inclusion of more green areas in our urban fabric. Unessential driving should be discouraged and environmental responsibility should be at the basis of such strategies. Moreover, the plan needs to achieve the minimum imposed number of public charging stations as established by the national policy, identify appropriate locations in consultation with the local community and the affected neighbourhood whilst ensuring walkability and access for all in all cases, provide for future planned installations ensuring equal geographical dispersion and maximising the occupancy rate of such infrastructure. The priority should be set in coordination with Infrastructure Malta and their planned road works programme and other utility operators to ensure the least possible nuisance to the residents and business community alike.

To reduce future charging infrastructure costs, the responsible Authority should further push for planning regulations which require that all new indoor and outdoor parking areas, public and private buildings are able to accommodate charging stations. The connection to the grid is one of the challenges in this transition and one of the largest costs for drivers. For instance, new regulations could instruct that new and renovated residential buildings would have to be equipped with the appropriate electrical foundation to facilitate the installation of charging points.

Specifically, the Association believes there should be a strong argument to enable the transformation of fuel stations strategically placed in Malta and Gozo as mobility hubs equipped with rapid charging stations. Existing fuel stations have been granted geographically exclusive permits and concessions that guarantee the convenient provision of fuel service to the national transportation network in strategic locations. Through an effort to reduce unnecessary vehicular traffic flowing through the centres of our localities, some fuel stations have been permitted to develop large areas within the Outside Development Zone. Government needs to ensure the viability of these strategically located hubs and oblige the respective operators to provide high quality rapid charging service so as to avoid unnecessary traffic in our urban centres or the need for developing further undeveloped land in the peripheral areas of our towns and cities. The Local Councils' Association will be launching a national project on mobility hubs which could also include the re-purposing of fuel stations as the shift to rechargeable vehicles takes on steam.

Another central role of Local Councils is the management of designated public charging spaces as part of public parking management, explored further in step 7. This may include the coordination with LESA to ensure effective enforcement and maximum occupancy of these charging stations.

The charging infrastructure master plan should have the flexibility to continue to evolve. Monitoring the frequency of use of charging stations, both private and public, will be important for future improvements. If charging stations are being overused by too many vehicles, this would require providing more charging stations in nearby locations or upgrading to faster charging technology. Similarly, if a charging station is barely used, after all efforts to encourage its use have been employed, the system may provide the opportunity to relocate such a station. Feedback from residents is vital as they may provide insight to everyday issues and Local Councils would be able to work towards solutions, with the support of the rest of the stakeholders. Consistent research and evaluation of charging technologies and battery development needs to be ongoing and will play a vital role in the expansion of the system without unnecessary increase of on-street charging units. Smart systems which indicate performance of charging stations would comprise an important part of this management. This will be explored in detail in the future LCA publication entitled Smart Cities as part of the twenty-four documents within the 'ResidentFirst' project.

photo source:
Giles Christopher, The Guardian

Step 7

Thousands of public chargers will replace free-for-all public parking spaces by the end of this transition. The loss of public car spaces needs to be managed within a well-planned national parking strategy and better parking management in our towns and cities.

photo source: Michael Fousert, Unsplash

The impossible promise of providing free-for-all parking spaces no matter the number of vehicles, the location and the time of day is a significant concern to our local councillors and mayors. Vehicle registrations have been steadily increasing. As a result, we now top the highest European statistics for the highest number of vehicles per licensed driver, cars per KM of roads and the highest density of households per km of public roads. The challenge becomes more pressing when residents rightly demand more public open spaces, better pedestrian infrastructure and safer road infrastructure for bicycles and micro-mobility vehicles.

The loss of thousands of on-street car parking spaces for electric car charging spots will only exacerbate the problem. One of the main concerns in providing public EV charging is the proper planning of both on-street and off-street parking, which is already a major issue in many dense localities in Malta and Gozo (amply discussed in another LCA document entitled Parking Projects as part of the twenty-four documents forming part of the 'ResidentFirst' project).

On-street parking heavily impacts walkability in every locality, causing a poorer walking experience for pedestrians. Walkability, especially within our towns and cities which are compact and dense (having a radius that corresponds to the so-called 'last mile'), is the main priority within a sustainable mobility plan, as it is the most convenient mode of travel. This subject is explored in more detail in other upcoming documents produced by the LCA, namely Walkability and Accessibility, Last Mile Transportation and Shared Transport.

The location of public EV charge points should be studied and planned, whether on- or off-street, in order to ensure ease of use and to minimise the impact on pedestrian movement and overall walking experience, as well as visual local character. This is particularly important in Urban Conservation Areas and in areas already characterised by parking and pavement pressures. The positioning of EVs is an opportunity to re-evaluate parking policies (also discussed in the LCA document entitled Parking Projects) and use these policies to incentivise a switch to EVs, therefore encouraging a cohesive sustainable mobility strategy.

Large public parking lots are limited in number. Introducing reserved EV parking bays therein could also encourage the move to EVs, as well as new planning policies for car parks to have a minimum number of spaces equipped with charging pillars. Such measures may effectively influence driver choices and are relatively low cost, but require proper, in-depth localised studies and management. As part of the national parking management policy, community parking projects including EV charging infrastructure could potentially be subsidised by the central government and

managed by local government as part of reaching the necessary charging facilities required for a rapid change-over. Public and private ventures could be formed to introduce public charging in private parking lots, efficiently benefiting from the presence of shared space. Utilising existing infrastructure, both public and private, is a key element of sustainable mobility, as with the potential of utilising existing resources such as fuel stations, as discussed in Step 6. Additionally, planning policies should require developers to allocate a minimum fixed percentage of parking spaces equipped with charging pillars especially in large developments, in line with current Enemalta requirements for the inclusion of such charging points within both surface and underground car parks.

The layout of car parks should maximise the ease of use of charge points, placing them so they may serve as many vehicles as possible. In general, EVs can use charge points within 5 metres as most charging cables are roughly around 4 – 8 metres long. User experience and access to the charging point would be improved if the following guidelines are implemented:

- Setting a length of stay limit for an EV bay. It is necessary to penalise 'overstaying' and blocking access for others. This may, for instance, involve higher fees after a set period, enforced via the charge point operator. The responsible use of energy should be encouraged, possibly through a stepped rate of consumption per driver, thus curbing potential abuse.

- Clear signage and painted bays help EV drivers find charge points and understand any restrictions. They need to be planned in a way that prevents them from being blocked by conventional (fossil fuel-based) vehicles.

- Heavy fines should be in place for conventional vehicles parked in EV parking bays or blocking dedicated EV spaces.

In order for these guidelines to be effective, it is important that the rules and restrictions be widely publicised and heavily enforced. On-street public charging requires innovative solutions to ensure that vehicles may be charged while parked in different streets and simultaneously do not impede walkability. A popular solution, often seen in other cities, would be integrating charging points into other street furniture elements, such as street lighting posts. These systems may be faster and cheaper to deploy than conventional column chargers although the local street lighting system would need to be altered to allow 24-hour supply at the lighting device. New technologies further allow for smart control management of street lighting through wireless data sensors.

photo source: Local Councils' Association Malta

Step 8

In the ideal scenario, tens of thousands of heavy fuel vehicles will be ditched in favour of new, emission-free vehicles every year. How and where would we handle, process and recycle this waste, and what would become of the hundreds of thousands of batteries once the first battery model vehicles need replacement?

photo source: Alexander Popov, Unsplash

As the EV market grows, questions arise as to what could be done with batteries after their life cycle is finished, and the use of second-hand batteries. Used batteries may present an opportunity as a valuable secondary source of materials.

Recent European regulations ensure that EV suppliers are responsible for reusing their products. Every battery pack is first tested to determine its state of health, then fully discharged and reconfigured to meet the energy demands of their new application. Batteries with minimal degradation and damage could likely be reconditioned and reused directly as a replacement for the same model vehicle, which is done by both Nissan and Tesla. Nissan is also now reusing old batteries from its EV cars in robotic delivery vehicles within its factories. Other manufacturers, such as Volkswagen and Renault, recycle the batteries to recover different elements, such as nickel, lithium, and manganese.

According to recent research, batteries will need half the lithium they currently need in ten years' time. It is therefore critical to integrate a policy clarifying battery reuse as part of the general EV national policy, to ensure a sustainable future for the next ten years. Such policy should furthermore encourage investments of battery recycling activities.

The new EU regulatory framework for batteries is designed to modernise the EU's regulatory framework for batteries in order to secure the sustainability and competitiveness of battery value chains. It would introduce mandatory requirements on sustainability (such as carbon footprint rules, minimum recycled content, performance and durability criteria), safety and labelling for the marketing and putting into service of batteries, and requirements for end-of-life management.

photo source: Kumpan electric, Unsplash

Concluding Thoughts

Cities are increasingly adopting strong EV policies, including targets for zero-emissions and fully electric fleets. The biggest challenge is building an efficient and reliable infrastructure that could possibly supply for an all-electric future. Local factors dictate different charging needs, influenced by the unique characteristics of each locality. Notably, home charging strongly influences how much public charging is needed at both the locality and national level. Localities with more residents in multi-unit dwellings need more public charging to make up for the lack of private home charging and spatial constraints. In the early stages of the transition to EV, an important part of planning for charging would be to provide enough space for both dedicated parking, as well as the location of the charging points. Important factors to be considered include population density, renting patterns, public transit access, and parking patterns.

In order to ensure the success of a national EV infrastructure strategy, it is vital that Local Councils participate as they have the most comprehensive knowledge regarding the challenges and opportunities within their localities. Local Councils are a valuable source of information for stakeholders that could:
- Track and measure charging infrastructure through the collection of valuable data
- Develop partnerships with stakeholders
- Create outreach and education campaigns
- Encourage the implementation of new charging regulations.

As evidenced by emerging best practices within other European cities, discussed throughout the 8 steps, a number of policies and actions could be adopted to encourage greater charging deployment.

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European Publications, Projects & Tools

Publication: **The Power of Civic Ecosystems** (URBACT)
Publication: **MOBI-MIX Report: The MaaS Scene**
Publication: **The Innovative Mobility Landscape: The Case of Mobility as a Service** (The International Transport Forum)
Publication: **E-mobility: From strategy to legislation** (CIVITAS)
Publication: **Policy Advice Notes: Smart mobility management measures** (CIVITAS)
Publication: **Policy Advice Notes: Integration of parking and access management** (CIVITAS)
Publication: **Policy Note: The use of social media to involve citizens in urban mobility projects and city planning** (CIVITAS)
Publication: **E-mobility: Make it happen through SUMPS!** (CIVITAS)
Publication: **Linking intermodal services better** (CIVITAS)
Publication: **Engaging the citizens of today to build the sustainable cities of tomorrow** (CIVITAS)
Publication: **Develop a smart choice of mobility services Factsheet** (CIVITAS)
Publication: **Shared mobility models** (European Commission)
Publication: **Planning for a more Resilient and Robust Urban Mobility** (European Platform on Sustainable Urban Mobility Plans)

Project: **City district/urban corridor cases as pilots for sustainable urban mobility**
Project: **Citizen and stakeholder involvement in the mobility planning process and new mobility services**
Project: **Adaptive parking management based on energy efficiency and occupancy**
Project: **Promote the installation of electric vehicle charging in multifamily housing**
Project: Shared Elba Mobility Agency
Dedicated to planning, managing and coordinating the different ride-sharing services, mobility information services for users, and other types of mobility planning support available on the island.

Tool: **Mobility Marvels Podcast** (CIVITAS)

Inspiring stories on smart, inclusive and sustainable mobility featuring forward-thinking cities, people and projects. In its first season, Mobility Marvels will take you on a journey to 16 cities that have made better living and moving a reality on the ground.

Tool: **ITF Transport Outlook 2021** (International Transport Forum)

Provides scenarios for the development of transport demand up to 2050. It also models transport decarbonisation scenarios and their impacts on climate change.

Tool: Sustainable Transport across Europe Factsheet (EU Mobility Atlas)

Further Case Studies

Case Study: **City Liveability by Redesign**

Launch real-life transition experiments in urban streets by means of small, tangible interventions, in combination with alternative mobility concepts.

Case study: **Smart Mobility Hub Platform**

A new efficient and reliable DSS tool to foster data exploitation so as to enable future urban mobility systems to be more collaborative, user-centred.

Case study: **Mapping Urban Transportation Innovation Ecosystems**

Creating a strategic infrastructure for urban policy management in the field of urban mobility.

Case Study: **UMOS: Urban mobility operating system**

Developing a service platform that lifts the barriers between different mobility solutions and ecosystems.

Case Study: **Parking in the context of mobility hubs (Cologne)**

Funding Opportunities

European City Facility (EUCF)

3rd call October - November 2021 - 4th call May - June 2022

The evaluation of the EUCF applications is conducted after the close of each call for applications by a dedicated evaluation team and it is based on five criteria: investment size, energy savings, governance structure, stakeholder engagement and alignment with EUCF objectives. Applicants undertake a 5-step journey within the scope of the EUCF, from the pre-application phase towards the implementation of their investment concepts.

ELENA

ELENA is a joint initiative by the EIB and the European Commission under the Horizon 2020 programme. ELENA provides grants, mainly to cities and regions, for technical assistance focused on the implementation of energy efficiency, distributed renewable energy and urban transport projects and programmes. The European Commission has allocated a further €35 million towards the initiative with €5 million dedicated to support projects across its sustainable transport portfolio.

Horizon Europe: Cluster 5: Climate, Energy and Mobility

Cluster 5 'Climate, Energy and Mobility' is the second largest in size with a budget of €15.35 billion. The goals of Cluster 5 Climate, Energy and Mobility are:

- Accelerating the twin green and digital transition and associated transformation of the economy to achieve climate neutrality in Europe by 2050. This requires that the transition to greenhouse gas neutrality of the energy and mobility sectors be achieved by 2050.
- Making Europe the first digitally-led circular, climate-neutral and sustainable economy by transforming its mobility, energy, building and production systems.

This twin transition requires instilling profound changes in social practices and skills requirements; as a result, this involves engaging society in the co-design, co-development, and co-implementation of innovations (including through social innovation). In this way, development of new products, methods, and services for and with societal needs would involve citizens, public authorities, business and industry, social partners and academia – the so-called 'Quadruple Helix' – in their design, development, and implementation.

Cluster 5 will deliver on six specific expected impacts, each of which has been

transformed into a specific Destination, as listed hereunder. This Destination-based work programme (WP) structure follows a thematic centre-of-gravity approach, but activities in a given Destination can of course have a cross-cutting character and will often contribute to multiple expected impacts.

Climate – Destinations 1 & 2

1. Climate sciences and responses for the transformation towards climate neutrality
2. Cross-sectoral solutions for the climate transition

Energy – Destinations 3 & 4

3. Sustainable, secure and competitive energy supply
4. Efficient, sustainable and inclusive energy use

Mobility – Destinations 5 & 6

5. Clean and competitive solutions for all transport modes
6. Safe Resilient Transport and Smart Mobility services for passengers and goods

Further information is available from Mr George Bugeja and Ms Tamara Schembri (the Cluster 5 National Contact Points) or from the European Commission website.

Smart Cities Marketplace - Is your city ready to redevelop certain areas? Call for project concepts

The Smart Cities Marketplace matchmaking support service is continuously looking for projects in need of finance to be matched with the requirements of members within its Investor Network. After completing and submitting their intake form, the matchmaking team will verify your submission, get back to you with any questions for clarification and, once resolved, submit your project concept to those investors whose investment strategy is matching your type of project. Once an investor is interested to learn more about your project, they will put you in touch for a 1:1 conversation with the investor. Typically, these conversations will be held during one of the face-to-face matchmaking events that are scheduled regularly.

Events

ITS World Congress (Hamburg)

11-15 October 2021

The ITS Congress is the biggest event focused on smart mobility and the digitalisation of transport. The Congresses offer stakeholders and patrons the ultimate platform to meet with industry influencers, discuss ideas and initiatives, make new contacts and promote their businesses by taking part in a range of activities.

Climathon Week

25-31 October 2021

Climathon is an ideathon-based global movement that builds the foundations for tangible projects, impact-driven start-ups and long-lasting conversations with decision-makers around city plans and policies. It happens over anything from hours to days, where hundreds of cities across 6 continents and many time zones come together with diverse groups of citizens ranging from policymakers to entrepreneurs, youth to business leaders, hackers to academics, students to professionals.

Urban Mobility Summit Berlin

October 2021

A City Summit is a unique event tailored to the needs of the host city and designed to activate the local mobility community, putting innovators and policymakers on stage together.

Civitas Forum 2021

20-21 October 2021

The 18th edition of the CIVITAS Initiative's flagship event will gather the keenest sustainable mobility minds to debate and analyse the most urgent topics in the field. Over the course of its two days, it will continue the tradition of offering interactive workshops, intriguing sessions, and interesting side visits, whilst introducing exciting new programme elements. This will provide the ideal opportunity to hear from the cities, people and projects driving innovation in smart, inclusive and sustainable mobility, as well as to exchange and connect with city representatives, policymakers, practitioners, planners, NGOs, and academics.

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