D3.2 Package of Recommendations from five clusters

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SUNRISE in a Nutshell

It is well-established that urban mobility is intertwined with most aspects of urban life. People need to get around, deliveries need to be made, and the cityscape itself is dictated by these needs. How to best meet urban mobility needs in a sustainable way is less well-established. Co-creation provides an opportunity to bring potentially differing points of view into the planning process—and then not only are a variety of perspectives taken into account, but a variety of skills are utilised.

Co-creation can and has been applied successfully to many situations. Companies employ it with their clients, clinics and researchers employ it with their patients, and local governments employ it with their citizens and stakeholders. City planners' and policymakers' work can be made better by the involvement of the citizens (who are often also the subjects of their work), and citizen initiatives can be enhanced by working with local authorities. This is possible in its purest form at the neighbourhood level. The level of specificity at which needs can be identified and addressed is unmatched. This particularly local focus of neighbourhood planning creates unique opportunities for community engagement and collaboration.

The CIVITAS SUNRISE project takes a neighbourhood approach to co-creation of urban mobility solutions. Neighbourhoods in the six project cities — Southend-on-Sea, Bremen, Malmö, Budapest, Thessaloniki, and Jerusalem — have facilitated the co-creation of measures to address co-identified and co-validated mobility concerns.

Explanation of the "Clusters" concept

To strengthen the capacity of SUNRISE neighbourhoods to develop measures, city partners convened to discuss ideas in groups organised along the following topics of highest interest, called thematic clusters:

- Mobility and accessibility for all, led by urbanista (page 5 of combined pdf)
- Active modes, led by Rupprecht Consult (page 31 of combined pdf)
- Innovative solutions to urban logistics, led by Zaragoza Logistics Centre (page 42 of combined pdf)
- Use and design of public road space, including parking (public spaces), led by Koucky & Partners (page 59 of combined pdf)
- Shared mobility, led by the City of Bremen (page 70 of combined pdf)

Each cluster was led by a project partner with expertise in the topic, and included the city participants as well as other partners with insights to share on the topic. The cluster meetings, both in-person and online, provided opportunities for the city partners to share their work on the respective topic, exchange experiences, and receive expertise. The clusters proved to be a useful format for the city partners to learn from one another – what approaches went well, what challenges arose, and how they could be addressed.

With each cluster meeting, experiences were shared, tips were exchanged, and questions were answered. The information ranged from general to highly situation-specific. From these conversations and presentations, each cluster leader has distilled the most salient recommendations that have emerged. These five cluster-specific findings are compiled in this single document, which aims at providing useful advice on the respective topics from the unique angle of neighbourhood co-creation.
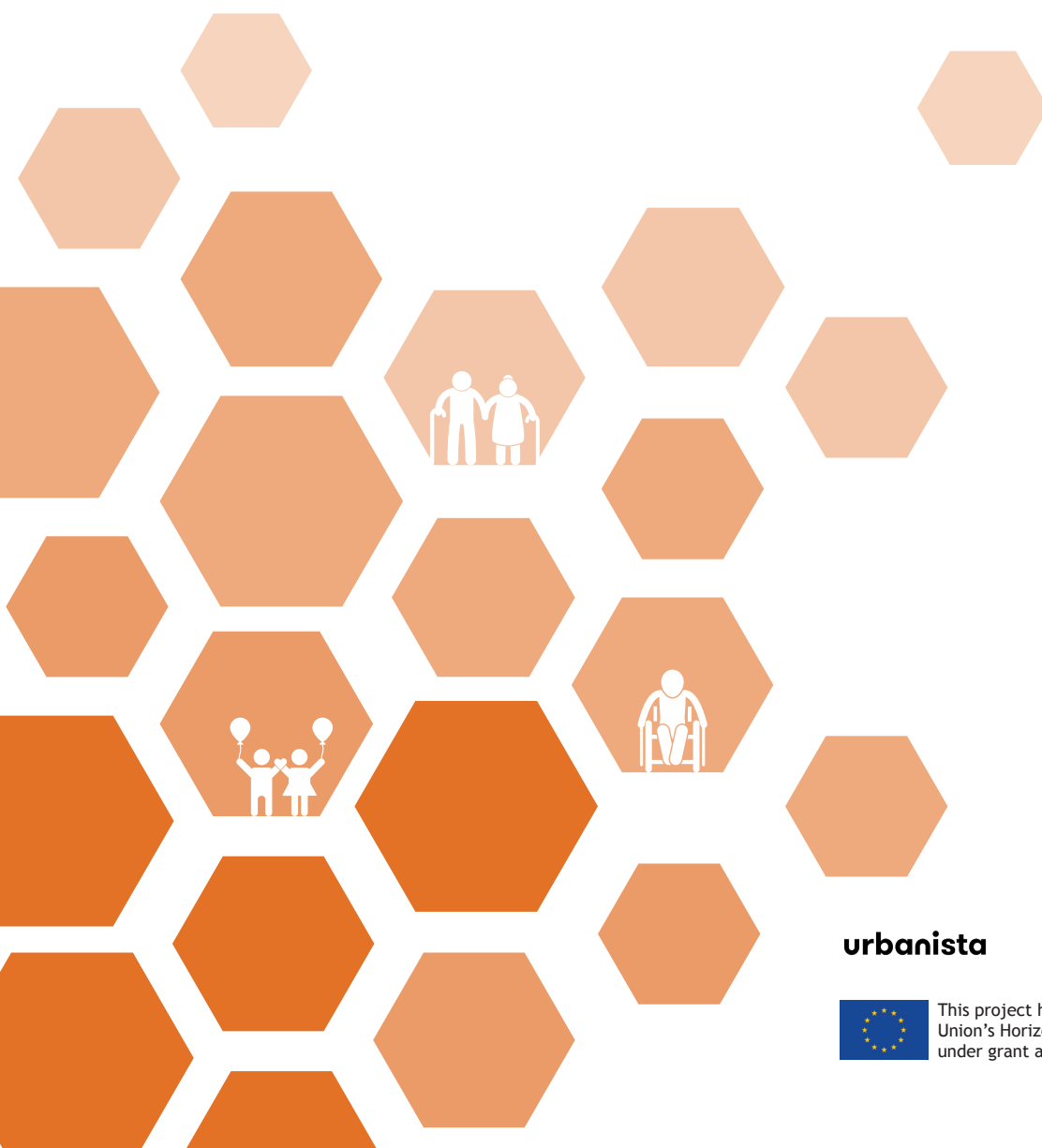
Where the co-creation approach and neighbourhood context intersect

These documents are not intended to be comprehensive guides to the five topics. Many thorough sets of recommendations already exist on these themes. This is also not a comprehensive guide to co-creation, a topic upon which SUNRISE elaborates more thoroughly in the Co-Implementation Guidelines and other documents. Rather, these recommendations focus on the specific opportunities afforded by the neighbourhood approach and co-creation in these five topics. These recommendations are intended for anyone active at the neighbourhood level—citizens, local councils, civil society actors, and community organisations.

ACCESSIBILITY FOR ALL
Youth, Elderly, Disabled, Ethnic Minorities, Gender, Low Income

CLUSTERTOPIC

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SUNRISE
Sustainable Urban Neighbourhoods
Research and Implementation
Support in Europe

2020
CiViTAS
Cleaner and better transport in cities

Content

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1. ACCESSIBILITY & MOBILITY FOR ALL
backgrounds, importance & aspects

How to encourage accessibility of urban spaces to provide opportunities and bridge inequalities in order for all inhabitants to become part of the urban everyday life and therefore, increase urban qualities?

Access (a place to linger for social interaction and activity) and connection (a place of economic efficiency and transit) are inseparable themes. Although the meaning of accessibility and mobility are self-evident for every human being, they are perceived differently by the various user groups. Reasons for this include the different types of barriers:

- **Physical and architectural barriers** are features of buildings or outdoor spaces that cause problems for people with physical limitations or disabilities. E.g.: hallways, doorways and parking spaces that are too narrow for a person using a wheel chair, counters that are too high, stairs that can't be taken, steep slopes.

- **Information or communication barriers** occur when sensory disabilities, such as hearing, seeing or learning disabilities, have not been considered (sending & receiving). E.g.: videos that are not captioned and don't have transcriptions.

- **Mental barriers** are individual, intangible and sometimes prejudiced. E.g.: thinking that people with disabilities are inferior, security or insecurity in public space, any information that is not specifically provided for disabled people, apparently insuperable streets etc.

- **Organisational or systemic** are policies, practices or procedures that unfairly discriminate and can prevent individuals from participating fully in a situation.

- **Technological** if a device or technological platform is not accessible to its intended audience and cannot be used with an assistive device.

- **Attitudinal barriers** are assumptions, perceptions, behaviours that discriminate against persons with disabilities leading people to ignore, to judge, or have misconceptions about a person with a disability.

What does »accessibility« mean?

Mobility and accessibility are discussed and approached within a wide range of academic fields and practical experiences. Defining and measuring both terms has empirical as well as conceptual challenges.

In this paper ACCESSIBILITY is defined as the ease of reaching destinations. Accessibility is high where every household has the abilities and possibilities to **reach a wide variety of destinations**, which are **physically close** and the **cost of travel per unit of distance is reasonable**. A lack of accessibility is instead characterised by a paucity of destinations, obstacles, long distances, and high transportation costs per unit of distance. MOBILITY in this perspective is the **efficient movement of people and goods** that is seen as beneficial or as the key aim of policy. This would put a high priority on active (e.g. biking) collective modes of transport (e.g. buses, rail).

„CITIES PROVIDE ACCESS TO HUMANS, ACTIVITIES, RESOURCES, SPACES & INFORMATION. "

Kevin Lynch (1981):
A Theory of Good City Form

Why is it important?

Access to mobility and transport means access to jobs, services and opportunities. It embodies the possibility to social inclusion and equity and is therefore crucial for social well-being. It is also key to city's economic vitality and quality of life. It should therefore be our ambition that as many people as possible - regardless of age, origin, skills, place of residence or physical abilities - have access to mobility and related systems so inclusive mobile community can evolve.

Have you heard of the »Curb Cut Effect« ?

more information

Click on this symbol to get more information!

Aspects of accessibility

Accessibilty constitutes as one dimension to measure urban qualities. It can be described through the following three aspects which could give a first orientation:

POROSITY
- The permeability of urban tissue.
- Depends on distance, location and accessibility as well as on the position and design of the accesses and thresholds of an urban space.
- It can be ascertained by means of inspections and the analysis of urban plans.
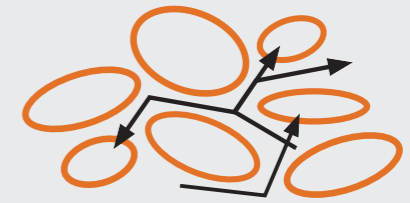
REGULATION
- Describes the spatial and temporal access or exclusion criteria that regulate the use of a location.
- This includes the right to physical presence, to self-determined action and to the use of space.
- It can be recorded through the analysis of usage regulations and prohibitions and through interviews with relevant actors.

CONTEXTUALISTION
- Describes the effect and reference of urban development elements to their existing and potential neighbourhoods.
- It can be made accessible through urban analyses and observations.

Based on: Kretz, Simon / Kueng, Lukas (2016): Urbane Qualitäten – Ein Handbuch am Beispiel der Metropolitanregion Zürich, p.60ff.

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2. INCLUSION – A CITY FOR ALL

For people who can't see well, can't walk well, who are sitting in a wheelchair, are pushing a stroller, aren't as fit or as tall as others or who are speaking another language or are suffering from lower income, cities are covered with obstacles and access restrictions. Therefore one of the overriding objectives of urban planning is inclusion.
Inclusion means that every person – with heterogenous perspectives, backgrounds and resources – belongs to the society. If everyone can be a part of the society it's normal to be different and everybody can benefit.

By removing physical hurdles and solving or overcoming mental barriers more openness, tolerance and better coexistence can be possible and, thus, an inclusive mobile community could evolve.

Due to the growing diversity of life realities, social opportunities and future prospects, the topic of inclusion plays an increasingly important role in urban areas. Thus, inclusion is the overall key objective that should be an integrated goal from the very beginning of planning processes.

But creating a city where everybody feels comfortable and save and where everybody moves from A to B without problems is not easy. Senior citizens have different demands then children and blind people require other surfaces then wheelchair users. A blind person for instance needs a kerb for the orientation towards the street whereas for the wheelchair user a kerb could mean an insurmountable barrier. Consequently some social groups place more sen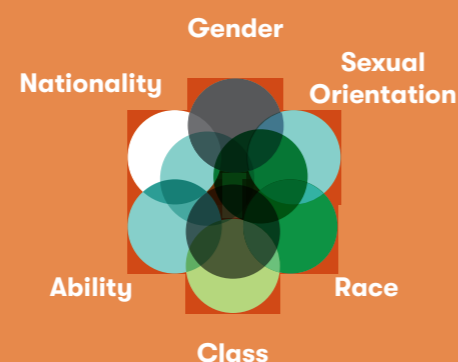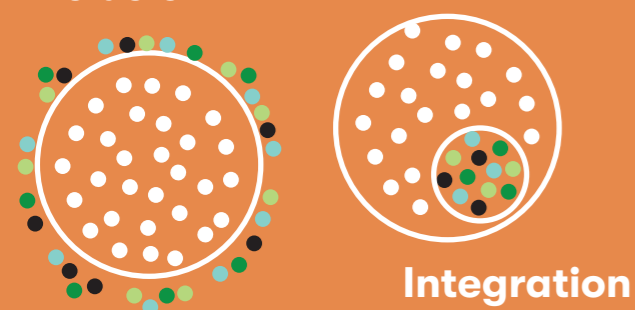sitive demands on accessibility and mobility in urban spaces those should be discussed in this section in detail. Without forgetting that accessibility for all lies in the search for finding innovative solutions everybody benefits from.

The user groups described on the following pages have demands on mobility and public space that have not yet been sufficiently taken into account. Some of the named groups were defined with the task definition of the Cluster Topics, others resulted from joint workshops with the project partners. Of course many of the claims listed here can be also subordinated to other user groups.

Exclusion

Integration

Separation

Inclusion

Gender
Nationality
Sexual Orientation
Ability
Class
Race

(The lens of)
intersectionality:
Consider the way social categorisations, like gender, age, race and social class combined create an interdependent system of discrimination and disadvantage resulting in residents' experiences of navigating their communities and cities.

»If you're standing in the path of multiple forms of exclusion, you're likely to get hit by both.«

ⓘ TED Talk: Kimberlé Crenshaw on »The urgency of intersectionality«

Source: Own representation based on Sozialverband VdK Bayern e.V.

SPECIFIC CLAIMS FOR ACCESSIBILITY

DISABLED

Accessible transportation is one of the key components that supports the community integration of people with disabilities, increasing quality of life and decreasing levels of social isolation. Barrier-free design and accesses to public transport are one key component to allow independend movement to a higher degree.

The public space and also route connections must therefore meet barrier-free requirements and should be redesigned and replaced. For instance, access to the open space must be equipped with lowered curbs and plenty of seating. For overcoming barriers such as traffic crossings, traffic light phases should be adapted to people needs. Diverse media tools and touch elements can support orientation taking advantage of various senses.

It should be borne in mind that people with disabilities are not only those for whom (in the short or long term) mainly physical barriers cause difficulties, but that the consequences of mental impairment must also be considered.

ⓘ The Guardian on » What would a truly disabled-accessible city look like?«

ⓘ CDC on » Common Barriers to Participation Experienced by People with Disabilities«

ⓘ Disability-Inclusive and Accessible Urban Development Network: »How to make cities accessible and inclusive«

Main points for the accessibility of disabled people:

- Ensure that information in the various means of transport and at stops (timetables, ticket machines, etc.) can be perceived in different ways, e.g. braille, acoustic signals, images, symbols, sufficiently large and legible fonts.
- Accessibility means a level-free transition from roads, transport and access to buildings. In addition, however, this includes e.g. not only ramps but also slopes and their incline.
- Spatial proximity of various facilities of the daily need increases the accessibility and therefore the quality of life enormously.
- Inclusive community activities and events promote social cohesion and thus make a significant contribution to improving the accessibility of people with disabilities.

Possible contact opportunities:

- Organisation for Disabled People
- Representative/Delegate for the Disabled
- Advisory Boards – e.g. Advisory Council for People with Disabilities, Advisory Council for Inclusion
- Social Office / Social Services Department
- Representative for Employees with Disabilities
- (Municipal) Intermediaries
- Association of Self-Help Groups
- Round tables
- Homes for the Disabled
- Schools/Workshops for the Disabled

Possible participatory methods:

- Special Walks:
  Walking and exploring the city or district together with e.g. blind, deaf or handicapped people, provides a great insight into their everyday challenges. »see Budapest p. 34«
- Self Experience:
  Various providers offer the opportunity to experience the consequences of a physical disability in everyday life. »see Bremen p. 36
- Using maps with tactile elements:
  To enable blind people to read maps, their surfaces can be adapted accordingly.

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ETHNIC MINORITIES

Ethnic minorities experience discrimination not only when it comes to social mobility i.e. the possible movement of individuals, families, households, or other categories of people within or between social strata in a society. Being an often marginalised group also affects e.g. their spatial concentration (socio-spatial segregation) in the city, the use of different modes of transport and the corresponding experience and dependencies. In London for example the bus is the most common mode of public transport used amongst ethnic minority communities (which is also a consequence of social segregation »see next paragraphs) but they are less likely to feel safe while using it. Black, Asian and minority ethnic (BAME) people experience higher rates of road and pedestrian injuries. Further barriers are the cost (sixty per cent say cost is a barrier compared to 38% of white Londoners) overcrowding, unreliable services, slow journey times and concerns about anti-social behaviour (for more information see second link below).

Also socio-spatial segregation plays an important role: People arriving to cities tend to settle in neighbourhoods with culturally similar habits searching for possibilities to connect in a familiar atmosphere and to learn strategies for navigation and orientation in the new city. Therefore, neighbourhoods such as "Little Italies" and "Chinatowns" arise in large urban territories. Mostly those neighbourhoods are characterized by socially homogenous groups - a denser accumulation of urban minorities such as persons with culturally and ethnically similar backgrounds or sharing similar life situations such as being in a process of integration.

The scarcity of affordable housing and ongoing gentrification are moreover a reason for socio-spatial segregation being a driver for choosing a living destination or being pushed toward one which mostly appears to be a less invested inner-city neighbourhood or locations in the outskirts. Mostly those neighbourhoods are characterised by disadvantaged features and stigmatisation in comparison to other neighbourhoods – meaning with less access to urban infrastructure (education, health and transport), poor maintenance of local areas (traffic lights, street lighting and uneven roads and pavements) or holding an image of a higher crime rate. Socio-spatial segregation is a broadly discussed topic in urban social studies. Considering a growing diversity of cities

inhabitants through migration and multi-national lifestyles, it is becoming an increasingly important question how to enable and restructure urban quality for all cultural backgrounds.

Main points for the accessibility of ethnic minorities:

- Ease orientation and navigation providing multilingual communication and information options regarding travel information and assistance (e.g. on routes, schedules and relative costs of transport modes and tickets available).

- Combat insecurity by communicating a zero-tolerance policy on racism, creating safer travel environments (e.g. through actions such as increased staffing, enhanced lighting and more CCTV surveillance).

- Encourage travel between diverse neighbourhoods in order for people to exchange their perspectives and bridge cultural barriers. Provide diverse "reasons" and "experiences" for traveling across own or other neighbourhoods: not only inner-city shopping but possibilities for exchange and connection in non-commercial activities.

- Learn from informal transportation practices such as minibuses' routes and rhythms as they clearly demonstrate a demand and needs of the people

- Rethink the public transport pricing system and subsidy: How do travel distances in everyday life relate to the user's costs of public transport? In the European city: people living in neighbourhoods in long distance of the inner-city neighbourhoods mostly are already in a disadvantaged living situation including longer travel periods and low financial resources to invest in transportation. This can conclude to avoidance of movement throughout the city and encourages segregation.

Possible contact opportunities:

- Religious Associations
- Cultural Associations
- Migrant Organisations
- Migration Advisory Committee / Migration officers
- Commissioners for Integration
- Counsellors for integration (social space management)
- Integration Advisory Council

To consider regarding participatory methods:

- On the spot participation: Due to various barriers, ethnic minorities often do not participate in traditional invited participation events. Visiting highly frequented places of everyday life or multipliers (e.g. religious associations) or direct contact at the front door by native speakers is usually more promising.
- Addressing concrete concerns and working together to achieve improvements instead of limiting on appeals and calls
- Staging planning workshop as a multilingual community experience and combining them with low-threshold offers (parents' afternoons, school festivals and parents' cafés).

> *i* — Lucas Harms on »Mobility among Ethnic Minorities in the Urban Netherlands«

> *i* — Transport for London: Understanding the travel needs of London's diverse communities

> *i* — Jonathan Rokem and Laura Vaughan on »Segregation, Mobility and Encounters in Jerusalem: The Role of Public Transport Infrastructure in Connecting the 'Divided City'«

YOUTH

Children and adolescents are a more sensitive group of users in urban areas. Because of their size and development, they experience traffic differently from adults. The five main challenges of urban children are traffic and pollution; high-rise living and urban sprawl; crime, social fears and risk aversion; isolation and intolerance; and inadequate and unequal access to the city (» Arup).

Important competencies for safe traffic behavior develop only with increasing age. Furthermore children are often too small to look over parked cars and are therefore often unable to see approaching vehicles in time. They are less likely to orient themselves than others before crossing the road and traveling at irregular speeds (running, jumping or stopping suddenly). Moreover, their behaviour is quite hard to predict as they do not act equally in similar situations.

For children and adolescents, open spaces are places of experimentation, the testing of one's own abilities as well as the unobserved movement and encounter with peers. Young people, in particular, seek their freedom in the city itself. On the one hand, they value places that allow retreat, and on the other, places that live up to their desire to present themselves in public. Above all, there need to be rooms to rest or empty spaces, which they seek as niches of self-determined leisure time activities.
In summary it is important to offer socialising opportunities for all age sand pay attention to the different ways children use their cities – from family units to give children peers to play with, and play space for preschool ages, elementary and teenage kids to informal spaces for teenagers. As with every special group also with children multiple forms of exclusion can overlap (»see Intersectionality p.6) as girls and minority ethnic children are likely to be more restricted in their use of urban space.

Initiatives like »880 cities« break it down: »We believe that if everything we do in our cities is great for an 8 year old and an 80 year old, then it will be great for all people.« Also the former mayor of Bogotá, Enrique Peñalosa, once said: "Children are a kind of indicator species. If we can build a successful city for children, we will have a successful city for everyone." »From a design perspective, babies, toddlers and their caregivers' vulnerability, dependency and strong drive to explore and play mean that if a space is safe, clean and interesting enough for them, it's likely to work for everyone.« (»Urban95)

> *i* — The Guardian on » What would the ultimate child-friendly city look like?«

> *i* — Arup on »Cities Alive: Designing for urban childhoods«

> *i* — University of Amsterdam on » Does independent mobility help children know their cities better?«

> *i* — ArchDaily on » [...]How to Design Stimulating and Safe Cities for Childhood«

Main points for the accessibility of children:

- Allow freedom: Provide places and open spaces for children (to play, mostly in parks and in the streets) and young people (for self-presentation and self-staging, mostly in the city center and at stations) giving children the opportunity for unstructured play and the opportunity to acquire their own public space to a certain extent.

- Provide a proper mix in the urban space of independent and social game exploration, discovery and imagination.

- Allow kids to experience life within the wider community, e.g. by turning playgrounds into community squares – featuring high-quality playable spaces with anything from community gardening to sporting facilities. Or by transforming outdoor institutional settings into multi-use neighbourhood spaces for the community (around schools, sport/recreation and health facilities).

- Find ways to create an environment where parents would feel that it was safe enough for children to walk to school.

- Invest in safe traffic especially on improving children's key journeys. Children and adolescents are mostly on foot and by bicycle. Therefore design walkable and green environments that facilitate longer dwell times, increase actual or perceived safety and cater for the different scales, roaming ranges and activities of different age groups in an integrated way (traffic calming, seating and toilets, and a mix of active and contemplative spaces).

- Proximity matters: Good public transport is important, as is being able to walk safely, comfortably and quickly to where you need to go. »Learn more about the 15-minute neighbourhood concept

Possible participatory methods:

- Planning as part of the classes: Using the curriculum and the teaching staff as the multiplier for participatory formats by preparing materials with corresponding questions for the kids.
- Involve children in the construction process of small scale/ (temporary) interventions to create a sense of ownership.
- Joint (hand-drawn) mapping of the things that matter to children as part of their everyday journeys can be a good way to highlight issues and prioritise necessary improvements, helping to make them more accessible and liveable.
- Joint discovery tours through the neighbourhood can also be a good way to better understand the perspective of children and young people and offer the possibility of better perception of complex spatial issues and playful appropriation.

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ELDERLY

With the world's population getting older and more urban, the needs of older residents will play an increasingly important part in the shaping of cities. For transportation plans and programs it is critical to recognize mobility needs of the elderly to quantitatively absorb the induced demand, and qualitatively cater for their specific mobility needs. People want to be and should be self-sufficient mobile and participate in the public and social life in an advanced age. Mobility is and remains a piece of life quality. For most elderly, the living environment and the neighborhood as scale of daily movements are becoming increasingly important. Especially the accessibility of everyday destinations is a key aspect of independent living. This implies a compact city design with high address densities and mixed land uses resulting in shorter distances to services and better public transport connections to stimulate public transport usage and walking respectively. For many older people, open spaces are places of observation, meeting and (cautious) movement. The length of paths, the possibilities for breaks or interruptions, the combination of necessary ways in everyday life with contemplative moments are important motives for appropriation practices.

Besides the lengths of paths of course also their quality plays an important role: Accessible transport includes barrier-free public transport services and terminals with easy ticketing and information (e.g. schedules) for visually or hearing impaired. To encourage elderly people to walk, be active and stay engaged a barrier-free road infrastructures is necessary with level pavements, places to sit, the removal of trip hazards, good street lighting and public toilets.

The mobility of older people has some characteristics to which planning must respond accordingly: Boecker et al. (*see second link below*) found out, that although their mobility is increasing, elderly people are still partaking fewer and shorter trips than younger generations. They walk more and have a higher use of motorized modes for leisure. As in general today's elderly have been found increasingly (auto)mobile (especially with increasing trip distances) – concerns may rise regarding the environmental and accessibility impacts of this induced mobility. In contrast, they cycle less in higher density urban areas with a lack of green, possibly related to the fast pace of busy inner-city traffic and have a higher we-

ather-sensitiveness. Also the intersectionality (*»see page 6*) plays an important role here: Especially elderly women are more dependent on walking, cycling and the public transport, while men more often use the car. Elderly with a non-western ethnicity travel less in general, and less by car and bicycle in particular.

Main points for the accessibility of elderly:

- Foster autonomy and independence and social connectedness, e.g. by enhancing the accessibility of everyday destinations and the public transport through a compact city design with high address densities and mixed land uses.

- Creating walkable neighbourhoods is also an important factor for carefree, independent movement. This means to abolish environmental obstacles like hills and slopes, poorly maintained streets, and heavy traffic and provide resting places, public toilets etc.

- Autonomy can also be fostered by instructing elderly people and giving them training, for example in the use of new mobility services such as digital apps or helping them in understanding changes in mobility behaviour of younger users.

- As seniors are becoming increasingly automobile in many parts of the world, also this group needs to be encouraged to use more physically active and environmentally friendly transport modes.

- Improve wayfinding – including visual, auditory and tactile cues –to offer information on different channels addressing physical limitations like poor hearing and vision.

- Extend door opening times at trains, trams, subways and buses to allow people, who are less mobile, to walk in easily. This also applies to the traffic light phase of road junctions to allow a safe crossing.

- Improve the safe cyclability in densely populated areas, which appears to be a far more prominent issue for the elderly than for the non-elderly population.

- Elderly people are often effected by a higher weather-sensitiveness. Therefore it's important to provide enough shading and natural cooling in residential environments and along active transport infrastructures.

- Create intergenerational spaces to promote social cohesion and learning and to fight loneliness and isolation.

> The Guardian on » What would an age-friendly city look like?«

> WHO on »Global Age-friendly Cities: A Guide«

> Boecker et al. on » Elderly travel frequencies and transport mode choices in Greater Rotterdam, the Netherlands«

> CBC on » Toronto getting older and more isolated: Vital Signs report«

Possible contact opportunities:

- Weekly Markets
- Continuing Education Classes / Adult Education Centres
- Nursing Homes / Old People's Home
- Senior Fitness Classes
- Cultural institutions like chess club, choirs etc.
- Religious institutions

GENDER

Mobility behaviour and its patterns differ between different genders. For example (at least in the western hemisphere), the paths taken by women in everyday life are usually shorter, more multi-modal, more complex and diverse as part of their social and cultural roles. They also tend to chain more trips, spend less time traveling to work and their journeys are less likely to be made at traditional commuting times. Woman furthermore use public transport more often and are less likely to travel at night. Not having safe and affordable transport available may restrict women's access to other important services. Men are more likely to make single destination journeys in cars and travel during peak times. Results that are often driven by the higher number of lone parent households headed by women, part-time roles and low-wage positions. The fact that the genders move differently and mobility opportunities are unequal, has to do with dominant images of masculinity, which have been elevated to the standard. And with an economic system that evaluates gender roles differently. From this point of view, urban planning and the choice of means of transport are only a logical consequence. Overall still little is known about specific needs of gender in mobility and more awareness and research is needed to make mobility attractive, reliable, safe and accessible regardless of gender, implementing gender mainstreaming in urban and mobility planning. Trying to observe the genders consciously and individually in their everyday life lets us recognize the gaps in the system and it often shows that cities are optimised for cars and cars are mostly optimised for male needs.

The accessibility to public transport and safe options are often the most crucial aspects in relation to gender equality in transport. Especially buses, trains and trams are often considered to be danger zones for sexual harassment. Also at hubs woman tend to feel vulnerable after dark. Sexual harassment and violence against women and girls in public spaces remains a pressing problem that is mostly unaddressed by policymakers. The actual safety or the feeling of security can be promoted in different ways: Planning routes, for example through apps and real time information is an

important method of securing safe movement around the city, especially for groups that may feel targeted, such as trans or Muslim women. Well-lit stops and means of transport, extensive CCTV, emergency buttons and information campaigns also increase safety. Since women still do most of the care work, barrier-free access to trains and buses with prams also promotes the mobility of women as well as further infrastructure like a sufficient number of safe toilets

When it comes to the role of gender we should also have a look through the lens of intersectionality and take additional variables such as age, class and income into consideration to provide a nuanced view of inclusion offering equal levels of accessibility to transport to all different groups.

Main points for the accessibility in terms of gender:

- Adopt a gender-sensitive perspective! Woman, man, non-binary have different mobility patterns. To reduce inequalities in access to transport due to gender, integrate a gender equality perspective also in your mobility policy-making, think about gender action plans and equality training in your workspace.

- Make use of or generate gender disaggregated data on transport and understand the diverse needs – make a gender impact assessment, monitor and evaluate!

- To understand needs and challenges action research is needed for instance by engaging with local community groups as well as the support of women's participation in decision-making.

- Key issues to be tackled are the improvement in accessibility to public transport, safety and comfort of transport modes.

- Especially concerns about crime are often a crucial restrictor on women's use of transit. It is therefore particularly important to increase safety precautions on the routes to public transit stops - for example through lighting, an urban design that promotes social control or the establishment of »night stops« allowing women to ask the bus driver to stop at any location during nighttime hours.

- Ensuring that transport services meet the specific as well as common needs of women/men/non-binary.

> URBACT Knowledge Hub (2019) on » Gender equal cities«

> Podcast »Chatting Change« (2019) with Jacquie Bridgman on »Woman in Transport«

> CIVITAS (2018) on » Gender equality and mobility: mind the gap«

> The Transport Forum (2019) on » Transport Connectivity – A Gender Perspective«

> TInnGO (Transport Innovation Gender Observatory) – A H2020 Programme.

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LOW INCOME

Access to mobility and transport means access to jobs, services, participation in society and to opportunities. It is key to a city's economic vitality and quality of life. For this reason, mobility systems must also be examined with regard to their accessibility for people with low income. This is particularly true for cities in the global south, where urbanisation and motorisation grow rapidly and the accessibility to urban mobility is a major challenge. But this also applies to regions and cities in the western hemisphere with different impacts in different countries. A recent study from UK for example shows that lower income households have fewer cars which is largely due to affordability, although factors such as the availability of good public transport and the general necessity of a car can also play a role (e.g. for more central locations). Besides the fewer cars, households with lower income also have fewer drivers and therefore travel much less and travel over much shorter distances than higher income households (»for more info see second link below).

Therefore also in the western hemisphere income is a significant constraint on the ability to travel for people in lower income groups and the inequalities can be quite severe: People may not be able to access important destinations, local services and activities, such as jobs, learning, healthcare, food shopping or leisure as a result of a lack of adequate transport provision. Conditions that can lead to social isolation. But the published academic and policy evidence for this specific topic is still quite sparse.

Lower-income neighbourhoods are often less well connected to public transport suffering from poor/missing connections, long trips to stops, poor frequency and reliability. Last mile/first mile connections or an integrated network of multimodal user-oriented services that allow (safe) routes or mobility chains to your stop or back home are usually not offered. A situation that generates under-served residents suffering from long or unsafe walks, long waits between poorly connected services in inconvenient locations, expensive trips in uncomfortable and unsafe vehicles or people that are forced into social isolation, because they do not have the financial means to get a car, for example, and escape the lack of public alternatives. Above all the lack of income leads to a literally chained limitation of choices and the occurence of multiple disadvantages on mobility services.

International Transport Forum (2017) on »Income Inequality, Social Inclusion and Mobility«

UK Government Office for Science (2019) on »Inequalities in Mobility and Access in the UK Transport System«

World Resources Institute (2019) on » From Mobility to Access for All: Expanding Urban Transportation Choices in the Global South.«

Starkey, Paul & Hlne, John for UN Habitat (2014) on » Poverty and sustainable transport – How transport affects poor people with policy implications for poverty reduction.

Whereas the levels of non-car ownership have been slightly increasing also among higher income groups, it is important to point out that those people in higher income households are giving up driving out of choice. People in low income households often need to drive to reach their daily activities.

But making mobility more accessible for lower income groups does not only mean adapting ticket prices and connecting low-income areas to public transport and last-mile services. It also includes rethinking the role of streets and whom they serve. When lower-income households are much less likely to own a car, the dominance of cars becomes an even more visible and tangible injustice, as they impose costs in society in terms of congestion, safety, emissions and air pollution. So making cities more more-accessible and just means also shifting from individual transport modes which leads to better chanes in fighting deteriorating environmental quality and economic competitiveness.

Also smart-city technology could help to increase low income residents' access to transport systems. The City of Columbus, Ohio was officially announced as the winner of the U.S. Department of Transportation's (DOT) Smart City Challenge in 2016 and proposed several transport initiatives like an autonomous vehicle program that links poorly connected neighborhoods with low-income residents to the local transport system; transit cards for low-income populations to use for ride-hailing or car-sharing services, with or without having smartphones or bank accounts; or the building of smart corridors through wireless technology, which enables a new bus rapid transit (BRT) system that is more safe and efficient for high numbers of users (as Columbus does not offer rail service). Also common solutions like multimodal transportation planning apps can help as they allow residents to choose between an array of public and private options (such as bus, train, rideshare, carshare, and bike-share) and help inform users of the cheapest or fastest ways to travel.

Main points for the accessibility of low income groups:

- Recognise the important social value of transport. It brings access to jobs, services and opportunities and means participation in society. A barrier-free access to the transport system is one key to a city's economic vitality. Transport poverty leads to social exclusion.

- Develop indicators for quantifying and better understanding the nature of exclusion, e.g. multimodal location-based accessibility indices and housing plus transport affordability indices.

- Transport, land use and housing are interdependent. To prevent transport poverty, they must be brought together (e.g. developing corresponding indicators) by coordinating the planning of the competent authorities and setting common goals.

- Expand the public transport including first mile/last mile connections! Low-income groups often have a car less often and are therefore usually dependent on public transport.
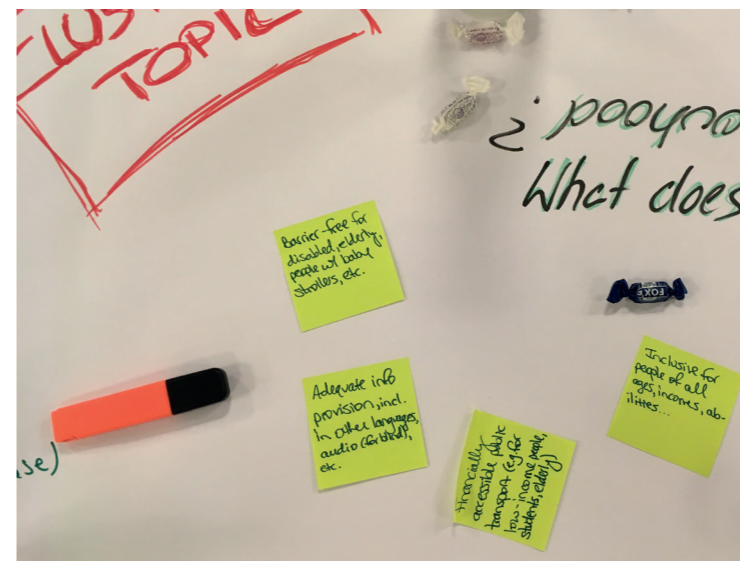

Impressions from one of the workshops on the cluster topic „Accessibility for all".

3. POSSIBLE ACTIONS

Actual „accessibility" at the level of urban neighborhoods is more of a vision than a feasible state. Inevitably, conflicts of interest arise in public spaces from the user groups just presented before. In the following recommended actions, possible action approaches are to be given which offer different possibilities to gradually change the public space. In the following, a distinction is made between physical (construction & space) and mental (& social) approaches.

The examples were collected in the course of research for the topic or were suggested by the Action Neighbourhoods.
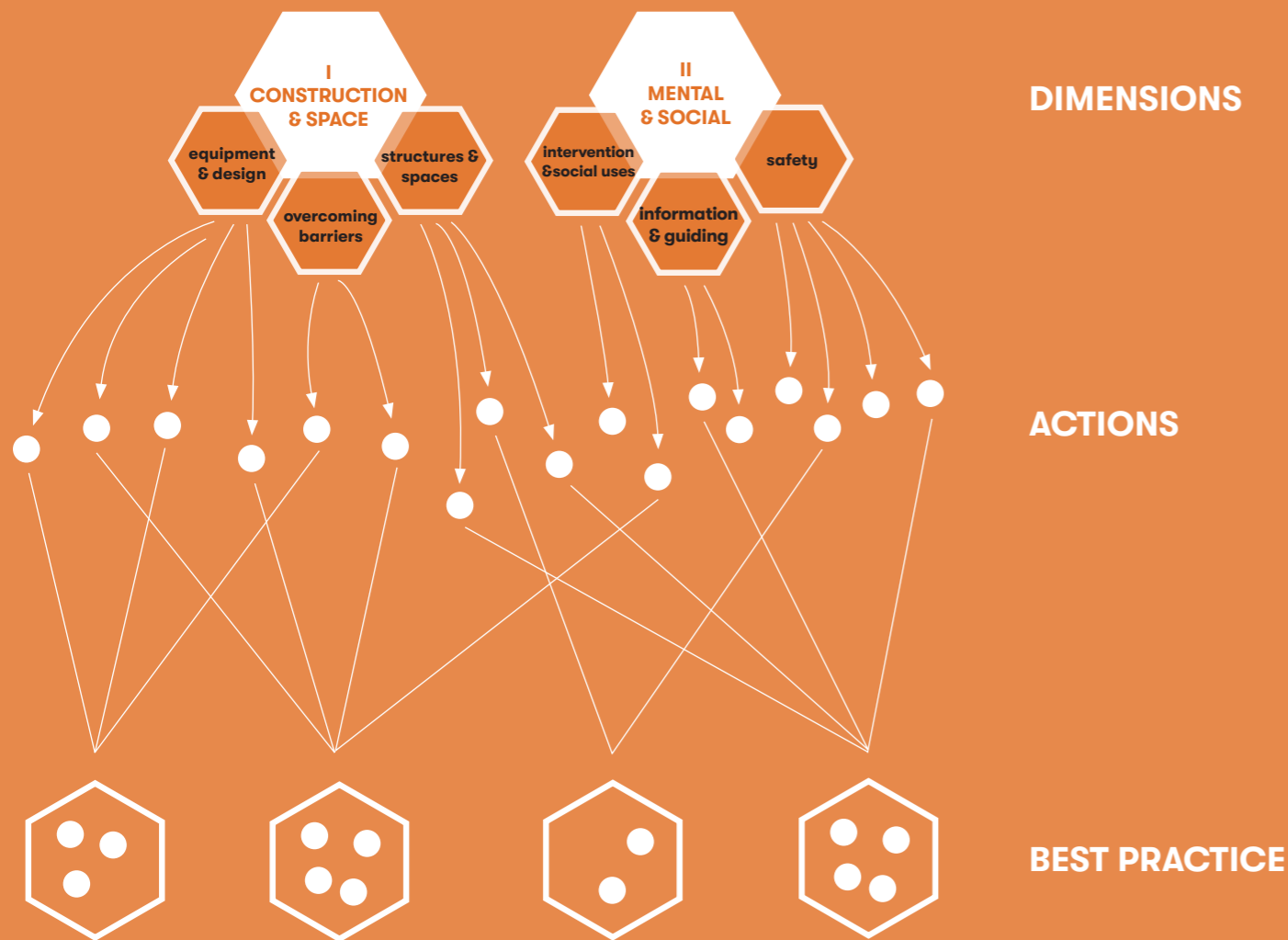
> *i*   For more impressive examples check the »Compilation of 51 case study profiles« from the INCLUSION project

> *i*   For Information on Europe's most pioneering cities: The »Access City Award«

I
CONSTRUCTION & SPACE

equipment & design

structures & spaces

overcoming barriers

II
MENTAL & SOCIAL

intervention & social uses

safety

information & guiding

DIMENSIONS

ACTIONS

BEST PRACTICE

I) CONSTRUCTION & SPACE

DIMENSION

structures & space

- Adapted roads with little separation effect
- Well-developed and marked pedestrian and cycling paths with attractive routes managed separately from each other to avoid accidents
- Clear crossings with low waiting times or priority for pedestrians and cyclists
- Consistent route relationships (gap closure)
- Sufficiently dimensioned, readable and inviting access to and within buildings
- Reasonable speed limits to reduce the risk of adjacent uses
- Reduction of dormant traffic in favor of increased and enlarged public spaces
- Green phases, that are adequate for diverse user groups with different speeds
- Sufficiently dimensioned paths with walking, rolling-friendly coverings and care of these in winter

ACTIONS

Separated cycle lane
Berlin, Germany

Seperated cycle lanes ensure safety while cycling (© QIMBY)

- ▶ More security due to reduced conflict area
- ▶ Increases the traffic flow of bicycle users
- ▶ Promotes locomotion by bike

EFFORT	Extensive reconstruction measures
TIME	Requires a lot of planning
COST	High, because elaborate earthworks
SCOPE	High accessibility and longevity

Connected pedestrian network
Bremen, Germany

Neighbourhood in Bremen (© Oelgemöller)

- ▶ Continuous footpath network
- ▶ More safety for pedestrians, reduced barriers
- ▶ Cars slow down to cross "pedestrian area"

EFFORT	Coordination works
TIME	Planning, tendering
COST	Re-construction of road (parts)
SCOPE	Reduces barriers for all padestrians

Fahrradstraße (Bicycle street)
Bremen, Germany

Designated bicycle street in Bremen (©City of Bremen)

- ▶ A road whose carriageway is intended for bicycle traffic. Cyclists have right of way.
- ▶ Improves safety, speed and convenience

EFFORT	Requires little planning
TIME	Coordination, decision-making
COST	No construction works needed
SCOPE	For bike riders

Kerb extensions
Bremen, Germany

Kerb extension at a corner (© City of Bremen)

- ▶ Reduces the length of crossings for padestrians
- ▶ Keeps "visibility zone" of pedestrians crossing free from parking cars, esp. important for children

EFFORT	Involves planning and road works
TIME	For tending,planning,implementation
COST	For road works
SCOPE	Brings more safety for all

Fahrradzone (Bicycle zone)
Bremen, Germany

Germany's first 'cycle-zone: Bremen-Neustadt neighbourhood (©City of Bremen)

- ▶ Entire neighbourhood with bicycle priority
- ▶ More street space for cyclists
- ▶ Safer bike riding (kids etc.)

EFFORT	For coordination of planning
TIME	Planning, tendering, implementation
COST	Construction works
SCOPE	Bike riders

Superblocks
Barcelona, Spain

Superblock Sant Antoni by Leku Studio (© Del Rio Bani)

- ▶ Redesign to walkable, communal space
- ▶ Reduces dominance of cars in urban space
- ▶ Places to linger with seating & low speeds

EFFORT	Ambitious urban project, top-down process
TIME	Can take years, needs strong political will
COST	redoing existing areas
SCOPE	All citizens or user groups benefit

Public libraries and spaces
Comuna 13 - Medellin, Colombia

Public library with community space in Comuna 13 (©Wikimedia Commons)

- ▶ Providing a community space in the neighbourhood (indoor/outdoor)
- ▶ Increase safety by the frequent use

EFFORT	High, due to construction work
TIME	Long-term implementation
COST	High, due to structural changes
SCOPE	Provides access to all citizens

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overcoming barriers

- Consistent route relationships (gap closure)
- Sufficiently dimensioned, readable and inviting access to and within buildings
- Sufficiently dimensioned paths with walking, rolling-friendly coverings and care of these in winter
- Sufficient crossing aids (e.g., central islands) provide more visibility and abridgement
- Leveled to adjoining roads, paved paths and open spaces
- Avoid pedestrian underpasses
- Landmarks at access points, readable route guidance

Temporary ramps
Berlin, Germany

Temporary ramps help to claim the stairs (©Andi Weiland flickr.com)

- ▶ Mostly equipped with wooden ramps
- ▶ Accessibility to all old city sites
- ▶ Flexible way to expand

EFFORT	Low, because no firm anchoring in the soil
TIME	Realizable in the short term
COST	Low, because of low production costs
SCOPE	All „rolls"(strollers, wheelchairs...) benefit

Tactile Elements
Shenzen, China

Tactile element on the pavement (©Wikimedia Commons)

- ▶ Allow orientation via white stick
- ▶ Highlighting the way to important destinations, entrances/exits, stations etc.

EFFORT	Low due to prefabricated elements
TIME	Realisable in the short term
COST	Low construction costs
SCOPE	Helps blind people and visually impared

Outdoor Stairlift
Lisbon, Portugal

Stairlift in Lisbon (©urbanista)

- ▶ If the installation of an escalator or a lift is not possible (e.g. due to preservation orders)
- ▶ Independent usage

EFFORT	Low, because no firm anchoring in the soil
TIME	Realizable in the short term
COST	Reaonable, but expect maintenance costs
	Mainly wheelchair useres benefit

Curb Ramps
Cabo San Lucas, Mexiko

Fonatur-branded curb ramp (©flickr.com/people/walkingsf/)

- ▶ Reducing of barrier effect
- ▶ Increases options for cycling and wheelchairs

EFFORT	Low, because no firm anchoring in the soil
TIME	Realisable in the short term
COST	Low, because of low production costs
SCOPE	Wheelchairs, cyclists, strollers benefit

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equipment & design

- Sufficient lighting in public spaces and at transportation stops
- Weather-protected waiting and seating facilities, which are available in sufficient numbers and without consumption
- Disruptive signs or post, electricity and telephone distributor on the sidewalk
- Sufficient supply of easily accessible and lighted bicycle parking facilities

ACTIONS

Outdoor escalators
Barcelona, Spain

Outdoor escalators to Gaudi's Parc Güell (©Becky Snyder flickr.com)

- ▶ Improving the accessibility of high neigbourhoods
- ▶ Increasing the feeling of security

EFFORT	High costs, but adaquate to benefits
TIME	Mediocre, due to the small scale
COST	Relatively high, but effective
SCOPE	High as the whole city benefits

Metrocable
Medellin, Colombia

Medellin Metrocable (©Jorge Gobbi flickr.com)

- ▶ Connecting people in hard-to-reach areas
- ▶ Removal of barriers in the city

EFFORT	Only street painting
TIME	Complex planning process
COST	High costs (infrastructure/maintainence)
SCOPE	All user groups of the city benefit

Bike + Ride parking stations
Hamburg, Germany

Bike and Ride parking station in Hamburg (©QIMBY)

- ▶ Promotes multimodality
- ▶ Increases use of sustain. transport services
- ▶ Protects bicycles from vandalism

EFFORT	Quite small
TIME	Realisation at short notice
COST	Per pitch comparatively high
SCOPE	Improves the situation only for former users

Temporary fiberglass sofas
Museumdistrict Vienna, Austria

Outdoor furniture in Vienna(© MuseumsQuartier Wien, Photo: Hertha Hurnaus)

- ▶ Increases quality of stay in publ. spaces
- ▶ Provides space for breaks and lingering
- ▶ Weatherproof and low risk of vandalism

EFFORT	Small, low bureaucratic tuning needs
TIME	In the short term, without much effort
COST	Small compared to its impact
SCOPE	Great, is attractive for any age group

Scooter Parking Station at Schools
Wien, Austria

Scooter parking facilities at schools in Vienna (©QIMBY)

- ▶ Promotes usage of sustain. transport mode
- ▶ Reduces volume of cars in front of schools
- ▶ Educational measure

EFFORT	Small
TIME	Realisation at short notice
COST	Low installation costs
SCOPE	Improves the situation for all children

Responsive Street Furniture
Museumdistrict Wien, Austria

Responsive Street Furniture (© Ross Atkin Associates / Marshalls)

- ▶ brighter street lighting, audio information, extra places to sit and more time to cross the street via smartphone or fob

EFFORT	Prototypes exist but no user experience so far
TIME	Complex planning process
COST	Higher initial costs, though no construction
SCOPE	Very high as no disadvantages appear

ACTIONS

MobilPunkt (Car sharing)
Bremen, Germany

MobilPunkt – Car sharing Station (© City of Bremen)

- ▶ Provides access to cars for all (social aspect - use it, don't own it)
- ▶ Alternative to car ownership

EFFORT	Involves planning and road works
TIME	For tending, planning, implementation
COST	For road works
SCOPE	Offering shared mobility for everybody

Parallel bike parking on lanes
Bremen, Germany

Parralel bike parking (©City of Bremen)

- ▶ Improves accessibility esp. for wheelchair users
- ▶ Reduces obstacles for visually impaired
- ▶ Keeps sidewalks free of bike parking

EFFORT	Small coordination effort
TIME	Small coordination effort, discussions possible
COST	Bike racks and installation
SCOPE	Improves all active modes of transport

Cargobike Sharing
Bremen, Germany

Cargobike sharing to transport goods (©Burkhard Cordes)

- ▶ Transport of large grocery or kids etc. (Alternative to a car)
- ▶ Free of charge sharing system w. pick-up stations

EFFORT	For operator: booking, maintenance, repair
TIME	For pick-up stations and repair
COST	Certain running costs (O&M)
SCOPE	available for all (free of charge)

II) MENTAL & SOCIAL

safety

- Avoidance of unattractive urban planning situations due to confusing edges, dark niches, underpasses, neglected parks or the back rooms of shopping areas and street underpasses
- Orientation: Be able to find your way around, create visual links to landmarks and identifiable goals, clearly characterize entry situations
- Visibility: Provide insights, make visual connections, make lifts, stops and stairwells bright and transparent
- Lighting and illumination: see and be seen, provide adequate lighting on walking and cycling paths, in basement garages and underpasses
- Leveled to adjoining roads, paved paths and open spaces

ACTIONS

Design and lighting of urban underpass
Homberger Straße - Moers, Germany

Colourful and illuminated underpass in Moers (©lebendige-stadt.de)

- ▶ Increasing safety through increased use
- ▶ Removal of barriers in the city
- ▶ Acts as a design element

EFFORT	Low compared to benefits
TIME	Mediocre depending on lighting concept
COST	Depending on scope of the concept
SCOPE	High as the whole city benefits

Eye-catching design of crosswalks
Seattle, USA

Colorful Crosswalk by Artist Sara Snedeker (© Wikimedia Commons)

- ▶ Increasing attention through 3D
- ▶ Safe transition for pedestrians of all kinds
- ▶ Optical ornament of the city

EFFORT	Only street painting
TIME	Realisable in the short term
COST	Low production costs
SCOPE	Attention not only on a user side

Illuminated crosswalk for more visibility
Germany

Illuminated crasswalk improves the visibility by night (© Wikimedia Commons)

- ▶ Recognizable signs and markings
- ▶ Visual relations between road users
- ▶ Improved security

EFFORT	Conversion measures must be made
TIME	High, due to earthworks
COST	High, due to construction costs
SCOPE	Improves the safety of all pedestrians

Luminescent light for cycle paths
Eindhoven, Netherlands

Van Gogh Path (©Daan Roosegaarde)

- ▶ Charges at day-time and glows at night
- ▶ Inorganic material that captures UV light
- ▶ Lighting without power supply

EFFORT	High, due to extensive road rehabilitation
TIME	Construction work
COST	Structural changes might be necessary
SCOPE	Long term, visually appealing and safe

Night Stops
Kalmar, Sweden

Bus at night (©Nathan Dumlao on Unsplash)

▶ Night stops – the possibility to get off the bus closer to home – have encouraged more people (esp. woman) to use public transport. *»more info*

EFFORT	Mostly information campaign to inform
TIME	Only a few minutes for additional stops
COST	Very low, mostly through information campaign
SCOPE	Offering help for vulnerable groups

Traffic calming signs at park entrances
Malmö, Sweden

Measures to hinder traffic from entering the park. (© Emmy Linde)

▶ Hinder cars from entering the park (safety)
▶ Boost already active networks & activities
▶ Promoting the active use of the park

EFFORT	Low, easy task for traffic planning
TIME	Not much time needed with inhouse skills
COST	Depends if material is available inhouse
SCOPE	Access to the park for all groups

Walking school bus (Pedibus)
Zanica, Italy

Pedi bus stop in Zanica (©Luigi Chiesa Wikimedia Commons)

▶ Increase safety and security for children walking to school
▶ Less parents driving their children to school

EFFORT	Organisation and trust between parents
TIME	It can start immediately
COST	No installation or materials needed
SCOPE	Needs parents commitment

Save crossings
Bremen, Germany

Save crossing in Bremen (©City of Bremen)

▶ Reduction of lanes
▶ Reduction of speed (30 km/h)
▶ Safe waiting area for cyclists, pedestrians

|	
EFFORT	For coordination of planning
TIME	Planning, tendering, implementation
COST	Construction works
SCOPE	Improvements for cyclists and pedestrians

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information & guidung

- Announcements and informations (e.g. timetables) must be visually and acoustically well perceivable (sufficiently large font, good light-dark contrast, etc.), provided with braille and to be understood without technical language
- Easy-to-use ticket counters allow all passengers to purchase tickets easily and understandably
- Transport information to multiple media (print, internet, e-mail, television, radio) to reach many different user groups
- Scoreboards on waiting times of buses and trains open the space for short errands

Bluetooth audio cues
Southern Cross Station - Melbourne, Australia
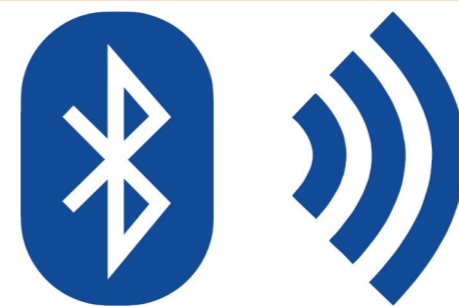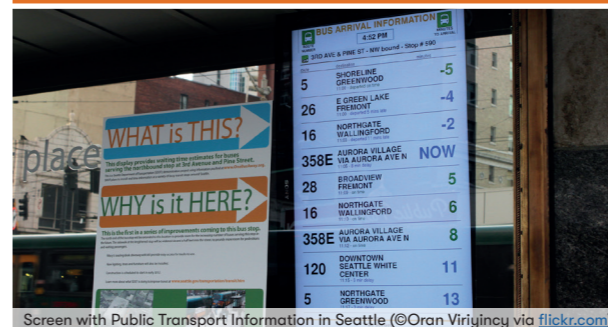

Bluetooth audio cues help blind people finding their way

▶ Allows independent mobility
▶ Increases safety due to warnings
▶ Basis is public Bluetooth and free GPS

EFFORT	Only sensors needed for realization
TIME	Due to the large number of installations
COST	Sensors are relatively expensive
SCOPE	It primarily serves visually impaired people

Sidewalk mapping app incl. route conditions
Seattle, United States of America

accessmap maps sidewals and slopes (©Mapbox ©OpenStreetMap)

▶ Presents slope, coverings and obstacles
▶ Improves route planning without dead ends
▶ Easy to use and increases independence

Low, user added/crowdsourced data
Short term: system constantly expands
Low, only implementing the app
For every type of walking disability

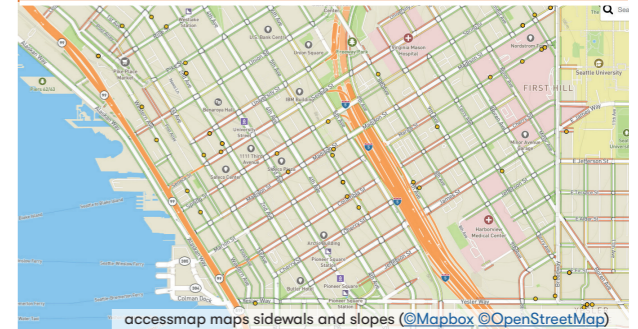## Increase PT information in kiosks/shops etc.
Seattle, USA

Screen with Public Transport Information in Seattle (©Oran Viriyincy via flickr.com)

▶ Make information accessible to local residents, employees and tourists
▶ Improve information about departures

EFFORT	Medium, convince local Stakeholders
TIME	Short time needed to install the equipment
COST	The equipment may be expensive
SCOPE	Improves accessibility only for PT-users

Trafikkagenten –The Traffic Agent app
Oslo, Norway
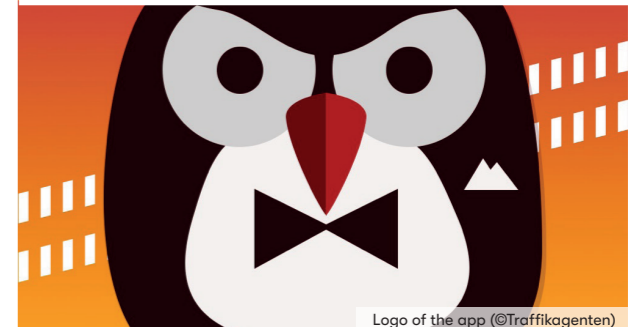
Logo of the app (©Traffikagenten)

▶ Being "secret agents" for the city, children were able to send immediate reports on their route to school via an app *»more info* *»more info (p.44)*

EFFORT	High, but moderate compared to infrastructure
TIME	Complex planning process
COST	Starting moderate, depends on specification
SCOPE	No disadvantages for other groups

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participating / awareness raising

- Greater accessibility requires not only an appropriate infrastructure, but also attention, communication and participation to achieve more and better solutions and to draw attention to the needs of sensitive user groups

- Inclusion of as many different sensitive user groups as possible

- Starting at an early stage of planning, using various appropriate methods

- Drawing the attention of the public, administration and planning to the needs of special user groups

Hands-up survey in kindergartens & schools
Törökőr Budapest, Hungary

Napraforgó kindergarten in Törökőr (© zuglo.hu)

- ▶ Measure the modal split of children
- ▶ Understanding the mobility situation in the area of the institution
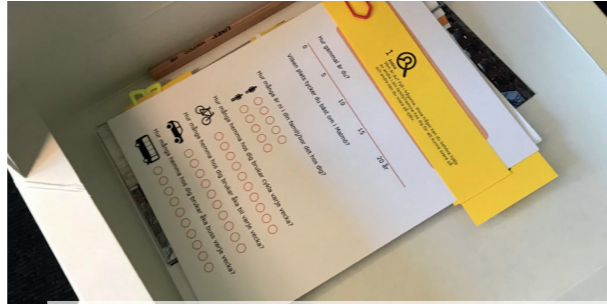
EFFORT	Low, depending on the participating group
TIME	10-15 min/ class/ group
COST	Low, no additional ressources needed
SCOPE	Specific, school-and kindergartenchildren

Participation-kits for schoolkids & parents
Malmö, Sweden

Working with local actors is crucial to design a good process. (© Emmy Linde)

- ▶ Work with local actors and stakeholders
- ▶ Reach the hard to reach groups with new methods & materials

EFFORT	Low, little materials or organisation needed
TIME	Feasible in short term, response uncertain
COST	Low, only printed sheets
SCOPE	Mediocre, only for a specific group

Work iterative - do, reflect, learn and adjust.
Malmö, Sweden

Working iterative, prototyping, reflecting and testing. (© Emmy Linde)

- ▶ Inlcusive and iterative co-creation processes with tests and adjustments along the way to respond to possible changes

EFFORT	Low, due to changes, user groups etc.
TIME	Flexible and short term to long processes
COST	Low, depending on the measures
SCOPE	Reach different groups by various measures

Manchester Age-Friendly Neighbourhoods
Manchester, United Kingdom

AGE FRIENDLY MANCHESTER

Logo of the initiative (©Tmafn.org.uk)

- ▶ Investment fund to award small project grants for neighbourhood groups to reduce social isolation and to promote participation. »more info

EFFORT	Implemantation, support, management...
TIME	Ongoing support
COST	Moderate, depending on size of projects
SCOPE	Offering participation for a marginalise

Wheelchair parcour
Bremen, Germany

Wheechair parcour in Bremen (© S. Findeisen, City of Bremen)

- ▶ Change perspectives
- ▶ Test out how it would be if you were e.g. blind
- ▶ Increases understanding and acceptance

EFFORT	Limited, mainly for setting-up initiative
TIME	Personnel resources mainly for events
COST	Equipment (wheel chairs), finding sponsors
SCOPE	Incl. physical and visual impaired persons

Walk with blind people
Törökőr Budapest, Hungary

Walk with disabled people (© JóügyKft)

- ▶ Understanding the needs and barriers of people with visual impairment
- ▶ Exploring the area by a joint walk

EFFORT	depending on the willingness of the group
TIME	1-2 h, preparation & processing of results
COST	no cost
SCOPE	specific, relatively small target group

Walk with disabled people
Törökőr Budapest, Hungary

Walk with blind people (© JóügyKft)

- ▶ Understanding the needs and barriers of wheelchair users
- ▶ Exploring the area by a joint walk

EFFORT	depending on the willingness of the group
TIME	1-2 h, preparation & processing of results
COST	no cost
SCOPE	specific, relatively small target group

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social uses & interventions

- Public spaces and buildings should be there for all people in the city but are dependent on the versatile, open and compatible use

- Unilaterally used or designated public spaces prevent sharing because of a lack of dialogue

- Vitalisation: mix different functions such as living, traffic, utilities, leisure, house entrances and windows to public space, create visual references to residential buildings and shops, bundle paths and traffic

- Responsibility: Establish identification, promote the appropriation of the living environment by the residents, strengthen neighborhoods and involve citizens

Ciclovía
Bogota, Colombia

Car-free Sundays and Holidays (©Micah MacAllen via flickr.com)

- ▶ Active mobility & physical activities
- ▶ Temporary traffic calming
- ▶ Fostering a shift in mindset

EFFORT	Only regulations have to be changed
TIME	Low, only changes of legal framework
COST	Low - no construction or design needed
SCOPE	All citizens or user groups benefit

Tactical urbanism
New York City, USA

Tactical transformation due to paint (©NYC DOT Art by Andrea von Bujdoss)

- ▶ Reclaiming and improving public space
- ▶ Increasing comfort and wellbeing
- ▶ Traffic calming

EFFORT	Low
TIME	Short term
COST	Low, only paint or basic furniture needed
SCOPE	Great, all inhabitants are addressed

Street Art
Paris, France

Street art to improve public spaces (©Guilhem Vellut)

- ▶ Changing the image of the neighbourhood
- ▶ Increasing the feeling of security

EFFORT	Low, but art skills needed
TIME	Short term implementation
COST	Low, only paint needed
SCOPE	Improves perceived safety of all

Guerilla/Pop-up bike lanes
Berlin, Germany

Temporary Pop-up bike lane (©Fabian Deter)

- ▶ Promoting cycling and safety
- ▶ Reclaiming street space for bicycles

EFFORT	Low
TIME	Short term implementation
COST	Low, only paint needed
SCOPE	Great, all inhabitants are addressed

Temporary conversion / „test blocking" of roads
Hamburg, Germany

Mobility Lab »Ottensen macht Platz!« Hamburg (©urbanista)

- ▶ Awareness of green + sustainable transport
- ▶ Show possibilities for traffic-free areas
- ▶ Offers public space for various events

EFFORT	Low, because only temporary realisation
TIME	Short term
COST	Small, support by voluntary organisations
SCOPE	Mediocre, usually not long-term feasible

Volunteer initiative - Cycling without age
Barcelona, Spain

Elderly in a cargo-bike in Barcelona (©Cycling Without Age)

- ▶ Socializing between young and old
- ▶ Promoting the bicycle use
- ▶ Outdoor experiences for elderlyW

EFFORT	Mediocre, personal assistence needed
TIME	Short term implementation possible
COST	Small, support by voluntary people
SCOPE	Elderly, as well as young people benefit

Temporary play street
Bremen, Germany

Equipment for a temporary play street (©SpielLandschaftStadt e.V)

▶ Temporary closure of road for cars (one afternoon per week)
▶ For playtime and neighbourhood meetings

EFFORT neighbourhood initiatives
TIME small coordination effort
COST for equipment, toys
SCOPE More space for active transport modes

Place making
Törökőr Budapest, Hungary

Reunion of Újvidék square, (© Balázs Turós)

▶ Test-programming of public spaces on originally used as car lanes
▶ Raising awareness for value of space

EFFORT low, short period with short term effect
TIME 2 weeks, preparaton and evaluation
COST low - only soft elements, volunteer help
SCOPE dialog with & inclusion of inhabitants

Placemaking Projects
Jerusalem, Israel

Placemaking (© MyNet Jerusalem, by Igor Pavroff)

▶ placemaking to improve area with locals
▶ Improve walkability and stay

EFFORT Many communal & bureaucratic phases
TIME Took a year, and ongoing volunteering
COST medium city budget for intervention (10k)
SCOPE completely resident-driven process

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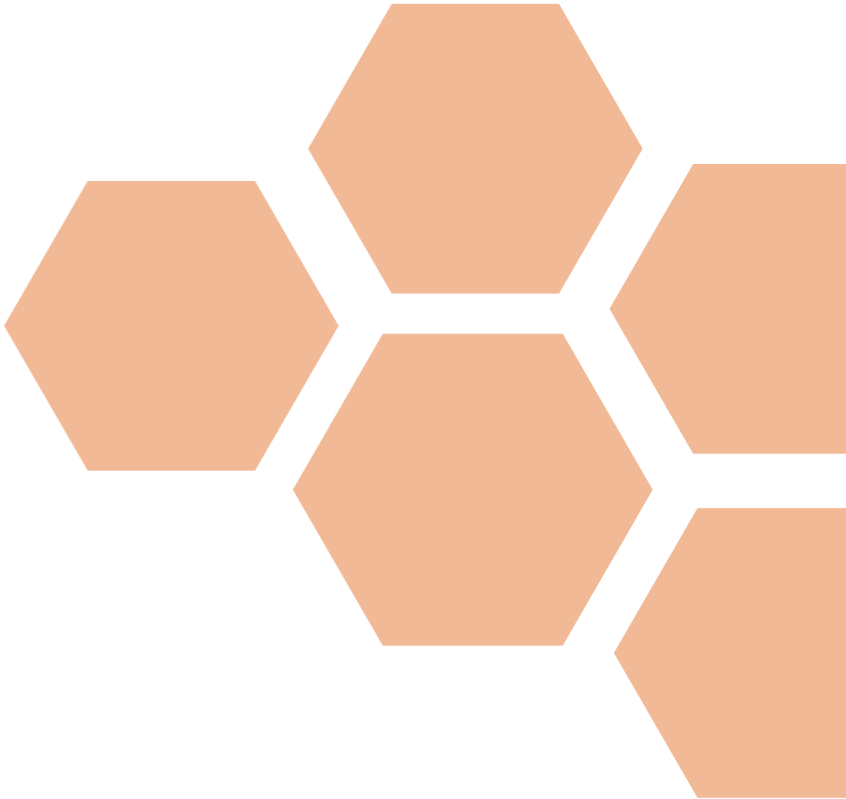
BEST PRACTICES

The presented best practice examples should serve as a basis for ideas to show that even projects with a super-ordinate topic can be harmoniously reconciled with many other topics. These topics show how closely the various fields of action are entangled. All costs, scales and periods mentioned are approximate figures.

Nørreport Station, Copenhagen | Denmark

Mobility | Ecology | Sustainability   💲 **13,500,000 €**   ↗ **10,000m²**   🕐 **Planning 2009 – Completion 2011**

Source: ©News Oresund via flickr.com

Source: ©Leif Jørgensen via Wikimedia Commons

On the surface of Nørreport Station, one of the two roads was eliminated in such a way that the formerly cut-off pavement outside the station is now in direct contact with the commercial streets of the quarter. The new pedestrian carpet is designed with panels of bright material, which is resistant, easy to clean and visually recognizable. The whole area is scattered with rounded surfaces (e.g. bicycle parking) placed without interrupting the flow of pedestrians.

The largest shelter clearly identifiable - thanks to the large luminous letters of the station's name - is the entrance to the Nørreport Station. It is characterized by a big overhanging porch and a completely glassed-in vestibule from which lifts and escalators go down to the platforms. Further constructions, of differing shapes and sizes, are porches sheltering emergency exits, bus stops and bicycle parking areas. Here and there, the esplanade is dotted with slender cylinders rising to about ten metres. These cylinders, the station's ventilation towers, also act as landmarks which are lit up at night like beacons symbolising the newly recovered metropolitan centrality of the place.

ⓘ more about the project

Park am Gleisdreieck, Berlin | Germany

Ecology | Sustainability | Accessbility   💲 **15,000,000 €**   ↗ **400,000m²**   🕐 **Planning 2006 – Completion 2011**

Source: Atelier Loidl ©Julien Lanoo

Source: Atelier Loidl ©Julien Lanoo

In 2006, the State of Berlin put forward the proposal of converting Gleisdreieck into a large urban park that would integrate the different urban zones which converged there. It was necessary to stimulate the development of sixteen new hectares of productive neighbourhoods that would be capable of integrating different generations and social strata around a model of the sustainable city and in harmony with nature.

On the northern side of the park there is a large concrete slab of rounded edges to be used as a place to sit. Well oriented to the south, it functions as a big sunny terrace, full of benches complete with footrests. In the south, the meadow looks over the gap of Yorckstrasse, On the eastern side of the meadow there is quite a dense forest of pre-existing maples, oaks and birches. At this point, a couple of large metal frames hold two swings. The edges of the park are finished with a collection of distinctive spaces, for example a nursery, sports fields, concave surfaces for skateboards, stages for tango dancing, community gardens or simple areas covered in gravel taken from the place itself.

ⓘ more about the project

Superkilen, Copenhagen | Denmark

Diversity | Sustainability | Accessbility   💲 **8,000,000 €**   ↗ **30,000 m²**   🕐 **Planning 2008 – Completion 2012**

Source: © BIG (Bjarke Ingels Group) via Forgemind Archi Media

Source: © BIG (Bjarke Ingels Group) via Forgemind Archi Media on flickr.com

In 2008, the Copenhagen City Council joined forces with an association of real-estate businesses engaged in a non-profit-making project of transforming built-up areas and they managed to raise a sum of almost eight million euros to transform the space into a park that was to be named "Superkilen" (Big Wedge). The intervention aimed to take the neighbourhood's cultural diversity not just as a starting point but also as a quality to cherish and celebrate, a factor that would inspire all the spaces of the park and bring the local residents together around ethnic, cultural and linguistic references with origins in many parts of the world.

The project not only responds to the typical demands of residents openly and without nuances, for example having more green zones or open-air leisure spaces. It also takes their imaginaries as its chief ingredient in moulding them into a sum of different identities in order to create new collective meanings.

ⓘ more about the project

‚Shared Surface' Exhibition Road, London | United Kingdom

Mobility | Accessibility | Identity   💰 **25,000,000 €**   ↗ **10,000m²**   🕐 **Planning 2009 – Completion 2011**

Source: ©Neil Turner via flickr.com

Source: ©Juan Lobo via flickr.com

London's Exhibition Road has been redesigned due to lack of quality of stay exigent requirements of accessibility and it was stipulated that pedestrians should be able to stroll there peacefully, while enjoying the monumental facades of its buildings.

The intervention essentially consisted of the physical unscrambling of the street's surface and traffic. Pedestrians and vehicular traffic now share the space in keeping with a "shared surface" model with a reduced speed limit. The ground has been cleared of footpaths, obstacles and architectural barriers so that pedestrians, people in wheelchairs and with baby buggies can move freely. Black cast-iron drainage channel covers run along both sides of the road, in four metres distance from the buildings. The covers are a plaster tape, which giving possibilities for orientation for visually impaired people. At night-time the street is illuminated by twenty-six masts of twenty metres in height, technically especially designed for the space.

ⓘ more about the project

Rearrangement of Republic Square, Paris | France

Accessibility | Continuity | Participation   💰 **12,000,000 €**   ↗ **20,000m²**   🕐 **Planning 2010 – Completion 2013**

Source: ©Pline via Wikipedia

Source: ©besopha via Wikimedia Commons

The Place de la République is one of the city's main squares - not only because of its symbolism as the epicentre of trade union or because its dimensions which ensure the occupation of a prominent place in the Parisian collective imaginary; it is also one of the nerve centres of the city's transport system, where three districts connect, together with five Metro lines and several main roads.

The main objective of the intervention was to link its metropolitan significance with the quality of life in the four adjoining neighbourhoods opening onto it. The plan included rationalisation of the traffic flow in order to take into account divers forms of mobility apart from focusing on the private vehicle. Therefore, particularly inverting the pre-existing proportion of the space used by traffic and pedestrians was emphasised. A large area had been opened up for a great variety of citizens' activities, while also highlighting the republican symbolism of the square. Within a consultation process decision-making on the square´s design took place: public events and thematic workshops organised by the City Council integrated the demands of local residents and business people.

ⓘ more about the project

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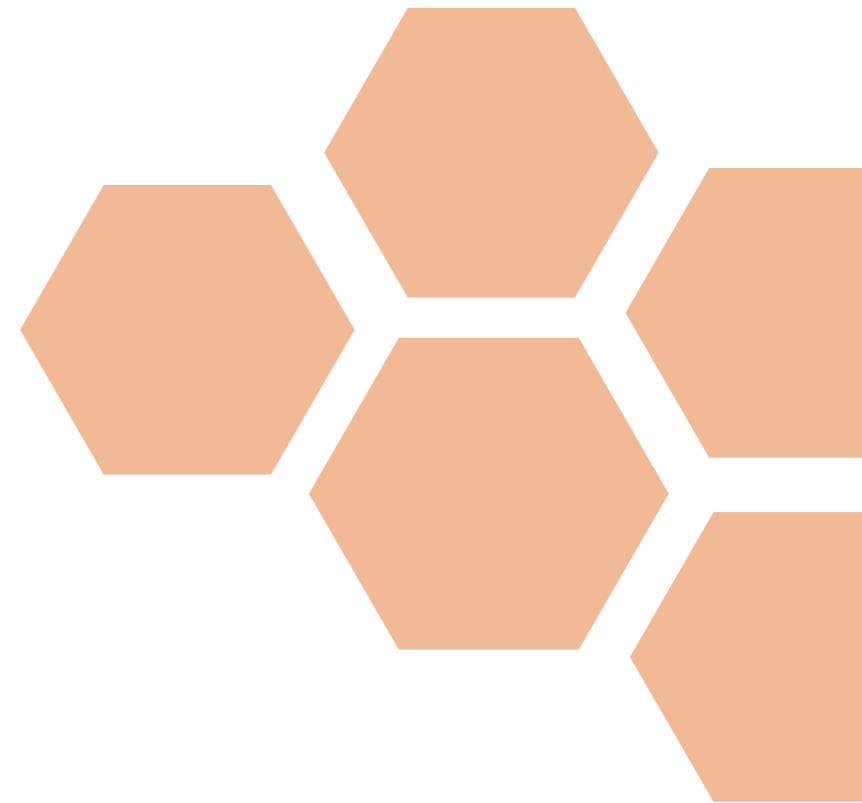
4. THE SUNRISE NEIGHBOURHOOD ANGLE

The SUNRISE Neighbourhood Angle transmits the theoretic knowledge into practice and briefly presents experiences of the SUNRISE partner cities.

As already stated out, facilitating accessibility and mobility for all in cities is not an easy task, nor exists a universal recipe on how to reach this goal. However the theory shows, that it requires the awareness of physical and mental barriers in an urban environment and communities as well as the inclusion of different user groups with specific claims in planning processes.
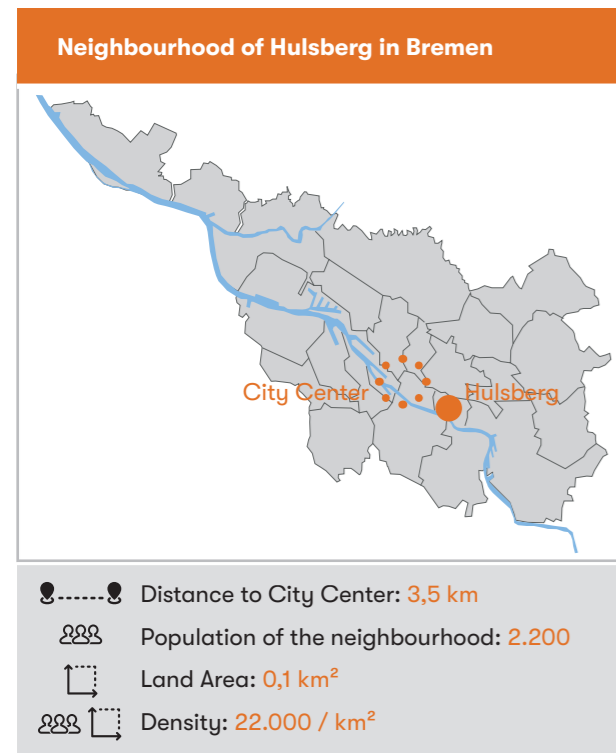
The six neighbourhoods of the SUNRISE city partners show how different issues and challenges can be addressed and where possibilities and obstacles can arise.

The neighbourhood angle aims to give a short overview about specific situations, methods and measures regarding approaching »accessibility for all« as well as to inform and to inspire. In each profile the current situation, experiences, demands and possible solutions are presented as part of the handbook of this cluster topic.

Malmö
Lindängen

Southend-on-Sea
Victoria Circus & London Road

Bremen
Hulsberg

Budapest
Törökör

Thessaloniki
Neo Rysio

Jerusalem
Baka

urbanista   SUNRISE

BREMEN
specific claims for accessibility

Neighbourhood of Hulsberg in Bremen

- Distance to City Center: 3,5 km
- Population of the neighbourhood: 2.200
- Land Area: 0,1 km²
- Density: 22.000 / km²

Modal Split in Bremen (2013)

- 16 %
- 36 %
- 23 %
- 25 %

EXPERIENCES & DEMANDS

A key measure of SUNRISE to increase accessibility in the area around Hulsberg was re-organising parking. One measure was the intensification of parking rules enforcement ("Back to the rules"), to actively reduce illegal parking on pavements and junctions. This was accompanied by the introduction of residential parking, including the introduction of parking fees for external parkers. The implementation was connected by installing a significant number of bike racks (on the street, parallel to the carriage way), to reduce "wild" bike parking on side walks. Also, more car sharing stations were installed ("mobil.pünktchen") to reduce the ownership of private cars within the neighbourhood and – in the end - to regain space. The measure was implemented in the western part of the SUNRISE neighbourhood (covering 3000 households).

Main points regarding accessibility in Hulsberg, Bremen:

- Blocked sidewalks by illegally parked cars.

- Blocked sidewalks by bikes parked at fences, street signs etc.

- Reduced accessibility of fire engines and rescue vehicles as well as waste collection vehicles.

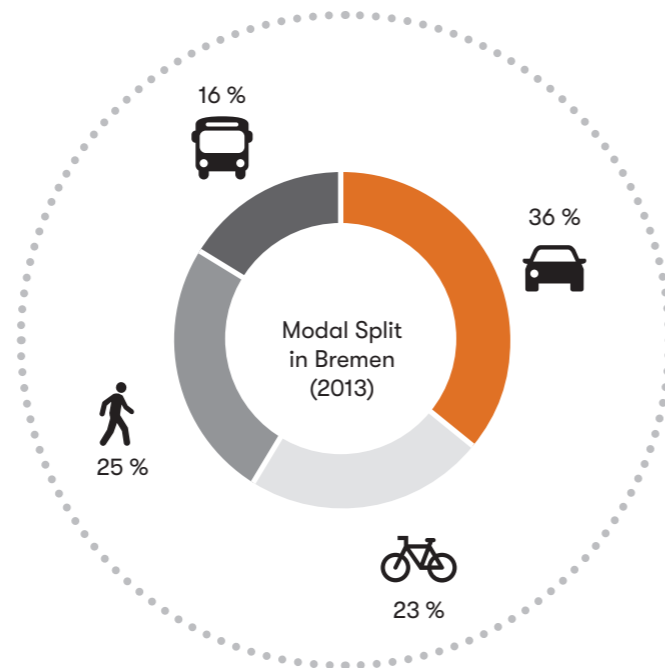- Cobblestones and high curbs in the streets of the neighbourhood.

LOCAL CONTEXT

Bremen has had a very tense financial position for many years. Consequently, investments into rebuilding streets to meet current standards for accessibility or to adapt the infrastructure to the traffic needs and planning goals is often not possible. When works on sewers or supply lines become necessary in a particular street and earthworks are carried out anyway, the opportunity often is used for cost-effective changes of the street design.

CURRENT SITUATION

The area around Hulsberg (Bremen - Östliche Vorstadt) is a typical historically grown inner city quarter of Bremen, with very narrow streets and sidewalks. In many streets, cars regularly park "illegally" halfway on sidewalks and in junctions – a practice that has been "tolerated" for decades so that it is perceived as a "customary right". Consequently, the walkability of the pathways and the accessibility for fire engines are significantly reduced. The use of sidewalks is often further limited by physical obstacles: bollards (to prevent illegal parking), bikes parked at fences, traffic signs, dustbins or other items. High curbs and carriage ways out of cobble stone in many streets are additional problems. Overall, the accessibility, especially for people with specific mobility needs (wheel chairs, rollators, walking sticks), people with visual impairment or for families with prams is very limited. For children, the parking habits and obstacles in the streets significantly reduce road safety.

POSSIBLE SOLUTIONS/ NEXT STEPS

The measures to re-organise parking has only be implemented in one part (the western part) of the SUNRISE neighbourhood. The expansion of this measure to other areas is desirable, but depends on the increase of personnel resources, especially for related planning works for residential parking and the conduction of parking rules enforcement within the quarter.

Further measures to reduce structural barriers (curbs, cobble stones etc.) are desirable. However, the tight financial budget of Bremen limits those activities strongly. Only when works on sewers or supply lines become necessary in a particular street and earthworks are carried out anyway, the opportunity can be used for cost-effective changes of the street design. Also, the implementation of car sharing stations are frequently used in Bremen as an opportunity to improve accessibility and walkability: by the building of protruding sidewalks/curbs with the purpose of supporting manoeuvrability for service vehicles and creating barrier free intersections.
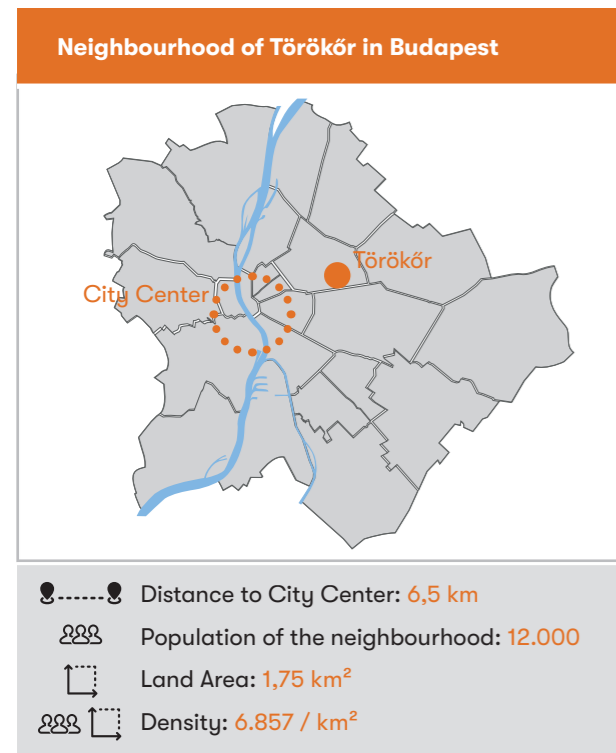

High curbs and cobblestones in the streets of the Hulsberg neighbourhood. Source: S. Findeisen, City of Bremen

Blocked sidewalks by cars. Source: S. Findeisen, City of Bremen.

„IN MANY STREETS, CARS REGULARLY PARK HALFWAYS ON SIDEWALKS AND IN JUNCTIONS – A PRACTICE THAT HAS BEEN TOLERATED FOR DECADES SO THAT IT IS PERCEIVED AS A <<COSTUMARY RIGHT>>."

urbanista   SUNRISE

BUDAPEST
specific claims for accessibility

City Center
Törökőr

- Distance to City Center: 6,5 km
- Population of the neighbourhood: 12.000
- Land Area: 1,75 km²
- Density: 6.857 / km²

Modal Split
in Budapest

45 %
35 %
2 %
18 %

EXPERIENCES & DEMANDS

In Törökőr the main tool that was used by the SUNRISE project's partners to map and understand the mobility needs and problems of different sensitive groups were thematic walks. Altogether three walks were organized: one for blind and visually impaired people, one for wheelchair users and another one for parents with prams.
Additionally to the thematic walks a „quick win" - idea in the project with respect to accessibility was to install information boards or signs in several tram stops in order to support people with guidelines to help effectively those who need assistance for the use of public transport. This idea was not realized, since the Association for Blind People was afraid that - if the information boards will only implemented in a few stops and not in the entire city - people might only help others with assistance in those tram stops covered with information boards.

POSSIBLE SOLUTIONS/ NEXT STEPS

Based on the problems and needs identified in the first phase of the SUNRISE project eight measures or projects were formed from which the residents could later choose and vote for their favourites. One of these eight projects specifically aimed to make the area accessible for people with special needs by lowering the curbs of the pavement in some intersections, which were selected by wheelchair users. But that project did not get enough votes to make it into the first three which will be implemented within the framework of the SUNRISE project.
Another way to make the area more accessible, especially for blind people, is to clear the pavement from objects or obstacles which are hard to recognize with cane (e.g. post boxes, pollers etc.).
However all selected projects are focusing on traffic calming in specific areas, which contributes to accessibility for all, for example one project specifically focuses on safety around schools and kindergartens.

Main points regarding accessibility in Törökőr, Budapest:

- **The biggest issue are high curbs in intersections.**

- **Awareness raising and supporting people how to help those in need is important.**

- **There are often conflicts between the needs of different user groups (e.g. pollers help to avoid parked cars on the pavement, but also cause problems to blind people).**

- **The opinions within a specific sensitive user group about the best solution can vary.**

- **The importance of accessibility varies according to the limitations of the people (e.g. accessibility might not be as important for parents with prams as it is for wheelchair users or blind people, because they were not that interested in shared their experience and needs).**
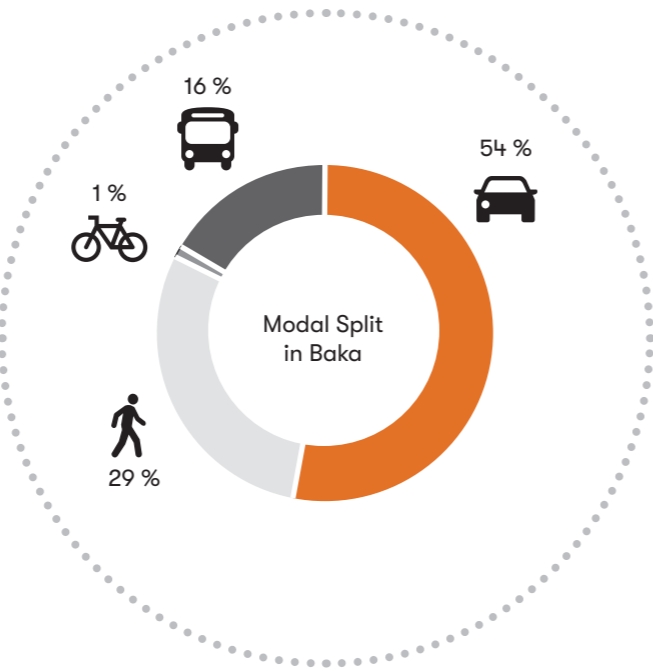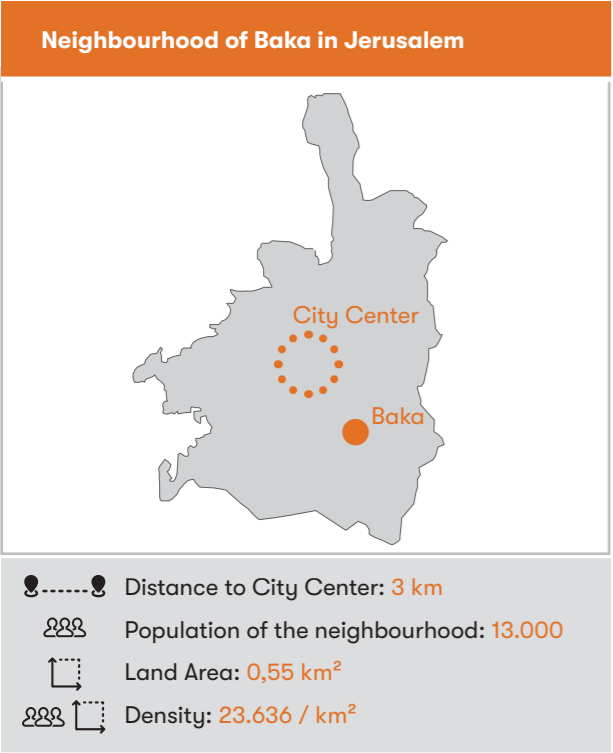

Walk with blind people. Source: JóügyKft

LOCAL CONTEXT

With respect to accessibility aging is an important issue in Hungary as well as on the city level of Budapest. From 12.045 people registered 2015 in the SUNRISE Neighbourhood of Törökőr, 1.545 are between 0 - 14 years old, 970 between 15 - 24 years old, 6.586 are between 25-62 years and 2.944 are older than 62 years. Aging affects every area of mobility, from the green phase of traffic lights at pedestrian crossings, through the width of streets in a residential area, to the features in public transport vehicles.
Another process which is important on a city level is the growing use of bicycles and the growing demand for bicycle infrastructure accordingly. That lack of sufficient cycling infrastructure causes an accessibility problem for cyclists in many areas of the city and on many roads in Budapest.
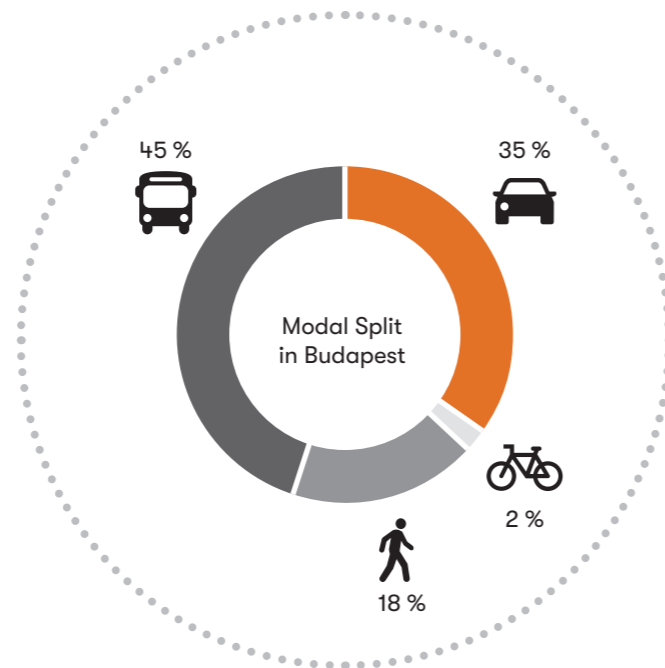
CURRENT SITUATION

Accessibility is an important topic in the neighbourhood of Törökőr due to its relatively high number of people with special needs using and living in the area. The reason for this is that there is the Institute of Blinds, a Kindergarten and a School for Mobility Impaired Children between the age of 3 and 18 years close by. Besides people with special needs, there are parents with prams and elderly people living or using the neighbourhood who are sensitive to accessibility issues.

„ACCESSIBILITY IS AN IMPORTANT TOPIC IN TÖRÖKÖR DUE TO ITS HIGH NUMBER OF PEOPLE WITH SPECIAL NEEDS."

Curbs are an obstacle for wheelchair users in the neighbourhood - Walk with disabled people. Source: JóügyKft.

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JERUSALEM
specific claims for accessibility

City Center

Baka

👤------👤 Distance to City Center: 3 km

👥👥 Population of the neighbourhood: 13.000

⬜ Land Area: 0,55 km²

👥👥⬜ Density: 23.636 / km²

Modal Split in Baka

16 %
1 %
54 %
29 %

CURRENT SITUATION

The size of neighbourhood Baka in Jerusalem is „human scale" according to the extension of the surface area, so it can be crossed within 15-20 minutes by an able-bodied person. Moreover it is surrounded by major urban areas and by fast pubic transportation lines. However it has many challenges that affect the accessibility and walkability for all. Amongst those are safety issues (e.g. road crossing safety, especially for elderly and children or the safety on sidewalks due to cracked or narrow sidewalks, physical nuisances and cycling on sidewalks), a lack of physical measures for people with special needs and a lack of signs for the orientation in the neighbourhood. Furthermore there are cultural issues regarding to mobility. The number of private cars is high, because car ownership is considered as a status symbol. However many people in Baka are sustainable minded and only use them for long distances.

„THE NUMBER OF PRIVATE CARS IS HIGH, BECAUSE OWNERSHIP IS CONSIDERED AS A STATUS SYMBOL."

EXPERIENCES & DEMANDS

In order to promote the physical needs within the neighbourhood they implemented a communal steering committee in Baka and tried to identify accessibility needs together with their residents.

POSSIBLE SOLUTIONS/ NEXT STEPS

To resolve particular issues of mobility and accessibility in the neighbourhood they are working together with the municipal public works departments on different projects. Those are of physical nature, such as fixing road crossings and sidewalk cracks as well as placemaking projects to improve the nodes along the main walking paths in order to to encourage the residents for walking. Moreover to overcome mental barriers or to initiate a mental shift they started campaigns to raise the awareness of benefits of walking as well as to reduce congestion and improve the road safety at rush hour. To improve the road safety they collaborate with the police force.

„TO INITIATE A MENTAL SHIFT THEY STARTED CAMPAIGNS TO RAISE THE AWERENESS OF BENEFITS OF WALKING AS WELL AS TO REDUCE CONGESTION AND IMPROVE THE ROAD SAFTEY AT RUSH HOUR."

Main points regarding accessibility in Baka, Jerusalem:

- Road safety

- Sidewalk safety

- Accessibility for people with special needs

- Road infrastructure

- Awareness of walkability as a sustainable, communal and happy lifestyle on multiple levels: for all populations, including special needs and elderly
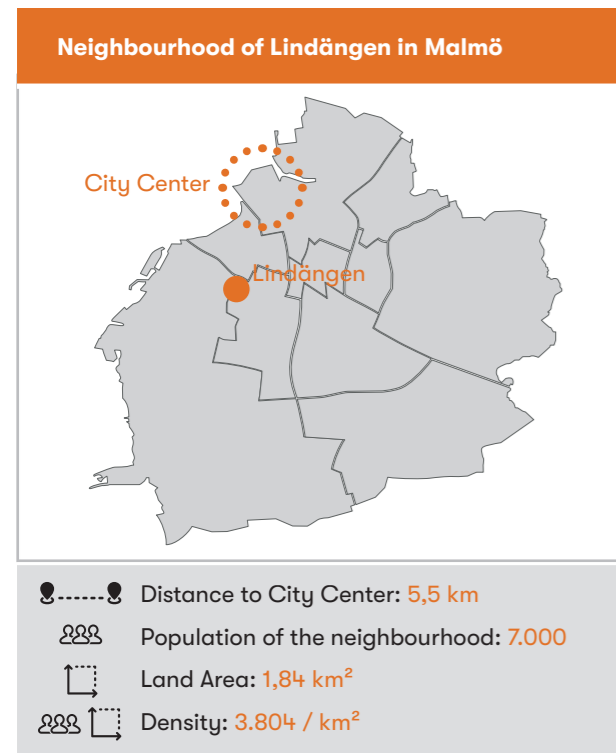

One of the main requests in the gad-rivka placemaking project - Scooters drive through the gad-rivka courtyard and often make residents feel it is not safe for their kids to playing in the courtyard. Source: Maya Tapiero, SUNRISE

Placemaking project for a seating area that encourages people to go walking and rest while strolling, while meeting people along the way. Source: Maya Tapiero, SUNRISE

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MALMÖ
specific claims for accessibility

- Distance to City Center: 5,5 km
- Population of the neighbourhood: 7.000
- Land Area: 1,84 km²
- Density: 3.804 / km²

Modal Split in Malmö

32 %
25 %
28 %
15 %

EXPERIENCES & DEMANDS

During the SUNRISE-project the focus in Lindängen has been to create more active and safe public spaces. The already established bike lanes are currently not used, because of the perceived feeling of unsafety. If the park around the bike lanes could be used more frequently, bike users would feel less exposed and more likely to use the designated areas for cycling.

Since it is know that many women and especially ethnic minorities avoid using the park, the SUNRISE-project wanted to address that group in the co-identification and co-creation phase, but it turned out to be problematic to reach them. The project group tried it in different ways and is still trying new ideas and concepts. But this is in a way also an accessibility problem - the access to processes in the municipality and the issue of the way the project group has worked with involvement of the citizens in the past. So the question remains: „Can this be done in another way to include more people in the process?".

Main points regarding accessibility in **Lindängen, Malmö:**

- **Physical barrier of the main road**
- **Seperated transport modes**
- **The feeling of us and them**
- **Perceived unsafety**

LOCAL CONTEXT

Lindängen is located in the south of Malmö and home for 7.620 people. Compared to other parts of Malmö, the population in this neighbourhood is characterized by a high migration background. 76 % of the population of Lindängen have a foreign background compared with the average of Malmö of 45 %. Most frequently spoken languages are Arabic, Polish, Danish and Serbian/Croatian. Lindängen is home for a very young population. 36 % of the residents are below the age of 24 compared to 29 % for Malmö's average. In Lindängen households with children are more common than the city average. In Lindängen a significantly lower share of the population has reached a high level of education compared to the Malmö average. However, the school results rank above average. Other socio-economic statistics describing Lindängen are an employment rate and per capita disposable income below the city wide average, while school results rank above Malmö's average.

The neighbourhood is representative for the Swedish building style of the 1960s-70s. The buildings consist of multistory buildings with a high percentage of rental flats, but hardly no detached houses, compared to the rest of Malmö. During a time when housing was scarce, the national government encouraged the construction of one million new apartments with a clear separation of transport modes. Up until now, parking is reserved in underground garages and outside the neighbourhood. Inside, bike lanes and pedestrian paths connect residential areas with its central amenities, shops and services. Public places where people can meet are parks with vast lawns, a central square, public and residential playgrounds and sportsgrounds.
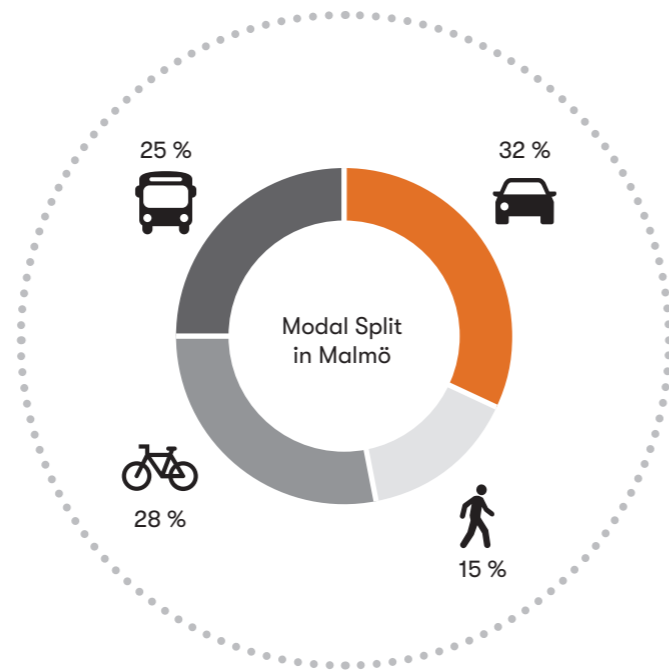
CURRENT SITUATION

Lindängen in Malmö is currently facing different issues affecting the accessibility for all in the neighbourhood. Problems are of tangible or rather physical nature as well as of intangible or mental nature. Those specifically consider the following four aspects: a barrier of the main road, seperated transport modes, a feeling of „us and them" as well as perceived unsafety. Lindängen and the close by areas of Nydala and Hermodsdal are divided by a large main road that creates a physical barrier to the rest of the city. The design of the neighborhood, with separated transport modes creates a distance between the lived life and the spaces between the buildings and create a physical and mental barrier for people to use the park.

As a mental issue it is to point out that the inhabitants in Lindängen, Nydala and Hermodsdal have a very strong feeling for their neighbourhood or a feeling of belonging and knowing everyone in the area. But this sense of belonging also alienate the other neighbouring areas and it creates a mental barrier between the people of different neighbourhoods that is hard to deconstruct. Furthermore the neighbourhood is known for being unsafe and a criminal area which makes the urban space inaccessible for certain citizens – mainly women and children – that do not feel safe using the urban space.

POSSIBLE SOLUTIONS/ NEXT STEPS

One aim of the project is, that women should be more present in the park and on the streets. But this is not only an issue of bad urban planning or a lack of outdoor activities. The culture and the perception of the feeling of unsafety in the area is one of the main issues in Lindängen and an issue that might be better handled by another department of the municipality.
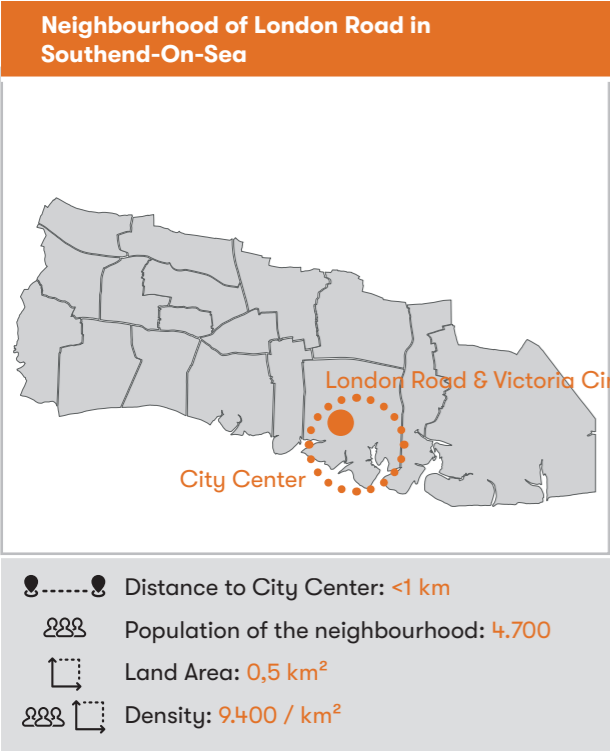

Physical and mental barrier - A large multilane road creates a barrier between Lindängen and Hermodsdal.
Source: Emmy Linde

„THE NEIGHBOURHOOD IS KNOWN FOR BEING UNSAFE AND A CRIMINAL AREA WHICH MAKES THE URBAN SPACE INACCESSIBLE FOR CERTAIN CITIZENS - MAINLY WOMEN AND CHILDREN."
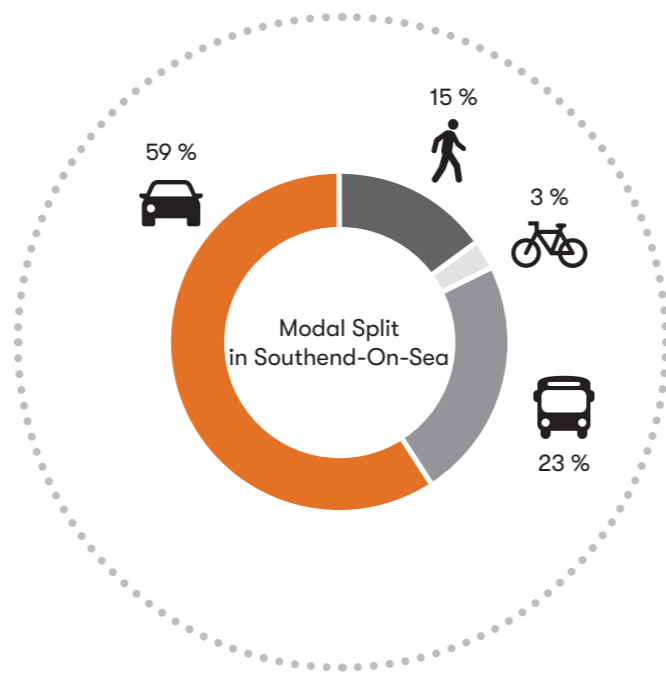

Separated transport modes - The building style of the 60's with separated transport modes creates large spaces with no eyes on the pedestrian or bikelanes, creating a feeling of unsafety. Source: Kajsa Körner

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SOUTHEND-ON-SEA
specific claims for accessibility

London Road & Victoria Circus

City Center

👤┄┄┄👤 Distance to City Center: <1 km

👥👥 Population of the neighbourhood: 4.700

⌐┐ Land Area: 0,5 km²

👥👥⌐┐ Density: 9.400 / km²

59 %

15 %

3 %

Modal Split
in Southend-On-Sea

23 %

EXPERIENCES & DEMANDS

Projects in the past have done extensive public consultation, however, the SUNRISE-project has brought about a shift in the practice in the sense, that we have moved from consulting - where stakeholders share opinions and comments on plans that are developed internally - to true engagement and empowerment, where in the stakeholders are leading the project in partnership with the project team. Early engagement has allowed them to contribute to the project, its scope and aims from the onset of the project helping in the creation of a feeling of ownership.

Main points regarding accessibility in
**City Centre,
Southend-on-sea:**

- **Creating a welcoming gateway to the town centre.**

- **Providing a useable public space that is attractive, thriving and reflects the character of Southend.**

- **Improving wayfinding in the town centre.**

- **Encouraging walking and cycling in the town centre.**

- **Improving safety for pedestrians at all times of the day.**

CURRENT SITUATION

The neighbourhood falls within one of the most deprived wards in Southend-on-Sea and there are efforts being made to regenerate the area. These societal challenges are mirrored in the quality of some of the neighbourhood's environment. The car is seen as a safer mode of transport and hence many people not to walk or cycle. Social networks in the neighbourhood are affected by the on-going regeneration of the neighbourhood. This development creates a divide between the older, less affluent, original residents, and the younger, more affluent new residents. The car often is perceived to represent a status symbol and is a reason that some people choose the car over public transport, cycling or walking. However a recent survey revealed, that walking is the main mode of transport to the City Centre. This includes people coming from different parts of Southend - not just the City Centre - Neighbourhood.

„STREET SPACE IS NOT ONLY SPACE FOR TRANSPORT, BUT SPACE FOR SOCIAL INTERACTIONS WITH DIRECT IMPACTS ON THE QUALITY OF LIFE FOR CITIZENS "

POSSIBLE SOLUTIONS/ NEXT STEPS

Southend-on-Sea aims to find creative solutions to mobility issues in the City Centre. It will use temporary trials to enable local stakeholders to test co-developed solutions for improving Victoria Circus and London Road (between College Way and Victoria Circus). The results will form the basis for new design solutions, that will be implemented as permanent changes by the end of the project. These measures include the redistribution of street space. Street space is not only space for transport, but space for social interactions with direct impacts on the quality of life for citizens. The project will aim to reclaim all or parts of the carriageway to ensure the street space is used to its full potential and not just for car use. Another measure is the creation of a welcoming gateway to the City Centre by testing innovative solutions to create an attractive entrance to the City Centre. Moreover they aim to promote active travel by facilitating active modes through comprehensive ‚convenience' by implementing different measures (e.g. infrastructure, information, campaigns etc.) and encouraging people to use them. Therefore a seamless transition between the modes as well as the improvement of the orientation or wayfinding in the city play an important role. By ensuring lightening in public spaces and streets and convenient street furniture people should feel save and invited to linger in the Town Center.
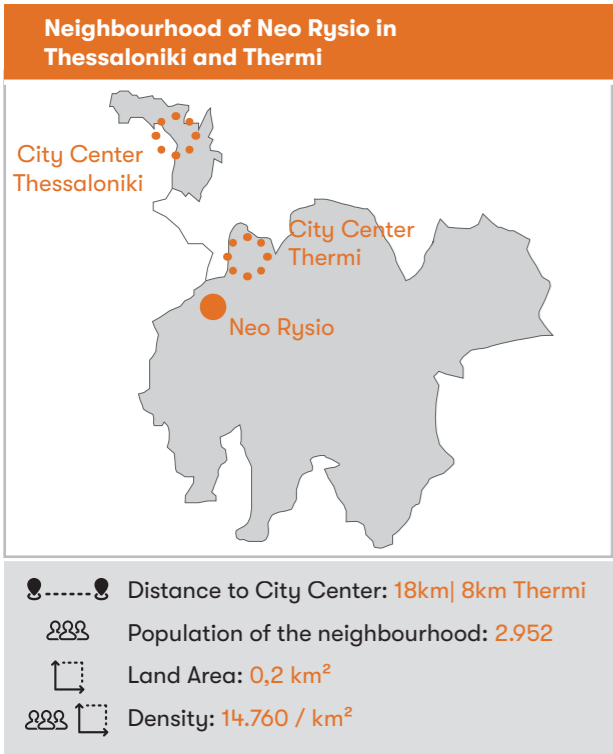
Indication of a very car dominated space, which over time has become neglected amplifying the sense of reduced safety within the area. Source: Justin Styles

As with London Road - Victoria Circus has become a neglected space which doesn't produce sense of 'welcome to the Town'. Source: Justin Styles

urbanista   SUNRISE

THESSALONIKI
specific claims for accessibility

City Center Thessaloniki
City Center Thermi
Neo Rysio

Distance to City Center: 18km | 8km Thermi
Population of the neighbourhood: 2.952
Land Area: 0,2 km²
Density: 14.760 / km²

Modal Split in Neo Rysio

31 %
46 %
5 %
18 %

EXPERIENCES & DEMANDS

The solution proposed to address the accessibility issues in the neighborhood promotes the creation of a pedestrian bus in order to reduce vehicles in the area around schools and increase road safety for both pedestrians and vehicles. Students are organized to walk all together and be accompanied by an adult. The team follows a defined route and gets or lets the children out of their homes. The idea is usually staffed with parents who are already going with their school children by foot. The approach is similar to a bus line. The „pedestrian bus" usually has a fixed route and itineraries. The „pedestrian bus" needs cooperation between parents, schools or the municipality. In any case, it requires cooperation with parents.

Main points regarding accessibility in Neo Rysio, Thessaloniki:

- Improvements of public transport services and an increase of bus frequencies

- Provide real time public transport information

- Implement smart ways of living, help to decrease CO_2-emissions and other pollutants

- Improve the accessibility to schools

- Neo Rysio can become an attractive destination for new residents who wish to receive a high standard of quality of life for themselves and their children

LOCAL CONTEXT

The area of Neo Rysio is included in the strategic Sustainable Urban Mobility Plan (SUMP) for the metropolitan area of Thessaloniki, while the operational local SUMP for the municipality was concluded in 2016. Public transport coverage, parking issues and other cases of misuse of public space, the lack of a central square or playgrounds and appropriate infrastructure for children's and families' recreation activities are some of the problems that have been indicated.
The 15.000 square kilometers area has undergone a noteworthy population increase of 65 percent, during the decade 2001 until 2011, which is indicative of the dynamics and the people-focused potential of this neighbourhood. Though it should be noted that around 57 percent of the population is economically non-active, and that unemployment in Neo Rysio is a bit higher than 14 percent. Additionally, according to the latest Census, around 25 percent of the population is younger than 20 years old, while the respective share of the elderly (older than 60 years) is around 20 percent. Emphasis should be given to new residents that are developing new mobility habits and therefore are more receptive to new sustainable travel choices. Finally, in Νeo Rysio there is a high degree of sense of belonging and cultural linkage that dates back to the historical roots of Neo Rysio as a refuge of relocated Greek populations during the 1920s.
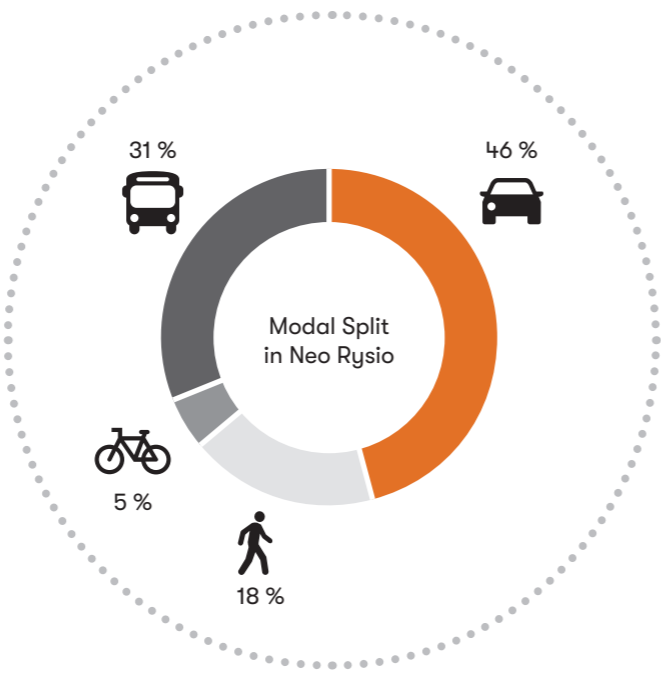
CURRENT SITUATION

The neigbourhood Neo Rysio consists primarily of residential areas with local commercial activity. It has a strong functional relationship with the urban core of the municipality of Thermi, as well as the center of Thessaloniki, in terms of administrative, economic, health, educational and other lifestyle-related activities. Accessibility in terms of public transport coverage is limited, despite the fact that Neo Rysio is located very close to the interchange station of IKEA. Moreover citizens don not have a direct connection to the center of their municipality in Thermi except by limited municipal transport and intermunicipal connections.
An issue of utmost importance is the accessibility to crucial infrastructures with a special view on schools. These areas gather many trips in the same time period and for a very short duration. The trips are made by different transport modes, including cars, buses, bicycles and pedestrians. In most of the cases the infrastructure is not appropriate and the accessibility is limited and consequently creating safety issues for the users.

POSSIBLE SOLUTIONS/ NEXT STEPS

One of the main challenges for Neo Rysio is to shift the modal split in favour of public transport, car sharing, bicycle and other alternative modes of transport. The area is mainly car dominated, but has a big potential to change towards sustainability, because it already has the basic infrastructure to achieve it.
As a result of the co-identification phase, different challenges have been identified, that should be addressed within the framework of the SUNRISE project. Those are: improving public transport services with more frequent and qualitative public transport connections to Thessaloniki, an intermunicipal connection with Thermi and other settlements, improving accessibility and road safety in main road axes, improving bike facilities, introducing a more organized car sharing system, the maintenance of basic infrastructure as well as eliminate heavy vehicles from the centre of the settlement.

Elementary school entrance. Source: Dimitra Komnianou (TheTA)

„AN ISSUE OF UTMOST IMPORTANCE IS THE ACCESSIBILITY TO CRUCIAL INFRASTRUCTURES WITH A SPECIAL VIEW ON SCHOOLS."

Central junction of Neo Rysio - Konstantinoupoleos-Metamorphoseos. Source: Dimitra Komnianou (TheTA)

urbanista SUNRISE

SUMMARY & CONCLUSION
Cluster Topic – Accessibility for all

LONG STORY SHORT

As already defined in the introduction of this paper „Accessibility & Mobility for all" is defined as the ease of reaching destination and includes both - the access and connection of places for interactions or activities and for transit for every citizen. Although the meaning seems to be self-evident for every human being, the perception of accessibility and mobility differs by the various user groups due to mainly physical and mental barriers - caused by architectural or social structures in our urban fabric and within our communities - as well as attitudinal, organisational, informational and technological barriers or simply the absence of destinations or transport options (cf. chapter 1).

Those user groups (disabled, elderly, ethnic minorities, youth, low income etc.) have specific claims and unfortunately experience impairments in different ways (see p.6 ff.). Indeed accessibility constitutes an important factor for urban quality, nevertheless cities are still covered by various forms of obstacles and do not address all people in the same way. Therefore inclusion is declared as one of the main objectives in urban planning to ensure the possibility for every person to equally take part on the everyday life in the communities (cf. chapter 2).

An inclusive planning approach requires a heterogenous perspective and intersectional awareness (see: the lens of intersectionality p. 6). The different user groups have to be involved in early stages of the planning and design-process. In any case it has to be considered, that accessibility is not only about avoiding physical and architectural barriers, but also mental barriers, spatial exclusion, the permeability of the urban tissue, the proximity and availability of infrastructures etc. Methods or actions can be of different nature and scale to address the various realities on the ground and specific needs of people. While some actions focus on the design of structures, spaces in a tangible way, others intend to overcome mental issues by information, guidance or safety measures (cf. chapter 3).

The six SUNRISE Action Neighbourhoods demonstrate, how different situations and circumstances in their city or neighbourhood require certain measures to ensure the accessibility for all, due to the specific urban environment and social structures. The issues in the neighbourhoods differ from

physical and architectural, to psychological or social or demographic issues. While some neighbourhoods are facing challenges connected to their current infrastructure and its physical condition (e.g. the lack of appropriate infrastructure in Neo Rysio/Thessaloniki or cracked sidewalks in Baka/ Jerusalem), others are dealing with social or mental issues in their communities (e.g. the value of the car as status Symbol in Southend or the image of crime and fear in Lindängen/ Malmö). Again others have to cope more with different user groups and their physical state (e.g. people with special needs in Törökör/Budapest). However in most of the cases, all aspects (architectural, social and physical) are somehow related, sometimes interconnected and have significant influence on the accessibility.

Furthermore the cities reveal how the physical and built environment affects the social situation in the communities and as a consequence the accessibility of certain user groups or places. Thus, for instance the separation of transport modes in Lindängen/Malmö constitutes a mental barrier and creates unused social spaces. Whereas the bad condition of sidewalks in Baka/Jerusalem result in safety issues and reduce walkability.

All projects within the SUNRISE framework were focused on the co-identification of the needs from people within the neighbourhood. As each neighbourhood had its own characteristics and special claims, the collectively developed and selected methods and measures address both dimensions – the construction & space as well as the mental & social dimension.

Respectively the actions range from physical placemaking projects (Baka/Jerusalem), improvements of public spaces/ parks (Lindängen/Malmö) or the reorganization of the street space for pedestrians and cyclists (Southend), to collective measures like the pedestrian school bus (Neo Rysio/Thessaloniki), info-boards with guidelines for assistance and thematic walks including people with special needs to identify their specific claims (Törökör/Budapest).

But not only the measure itself have inclusive approaches, also during the co-creation process towards the measures the city partners have tried to involve various groups. The collaboration between or involvement of different actors in

the projects is an important aspect of the SUNRISE process and includes for instance public works department and police force (Baka), parents, schools and the municipality (Neo Rysio) or specific user groups with special needs (Törökör).

The »Neighbourhood Angle« shows the various challenges and efforts of the city partners in terms of »accessibility for all«. It underlines the importance of the involvement of different user groups and their special needs and claims as well as to consider both dimensions - structural and social/mental - to overcome barriers and guarantee accessibility for all. And, just as important, the »Neighbourhood Angle« also points out the difficulties that also arise during these processes. Be it the challenge of reaching specific, marginalised user groups or the fair weighing of the needs of different groups.

The consideration of theory and practice shows that the urgency of making cities and especially their transport systems accessible for all parts of the population is beyond doubt. But just as the ambitions are big, so are the challenges that come with them. This is mainly due to the fact that cities have been planned over a long period of time by and for dominant user groups and their needs. As a result, the diverse marginalised user groups, their demands and the resulting need for action now appear particularly extensive. Added to this are intersectional challenges, i.e. the overlapping of different forms of discrimination in one person. The complexity of the planning itself makes it even more difficult - if mobility is to be planned in an inclusive way, topics such as housing or social infrastructure must also be considered simultaneously. Clearly, there is still a long way to go to make mobility truly inclusive, but the growing professional and public debate, the growing demands on planning and the increasing number of scientific studies are encouraging and giving hope for a more inclusive society in the future.
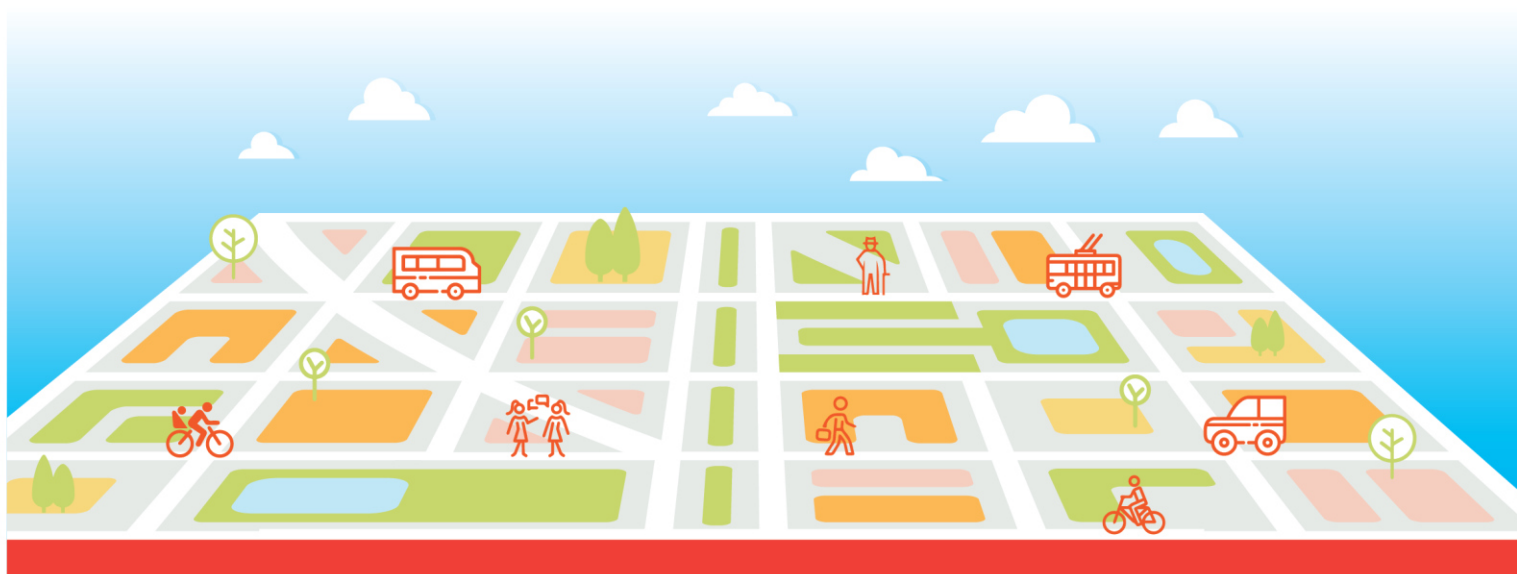
A C T I V E   M O D E S

Recommendations for neighbourhood co-creation

SUNRISE Cluster: Active Modes

What are "active modes"?

Active modes of transport include non-motorised forms of mobility that rely on human muscle power for propulsion. Most often, this means walking and cycling, and—to a lesser extent— kick scooters or skateboards. Active modes are associated with numerous environmental and health benefits, and when proper infrastructure and design is in place, they are also an enjoyable, safe, fast and convenient means of getting around; especially at neighbourhood-typical distances.
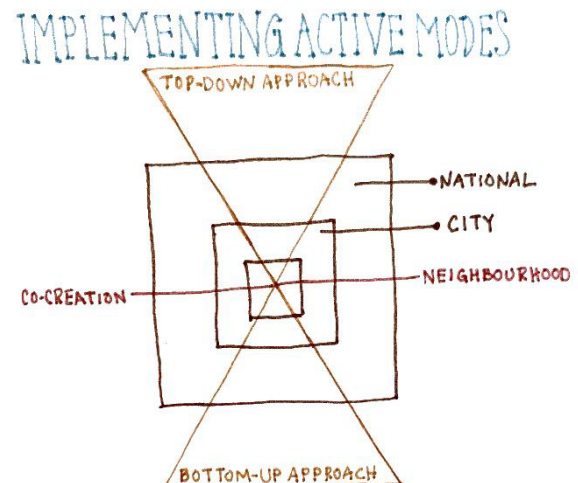
Why are active modes important?

Travel by active modes benefits cities by reducing car congestion, energy consumption and pollution emissions, as well as helping create more compact "people-focussed" urban environments. Active modes also benefit people directly; travel by active modes is associated with multiple health benefits including improved physical fitness, reduced risk of diabetes, reduced cardiovascular complications, and improved mental well-being.

The neighbourhood context presents a chance to increase travel by active modes since distances within a neighbourhood can typically be covered on foot, or by bike or kick scooter. Commutes to school and trips running errands often take place within a neighbourhood. Ensuring that such trips can comfortably be made via active modes would be highly advantageous for a neighbourhood and its residents. Advantages include a reduction in car traffic for trips within the neighbourhood, reduced noise pollution, increased road safety, reduced greenhouse gas emissions, more people-friendly public spaces, opportunities for recreational exercise, improved social well-being, pleasant opportunities for social interaction and a strengthened sense of community.

Co-creating an active neighbourhood

The intersection of co-creation and the neighbourhood scale enables a degree of meticulousness that would not easily be achieved at another level. Co-creation brings a variety of perspectives and the neighbourhood scale focuses those views on a specific, defined area.

Applying the co-creation perspective to a focus on active modes allows small, but important nitty gritty problems to be taken into consideration. **Attention to detail** is especially important for active modes because seemingly minor issues (e.g. a dangerous intersection, a pothole,

insufficient streetlighting) can easily go unnoticed by planners or policy makers who work at the city-wide level and who do not personally experience this specific problem.

Similarly, honing in on a smaller area of a city (that is, a neighbourhood) as a focus for urban mobility measures allows attention to extremely detailed issues and taking a co-creative approach **benefits from detailed knowledge** about the neighbourhood, about informal short-cuts, from tacit knowledge about the subjective quality of certain streets and spaces, about cultural preferences and taboos of its residents, etc.

Lack of **resources** is often cited as a major challenge when it comes to implementing mobility measures. Even relatively simple and low-tech solutions, such as those often associated with active modes, require time and money, both of which many local authorities might be in short supply. Expanding the number of actors (co-creation) and narrowing the focus of the area (neighbourhood approach) is in this sense a very practical way to get things done.

Furthermore, **building and strengthening a sense of community**, an oft-cited benefit of active modes, is also an outcome of co-creation and engagement at the neighbourhood level. The motivation and incentives to become active at the neighbourhood level are naturally high, as results of projects are more easily visible and directly tangible. Co-creation furthers this cause by engaging the actors who will usually be directly affected by the co-creation project.

Recommendations & experiences of SUNRISE neighbourhoods

Improve perceived and objective safety increase the attractiveness of active modes.

Malmö's focus on a park that residents described as appearing unsafe showed how **measures to improve perceived safety increase the attractiveness of active modes** as the main pedestrian and bike lane in the neighbourhood go through the park. When digging deeper with the citizens two things stood out as contributing to the perceived unsafety; illegal car driving on pedestrian and bike lanes and low use of the space for recreational use leaving the park empty. The first measure was therefore to hinder car drivers from entering the park, reclaiming the urban space for active modes. Then the main focus was on activating the space for recreational use together with citizens. Park facilities in need of improvements - such as lighting, outdoor furniture and maintenance - were co-identified and addressed with a view of making active modes in and through the park more enjoyable. The co-development of these measures required locally specific information and understanding the concerns and needs of the citizens at a high level of detail. At the same time SUNRISE supported and facilitated community events to co-boost the recreational activity in the park, show-casing the potentials of the urban space. All measures were intentionally small in scale as experiencing tangible results was expressed as a crucial aspect of the co-creation process in Lindängen.

Photo: Co-identification of areas to focus on in Malmö's Lindängen neighbourhood ©Malmö Stad

Prioritise practical, people-friendly urban design to attract active modes.

The Green Path in Jerusalem's neighbourhood of Baka provides much-needed infrastructure for active modes. An old rail line into the city, which was previously an obstacle to local transportation, was transformed into a "Rail Line Park" and pedestrian/cycle way linking the neighbourhood on one side to an industrial commercial area and on the other side to the central business district. In SUNRISE, the neighbourhood mapped the green path's strengths and weaknesses, with a particular focus on urban design features (street furniture, shading, lighting, etc.). The reception from residents and the uptake of travel using active modes indicates that sometimes **simply providing the infrastructure** is enough to incite a modal shift.

Baka's Green Path provides infrastructure for active modes. ©Jerusalem

Examples of concrete ways to prioritise active modes through design:
- **Elevate sidewalks at crossings** so that pedestrians have one level (instead of stepping down at the curb) and cars have to cross the sidewalk, rather than people needing to cross the street. This flipping of the traditional street crossing concept indicates that it is the cars who are crossing the space of people, rather than the other way around.
- **Provide attractive, adequate lighting** for a pleasant, inviting atmosphere even in darkness.
- **Ensure ample, well-placed bicycle parking** to improve the convenience of cycling.
- **Provide attractive, comfortable street furniture** including shelters to protect from inclement weather.
- **Widen sidewalks and bicycle lanes** to prioritise space for these modes. This can be done by reducing or eliminating street parking. The amount of public/street space devoted to each mode is an indicator of how highly it is prioritised.
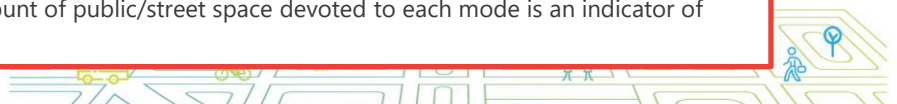
Shape parking policies that benefit active modes.

Bremen's measures on parking highlight how **parking policies strongly affect active modes.** When parked cars obstruct active modes, as in Bremen's Hulsberg case by blocking sidewalks, they create obstacles that are at minimum an inconvenience and at worst prevent passage. Children on their way to school must walk in the street to get around a parked car, which then becomes not only a mobility issue, but a safety issue. When on top of that, the obstructing vehicles are illegally parked, it adds insult to injury. Hulsberg's civic actors have brought this topic to light, leading to a significant increase of parking enforcement staff and stricter enforcement of parking regulations. These policies help restore accessibility and brings more quality to pedestrians in the street. Children, the elderly and people who are walking with walkers or strollers in particular need more space and more safety. By resident parking and parallel parking space management, Bremen's aim was to prevent commuters from misusing residential areas as free parking spaces, while offering alternatives to using one's own car through car sharing and bicycle parking spaces.

Photo: Residents invited by SUNRISE undertake an on-site exploration to discuss the plans for residential parking in the neighbourhood ©Bremen

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Parking policy tips for prioritising active modes:
- **Prioritise parking for bicycles, scooters, and any other active mode with parking requirements.** This means priority in terms of location as well as in terms of the amount of space designated for the parking.
- **Remove requirements for car parking in new developments.** Many cities still require a certain number of designated parking spaces for new buildings. Removing such requirements while
- **Enforce penalties for illegal parking.** Illegally parked cars often impinge on space for people, as described in the above example from Bremen. Parking laws are important, but have little meaning if they are not enforced and abided to.

Provide infrastructure for active modes.

Malmö's co-creation process led to the measure of improving the bicycle parking in front of a multifamily housing complex, especially from theft-preventive aspects. This was a very localised example of how **adequate infrastructure is essential for encouraging active modes.** While that may be common knowledge in many planning departments, connection with neighbourhood level was necessary to identify this specific need, as Malmö generally and Lindängen specifically already has what many would consider ample bicycle infrastructure. Extensive cooperation between the municipality and the local real estate owner was essential for the implementation of the measure.

Photo: Bicycle parking in Malmö ©Malmö Stad

Focus on basic infrastructural improvements that can reap major benefits in encouraging active modes.

In Budapest's Zuglo neighbourhood, the success of traffic calming and low-tech infrastructural solutions in encouraging travel via active modes shows that **the most important residential needs to encourage active modes are often rather basic.** Redoing an intersection, redesigning an underpass under a divisive rail line to make it more attractive for pedestrians and cyclists to use, painting zebra crossings, implementation of elevated crossing options for pedestrians, opening one-way streets to counterflow cycling, adhering to basic safety practices, and combining these improvements with social campaigning. Measures such as these resulted from the interaction with citizens and were positively received by them. At the same time, they greatly helped reduce the speed of vehicles traveling through the streets in the area.
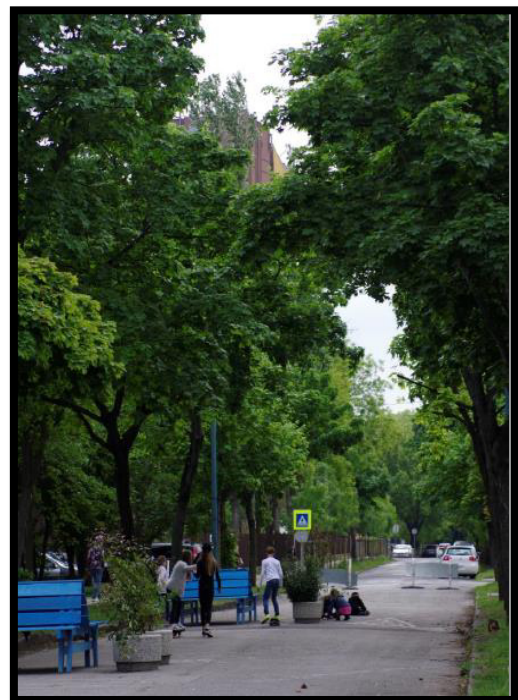
Photo: A street in Zuglo with temporary infrastructural additions (furniture, traffic calming) catering to pedestrians. Due to the positive feedback, the municipality is considering permanent street closure. ©Zuglo

Consider the potential of cargo bikes to reduce car-based transport of goods and/or children.

As project partners in Bremen put it, "If the bike is too small for a transport and the car is actually too big, the Fietje cargo bike fits exactly." From a SUNRISE initiative, a rental cargo bike was made available for all citizens. It was suggested for transporting children, bulk shopping, or crates of drinks by bicycle. It can be borrowed and tried out free of charge and easily reserved online for one to three days. The Fietje cargo bike is an alternative to a car with a wide range of offers and an aim relieve the pressure on the roads in the Hulsberg area. It allows people to use active mobility for errands and activities that might otherwise compel them to use a car.

Photo: The Fietje cargo bike ©Bremen

Encourage and make active modes accessible for children.

The premise of SUNRISE's sister project, Metamorphosis, is that when a neighbourhood has many children on its public spaces, this is a major indicator that it is well designed as a sustainable neighbourhood. A co-created measure in Thessaloniki's Neo Rysio neighbourhood shows how **the neighbourhood scale is the natural geographic domain of children,** and likewise **active modes are the natural mode of children.** The neighbourhood's pedibus measure provides a means to encourage safe travel to school on foot. This walking school bus begins at the house of the children living furthest from the school and continues along a predetermined route, picking up other children along the way. The children have safety in numbers and get a bit of extra physical activity along the way. Encouraging and instating such a measure means addressing concerns related to active modes, namely those of safety and convenience such as: Are there safe street crossings along the route? Is there ample sidewalk space? Are there cars moving at

high speeds? Does the environment feel safe? Addressing such issues benefits the walkability of a neighbourhood not only for children, but for most residents.

Photo: Children take part of the co-implementation of this measure by painting the wayfinding signs around the neighbourhood. ©TheTA

Integrate active modes with public transport.

Another way to encourage the use of active modes is to ensure that they are attractive options not only for covering short distances, but also possible and attractive as a first or last leg of travel for longer trips. A city with good public transport options is a city that is more attractive for active modes of travel. Coordinating walking and cycling with public transport is mutually beneficial. It has been found that investing in active modes supports PT use, and that access to public transport helps pedestrians and cyclists make longer and more complex trips. Thessaloniki's measure to improve bus stops and provide bus stop shelters illustrates well that **well-integrated public transport options are instrumental in fostering active modes in neighbourhoods.** Providing real-time bus information and integrating bus stops with weather protection, seating, signage, and lighting makes the bus attractive which in turn makes active modes to reach the bus attractive. The bus stops are located conveniently within walking distances and provide a hub for the local community.

Photo: Planning the location of a smart bus stop in Thessaloniki's Neo Rysio neighbourhood ©TheTA

Understand and communicate the benefit of active modes for local businesses.

In Southend-on-sea, the number of pedestrian errands and shopping that occurs on the high street led the planning group to the consensus that **prioritising walking over car traffic would be beneficial not only to pedestrians, but also to local businesses**. Historically, business owners often resist the restriction of vehicles near their places of operation. In reality, opening up streets to more bicycle and pedestrian traffic is usually a boon to local businesses. For example, a study in Bremen indicates that non-car-owners more frequently shop locally. In order to pre-empt any protest in Southend, the co-creative working group was well-informed on how restricting vehicle access is a boon to business and provided citizens with opportunities to connect with the project and share concerns.

Photo: The SUNRISE stand along Southend's high street provided face-to-face communication about the project and opportunities for interaction with passers-by. © Southend-on-Sea

Think unconventionally about ways to achieve your goal.

Other co-creative initiatives in Baka show that **sometimes a novel and unusual approach is an effective way to reach people's attention and promote active modes.** The neighbourhood conceptualised, designed, and built a "Conversational Bench." This urban design feature was proposed by the residents as a means to bring "eyes to the street" and to create a convivial space by making the adjacent footpath more attractive for everyday pedestrian mobility.

Photo: Construction of the "Conversational Bench" ©Jerusalem

Give the stage to trusted voices to promote active modes.

While co-creation may come to feel like second nature for those who are directly involved, other citizens are unlikely to be aware of how mobility changes in their neighbourhood are brought about. Involving a wider audience in the co-creation process can improve feelings of representation among citizens and increase support of active modes measures. In Baka, the walking to school program shows how **a visible co-creative campaign can increase travel via active modes**. Children took part in the co-creative process as "walkability ambassadors", taking the stage at community events to explain walkability concepts to adults and children of the neighbourhood. Local children as ambassadors generated attention and triggered a unique social dynamic that could not otherwise have been achieved. The talented kids who care about environmental issues took it upon themselves to be ambassadors for walkability in their neighbourhood, and effectively spread the word.

Photo: Walkability ambassadors in Baka ©Jerusalem

Active modes beyond the neighbourhood

The neighbourhood is an ideal springboard for active modes, because measures to encourage walking, cycling, and other active modes are easier to implement in a smaller area. Campaigns are more effective at the small scale, because people more readily see the habits of their neighbours as relatable and doable. There is a priceless benefit to being a local and trusted person when working at neighbourhood level; you are in a better position to receive the wishes and concerns of your fellow citizens, and your own message will carry more weight.

A lot can be achieved at the neighbourhood level. At the same time, not *everything* can be done at neighbourhood level. Many projects require complementarity with city-wide efforts. For example, active modes need good public transport to work well over longer distances that extend beyond the neighbourhood area, and their points of connection also need good walking and cycling options.

Active modes are attractive beyond the neighbourhood, with benefits for the entire city. Active modes:

- reduce car dependence
- reduces transport system's carbon footprint
- have minor infrastructure requirements compared with other modes
- increase physical activity

- create convivial spaces
- optimise use of existing road space
- are integral part of combined mobility
- are well-suited to urban environments where space is scarce and mobility is of high importance
- make a substantial contribution to retail profitability

Furthermore, active modes are affordable modes. For low-income neighbourhoods especially, making provisions for affordable travel is crucial for social equity. The aforementioned points all speak to the importance of prioritising active modes not only in one neighbourhood, but throughout the city.

One potential approach to this is to implement measures one neighbourhood at a time; make small changes in the neighbourhood (turning a few small screws, rather than big screws). However, a unified city vision can go a long way to support implementation of active modes measures. Measures to prioritise active modes should be aligned with the city's overall SUMP at minimum, and in the best case serve as small forms of activism that can influence higher-level policy (help to turn bigger screws).

With this in mind, the neighbourhood can serve as testing-grounds or incubation sites for measures to prioritise active modes. Co-creation is a crucial aspect in this because it recognises people as the experts of their own neighbourhood. Acknowledging and respecting local competence is not only appreciated by the beneficiaries of the measures, it is also a boon to the measures themselves, improving their implementation with the injection of local expertise.

SUNRISE

Sustainable Urban Neighbourhoods
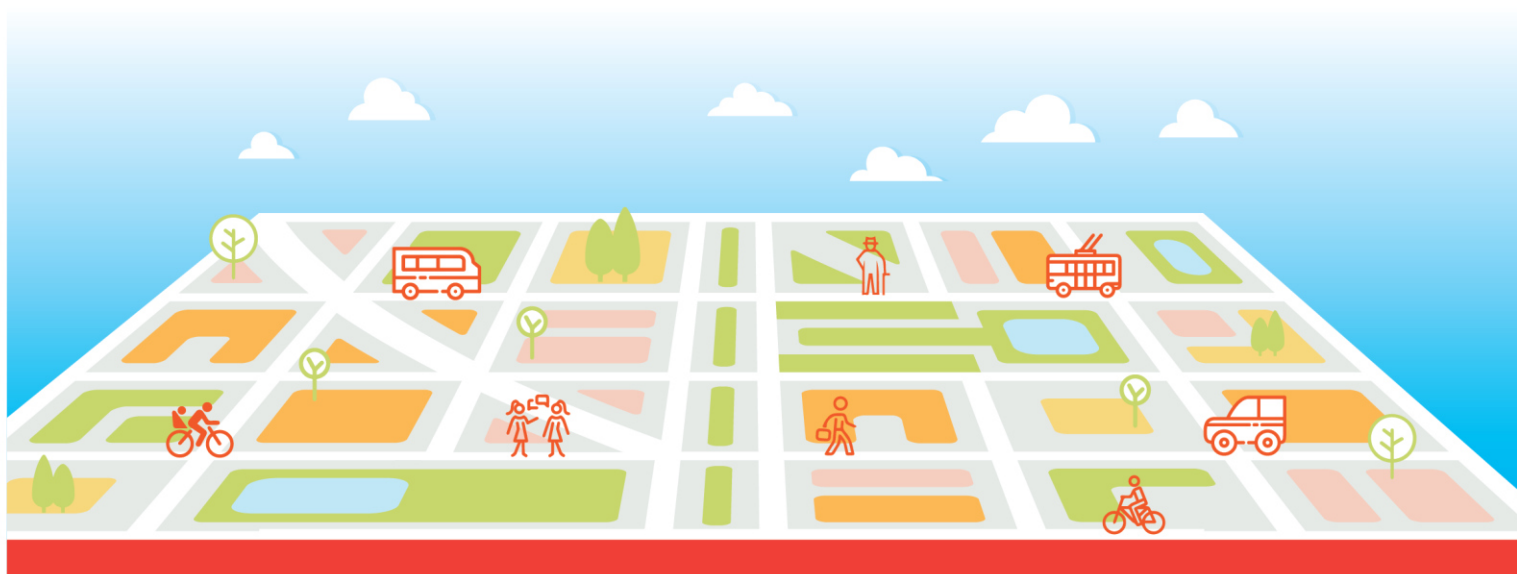Research and Implementation
Support in Europe

Innovative solutions to
U R B A N L O G I S T I C S

Recommendations for neighbourhood co-creation

Version: 1.0
Date: 20.03.2020
Author: ZLC

2020
CIVITAS
Cleaner and better transport in cities

Table of contents

1. Importance of the cluster topic

Each of the SUNRISE neighbourhoods has its own particular mix of challenges. However, they all share common sustainable urban mobility issues.

In this scene, freight and urban logistics are sources of both problems and solutions. Problems, because freight creates pollution and congestion, can degrade lightly built or inappropriate infrastructure, and can make alternatives to cars such as walking and cycling appear unattractive or even dangerous. Solutions, because efficient logistics helps sustain retailers, services and amenities, and employment opportunities at the neighbourhood level, which helps address social issues and can reduce the demand for longer distance travel.

Europe's level of urbanisation is expected to increase to approximately 83.7% in 2050[1] . The development of cities and their continuous growth has an impact on consumers' routines, as changes in urban mobility may produce a change in consumption habits. For instance, a city with pedestrian and zero emissions zones may inspire people to walk to shops whereas a congested city may lead to more ecommerce demand. The SUNRISE cluster on urban freight and logistics is an important node for integrating both passengers and goods with the aim of contributing for the improvement of the quality of life at the neighbourhood level.

On the other hand, due to the growth of the e-commerce, traffic restrictions in city centres and other reasons, the model of consumption and distribution in cities and neighbourhoods has evolved. This evolution impacts goods mobility and impacts the quality of life of inhabitants, creating new elements and needs (Figure 1).
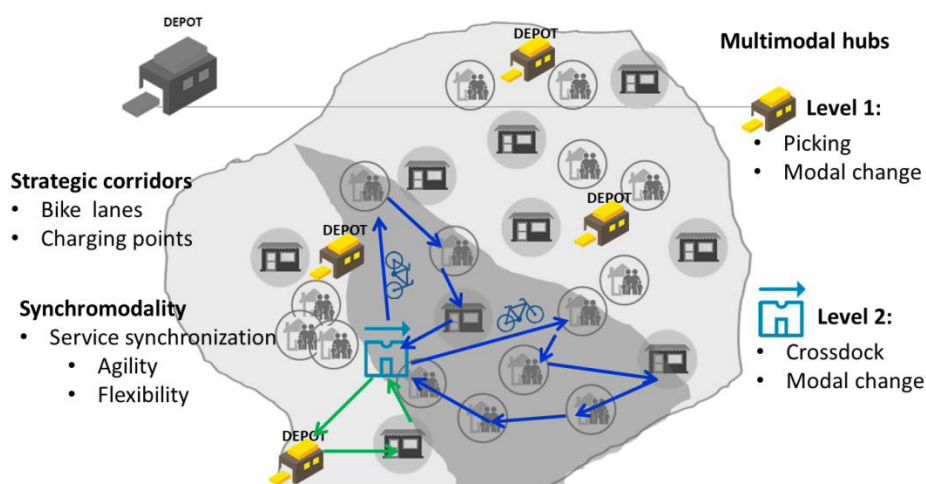

Figure 1 Evolved model of distribution/consumption at cities/neighbourhoods

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[1] https://ec.europa.eu/knowledge4policy/foresight/topic/continuing-urbanisation/developments-and-forecasts-on-continuing-urbanisation_en

Within the "innovative solutions to urban logistics" cluster there have been four main different approaches recommended for particular neighbourhoods in the project, as well as an additional two approaches for the take-up cities, as it can be seen in Figure 2:

- Participatory budgeting (Zugló-Törökőr)
- Soft measures in mobility for implementing urban freight-related actions (Neo Rysio-Thermi)
- Implementation of a Neighbourhood distribution center (Lindängen)
- Horizontal collaboration practices (Southend-on-Sea)
- Sustainable Urban Mobility Plans that integrate also freight transport
- General best practices

Figure 2 Summary of the cluster recommendations

2. Cluster Recommendations

2.1. Zugló-Törökőr: Participatory budgeting

Participatory budgeting is an open decision-making process, in which citizens decide where to spend part of public budget.

Participatory budgeting is an excellent example of a participatory process that can lead to the implementation of sustainable solutions for mobility issues at the neighbourhood level, including those relating to urban freight. Participatory budgeting follows a co-identification, co-development, co-implementation and co-evaluation approach, in line with SUNRISE's methodology.

This cluster provided support to Zugló to use this process for overcoming their mobility challenges. Support took the form of providing the best practice of the City of Zaragoza.

Figure 3 Best practice: Zaragoza participatory budgeting. Source: Zaragoza City Council.

The Spanish city of Zaragoza launched its first participatory budgeting process in 2016[2]. Since then, around ten million euros every year are dedicated to the implementation of concrete infrastructure investment actions using municipal money at neighbourhood/district level. Voting can be done on-site or electronically. The procedure is generally as follows:

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[2] https://www.zaragoza.es/sede/servicio/presupuestos-participativos/

Figure 4 Participatory budgeting cycle[3]

Typically but not exclusively, actions derived of applying the process, are the following:

- Creation of infrastructures: Urbanization, roads, road signs, street furniture, lighting, parks, garden areas, trees, fountains and hydrants, etc.
- Reform or replacement of infrastructures: Adaptation of parking areas, remodelling of roads and signalling, lighting reform, remodelling of parks, green areas, repair of fountains, etc.
- Construction or renovation of buildings: civic centers, open-care centres for the elderly, libraries, cultural centers, sports facilities, social service centers, other municipal spaces, etc.

Generally speaking, citizens don't propose actions that are directly related to urban logistics. Rather, urban logistics related proposals come indirectly through mobility issues relating to both passengers and goods transport, and the redesign of the urban space is closely linked with urban freight as well.

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[3] Adapted from zaragoza.es/sede/portal/presupuestos-participativos/fases

2.2. Neo Rysio-Thermi: Soft measures in mobility for implementing urban freight-related actions

Infrastructure is only one pillar in the whole framework of neighbourhood planning. Another pillar is soft measures that include information and marketing campaigns to encourage use of sustainable mobility, mobility management initiatives, and attitudinal and behavioural measures[4]. Normally, soft measures are difficult to implement as they are intangible and impact may depend on subjectivity of the people. Furthermore the behaviour that people engage in is structured by the system in which they operate. Nonetheless, it has been demonstrated that soft measures are necessary and a previous process of mental shift is needed.

> **Soft measures consist of solutions that impact the quality of life of inhabitants, often with low or medium financial investment.**

Traditional urban freight distribution activities cause pollution, congestion, and noise. Some examples of soft measures that can help to tackle these challenges are:

- Size restrictions of vans and trucks for accessing particular zones in the neighbourhood; therefore, the distribution can be done manually, in parcel lockers, or with small vans, electric vehicles or bikes.
- Time access or time window access: In this case freight vehicles are only allowed to access the neighbourhood in a particular time window.
- Parking regulations: To provide more or fewer parking spaces for freight vehicles according to the neighbourhood's needs.
- Environmental restrictions: Limiting or banning vehicles with high levels of polluting emissions.
- Ensuring nearby delivery areas, where parcel lockers may be settled at a distance no greater than 400m from the final delivery point.
- Modal shift: The use of other transport modes for the urban freight distribution, that is, typically tram or bus and this activity can be done during off-peak hours (mainly at night).
- Designating or eliminating street loading zones
- Dynamic routing: Routing delivery vehicles according to the current traffic situation.

The soft measures described above are often linked to other measures, structures and technologies helping people to change their travel behaviour towards more sustainable options. These include cycle lanes, information systems, integrated pricing, innovative incentive schemes, bike rental, pedestrian areas etc.

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[4] https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/midas_soft_measures_for_sustainable_mobility.pdf

Soft measures can lead to a shift in mentality that further stimulates the adoption of new solutions, but they can also result in resistance among some stakeholders who do not wish to implement such measures. Age and digital literacy are some of the sources of gaps that must be filled (for instance, some people may find it technologically challenging to use a new parcel locker near their home). The INDIMO project[5], a recently EU-funded Horizon 2020 project, aims to extend the benefits of digitally interconnected transport systems to people that currently face barriers in using or accessing such solutions.

In the framework of SUNRISE project, urban logistics cluster provided support on this topic to the neighbourhood of Neo Rysio in order to help them to select sustainable interventions to be implemented in SUNRISE. In particular, the step regarding mental shift can be achieved through the engagement of citizens using surveys or participatory processes. This includes, for example, engagement of citizens for the purpose of:

- Improve accessibility to schools
- Better use of public space by shifting to a model of multi-use sharing space – with time windows allowing un/loading activities, parking or traffic flows
- Better alignment of shops and stores schedules
- Participatory budgeting

Sometimes mental shift can be accelerated by external events. A recent example is the increased e-commerce at neighborhood level that the COVID-19 crisis has promoted. In this context, many small businesses have gone online, on their own or integrated in local e-commerce platforms. At the same time, consumers have rapidly adapted to new business models[6].

2.3. Lindängen: neighbourhood distribution center

Neighbourhoods can be more sustainable by sharing resources for logistics activities. Horizontal collaboration is also a good example of co-implementation at neighbourhood level.

The neighbourhood of Lindängen has a series of characteristics that would make the implementation of this solution very interesting. Lindängen is home to a very young population. Also, employment rate and per capita income are below the city average. Parking is reserved in underground garages and outside the neighbourhood. Bike lanes and pedestrian paths connect residential areas with its central amenities, shops and services[7]. There are a few public buildings in the area, such as the library, which currently are underused. One of those facilities could be used as "neighbourhood distribution center" (mimicking urban distribution centers). Youngsters could then use cargo bikes for the proximity deliveries. This would also lead to the creation of new jobs and to reduce the noise and carbon footprint in the neighbourhood.

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[5] https://www.indimoproject.eu/
[6] https://www.som.polimi.it/en/covid-19-the-impact-on-b2c-ecommerce/
[7] SUNRISE D1.2 Neighbourhood mobility dossiers

There are many European projects that encompass such measures (at city level) such as C-LIEGE[8], BESTFACT[9], ENCLOSE[10] and FREVUE[11]; all of them include actions that show good practices in last-mile distribution.

The figure below illustrates the best practice of the FREVUE project in the city of Madrid. In the framework of this project a Consolidation Centre was established at the periphery of Madrid city centre: at Legazpi's Fruits and Vegetables Market, one of the oldest and most iconic markets of Madrid, which was also restored within this project.
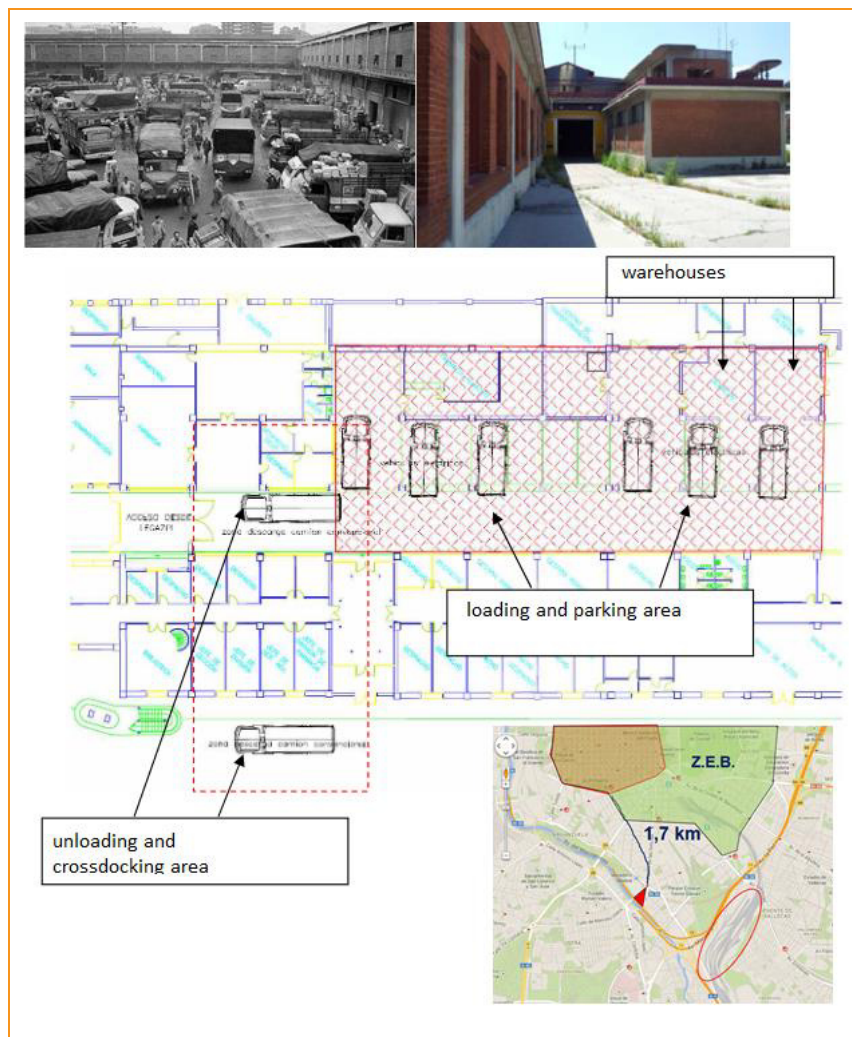

Figure 5 Best practice: FREVUE project. Source: Madrid City Council[12]

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[8] c-liege.eu
[9] bestfact.net
[10] enclose.eu
[11] frevue.eu
[12]
https://www.madrid.es/UnidadesDescentralizadas/Sostenibilidad/EspeInf/EnergiayCC/03Energia/3bMovilidad/3b05Distribucion/FicherosCambiar/ProyFREVUE_FPC.pdf

2.4. Southend City Centre: Horizontal collaboration for a more sustainable neighbourhood

The case of Southend presents a main street with lots of clubs and restaurants, often perceived as unsafe because of a homeless population presence once stores are closed at 5pm. Southend proposes to improve the local taxi stop's visual appeal to create a better street atmosphere in general.

Loading and unloading of food and beverage delivery vehicles supplying the clubs, restaurants and cafeterias also detracts from the main street's appeal, either blocking the main street where there is little space or taking place in parallel or side streets. Food and beverage deliveries usually are made by different suppliers and occur several times per day.

Applying the concept of horizontal collaboration to the provision of supplies to food and beverage businesses is a good idea as it improves the image of the area and is closely related to the concept of better use of public space. A neutral trustee (typically a logistics operator, but it can also be promoted by local authorities) consolidates the deliveries to be served in the city center, maximizing the load factor of the vehicles. Studies show that particulate matter and NO_x emissions can be reduced by 29% and 22%, respectively[13]. Many European cities have attempted to implement this concept[14], however it must be pointed out that, in order to produce lasting results and be economically sustainable over time, there are some challenges regarding stakeholder engagement, impact modelling, and contract durations that must be overcome.

Southend city planners have been working for months on the redesign of the main street, for the creation of a better atmosphere and a more pleasant use of space. Considering all the variables, the cluster made some recommendations to the city, along the lines of:

- **Zero (or low) emissions urban freight distribution practices**: Examples of this include mobile depots or the implementation of microterminals in neighbourhoods. Special access will be given to neighbourhood's freight distribution when traffic restrictions are implemented. These practices are also linked to the use of bikes, new jobs creation, and rehabilitation of underused municipal buildings (as microterminals). The concept of superblocks has also been implemented in several neighbourhoods, as it establishes perimeters of 400m^2 where traffic is restricted, and it promotes better and healthier lifestyles by using bikes and proximity markets. Proximity replenishment of goods and the increase of quality standards of life can be achieved in combination with those superblocks. The perimeter also ensures that there is public transport in a walking distance.

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[13] Morganti, E., Gonzalez-Feliu, J. (2015) City logistics for perishable products. The case of the Parma's Food Hub. Case Studies on Transport Policy. 3(2), 120–128.

[14] http://www.prosfet.eu/PROSFET/wp-content/uploads/2018/05/Transitioning-Urban-Consolidation-Centres-initiatives-in-successful-operations.pdf
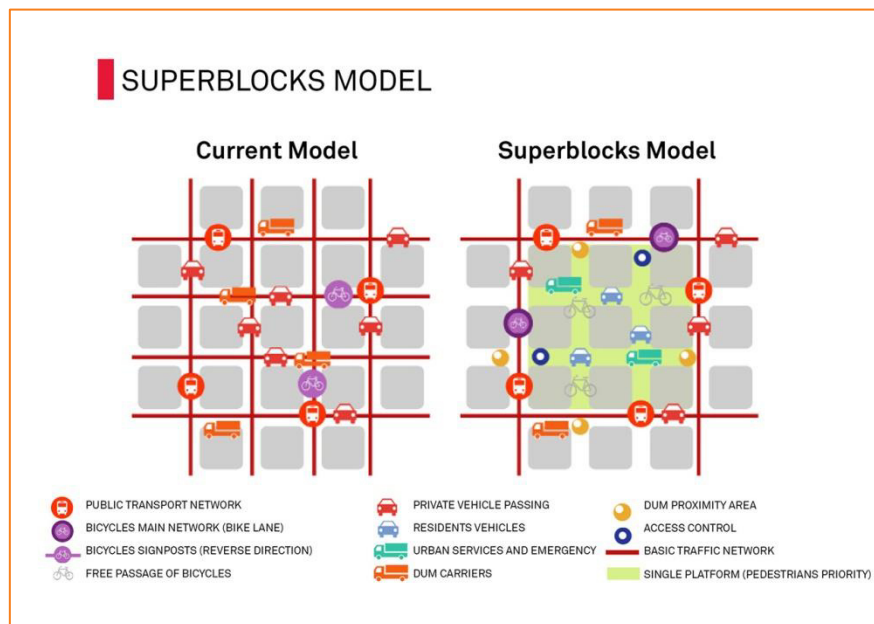
Figure 6 Super-blocks model. Best practice from Barcelona (Image from Ajuntament de Barcelona).

▪ **Waste transport collection and recycling**: Sensors in trash bins send a signal when the bins/containers are full, therefore reducing the number of collection trips and consequently the number of km driven by waste and recycling vehicles within the neighbourhood. This system provides a better quality of life as it reduces the traffic and carbon footprint in the area.

Figure 7 Sensor inside a glass container. Best practice from the Municipality of Calatayud. Taken from the European project Synchronicity[15]

▪ **Mixed passenger/freight transport systems at city/neighbourhood level**: There have been some initiatives to combine people with goods in public transport modes (metro, tram, train, etc). This practice is called "cargo-hitching". Public transport systems can also deliver goods in the off-peak hours (at night) from the outskirts to the city center or

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[15] https://synchronicity-iot.eu/

to a specific neighbourhood. Last-mile can be covered by electric bikes or non-pollutant modes.

Figure 8 Best practice of cargo-hitching (share tram) in Saint-Etienne[16].

- **Improve road safety**: Educational programs need to be promoted for both the delivery companies and the local citizens. Citizens need to learn about the continuous changes that cities are facing in terms of traffic lights control, tram tracks, pedestrian areas, loading and unloading areas, etc. in order travel safely via the mode of their choosing. Cities should become healthier and more pleasant places for walking and for facilitating mobility, and education and road safety must go hand-in-hand. Education must be ensured for citizens but also education should be ensured for truck drivers and transport operators, as they are part of the neighbourhood activity every day.
- **Implement motherships**: A big truck acting as a mobile depot, containing smaller and non-pollutant transport modes (i.e. bikes and electric tricycles) to make the daily deliveries in the neighbourhood. This is an idea that some companies such as postal services are considering for the delivery of goods[17,18].

Figure 9 Best practice: TNT-express mobile depot in Brussels[19].

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[16] http://www.citylab-project.eu/presentations/180423_Brussels/17Mazzarino.pdf
[17] http://www.straightsol.eu/demonstration_B.htm
[18] https://www.fleeteurope.com/en/last-mile/smart-mobility/united-kingdom/features/ford-last-mile-initiative-gnewt?a=THA13&t%5B0%5D=Ford&curl=1
[19] https://www.tnt.com/corporate/en/data/press/2013/05/tnt-express-introduces-mobile-depot-in-Brussels.html

2.5. All neighbourhoods: How to build a Sustainable Urban Mobility Plan at neighbourhood level, integrating freight transport.

A Sustainable Urban Mobility Plan (SUMP) is a strategic plan designed to satisfy the mobility needs of people and businesses in cities and their surroundings for a better quality of life.

In contrast to traditional transport planning, SUMP is a continual planning process characterised by cooperation, goal-orientation and integration. Through the collaboration of actors and decision-makers from transport-related sectors, from the district to the national level, there is a coordination of activities with mobility relevance for the local and regional level. This coordination is based on sustainable mobility objectives and policies, and measures defined by the stakeholders.

SUMPs benefits at the neighbourhood level include[20]:

- Improving quality of life;
- Saving costs – creating economic benefits;
- Contributing to better health and environment;
- Making mobility seamless and improving access;
- Making more effective use of limited resources;
- Winning public support;
- Preparing better plans;
- Fulfilling legal obligations effectively;
- Using synergies, increasing relevance; and
- Moving towards a new mobility culture.

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[20] https://ec.europa.eu/transport/themes/urban/guidance-cycling-projects-eu/policy-development-and-evaluation-tools/sumps-and-cycling_en

Figure 10 Crucial principles for successful Sustainable Urban Mobility Planning. From ELTIS[21]

Integrating not only passengers but also freight in SUMP development can decrease noise, emissions and congestion in the neighbourhoods, improve road safety, enhance business economic development, and improve the efficiency and cost-effectiveness of the transportation of goods.
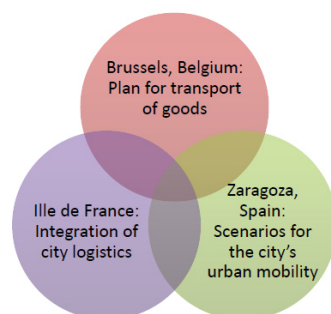

Figure 11 SUMPs integrating freight good practices presented in the webinar[22]

After learning from cities that have implemented or are in the process of implementing a SUMP, one can realize how important the integration of passengers and freight from lower stages is.

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[21] https://www.eltis.org/mobility-plans/sump-concept
[22] https://www.eltis.org/discover/case-studies/integrating-urban-freight-brussels-sump-belgium

Below there are some tips, that can be considered as guidance, for a successful integration of urban freight distribution into the SUMP of a city or neighbourhood:

- Make an initial list with all the actors involved in the process:
  - Shippers
  - Transport operators
  - Receivers
  - Neighbourhood residents
  - Visitors
  - Local Administration
  - Traffic Managers
  - Other actors
- Agree on the communication channels: During the whole process there should be interlocutors from each of the groups
- Establish the timeline along which the group is going to collaborate
- Ensure this group of stakeholders are also aware of the different actions related to citizens' mobility
- Involve other external actors to provide feedback
- Learn from other initiatives and collect sufficient information
- Put in common future development plans in the neighbourhood and how they will affect the initiatives from the group
- Most important, try to generate win-win initiatives. For instance, if a shipper needs purchase a new, less polluting fleet, try to incentivise this transition with low taxes, advertising the company as environmentally friendly, etc.

2.6. All neighbourhoods: General best practices

During SUNRISE's consortium meeting in Budapest, this cluster held a workshop with the project neighbourhoods and some additional take-up cities. The main objective was to share and discuss general best practices in the field or urban logistics and assess their impact at neighbourhood level.

Table 1 Best practices in urban freight distribution identified during the workshop

Best practices	Objectives
Vehicle regulation	Congestion reduction, Safety for citizens
Low emissions zones	Emissions reduction
Cargo bikes	Reduced lead times, sustainability
Transhipment points	Simplify deliveries due to e-commerce

Urban consolidation centers	Simplify deliveries due to e-commerce
Use of public transport	Integration of passengers/freight transport
Multiuse lanes	Sustainable use of public space
Temporary loading/unloading zones	Sustainable use of public space
Off peak hours deliveries	Sustainable use of public space
Use of new technologies	Efficiency, use of sensors, engagement with citizens

During the workshop also the following questions were discussed, which are questions that any neighbourhood can ask itself when considering their plans:

- What do we mean by integration in the context of urban freight?
- Why is it important to integrate urban freight with social and environmental considerations?
- How can urban freight transport be included as an integral element of a wider approach to bridge social and environmental objectives?
- Who needs to be involved for this?
- When do you think it would be good to integrate urban transport, considering social and environmental issues?

- Do you think mobility and proximity markets make sense without an integrated urban freight distribution? How about e-commerce?
- How do you envision the combination of freight with the use of public transport?
- How do you envision, in the medium term, your neighbourhood in terms of accessibility?
- Is your neighbourhood following a policy aligned with SUMP?
- Which measures are already implemented in your neighbourhood in relation with urban freight distribution?

Here we have gathered the main insights from the discussion with the project neighbourhoods. These can be useful for other neighbourhoods as challenges to overcome and recommendations to be followed.

- Some neighbourhoods are still far from implementing actions related to freight, prioritizing mobility of people without taking into account an integrated view of the problem.
- Although many cities have already implemented a SUMP, in practice just a few of them scale measures related to freight at neighbourhood level.
- Generally speaking, there is a lack of communication among the logistics operators, with no horizontal collaboration in the last mile delivery, which contributes to the problem.
- The current growth of e-commerce sales is perceived as an extremely important topic. Neighbourhoods recognize that there is a need for new measures to address it, such as cargo bikes and cargo bike sharing, micro hubs creation, urban consolidation centers, etc.
- Reverse logistics can also help to improve the neighbourhoods. This refers to situations such as waste disposals for special products (i.e. furniture), as well as garbage collection at residential level.
- Soft measures such as multiuse lanes and others related to traffic calming are popular at neighbourhood level. Participants agreed that establishing regulations for a better use of space and integration of both freight logistics and citizens' mobility, can improve neighbourhoods' liveability.
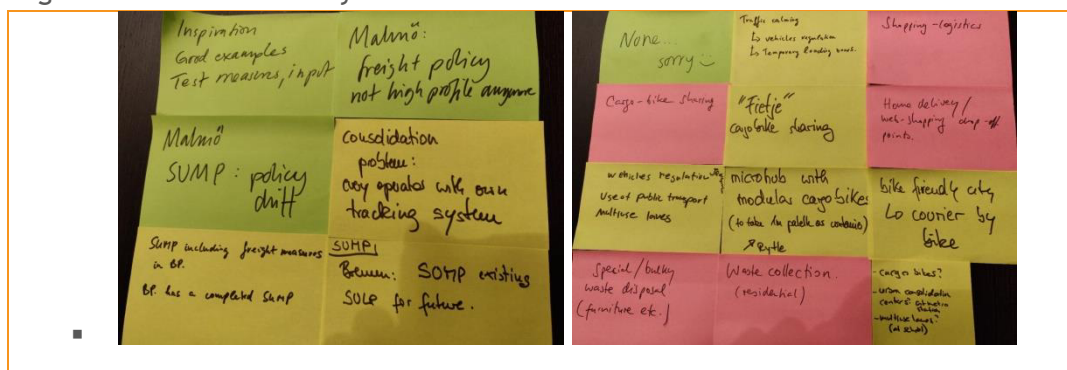

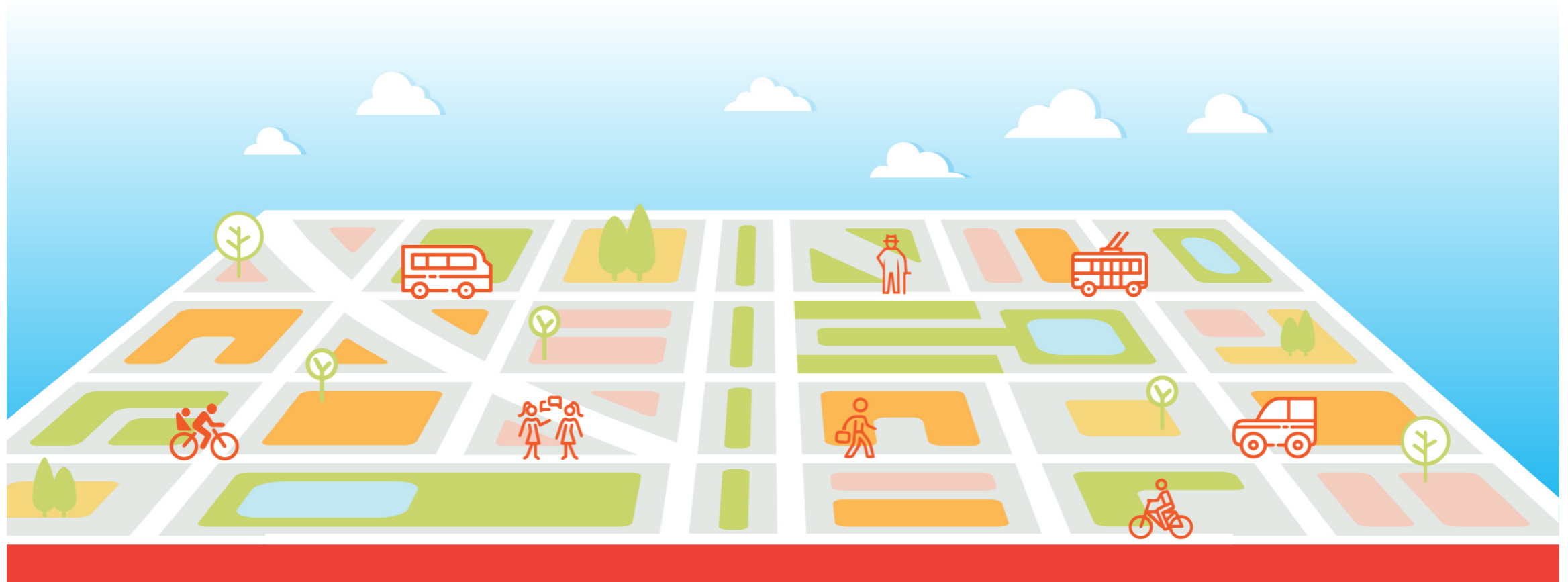**Figure 12 Some of the contributions from the workshop's attendees**

Use & design of space in neighbourhood mobility

SUNRISE cluster recommendations
Deliverable 3.2

Use & design of space in neighbourhood mobility
Recommendations from the SUNRISE-cluster „Use & design of space“

Part of deliverable 3.2

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Aim: These cluster recommendations summarise findings and experiences from the SUNRISE-cluster „Use & design of space“. They are aimed at SUNRISE cities but also at other interested cities and neighbourhoods.

The CIVITAS SUNRISE-project is an European project on sustainable mobility on a neighbourhood level. It has a strong focus on stakeholder involvement and explores the possibility to identify, develop and implement mobility measures on a neighbourhood level. The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 72 33 65.

More information about the SUNRISE and further resources: www.civitas-sunrise.eu

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2: Speed, space and design

3: Parking

4: Alternative use of street space

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1: Introduction

In urban neighbourhoods, the overall quality of life, the level of accessibility for all and perceived safety is strongly influenced by traffic. Depending on the speed and intensity of traffic, neighbourhood streets can either be perceived as dangerous barriers, dividing a neighbourhood, or as attractive, multifunctional spaces that provide access with a multitude of modes but also allow for human interactions, commerce and play. Multiple studies have shown that the level of car traffic on a street strongly influences social interactions across but also along it (e.g. Appleyard 1981). Besides moving traffic, car parking can also strongly define the character of a neighbourhood.

Urban and neighbourhood streets can to an extent be seen as battlefields of colliding interests – smooth accessibility for passing car travelers, the residents' need for safety, quiet and good air quality, parking possibilities for both visitors and locals, the commercial interests of neighbourhood businesses, the needs of pedestrians, cyclists, children, the elderly and so on.

In many cities, car traffic has long been prioritized, also at a neighbourhood level. This has led to streets that are unattractive, full of parked cars, can be dangerous to cross and provide little space for cyclists or pedestrians.

Conscious design and use of space, mainly street and parking space, can be used to revert this development. It is both a means to an end – to change mobility patterns and to increase the use of sustainable modes – as well as a goal in itself, e.g. by providing more space for pedestrians, cycle lanes, parks and playgrounds.

At the neighbourhood level, even small design changes and micro-interventions can often lead to tangible improvements. Key areas are improving safety by controlling speed, safe crossing opportunities and the allocation and management of parking space. At the same time, these questions are often sensitive and controversial. Communication with the inhabitants and the involvement of local stakeholders can be crucial for acceptance and long-term success of mobility measures at the neighbourhood level.

This document summarises examples, experiences and findings from the work with the SUNRISE neighbourhoods. Its purpose is to provide inspiration and key recommendations rather than being a comprehensive guide or design manual. It is aimed at SUNRISE cities but also at other interested cities, neighbourhoods and stakeholders interested in improving the mobility situation on a neighbourhood level.

The following, partly interconnecting themes are covered:
• Speed, space and design
• Car parking
• Alternative use of street space

For more technical details, we refer to the large existing body of technical manuals on street design and -use as well as on parking and tactical urbanism. Further, many interesting example projects are well documented, e.g. by CIVITAS.

People-centred use and design of space are both means and goals for achieving sustainable mobility in neighbourhoods.

2: Speed, space and design

Vehicle speed is the single most important indicator of the safety of a street. Speed management reduces the likelihood and severity of accidents. Lowering speeds creates safer conditions for pedestrians and cyclists, making these modes more attractive. Further, low and consistent traffic speed reduces noise and air pollution. If a neighbourhood suffers from extensive through traffic, it can be reduced by speed management, making local streets less attractive as a thoroughfare.

If actual vehicle speed can be reduced to 30 km/h or less, fatalities are drastically reduced. A collision between a pedestrian and a car at 30 km/h can be compared to falling from the first-floor window of a building, with a very high chance of survival. A collision between a pedestrian and a car at 50 km/h is comparable to falling from the third-floor window of a building. A speeds of 30 km/h or lower, cycling in mixed traffic becomes both far safer and acceptable since cars and bicycles move at similar speeds. Also crossing the street becomes safer and easier for pedestrians if vehicle speeds are low. Ideally, the speed at pedestrian crossings should be as low as 10 km/h. For streets with many pedestrians and little vehicle traffic, e.g. access streets with only residential traffic, speeds of 10 km/h or less can greatly improve the livability and multimodality of the street.

Speed management is therefore a key tool to improve neighbourhood mobility, to increase the potential for walking and cycling and to make neighbourhoods more livable.

In many urban neighbourhoods there are streets, street segments or crossings that are perceived as unsafe. Local inhabitants are the best source of information to identify these spots. In SUNRISE, many different techniques to gather information have been used – from public hearings to on-street stands and interviews to on-line mapping tools. See the SUNRISE webpage for tools and examples. Important is to gather the information of many groups - children and their parents, the elderly or visually impaired might be more aware of danger spots than young adults or regular car users. Use this local knowledge to identify hot spots and streets that need speed management.


Stakeholder consultation in Budapest to identify problem areas in the neighbourhood

- Consult residents and local stakeholders to identify streets, sections or crossings that are considered unsafe.
- Examine if reducing vehicle speed would improve the situation.
- 30 km/h is recommended as default speed on residential streets and facilitates mixed traffic.
- 10 km/h or lower is recommended at crossings and streets where pedestrians and motor vehicles mix.

Traffic enforcement can help to manage speeds but is not always available. Instead, speed management should ideally be achieved by designing the street and its surrounding so that the desired speed occurs naturally. The width of the carriageway and the length of the unobstructed line of sight are key design factors that communicate to the driver what speed is adequate. There are many possibilities to manage speed by street design, e.g. narrowing the lane, chicanes, using speed humps, raised pedestrian crossings, pedestrian refuge island, curb extensions, narrow gateways when entering the street and more. The design should clearly signal to the driver that they are entering a zone with lower speed. Click here for a collection of traffic calming strategies. Public hearings or other forms of stakeholder consultations where pros and cons of different solutions are discussed are recommended before choosing a final design.

Many countries also have specific street types and signs for different low-speed zone in their traffic code. Examples are the so called "living streets" or "home zones" where cars are allowed but only at very low speeds and "bicycle streets" where bicycles have priority but cars are allowed at bicycle speed. These street types can be used to re-classify and redesign neighbourhood streets where appropriate.
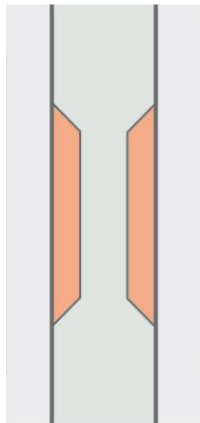
Locally narrowing the street is one of many possibilities for speed management and to increase pedestrian safety. Source: globaldesignincities.org

Swedish traffic sign signaling a "living street" where cars are allowed to drive but only at low speed and apprehensive of pedestrians.

SUNRISE examples: Budapest, Hungary

Within the SUNRISE-neighbourhoods, problem areas have been identified through citizen involvement and stakeholder-consultation. In many cases, this has led to the development of design measures to improve the situation. An example is Tábornok street in Budapest, a residential street where several intersections where considered unsafe for cyclists and pedestrians. To improve the situation, a combination of additional pedestrian crossings, improved signposting and other physical measures were developed.

Tabornok street in Budapest where new pedestrian crossings, speed reduction and other safety measures will be implemented as a result of SUNRISE.

- Identify suitable speed management measures and if a change in street type is appropriate.
- Changes in street design are often more effective than signposting or traffic lights.
- Consult with local stakeholders when choosing speed management measures.

3: Parking

Car parking is a challenging topic in many neighbourhoods. On-street parking is common and where parking pressure is high, residents can find it difficult to find available spots. Especially in areas where parking is free, residential city streets are often also used for parking by commuters, attracting additional traffic and blocking space. Car parking is space-demanding and competes with alternative uses of space such as dedicated cycle lanes, wide sidewalks or green areas. Where parking pressure is high, illegal parking occurs and it is common that sidewalks are partially blocked by parked cars or bicycles, reducing accessibility for pedestrians. Especially for people with walking aids or wheelchairs, the blind or parents with prams, blocked sidewalks can cause real problems. In extreme cases in narrow streets, parked cars can even restrict access for emergency vehicles or fire fighters.

At the same time, parking is a sensitive topic and emotions can run high when measures such as restrictions, pricing or alternative uses of parking are discussed. This makes the topic well suited for stakeholder involvement, but care has to been taken that different views are properly balanced and less vocal groups also are heard. A starting point is to understand and share the problem definition and needs of different groups – car owners in the neighbourhood but also the police, cyclists, the elderly, children, municipal services etc.

Depending on the local challenges, a variety of measures to manage parking are available. Where neighbourhood streets are blocked by cars of external commuters or visitors, parking time restrictions combined with residential parking permits can improve the situation. Pricing and parking controls are additional tools that can be used.

Ideally, on-street parking should come at a cost, both for visitors and residents. This reduces the risk of crowding and that valuable city space is used for storage of cars that are rarely used. Management of on-street parking makes parking garages more attractive and increases the competitiveness of alternative travel options such as public transport, bicycles, car sharing or other mobility offers. This in turn further reduces the need for on-street parking.

Gradually reducing the available on-street parking spots creates opportunities to free space for other uses and is a proven strategy in many cities. If parking is removed, it is important to immediately implement alternative uses for the space, e.g. a bicycle lanes, wider pavements or seating areas so that improvements in the local environment become tangible. Offering safe and secure bicycle parking facilities at strategic locations can make cycling more attractive and at the same free space from sidewalks and other less suitable areas.

Key steps for developing successful parking measures that are well accepted within the neighbourhood are to create a common understanding of the challenges that should be resolved, to discuss and visualise what improvements for the neighbourhood could be achieved and to devise a carefully designed implementation and communication strategy.

SUNRISE example: Bremen, Germany

In the Hulsberg neighbourhood in Bremen, parking has developed into a major headache. The narrow local streets are jammed with parked cars of residents and visitors alike and parking on the sidewalk has become common, even if it is illegal. Accessibility for pedestrians is jeopardized since many sidewalks are partially blocked by parked cars or bicycles. The problem is especially severe for the elderly, blind or anyone with walking aids and parents with prams. Parked cars also restrict the accessibility for firefighters, waste-collection and ambulances, with potentially serious consequences.

On-street parking in Hulsberg has been free of charge and parking rules have not been strictly enforced. Introducing fees and strict enforcement has long been considered as too controversial. Within the SUNRISE-project, the parking challenge has been thoroughly discussed with the local population and stakeholders, with several public hearings, presentation of international experience and examples, guided walks and through other channels.

As a result, parking in the neighbourhood will become more regulated to improve the situation. Parking fees and time restrictions will be introduced for visitors, while residents can apply for residential parking permits for an annual fee. At the same time, parking rules will be more strictly enforced. Additional cycle parking facilities are planned to avoid that parked bikes block sidewalks.

A key goal is to reduce the number of external cars parking in the neighbourhood, improve parking discipline and to improve availability of parking for residents. To provide alternatives to owning a car and to free parking space, the city also supports alternatives like car-sharing, cargo-bike sharing and other mobility measures in the neighbourhood.

Pictures: City of Bremen

- Parking can be a sensitive topic with many diverging opinions.
- Communicate extensively, prepare for conflicting views.
- Engage with wide groups of local stakeholders and ensure that the opinions and needs of many groups are heard, not only car-owners.
- Try to find a common ground on what problems should be solved.
- Use national and international experience and examples to show a variety of possible parking management options.
- In dialogue with local stakeholders, develop suitable and acceptable parking management measures.
- Clearly communicate the benefits for the neighbourhod that can be achieved by parking management when parking measures are introduced.
- Don't forget to also provide safe bicycle parking in public spaces.

4: Alternative use of street space

There are many possibilities to transform street space and car-parking spaces for alternative use. By reducing street width or removing on-street parking, dedicated cycle lanes can be created or pedestrian sidewalks widened. Other options are creating cycle parking, greening the neighbourhood with plantations, mini-parks, play-areas or space for outdoor markets or seating for restaurants. These measures can all contribute to improved conditions for walking or cycling and to to create a more attractive and inviting streetscape.

Transformations can be large-scale, where whole streets and parking areas are transformed to pedestrian areas. But also small projects such as the transformation of individual parking spots can lead to amazing improvements. Transformations can be permanent as well as temporary in the sense of tactical urbanism.

To identify where transformations are possible and, especially, what alternative uses are desirable, stakeholder involvement, neighbourhood based co-creation processes and public participation are very well suited. Cheap, temporary solutions can be used test ideas and to demonstrate and evaluate their impact before moving to more permanent changes. Stakeholder involvement is highly recommended also for evaluation and further development of measures, e.g. whether temporary solutions should become permanent.

- Have an open view on what space can be used for – streets and parking are only some of many options.
- Consider what functions are most desirable, consult with stakeholders.
- Use temporary, reversible measures to test and evaluate.

London – microparks and benches instead of parking.

Two parking spaces on Tooley Street in central London were transformed into a micropark that extends public space from the sidewalk into the street. The parklet provides a touch of green and offers the possibility to rest and interact, changing the character of the street by allocating more space to people rather than cars.

Picture: WBM Studio

Gothenburg, Sweden – car parking to bicycle parking

Through installations of bike racks, Gothenburg and many other cities have started to transform inner city car parking into bicycle parking, providing parking possibilities for more visitors than before and thus supporting local businesses.

Picture: M.Koucky

![SUNRISE logo]

SUNRISE example: Southend-on-Sea, U.K.

As in many other UK cities, the usage of Southend-on-Sea's central High Street, London Road, has declined over the years. The area has lost in attractiveness for both visitors and residents and many local shops and restaurants are struggling. Within SUNRISE, a process of reallocating space from carriageway to pedestrianized space was initiated, with considerable involvement of local stakeholders and inhabitants.

As part of the pedestrianized space, restaurants will be allowed to have outside eating and green spaces will be created with plantings and trees. Deliveries to local business will be allowed between 7pm and 7am only and taxi parking will be moved. Vehicle traffic will therefore be significantly reduced, with less noise and improved air quality and an attractive and safe environment for pedestrians. With the shift to a pedestrianized space, the area will be used for outdoor events to encourage people back to the High Street. Input from both local business and residents has been instrumental for developing the proposed solution.

Being the top end of the High Street and a central point of the neighbourhood, there has been resistance from people who used the space for purposes such as taxi, loading and parking. This highlights the importance of balancing the views of different interest groups and of securing support from property owners, residents and local businesses. It is also important to develop a clear vision as well as allow adequate time for discussions and the entire process, from collection ideas and opinions to implementation of the transformation.

SUNRISE example: Malmö, Sweden

The SUNRISE city Malmö started in 2017 to introduce the concept of "summer streets", where some neighbourhood streets are temporarily restricted for motor vehicles from April until October. During this period, movable street furniture, benches, plants and bicycle racks as well as outdoor seating of restaurants are used to transform the streets into places for pedestrians, cyclists and urban life. Residents are allowed to drive their cars and delivery vehicles are allowed as well, but at pedestrian speed. At first, the concept was tested on one street only, and it proved to be successful and highly popular. Since then, residents and businesses from several other streets have taken initiative to transform their streets. Currently, Malmö has four summer streets. A continuous dialogue is an important part of the concept and local businesses, property owners and residents are invited to engage in the design of the street. Annual meetings between the city and local stakeholders to evaluate and discuss the traffic situation and desired changes are institutionalised. Being temporary by nature, summer streets are time limited and the decision whether to continue or not is taken every other year after an evaluation, making the measure more acceptable also for opponents.

Pictures: City of Malmö

- Involve local residents, property owners and business in the development process.
- Visualise the proposed changes and communicate extensively.

6: Summary of recommendations

People-centred use and design of space are both means and goals for achieving sustainable mobility in neighbourhoods. Stakeholder-based processes are well suited to identify problem areas and to develop possible measures.

Speed: On neighbourhood streets, speed is a key parameter regarding how a street is perceived and how safe it is.

- Consult residents and local stakeholders to identify streets, sections or crossings that are considered unsafe.
- Examine whether reducing vehicle speed would improve the situation.
- 30 km/h is recommended as default speed on residential streets and facilitates mixed traffic.
- Identify suitable speed management measures and if a change in street type is appropriate.
- Changes in street design are often more effective than signposting or traffic lights.
- Consult with local stakeholders when choosing speed management measures.

Parking: Parking can be a sensitive area with many diverging opinions but often offers opportunities for improvement.

- Communicate extensively, prepare for conflicting views.
- Engage with wide groups of local stakeholders and ensure that the opinions and needs of many groups are heard, not only car-owners.
- Try to find a common ground on what problems should be solved before focusing on what measures to use.
- Use national and international experience and examples to show a variety of possible parking management options.
- Clearly communicate the benefits for the neighbourhod that can be achieved by parking management when parking measures are introduced.
- Don't forget to also provide safe bicycle parking on public spaces.

Alternative use of street space: Have an open view on what space can be used for – streets and parking are only some of many options.

- Consider what uses could be possible and desirable if street space or parking became available - consult with stakeholders.
- Dare to experiment - use temporary, reversible measures to test and evaluate.
- Involve local residents, property owners and business in the development process.
- Visualise the proposed changes and communicate extensively.

SUNRISE-Guidelines on "Shared Mobility"

City:	Bremen
Reporting Period:	
Responsible Author(s):	**Tom Bremer,** **Susanne Findeisen,** **Michael Glotz-Richter** **City of Bremen**
Responsible Co-Author(s):	
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Status:	Draft / Final_1.0
Dissemination level:	Confidential / Public

Table of Contents

1.   What is shared mobility?

"Sharing" is a pre-requisite for transport and mobility: without a "shared" responsibility, financing and use of paths or streets, there would be no mobility, as we need it for business and daily life (image 1). Shared mobility offers from services providers have always been essential for the mobility of people and all kinds of different mobility options have been developed throughout the history: from horse carriages (image 2) to trains, air traffic or the public transport of the cities today (images 3). Despite the importance, usually we do not think about this kind of "sharing."
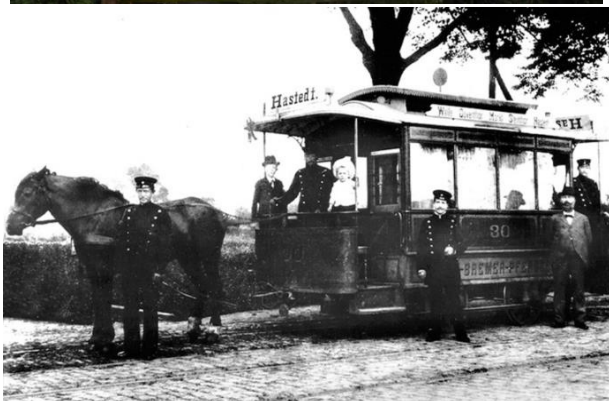

Image 1 (top left): A prerequisite for mobility: Sharing infrastructure – not usually considered as shared mobility; Image 2 und 3 (Bottom): "Conventional" shared mobility in earlier times and today: Horse drawn rail cars in Bremen, Late 19. Century (left) [Source: BSAG] right: Modern low floor bus in Bremen [Source: BSAG]

With ride sharing, taxi-sharing and early forms of car sharing, some precursors of **modern "shared mobility" modes** emerged already decades ago. However, it required smartcards, internet, and smartphones to exploit a wider potential for "shared mobility" as we understand it today. Those "modern" shared mobility options include, for example, free floating or station based car sharing, bike sharing or bus-on demand. The market of shared mobility in various forms is growing rapidly, driven by urbanization, increasing smartphone penetration, growth in internet of things (IoT), growing awareness about the environment and personal health etc. Innovative mobility options, like **e-mobility and mirco-mobility** (e.g. e-scooter/kick-boards) are also offered by sharing services and thus become easily accessible to people. They create new opportunities for flexible and efficient mobility in cities and within neighbourhoods.

The evolution of modern shared mobility has brought up the concept of **"mobility as a service" (MaaS)**. It describes the approach to provide access to various mobility services, such as public transport, car

sharing, cabs etc. in one integrated, digital mobility offering, which can cover all individual transport demands. People can be mobile with a mix of multi- and intermodal mobility options by using a single app for planning, booking and paying a journey. MaaS approaches are applied in a growing number of cities to fully exploit the full potential of shared mobility. The long-term effects are yet to be identified, such as: whether or not MaaS has adverse effects on public transport system or causes rebound effects, which could increase traffic and environmental impacts.

From the viewpoint of sustainable neighbourhood mobility plans – the key subject of SUNRISE – we have to look closely at the potential impacts of the various applications of shared mobility. Looking at a fair and more efficient use of limited street space, a key objective of shared mobility is to give an alternative to car ownership. As the private car is not only a tool for transport but has some deep emotional relationship, we have to consider also aspects of image, convenience and fun.

It is a challenge for cities and neighbourhoods to deal with the new mobility offers, to use the opportunities and to mitigate any adverse effects. The SUNRISE cities want to share their experiences on shared mobility and to contribute to a mutual learning on this topic.

These guidelines cover:

- an introduction of some of the main forms of shared mobility and the different effects they can have on mobility patterns, the environment and the use of street space
- insight about the effects COVID-19 had on shared mobility and possible strategies to reduce them
- recommendations for cities and neighbourhoods.

For additional information on city examples, please see the "Shared Mobility Rocks: A Planner's Guide to the Shared Mobility Galaxy", a comprehensive guide for municipalities being published by the SHARE-North project soon: https://share-north.eu/resources/.

2. Characterisation of shared mobility options

2.1 Ride sharing: Classical ride sharing, ride hailing, bus-on-demand (ride pooling)

Ride sharing is the traditional forms of shared mobility. A simple definition of ride sharing is "the sharing of car rides by persons to reduce costs and environmental impact" (SHARE-North project). Spontaneous rides become popular decades ago as "hitchhiking." Later, car pooling agencies offered their (analogue) services to match private drivers with passengers for specific trips (e.g. from city to city). Taxi sharing has always be an option to share informally and/or spontaneously a ride with other people traveling in the same direction or to the same destination. With internet platforms and the use of smartphones, new options emerged that are typically geared at relatively short distances within a city. Today, there are many internet-based platforms to match drivers with potential passengers for the same routes.

Three main options of ride sharing are introduced below:

- **Classical ride sharing**
  Rides are shared with people who know each other (neighbours, friends, colleagues) or the driver and passengers are matched through ride sharing software (e.g. Liftshare UK, Blablacar). Classical ride sharing is typically used as a regular commuter alternative or for occasional long-distance journeys (e.g. for leisure or business trips). This classical form of ride sharing has an impact on regional traffic volumes, demands for parking spaces at destination locations, emissions reductions by better use of vehicle capacity.

- **Ride Hailing, e.g. Uber, Lyft and DiDi (operating in Asia)**
  The concept of ride hailing has been developed as an alternative to the taxi business, with app-based booking platforms. The locations of potential drivers are shown in real time on the smartphone. The original idea (originating in the USA) is that private drivers offer services in their private cars (normal cars with 4-5 seats). In Europe, the concept of working with private drivers are not allowed – the services have to be offered by professional drivers, car rental companies etc. - in many cases commercial and profit-oriented companies. Thus, the boundaries to classic taxi companies blur and become a great competition to them. However, in contrast to taxi companies, ride-hailing operators are not allowed to park and wait for costumers on predefined locations in the cities – and therefore are less visible.

- **Bus-on-demand (or ride pooling), e.g. by MOIA, IOKI, Clevershuttle**
  Bus-on-demand services work often with minibuses, to be able to transport several passenger at the same time, with different destinations (images 4 and 5). A dynamic pooling algorithm assigns them to an existing ride. The client is picked up and transported together with others on a completely dynamic route, which is often not the most direct one, due to the various specific pick-up and drop-off locations. However, it is more cost-efficient option compared to normal taxis, if more time-consuming rides can be tolerated.

Ride hailing and ride pooling (bus-on-demand) trips can be booked on a short notice via an app. Relevant booking information, such as the driver's position and arrival time, can be displayed in real

time. The system allows an "evaluation" of the driver and the user after completion of a ride. As the identity of all involved parties is part of the system, there is a relatively high level of safety. Furthermore, women are able to specifically select another female driver to share a trip with.

Ride sharing services can be well integrated into company-based mobility management - to reduce the demand for parking spaces and the number of kilometres driven by several company cars. In the US, such services are often complemented by guaranteed ride home programmes (e.g. by taxi) by the companies in case of unforeseen events such as overtime or when no other mobility options are available.

Image 4 (left): MOIA in Hamburg, ©MOIA;
Image 5 (right): Bus-on-demand generally works with spacious vehicles for more than one passenger ©IOKI

Table 1 summarises positive and negative impacts that can be associated with station-based car sharing.

Table 1: Potential impacts of ride hailing

Potential impacts	
Positive	**Negative**
For cities/neighbourhoods • Offers can complement public transport (e.g. within or to suburban areas) • Bus-on-demand: More efficient use of cars - reducing associated negative environmental impact, less congestion • Future perspective: Driverless vehicles can potentially improve the availability of services and reduce costs *For users* • Future perspective: Driverless vehicles can potentially improve the availability of services and reduce costs • Potentially cheaper than taxi (e.g. shared rides with bus-on-demand) • Flexible "bus" trips, to specific destinations	*For cities/neighbourhoods* • Currently no financially viable business model; Can increase cost for public transport when, e.g. bus-on-demand is operated by a public transport company • Could reduce the usage of the already traditional taxi and public transport services • Mobility-on-demand: Benefits of shared mobility only become effective with sufficient users (currently: operators often transport only one person at a time) *For users* • Potential safety concerns (in comparison to traditional taxis which start their ride on well illuminated central taxis stands) • In case of bus-on-demand: Increased time needed due other passengers destinations and associated detours (often no direct trips)

2.2   Station-based car sharing (UK: "Car clubs")

Station based car sharing (or "car clubs" in the UK) is the organised joint use of cars offered by a professional service provider. The car sharing vehicles are distributed within the city at different stations, in reserved parking spots. Users pick up the car at a station and return it after use to the same station. They often can select from different types of cars (also e-cars) which are assigned to the specific stations. The journey with station-based car sharing needs to be booked in advance and can be planned up to several weeks before a trip. This reliability makes it attractive for users who want to get rid of their own car and need a reliable access to a shared vehicle.

Car sharing stations are located either on private ground or on dedicated spots on public space, where the visibility for the offer generally is much higher (image 6-10). In Bremen, for example, car sharing stations are erected on public street space and are planned as mobility hubs ("mobil.punkt"). They host between 4 and 12 cars and offer access to additional mobility forms, like public transport, bike parking facilities, easy cycling and pedestrian access as well as taxi stands (image 6). The smaller hubs ("mobil.pünktchen", with 2 to 3 cars) are typically located at less central spots, within side streets directly in the neighbourhoods, to bring the service closer to the users (image 7). The approach in Bremen has proved to be successful: Today's car sharing (390 cars) are used by nearly 20.000 users. A recent study shows, that 16 (and even up to 20 in some neighbourhoods) private cars are replaced by each car sharing vehicle offered.[1] Thus, more than 6.000 cars have been taken off Bremen's roads so far. A similar effect would have costs more than 100 Mio € if Bremen would have invested in underground car parks[2].

In Germany, some providers of station-based car sharing have begun complementing their fleet with additional free-floating (non-station-based) vehicles. This has the potential to increase the attractiveness of their offer and attract additional costumers. A study has shown, that the effects on the reduction of private car ownership of those "combined" offers is comparable to pure station-based offers[3].

The number of station-based car sharing operators with a viable business model is limited. Some offer local services (e.g. *STATTAUTO, Munich*), others operate nationwide (e.g. *cambio*). The concept often is similar: The operator is responsible for the maintenance and repair of the vehicles. The use of the cars generally is linked to a membership. A wide variety of systems are used for getting access to the cars: from simple key boxes to app-based solutions with GPS positioning. The use of the vehicles is billed via a time or kilometre tariff that includes the fuel costs, or via mixed forms of such tariffs.

Table 2 summarises positive and negative impacts, that can be associated with station-based car sharing.

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[1] Team Red (2018): Analyse der Auswirkungen des Car sharing in Bremen
[2] Senatspressestelle Bremen (2018): Car sharing entlastet Bremer Straßenraum um 5.000 PKW
[3] Bundesverband Car sharing (bcs) (2018): Nutzer und Mobilitätsverhalten in verschiedenen Car sharing-Varianten

Images 6 and 7 (top): Station-based car sharing on public space in Bremen: "mobil.punkt" with up to 5 cars (Georg-Gröning-Straßestraße) and one of the smaller car sharing stations with 2 to 3 cars ("mobil.pünktchen"), which are situated in side streets in neighbourhoods (Keplerstraße)

Image 8, 9 and 10 (bottom): "Switchh" mobility hubs in Hamburg, providing spaces for car sharing stations (and other mobility offers)

Table 2: Potential impacts of station based car sharing

Potential impacts	
Positive	**Negative**
For cities/neighbourhoods • Reduction of private car ownership and thus reduction of space used for car parking (in Bremen, Germany: 16 private cars are taken off the road -sold or not bought- for each car sharing car (Source: TeamRed, 2018.) • Reduction of car usage and thus less traffic congestion, less traffic induced pollution and noise (Trips with car sharing are more carefully planned, due to (transparent) costs • Added value from car sharing stations on public space: the implementation of car sharing stations can be used as an opportunity to improve accessibility and walkability: by the building of protruding sidewalks/curbs with the purpose of supporting manoeuvrability for service vehicles and creating barrier free intersections • Station-based car sharing can be part of mobility concepts for housing developments: reduced need for parking space results as contribution to affordable housing and better urban environment • When cars with new drive types (Hydrogen, E-cars) are offered in the fleet, car sharing can help to increase their acceptance and market diffusion *For users* • Reliable and predictable availability, with good accessibility for the user. It can substitute a private car – if not required for daily trips (e.g. for work) • User has access to different car types • Reduces the need for looking for (free) parking spaces (fixed parking spot at the station) • Cost savings (compared to using own car), when user drives less than 10.000 km/year • Time savings (no need to organise maintenance and repair works) • Easy access to new types of drives (Hydrogen, e-cars) • Special parking rights for car sharing-cars – if legislation in places (Example: German legislation) • Combination with other mobility modes at mobility hubs – if station has been design accordingly (e.g. bike parking, bike sharing etc.) • Easy to use (online booking tools, apps, keycard-system etc.)	*For cities/neighbourhoods* • Often not available in outskirts as operators need a high utilisation rate • Difficult business model – only few providers on the market are profitable • Reduced acceptance from residents (when not informed adequately with marketing campaign) when car sharing stations in public reduce available parking space *For users* • Small flexibility: the car has to be returned at a specific time and can only be prolonged, if not booked afterwards by another user; • Most users book well in advance - less spontaneous availability • Often not available in outskirts as operators need a high utilisation rate

2.3 Free-floating car sharing

Free-floating car sharing is a relatively new service - offering one-way usage of the car sharing vehicles. The cars are provided not at fixed stations, but can be picked up wherever the previous user parked them – which must be within a predefined operational area (images 11 and 12). The locations of available cars are shown in the related smartphone app.

The system does not allow reservations more than 30 minutes in advance. On the one hand, this offers maximum flexibility for the user to do spontaneous trips. On the other hand, a journey cannot be planned ahead, which makes the service unattractive for those who want to rely on the offer as an alternative to an own private car.

In Germany, the free-floating services are offered mainly by companies of the automotive industry. They concentrate their services in only 17 cities (mainly larger cities) – whereas station-based offers are available in more than 800 cities and towns[4]. There are more than 200 station-based providers on the German market as compared to seven free-floating providers. Since 2014, there are more free-floating subscribers in Germany than with station-based car sharing. A total of about 1.5 million free-floating customers (twice as many as station-based).

Compared to station based car sharing, free floating is a very expensive offer. For example, a weekly groceries purchase (2 hours, 10 km) costs about 24€ (station-based: 8,50€) (prices calculated for a compact car in standard tariff)[5].

Free-floating car sharing is normally used for shorter urban trips (average about 30 minutes/10 km) – which are however longer than with bike- or scooter sharing. Station-based car sharing is used more frequently for longer trips (e.g. outside the city)[5].

Free-floating alone shows very little effect on private car ownership: every second free-floating customer still has his or her own car – In the case of station-based car sharing, it is only about every 10th customer[5]. Some car sharing operators have started to offer a combination of reliable station-based and more flexible free-floating services. A study has proved that this approach also has strong impacts on private car ownership similar to those of station-based car sharing. In addition, the operator may attract new customers[6].

Table 3 summarises positive and negative impacts, that can be associated with free-floating car sharing.

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[4] Bundesverband Car sharing (bcs) (2020): Zahlen & Daten
[5] Bundesverband Car sharing (bcs) (2020): Car sharing in Deutschland 2020
[6] STARS project (2020): Car sharing in Europe: a multidimensional classification and inventory

Image 11, 12: Free Floating car sharing in Hamburg, Share Now (formerly "DriveNOW"); in Bremen: smumo (by Cambio)

Table 3: Potential impacts of free-floating car sharing

Potential impacts	
Positive	**Negative**
For cities/neighbourhoods - Attracts new users to car sharing concept (also to station-based car sharing) - If offers are combined with station-based car sharing: reduction of private car ownership - If electric vehicles are offered: May support market penetration of e-mobility *For users* - Flexibility of use (short-term decisions, no planning needed) - High accessibility throughout operating area - Possibility to pick up and drop off the car anywhere in the operating area (without fixed stations)	*For cities/neighbourhoods* - Often substitutes public transport trips and thus increases car traffic - No reduction of car ownership (as use cannot be planned ahead) - Often leads to increased parking pressure in neighbourhoods; free-floating cars can add to existing parking pressure - Payment schemes based on payment per minute can increase "wild"/ illegal parking in neighbourhoods - Cars of "free-floating" offers are used for illegal street racing in inner city areas (often expensive cars are in the portfolio of free-floating companies) - Negative impacts result in a bad reputation for car sharing in general (often press reports do not distinguish between different kinds of car sharing) *For users* - No plannable trips, not suitable for substituting private car ownership - Only available in larger cities (due to economic decisions of operators) - App-based services exclude some user groups

2.4   Peer-to-peer car sharing

Peer-to-peer car sharing (P-2-P car sharing) involves the sharing of privately owned vehicles – traditionally being done among friends and neighbours. Private cars are generally not used efficiently. On average, they are not in use for about 23 hours a day[7]. Therefore, sharing private cars is a smart way to use the resources more efficiently and share costs between the owner and users.

P-2-P car sharing has found a wider exploitation with the introduction of internet and smartphones apps (images 13 and 14). Service platforms offer the framework to bring the parties – owners and users – together, managing bookings and dealing with payments. Sharing platforms also manage the insurance and the availability of roadside assistance for the users. Different to traditional sharing among friends, owners may not know the "borrower". To offset this disadvantage, P-2-P platforms allow users and owners to give comments on the experiences with each other – and thus create a certain transparency. This may help to overcome the fears of bad treatment to your private car.

Instead of handing over car keys in person, P-2-P car sharing services can offer more convenient options, for example, by installing in-car hardware, which allow vehicle keys to be kept securely in the vehicle (company: getaround). The installation also allows the user to access the car through an app.

The P-2-P approach has an unbeatable advantage: it is not limited to some business area, but works in principle anywhere where car owners are willing to share their asset. Therefore, people can also might find suitable offers in areas without good mobility services (but high car ownership), e.g. in the countryside.
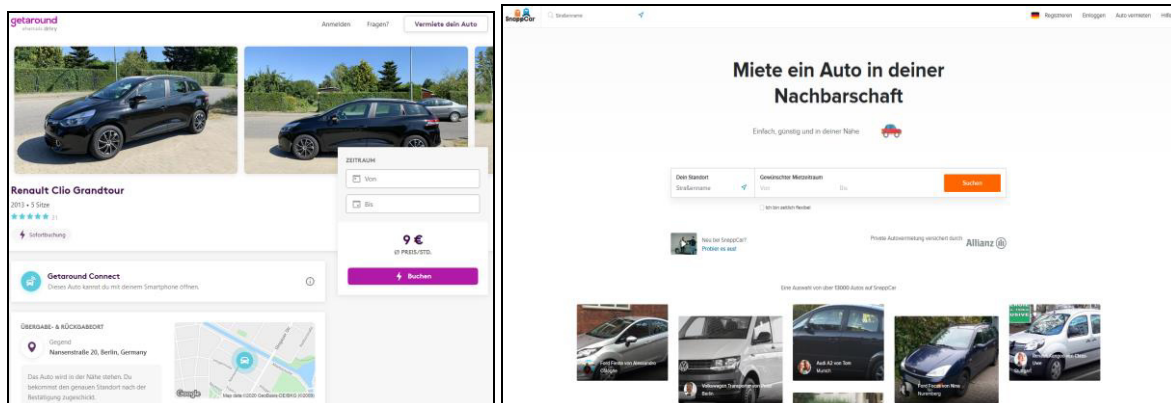

Image 13 (left): screenshot of the getaround-website https://de.getaround.com/ ©getaround;
Image 14 (right): screenshot of the Snappcar-website www.snappcar.de ©snappcar

Table 4 summarises positive and negative impacts, that can be associated with P-2-P car sharing.

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[7] Mobilität in Deutschland (MiD) (2017): Ergebnisbericht

Table 4: Potential impacts of Peer-to-peer car sharing

Potential impacts	
Positive	**Negative**
For cities/neighbourhoods • Reduction of private cars (reduced parking pressure) • Sustainable mobility offers for residents in peripheral (or rural areas) which are poorly connected to public transport and/ or free floating car sharing is not available • No associated planning tasks for cities (e.g. providing space for stations) *For users* • Sustainable mobility offers for residents in peripheral (or rural areas) which are poorly connected to public transport and/ or free floating car sharing is not available • Access to a car without ownership (for the 'borrower') • Reduced costs for car-ownership (sharing of costs) • High flexibility for usage (short, long trips or regular trips, etc.) • App-based sharing services offer flexible, easy accessible and risk-reduced participation	*For users* • Certain risks about the quality of the booked cars (need for repair) • Increased use of shared cars lead to increased maintenance and repair costs for the car owner and a reduced lifetime of the vehicle • Owners are involved in managing with results of traffic violations by the user • Reduce flexibility on the choice of cars for special needs (e.g. transporter)

2.5   Bike sharing

Bike sharing systems are well established in many cities worldwide. They provide a convenient and cost effective mode of transportation, particularly for short-distance trips. The experiences show that the bikes are rented by a wide range of users and for many occasions. Citizens use shared bikes to overcome the "last mile" from/to public transport stations (e.g. commuters), to substitute public transport or cars trips or as a flexible option if an own bike is not available.

Bike sharing offers can contribute to an increase of the share of active modes used in a city and, thus, have a positive effect on the environment and the physical health of the users. A citywide bike sharing system can represent the starting point for a wider transition towards bike-friendly cities – like in Paris (Vélib). It can help to have a bike available where the housing stock does not offer parking facilities for private bicycles. Bike sharing is also part of attracting tourists to actively explore the city. The low renting costs make bike sharing very attractive (standard tariff: 1 €/30 min).

Although various types of bikes are used in bike sharing, most of them are standard, gender-neutral framed and pedal-powered bikes. The integration of e-bikes (pedelecs) requires charging infrastructure, which makes the system more expensive. However, especially for hilly areas, electrically supported bikes make the system much more attractive. In addition, cargo bike sharing require more organisational and infrastructural considerations (see chapter 6 about cargo-bike sharing).

Bike sharing schemes can be distinguished between station-based (or "dock" based), free floating and hybrid forms. Station-based services involve a network of "docking" stations where users can pick up and drop off a bike (images 15 and 16). The docks work as automatic locking systems, controlled by the booking app, so that bikes can be rented independently and at any time of the day. Free-floating offers do not involve fixed stations. The bikes are freely available within the area of operation, wherever the last user has parked the bike. An app-controlled locking system is integrated within the bike. Some free-floating operators also offer "virtual" stations, i.e. pre-defined locations that are regularly supplied with bikes that are ready for use (images 17 and 18). Stations help to avoid random parking of shared bikes, which may block sidewalks or green spaces and reduce walkability and barrier free accessibility of the city.

The global bike sharing market has witnessed continuous growth in the past few years and is expected to grow even further. In some cities, the system is owned by the city itself funded by local authorities (e.g. Hamburg), to ensure a good access for all neighbourhoods, not only in inner-city areas. Bike sharing services are also offered by commercial operator alone or in cooperation with the city (e.g. Santander in London). Nextbike is the European leader in the bike sharing market. This company cooperates with local partners (e.g. in Bremen, with the local newspaper, "WK-Bike"). In Bremen, the largest housing company cooperates with the bike sharing operator, to the mutual benefit: all tenants have one 30 min trip /day for free and can be gained as users. Housing company integrates bike sharing into their mobility concepts.

A few years ago, many cities worldwide were flooded by operators with a large number of low-quality bikes, which blocked public areas, many of them ending up littering the environment. This has resulted in negative headlines and discredited a whole sector. Those operators were often not aiming at a sustainable mobility but rather on collecting user data. Cities reacted by implementing

regulations (e.g. Bremen) since they viewed the general public use of street space as overstretched. A clear requirement for an operating permit allows to limit the number of bikes, to define operating areas and 'no-parking zones' (e.g. in narrow historic areas, parks etc.). Other organisations have responded with accreditation systems for bike sharing providers (e.g. CoMoUK) or specific tendering procedures to ensure quality and reliable services.

Image 15 (top left): A bike sharing station by Nextbike, with a high visibility, ©nextbike GmbH;
Image 16 (top right): A station of StadtRAD in Hamburg, with locked-in Bikes, ©StadtRAD Hamburg;
Image 17 and 18 (middle): "Virtual" stations by Nextbike(left: in Bremen; right: in Berlin);
Image 19 and 20 (bottom): Shared bikes blocking side walks (left: Lime-Bike in Berlin; right: "mobike" in London.)

Table 5: summarises positive and negative impacts, that can be associated with bike sharing.

Table 5: Potential impacts of bike sharing

Potential impacts	
Positive	**Negative**
For cities/neighbourhoods • Alternative to car use (Less air pollution, less congestions) • Complementation of public transport • Increased number of cyclists increases safety ("critical mass") • Can be a starting point for a transition to become a bike-friendly city • Increased shared of sustainable mobility modes (decreased carbon footprint) *For users* • Easy and flexible access to bikes if no own bike is available (e.g. on the way home from train station) • Can substitute public transport trips • Low costs compared to other shared-mobility offers (E-scooter, car sharing) or taxis • Positive effects on health condition • Easy and fun way to explore a city (e.g. for tourists) • Increased number of cyclists increases safety ("critical mass")	*For cities/neighbourhoods* • Possible "flooding" of shared bikes in cities by operators not focussing on high quality bikes and services but on collecting user data • Possible wild parking on public space (often on sidewalks), blocks space and can represent barriers • Risk of users not following the traffic rules (illegal driving on pathways etc.) • With some service providers: short-lived, cheap products, that have a negative environmental impact *For users* • With some operators: Cheap bikes with low riding comfort • Often only available in defined operating zones (inner city areas)

2.6   Cargo bike sharing

Often, people consider using a car when it comes to transporting heavy or larger items. However, there is an alternative that bridges the gap between the bicycle and the car: cargo bike. They are specifically designed and constructed to transport anything from grocery shopping, bottle crates, toddlers or pets (images 21 to 24). Therefore, cargo bikes are enjoying increasing popularity, both in private use and in business.

There are different types of cargo bikes on the market: with electric support or without, the cargobox in the front or at the back. In case of electric support, the charging needs to be done at specially designed stations or by the "hosts". To avoid theft of batteries, some special protection is recommended. "Tricycles" may also be offered, off-road bikes or vehicles suitable to transport children or even grown-ups.

Sharing services provide access to cargo bikes for private and commercial users in many cities – some free of charge or at low cost. The operators of some of these cargo bike sharing systems are NGOs, which have non-commercial offers, based on voluntary work and donations[8]. Nevertheless, there are also (specialised) bike sharing operators. In Germany, for example, each of the 72 cities that provide cargo bike sharing have their very own supplier[8]. In Switzerland, cargo bike sharing is offered by only one provider nationwide, the commercially run company "carvel2go", which operates in 70 cities and municipalities.

Cargo bike sharing systems are typically designed as "station-based" offers, meaning that they have a fixed home location, where you need to pick them up and bring them back, often in specific local shops as "hosts" of the cargo bike. In such cases, access and return must happen during opening hours of these shops. The sharing procedure requires an online registration, where you have to book the bike in advance.

For business applications (delivering goods over the last mile), the cargo bike is proving to be an environmentally friendly, space-saving and congestion-free alternative to the delivery van. For distances of up to three kilometres, cargo bikes and delivery vans reach their destination in the same time. For longer distances (up to 8 kilometres), the bike is only between two and ten minutes slower than a delivery van[9]. Therefore, cargo- bikes are often part of the innovative delivery concept called "micro hub": small, decentralised storage containers from which goods are distributed into the neighbourhoods.

Table 6 summarises positive and negative impacts, that can be associated with cargo bike sharing.

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[8] Cargobike.jetzt: Städteliste Cargobike Sharing
[9] Deutsches Zentrum für Luft- und Raumfahrt (DLR) (2019): Travel Time Differences Between Cargo Cycles and Cars ind Commerical Transport Operations

Image 21 (top left): Cargo-bike in Hamburg ("Klara") www.klara.bike, © Volker Hämmerling;

Image 22 (top right): Shared cargo-bike system in Bremen ("Fietje"), ©Burkhard Cordes

Image 23 and 24 (bottom): Cargo bikes "Kasimir" in Cologne, ©KASIMIR;

Table 6: Potential impacts of cargo bike sharing

Potential impacts	
Positive	**Negative**
For cities/neighbourhoods • Reduced car usage for private purposes- and associated effects: less traffic congestions, air pollution, noise • Reduction of traffic by delivery vans • Reduced car ownership and reduced space requirements for car parking ***For users*** • Availability of alternative means of transport for bulky items (e.g. grocery shopping), kids etc. • Health improvement by active mode	***For cities/neighbourhoods*** • Overloading of the existing cycle infrastructure if not designed for bikes of such dimension • Normal bike racks are often not suitable for cargo bikes, so they might block the road space or pavement ***For users*** • Increased number of accidents due to lack of driving experience with a larger bike • So far often relatively few numbers available – reduced access • Small flexibility - pre-booking required

2.7   (E-) Motor scooter sharing

Moped or motor scooters are worldwide a frequently used mobility option – especially in congested cities (images 25 and 26). Whereas the traditional 2-stroker engines contribute heavily to bad air quality and noise problems, today's electric scooters are more environmentally friendly. Scooters are easy to use, and allow people to travel on urban roads often faster and more efficiently than by car. As mopeds sometimes are also called "scooter", it needs to be clarified: In this context, the focus is set on mopeds (Vespa style). Kickboard "scooters" (formerly used from kids but nowadays available as roadworthy e-vehicles) are subject of chapter 2.8.

Motor scooter sharing is a relatively new service that has evolved around 2012 and rapidly gained considerable market share since then. Some offers exist also in smaller towns and in rather rural areas[10], where the shared motor scooters complement public transport and enable residents to be flexibly mobile. The costs vary with each provider. Generally, costs for a short trip are comparable to e-kickboards, renting for a whole day is cheaper than station-based car sharing (Example: "Emmy", Berlin, 2020: 19 cents per minute, 24 euros per day).

Motor scooters are mostly free-floating offers. Similar to other sharing services, booking and payment is done via smartphone apps. The motor scooter can either be unlocked by the smartphone app or the ignition key can be found in the helmet box. Some provider offer two helmets in the box under the seat, so that an additional person can join the ride (free of charge).

Users must be at least 18 years of age and have a driving licence to drive a car, motorcycle or moped. In Germany, the maximum speed is 45 km/h and the maximum distance for a ride, depending on scooter model, is usually between 50 and 100 km. The batteries are recharged by the motor scooter providers. For this purpose they are collected regularly. The persons responsible for charging these vehicles are often called "juicers".

It is not an easy business case to refinance costs such as maintenance, personnel costs or app development by renting a motor scooter. Some providers are already off the market. Even the motor scooter-sharing provider "Coup" (part of Bosch), has withdrawn from the market.

Image 25 (left): Motor scooter can easily be located and unlocked by an App, ©Emmy;
Image 26 (right): Shared motorcycle "Stella" from Stadwerke Stuttgart ©Stadtwerke Stuttgart

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[10] Example: start-up Share2Move offers electric scooters in Meppen and Lingen in Emsland.

Table 7 summarises positive and negative impacts, that can be associated with e-motor scooter sharing.

Table 7: Potential impacts of (e-) motor scooter sharing

Potential impacts	
Positive	**Negative**
For cities/neighbourhoods • Less parking space needed compared to cars • Complementation of public transport system for neighbourhoods that are only poorly connected • Can reduce the amount of short car-trips within the city *For users* • Potentially easy accessible in inner cities and neighbourhoods • Fast way to pass congestions • With some /many offers: 2nd persons can join (free of charge) • Fun factor	*For cities/neighbourhoods* • Possible wild parking on public space, e.g. pathways, blocks space and represents barriers • Car-traffic by juicers, who replace the empty batteries in the e-motorbikes by charged ones *For users* • Risk of accidents for users with limited practice • Minimum age: 18 years

2.8   E-scooter sharing (kickboards)

With the electrification and further development of kickboards, the former "toys" have been transformed to a new mobility option suitable for public streets. E-Scooters/kickboards, which are considered as a form of "micro-mobility", have entered the market only recently. However, sharing service operators have expanded their offers quickly throughout many cities worldwide (images 27 to 32).

E-scooter sharing systems are often designed as free-floating offers, meaning that they do not have a fixed home location. They can be parked and collected from the next user at random places within a pre-defined service area. Problems associated with random parking of scooters (which creates barriers for pedestrians and other vulnerable road users on pavements, in parks etc.) led to public discussions in many cities about the drawbacks of e-scooters and how undesired effects can be regulated. E-scooters, which have to be recharged regularly, are collected by the operators' team (so-called juicers) who distribute the vehicles afterwards throughout the city.

The use of e-scooters can be particularly useful for short distances in urban areas. Commuters belong to the typical user group, to travel the "last mile" between home and the nearest public transport station[11]. In many cities, e-scooters are also used by tourists as an alternative to public transport to explore the city.

With e-scooters in over 50 European cities, the US-companies Lime and Bird are two of the largest suppliers on the market. The largest European operator is the Swedish company Voi, founded in 2018. Besides these, also the German start-ups Tier, Wind and Circ offer their e-scooter fleet in numerous European cities.

The use of e-scooters usually requires the registration with the operator. Booking is done via apps, which display the location of e-scooters ready for further use. E-scooters can be unlocked at a basic rate. Throughout Europe, this unlock fee is about one Euro. On top of the basic rate, users pay a price per minute the e-scooter is used. The prices per minute are around 20 cents per minute. According to a study on shared mobility in Berlin, e-scooter sharing can be regarded as the most expensive option of shared mobility (in Berlin, even for short distances of less than three kilometres[12]).

A prerequisite for the use of e-scooters on streets is the passing of associated regulation, which defines the specific rules for their use. The rules for e-scooter usage and specifications for road approval vary widely across Europe as summarised by ELTIS[13]: A number of European countries (like Italy, Germany, Norway and Sweden) have defined 20 km/h as the maximum speed for e-scooters. Others (France, Belgium and Austria) even allow 25 km/h. The minimum age for driving is, for example, 12 years in France and 14 years in Germany. In the Netherlands, e-scooters are classified in the same category as mopeds, with 16 being the minimum age for driving. Also, the rules where e-scooters are allowed to be driven vary significantly. In Germany, they must use the road or cycling infrastructure and are banned from driving on sidewalks and in pedestrian zones. In France and Italy, it is also allowed to ride such an e-scooter in pedestrian zones with reduced speed. In Spain, riding on

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[11] Auf der Maur et al. (2019): Shared Mobility – Collaborative Mobility Services in European Cities

[12] Business Insider (2019), after data analysis of Mydealz (2019): Preisvergleich zeigt: E-Scooter von Lime, Tier, Circ und Voi sind mitunter teurer als Car sharing

bicycle lanes that are not equipped with associated traffic signs, is not allowed[13]. Some European countries such as the United Kingdom have no associated regulations in place yet (April 2020). Some additional issues are currently discussed in Germany to further improve the national rules for e-scooters: a mandatory installation of turn signals and the automatic reduction of the maximum speed, for certain areas of the city, at specific times of the day or during city events – based on GPS data.

In Germany, the 'Small Electric Vehicle Regulation' (Elektrokleinstfahrzeugverordnung – eKFV) became effective in June 2019 – only since then were e-scooters allowed to be used in public road traffic. As one of the first cities in Germany, Bremen additionally issued an e-scooter regulation which defines specific rules for e-scooter sharing providers on the basis of the "special use regulation of public space" ("Sondernutzungsrecht"). This allows Bremen the steer and control the operation of e-scooter offers in the city. Service providers require a permission to operate in Bremen under strict conditions. For example, only a limited number of e-scooters are allowed and certain areas from operation and parking must be excluded (see also page 36).

Table 8 summarises positive and negative impacts, that can be associated with e-scooter sharing.

Table 8: Potential impacts of e-scooter sharing

Potential impacts	
Positive	**Negative**
For cities/neighbourhoods • Supplement to public transport system, especially in areas/times of low/no service • Potential reduction of the amount of short car-trips within inner city areas • Attractive offer for tourists *For users* • Potentially easily accessible (distribution within in inner city neighbourhoods)No need for a driver license • High fun factor • Fast way to pass congestions • Can be combined with public transport • Not private property (no risk of theft)	*For cities/neighbourhoods* • Random/disorderly parking on public space: blocking of sidewalks and bike paths, • Parked vehicles are a particular problem for visually impaired people • Additional burden for bike lanes (which are not designed for additionally accommodating e-scooters) • Users not following the rules and provoke accidents (drunk drivers, illegal driving on pathways, more than one person on a vehicle) • Broken vehicles that are littering the environment • Short-lived, cheap products (of some operators) have a negative environmental impact • Car-traffic by "juicers", who collect the scooters to recharge them • Mainly low-wage jobs involved ("juicers") *For users* • Risk of accidents for users with limited practice • Risk of accidents in case of rain or on cobblestones • Not suitable in winter (snow) • Safety issues: as no option for indicating a turn • No protection gear available (helmet) • The pre-defined zones for usage/parking are limited to inner city areas • Only usable with smartphone and app

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[13] European Local Transport Information Service (ELTIS) (2019): E-scooter regulations in Germany and France
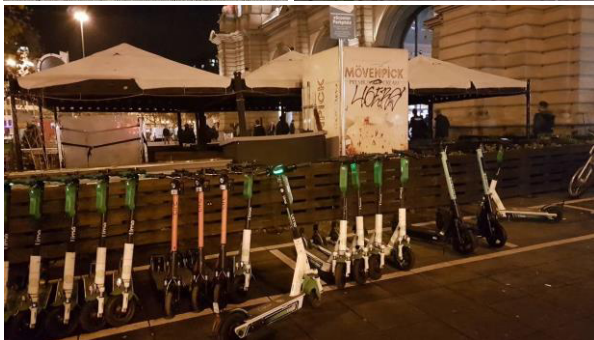
Image 27 (top left): E-Scooter parked in the middle of the sidewalk – being a potential barrier for pedestrians;
Image 28 (top right): E-Scooter driving on cycle paths – as required; Image 29 (middle left): E-Scooter parked at a bus station; Image 30 (middle right): so-called "Juicer" collecting the e-scooter for recharging (Problem here: blocking the cycle path with vehicle); Image 31 (bottom left): Pre-designated parking areas for e-scooter at the main station in Frankfurt; Image 32 (bottom right): E-scooter are parked at a "mobil.punkt" in Bremen

3. Drivers and barriers for shared mobility

There are a wide range of drivers and barriers that can support or hinder a successful implementation shared mobility options. The following table (table 9) summarised the main issues, identified by the SUNRISE Consortium.

Table 9: Drivers and barriers for shared mobility

Drivers	Barriers
Mobility Related	
• Offering "mobility hubs", which combine different mobility offers (public transport, bike parking) with sharing services etc. • No attractive public transport system available, e.g. no sufficient connections, overcrowded busses and trams in the city etc. • High quality of sharing service: high number of stations (e.g. for station based car sharing), high number of vehicles, high quality of vehicles, good O&M • Larger cities provide a high number of potential customers and make viable business models possible • Large operating area, that also includes more remote areas • High parking pressure in neighbourhoods: Difficulty of finding a parking place with a private car (increases the attractiveness of other mobility options) • Integration of sharing services in housing development, to reduce the need to offer private car parking (can reduce building costs)	• Free parking for cars in neighbourhoods, at work (company premises) – makes private car ownership attractive • Lack of safety measures for gender consideration: not suitable locations for stations • Insufficient offers or service quality from operating companies (low quality vehicles, insufficient maintenance etc.) • Risk of vandalism or theft for shared vehicles (high costs) • Service is market based: operators finally decide on services offered • Negative press about, e.g. car sharing in general – mixing up negative effects of free floating car sharing with station-based car sharing • Increase of flexibility in the working world can generate more commuters (who daily need to use private cars) • *For bike sharing, cargo bike sharing:* lack of good cycle infrastructure (bike-lanes, cycle-streets, low speed of car traffic...)
Political / Regulatory	
• Political support in boroughs and on city level (based on understanding of benefits and chances) • Insurance-related simplifications (car sharing insurance that also covers damages caused by the user of the vehicle) • Regulations for shared mobility, for steering and controlling the development (which can reduce adverse effects), e.g. Car sharing legislation • Shared mobility as part of strategic mobility plans (e.g. Sustainable Urban Mobility Planning SUMP, Actions plans for car sharing etc.)	• Regulations can prevent exploratory, innovative offers that are tested in living lab settings • Policies are often slow to respond to potentials that the shared mobility market has to offer – public administration often lacks knowledge of market
Economical	
• Increasing costs for general parking of private cars • Higher fuel prices • Using the chances of developing a viable business model (cooperation with local partners, using vehicles for placing advertisements etc.)	• Service is a difficult business model: often only few providers and making a profit is difficult for most providers • Unclear mid- or long-term availability of offers in the city, as business models still often have to prove viability (i.e. often cross-financed, services only for image reasons) • Risk of theft and vandalism (economical risks)

Social / Environmental	
• Trend towards "sharing" instead of "owning" • Digitalisation: availability of app-based booking tools etc. • Increased awareness for climate and environment protection • Electric vehicles for a sustainable image • Development of "trendy" mobility option with fun factor (e-scooters) • Increasing amount of people living in cities: more traffic, more mobility needs, more need to avoid congestion • Increased desire to re-connect with the community: shared vehicles increase social inclusion	• Often depended on having a smartphone and apps to book a ride (excludes e.g. older people) • Fear of using new types of drives (Hydrogen, E-car) – when only those are offered • Private car ownership stays important for many people (due to status symbol, comfort, etc.) • Missing publicity/knowledge about the service • Cultural differences that make it difficult to share a vehicle with others at a time

4.   Shared mobility in times of COVID-19

The evolution of the COVID-19 pandemic in early spring 2020 has severe impacts on the entire transport sector – including the various forms of shared mobility. With the lockdown regulations in many cities in Europe and even worldwide, many reasons for travelling vanished: closed factories, home office, restricted leisure options, very limited family meetings and cancelled vacation travels – all leading to empty streets, empty trains and closed airports. Side effects were reductions in congestion, in transport-related CO_2-emissions and other forms of air pollution and as well in road accidents.

With the gradual release of Covid-19-related restrictions, the number of trips increased again – still not reaching the level of "before". At the same time, many cities recognise a modal shift away from collective traveling (esp. public transport) to individual modes (esp. private car and bicycle). Many cities saw an increase in walking and cycling, which provided a much-needed push for expanding or establishing cycling cultures in cities. In parallel, structural changes got a push – like the shift in shopping activities from stationary shopping to internet-based e-commerce and related deliveries – accelerating a process of changing downtown areas from shopping districts to more leisure, restaurant and edutainment areas. These parallel processes will lead of a new post-Corona 'normal', which will be different from the pre-Corona situation. In addition, changes in employment will have impacts on the transport (and as well housing) sector.

Depending on the type of shared modes, different impacts can be identified[14]:

Car sharing:

The reduction in travelling had severe impacts on the car sharing market. The Bremen based car sharing operator cambio had about 50% reduction in trips in comparison to the previous year (see image 33). When leisure activities, family meetings etc. became possible again with some defined limitations, the private use of car sharing increased to some extent – but to some reduced level of "normal". The use of car sharing in the business sector is still at a very low level, due to the reduced number of business activities[15]. Even half a year after the Corona lockdown, physical business meetings (including training workshops, conferences etc.) are extremely limited.

As the business model of car sharing was extremely endangered, some operators that developed from the eco-NGO scene (like cambio in many German cities) asked their users for support. Many users donated money by taking over sponsorships for car sharing stations (paying the monthly fee) or by booking a "solidarity car" – paying for the use of a vehicle that did not physically exist. The high level of donations shows the importance of car sharing for many users: As they do not own a car, the existence of the car sharing service is crucial for their life. Without car sharing, they may need to purchase a car – creating much higher costs than the donations in the Corona crises. It also reflects the identification and connection with operators that arose from the NGO/local action group scene.

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[14] Berliner Zeitung (2020): Fahrzeug-Sharing in der Corona-Krise: Eine Chance für die Verkehrswende
[15] Redaktionsnetzwerk Deutschland (RND) (2020): Car sharing: Daimler Mobility erreicht trotz Corona-Krise Vorjahresniveau

Some cities and states in Germany created programmes to support car sharing to ensure that car sharing can further grow to replace private cars. The State of Baden-Wurttemberg created a special "umbrella program" for stations that were at risk of being closed down due to Covid-19, and new users receive vouchers that are paid by the State[16].
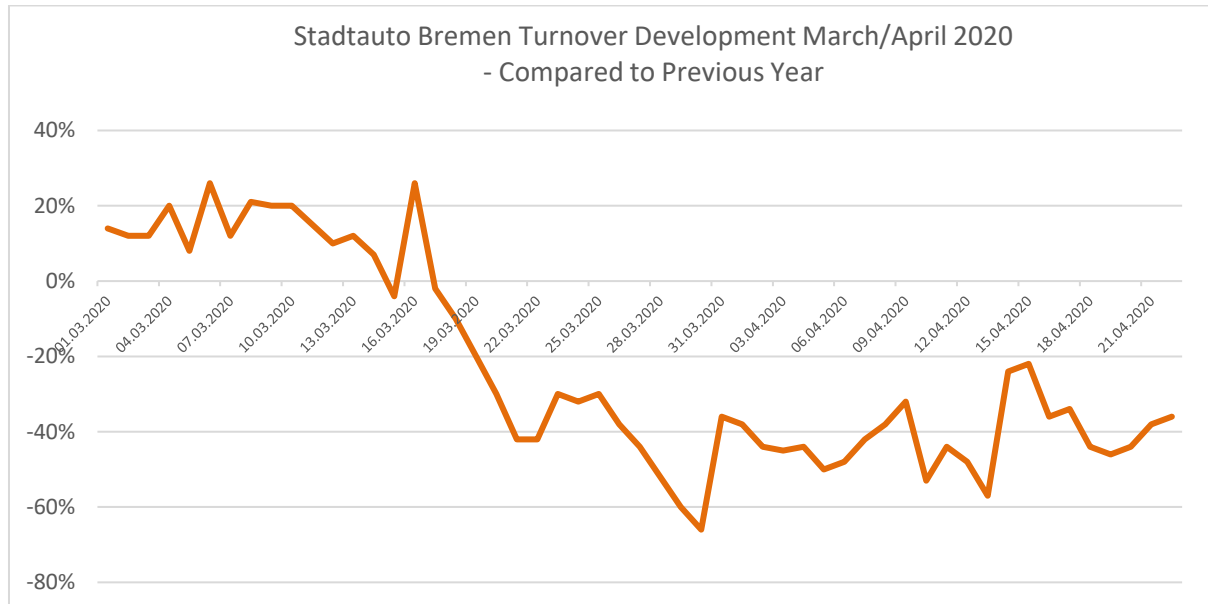

Image 33: Effects of Corona on car sharing in Bremen: Revenue development of the station based car sharing provider "Cambio" in March and April 2020 (Data from Cambio)

No similar activities are known for the big motor-industry-based car sharing operators. They also experience lapses in revenue as a result of the Corona-situation. WeShare (Volkswagen group) announced that they would postpone their extension to further cities to the year 2021- but at the same time reported that usage is back to higher use levels in July 2020 than before the Corona-crisis[17].

To mitigate any infection risks and deal with public concerns, car sharing operators clean their vehicles more frequently and asked users to wipe the steering wheel and gear stick before and after use with disinfectant. Some users prefer using gloves to reduce physical contact to the vehicles.

E-scooter sharing

While some operators stopped all operation during the lockdown period, others offered their scooters for "system-relevant" service persons (e.g. doctors, nurses, emergency services employees). In general, e-scooter sharing providers were also affected by the reduction of travelling – here especially from limitations in leisure activities and tourism. In the period of lifted restrictions, the scooter operators were back also on the streets – claiming that scooter-use guarantees the required social distance on the streets.

[16] Land Baden-Württemberg (2020): Stabilisierungshilfe für Car sharing-Anbieter
[17] Stern (2020): Alles oder nichts: Corona wird zur härtesten Probe der Car sharing-Dienste

Bike sharing / cargo bike sharing

Similar to scooter and car sharing, bike sharing was also affected by the reduction of traveling – but recovered partly with lifted restrictions in summer 2020.

Cycling in general offers a comparatively Corona-safe way of travelling, many cities state that the reduction of transport did not occur at the same level with cycling as with public transport. The demand for bicycles grew with the spread of the Coronavirus pandemic[18]. In order to provide better cycle infrastructure, local authorities created pop-up bike lanes during the Corona crisis. As in the fuel price crisis of 2008, during the Coronavirus pandemic the mode of cycling proves to be a very resilient mode of transport.

For further mobility planning, it is obvious that cycling has a huge potential that must be exploited. Safe cycle infrastructure must not only include bike lanes but must also include parking facilities for bicycles. It all requires street space: the Corona situation may support policies of re-allocating street space from the car to the sustainable modes. Shared services for bicycles and cargo bikes will support such strategies – but may require support by local authorities (esp. in dedicating space for stations).

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[18] Radmarkt (2020): ECF und Corona: Daten bestätigen massives Radverkehrs-Wachstum

<u>Public Transport</u>

The reduction of trips and the fear of infection hit public transport sector extremely hard. The amount of passengers dropped in some cities by 90%[19]. Services were reduced in order to have enough operating staff available in case of infections. In Germany, like in some other countries/cities, passengers of public transport are required to wear a mask covering their mouths and noses.

Despite intensified cleaning and masks, numbers of public transport passengers (and related revenues) are still far below the previous 'normal'. For Bremen, it is expected that the necessary public funding for the public transport operator will have to be increased by about 20 – 35 million €[20] to make up for losses as a result of reduced passenger numbers.

<u>Ride-hailing/taxi</u>

The wider taxi business still suffers under the reduction of travelling – especially the reduction in business trips.

Due the low level of demand, the ride-hailing operator MOIA stopped operating in Hamburg temporarily and revised its concept by reducing the number of passengers allowed in vehicles. Of course, such capacity reduction affects the business model severely.

Already before the Corona crisis, the vulnerability of the business concept became obvious when the operator Clevershuttle (using electric vans) stopped operation in Hamburg, Frankfurt and Stuttgart. With the Corona crisis, operation has also been abandoned in Berlin, Dresden and Munich due to "economic reasons".[21]

"Berlkönig", a publically co-financed operator in Berlin (in conjunction with public transport and ViaVan), offered their capacity during the lockdown period to "system-relevant" workers in the health sector. The four-year contract with the city of Berlin will terminate in 2022 and the future is currently unsecure despite taking the higher demand of public funds for regular public transport operation into account.

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[19] Mobilité (2020): Corona: Was jetzt zu tun ist, damit der ÖPNV wieder an Bedeutung gewinnt?
[20] Buten un binnen (2020): BSAG verkauft nur halb so viele Tickets
[21] Auto Motor Sport (2020): Aus in Berlin, Dresden und München

5. Recommendations

How can cities and neighbourhoods exploit the benefits and mitigate the risks of new forms of shared mobility?

The following recommendations can be drawn from the experiences of the SUNRISE consortium and can be valuable for other cities and neighbourhoods:

1. Capacity building –
   Increasing knowledge on shared mobility in administrations and with decision-makers
2. Strategic planning –
   Integration of shared mobility as part of the city's mobility strategy
3. Facts and images –
   Measuring and evaluating shared mobility effects
4. Defining the rules –
   Development of a regulatory framework for shared mobility
5. Informing the public –
   Marketing and information campaigns
6. Involving the public–
   Considering participating options
7. Understanding the impacts-
   Monitoring how the "sharing" is working in practice – getting and giving feedback –adjusting rules and conditions if necessary
8. Risk mitigation –
   Supporting operators of shared mobility in the times of COVID-19

The recommendations are explained in detail in the following pages.

1.

Capacity building
– Increasing knowledge on shared mobility in administrations and with decision-makers

Shared mobility in various forms will increasingly change mobility of cities and within neighbourhoods. Therefore, building up knowledge about innovative concepts and new players, the options how to regulate and steer developments, how to reduce potential negative effects and how shared mobility can contribute to a more sustainable mobility in cities and neighbourhoods, is essential for members of administration and decision-makers. Targeted capacity building is therefore required.

A suitable way is to exchange experiences with other cities and to learn from best practices examples, e.g. by

- Site visits and excursions to other cities, with members of the administration, decision-makers or other stakeholders (images 34, 35, 37)
- Invitations of external experts to shared their experiences from their cities within discussion events or seminars (image 36)
- Participation in European projects on sustainable mobility and shared mobility, either as partners or as "associated partners" or "up-take" cities, where a direct exchange between cities and neighbourhoods is facilitated (image 38)
- Participation webinars offered by e.g. European projects on sustainable mobility and shared mobility (SHARE-North, Civitas Framework, ECOMM) (image 39)

Image 34 (top left): Onsite exchange on car sharing in Bremen, with colleagues from the Cologne Traffic Authority; Image 35 (top right): Site visit to Cologne, organised with SUNRISE (Bremen); Image 36 (bottom left): Public discussion with external experts in Bremen; Image 37 (bottom right): SUNRISE Bremen and local stakeholders in Hamburg – to exchange on sustainable mobility
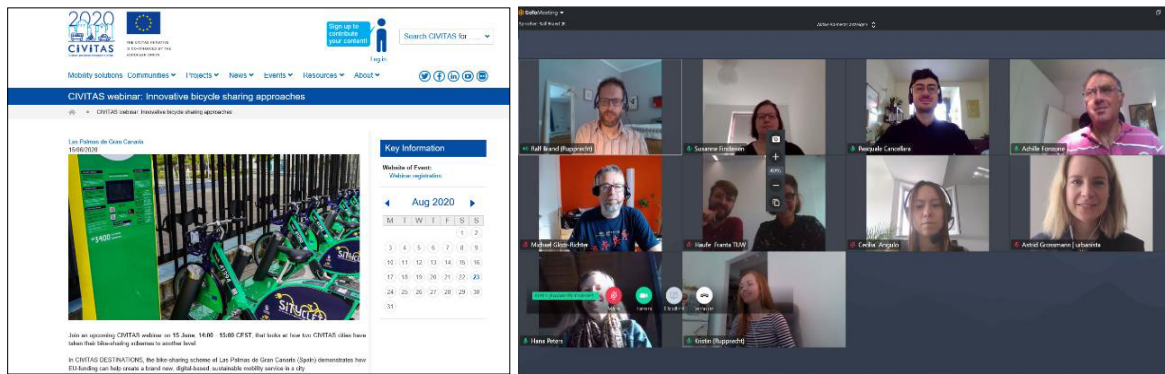
Image 38 (left): CIVITAS webinars on shared mobility – open for the public;
Image 39 (right): Online-Meeting within the SUNRISE Consortium, to exchange on sustainable mobility

2.

Strategic planning –
Integration of shared mobility as part of the City's mobility strategy

Shared mobility should be a strategic element of a city's sustainable urban mobility plan (SUMP) and ideally of its neighbourhood equivalent (SNMPs), as it can be a relevant element to reach set aims.

Strategic planning of shared mobility should consider the different effects the individual shared mobility modes can have:

- Shared mobility can **reduce the number of cars trips** (e.g. bike sharing) within a city and thus reduce pollution and congestion. This is also true for car sharing, as users generally plan trips more consciously (car use becomes a rational decision, not an automatic one).
- Some shared mobility modes, like bike or e-scooters sharing can **complement and thus increase the attractiveness of public transport.**
- Station-based car sharing (also in combination with free floating offers from the same provider), peer-to-peer car sharing and cargo bike sharing can **represent alternatives to private car ownership (see table 11)**: Those who do not need a car regularly (e.g. for commuting to work) might find those offers attractive alternatives to owning a car for occasional trips. **This effect is particularly valuable for neighbourhoods, as less private cars parked in the streets means more space for walking, cycling or playing.**

Strategic plans for shared mobility could contain the definition of, e.g.

- Dedicating space for stations
- Quantitative targets for specific shared mobility options
- Intermodal approaches by planning mobility hubs (decentralised or centralised)
- Coverage of city neighbourhoods
- A potential role of the city as a service provider (e.g. bike sharing offers together with public transport).

Table 11: Effects of shared mobility modes on private car ownership

High effects: can reduce private car ownership	Low effects on the reduction of private car ownership
• Station based car sharing • Combined station-based + free-floating car sharing • Peer-to-Peer car sharing • Cargo bike sharing	• E-Scooter sharing • Free-floating car sharing • Bike sharing • Motor scooter sharing • Ride hailing/bus-on-demand

Examples:

Bremen's Car sharing Action Plan (2009):

- *20.000 users by the year 2020*
- *6.000 fewer private cars on the streets (getting rid of private cars due to car sharing)*
- *Improved visibility of car sharing stations ("mobil.punkte", "mobilpüntkchen")*
- *Market access for all providers in order to achieve more competition and additional innovation*

Bremen's SUMP ("Verkehrsentwicklungsplan 2025") (2014)
(images 40 and 41)
– includes strategic plans and aims for car sharing to reach Bremen's aims to reduce car traffic and ownership:

- *to extend station based car sharing offers at mobility hubs on public space ("mobil.punkte", "mobil.püntkchen")*
- *to further include areas outside the inner city areas in the planning of car sharing stations*
- *to include e-mobility in car sharing*
- *to integrate car sharing in housing development projects*

Image 40 and 41: SUMP Bremen ("Verkehrsentwicklungsplan 2025"), which integrates shared mobility as a strategic element

3.

Facts and images –
Measuring and evaluating shared mobility effects

It is recommended to regularly evaluate the effects of shared mobility and collect qualitative and quantitative data on each mobility form offered in the city. This is a basic requirement to identify the benefits and problems of the options, to understand user needs to be able to develop targeted offers and solutions, and identify and understand drivers and barriers. The findings are vital to set realistic targets and develop strategies. Furthermore, facts and images on shared mobility need to be communicated to the public and decision-makers to safeguard acceptance and support.

The effects of shared mobility should be analysed through user surveys that are carried out by the service providers themselves as well as through independent research institutes. A valuable example is the study "users and mobility patterns with different car sharing types", by BCS Bundesverband Car sharing e.V., 2018: The study shows that station-based car sharing (also in combination with free-floating offers) has the effect that the number of private cars are reduced significantly; this effect cannot be observed with free-floating car sharing alone (images 44 and 45)

Information worth investigating is, among other things:

- Number of users, frequency of use
- Change of mobility patterns of users due to the shared mobility options (reduction of car trips, etc.)
- Reduction of car ownership by shared mobility options
- Factors which attract users (e.g. service quality, proximity to station/ vehicle)
- Comparison of effects of different shared mobility options
- Problems associated with the use
- Contributions to social equity and accessibility (needs of different user groups)

Example: "Study on the effects of car sharing in Bremen", by teamred Deutschland 2018
(image 42 and 43)

- *Each car sharing car replaces 16 privately owned cars in Bremen*
- *Main factors which make car sharing in Bremen attractive to users*
  - *Short distances to the next station*
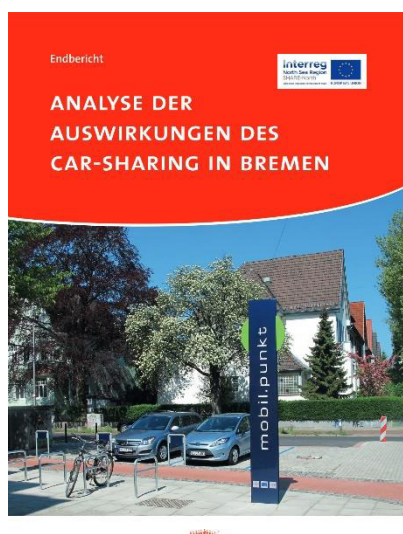 - *Availability of the vehicle at the desired time*

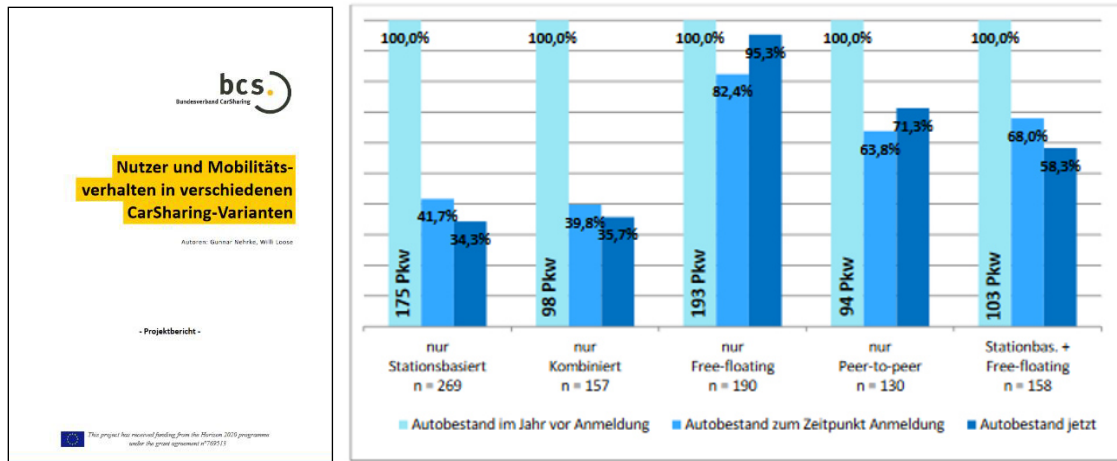Image 42 and 43: Study on the effects of Car sharing in Bremen, by teamred Deutschland, 2018

Image 44 and 45: Study "users and mobility patterns with different car sharing types", by BCS Bundesverband Car sharing e. V., 2018 – the study shows that station based car sharing (also in combination with free floating offers) has the effect, that the number of private cars are reduced significantly; this effect cannot be observed with free floating car sharing alone.

4.

Defining the rules – Development of a regulatory framework for shared mobility

Shared mobility is a great opportunity for cities and neighbourhoods to change mobility habits of citizens for the benefit of sustainable travel modes and to reduce the number of privately owned cars. However, the new mobility options must be regulated in order to reduce unwanted negative impacts and to steer the development. Therefore, it is recommended, to issue specific local regulations. They could encompass:

- the definition of areas of operation for free-floating offers
- the exclusion of specific areas, where driving and/or parking of vehicles is forbidden (e.g. e-scooters in parks, pedestrian zones) (image 46)
- the definition of rules parking rules in residential parking zones
- the definition of the maximum amount of vehicles allowed to be distributed in the city area by each private operator
- criteria for minimum operational service (e.g. to remove broken or wrongly parked vehicles within a given time)
- criteria for private service providers
- environmental and quality standards for vehicles provided

Image 46: Budapest – Various forms of (shared) mobility are forbidden in pedestrian zones

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Also, criteria can be defined within the tendering of the operation shared mobility services, e.g. car sharing stations /mobility hubs on public ground. For example, the obligation can be defined, to combine offers on high profitable inner city areas with offers in more remote neighbourhoods in the city.

Example: Bremen's e-scooter (kick-boards) rules (2019)

Bremen was the first German city to define specific rules for e-scooter sharing providers. Permissions for providers were granted on the basis of the "Special use regulation of public space" ("Sondernutzungsrecht"):

- *a limit of 500 vehicles per provider*
- *a pre-defined area where drivers are allowed to drive and scooters can be parked*
- *defined zones, where parking is prohibited (e.g. parks)*
- *a local contact person, who can intervene in case of problems*
- *the permit for the suppliers is limited to only one year*
- *in cases of non-compliance, the operation permits can be withdrawn.*
- *at least the minimum wages have to be paid by the operator.*

Example: Bremen's car sharing regulation (2009)

- *Car sharing providers must tailor their range of services so that they contribute to a reduction in the need for parking space in the neighbourhood (minimum replacement rate of 1:6).*
- *Within the limits of available capacity, car sharing providers grant an entitlement to participate on a non-discriminatory basis to every adult person with a valid and presented driving licence for the corresponding vehicle*
- *Setting quality standards for operators who want to provide car sharing at on-street stations*
- *Holders of season or discount tickets for public transport should be granted discounts*
- *Information on environmentally friendly and low-noise driving should be made available to customers by car sharing providers through their website or other suitable information material*

5.

Informing the public –
Marketing and information campaigns

Today, in the light of environmental and climate protection movements, which is driven particularly from young people, the approach of "sharing instead of owning" is quite popular among some target groups. However, shared mobility is a new to many citizens and needs to be explained: People get access to new vehicle types they have not used before (e.g. e-scooter/kickboards), they have to become acquainted to new procedures and new rules to obey (where driving is allowed, how vehicles can be parked etc.). Furthermore, the public is confronted by additional mobility forms on the streets with which they must share the street space. Some notice initial negative impacts, e.g. shared bikes or scooters blocking sidewalks. The overall strategic benefits of shared mobility are often not known by the general public and have to be explained. Regular information also needs to be provided to frequent users: for example, updates about new services, new stations, costs, new regulations etc.

The implementation and operation of shared mobility or specific mobility services should be accompanied by marketing and information activities, which could include

- Marketing campaigns (e.g. corporate design, flyer, website, on-street advertisements, postcards, etc.) (images 47 to 49)
- Articles, Interviews in local newspapers
- Presentations at events, e.g. explaining shared mobility and the approach of the city
- New residents campaigns, to introduce shared mobility (images 50 and 51)
- Campaigns on shared mobility "testing" (e.g. summer fleet, Berlin) (image 52)
- "Test rides" events for e-bikes, cargo bikes etc., e.g. at local festivals
- Neighbourhood specific information (images 53 and 54)
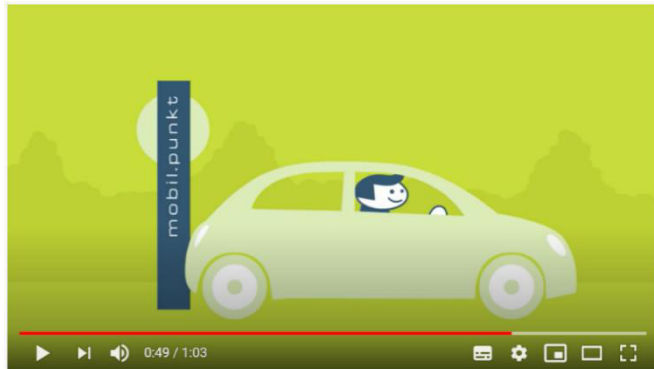
Images 47, 48 and 49: UDO campaign Bremen ("Use it, don't own it") for Bremen's car sharing approach "mobil.punkt", "mobil.pünktchen": on-street advertisements, set of postcards, video, etc.
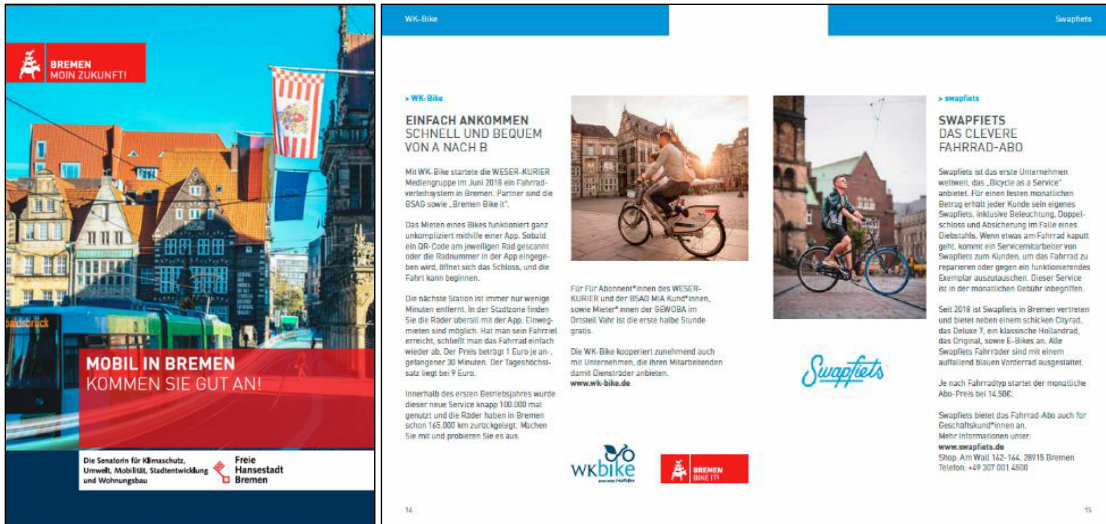
Image 50 and 51: Mobility campaign in Bremen (here: brochure) for new residents of Bremen, introducing public transport, shared mobility options etc. (Being new to a city or neighbourhood can be an opportunity to change mobility behaviours)

Image 52: Summer fleet campaign by BMW, Berlin ("Sommerflotte"): Interested persons can "test" shared mobility options for months in turn of handing out their car key. © Neue Mobilität Berlin; http://neue-mobilitaet.berlin/summer-fleet-2019?lang=en/

Images 53 and 54: Brochure for the SUNRISE neighbourhood, including information on specific on shared mobility services in the neighbourhood

6.

Involving the public– +

Considering participating options

Involving the public in the planning and implementation of shared mobility can increase acceptance, can lead to a wider usage and even to additional offers.

The following options are possible:

- The joint selection of new locations for shared mobility stations (e.g. car sharing stations / mobility hubs on public space), together with residents and stakeholders of the neighbourhoods) (image 55)
- The joint suggestion of "virtual stations" in the neighbourhoods, where shared bikes or scooters are regularly provided to by the service operator (without offering a fixed lockage system)
- Non-commercial, low-threshold offers (e.g. cargo-bike offers) can be hosted by local shop owners, acting as "stations" for cargo-bikes, where the bikes are stored at night and can be collected from (image 56)
- Neighbourhood initiatives (small scale peer-to peer sharing networks) can be supported

Images 55: On-street participation activity in Bremen: visiting and finding new locations for car sharing stations;
Image 56: Local shop owners in Bremen act as stations for cargo bike "Fietje" (here: Oecotop)

7.

Understanding the impacts –
Monitoring how the 'sharing' is working in practice – getting and giving feedback –adjusting rules and conditions if necessary

As it is not easy to forecast the impacts of new services of shared mobility, all involved players – including public authorities – need to be open for adjustments. The examples of bike sharing and e-scooter sharing show that adjustments of the regulatory framework was necessary to avoid unwelcome side effects. It requires some kind of monitoring what is going on in our streets, what is the feedback of citizens, stakeholders, neighbourhood committees etc.

It might be wise to rather carefully start and stet some limitations in order to avoid that the new service got some negative connotation by citizens (as happened in some cities with bike sharing and as well with e-scooter sharing.

It is also helpful if operators and public authorities have some exchange about problems and ways to reduce such problems – and as well about exploiting a wider potential when impacts prove to be positive.

8.

Risk mitigation –
Supporting operators of shared mobility in the times of COVID-19

The evolution of COVID-19 pandemic in early spring 2020, with the resulting lockdown regulations and safety approaches, had significant effects on the whole transport sector, the mobility of people and on shared mobility – as described in chapter 4. Especially in the first phase of the lockdown, the business models of shared mobility providers have been seriously endangered, e.g. from station based car sharing providers. It is still unclear how the pandemic develops, how long constraints need to last and how the "new normal" of mobility patterns will look like in the pre-COVID-19 phase.

Therefore, it is recommended for cities to consider the support of shared mobility operators, especially when they have a relevant role in the sustainable mobility strategy of the city, e.g. to replace private cars.

The following examples show how cities can support shared mobility in times of COVID-19:

- Reduction of fees normally to be paid from shared mobility providers to the city (e.g. for the use of public space for car sharing stations)
- Joint communication of the safety of shared mobility (on the basis of existing hygiene concepts for shared mobility providers)
- Specific financial assistance programmes to support sharing providers
- Programme of the city to pay for shared mobility vouchers, to gain new users(to keep users)

- Creation of pop-up bike lanes, in order to provide a better cycle infrastructure in the times of COVID-19, when individual mobility (e.g. cycling) increased, so that also local bike sharing operators can benefit.

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