Better Streets for Better Cities:

A handbook for active street planning, design and management

MORE
Multimodal Optimisation of Roadspace in Europe

Chapter 1:

Challenges and Opportunities

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1.1 Urban streetspace: a scarce resource

Roads and streets represent most of the public space in cities – an estimated proportion of 70-80%.

They are also the locations where most people experience the city, as residents, commuters, shoppers, tourists, or sporadic visitors. In busy parts of the city, streets have multiple uses, leading to tensions and conflicts. Some of these uses involve movement:

- Movement of people, by various modes of transport, both motorised (cars, buses, taxis, motorcycles, trams) and non-motorised (pedestrians, cycles)
- Movement of goods, by vans, trucks, or cargo cycles

Other uses are static activities, not directly involving movement. In these cases, streets are used not as a structure allowing people to travel between places in the city, but as places and destinations in their own right:

- As a place for stopping vehicles, for parking, loading goods, or pick-up/ drop-off passengers
- As a place for waiting for buses or taxis
- As a place for outdoor activities, such as window shopping, strolling, socializing, and sitting on outdoor benches or in cafés and restaurants.

Figure 1.1. Multiple uses of an urban street: movement, parking, outdoor restaurant

Not all street users have the same needs, even when performing the same function (i.e. moving or stopping). For example:

- People with disabilities may need more space to walk, cross the street or board/alight buses
- Emergency and service vehicles may need to access some spaces on roads/streets where private vehicles (either moving or parking) are not permitted

Other facilities using streetspace are not linked to specific users. This includes natural elements (e.g. trees, water streams), utilities (e.g. cables, pipes), and street furniture (e.g., post boxes, streetlights).

Street uses are becoming more diverse, creating new demands for streetspace. For example, since the 2010s there has been a rapid increase in the use of electric vehicles, car clubs, and cycle share systems. More recently, these have been joined by e-scooters and footway robots. These new uses require space and sometimes specialised infrastructure (e.g. facilities for charging electric vehicles, space reserved for car clubs, and for cycle and e-scooter docking stations). In most cases, this space needs to be reallocated from existing uses.

The problem is that most urban streets have limited space to satisfy all these possible uses. Widening streets or building new ones is generally not an option in city centres or in other densely built areas, as it would require demolition of existing buildings. Streetspace in these areas is scarce, because streets were designed for a much smaller range of uses. In fact, a large part of the street network in many cities was laid out at a time when motorised vehicles did not exist and space was only required for the movement and stopping of people and animals.

Having many different demands on scarce streetspace generates conflicts. This means that some users 'fight' for space and may occupy space that has not been allocated to them. This disrupts other users, causes congestion, poses safety risks, and increases stress and anxiety for all users. Typical examples of conflicts over streetspace include:

- Vehicles parked on the footway or at bus stops
- Shopfront displays disrupting the movement of pedestrians on footways
- Cyclists and motorcyclists riding on the footway
- Cars and vans using traffic lanes that are restricted to buses or cyclists
- Pedestrians crossing the street outside designated crossing facilities

Figure 1.2. Examples of conflicts over streetspace

Conflicts also arise in the interaction between street uses and activities below the surface. For example, tree roots may damage pedestrian pavements. The maintenance or repair of underground utilities may also require the closure of the street.

Conflicts over streetspace have been increasing as street uses are becoming not only more diverse, but also more intense:

- There has been a rapid increase of the number of e-scooters, and various other forms of "micromobility". This has led to conflicts in many cities, as it is not clear which space these vehicles can use for movement (footways, cycle lanes, or the carriageway), or for parking (footways or kerbside areas).
- Dockless shared cycling schemes have also become popular. In some cases, this has led to a chaotic occupancy of footways, due to the large supply of vehicles introduced by different operators.
- The growth of home deliveries and ride-hailing services has also led to conflicts, due to the absence of dedicated spaces for vehicles to stop

In addition, cities have been unable to adapt quickly to the rapid pace of advancement in types of vehicles and forms of mobility and have been mainly reactive rather than proactive – for example regulating some street uses, or providing space for them only after they start to generate significant conflicts.

Figure 1.3. Examples of new conflicts over streetspace

1.2 Beyond the street

The allocation of streetspace also has broader consequences for the lives not only of street users, but also of people who live, work, shop, or visit the surrounding area.

In fact, busy urban streets are where many strategic policy issues play out, at the economic, social, and environmental level. Streetspace allocation can then contribute to achieving wider urban policy objectives.

Promoting economic aspects in streetspace allocation

- Increasing accessibility of customers and freight vehicles to stores (e.g. by providing loading spaces, bus stops, smooth access to train stations, and parking areas) promotes the **local economy** and can counter the tendency for the decline of physical stores in commercial streets.
- The provision of good-quality street infrastructure for pedestrians, and places to rest, can also increase the **attractiveness** of those streets for customers, increasing footfall, sales, and rental values.

Enhancing social and equity aspects in streetspace allocation

- Reducing points of conflict (especially at junctions), providing suitable pedestrian crossing facilities, and removing physical or visual obstructions improves **traffic safety**, decreasing the probability of collisions, injuries, and fatalities. It also reduces **community severance**, reducing perceptions of the street as a barrier and the feelings of disconnection and isolation, especially among older people.
- Allocating more space to non-motorised modes of transport promotes **physical activity**, reducing propensity for obesity, heart diseases, and other physical and mental health problems.
- Providing more space for pedestrians and outdoor activities promotes **social interaction** and **social cohesion**, as it provides spaces for meeting friends and facilitates chance encounters with neighbours and other acquaintances.
- Allocating more space to walking, cycling, and outdoor activities increases the number of people using the street, increasing perceptions of **personal security**, and possibly reducing crime incidents. Providing space to street lighting and decluttering the street environment (increasing visibility) can also improve personal security.
- Providing attractive streets and green spaces, minimizing user conflicts, reducing congestion, and providing space for walking, cycling, and outdoor activities reduces stress and increases **wellbeing.**

Highlighting environmental aspects of streetspace allocation

- Reallocating space from motorised to non-motorised modes and providing green spaces reduces **noise and air pollution** levels, with positive consequences for the physical and mental health of street users and local residents
- Removing obtrusive infrastructure designed to support motorised modes and providing good-quality pedestrian spaces and green spaces improves the **visual environment**, producing a more pleasant experience for residents and visitors.
- Using pervious surfaces, reducing space allocated to motorised traffic (thus reducing traffic levels), and providing space for green areas and surface water run-off protects **soil and water** and reduces flood risk
- Providing green spaces and reallocating space from motorized vehicles (thus reducing emissions) reduces heat island effects, improving the local climate.
- Reallocating space from motorised to non-motorised modes may lead to modal shift, reducing **energy consumption and CO_2 emissions** from transport.

1.3 Dealing with contested streetspace

The supply of streetspace in busy urban areas is limited, but demand for space is (potentially) unlimited – a classic economic problem.

However, urban streets are public spaces, so market solutions are not fully applicable. As such, governments need to use other approaches to allocate the supply to the various demands.

The allocation needs to achieve two aims:

- Increasing the **efficiency** of streetspace use (for example, reducing the amount of time that streetspace is not being used, or increasing movement capacity per person)
- Distributing space in a way that is **equitable** to all users (i.e. perceived as fair) and reduces conflicts

Increasing the efficiency of streetspace use is, to some degree, a technical issue. Over the years, solutions have been designed to optimize movement in specific locations, such as junctions. Traffic signals are an example, found in most cities. Signals have been improved over the years and can now adapt phases to levels of incoming traffic. Other solutions (see Chapter 5) include using new materials and adjusting the allocation of streetspace dynamically.

It is more difficult to achieve equity with technical solutions alone. Technology enables a better allocation of space but does not solve conflicts among different uses. Dealing with contested streetspace is also a political issue. Technical solutions that maximize street use can be contested as unfair by some users, if they think their needs are not fully or fairly satisfied. Delivering new solutions to reallocate space may also meet with resistance from local residents or other stakeholders. In addition, some stakeholders may have more power or be better organised than others. This means that in practice, governments need to make trade-offs and resolve conflicts over streetspace.

In most cases, responsibility for solving these conflicts is fragmented across a variety of planning and delivery agencies, often at various levels (local, regional, national, and international level – see Chapter 3). This often creates barriers, as different agencies may have different visions and objectives for the street. There are also barriers to coordination within each organization, with different departments responsible for transport planning, land use planning, traffic management, and environment.

Solving conflicts also requires dialoguing with a wide range of stakeholders. This dialogue, if it happens at all, is often limited to public consultations to gauge people's views of professionally-generated solutions, and to identify any potential conflicts and problems. However, deeper and more comprehensive forms of engagement are possible, involving a wide range of stakeholders in the generation of street design solutions, thus helping to promote consensus. These forms of engagement have not been fully explored – the **MORE** approach provides solutions to facilitate this engagement (see Chapter 8).

Adopting technical solutions to optimize streetspace may also raise concerns. Most of the solutions being developed rely on gathering information about street use, possibly infringing on the individuals' privacy. This includes, for example, systems to track people's movements from mobile devices, license plate recognition, and video surveillance. This may lead to resistance to adopt some technologies or to disputes on how much data is collected and how data is used.

In conclusion, technical advances provide opportunities to improve the streetspace allocation process but pose their own challenges, and do not necessarily make the allocation more equitable or solve conflicts. This requires the consideration of political issues and engagement with stakeholders.

1.4 Changing political priorities

Given the importance of political issues in streetspace allocation, the solutions implemented will depend on the priorities of national and city governments.

There is evidence that these political priorities change over time and tend to follow a similar trajectory in many cities. For example, the EU-funded **CREATE** project developed a conceptual model where cities follow three stages, characterised by levels of car use, which change in tandem with political priorities and the types of policy interventions applied by governments. Cities tend to follow this 3-stage process, but at different times.

Stage 1
(car-oriented city) - C

- **Car use:** increasing
- **Political priority:** car mobility
- **Typical interventions:** building new roads and streets, provision of car parking, segregation of modes

Stage 2
(sustainable mobility city) - M

- **Car use:** levelling out
- **Political priority:** public transport and non-motorised modes.
- **Typical interventions:** improvement of public transport and walking/cycling infrastructure

Stage 3
(city of places) - P

- **Car use:** declining
- **Political priority:** place-making
- **Typical interventions:** traffic restraint, improving the quality of streets and public places.

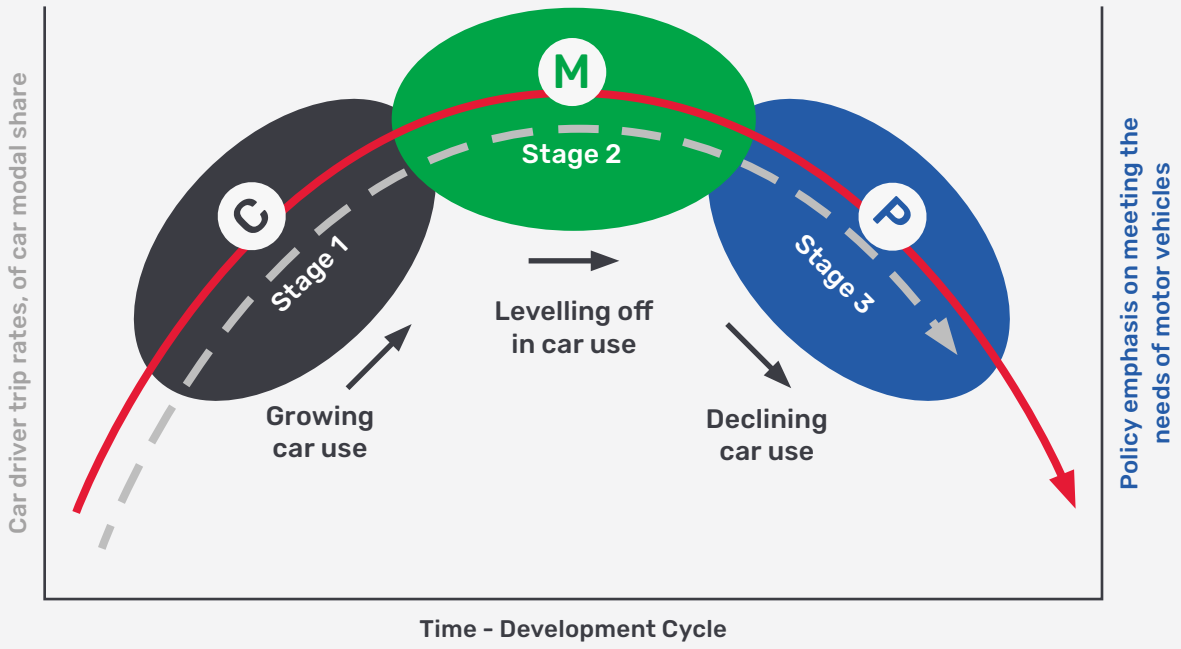

Figure 1.4. The three stages of urban mobility. From CREATE (2017)

Many cities in Europe are now in Stage 3. Examples of interventions include the congestion charging zone in London and the extension of pedestrianized areas in central Copenhagen. As a consequence, the car modal split has been decreasing in many cities, for example since 1998-2002 in London, Paris, Berlin, and Copenhagen, and since 1992 in Vienna.

Cities in other parts of the globe are also starting to apply this type of interventions, usually involving restrictions to motorised vehicles, or even the removal of some obtrusive major road/ street infrastructure, creating pedestrianised areas or new squares and public places.

In the application of these solutions on busy streets, it is recognized that movement is important. However, even in these cases, there are solutions to make the allocation of streetspace more balanced, without a radical transformation of the street. These may include the removal of space previously allocated to the parking of motorised traffic.

Figure 1.5. Examples of urban designs prioritizing cities as places

Figure 1.6. Solutions to reduce motorised traffic

1.5 COVID-19 and streetspace

The COVID-19 crisis has amplified these challenges but also the opportunities for more radical streetspace allocation in cities. Lockdowns and movement restrictions since 2020 have led to:

- Decreases in the number of commuting and business trips, due to more home working
- Reduction of trips to shops and other urban facilities (e.g. museums, concert halls), and localisation of travel patterns, around the home neighbourhood
- Decrease in the public transport modal share, as people avoid crowded situations that facilitate virus transmission
- Increase of home deliveries, leading to more freight traffic
- More walking and cycling and use of public spaces (especially in people's areas of residence)

Some of these changes accelerated trends that were already occurring in many cities, involving a shift of activities from the physical to the online world, and the use of active modes of transport, and greater use of green areas, as health-promoting activities.

At the same time, the need for social distancing to reduce virus transmission increased the demand for space on footways and public spaces. The reduction of pedestrian traffic in central city commercial streets also led to financial pressures on shops and services that rely on face-to-face transactions in physical stores, from large numbers of employees and tourists.

This has led governments to quickly respond by applying emergency measures, allocating streetspace to uses that reduce virus transmission (e.g. space for queues outside supermarkets). Temporary spaces were also designated for social activities that were previously conducted indoors (e.g. dining and some religious or cultural activities).

In other cases, the challenges posed by the changes in people's mobility behaviour accelerated the trend in adopting new political priorities, described in the previous section, towards "cities of places". In fact, policy interventions during the COVID-19 crisis often involved giving more space for non-motorised modes and place activities:

- Widening footways
- Creating new cycle lanes
- Closing streets to car traffic (reconverting them as 'play streets', or pedestrian-only spaces)
- Converting car parking spaces to outdoor seating areas for nearby cafés and restaurants.
- Expanding the area of outdoor markets
- Fast-tracking the regulation of scooters and other forms of micromobility
- Designating space for parking shared bicycles and e-scooters (using space previously used for car parking or underused street furniture)
- Designating space for short term parking for vehicles delivering goods to shops and residences

These responses to COVID-19 have illustrated the potential for more radical changes in streetspace allocation in a bold/agile way. In many cases, the changes involved little financial investment: flexible materials (such as planters and dividers) were used to demarcate spaces allocated to specific uses. In addition, the success of many of these changes demonstrates their benefits for society and paves the way for further similar measures in the future.

Figure 1.7. Responses to COVID-19: car parking space converted to outdoor café; designated areas for shared vehicles.