



COVID-19 TRANSPORT BRIEF

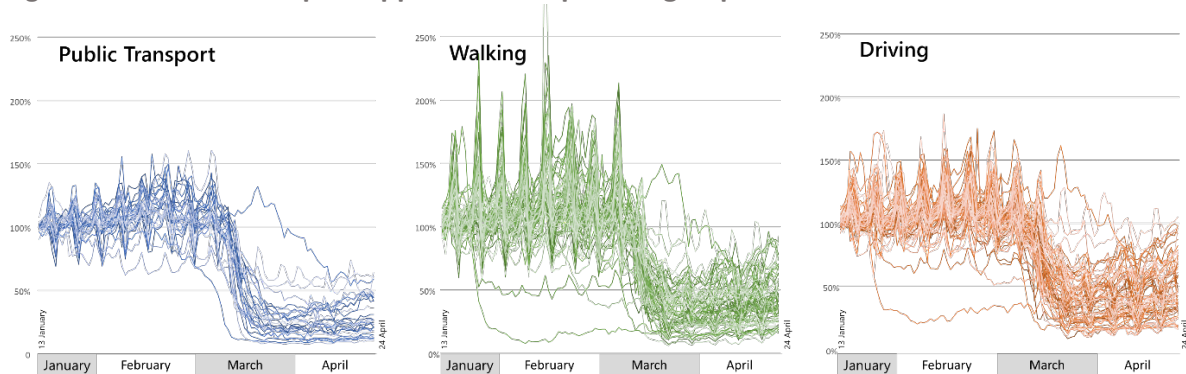
Re-spacing Our Cities For Resilience

3 May 2020

React, reboot and rethink – cities must meet this triple challenge to continue as catalysts for creative social and economic activity despite new health imperatives. Mobility in cities emerging from confinement will be different from what it was before the lockdown. At the crux of their challenge is the way in which limited space will be (re-) allocated.

Public authorities have reacted to the Covid-19 crisis by calling on citizens to reduce their movements to the strict minimum to lessen transmission risks. More than [half the world](#) population is under home confinement directives or advice. Public transport use, road traffic and everyday mobility have collapsed to record low levels as a result – [even in places](#) with no stay-at-home orders (Figure 1).

Figure 1 **Sudden Collapse: Apple device trip routing requests in countries around the world**



Routing requests are a proxy for travel demand and do not include most habitual trips. They give an indication of the scale of travel demand contraction where Apple devices are present and Apple routing services are used. Source: ITF based on Apple Mobility Trends

React to quickly-changing conditions

Rapid responses, sometimes improvised, have been deployed in the face of the global pandemic to ensure essential trips and to respond to changes in travel demand. Many workers, especially those in

the health sector, emergency services, food retail and distribution and others providing essential services must still travel. And people need to purchase food and attend to necessary family and medical visits. Even where confinement measures are less stringent or voluntary, people must travel without increasing their risk of exposure to the virus.

National health authorities and the World Health Organization have set out detailed recommendations to limit contagion, among them the need to ensure minimum separation distances between people.

Takeaways from this Brief

- Physical distancing requirements will impose constraints on the use of space.
- Public transport use will decrease in the short-term; cycling, walking and car travel will increase in the post-confinement phase.
- Cities will need to re-allocate space to allow for physically-spaced walking and cycling.
- Cities will need to strengthen measures to manage excess post-confinement car traffic.
- Relax administrative rules regarding emergency light individual transport lanes and remove punitive taxes on shared micromobility.
- Provide funding for the deployment of more light individual transport lanes.
- Link emergency infrastructure to long-term objectives. Cities should build now what they wish to keep for later.
- New infrastructure should follow established guidelines for safety.

Advice on physical distancing varies and ranges from 1 to 2 metres, depending on local and national contexts. This guidance will significantly impact urban mobility both during the acute phase of the crisis and during the reboot of cities.

Most cities cannot function without core public transport. Yet these services have been hit hardest by efforts to limit contagion. The real and perceived risks of exposure to the virus have transformed the greatest plus of mass transport – the ability to move large numbers of people rapidly, efficiently and affordably – into a liability. In some cities public transport services have been suspended completely during the acute phase of the contagion, notably in China and India.

Elsewhere, public transport operators have sought to minimise risks through back-door boarding, cashless operation, frequent sanitising of rolling stock and stations, limits on occupancy and advice

on physical distancing. The two latter measures are particularly difficult to implement. A steep drop in maximum achievable load factors for buses, metros and trains has been the result. Reduced frequencies in response to lower demand, have increased [queues and wait times](#) for riders.

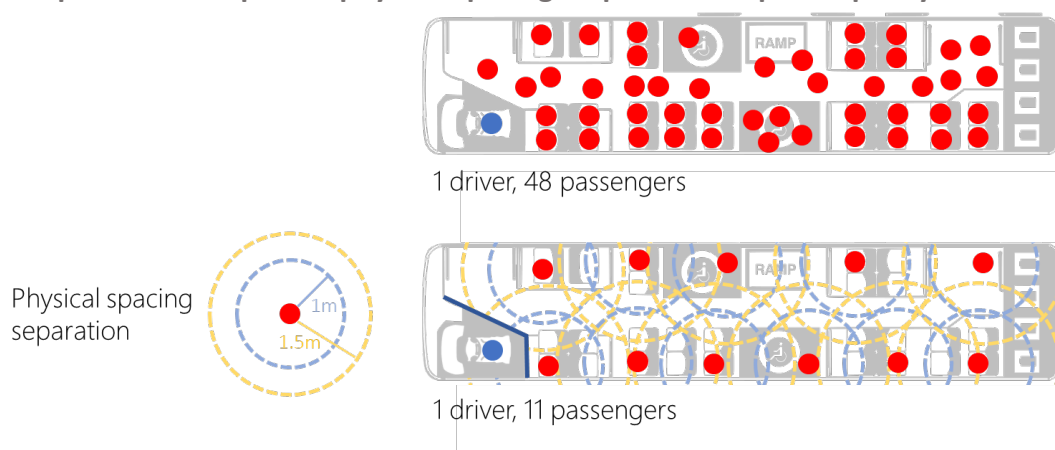
Physical distancing has spaced the public out of public transport during the crisis (Figure 2) and this will pose a challenge to cities as they seek to return to normality. There will be pressure to find alternatives to physical spacing requirements for public transport that allow safe use of buses, metros and trains.

Travelling by car limits contagion risks and the steep drop in road traffic during lockdown has made driving a compelling choice for those still on the road. Crash-related deaths and serious injuries have gone down as fewer kilometres overall are travelled. France reported a [40% reduction](#) of road traffic deaths and a 44% reduction of serious injury crashes year-on-year for the month of March (the country went into a nationwide lockdown on 17 March). California has seen a [50% drop](#) (PDF link) in serious injury and fatal crashes since the state issued a “shelter in place” order.

However, the drop has been less strong than the drop in traffic. Traffic speed, and speeding, has increased as streets have emptied. The [rise in traffic speeds](#) increases risks for other road users, including those walking and cycling.

Many people have opted to walk and cycle during the pandemic - partly to avoid public transport, but partly also because walking and cycling are well-suited for travel during the pandemic. Both walking and cycling limit the risk of close contact and allow adjusting trajectories to avoid close passing. As many people seek to minimise travel distances, walking in the neighbourhood has replaced cross-city travel while cycling is an effective alternative for longer trips previously taken by public transport.

Figure 2 **Spaced out: impact of physical spacing on public transport capacity**



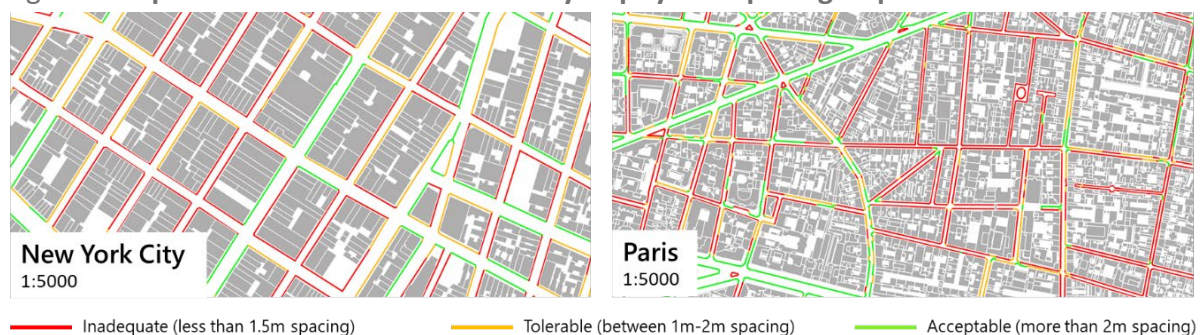
Approaches towards cycling have not been uniform, however. In some countries, cycling has been restricted to the minimum necessary to carry out essential trips. In others, leisure cycling has been encouraged in recognition of its health benefits, including for mental health, when compatible with Covid-19 health recommendations. The World Health Organization has encouraged people to walk, bicycle or use other forms of micromobility for exercise and for essential travel, as have many local and many national authorities (e.g. in Belgium, Denmark, Germany and New Zealand).

Shared micromobility has helped ensure everyday mobility during the crisis where it has continued to operate. In Wuhan, shared bicycles accounted for more than half of all trips or [2.3 million rides](#) in the city from 23 January to 13 March. Cities have recorded [increased use](#) of shared micromobility as people abandoned public transport before strict confinement. Many share systems have been made free for use by health sector professionals and other essential workers. Operators have sought to minimise virus transmission risks by frequently sanitising touch points on e-scooters and bicycles.

At the same time, Covid-19 has also revealed limitations to shared micromobility's business models and the regulatory approaches towards them. The economic pressure on operators caused by the precipitous drop in demand in some markets has sometimes been amplified by poorly designed or unfair regulations and charges levied on electric scooter and bike operators. In response, most operators have scaled down activity or [pulled their fleet](#) out of cities in order to limit expenditures.

Unsurprisingly, cities are not adapted to current physical spacing guidelines imposed by Covid-19 - they derive their advantages from density and proximity. But authorities must confront this challenge as they seek to ensure safe urban mobility during the different phases of the pandemic. Current sidewalk widths in many cities, for instance, simply cannot accommodate more pedestrians in safe ways if physical distancing is required. Paris and New York, two very densely populated cities, currently recommend a distance of two metres (Figure 3, online examples from [Madrid](#), [New York City](#) and [Toronto](#)). These constraints are exacerbated where access restrictions to shops require queuing.

Figure 3 **Space Walk: sidewalk conformity to physical spacing requirements**



Source: ITF based on OpenStreetMap, WHO, CEREMA, APUR, City of New York, Meli Harvey, Ville de Paris, OpenStreetMap

Many cities have rapidly repurposed streets to provide safe room for pedestrians, cyclists and other forms of light, active mobility. These “emergency cycle lanes”, also “Corona lanes”, act as safety valves which make essential travel possible and safe for those displaced from public transport.

Unlike more permanent infrastructure, emergency lanes are rapidly deployed, sometimes overnight, without heavy bureaucratic processes. The inspiration for such light individual transport (LIT) infrastructure comes from “tactical urbanism” interventions like those that spurred the rapid implementation of [Seville’s](#) extensive cycling network and the recent development of [New York City’s](#) cycling infrastructure.

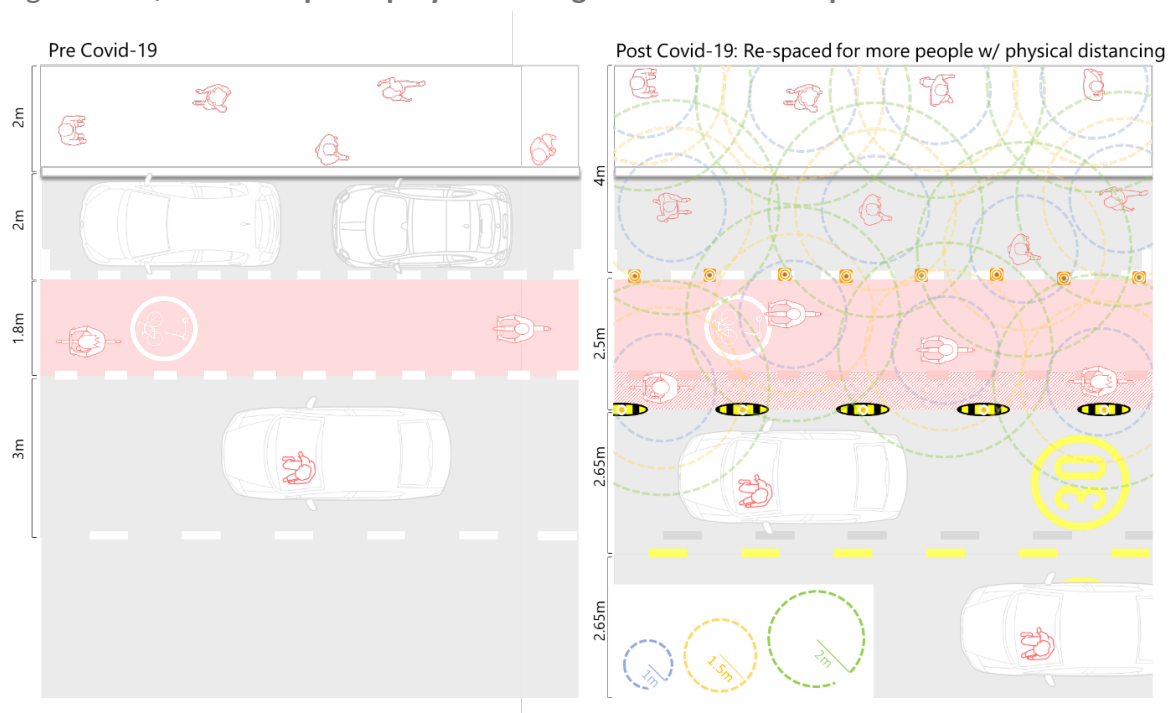
Such interventions mobilise existing resources such as traffic cones, plastic bollards, construction separators and temporary lane markings. Typically, they are deployed under the same rules applying to construction-related traffic diversion. They take advantage of reduced car traffic by reclaiming street space from car parking and travel lanes. Often, pedestrians are given space to walk on the carriageway and in some instances car travel lanes are narrowed (Figure 4).

For these reasons, authorities often reduce maximum traffic speeds to 30km/h or less, as this is the safe limit for mixed-use roads. Generally, these measures build on [established practice](#) to ensure safety for light cycling and walking infrastructure. Other types of emergency measures have focused on developing “safe streets” or “slow streets” by giving pedestrians, scooterists and cyclists priority, banning through traffic and lowering speed limits.

In places where cycling is popular and facilities are already present, physical spacing imperatives may require the allocation of even more space to cyclists and micromobility, especially at junctions where bunching occurs. Some cities, like Brussels, are re-timing traffic lights to give more time for pedestrians

and cyclists and avoid crowding at junctions. [Turning off traffic lights](#) and enforcing traffic priority rules for shared space to avoid crowding is another option.

Figure 4 **Quick-LIT: rapid deployment of light individual transport lanes**



Source: ITF based on WHO, CEREMA, Berlin Senatsverwaltung für Umwelt, Verkehr und Klimaschutz

First implemented in mid-March 2020 in cities like Berlin, Bogota, Mexico City and New York, emergency LIT infrastructure has spread rapidly. More than 150 cities have deployed emergency cycling and walking infrastructure as of late April 2020, with many hundreds more planning to do so as confinement is eased.

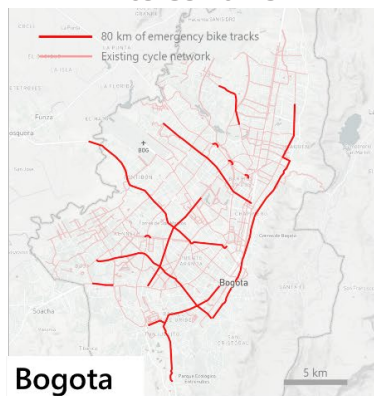
In some cases, the introduction of LIT infrastructure has alleviated pressure along vital corridors or improved access to specific destinations like hospitals – as in Berlin, Budapest, Dublin, Grenoble, Montpellier and Tirana. Valencia focuses not only on transport corridors but equally on large junctions and squares. To give traffic space to pedestrians, Spain’s third-largest city has created a set of temporary [superblocks](#).

Other cities aim to create city- or region-wide networks of emergency cycling and pedestrian infrastructure that facilitate socially-spaced walking and cycling against the backdrop of decreased public transport use. Among these are Auckland, Barcelona, Bogota, the Île-de-France region, Lima, New York City, Quito and Rome (Figure 5).

Still other cities like Montreal, Oakland, Portland, San Diego, San Francisco and Vienna are creating “slow street”/“safe street” networks that prioritise pedestrians and cyclists and limit car access. Finally, some cities aim to deploy all of these and still other measures to radically restructure urban space for a more resilient future.

Milan, with its “[Strade Aperte](#)” (Open Streets – PDF link) plan combines the emergency deployment of cycling infrastructure and sidewalk widening, a rapid expansion of 30km/h traffic calmed zones, the pedestrianisation of several plazas alongside, 20km/h shared street zones, parklets and other measures seeking to provide space for physically distanced city living. These measures are linked to longer-term objectives to manage car traffic and provide sustainable travel options for inhabitants.

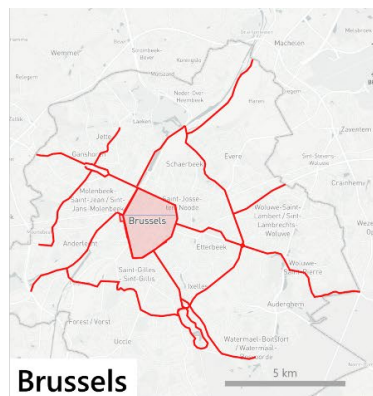
Figure 5 The new space race: large-scale street space re-allocation initiatives in response to Covid-19



Bogota

Demand-responsive emergency cycle routes deployed overnight

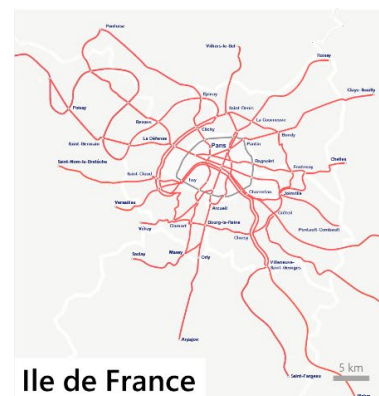
Pre-lockdown, the city deployed 112 kms of emergency cycling lanes (in addition to the 550 km already in place) to handle displaced public transport trips. Post-lockdown, the city iterated the network 3 times and currently has deployed 80 kms of emergency lanes (28 April).



Brussels

City-center re-prioritisation for walking, cycling and scooting and additional lanes

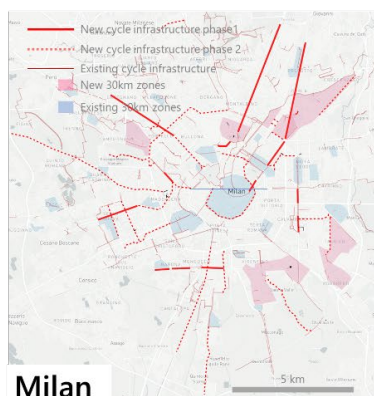
Brussels centre will become an emergency shared space zone with priority given to pedestrians and cyclists and 20km/h speed limits. Pedestrians will be able to walk on the carriage-way in order to facilitate physical distancing. An additional 40km of cycle tracks will be deployed in the region.



Ile de France

650 km regional bicycle network fast-tracked to help compensate for public transport loss

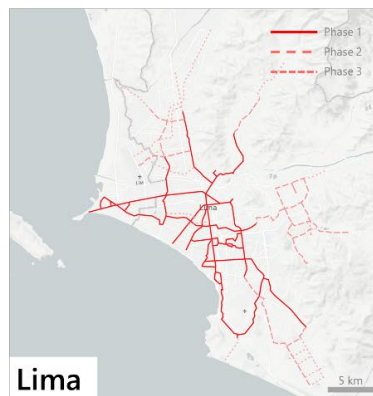
The region will help build a network of cycle routes and provide EUR 300 million funding (~60% of the total cost). Construction will be fast-tracked starting May 11th, 2020 and will include the rapid deployment of emergency cycling infrastructure. The city of Paris will deploy another 150km of pop-up cycle lanes.



Milan

Post-Covid19 mobility plan starting w/ emergency lanes, speed zones and plazas

In order to adapt to post Covid-19 travel behaviour and meet sustainability goals, Milan’s « Strade Aperte » mobility plan calls for new cycle track infrastructure, new slow speed zones, and pedestrianised plazas, starting, deployed first as emergency infrastructure.



Lima

Planned 301 km cycle network to be deployed as emergency lanes first

The first phase of the network planned to be deployed in 5 years will be deployed in 3 months. It will first be implemented as emergency cycling lanes and will be extended and converted to hard facilities in later phases.



Oakland

75 miles of Slow Streets to allow social spacing for walking, cyclists and scooters:

The city of Oakland has converted its neighbourhood cycling network (10% of all streets) into pop-up ‘slow streets’ closed to through car traffic. San Francisco has implemented a similar measure with a number of streets prioritised for walking and cycling.

Source: ITF based on Bruxelles Mobilité, City of Oakland, Collectif Vélo Île-de-France, ATU Lima, Movilidad Bogota, SFMTA, Comune di Milano, Mapbox, OpenStreetMap

Brussels is fast-tracking the implementation of its “[Good Move](#)” mobility plan that combines new walking and cycling infrastructure with neighbourhood traffic-calmed zones. As in other cities, the plan is now being rolled-out overnight with temporary fixtures.

London’s “[StreetSpace](#)” plan and Paris’ Covid-19 [response plan](#) envisage similar, broad and strategic resilience-enhancing actions. Outside of the mobility arena, some cities (like [Vilnius](#)) are planning to dedicate street space for outdoor seating to help restaurants and cafes operate within physical distancing constraints.

Some regional and national governments actively support the use of emergency LIT infrastructure. New Zealand has [announced](#) significant new funding to help local authorities create emergency walking and cycling infrastructure. The French transport minister [has tasked](#) a high-level panel to help guide the national roll-out of such infrastructure. [This plan](#) includes EUR 20 million of emergency funding to help facilitate cycling during the post-confinement phase. Also included are funding for emergency cycle infrastructure and parking, administratively streamlining the creation of emergency cycling infrastructure, EUR 50 maintenance vouchers for used bicycle repair, training for new or hesitant cyclists and co-financing of employer-provided cycling incentives. The United Kingdom has [relaxed administrative rules](#) so local councils can put into place emergency walking and cycling lanes.

Technical guidance has also quickly been issued by national governments and regional authorities. For instance, the French Centre for Studies and Expertise on Risks, Mobility, Land Planning and the Environment (CEREMA) has developed guidelines for [walking](#) and [cycling](#), while in Germany the government of the *Land* of Berlin has published a [framework for emergency cycling infrastructure](#) (PDF link) as has the municipality of [Quito](#). Advocacy organisations and others have also put out guidance (e.g. [Bikeitalia](#) (PDF link), [Mobycon](#)).

Rebooting safely: pathways out of the pandemic

The course of the pandemic, and thus de-confinement strategies and timelines, are fraught with uncertainty. Cities will have to reboot in ways that avoid a spike in new contaminations. Many of the safety measures currently in place will remain relevant for some time. The pathway out of the pandemic will not lead the world’s urban agglomerations back to the old “normal”. Instead, it will lead to a qualitatively new reality for the foreseeable future that is physically spaced, hyper-sanitised, hygienic-masked and crowd-averse.

What will this re-boot look like? It is entirely too soon to say but early indications provide some hints. Urban travel will not immediately bounce back to prior levels. Many of those who can telework will continue to do so until safe travel and safe workplaces are assured. Commuting may resume for those not able or willing to telework, but discretionary trips may become fewer and more local.

[Surveys](#) (PDF link) from China indicate that post-confinement public transport use is down, and travel counts confirm ridership at [50% of 2019 levels](#) for the first quarter of 2020. Conversely, car travel has risen quickly to equal and surpass pre-Covid levels in [large cities](#) once travel restrictions were lifted.



As of mid-April 2020, road traffic levels in 70% of Chinese cities were at least 90% or more of their 2019 levels. One exception is Wuhan where car travel is still below pre-Covid levels, year-on-year. Car sales are up, though this may be due to pent-up demand. Surveys suggest that private cars may replace trips (PDF link) previously taken by public transport, taxis and ride-sourcing. At the same time, bicycle travel has risen even more rapidly across many Chinese cities. Shared bicycle use has almost tripled in Beijing and doubled compared to pre-Covid levels in many other cities following the end of travel restrictions.

These developments are indicative only and tied to the Chinese context. Yet they point to the possibility that many people will feel uncomfortable travelling by public transport or sharing close quarters with drivers in taxis or ride-sourcing vehicles. These trips will have to be catered for with other travel options.

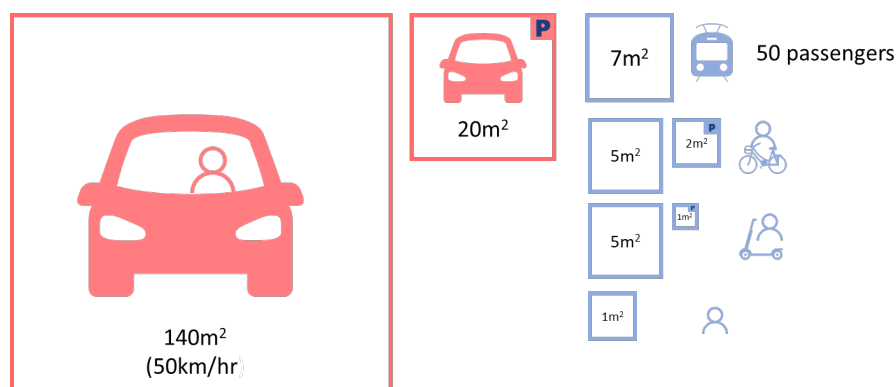
Table 1 **Number of daily public transport trips to be serviced post Covid-19**

	Daily bus and metro trips (excl. regional rail, million)	Scenario: Minus 30% teleworking	50% of remaining trips
London	9.8	6.9	3.5
New York	7.6	5.3	2.7
Paris	5.5	3.8	1.9
Tokyo	8.0	5.6	2.8

Source: ITF based on Transport for London, Municipality of Tokyo, City of Paris

Absorbing these trips will not be trivial, as this simple calculation demonstrates: Anywhere from 5 to nearly 10 million daily trips are taken by metro and bus (excluding regional rail) in London, New York, Paris and Tokyo. If 30% of those trips were to be replaced by telework, 4 to 7 million trips per day would still have to be handled by public transport. Two to 3 million trips a day remain if 50% of those remaining trips are no longer taken in public transport.

Figure 6 **Out of space: square meters required to move one person**

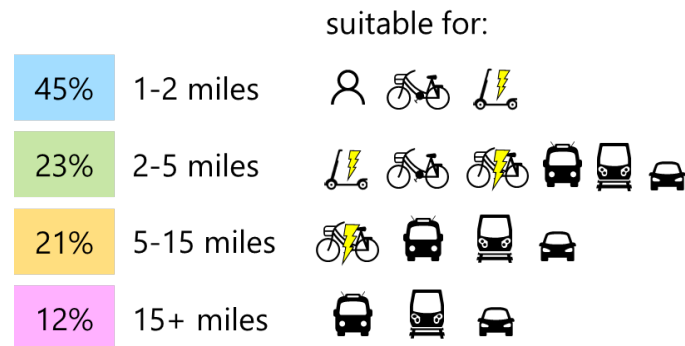


Source: ITF adapted from City of Amsterdam, KIM Netherlands

In the short-term, that is an impossibly large number of trips for city streets to absorb if they are taken by car. In the longer term, cities that are designed to handle such an increase in traffic may not be able to deliver other outcomes related to safety, equity, access, environment and efficiency. Walking, cycling and other forms of light mobility are much more space-efficient (Figure 6) and could help

absorb this demand. Many urban trips are made over a relatively short-distance and could easily be walked, cycled and scooted. Electric propulsion and regional infrastructure also make longer-distance cycling or scooting possible (Figure 7).

Figure 7 **Make space for short trips: total urban trips in the US by distance**



Source: ITF based on US NHTS 2017 data

Public authorities will have to adjust to a new environment in which travel options, preferences and behaviour will remain severely disrupted as long as the threat of Covid-19 persists. A major part of that adjustment will be the realisation that physically-spaced Corona lanes will be part of the near-term normal. In terms of road space allocation, public authorities should provide the following to ensure that urban travel can be safely accommodated during the climb-out from Covid-19 travel restrictions:

- **Do not compromise safety** when rapidly deploying emergency LITs. There is experience in how to make light infrastructure safe, but where necessary car and truck traffic speeds should be reduced.
- Link emergency infrastructure to **long-term objectives**. Cities should build now what they wish to keep for later.
- **Monitor the use** of infrastructure and **iterate and expand** emergency LIT infrastructure as needed during the reboot. Light infrastructure can be rapidly modified and re-deployed. Public authorities should do so where usage numbers require it.
- Consider **fast-tracking upgrades** where levels of use are high. “Emergency” is not synonymous with “temporary”. When critical thresholds are approached or where strategic requirements dictate, public authorities should upgrade emergency infrastructure.
- Link emergency LIT infrastructure to **other resilience-enhancing measures**. Emergency infrastructure that complements other needs such as access to jobs, healthcare, food and other essential services will provide better resilience.

Rethink space allocation to increase resilience

Cities are the product of a constant interplay of forces, some long and steady, others abrupt and violent like the Covid-19 crisis. The cities of the future will no doubt be formed by the Covid-19 pandemic just as indoor plumbing, sewage treatment, garden parks and broad, leafy avenues were partly the outcome of past pandemics. It is still too early to know what the exact imprint of Covid-19 will be but even now citizens, public authorities, civil society and the private sector can work to guide that outcome. If there is one principle that should underpin recovery efforts, it should be to make choices now that we wish to keep in the future.

The heart of the urban mobility system will continue to be public transport. But it will be an expanded and diversified form of public transport that continues to contribute to the effective functioning of dense cities and delivers social value to its inhabitants. It will be more demand-responsive and agile at its margins, but still be unparalleled in its ability to rapidly and efficiently transport millions of people every day across large urban areas.

Until the end of the “UV age” (for “Until Vaccine”), the ability to deliver on that promise will be compromised. Public authorities and operators will have to adapt their vision for the sector, its funding and support mechanisms to ensure mass transport’s long-term viability as ridership drops and public budgets are pressured during the economic downturn engendered by confinement.

Car travel may increase and this will put pressure on improving the environment in, and livability of, cities; objectives that were at the heart of urban mobility policies around the world prior to Covid-19. These objectives remain relevant and valid, and so part of the renewal process will be to find ways to ensure they can be met in new circumstances.

Part of this process will be to increase the resilience of cities to shocks such as the current one. This will require rethinking and recalibrating the ways in which street space is allocated. More space will be given to citizens who choose to walk, cycle or scoot - providing them with safe, connected, coherent and comfortable networks adapted to their specific needs.

This investment delivers [high returns](#) and enhances [urban resilience](#) to shocks. It is an effective way of making access more equitable and creates an efficient safety valve for urban travel demand. Streets are not [set in stone](#), despite all appearances. The ultimate impact of the response to Covid-19 may be to re-shape our cities into better, more livable places.

+ + +