

NET-ZERO MOBILITY: SOCIAL CONSIDERATIONS FOR LIMITING PRIVATE VEHICLE ACCESS

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INTRODUCTION

Public transport is vital for accessing jobs, education, and services, helping prevent social exclusion and economic deprivation. Many cities reduce emissions by restricting private, polluting vehicles through low-emission zones, road charges, and vehicle limits. However, without considering diverse citizen needs, such measures risk increasing inequalities and limiting access to opportunities for marginalised groups, slowing emission reductions. This Policy Brief explores how cities and transport organisations can collaborate to provide inclusive mobility solutions throughout the net-zero transition. It focuses on key considerations for implementing vehicle access measures that promote decarbonisation, reduce congestion, and prioritise sustainable transport.



► Urban multimodality in Gothenburg, Sweden

SOCIALLY INCLUSIVE NET-ZERO: A FRAMEWORK

A socially inclusive net-zero transition, or a ‘just transition’, refers to the shift towards a climate neutral economy in a fair way that does not exclude certain groups. This entails provision of targeted support to help mobilise changes in society, to alleviate socio-economic impacts. In other words, our economic efforts to decarbonise and adapt to climate change should not come at the expense of our social sustainability. A just transition contributes to the broader outcome of stronger economies, green environments, and social cohesion.



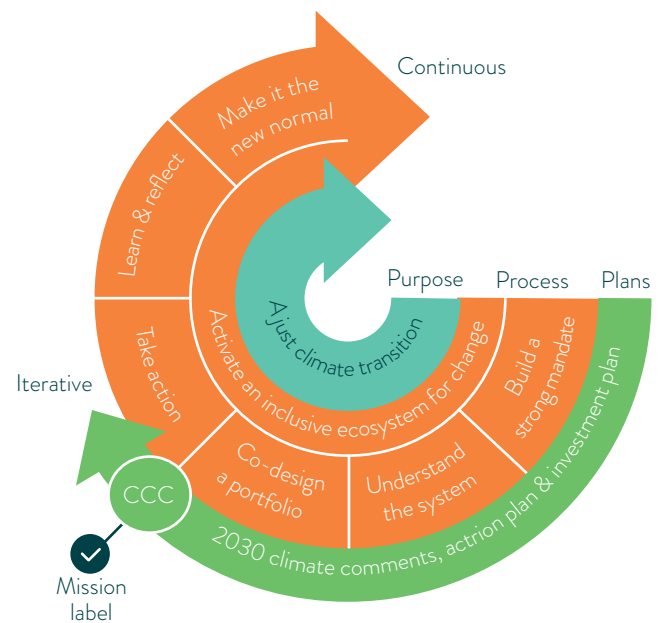
► Redevelopment of Chandni Chowk Road in Delhi, India – decongestion, non-motorised vehicles, and pedestrianisation

NETZEROCITIES: HELPING CITIES REACH CLIMATE NEUTRALITY

UITP is collaborating with NetZeroCities, an initiative supporting the European Union's (EU's) Mission for Climate Neutral Cities by 2030. Using a systems innovation approach, the project addresses institutional challenges through coordinated action across urban systems. It recognises the interconnection of technological, financial, and social factors to drive transformative change. Social innovation is central, emphasising a bottom-up, human-centred strategy. By involving residents, businesses, civic groups, and policymakers, it fosters co-created solutions that cut emissions and improve community well-being. This collaborative method not only speeds up decarbonisation but also builds local capacity, creating more adaptive, resilient, and sustainable urban environments.

As part of the programme, each of the 112 Mission Cities are submitting Climate City Contracts showing their commitments, action plan, and finance plan to reach climate neutrality by 2030 (available on the website's portal). Transport has emerged as the sector with the greatest decarbonisation potential for climate goals.

The Climate Transition Map



For the mobility sector to transition to net-zero, vehicle electrification is not the solution. Rather, we need to recentre the debate towards active, mass, and shared transport and increase multimodal solutions to encourage new mobility behaviours and decrease car dependency.¹ Along with the Avoid-Shift-Improve framework, this requires policies to support demand management, behavioural change, and climate change adaptation:



AVOID

Avoiding unnecessary motorised trips based on proximity and accessibility; better integrating transport and land-use planning.



SHIFT

Shifting to less carbon-intensive modes – from private, individual vehicles to active mobility, public transport, and shared solutions.



IMPROVE

Improving vehicle design, energy efficiency, and clean energy sources for passenger transport and logistics. Improving operational efficiency and passenger experience with real-time and digital solutions.

Supported by complementary policies beyond the mobility sector:

- Demand management
- Stakeholder behaviour change
- Climate change adaptation

¹ UITP, 2024. Car electrification and urban mobility: Recentring the debate on public transport. Available here: <https://netzerocities.eu/climate-city-contract/>

However, the shift towards sustainable urban transport must be **equitable, inclusive, and socially just**. It should address the needs of **flexible workers, marginalised communities, and vulnerable groups** while reducing emissions, improving public health, and enhancing urban liveability. This is because such groups may face additional physical, price, or other barriers that make it more difficult to change their travel behaviour.

Walking, cycling, and public transport are more affordable and accessible options than private, individual transport. However, since the 1950s, cities have been largely designed for individual cars and are locked in to their infrastructural design and driving habits. The more sustainable modes consequently struggle to compete with the car and meet the needs of citizens' lifestyles. Transitioning away from the individual car-based model will cause disruption and change in the way people move around cities. **Cities will need strong political will, clear vision, and an open dialogue with all actors to ensure they can move forward.**

REDUCING VEHICLE ACCESS FOR BETTER STREETS: OBJECTIVES AND IMPACTS

Urban vehicle access regulations (UVARs) and clean air zones (CAZs) are useful tools that can help facilitate the transition towards clean mobility, breathable air, and people-friendly spaces. These approaches can include:

- **Spatial interventions** such as reallocating parking spaces and road spaces for active mobility, public transport, and shared mobility.
- **Pedestrian priority zones/pedestrian only zones:** Areas limiting any motor vehicles to allow space for pedestrians and sometimes cyclists.
- **Traffic limited zones:** Restriction of traffic to non-residents and unauthorised vehicles. Zones for public transport vehicles.
- **Low/Ultra/Zero emission zones (LEZs/ULEZs/ZEZs):** Defined areas where usage of certain polluting vehicles is limited or banned completely or during certain determined periods.
- **Road user charges:** Often implemented with an LEZ, a charge is applied to vehicles entering a given zone if their emissions standard or weight is above the determined threshold.

Check out UITP's paper on congestion-free bus networks for good practices and recommendations to prioritise space for buses.

OBJECTIVES OF UVARS

Limiting or preventing usage of certain vehicles should align with a city's broader mobility, spatial, and economic strategies and be informed by extensive local and stakeholder engagement. The ReVeAL project² highlights five key goals for such measures:

- **Cutting climate emissions:** Road transport produces 15% of greenhouse gas (GHG) emissions and is decarbonising more slowly than other sectors. Urban areas can take the lead through infrastructure changes, electrification, and sustainable mobility.
- **Improving air quality:** Air pollution caused 8.1 million deaths globally in 2021 and disproportionately affects children, the elderly, and vulnerable groups.
- **Reducing congestion:** Congestion worsens emissions, harms air quality, raises economic costs, and increases road danger.
- **Enhancing quality of life:** Urban space is limited and costly, yet often dominated by vehicles. Reclaiming road space for recreation and commerce makes cities more vibrant and people-focused.
- **Promoting fairness:** Walking, cycling, and public transport use far less space. Those without cars — by choice or necessity — often subsidise the space and impact of private vehicles. Equitable mobility means designing cities for all users, not just drivers.

These goals collectively support healthier, more sustainable, and more inclusive urban environments.

- **When incentives are not enough:** UVARs can effectively change behaviour by making driving less convenient than sustainable options. Even with good alternatives, many still choose cars—disincentives provide an extra nudge. Most people and companies change their behaviour when the alternative is:
 - More convenient, reliable, and accessible
 - Less expensive
 - The only option (in other words, their preferred option is no longer possible)

UVARs can work as one half of an effective pairing of incentives and disincentives. When the UVAR 'disincentive' is combined with the incentives of increased public transport, more attractive active mobility, and sustainable logistics options, cities have the full package to cultivate sustainable mobility habits (CIVITAS ReVeAL, 2022).

² <https://civitas-reveal.eu/>

IMPACTS OF UVARS

UVARs bring numerous benefits. They support transformative policies to deliver systemic change in cities, such as improving air quality, reducing congestion thanks to more reliable and accessible public transport, enhancing road safety through fewer road fatalities, and making more space available for walking, cycling, greenery, and social public places.

They also serve to support marginalised people such as people with reduced mobility (PRM) and lower-income groups. For example, people living in the most polluted areas of cities tend to be poorer,³ and improving active mobility and public transport can help reduce pollution and make mobility services accessible to those who cannot afford private transport. In essence, supporting such policies does not just support environmental goals but also reinforces social cohesion and better quality of life for all.

However, it is not enough to implement such measures without them being integrated with and contributing to achieving wider city/regional transport and environmental goals. Implementing a measure with the goal to reduce emissions in a given area and preventing access to vehicles can inadvertently cause exclusion and disruption to the population, resulting in public opposition. **For measures to be impactful, they need to be integrated with complementary policies related to improvements in transport services, the public realm, road safety, social cohesion, and public health.** It is key for both coordinated public policy development and citizens' behavioural change.

SOCIAL CONSIDERATIONS FOR CITIES

This section focuses on the considerations that cities need to take into account to ensure that their mobility measures are impactful for congested, urban areas and simultaneously avoid excluding citizens.

Institutional commitment and preparedness	Inclusive planning and equitable impacts	Inclusive stakeholder engagement	Inclusive implementation
➤ Commitment ➤ Governance ➤ Budget ➤ Baseline generation	➤ Equity assessment ➤ Equitable impacts ➤ Monitoring and evaluation ➤ Policy recommendations	➤ Define the vision for public participation ➤ Stakeholder mapping and analysis ➤ Inclusive communication and public engagement	➤ Monitoring and evaluation ➤ Governance ➤ Continued engagement of stakeholders and impacted groups
Identify how institutionally and financially prepared your city is to address equity and inclusivity considerations and what data is available to inform this process.	Assess which groups could be affected by the introduction of the Clean Air Zone and what city-wide benefits will be accessible to these groups.	Map a diverse set of stakeholders who may inform, be impacted by, or oppose the policy and develop an engagement strategy to strengthen the process.	Review, refine, and monitor the implementation of equitable policy recommendations and maintain accountability to stakeholders.

Source: C40 Knowledge Hub: Clean air zones

³ <https://publichealth.berkeley.edu/news-media/research-highlights/new-method-for-mapping-air-pollution-reveals-disproportionate-burden>

PLACE INCLUSIVITY AT THE HEART OF POLICY DESIGN AND IMPLEMENTATION

Data is essential from the start of policy design to assess institutional readiness, understand the current situation, and justify action. Key data includes pollutant sources in target areas, local demographics, populations disproportionately exposed to pollution, access to safe walking, cycling, and public transport, travel costs, and groups most affected by proposed changes. An evidence-based approach is crucial.

Impact and equity assessment are crucial to the process and should be assessed in collaboration with user group representatives, rather than managed solely by one stakeholder. This assessment will highlight which groups of people could be negatively impacted by the proposal, equity considerations when defining the area, quantifiable benefits (for example, improved access to walking and public transport options or more space for bike sharing stations), and key performance indicators (KPIs), like improved air quality, an increase in the number of people cycling and using public transport, and an increase in the number of accessible stops for people with reduced mobility.

Early identification of impacts and benefits facilitates engagement and implementation. Developing a **stakeholder map and engagement strategy** ensures tailored communication, builds evidence-based counterarguments, and highlights concerns early on, allowing for adjustments before rollout.

Inclusive implementation entails regular review of the impacts the measures have on your initial data, your wider strategic KPIs, and possibly using mitigation measures to better support certain population groups where issues are raised.

WHEN DESIGNING MEASURES, APPLY AN INCLUSIVITY LENS TO MOBILITY, FOLLOWING THE 4 A'S

When designing, implementing, and integrating UVARs such as LEZs, parking policies, and changes in road layout, cities need to ensure that they are still providing a level of accessibility for other modes of mobility—walking, cycling, public transport, and shared/on-demand modes. This level of alternative accessibility should be implemented before any UVARs and can be measured based on four categories:⁴

Availability

When implementing measures, sustainable mobility options need to be within easy reach for different people, including those with disabilities or the elderly. If mass transport services are not feasible, active, shared, and on-demand mobility should be used for first- and last-mile connectivity. For example, in London, to better connect outer areas with the rail network, the Superloop suburban express bus routes were implemented in conjunction with the expansion of the ULEZ scheme, which now covers all London boroughs. As another example, the city of Lyon created an innovative governance model for car sharing as a public service, to scale up quickly and make it available for those impacted by the newly adopted LEZ.⁵

Accessibility

If vehicles and surrounding infrastructure are not physically accessible, people simply will not use it. Before implementing UVARs, the affected zone and connecting areas need to be made as accessible as possible. For example, Barcelona's LEZ and high parking charges to reduce the number of cars in the city centre is complemented by a 100% accessible bus network and largely accessible metro network.

Affordability

The cost of travel using sustainable modes needs to offer the best value for the journey. The fares paid by public transport passengers should be affordable for everyone and competitive with the (marginal) cost of car use. Many cities, regions, and countries offer concessionary transport tickets to support more vulnerable users—in some cases, children and elderly people travel for free, and students travel at discounted rates. For example, TransLink in Vancouver offer passes to children to encourage sustainable transport habits from an early age. Such policies should be implemented before or, at least, in conjunction with any access interventions.

Check out [UITP's fare affordability policy paper](#) for further guidance.

Acceptability

People need to feel comfortable enough to walk, cycle, and use public transport and shared modes before they can make the transition from private cars. Are the systems and networks safe and reliable enough for everyone to use these transport modes autonomously (for example, people with disabilities, women, the elderly, etc.)? For example, Mexico's first LEZ in Guadalajara spans 2 square kilometres (km²) in the historic city centre. Over the past decade, various measures have been introduced to enhance mobility, pedestrian and cycling infrastructure, and urban nature. These include designated loading and unloading zones, 30 kilometre per hour (km/h) speed limits, and dedicated cycling paths, all in efforts to prioritise road safety and foster dynamic and enjoyable public spaces.⁶

Available	Accessible	Affordable	Acceptable
- Is it within easy reach of where people live? - Does it take them to the places they want to go? - Does it operate at times that fit patterns of family, working, and social life? - Does it support trip sharing? - Is it easy to find out about the service, including how, when, and where it operates? - What alternative options are there? - Is the service integrated with the wider transport network? - Are storage, charging, and parking available?	- Are there physical barriers to use (e.g. steps, difficult-to-read signage, lack of rest areas, no toilets)? - Is it easy to figure out how to use it? - Are any particular skills or knowledge required to use it (e.g. numeracy or digital literacy)? - Is any training or confidence building activity required? - Does it accommodate 'encumbered travel' (e.g. travel with children or luggage)? - Does it require an internet connection/smart phone?	- Is pricing as simple and consistent as it can be? - Are price rises kept to a minimum? - Are prices capped? - Is it easy to find the best value option? - Does it require a bank account? - Are different payment options available (e.g. cash, SMS, instalments)? - Are there any barriers to accessing the best value deals/transport options (e.g. digital only or large upfront costs)? - Is help available to meet or mitigate the costs of the scheme/purchasing vehicles/equipment?	- How does it compare to alternative options? - Is it convenient? - Is it welcoming? - Does it afford those who use it dignity and respect? - Is it clean? - Is it comfortable? - Is it safe? Does it feel safe? - Is help available if needed? - Does marketing and branding reflect diversity and avoid stereotypes? - Is it attractive? Do people want to use it?

Source: Urban Transport Group and ARUP, 2022

⁴ UK Department of Transport, 2008. Delivering a sustainable transport system: Main Report; Urban Transport Group and ARUP, 2024. Equitable Mobility.

⁵ "Focus on Local people: Lyon Metropole", Presentation by Lyon Metropole during UITP Shared Vehicles Committee, 26 March 2024. Slides available here: <https://mylibrary.uitp.org/PermalinkRecord.htm?archive=292695701087>

⁶ C40, 2024. Guadalajara announces Mexico's first low emission zone, joining the movement for cleaner air. Press Release.

SOCIAL CLIMATE FUND: AN OPTIMAL TOOL TO EMPOWER VULNERABLE TRANSPORT USERS

The Social Climate Fund (SCF), part of the EU's Fit for 55 package, will support vulnerable groups affected by the new emissions trading system from 2026 onwards. It provides funding to Member States to address energy and transport poverty through structural measures and investments in low- and zero-emission mobility. Some funds may be used for temporary direct income support. UITP is advocating for SCF resources to be directed toward inclusive transport solutions aligned with the 4 A's framework—ensuring availability, accessibility, affordability, and acceptability—rather than promoting private electric vehicle (EV) ownership, which does not support long-term sustainable and equitable mobility.

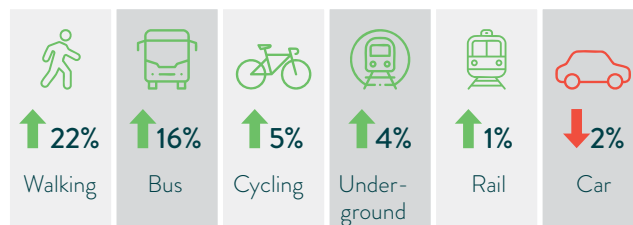
[Read UITP's policy position on the Social Climate Fund](#)

APPLY EQUITABLE MITIGATION MEASURES

When implementing changes, quantitative assessments and stakeholder discussions will identify how certain measures may negatively impact stakeholders. Supportive measures can mitigate these impacts and come in the form of financial incentives (subsidies, concessionary travel tickets, or scrappage schemes for polluting vehicles), or grace transition periods (e.g. for emergency vehicles and small and medium-sized enterprise (SME) vehicles), complemented by education/awareness raising campaigns and stakeholder engagement.

In London, the scrappage scheme was introduced as a way of mitigating the impacts of the ULEZ. It did this by offering a grant to Londoners with vehicles that did not comply with ULEZ emission standards to either scrap the vehicle, retrofit it with emissions abatement equipment (if available), or, as added in March 2024, donate it to Ukraine to support medical and humanitarian needs. The grant did not have to be used to purchase a replacement vehicle. A survey of car and motorcycle grant recipients for the scrappage scheme, which accompanied the inner London ULEZ expansion, showed that a third did not purchase a replacement vehicle with the money and

a fifth no longer had access to a vehicle in their household. The overall impacts of the inner London scrappage scheme are shown in the diagramme below. In the latest scrappage scheme, covering outer London, an option was added to receive free bus and tram travel for a year in return for a lower grant payment. The impacts of this will be published later this year.



Source: *Transport for London*⁷

In Italian cities, exemptions are granted to non-compliant vehicle owners under certain conditions. However, while exemptions can enhance public acceptance and minimise the impact on individuals with no feasible alternative to private transport, they should be evaluated based on their effectiveness and impact on air quality.

BUILD POLITICAL AND PUBLIC SUPPORT

It is important when designing complementary mobility policies to understand that disincentivising policies focused on removing access cannot simply be replaced by incentive policies. This is due to several factors, such as:

- **Motonormativity:** A hidden bias shaping how humans can apply a double-standard to the car-dominated status quo in the face of potential change.⁸
- **Car blindness:** A form of cognitive processing bias which results in focusing on certain elements of the urban scene while large, motorised vehicles are pushed to the back of peoples' perception, to the point of becoming 'invisible'.⁹

These societal factors play a key role in citizens' reluctance to stop using private cars, even impacting their perception of accessibility and exclusion,¹⁰ despite knowledge of the benefits of walking, cycling, and public transport. This not only highlights the critical importance of a human approach to the climate transition, with clear two-way communication and engagement, but also the need for synergy between policy measures and the public narrative on topics such as improving road safety, tackling housing unaffordability, and saving lives through better air quality and green spaces.

⁷ <https://tfl.gov.uk/corporate/publications-and-reports/ultra-low-emission-zone>

⁸ <https://www.sciencedirect.com/science/article/pii/S0959378025000172>

⁹ <https://www.itf-oecd.org/improving-quality-walking-cycling-cities>

¹⁰ <https://www.sciencedirect.com/science/article/pii/S0966692321001435>

Getting political and public support for a sustainable net-zero transport policy requires a mix of strong strategic communication, community engagement, and alignment with local government aspirations:

- **Frame the benefits around pertinent local issues** such as reducing GHG emissions, improved accessibility (for low-income groups, senior citizens, and people with reduced mobility), local employment (such as infrastructure development), and potential cost savings for households (when cars are not used).
- **Foster community engagement** using ‘town halls’, focus groups, workshops, and advisory panels, especially to engage marginalised communities. If possible, pilot or create a proof-of-concept project from which you can get feedback and share success stories. Map out transition measures, especially where employment or redeployment will be needed.
- **Seek influential local champions** within the civil, political, and business communities to advocate the change. Cultivate bipartisan support by linking the change to economic benefits, social inclusivity, and greater business competitiveness.
- **Effectively communicate successful transition narratives**, such as those centred on road safety, liveable cities, and breathable air. Share positive and incontestable metrics from data-driven evidence. Partner with influencers to boost the messages and reach diverse audiences.
- **Invest in a system that demonstrates the wide availability of net-zero options.** Strengthen links between active mobility and public transport and first- and last-mile infrastructure with a network of mobility hubs¹¹; integrate Mobility as a Service (MaaS) solutions with real-time data to improve the user experience and measure the positive outcomes.

MONITORING AND EVALUATION

Regular assessment ensures that unintended negative consequences are identified early on, allowing policymakers to introduce mitigation measures such as exemptions, financial support, or improved public transport options. Data-driven evaluations help balance environmental and traffic benefits with social equity, ensuring that sustainable urban mobility policies do not deepen existing inequalities.

Engaging affected communities in the evaluation process enhances fairness and effectiveness, leading to inclusive policy adjustments. By integrating social impact assessments into UVARs, cities can promote accessibility, fairness, and sustainability while minimising hardship for disadvantaged groups. This is also crucial when mitigation measures such as grace periods come to an end or subsidies are reduced over a given period of time.

Examples of KPIs include:

- Air quality improvement
- Carbon emissions reduction
- Traffic noise level reduction
- Modal shift
- Vehicle counts & emissions classifications
- Public health benefits
- Equity & accessibility
- Public perception and satisfaction
- Economic impact
- Road safety

CASE STUDIES

The following case studies showcase approaches, integration, challenges, and results of limiting vehicle access:

NEW YORK CITY, UNITED STATES

New York City’s implementation of congestion pricing faces significant political and public opposition but was ultimately enacted thanks to a combination of evidenced-based arguments, strategic adjustments, and strong leadership. Initially, the plan proposed a \$15 toll for drivers entering areas of Manhattan south of Central Park. However, due to widespread resistance and reassessment, the plan was revised with a reduced daytime toll of \$9, aiming to mitigate concerns while still addressing traffic congestion and funding for the city’s subway system.¹²

Considering the impact on vulnerable users, such as lower-income groups, a study by The Community Service Society, an anti-poverty organisation, supports congestion pricing due to its significant benefits for low-income New Yorkers. After analysing commuter patterns into the Central Business District by travel mode and income level, the society found that only 2% of the city’s working poor would be subject to the congestion fee. Furthermore, the expected \$15 billion from the toll roads will go towards transit improvements, such as enhanced accessibility of stations and services,¹³ encouraging more people to use public transit.

Since implementing the congestion charge, fewer cars are entering the zone, public transport mode ridership is increasing and local buses are moving 3.2% faster. Car crashes and injuries have declined and noise complaints have dropped by 45%, supporting the overall improvement to quality of life in the zone.¹⁴

¹¹ For more information on mobility hubs, check out UITP’s Mobility Hubs Policy Brief

¹² <https://www.france24.com/en/live-news/20250105-nyc-starts-driver-congestion-charging-despite-opposition>

¹³ <https://www.mta.info/tolls/congestion-relief-zone/better-transit>

¹⁴ <https://www.nytimes.com/interactive/2025/05/11/upshot/congestion-pricing.html>



▶ A new tramway in Oslo, partly financed by the toll-ring project

OSLO, NORWAY

The toll road in Oslo, also known as the ‘Oslo toll ring’, was first introduced in 1990 as a measure to finance infrastructure and city tunnels. Since then, the system has undergone several changes and extensions and has developed into a central tool in the city’s transport and environmental policy.

As of 2025, the toll ring continues to be a key element in Oslo’s transport and environmental strategy. Although the measure still faces opposition from certain groups, it is generally recognised as an effective tool for managing traffic, reducing emissions, and financing important transport infrastructure in the capital region.

- ▶ **Funding:** Tolling has generated significant revenue, which has been used to finance major infrastructure projects in the Oslo area, such as a new tramway. The current toll-ring package, from 2016-2045, is €8 billion.
- ▶ **Traffic reduction:** The introduction of the toll ring has led to a noticeable reduction in car traffic in the central areas of Oslo.
- ▶ **Environmental impact:** By reducing car traffic, the toll ring has played a crucial role in improving air quality in Oslo.
- ▶ **Change in travel habits:** The toll has encouraged many to choose alternative forms of transport such as public transport, cycling, and walking.
- ▶ **Urban development:** Reduced car traffic in the centre has opened up more pedestrian-friendly areas and car-free zones, which has changed the cityscape and improved the quality of life for many residents.

Despite being world leaders in the share of battery electric vehicles of new car sales, Norway cannot reach its climate targets through electrification. Boosting walking, cycling, and public transport ridership is the fastest and most inclusive solution to reach their goals.



▶ New express bus services introduced in outer London

LONDON, UNITED KINGDOM

In 2016, average concentrations of nitrogen dioxide (NO₂) were much higher in London than the rest of the United Kingdom (UK). Since then, the city has introduced and expanded key policies to reduce air pollution and protect public health. Annual roadside NO₂ concentrations across London dropped by nearly half (49%) between 2016 and 2023, and the number of monitoring sites across London exceeding the UK’s annual legal limit for NO₂ decreased from 56 sites in 2016 to just five in 2023. This happened thanks to the following measures:

- ▶ Introducing the world’s first 24-hour ULEZ in central London in 2019, expanding it to inner London in 2021 and then across all London boroughs in August 2023, making it the largest zone of its kind in the world.
- ▶ Accelerating Transport for London’s (TfL’s) transition to a cleaner bus fleet and introducing new express bus services in outer London (see photo below).
- ▶ Electrifying London’s taxi and private hire vehicle fleets by introducing strict new emissions-based licensing requirements.
- ▶ Supporting London’s electric vehicle revolution, with over a third of all UK charging points for EVs (over 18,600) in London.
- ▶ Encouraging more people to cycle more often by quadrupling the size of the London-wide cycle network by the end of March 2024, reducing danger at junctions, expanding TfL’s Santander Cycle Hire scheme, and delivering high-quality cycle infrastructure.

MEDELLÍN, COLOMBIA

Momentum for low-emission zones in Medellín has grown as awareness of air pollution's health impacts has increased, driven by activists and young politicians. Road transport, mainly old diesel trucks and buses, contributed 80–90% of air pollutants and significant CO₂ emissions.¹⁵

In 2018, Medellín's metropolitan authorities (10 municipalities) created two 'Protected Urban Air Zones' (ZUAPs). The first, in the city centre (2km²), had pollution levels up to five times the World Health Organisation (WHO) limit. The decree introduced:

- Stricter vehicle inspections and emission certifications
- Measures to reduce car use and promote active mobility
- Restrictions on older vehicles and incentives for low-emission options
- Public education campaigns

A four-stage plan (2020–2023) guided ZUAP implementation: planning, awareness, development, and consolidation. In 2021, the ZUAP launched with signage and public engagement. Temporary interventions included tactical urbanism, stricter access controls, cultural and educational events, and consultations with businesses. Air quality and traffic studies helped facilitate future planning.

However, despite early momentum, progress stalled. The plan lacked concrete targets, technical systems (for example, camera enforcement), and infrastructure upgrades. Political hesitation to impose unpopular restrictions, such as vehicle limits, led to weak public and business support. Many saw the changes as disruptive, rather than transformative.

Still, with renewed political will and clearer planning, Medellín has strong potential to revitalise and expand Colombia's first LEZ.

GENEVA, SWITZERLAND

A 2023 feasibility study explored implementing a congestion charge in Geneva for motorised four-wheel vehicles crossing an urban boundary, with tariffs ranging from CHF 1.00 to 2.50 based on time of day. The goal is to cut peak-hour traffic, with forecasts showing an up to 40% reduction.

Equity is a key concern. Lower-income commuters may face challenges, especially if they cannot adjust schedules or telework. However, only 12% of commuters — one-third low-income — would be significantly affected,

with most households spending less than 1% of income on tolls. Targeted measures, like reduced rates or exemptions, could address hardships.

Residents inside the toll zone would benefit from reduced traffic and pollution but may view the toll as unfair. Discounted or free trips, as in Milan, could boost public acceptance, although excessive discounts might weaken congestion-reducing effects.

Retail impacts are expected to be minimal — only 10% of shoppers rely on cars, with most using public transport or living nearby. Improved air quality and less noise could enhance the shopping experience. Revenue reinvestment in urban upgrades and business support could offset any downsides.

Supporting measures like better public transport, incentives for alternative modes, and continuous monitoring are essential to ensure fairness and long-term success.

MEXICO CITY, MEXICO



Mexico has embraced a 'Less Parking, More City' approach to urban planning, aiming to reduce car dependency and promote sustainable development. Historically, Mexican cities required developers to include a high number of parking spaces in new buildings, leading to urban sprawl, increased traffic congestion, and less space for pedestrians, public transport, and green areas. Recognising these issues, in July 2017, Mexico City implemented significant reforms to its construction code, eliminating mandatory minimum parking requirements for new residential and commercial developments. These changes were replaced with **maximum parking allowances**, aiming to promote more efficient land use and reduce reliance on private vehicles.¹⁷ This is expected to decrease the number of cars on the road by 17,000 every year through 2030.¹⁸

¹⁵ C40, 2022. Benefits of urban climate action. Technical Report.

¹⁶ <https://itdp.org/publication/sizing-up-parking-space>

¹⁷ <https://qz.com/1037799/mexico-city-got-rid-of-minimum-parking-requirements-and-other-cities-should-too>

¹⁸ <https://itdp.org/2024/09/19/proving-that-off-street-parking-reform-can-lower-emissions-and-housing-costs/>

Under the new regulations, developers are limited to a maximum of three parking spaces per housing unit, regardless of its size.¹⁹ For office spaces exceeding 100m², the limit is set at one parking space per 30m². Furthermore, in central areas of the city, developers who choose to build more than 50% of the allowed maximum parking must pay a fee.²⁰

This shift encourages the construction of more affordable housing and mixed-use developments while reducing construction costs. Moreover, the policies promote investment in public transport, cycling infrastructure, and pedestrian-friendly spaces, making cities more accessible and liveable.

The initiative aligns with global trends to curb excessive car use, reduce carbon emissions, and improve urban quality of life. Cities like Guadalajara and Monterrey are following suit, recognising the economic and environmental benefits of prioritising people over parking. In addition, São Paulo has seen that removing parking minimums near public transport stations enabled developers to build more social housing units closer to the city centre. Although challenges remain, such as resistance from car users, Mexico's approach is reshaping urban landscapes, fostering more vibrant, walkable, and sustainable communities.

BRUSSELS, BELGIUM

In line with Brussels' vision to reduce the number of private vehicles in the city centre, the [Green Deal Inclusive Car-Sharing](#), led by Way to Go, recently shared key recommendations for inclusive shared mobility and changing users' mindset, especially with vulnerable populations. Improving knowledge, digital skills, and the visibility of the offers can make solutions more appealing and accessible. This is often the case for families with young children, the elderly, and people living in suburban and more rural areas where public transport is not always available and can help them transition away from private journeys.

INCREMENTAL APPROACHES

Certain measures, such as LEZs, congestion charging, and parking regulations, should be carried out either in large dedicated zones across the city centre or the entire city; otherwise, air quality improvements and disincentives for private car users are not effective. Rather, air pollution and congestion problems will only be pushed towards the zone boundaries.

However, other measures can be tested and initially integrated in smaller zones, single streets, or even around similar services across a city/region, and for limited periods of time. An incremental approach helps build stakeholder acceptance, especially as they see the benefits. Such measures—for example, preventing motor vehicles around schools during

drop off/pick up hours and establishing pedestrianised streets and public transport/shared vehicle only streets—can then be expanded to zones/neighbourhoods or along corridor routes. They can be low-cost and start changing the attitude of the public towards allocating less space to private cars and more to active mobility and mass and shared transport.

DELHI, INDIA

India is a country known for its congested urban spaces. However, their pedestrianised street Chandni Chowk is an example of how a government can reduce access to motorised vehicles to encourage accessibility of public spaces, support thriving businesses and respect the cultural heritage. The success of the 1.3km stretch with visitors and locals shows the desire for more of these spaces.

COLOGNE, GERMANY

As part of Cologne's commitment to sustainable urban mobility, Venloer Straße in the Ehrenfeld district was converted into a one-way street in 2023. This initiative aimed to reduce traffic conflicts, enhance pedestrian and cyclist safety, and improve public space.²¹ The street, previously known for high accident rates and congestion, underwent a two-phase transformation. Initially, a 20 km/h traffic-calmed business zone was introduced, but the measure proved insufficient in reducing through traffic.²² A one-way system with a 30 km/h speed limit was then implemented, allowing for better traffic flow while maintaining accessibility.²³

Cyclists retained bidirectional access, and pedestrian infrastructure was significantly improved through reactivated traffic lights and new crossings. Furthermore, 60 short-term parking spaces were repurposed for outdoor seating, bicycle parking, and shared mobility services.²⁴ Community engagement played a key role, with public consultations shaping both short-term interventions and long-term planning.²⁵ Preliminary evaluations indicate a decline in accidents and improved public space quality, aligning with the broader vision of net-zero, socially inclusive urban environments.²⁶

As explored in UITP's congestion-free bus networks paper, the Czech city of Pilsen aligned the implementation of bus priority measures with their city-level strategy. Following the deployment of a car-free zone along America Street, the busiest trolleybus line in the city (500 bus trips/day, with 24,000+ daily passengers), resulted in public transport running faster, providing a more attractive, economical, and energy-efficient transport service to citizens and more space for active mobility. Two less buses were needed thanks to faster route cycles.

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23 Stadt Köln (2023b) Verkehrsversuch Venloer Straße – Phase 2. Available at: <https://www.stadt-koeln.de>

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► Cologne, Germany

CONCLUSIONS

In the transition to net-zero, some cities are tackling the challenge of unsustainable transport and congestion by increasingly regulating access of such vehicles to make space for more sustainable modes and ensure better use of public space. However, when implementing urban access regulations, cities must consider social elements to ensure inclusivity and equity. Policies that restrict vehicle access or impose congestion charges can disproportionately affect lower-income communities, workers with irregular hours, and individuals with disabilities. A socially inclusive approach requires designing policies through an inclusive lens, engaging diverse stakeholders, and assessing the social impacts of potential regulations.

RECOMMENDATIONS

- **Integrate mobility measures into broader strategies** that support public health, inclusion, and road safety. They should enhance service quality and promote green transport, multimodal connectivity, and behavioural change, rather than be implemented in isolation.
- **Build political and institutional support:** Educate policymakers on the social benefits of inclusive access regulations and create coalitions to champion equitable urban mobility policies. Clear and continued leadership is essential to build trust, foster long-term acceptance and, most important, ensure long-term emissions reductions.

- **Adopt an inclusive policy lens** when designing environmental strategies: Build your evidence-based framework, conduct impact and equity assessments, and ensure that negative impacts on vulnerable groups are minimised and mitigation measures are well established within these communities.
- **Engage local communities in decision-making:** Conduct public consultations, focus groups, and surveys, especially in marginalised areas, to ensure that transport-related changes align with community needs.
- **Ensure that the access regulations are implemented holistically:** Better integration between land-use planning and transport planning strengthens a modal shift and helps avoid moving the congestion and poor air quality to other areas of the city/region.
- **Integrate available, affordable, accessible, and acceptable transport** before or in parallel to access measures: Ensure that regulations consider social equity, engaging diverse stakeholders such as marginalised communities, low-income workers, and people with disabilities. Make sure that transport improvements, such as expanded bus and metro services, are well-funded, accessible, safe, and reliable to lower-income communities to prevent displacement and improve connectivity.
- **Introduce equity-based mitigation measures:** Provide subsidies, exemptions, or discounts for low-income commuters, essential workers, and individuals with mobility impairments to prevent disproportionate burdens. However, do not create too many rules and exemptions that confuse stakeholders and deter them from the main environmental goals. If the rules are not clear or not strong enough, you risk people not following them and/or not changing their behaviour.
- **Education and awareness raising:** Raise awareness about the benefits of sustainable mobility and the importance of transitioning to net-zero cities, engaging all actors in the process and fostering a culture of sustainability.
- **Monitor, evaluate, and adapt:** This entails piloting new approaches on a smaller scale, then uptake with agile mechanisms for ongoing assessment, monitoring against KPIs, and adapting regulations based on changing urban needs and feedback from communities. Roll out measures incrementally to reach climate goals, especially as public acceptance increases once people see the benefits to overall liveability.

REFERENCES AND FURTHER RESOURCES

- [CIVITAS REVEAL Project](#)
- [UPPER project: UVAR toolkit](#)
- [C40 Knowledge Hub: Clean air toolkit and checklist](#)
- [Urban Transport Group & ARUP, 2022. Equitable Future Mobility](#)

This is an official Policy Brief of UITP, the International Association of Public Transport. UITP represents the interests of key players in the public transport sector. Its membership includes transport authorities, operators, both private and public, in all modes of collective passenger transport, and the industry. UITP addresses the economic, technical, organisation and management aspects of passenger transport, as well as the development of policy for mobility and public transport worldwide.

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