# You Can't Fix Housing Without Fixing Mobility

## (and vice versa)

### Twelve Recommendations for Integrated Planning





Making sustainable transport happen.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

On behalf of

Federal Ministry for Economic Cooperation and Development

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# Three Core Messages

1. **Affordable housing is not affordable without affordable access.** Housing (and its costs) must be understood together with transport costs, commuting time, and access to jobs, services, and opportunities.

2. **Urban form determines long-term emissions and mobility demand.** Low-density, car-dependent development locks cities into high emissions, high infrastructure costs, and social exclusion for decades.

3. **Integrated planning is a governance issue.** Housing and mobility are still governed through separate institutions, funding streams, and planning frameworks. Sustainable urban development requires coordinated decision-making across sectors.

# Executive Summary

Housing and mobility are too often planned separately, even though they fundamentally shape one another. A home that is affordable on paper but poorly connected is not truly affordable. An energy-efficient building located in a car-dependent area is not sustainable. And a neighbourhood that cannot be navigated safely on foot or by public transport is not inclusive, regardless of what the housing units themselves look like.

This paper argues that housing affordability, sustainability, and inclusiveness cannot be achieved without integrating mobility and accessibility into urban planning. It identifies three structural failures: housing cost metrics that ignore transport expenditure; building-level energy analysis that excludes transport emissions; and planning institutions that treat housing and transport as separate sectors governed by separate authorities.

The argument is developed across three parts. First, the paper sets out why mobility is central to housing outcomes – not as a soft co-benefit, but as a determinant of cost, emissions, and daily life. Second, it describes how integration works across regional contexts and at three planning levels: the metropolitan region, the neighbourhood, and the individual building. Third, it translates these findings into twelve recommendations for integrated planning.

The window to act is narrow. Today's decisions about where housing is built, how densely, and with what mobility infrastructure will define emissions trajectories and household costs for decades. What is built wrong cannot be fixed by transport policy later.



Floridablanca, Colombia ©Carlos Pardo/flickr



**Paris, France**

Compact urban form, mixed land use, and strong public transport connectivity reduce travel distances and enable low-carbon mobility patterns

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# 1. The Problem: Housing Policy's Blind Spot

The global debate on housing is dominated by questions of supply and demand, energy efficiency of buildings, construction costs, and affordability. While these aspects are undoubtedly important, this perspective is incomplete. It systematically underestimates the role of mobility as a decisive factor in determining the sustainability, affordability, and inclusiveness of housing. A housing development may appear affordable on paper, but if it is located far from jobs, schools, healthcare and reliable public transport, residents pay the difference through high transport costs, long commuting times, and reduced access to opportunities. When transport costs and accessibility are taken into account, housing affordability looks fundamentally different.

Housing and mobility are closely intertwined, with each influencing the other. Cities have always developed around connections: along trade routes and rivers, at intersections, near transport hubs. This relationship continues today: transport systems shape how cities grow, how dense or dispersed they become, and how functions are organized in space. Mobility patterns are determined less by individual travel choices than by urban form, land-use structures, and the availability of transport infrastructure.

Housing location and urban form are therefore key factors shaping how people move. They determine whether daily needs can be met locally or require long-distance travel, whether public transport, walking, and cycling are viable options, and how much time and money households must spend on daily travel. Mobility becomes a key determinant of emissions, household expenditure, accessibility, and overall quality of life.

The relationship also works in the opposite direction. Mobility systems enable access to housing by expanding or constraining the range of feasible residential locations. High-quality public transport and multimodal accessibility allow households to reach jobs and services without relying on private cars, effectively increasing the supply of "accessible housing" within a city. Car-dependent systems limit access for non-drivers and reinforce spatial inequalities. The spatial footprint of mobility infrastructure also directly competes with housing: roads, parking, and traffic-dominated public space consume enormous amounts of urban land. Reducing space allocated to private vehicles – through lower parking requirements, shared mobility, and reallocation of street space – can free up capacity for housing, public space, and social infrastructure.

The nature of this relationship differs across regions. In many cities across sub-Saharan Africa, South and South-east Asia, and Central Asia, the majority of residents rely not on private cars but on informal paratransit: minibuses, motorcycle taxis, shared taxis, and rickshaws. Sub-Saharan Africa illustrates this dynamic particularly clearly. Rapid urbanisation has been accompanied by a sharp increase in the number of people living in informal settlements, many of which are located on the urban periphery and remain poorly connected. As a result, residents often depend on informal transport for long, costly, and frequently unsafe daily journeys. The challenge is not primarily to reduce car dependency but to improve, formalise, and integrate existing mobility systems while simultaneously expanding access to affordable, well-located housing. Policy responses therefore differ significantly from those developed in Western European or North American contexts.

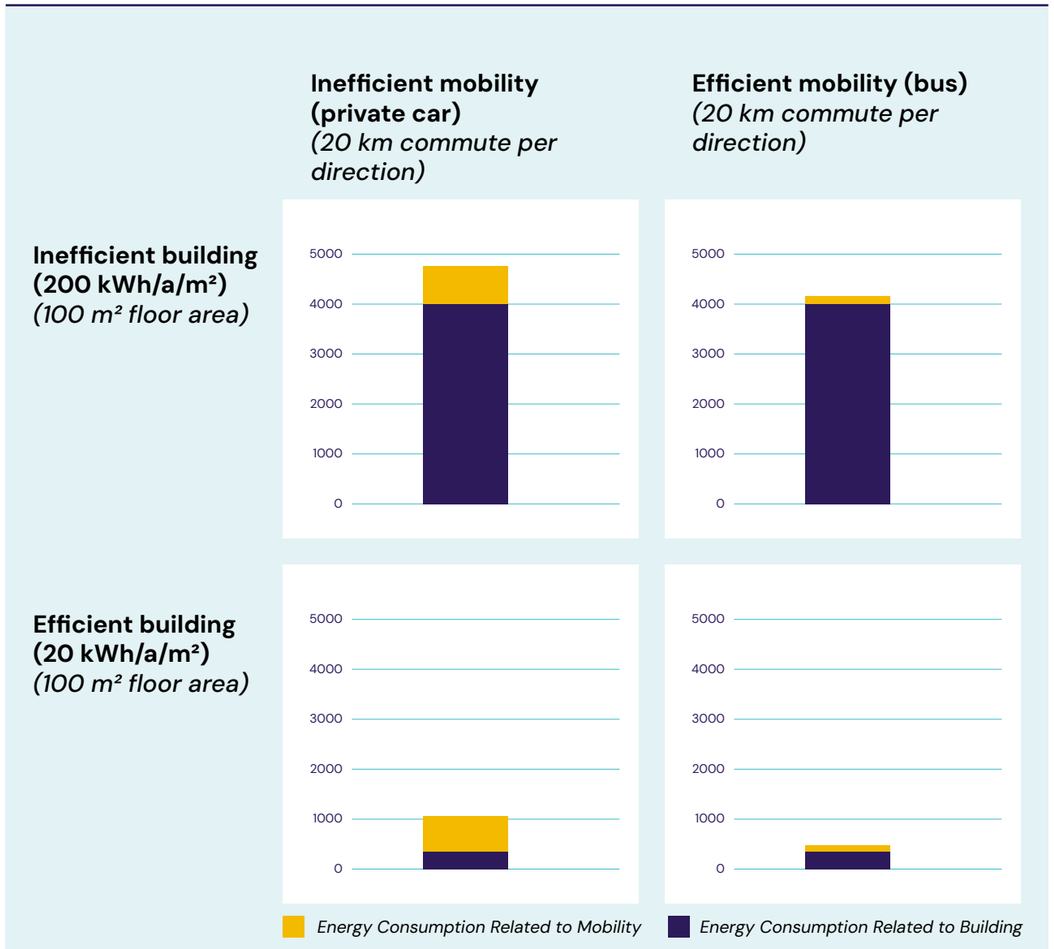
Planning and policy frameworks, however, continue to treat housing and mobility largely as separate sectors. The consequences are visible across every world region: new housing developments are frequently built without adequate public transport or active mobility infrastructure; household energy consumption is systematically underestimated because transport energy is excluded from building performance calculations; residents face high mobility costs that erode the apparent affordability of peripheral housing; and social inequalities are reinforced, particularly for low-income groups, women, elderly people, and those who rely on transit, walking, or cycling.

Without systematically integrating mobility into housing and urban planning, key development goals, such as affordability, climate mitigation, and social participation, remain only partially achievable.

**Core thesis: Housing cannot be considered affordable if residents must spend a substantial share of their income and time on transport. It cannot be considered sustainable if everyday life depends on private car use. Nor can it be considered inclusive if people cannot safely, reliably, and independently access jobs, education, healthcare, services, and social life.**

**Figure 1:**

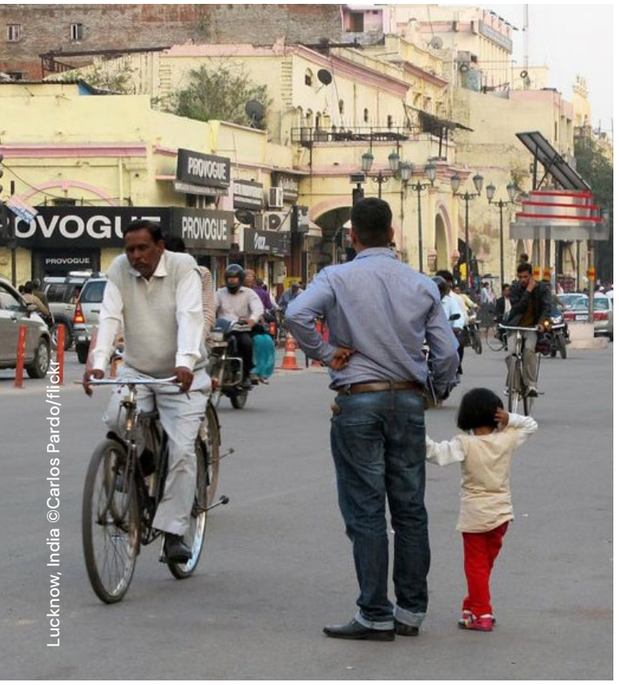
Building efficiency has the strongest influence on total energy demand, while efficient mobility further reduces energy use and system costs. Once building energy demand has been substantially reduced through high-efficiency standards and retrofits, mobility becomes a more important lever for further reductions. This is a simplified representation: outcomes depend on factors such as climate, building standards, travel distances, and mobility behavior. Data show total annual consumption in kWh.




*Data show total annual consumption in kWh.*
*Source: Armin Wagner, GIZ.*

# 2. Why Mobility is Central to Housing

The real costs of housing extend well beyond rent or purchase price. A dwelling's price tag reflects construction and land costs, but its true affordability reflects how it is financed, what subsidies underpin it, and whether transport costs are counted alongside rent. A superficially cheap peripheral location can become unaffordable once transport costs are factored in: a household spending 30% of income on rent and a further 25% on transport is not housed affordably, even if standard metrics suggest otherwise. Policies that consider rent alone risk misleading households and misallocating public subsidy toward locations that only appear affordable.



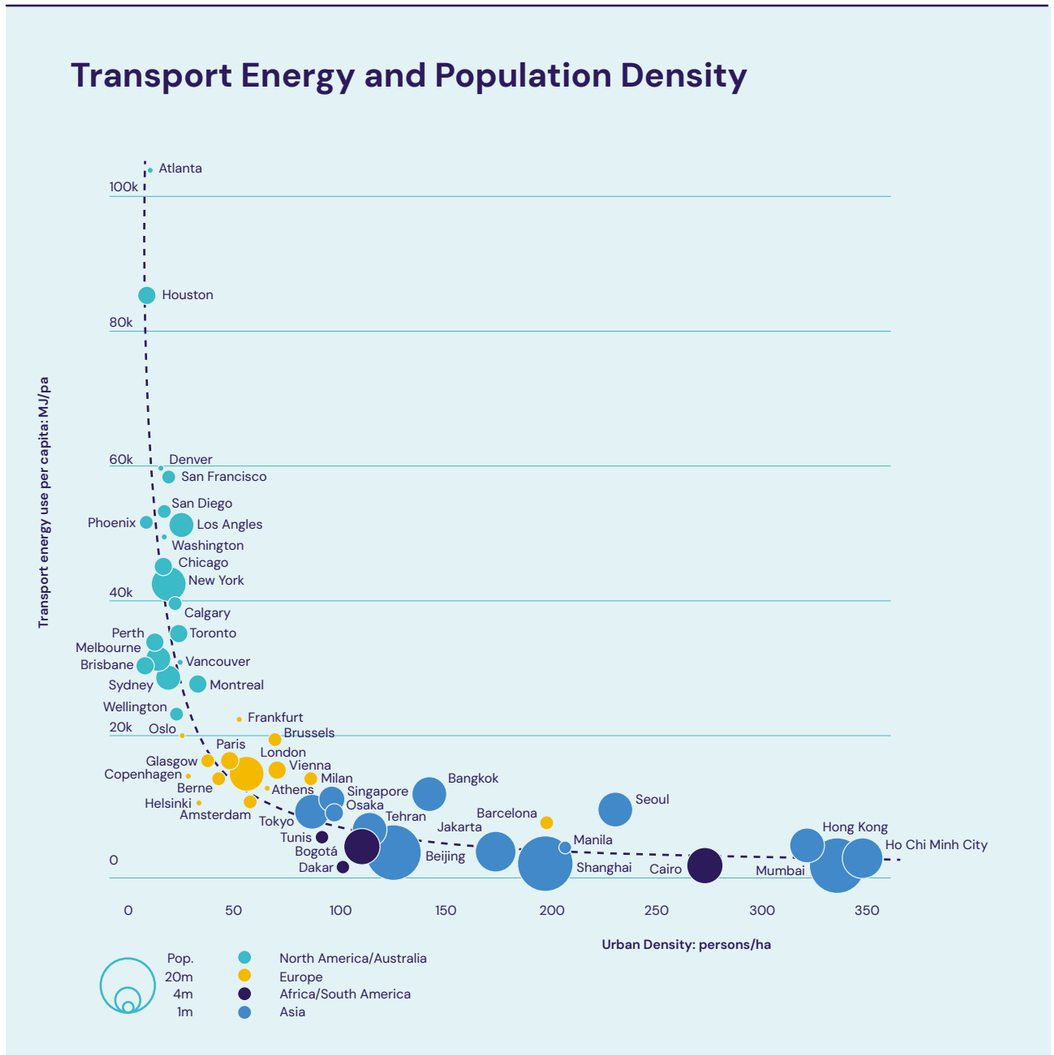
Lucknow, India ©Carlos Pardo/flickr

Affordability is only one of several dimensions through which housing must be judged. The World Cities Report 2026 identifies five dimensions: affordability, displacement, informality, resilience, and liveability. Displacement concerns who is pushed out of a neighbourhood as it changes; informality concerns the large share of urban housing built and occupied outside formal planning and land title systems, particularly widespread across sub-Saharan Africa, South Asia, and parts of Latin America; resilience concerns a settlement's capacity to withstand shocks such as floods, heatwaves, or economic downturns. The dimension most frequently misunderstood, however, is liveability.

Liveability is often treated as a soft or aspirational quality, yet it is best understood as the measurable, everyday experience of urban life: the time it takes a child to walk safely to school, whether a clinic can be reached in an emergency, how many hours of a household's day are consumed by commuting, whether an elderly resident can leave home without assistance. Each of these outcomes depends less on the dwelling itself than on its location and the mobility options available around it.

**Figure 2:**

The relationship between urban density and transport energy use demonstrates that compact, well-connected cities tend to have significantly lower per capita transport energy consumption, highlighting the importance of integrating housing reconstruction with sustainable mobility and public transport planning.




*Source: Illustration based on: Rode and Floater (2014, p8). Accessibility in Cities: Transport and Urban form, London School of Economics.*

Further, an energy-efficient building is not automatically sustainable if it is located in a car-dependent area, since gains from building efficiency can be offset, or even outweighed, by high transport energy use and emissions. Figure 2 illustrates the same logic at city scale: denser, well-connected cities tend to show markedly lower per capita transport energy consumption than dispersed, car-oriented ones. Sustainable housing therefore has to be understood in relation to urban form, accessibility, and mobility systems, not in isolation from them. As in Chapter 1, the practical weight of this relationship varies by context: where car ownership is already low and informal transport dominates, the lever is less about reducing car dependency and more about improving the safety, reliability, and integration of existing paratransit systems.

The reverse relationship also holds, and can cause harm if mismanaged. Mobility investment without accompanying housing policy tends to raise land and rental values along newly accessible corridors. Improvements like these need complementary measures. These include rent stabilisation, land value capture that channels part of the gain back into public investment, and inclusionary zoning that reserves a share of new housing for lower-income residents. Without such measures, the benefits of improved access tend to flow mainly to property owners and higher-income newcomers. The lower-income residents who most needed that access are often displaced instead. Transit-oriented development in several fast-growing Asian and Latin American cities has followed this pattern, with property values rising sharply near new metro or BRT lines while long-standing residents relocate further from the very stations meant to serve them.






**Kampala, Uganda**

Motorcycle taxis, minibuses, and private cars compete for the same road space.

©Carlos Pardo/flickr

# 3. Context Matters: Differentiated Approaches by Region

The principle that housing and mobility must be planned jointly holds everywhere, but its practical implications differ by context. How this principle translates into policy depends on income levels, institutional capacity, inherited urban form, and the maturity of existing transport systems.

## 3.1 Fast-Growing Cities: The Global South

The term "Global South" conceals substantial differences between regions. Urban growth across these contexts is not driven by a single process but by several distinct dynamics, each with different implications for the housing-mobility nexus.


Nairobi, Kenya ©JonasWresch, KfW

**In many sub-Saharan African cities,** the central challenge is to shape rapid urban expansion before it becomes locked into low-density, road-based patterns. Walking and cycling already account for a substantial share of daily trips, alongside informal and semi-formal transport systems that carry the majority of the population. Integrated housing-mobility planning must build on these existing mobility patterns: upgrading and formalizing the transport networks already in use, securing accessible land for housing, and aligning urban expansion with affordable transport before rising incomes accelerate private motorization.

**North Africa** follows a distinct urbanization trajectory, marked by more consolidated city structures and substantial government investment in strategic transport and urban infrastructure. The key policy challenge is to coordinate housing expansion with regional and metropolitan transport systems, ensuring that new residential development is connected to employment centres and public transport.

**In South Asia**, the housing-mobility nexus is shaped by extreme density, rapid metropolitan expansion, land constraints, and high levels of informality. The challenge is not simply to build compact cities – many already are compact – but to make density liveable, connected, and affordable. Integrated planning must address land access, slum upgrading, public transport capacity, walking conditions, and the spatial mismatch between affordable housing and employment.

**Latin America** is already highly urbanised and has a long history of mass transit innovation - bus rapid transit (BRT) systems, cable cars, metro expansion. Yet many metropolitan areas remain marked by deep socio-spatial inequality, peripheral low-income housing, and unequal access to jobs and services. Brazil's Minha Casa Minha Vida program illustrates the pattern. It delivered over 8.4 million housing units by 2024, but units built on the periphery left residents facing two- to four-hour daily commutes, and generated substantial additional infrastructure costs for municipalities. The regional priority is to close the gap between housing policy and the region's own transit expertise – through affordable transit, safer walking and cycling infrastructure, land value capture, and safeguards against displacement around new mobility investment.


Bogotá, Colombia ©JonasWresch, KfW

Across these contexts, the underlying principle holds: land-use and transport decisions must be made jointly, not sequentially. But the policy response differs. In some cities, the priority is preventing future motorisation lock-in; in others, it is upgrading informal systems, improving access in already dense settlements, or correcting inherited patterns of spatial exclusion.



Bogotá, Colombia © JonasWresch, KfW

## 3.2 Reconstruction Contexts: Ukraine and Syria

In post-conflict reconstruction settings, urban systems must be reorganised under extreme resource and time pressure, while linkages between building design, neighbourhood planning, and mobility remain weak.

Reconstruction offers a window to correct rather than reproduce past inefficiencies. For example, Ukraine's Soviet-era fabric was built around compact neighbourhoods and extensive tram and trolleybus networks. Guided by integrated mobility criteria, reconstruction could modernise this spatial logic rather than default to car-oriented sprawl. But this requires institutional readiness, political will, and technical frameworks alongside reconstruction efforts.

Syria faces a different starting point: less pre-existing formal infrastructure to restore, and reconstruction that is already happening ahead of any coordinated planning. Rebuilding homes and urban areas without addressing transport, accessibility, and connectivity risks reinforcing social inequalities, segregation of communities, and long-term car dependency. Integrating affordable public transport, walkability, and accessibility into reconstruction strategies can support more inclusive, resilient, and economically viable communities, while also creating opportunities for investment projects and coordinated international support.

## 3.3 Post-Socialist Cities: Eastern Europe and Central Asia

After 1990, cities across Central and Eastern Europe experienced rapid, largely unplanned suburbanisation driven by land privatisation, developer-led sprawl, and the collapse of integrated state planning. New housing estates across Poland, Romania, Bulgaria, Hungary, and the Baltic states became synonymous with car dependency, monofunctionality, and absent public transport links. This is not the whole picture, however: several of the same countries' capitals, Warsaw, Budapest, Bucharest, and Sofia, retained metro and tram systems built under state planning that still carry a large share of daily trips today. This inherited network is unevenly distributed, though. It is largely a capital-city phenomenon, and even there, coverage varies. Many secondary cities across the region rely on far thinner bus or trolleybus networks with limited capacity. These cities, and the car-dependent peripheries built onto all of them since 1990, now face the expensive and politically difficult task of retrofitting sustainable mobility into structures built for the car.

## 3.4 Brownfield Redevelopment and "Reborn" Cities

Brownfield redevelopment offers planners the opportunity to implement integrated low-carbon mobility systems from the ground up. HafenCity in Hamburg combines dense mixed-use development with strong public transport, limited parking, and high walkability.




Lviv, Ukraine © joanna_alexa/shutterstock

The regeneration of London's Docklands, anchored by the Docklands Light Railway and later the Elizabeth Line, demonstrates how large-scale brownfield transformation can be aligned with major transit investment to shape travel behavior and support sustainable growth. Medellín's Moravia district, a former municipal landfill, was upgraded together with the extension of the Metrocable aerial cable-car system connecting it to the city centre.




**Bogotá, Colombia**

Passengers wait at a bus stop with tactile paving for accessibility.

# 4. Three Levels of Integrated Planning

Effective housing-mobility integration operates across three levels: the city and metropolitan region, the neighbourhood, and the individual building. Each level sets the conditions for the next. Metropolitan structure determines whether a neighbourhood can support viable public transport; neighbourhood design determines whether buildings can be reached without a car; building design determines whether residents can actually use the mobility options available to them. Acting at only one level produces incomplete outcomes: transit investment without supportive land use under-fills trains and buses, mixed-use zoning without safe pedestrian infrastructure fails to reduce car dependency, and parking reform without active-travel networks at neighbourhood scale merely shifts the problem elsewhere.

The three levels also differ in reversibility. Metropolitan decisions on where growth occurs and along which corridors lock in mobility patterns for decades and are extremely costly to revise. Neighbourhood interventions allow more incremental adjustment. Building-level decisions are project-specific but aggregate, over time, into city-wide outcomes. Climate resilience is not a separate objective layered on top of this framework; compact, transit-served development that reduces per capita transport emissions and shortens emergency response routes is simply what sound integrated planning produces.

These three levels translate into distinct planning instruments, each operating on a different time horizon and led by different actors, summarised in Table 1.

**Table 1:** Planning levels for housing-mobility integration

| Planning level | Typical time horizon | Key housing-mobility question | Lead actors | Examples of plans / instruments |
|---|---|---|---|---|
| National / metropolitan spatial strategy | 20–30 years | Where should urban growth occur, and which corridors should structure it? | National government, metropolitan planning authority | National urban policy, National Urban Mobility Plan (NUMP), metropolitan development strategy, regional growth strategy |
| Regional / land-use planning | 10–20 years | Are housing densities and functions aligned with public transport, jobs, and services? | Regional planning authority, municipal governments | Regional plan, structure plan, land-use plan, zoning framework, metropolitan land-use strategy |
| Infrastructure and mobility investment planning | 5–20 years | Does public transport, walking, cycling, water, energy, and social infrastructure precede or accompany housing development? | National and city transport authorities, infrastructure agencies, DFIs | Sustainable Urban Mobility Plan (SUMP), transport master plan, public transport investment programme, corridor development plan |
| Neighbourhood / area planning | 5–15 years | Are streets, services, schools, shops, public spaces, and transit stops accessible by walking, cycling, and public transport? | City planning authority, district government, urban development agencies | Local area plan, neighbourhood plan, district plan, urban redevelopment plan, station-area plan, urban design framework |
| Street-space and public-realm planning | 1–10 years | Is street space allocated to support walking, cycling, public transport, accessibility, social interaction, greenery, and climate adaptation rather than only vehicle movement and parking? | City transport authority, municipal public works | Street design guide, street-space allocation plan, complete streets plan, tactical urbanism programme, parking management plan, traffic-calming plan |
| Development control / building permit | Project-based | Does the project meet mobility, parking, accessibility, and active travel requirements? | City planning authority, building permit office | Local development plan, detailed zoning plan, building permit, mobility impact assessment, parking regulation, development agreement |
| Monitoring and operation | Continuous | Are residents actually able to reach jobs, services, and social life affordably and safely? | City authority, statistical agencies, transit operators | Accessibility monitoring, combined housing and transport cost indicators, mobility surveys, modal split monitoring, social impact assessment |

## 4.1 City and Regional Level

Urban form is the most powerful determinant of long-term mobility demand. Once established, it is extremely costly to change. Four central approaches guide sustainable planning at this scale:

## 4.1.1 Compact, polycentric urban structures

### Planning objective:

Distribute urban growth across multiple interconnected centres served by high-capacity public transport, reducing average travel distances and enabling walking, cycling, and public transport to become viable for the majority of daily journeys.

### Planning approach:

Polycentric development directs housing, employment, services, and public functions toward dense, mixed-use centres located along existing or planned transit corridors. Rather than allowing dispersed peripheral expansion, urban growth is concentrated around transit nodes connected through regional transport networks, while green spaces and ecological corridors between centres are protected.

### Planning and regulatory prerequisites:

Effective polycentric transit-oriented development requires binding coordination between land-use planning and transport investment. Metropolitan planning authorities must designate priority growth zones around transit corridors and apply minimum density requirements within walkable catchment areas of stations and major transit nodes. Large-scale development beyond transit reach should only be permitted where legally committed transit infrastructure accompanies or precedes construction. Instruments such as land readjustment, compulsory acquisition, development agreements, and land-value capture mechanisms may be necessary to assemble fragmented land and finance infrastructure provision. Long-term statutory protection of green corridors and continuity across political cycles are essential to prevent fragmented, car-dependent urban expansion.

Without binding linkage between development approvals and transit investment, polycentric frameworks remain largely advisory. Developers are likely to prioritise locations with lower land costs regardless of accessibility, reinforcing car dependency and locking in unsustainable urban structures for decades.

### Copenhagen Finger Plan, Denmark

Prepared in 1947, the Finger Plan directed Copenhagen's urban growth along five suburban railway corridors while legally protecting green wedges between them. The framework has been maintained across multiple political administrations through binding statutory instruments.



Copenhagen, Denmark ©Jannis Werner/AdobeStock

## 4.1.2 Transit-Oriented Development (TOD)

### Planning objective:

Compact, mixed-use and accessible urban development around high-quality public transport, reducing car dependency while improving access to jobs, services and opportunities for all income groups, and enabling land value uplift to fund affordable housing and public infrastructure.

### Planning approach:

Metropolitan and regional planning authorities designate transit corridors and station areas as priority growth zones in statutory spatial plans, then require zoning rules permitting higher densities and mixed uses within 500–800 metres of stations. Infrastructure investment is sequenced so transit precedes or accompanies housing, not follows it. Minimum parking requirements are replaced by maximum standards in TOD zones.

### Planning and regulatory prerequisites:

Metropolitan and regional plans must designate transit corridors and station areas as priority growth zones in binding statutory documents, not advisory frameworks. Land-use and zoning plans must allow higher densities and mixed uses by right. Development agreements, land value capture mechanisms, and inclusionary zoning must be in place before land values rise, designing them in after development pressure arrives is consistently ineffective. Anti-displacement safeguards must be embedded from the outset.

### Curitiba, Brazil

Curitiba's 1966 master plan structured the city's growth around five radial corridors, paired with the creation of a dedicated planning institute, the Institute for Research and Urban Planning of Curitiba (IPPUC), to develop, monitor, and periodically revise the plan. Transit, land use, and road design were treated as one system from the outset: zoning permitted higher densities along the corridors and lower densities beyond them, so transit demand was built into the city's spatial structure rather than added to it later. The first dedicated busway opened in 1974 – the world's first bus rapid transit system.



Salvador, Brazil © Soninha Vill / GIZ Brasil

# Where public facilities are located is a housing–mobility decision

Schools, universities, healthcare facilities, hospitals and administrative offices are among the more predictable trip generators in a city, yet their location is often decided by education, health and other sector authorities with limited input from transport and housing planning. Land price tends to play a significant role, which can push facilities toward the urban periphery – often the same low-density, transit-poor areas where peripheral housing already concentrates car dependency. This can reproduce a pattern this paper identifies for housing: a site that appears inexpensive on the balance sheet may generate higher transport costs, longer journeys, and reduced access for those without a car.

These costs are not always fully accounted for. A facility's budget typically records land and construction, while the road upgrades, parking and additional services its location requires are paid for elsewhere, or not at all. As with housing, the true cost of a public facility must be assessed on a total-cost basis that includes the transport infrastructure its siting triggers, not land and construction alone.

This points to the same cross-sectoral coordination argued for throughout this paper. Bringing decisions on where to place trip-intensive public facilities into a joint housing-transport planning process, with education, health and social-service authorities at the table, and weighing their transport and accessibility implications before a site is fixed, could help address this. Locating schools, healthcare facilities and other high-traffic services within well-connected, mixed-use neighbourhoods, rather than on cheaper peripheral land, is one way to reduce car-dependent travel while improving everyday access for those who rely most on walking, cycling and public transport – including women, children, older people and lower-income households.



**Bogotá, Colombia**

Space allocated for pedestrians and cyclists at a city junction.

©Carlos Pardo/flickr

## 4.1.3 Mixed-use zoning and proximity planning

### Planning objective:

Reduce the need for motorised travel by ensuring that housing, employment, retail, education, and health services lie within walkable or cyclable distance for the majority of residents, making daily life achievable without a car. The 15-minute city concept operationalises this aim at neighbourhood scale.

### Planning approach:

City planning authorities audit residential areas to identify daily destinations, schools, clinics, markets, employment clusters, that lie beyond walkable distance, then use zoning reform and development incentives to bring those uses back in. Where density already exists but mixed use was suppressed by earlier zoning regimes, simplified ground-floor change-of-use permits can reintroduce services without new construction. None of this works in isolation from affordability: improved accessibility raises land values, and without inclusive zoning or rent regulation, the households who most need short trips are often displaced first.

### Planning and regulatory prerequisites:

Zoning frameworks must allow mixed use by right in residential areas, not as a special exception requiring lengthy approval. Simplified change-of-use permits for ground floors are the minimum viable instrument where regulatory capacity is limited. Anti-displacement measures must be in place, or under active development, before accessibility improvements drive up land values, not after. Health, education, and social service authorities must agree to co-locate facilities within residential areas rather than centralising provision in mono-functional zones.

### Barcelona Superblocks, Spain

Since 2016, Barcelona's Superblock model has removed through-traffic from internal residential streets by grouping several city blocks into a single unit, freeing the interior for pedestrians, greenery, and community use while redirecting circulation to perimeter roads. The city's Public Health Agency evaluated the model's impact through its "Salut als Carrers" (Health in the Streets) project, comparing conditions before and after implementation in several neighbourhoods.



Barcelona, Spain ©M McBey / flickr, CC BY 2.0

## 4.1.4 Development corridors aligned with public transport

### Planning objective:

Concentrate urban growth along high-capacity public transport corridors, shaping long-term mobility demand and heading off the car-dependent sprawl that follows whenever development gets ahead of transit. Where transit-oriented development governs density and design once transit is secured at a given station, corridor sequencing governs a prior question: whether large-scale development is permitted to happen at all before that commitment exists.

### Planning approach:

Growth is steered toward corridors where transport infrastructure, housing, jobs, and public services are planned and delivered as one integrated sequence, not as separate projects that happen to end up nearby. National and metropolitan authorities set binding transit-first rules: large-scale development in greenfield or peripheral areas can only proceed once high-capacity transit is legally committed, financed, and under contract, not merely promised. Station-area plans are drawn up ahead of time, coordinating density, land use, public space, and infrastructure around future transit nodes and capturing the land-value gains that accessibility creates. Utilities, water, energy, telecoms, and waste, align their own investment schedules to the same corridor phasing, so growth doesn't outrun the services it depends on.

### Planning and regulatory prerequisites:

Effective corridor sequencing depends on statutory, not voluntary, coordination between transport investment, land-use planning, infrastructure finance, and utility provision. "Legally committed" transit investment requires secured funding, approved procurement, and contractual implementation obligations, not political announcements or provisional budget allocations. Metropolitan plans must define mandatory sequencing rules that tie development approval to infrastructure delivery timelines. Land-value capture mechanisms, inclusionary zoning, and anti-displacement safeguards must be established before accessibility improvements raise land prices, not introduced retroactively once they have. Development finance institutions and infrastructure lenders can support this by conditioning corridor financing on enforceable sequencing guarantees, which helps prevent the speculative, transit-deficient expansion that otherwise fills the gap left by unenforced commitments.

### Dar es Salaam, Tanzania

Dar es Salaam's Rapid Transit system, East Africa's first bus rapid transit network, opened in 2016 with financing from the World Bank and the African Development Bank. Rather than displacing the city's existing minibus operators, known locally as daladala, the city's transport authority negotiated transition agreements with them before construction began, folding their routes and, in some cases, their drivers into the new system instead of competing against it. This sustained both ridership and political acceptance in a city where the vast majority of trips had long depended on informal transport. The corridor's success has come with a familiar cost, though: land values along the route have risen, and lower-income residents near the busiest stations have faced documented pressure to move elsewhere, a reminder that even well-sequenced transit investment needs deliberate safeguards against displacement, not just against congestion.




Dar es Salaam ©Thomas Cockrem/Alamy




**London, United Kingdom**

Low Traffic Neighbourhoods reduce through traffic in residential areas by using modal filters and redesigned street space. This improves safety and air quality, creates better conditions for walking and cycling, and supports more liveable neighbourhoods overall.

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## 4.2 Neighbourhood Level

At the neighbourhood scale, city-level decisions become physical: street width, a bollard, a bike lane. This is where a resident either walks to the transit stop or drives to it. That is why neighbourhood-level integration cannot rely on voluntary behaviour change or developer goodwill. It needs enforceable local mechanisms, embedded in local area plans and backed by binding development control.

### 4.2.1 Low-Traffic Neighbourhoods

**Planning objective:**

Cut through-traffic on residential streets to improve safety and air quality, and free up street space for pedestrians, children, and community life, without cutting off residents, deliveries, or emergency access.

**Planning approach:**

Modal filters, bollards, planters, camera enforcement, or one-way systems, block through-traffic and redirect it onto perimeter roads. The street space this frees up can be reallocated to wider pavements, cycling infrastructure, or seating and greenery. Such schemes rarely survive if designed without residents: those imposed top-down tend to provoke concentrated opposition, even where the broader public benefit is substantial. Freight access and deliveries need to be addressed in the initial design, not treated as an afterthought once businesses object.

**Planning and regulatory prerequisites:**

Without statutory backing, Low-Traffic Neighborhoods are vulnerable to reversal after every change in local administration. It must be embedded in local transport plans and secured through traffic regulation orders. Traffic modelling, accessibility assessment, and consultation with emergency services need to precede construction, alongside ongoing monitoring of whether traffic is displaced onto surrounding streets rather than reduced. Public consultation should favour representative methods, door-to-door engagement above all, since public meetings alone tend to be dominated by organised opposition. Accessibility for disabled residents and carers must be part of the original design, not a mitigation measure added after the fact.

## 4.2.2 Adequate density and land-use mix

### Planning objective:

Ensure residential neighbourhoods have sufficient density and functional diversity to support viable public transport, local services, and everyday activities without car dependency, reducing both household travel demand and the operational burden on transport systems.

### Planning approach:

Neighbourhood planning combines compact residential density with commercial, social, educational, and recreational functions within walkable distance. Planning authorities look for areas where population density is already sufficient to sustain local services and transit use, but where monofunctional zoning still limits accessibility, then use simplified permitting and flexible mixed-use rules to reintroduce local commerce and community functions. In post-socialist microrayons, the large residential districts built under Soviet planning principles, activating underused ground floors is one of the most cost-effective interventions available: it requires little physical reconstruction and depends mainly on regulatory adaptation and support for small businesses. Health, education, and social services need to decentralise into residential areas too, rather than concentrating in distant urban centres.

### Planning and regulatory prerequisites:

Zoning has to permit commercial and service uses within residential areas as of right, not through lengthy discretionary approval. In post-socialist contexts, national building and fire safety codes may need revision where Soviet-era standards restricted entire building types to single uses. Regulatory flexibility should be paired with targeted support for small businesses during the transition period. Proximity audits assessing access to daily services should prioritise the groups most dependent on it: women, elderly residents, caregivers, and children, whose mobility relies more heavily on short, multi-purpose trips on foot or by public transport.

**aspern Seestadt, Vienna, Austria**

Built on a former airfield, Seestadt was planned around a U2 metro extension that opened before large-scale residential occupation began. Street-level parking is prohibited; residents park in collective underground garages instead, freeing surface space for cycling and pedestrian use. The district's mixed uses are embedded directly in the statutory master-plan, not left to individual developers, with a target modal split of 40% public transport, 40% walking and cycling, and 20% private vehicle use.



Vienna, Austria ©Waldteufel/AdobeStock

## 4.2.3 High permeability for active mobility

### Planning objective:

Ensure safe, well-lit, and continuous walking and cycling connections between residential areas, transit stops, schools, healthcare facilities, and daily services for all residents, with particular attention to the mobility needs of women, children, elderly people, and persons with disabilities.

### Planning approach:

A connected network on a map is not the same as a network people are willing to use. Neighbourhood mobility planning has to treat pedestrian and cycling routes as socially and psychologically accessible, not just physically continuous, which means auditing them for gaps in lighting, surface quality, crossing safety, and perceived security, alongside the more obvious question of whether the path connects at all. Gender-responsive safety audits, conducted with women and girls as active participants rather than survey respondents, surface risks that conventional engineering assessments routinely miss: harassment hotspots, isolated stretches, and routes people avoid after dark, none of which show up in a standard connectivity or lighting survey. Priority corridors follow from how people actually move day to day, weighted toward those most dependent on walking and cycling: caregivers, children, older residents, and households without regular access to a car.

### Planning and regulatory prerequisites:

Standards for lighting, paving, weather protection, and route continuity need to sit inside statutory development control, not as guidance developers can choose to follow. Pedestrian access to transit stops and public facilities should be a direct, barrier-free requirement, with universal design built in for residents with reduced mobility. Participatory safety audits, with women, girls, older residents, and disability groups, belong in the design phase of a project, not as a retrofit once construction is finished and problems are already visible. None of this holds together without coordination between planning, transport, public health, and public safety institutions, since active mobility infrastructure only delivers on social inclusion if these sectors are working from the same brief.



## 4.2.4 Integration of new mobility services

### Planning objective:

Improve first- and last-mile accessibility, complement public transport systems, reduce dependence on private car ownership, and expand mobility options for households without regular access to a private vehicle.

### Planning approach:

Bike-sharing, e-scooters, car-sharing, demand-responsive transit, cargo-bike sharing, and Mobility-as-a-Service (MaaS) platforms work best treated as components of regulated mobility infrastructure, not as commercial consumer products left to find their own market. Municipal authorities fold them into wider public transport and land-use strategy through coordinated station planning, shared ticketing, mobility hubs, and digital interoperability requirements. Mobility hubs that combine several modes belong in housing developments, transit stations, and neighbourhood centres, where they do the most to reduce reliance on private cars for short and intermediate trips. Parking policy is one of the more effective levers here: developers can be allowed to reduce minimum parking provision in exchange for shared mobility spaces, transit subscriptions, bike-sharing facilities, or a resident mobility budget.

### Planning and regulatory prerequisites:

This only works with sustained public regulation, not a one-off licensing round. Operating licences should carry service-area obligations that require coverage in peripheral and lower-income neighbourhoods, since operators left to choose for themselves concentrate almost entirely in profitable central districts. Data-sharing and interoperability requirements need to be set from the outset, not negotiated after operators are already established, so that private services integrate with public transport rather than running parallel to it. Public space for docking stations, charging points, and interchange facilities belongs in local development plans and station-area design guidelines, not left to ad hoc allocation. And a public transport authority needs to hold the coordinating role throughout, or the system fragments into competing private operators with no shared plan.



**Bogotá, Colombia**

Commuters share road space at an intersection.

©Carlos Pardo/flickr

## 4.3 Building Level

Buildings are the starting and end point of almost every trip. Their design directly influences the mobility behaviour of occupants, and the choices that individual buildings make possible or foreclose accumulate at neighbourhood and city scale.

### 4.3.1 High-quality facilities for sustainable mobility

#### Planning objective:

Make sustainable transport the default convenient choice by requiring new buildings to provide the physical infrastructure, bicycle parking, e-mobility charging, and active travel access, that enables residents and occupants to choose walking, cycling, and public transport without additional effort or cost.

#### Planning approach:

National building codes set mandatory minimum standards for cycling facilities, e-mobility charging, and active travel access in all new residential and commercial buildings above a minimum scale. City planning authorities may apply higher local standards through permit conditions for larger or transit-adjacent developments. Compliance is verified by building permit offices at permit stage, post-occupation enforcement is ineffective.

#### Planning and regulatory prerequisites:

National building code revision is the primary instrument; local authorities cannot compensate for absent national standards in fragmented building control systems. Building industry training and standard specifications must be developed alongside the code revision to ensure the construction sector can comply cost-effectively. E-mobility supply chains and installation capacity must be available at scale before requirements are imposed on smaller developers. In lower-income country contexts, green building certification frameworks, such as IFC EDGE, can drive building-level mobility standards ahead of formal building code reform, creating market demand that accelerates code revision.

## 4.3.2 Low-mobility buildings

### Planning objective:

Reduce car dependency at its point of origin – the building scale – by designing residential and commercial developments around public transport access, active mobility, and shared transport systems rather than private vehicle ownership. The objective is to shape the default mobility behaviour of future residents and users before occupation occurs.

### Planning approach:

Urban development policy integrates mobility management directly into building design and development approval processes. Residential and mixed-use projects within defined transit catchment areas are required to prepare mobility plans demonstrating how occupants will access public transport, cycling infrastructure, pedestrian networks, and shared mobility services. Car-free or car-limited developments prioritise direct pedestrian access to transit stops, secure bicycle storage, mobility hubs, and shared vehicle facilities while relocating necessary parking provision to peripheral or collective structures. Municipal authorities can incentivise these models through density bonuses, reduced parking minimums, expedited permitting procedures, or development fee reductions. The sequencing of infrastructure remains critical: high-quality transit services and active mobility infrastructure must be operational before or alongside residential occupation rather than introduced retrospectively.

### Planning and regulatory prerequisites:

Effective low-mobility development requires integration between planning regulation, transport policy, and financial institutions. Building permit authorities must verify compliance with mobility plans during the approval process and establish enforceable standards for cycling facilities, pedestrian accessibility, and shared mobility integration. Parking regulations should permit or encourage unbundling, whereby parking spaces are priced separately from housing units rather than embedded within overall housing costs. At the same time, mortgage providers, insurers, and real estate valuation systems must recognise transit-accessible, low-car developments as stable and desirable assets rather than treating reduced parking provision as a market risk. Public transport authorities also need to guarantee minimum service frequencies and long-term operational reliability to make car-free living functionally viable for residents.

Low-mobility housing strategies fail when planning requirements are not matched by reliable mobility alternatives. Residents are unlikely to accept car-free or car-limited living conditions where transit services are infrequent, poorly connected, or inaccessible. Similarly, if financial institutions continue to prioritise parking provision within property valuation frameworks, market incentives will directly undermine planning objectives. Car dependency therefore cannot be reduced through building regulations alone; it requires coordinated transport provision, pricing reform, and institutional alignment across planning and finance systems.




Istanbul, Türkiye ©Carlos Pardo/flickr

## 4.3.3 Parking management

### Planning objective:

Internalise the full cost of car ownership in building design and land use by replacing mandatory minimum parking requirements with context-sensitive maximum standards, removing a subsidy that is currently embedded in nearly all development and passed on to every resident, whether or not they own a car. Implicitly subsidised parking is one of the most persistent drivers of unnecessary car use, and mandating it structurally subsidises car ownership even in places where most residents don't own one.

### Planning approach:

National governments revise building codes to eliminate minimum parking ratios in transit-served areas and set maximum standards calibrated to local transit access and car ownership rates. City authorities unbundle parking from housing prices, offering it as a separately priced service rather than a built-in cost every buyer pays regardless of need. On-street parking pricing has to be maintained or introduced alongside this, otherwise building-level reform simply pushes demand onto the street instead of resolving it. The transition from minimum to maximum standards works best moving from uniform city-wide rules toward standards calibrated to transit proximity, rather than applied uniformly regardless of location.

### Planning and regulatory prerequisites:

Building code reform is a national government responsibility; city authorities can accelerate it through transit-proximity exemptions in local zoning, but cannot substitute for the absence of national standards. Political viability depends heavily on how the reform is framed and evidenced: it succeeds where parking minimums are reframed as a tax on renters and non-drivers rather than as a sustainability measure, and where pilot schemes establish real evidence on street parking demand before the wider reform debate begins, rather than leaving that evidence to be contested after the fact.

## 4.3.4 Integration of energy and mobility systems

### Planning objective:

Enable buildings to function as active nodes in urban energy and mobility systems, combining on-site renewable energy generation with EV and e-bike charging to reduce household transport emissions, lower energy costs, and reduce peak demand on electricity grids.

### Planning approach:

National building codes require solar-ready roofs, EV and e-bike charging infrastructure, and battery storage provision in all new residential buildings above a minimum scale. Smart charging is coordinated with grid operators to avoid peak demand stress. In contexts where e-motorcycle adoption is accelerating across Africa and Southeast Asia, building-integrated charging for two- and three-wheelers is incorporated as a priority in building code revisions, not treated as a future consideration. Development finance institutions condition green building financing on mobility-energy integration criteria, creating market demand ahead of code reform.

### Planning and regulatory prerequisites:

Energy utilities need a seat at the table from the start of building code reform, not a briefing after codes are already adopted, so that grid upgrade standards and smart charging specifications are aligned with building requirements rather than retrofitted around them. The major green building certification schemes, the International Finance Corporation's EDGE standard for emerging markets, Germany's DGNB system, and the UK's BREEAM, should weight e-mobility charging criteria equivalently to energy performance criteria, since this is what creates the market pressure that accelerates code reform in the first place. Phased compliance timelines give the supply chain and installation capacity room to develop before requirements reach smaller or more cost-constrained developments.

©Carlos Pardo/flickr

## Guangzhou, China

Passengers exit a bus at a station along Guangzhou's Bus Rapid Transit (BRT) corridor, one of the world's highest-capacity BRT systems.

©SUITP

## Bonn, Germany

Residential street with limited space, using advisory cycle lanes on both sides.

# 5.

# Twelve Recommendations for Integrated Housing and Mobility Planning

1. Adopt combined housing and transport costs as the standard metric for residential affordability in all national and local housing strategies. No housing programme should be assessed on rent or price alone.

2. Require integrated housing-mobility assessments for all major new residential developments, as a condition of planning permission or public funding. Developments that fail minimum accessibility thresholds should not receive public subsidy or approval regardless of their building-level energy performance.

3. Reform parking requirements from minimum to maximum standards in all urban areas served by public transport. Apply context-sensitive standards based on transit accessibility and car ownership rates.

4. Mandate Sustainable Urban Mobility Plans (SUMPs) developed jointly with housing strategies at city and metropolitan level, including in rapidly urbanising cities in the Global South and in post-conflict reconstruction contexts. Transport planning and housing planning must share a single strategic document, not two parallel ones.

5. Implement transit-oriented development (TOD) guidelines that tie permitted densities and development rights to public transport quality and proximity, incentivising housing concentration near transit nodes and discouraging it in car dependent locations.

6. Establish land value capture mechanisms alongside all major transit investments, ensuring that a portion of land value uplift funds affordable housing, transit operations, or public infrastructure preventing the displacement of lower income residents from transit-accessible areas.

7. Integrate mobility criteria into all building regulations and green building certification systems, with requirements for bicycle parking, active travel facilities, EV and e-bike charging infrastructure, and maximum (not minimum) car parking ratios. Mobility performance should be weighted equally to energy performance.

8. In reconstruction contexts, make integrated spatial and mobility planning a precondition for reconstruction funding. Housing rebuilt without reference to transport infrastructure reproduces the inefficiencies of the past at enormous cost.

9. In rapidly urbanising cities, prioritise the formalisation and improvement of existing informal paratransit networks as part of integrated mobility and housing strategies, rather than bypassing them with new formal systems that ignore existing operators and users, as well as existing spatial patterns.

10. Anchor housing-mobility integration across the full planning hierarchy, from national spatial strategies and metropolitan plans to land-use plans, zoning frameworks, street-space design, development agreements, and building permits. Integrated planning must not remain a strategic ambition. It must be translated into binding rules on land allocation, density, mixed use, parking, public transport access, walking and cycling infrastructure, and developer obligations. Once low-density housing locations, road-based layouts, or minimum parking requirements are fixed in plans or permits, later correction becomes costly and politically difficult.

11. Establish joint housing-transport planning units at city and regional level, with integrated budgets and decision-making authority, to overcome the institutional fragmentation that is the primary barrier to integrated planning. Structural separation between housing and transport agencies is not a technical problem, it is a governance choice, and it can be changed.

12. Invest in planning capacity and technical assistance – particularly in low- and middle-income cities and in reconstruction contexts – to enable local authorities to design, implement, and monitor integrated housing-mobility strategies. International development institutions should make this a core, funded component of all urban investment programmes, not an optional add-on.

# 6. What Is Built Wrong Cannot Be Fixed Later

Buildings alone will not solve the housing challenge. Energy efficiency and construction costs matter, but the true sustainability and affordability of housing are determined by its relationship to location, urban structure, and mobility options.

Urban form and accessibility shape mobility behaviour, and thus energy consumption, emissions, household costs, and quality of life. Early action is decisive. Today's housing and infrastructure decisions will define mobility patterns for decades. Once car-dependent structures are built, they are extraordinarily costly and politically difficult to undo. Retrofitting a car-dependent suburb with public transport, cycling infrastructure, and mixed uses is possible, but at several times the cost of getting it right from the start.

This is not merely a planning principle. It is a fiscal and climate imperative. Reconstruction programmes, housing subsidies, and development finance that fund car-dependent housing are locking in emissions and costs that will burden future generations. International institutions, national governments, and city authorities have a narrow window, to embed integrated mobility principles before the next wave of built fabric becomes permanent.

**What is built wrong cannot be fixed by transport policy later. The time to integrate housing and mobility planning is before the concrete is poured.**




**Quito, Ecuador**

Segregated cycling infrastructure separates bikers from bus and car traffic.

©Carlos Pardo/flickr

## Further Reading

**TUMI** – Transformative Urban Mobility Initiative
https://transformative-mobility.org/

**MYC** – MobiliseYourCity
https://www.mobiliseyourcity.net

**SUTP** – Sustainable Urban Transport Project
https://www.sutp.org

**ASI** – Avoid, Shift, Improve Framework
https://transformative-mobility.org/multimedia/inua-9-avoid-shift-improve/

10 Principles for Sustainable Urban Transport
https://sutp.org/download/10354/?tmstv=1778569904

## Glossary

**BREEAM** Building Research Establishment Environmental Assessment Method – UK green building certification system

**BRT** Bus Rapid Transit – High-capacity bus service operating in dedicated road corridors, capable of reaching metro-level ridership at a fraction of metro construction cost

**DART** Dar es Salaam Rapid Transit – East Africa's first BRT system, opened in 2016

**DFI** Development Finance Institution – Public or quasi-public financial institution providing long-term financing for development projects

**DGNB** Deutsche Gesellschaft für Nachhaltiges Bauen – German green building certification system

**EBRD** European Bank for Reconstruction and Development

**EV** Electric Vehicle

**FSI / FAR** Floor Space Index / Floor Area Ratio – The ratio of permitted building floor area to plot area. Higher FSI near transit corridors is the primary TOD instrument.

**GIZ GmbH** Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH

**GMEDRI** Guangzhou Municipal Engineering Design and Research Institute

**IFC** International Finance Corporation – Member of the World Bank Group; developer of the EDGE green building certification standard used in emerging markets

**IPPUC** Instituto de Pesquisa e Planejamento Urbano de Curitiba – Curitiba's urban planning institute, responsible for designing its integrated BRT and land-use planning system.

**ITDP** Institute for Transportation and Development Policy

**LEED** Leadership in Energy and Environmental Design – US green building certification system.

**LTN** Low-Traffic Neighbourhood – A residential area where modal filters restrict through-traffic while maintaining local access.

**MaaS** Mobility as a Service – An integrated mobility model combining public transport, bike-sharing, car-sharing, and other modes through a single digital platform

**MTR** Mass Transit Railway – Hong Kong's rail transit operator, known for integrating residential and commercial development directly above stations

**NUMP** National Urban Mobility Plan – A national-level strategic framework for sustainable urban mobility, coordinating policy across cities and sectors

**SUMP** Sustainable Urban Mobility Plan – A city-level strategic document integrating public transport, walking, cycling, and shared mobility into a single planning framework

**TOD** Transit-Oriented Development – Compact, mixed-use, and accessible urban development concentrated around high-quality public transport

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**Hamburg, Germany**

Planter boxes preventing illegal parking.

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