

# Connecting Mobility Solutions Across The Atlantic

## IURC NA Event on Sustainable Urban Mobility and Transport Infrastructure | Boston, USA

On June 16-17, 2025, the Massachusetts Department of Transportation (MassDOT) welcomed in Boston representatives from cities and regions across Europe and North America for a thematic exchange on sustainable urban mobility and transport (SUMT). The event brought together over 40 delegates from 17 cities and regions across the U.S., Canada, and the EU, under the framework of the International Urban and Regional Cooperation North America (IURC NA) programme.

Boston served as an ideal backdrop for the exchange. A historic city shaped by successive waves of transport infrastructure, Boston now stands at the forefront of efforts to repurpose and reintegrate mobility with the contribution of various stakeholders such as MassDOT and

the Massachusetts Bay Transportation Authority (MBTA), each within their respective competencies, considering both the broader scale of urban transformation and the fine-grained detail of neighbourhood streets.

The two-day exchange featured workshops, peer-learning activities and on-site visits exploring how Boston is adapting transport infrastructure to new environmental, social, and technological demands, dealing with economic barriers. With a particular focus on climate adaptation and resilience of mobility infrastructure, urban reconnections and community empowerment, decarbonisation, efficiency and equity of public transport, as well as road safety and curbside management, the event offered a platform for discussing long-term strategies and exchanging experiences and best practices to make streets safer, more equitable and efficient. The event was further enriched by specific sessions dedicated to exploring projects and programmes currently underway by the participating cities under guidance from the European Union.



Figure 1 – Representatives from the European Union, United States and Canadian cities and regions, the hosts from MassDOT and the IURC NA team in front of Stony Brook subway station (Orange Line), along the Southwest Corridor – June 16th, 2025. © Stefano Zenoni

<sup>1</sup> In Boston the responsibility for infrastructures, public transport, and, more generally, mobility policies are shared among different actors such as the Federal Government, the Commonwealth of Massachusetts, State Agencies, the City of Boston, and public transport operators.

## The host: MassDOT bridging governance and innovation

The Massachusetts Department of Transportation (MassDOT), as a state agency, is responsible for road safety, the enforcement of vehicle safety standards, the design and delivery of road infrastructure, as well as the planning and coordination of public transport across the state, through the Massachusetts Bay Transportation Authority (MBTA) and other local agencies. As a division of MassDOT, the MBTA provides subway, bus, Commuter Rail, ferry, and paratransit service to eastern Massachusetts and parts of Rhode Island.

To ensure rapid and flexible action within the Department, a dedicated unit called [MassDOT-Lab](#) was established, to assess and prototype new services, policies, and ideas through small-scale pilots that foster rapid learning, adaptation,

engagement with external partners and communities, and close cooperation with other agencies and public authorities. The approach is collaborative and experimental, with a strong focus on swift implementation. Through MassDOT-Lab pilot projects, the Agency can test initiatives that may later serve as the foundation for long-term, larger-scale strategies.

The overall framework is represented by the Massachusetts 2050 Transportation Plan of the Commonwealth of Massachusetts, the State's strategic planning document that sets out the main objectives for the next 25 years. Approved in 2024, the Plan highlights particularly the following themes, in coordination with the Federal Level:

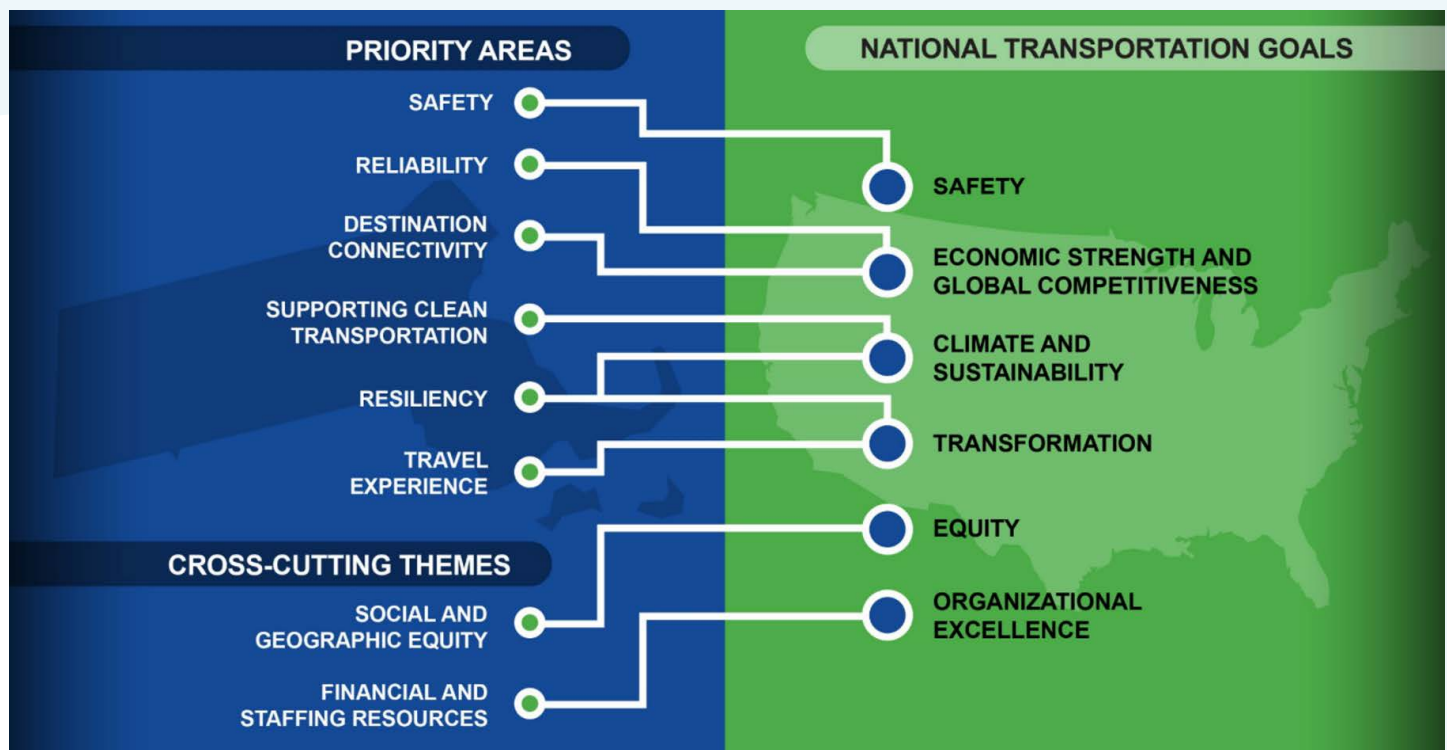


Figure 2 - Diagram of the Massachusetts 2050 Transportation Plan illustrating the relationship between priority areas, cross-cutting themes, and national transportation goals

For each one of these themes, the document provides analyses, specific objectives, timelines, and sets out the standards that state agencies are required to pursue.

Consequently, the participants in the thematic event organised by IURC NA and MassDOT had the opportunity to gain an

understanding of the agency's priority issues, as well as to explore ongoing projects in the Boston area, ranging from small neighbourhood-scale initiatives to more ambitious global programmes.

The following table, based on the overarching objectives of the Massachusetts 2050 Transportation Plan, presents some of the topics selected for the thematic event and the related projects examined on site.

| Challenges & topics derived from the Massachusetts 2050 Transportation Plan                       | Related MassDOT's vision and goals presented during the IURC NA event                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Related projects in Boston visited and/or selected and presented during the event                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Resilience</b>                                                                                 | Designing mobility spaces and infrastructure to integrate climate adaptation solutions at every scale, including enhanced green spaces, support for biodiversity, reduction of ground-level temperatures, and stormwater management.                                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• <a href="#">The Southwest Green Corridor</a>, a linear park adjacent to public transport services, featuring a cycle path through green spaces, tree planting, and integrated water management.</li> <li>• <a href="#">Green roofs on bus shelters along Bus Route 28</a>, improving climatic comfort for passengers, while also supporting water management, biodiversity, and pollinating insects.</li> </ul>                                                                                 |
| <b>Destination Connectivity – Social and Geographic Equity – Financial and staffing resources</b> | Repurposing space occupied by major road infrastructure by covering it to create new land for collective use, enhance sustainable mobility connections, and generate revenue to reinvest in public transport. Involvement of stakeholders and communities in the processes.                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>• <a href="#">The Parcel 12/Lyric project</a> involving the decking over of the Massachusetts Turnpike, in collaboration with private developers and the City of Boston, to generate revenue, provide public spaces, improve access to public transport, and enhance the comfort of transit stops.</li> <li>• <a href="#">"Reconnecting Chinatown" project</a>, to create an "attractive connection between the two sides of the open-cut Massachusetts Turnpike (I-90) in Chinatown".</li> </ul> |
| <b>Reliability, Destination Connectivity, Travel Experience</b>                                   | Strengthening the public transport network through the introduction of high-capacity bus corridors, by adopting lane prioritisation measures inspired by Bus Rapid Transit systems, improving the efficiency and appeal of public transport.                                                                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• <a href="#">Columbus Avenue redesign project</a>, with the first centre-running bus lane in New England, providing a fast connection from Downtown to southern neighbourhoods.</li> <li>• Washington street Silver Line dedicated lane.</li> </ul>                                                                                                                                                                                                                                              |
| <b>Supporting clean transportation</b>                                                            | Progressive electrification of both road-based and rail systems, contributing to the reduction of greenhouse gas and pollutant emissions. The Commonwealth of Massachusetts has set a general decarbonisation target of an 85% yearly emission reduction by 2050 compared to 1990 levels through the 2050 Decarbonization Roadmap. With the Clean Energy and Climate Plan for 2050, it has also established specific targets for the transport sector: 34% reduction by the end of 2030; 86% reduction by the end of 2050 (equivalent to a decrease of 4.1 million tons of CO <sub>2</sub> eq). | <ul style="list-style-type: none"> <li>• New Silver Line hybrid vehicles</li> <li>• <a href="#">Electrification of the Fairmount Commuter Rail Line</a>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Safety</b>                                                                                     | Redesigning the layout of neighbourhood streets by introducing measures to enhance bike ridership, calm traffic, and improve the safety of pedestrian crossings, and additionally managing curbside use flexibly to respond to the needs of businesses, commercial activities, and residents, through a community engagement process.                                                                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>• <a href="#">Curbside redesign of Tremont Street</a> to "prioritize safety and comfort for people walking, manage curb access, and make dedicated space for people on bikes."</li> </ul>                                                                                                                                                                                                                                                                                                         |



Figure 3 - The Parcel12/Lyric project with the green plaza over the Massachusetts Turnpike - © Google Maps content - Google



Figure 4 - Columbus Avenue with the first centre-running bus lane in New England - © Stefano Zenoni

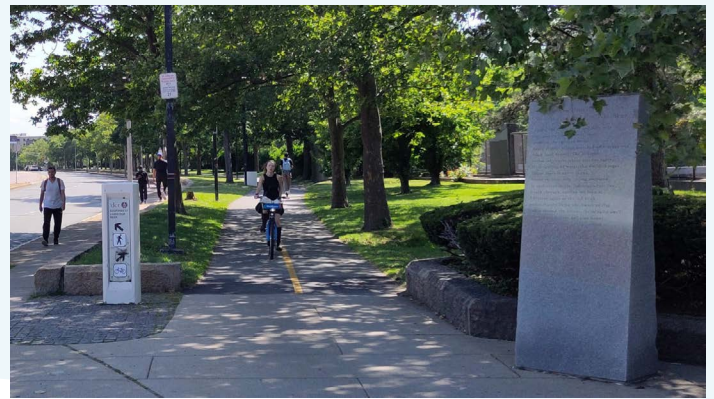


Figure 5 - The South West Green Corridor, a sustainable mobility infrastructure - © Stefano Zenoni

## The European approach: Sustainable Urban Mobility Plans (SUMP)

For over twenty years, the European Union has designed overall mobility strategies intended to be adopted by Member States and subsequently implemented at the local and urban scale. The comparison with the planning model of the Commonwealth of Massachusetts was one of the most interesting aspects of the thematic event. The EU has identified SUMP as a key tool for managing urban mobility in the cities of its Member States. The EU supports their development and implementation through dedicated programmes, funding (i.e.: [CIVITAS Initiative](#), [ERDF & Cohesion Fund](#)), [Connecting Europe Facility \(CEF-Transport\)](#), [Horizon Europe & Mission Cities](#), [EIB's ELENA facility](#), [JASPERS Advisory \(EIB\)](#), [Interreg](#), [URBACT](#)), and methodological guidance (i.e.: [SUMP Guidelines \(2nd Edition, 2019\)](#), [SUMP Topic Guides](#), [ELTIS / Urban Mobility Observatory](#)).

SUMPs are strategic plans designed to satisfy the mobility needs of citizens and businesses, while improving the quality

of life in urban areas, through an integrated approach. They play a central role in achieving the EU's objectives in terms of road safety, environmental sustainability, emissions reduction, improved public space, and social inclusion. The alignment between the European objectives and those highlighted in the Massachusetts context made it possible to foster a dialogue between these two models.

More than 500 European cities from 27 Member States have adopted a SUMP, thereby committing to a continuous and virtuous governance process based on needs assessment, community engagement, the search for sustainable solutions, and the monitoring and evaluation of results. Thanks to the implementation of SUMP, European statistics show widespread improvements across many cities, with positive trends observed in several key indicators, including modal share, emissions reduction, and road safety improvements.

## Linking the European framework to local implementation: Madrid's 360° Sustainable Strategy

The European framework of Sustainable Urban Mobility Plans (SUMP) provides a strategic umbrella under which cities can design integrated mobility policies. To illustrate how this translates into concrete action at the local level, the City of Madrid offers a particularly advanced example. Building upon the principles embedded in SUMP—such as reducing emissions, improving accessibility, and fostering social inclusion—Madrid has developed the [Madrid 360 Environmental Sustainability Strategy](#), an ambitious plan launched in 2019 that places sustainable mobility at its core, including 200 initiatives.

Two major infrastructure projects stand out within this initiative:

- [The ongoing construction of the new Metro Line 11](#), the first in Madrid not oriented towards the city centre, but aimed at reconnecting peripheral neighbourhoods.
- [The undergrounding of the A5 motorway](#), which formerly

acted as a significant urban barrier, creating a green boulevard with 33 new at-grade pedestrian crossings, 2,884 metres of cycle lanes, and 7 hectares of green space created above the covered section.

Madrid has also made considerable progress in real-time mobility management. Through partnerships with telecom providers, the city collects anonymous data from 60 induction-loop stations, 120 AI-enabled traffic cameras, and 145 roads monitored for vehicle speed. Pedestrian and cycling flows are tracked via a dedicated network of sensors and video monitoring. Artificial intelligence plays a key role in generating real-time dashboards that visualise modal share and traffic dynamics. These dashboards support both macro- and micro-simulations, allowing the city to optimise vehicle rerouting in response to roadworks, unexpected incidents, or planned changes in circulation.

## Exploring climate adaptation and challenges: lessons from San Francisco

Although climate adaptation was not the core focus of the event, the discussions highlighted the importance of resilience and the opportunities arising from addressing climate-related challenges in cities. In this context, San Francisco was presented as a reference case, especially as key transport infrastructures are located along the shoreline, illustrating how urban adaptation strategies can turn pressing challenges into pathways for innovation, collaboration, and long-term sustainability.

The U.S. Army Corps of Engineers (USACE), in collaboration with the city of San Francisco, has developed a strategic response: [the Waterfront Resilience Program](#). This initiative aims to redesign San Francisco's waterfront to withstand the impacts of climate-related impacts, particularly rising sea levels. Proposed interventions include nature-based solutions, raising the shoreline, retrofitting historic waterfront structures and public spaces, and developing flood-resilient piers and buildings. The Planning Department has also developed an [Adaptation Strategy for the Islais Creek area](#), which forms part of the waterfront.

Another notable example comes from Ocean Beach Great Highway Project, where a coastal highway at risk of inundation was closed to vehicular traffic at weekends during the pandemic and temporarily turned into a pedestrian promenade. In November 2024, following the approval of a Proposition, this closure was made permanent, converting a two-mile stretch into a public space for walking and cycling. In this case, the decision was made not to invest in adapting a motorway to changing environmental conditions; instead, the apparent 'abandonment' of the infrastructure becomes a deliberate choice, capable of giving new life to the area and repurposing it to meet new climate adaptation objectives. Today, the area functions as a linear park, enhancing public access to the coast while reducing infrastructure exposure to flooding. It also supports climate resilience by mitigating coastal erosion and the effects of sea level rise. The project is the result of collaboration between the San Francisco Municipal Transportation Agency and other public entities.

## Key learnings for greater impact

The successful projects implemented in the Boston context, along with the experiences shared by participating cities during the collective activities and discussions, made it possible to identify several emerging cross-cutting key lessons in sustainable urban mobility that are shared across cities to achieve successful projects and policies.

### 1) Mobility is a key driver for sustainability goals, but also for climate adaptation and urban resilience.

Achieving climate targets in the transport sector requires the continuous improvement of public transport services in terms of accessibility and efficiency, the decarbonisation of vehicles, and the promotion of sustainable mobility. While mobility policies focus on the movement of people and goods, they also have a significant spatial impact on the city. Mobility inevitably occupies public space, a scarce resource in urban areas. Adaptation policies must therefore redesign these spaces to mitigate the effects of climate change, making every mobility intervention an opportunity to enhance urban resilience.

#### Key takeaways:

- **Context-sensitive solutions** are essential. Although approaches are widely transferable, urban density and mobility patterns vary, not only between cities but also within neighbourhoods. Therefore, only a combination of targeted solutions, integrating public transport, shared mobility, and active travel, can ensure equitable access to mobility services. Integration can be supported by the creation and mapping of mobility hubs, even at the neighbourhood scale.
  - **Public transport competitiveness** hinges on prioritisation in street design. Dedicated lanes for buses—such as those seen in Bus Rapid Transit (BRT) systems—are critical for improving travel times and reliability in comparison to private car use.
  - **Progressive decarbonisation of public transport networks** must be planned strategically. A phased approach using a mix of technologies (e.g. hybrid buses, full electrification, hydrogen) allows cities to maximise cost-effectiveness, prioritising high-frequency, high-demand corridors to amplify impact.
- Mobility infrastructure must embed climate adaptation measures.** Examples include cycle paths functioning as green corridors with permeable surfaces and shade trees, and bus stop networks reimagined as microclimate shelters. These interventions require cross-sectoral collaboration—urban mobility, environment, public health—from the earliest design stages.

**DO: Developing Mobility as a Service (MaaS) systems** by digitally integrating various public and private mobility services, with the aim of improving efficiency in travel choices.

**DON'T: Designing mobility projects solely from a functionalist perspective**, as if they concerned only mobility, fails to recognise their broader impact. An intersectoral approach, by contrast, allows each intervention to become a building block for enhancing the quality and sustainability of urban spaces.

*The reconfiguration of public transport priority corridors along Columbus Avenue and Washington Street in Boston demonstrates how reorganising spatial hierarchy within roadways can improve efficiency, accessibility, and competitiveness relative to private car use. Introducing buses with varying levels of electrification, alongside a project to repurpose a former railway line, helps reduce greenhouse gas and pollutant emissions in line with available funding. In the MBTA Climate Assessment published in 2024, the agency estimated a 44% reduction in GHG emissions since 2009 in the public transport sector.*

*The Southwest Corridor project combines public transport, cycling infrastructure, and shared mobility services such as bike-sharing stations, offering an integrated model adapted to urban areas with varying population densities. This integration is facilitated through the development of small-scale intermodal hubs.*

*Additionally, the same corridor, together with the green bus shelter roof initiative, exemplifies how climate adaptation measures can be incorporated into mobility infrastructure to enhance resilience.*

### 2) The seamless integration of urban mobility infrastructure into urban spaces is a key factor for the quality of urban life, and also a potential source of economic value for public authorities.

Cities on both sides of the Atlantic are struggling to mitigate the legacy of past transport planning decisions, especially those that prioritised vehicular traffic over community cohesion, leaving behind "scars" within the urban fabric and increasing dependence on private car use. The most pursued solutions include covering such infrastructures to create new public space or converting them into areas dedicated to sustainable mobility.

**Key takeaways:**

Air-rights projects to yield transformative urban benefits require:

- **Long-term planning tools**, such as Urban Masterplans and Sustainable Urban Mobility Plans (SUMPs), are essential to implement large-scale infrastructure projects. These plans must be aligned across departments and political cycles to ensure continuity and reduce disruptions from changing administrations.
- **Stable, broad-based stakeholder coalitions**—including public-private partnerships—are crucial. Their success hinges on strong public-sector leadership from a central coordinating body that can function as a bridge between actors and ensure alignment over time.
- **Flexible and resilient funding mechanisms** are needed to manage investment risks, accommodate market fluctuations, and sustain stakeholder commitment throughout long implementation periods.

**DO:** Leverage air rights to create urban value, but only after extensive stakeholder and community engagement, grounded in a clear strategic vision and thorough technical feasibility assessments, to manage the long-term nature of such transformations.

**DON'T:** Underestimate the time, coordination, technical complexity, and cost involved in implementing these projects. Offering to the private investors an incomplete or shifting regulatory and decision-making framework.

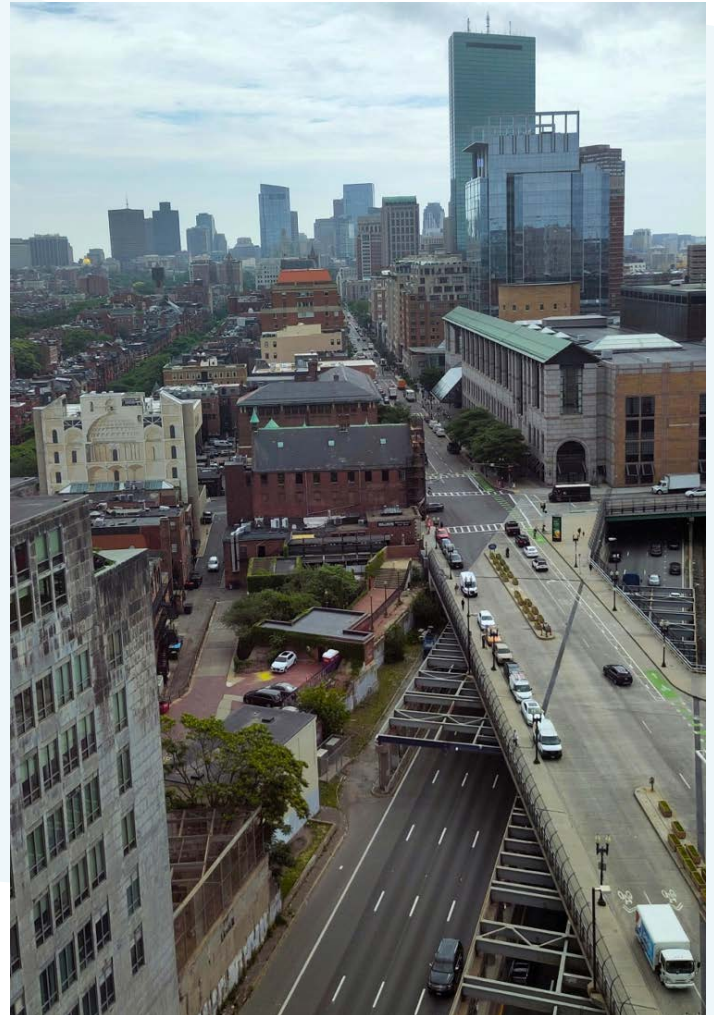


Figure 7 - View of Boston's urban landscape, marked by the presence of major road infrastructures, from the top of the Parcel 12 project building  
© Stefano Zenoni

### 3) Street redesign and curbside management as a key factor to manage the scarcity of public space in urban areas.

Redesigning public space at the street level can enhance safety, equity, and functionality by optimising curbside use to meet competing demands. In all urban contexts, street space is a limited resource. The convergence of multiple users—pedestrians, cyclists, scooters, EV charging stations, delivery services, public transport, and private vehicles—intensifies the challenge. To address this, local authorities are rethinking both the physical design and regulatory framework of streets to manage conflicting needs more effectively.

**Key takeaways:**

- **Clear project priorities and achievable objectives** should be established from the outset -placing **road safety** at the core of every design decision.
- **Climate adaptation solutions**, such as stormwater management, tree planting, and permeable surfaces, can be integrated into street design to deliver co-benefits beyond mobility.
- **Community engagement** must guide the development of project goals, ensuring that redesigns are not driven solely by technical criteria but reflect local needs and values.
- **Monitoring and evaluation systems**, including the use of real-time technologies, are crucial to assess performance and adjust strategies as needed.
- **Curbside reallocation** and reduced carriageway width demand tailored parking strategies, with dynamic regulations and pricing models adapted to different times of the day, ideally supported by sensor-based technologies.

**DO: Pilot small-scale interventions**, even using tactical urbanism, to evaluate public support and performance, while clearly communicating the overall objective and envisioning a phased, incremental implementation.

**DON'T: Street redesign and regulation projects should not be approached as old-fashioned "traffic engineering" exercises** that fail to integrate multiple areas of expertise. Instead, they should bring together engineers, architects, urban planners, agronomists and botanists, climatologists, and community practitioners to ensure a comprehensive approach capable of addressing diverse and interconnected objectives.

*The redesign project of Boston's Tremont Street enabled the transformation of a neighbourhood street through active community involvement and the use of a practical toolkit of well-known road safety solutions (such as raised crosswalks, traffic calming islands, narrower traffic lanes, and the introduction of protected cycle lanes). This was complemented by the reorganisation of loading/unloading areas and the introduction of new parking regulations.*

#### **4) Community engagement, participation, communication, and outcome monitoring are essential pillars of effective mobility planning.**

At both the neighbourhood and city-wide levels, the active involvement of citizens and stakeholders is essential for the success of mobility policies and projects. Participatory processes ensure that interventions respond to real needs, foster trust, and maintain long-term support—especially when change affects how people move and use urban space.

**Key takeaways:**

- **Public participation** at the strategic level is crucial for shaping high-level frameworks such as Sustainable Urban Mobility Plans (SUMP). These processes help define collective goals and a shared vision of the future city, connecting individual projects to broader urban narratives and enhancing public understanding and ownership.
- **Local-scale/ neighbourhood engagement**—even when not legally required—is vital for understanding the real needs of local communities, building mutual trust, overcoming biases and barriers—especially with more sceptical or change-resistant groups—and avoiding endless cycles of opposition-led consultation.
- **Clarity and transparency** at the outset are essential. Every effective participatory process should begin with a clear presentation of the project's purpose, the promoter's goals, the resources available, and any constraints or limitations (e.g., regulatory, technical, or financial).
- **Well-designed, inclusive participation processes** require adequate funding and skilled facilitation. Formats and materials must be accessible across educational levels, languages, income groups, and digital literacy, ensuring no one is left out of the conversation.
- **Communication is not an afterthought—it is a core component.** Dedicated communication strategies and budgets should be part of every project, supporting the development of websites, informative materials, visual aids, and channels for ongoing updates.
- **Monitoring outcomes** builds accountability and sustained support. Clear indicators should be established to measure success (e.g., reduced traffic collisions, modal shifts, increased ridership, emissions reductions, improved parking turnover, or public revenue). Data collection methods—like sensors and user feedback platforms—must be prioritised as a core activity, not a secondary task.

**DO:** Allocate a dedicated share of resources to participation and communication in every project, setting—at municipal or agency level—a variable percentage target, even if not required by current legislation.

**DON'T:** Dismiss public opposition by relying solely on technical arguments or overly specialised language. Doing so alienates citizens and weakens public ownership of the project.

Both large-scale and smaller projects - such as **Parcel 12 and the Tremont Street redesign of Boston** - provide a valuable model of early and sustained engagement. In both cases, structured public processes were developed over time, including public meetings, workshops, the preparation of dedicated information materials, and opportunities to meet directly with planners and public officials. MassDOT's planning framework demonstrates a strong institutional commitment to equitable access and inclusive mobility, placing particular emphasis on communities historically underserved due to their location or socio-economic status.



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