Breaking free:
Reducing car reliance in Small and Medium-Sized Cities

October 2025   **REPORT**

POLIS
CITIES AND REGIONS FOR TRANSPORT INNOVATION

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Titled 'Breaking free—Reducing car reliance in Small and Medium-sized Cities', the latest POLIS Just Transition Webinar explored how small and medium-sized cities (SMCs) can tackle transport poverty by reducing forced car ownership and expanding mobility choices, even in peri-urban and rural contexts where alternatives remain limited.

Organised on 23 October 2025 by the Small and Medium-Sized Cities Platform and the Active Travel & Health Working Group, with support from the Just Transition Taskforce, the session marks the second in a renewed webinar series on transport poverty and mobility justice.

POLIS launched its Just Transition Agenda in 2021 and expanded its efforts in 2022 by establishing a dedicated Taskforce to drive further action across thematic areas.

Since 2023, the Taskforce has organised a series of webinars exploring key topics, including urban-rural mobility, EV-charging and active travel for people with disabilities, gender mainstreaming, and more, now shifting its lens to car dependency as a barrier to inclusive and sustainable mobility.

As highlighted in POLIS' Social Climate Fund policy paper, owning a car is often a necessity rather than a choice, and breaking car dependency is essential to fight transport poverty. Targeted, context-specific interventions in SMCs can deliver immediate, measurable impacts for both equity and sustainability.

This webinar explored how innovative policies, demand management measures, and low-cost interventions can empower citizens, expand mobility choices, and reclaim urban space from cars—demonstrating how SMCs can lead the way in inclusive, just, and climate-friendly mobility.

The webinar featured four expert speakers:
- Wieger Postma, City of Leeuwarden;
- Annarita Leserri, Pin Bike;
- Isabel Garnika Ortiz, City of Vitoria-Gasteiz;
- George Gorgogetas, e-trikala.

Reimagining urban space in Leeuwarden

Wieger Postma, Senior Advisor Urbanism at the Municipality of Leeuwarden, shared insights into how the medium-sized Dutch city is transforming former industrial and car-oriented areas into walk- and bike-friendly urban spaces. Leeuwarden, located in the northern province of Friesland, has a central urban area and 35 surrounding villages—the city counts 95,920 residents (2023), while the municipality counts 128,857 (2024). The city's historical relationship with water has deeply shaped its urban form: much of the landscape was reclaimed from the former Middelsee, a sea inlet of the North Sea, and early settlements were built on artificial hills, or terps, to stay safe from rising water levels. These historical strategies continue to inform contemporary urban planning, **blending heritage with modern approaches** to mobility and space allocation.

A key transformation site near the city centre is the **Spoordok**, a former industrial district being redeveloped into a vibrant, walk- and bike-friendly area. The Spoordok forms part of the broader Spoorzone Leeuwarden programme—eight interconnected projects transforming former rail and industrial sites into sustainable, inclusive urban districts. Interventions in the Spoordok **include relocating a car-dominated radial road alongside the railway, reducing traffic impact**, and creating space for a **new waterfront boulevard prioritising pedestrians and cyclists**. As part of the European Active Cities project, the area 'turned blue' in March 2025, with blue road markings designating shared zones for walking and cycling.

'Leeuwarden used to be a truly water-oriented city, but over time we shifted toward car-oriented mobility—now we are working to rebalance that.'

—Postma

Before (picture) and after (rendering) of the Spoordok redevelopment in Leeuwarden
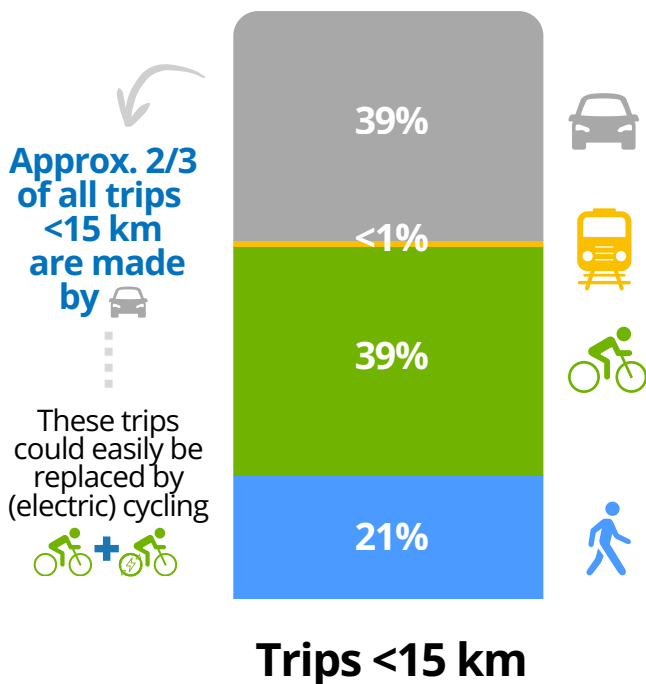—*Municipality of Leeuwarden*

Promotional brochure and poster to promote the Spoordok redevelopment in Leeuwarden
—*Municipality of Leeuwarden*

Converting the modal split

Leeuwarden's potential hides in converting short car trips to other sustainable modes:

Approx. 2/3 of all trips <15 km are made by 🚗

These trips could easily be replaced by (electric) cycling

39%	🚗
<1%	🚆
39%	🚴
21%	🚶

Trips <15 km

Modal split for <15 km trips in Leeuwarden
—*Municipality of Leeuwarden*

This simple measure makes active mobility more visible and attractive while alerting drivers to pedestrian crossings. The Spoordok redevelopment also **integrates social and environmental dimensions**: temporary housing for Ukrainian refugees and asylum seekers has been established within the area, linking urban transformation to social inclusion.

A significant challenge in Leeuwarden, as in many medium-sized cities, is the **prevalence of short car trips due to limited public transport**. For trips under 15 km—a distance well suited to walking or (electric) cycling—around two-thirds are still made by car. Modal split for these trips is 39% car, 39% bicycle, 21% on foot, and less than 1% by public transport. To address this, the city has invested in cycling infrastructure linking residential areas to the city centre and has tested low-cost, experimental interventions, such as painted road markings to expand pedestrian space. Pedestrian experience is actively monitored using surveys, the **Walk21 Walkability app**, and traffic psychologists' assessments, providing data to inform further adjustments.

Postma emphasised that these measures are iterative: temporary improvements allow the city to gather feedback, adapt designs, and gradually transform the area. Early observations suggest that accessibility for pedestrians and cyclists is improving and that reliance on cars is gradually declining. Future plans include additional greening and further enhancements to active mobility routes.

Gamifying active mobility in SMCs

Annarita Leserri, Project Manager at Pin Bike, presented innovative approaches to reducing car reliance through **gamification** and **economic incentives**. Pin Bike is a technology-driven platform designed to encourage citizens to shift from private motorised transport to active mobility, particularly cycling.

Pin Bike targets small and medium-sized cities where short car trips are prevalent due to limited public transport options. The platform **combines certified travel data with a gamified user experience to incentivise cycling**. Users equip their bicycles with a sensor that records wheel movement, which is compared with GPS data collected via the Pin Bike App.

Participants earn community points for cycling, which can be redeemed in local shops, fostering both sustainable mobility and local economic engagement. Additional rewards include direct bank transfers or vouchers, depending on partnerships with cities, schools, or companies.

A key feature of Pin Bike is its **dashboard for city managers, urban planners, and company administrators**. The dashboard allows project managers to set up gamification challenges, monitor travel patterns, and gather meaningful data on cycling activity.

This data supports evidence-based urban planning, such as determining optimal locations for bike lanes, parking, or maintenance points, and assessing the impact of interventions.

From top to bottom, the Pin Bike kit, the Pin Bike app, and the Pin Bike dashboard
—Pin Bike

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Pin Bike's success

In six years, Pin Bike has been extremely successful:

27K users
11K km travelled
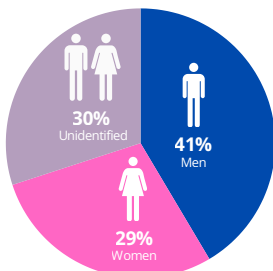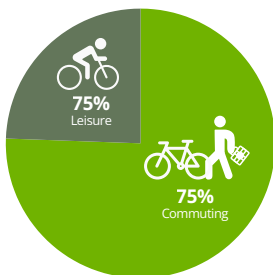**1.7M kg CO$_2$ saved**
2.6M € earned

27K users

- 30% Unidentified
- 41% Men
- 29% Women

89% do not own a 🚗

67% are aged 30 to 59

11K km travelled

- 93% Mechanical bikes
- 7% Electric bikes
- 75% Leisure
- 75% Commuting

By mode:

1.7M kg CO$_2$ saved

- **1.2M kg** Mechanical bikes
- **43K kg** Micromobility
- **128K kg** Electric bikes
- **60K kg** Walking

Key usage highlight of Pin Bike from 2019 to 2025
—Pin Bike

'SMCs can accelerate the shift from car reliance to active and sustainable mobility with soft measures.'

—Leserri

Leserri highlighted several case studies from Italy. In **Bergamo**, a city of 120,000, users earned digital vouchers for local shops, with strong collaboration between municipal authorities and community associations. In **Florence**, cooperation with the local university engaged 20,000 students and staff in cycling activities, supported by heat maps that tracked popular routes and informed planning. In **Puglia**, three small neighbouring towns—Fasano, Monopoli, and Polignano—joined forces, allowing users to cycle across municipalities and redeem rewards at participating shops throughout the region.

Beyond cycling, Pin Bike encourages **multimodal and intermodal travel**. Users can also earn rewards for combining bicycles with public transport, carpooling, walking, or other micro-mobility options, addressing mobility poverty by integrating first- and last-mile solutions.

Carpooling for sustainable commuting in Vitoria-Gasteiz

Isabel Garnika Ortiz, Environmental Officer at the Environmental Study Centre of Vitoria-Gasteiz, presented a pilot project aimed at reducing car dependency in the city's industrial areas. **Vitoria-Gasteiz**, a medium-sized **Mission city** in northern Spain with just over 260,000 inhabitants, is recognised as one of Europe's leading cities for sustainable mobility.

The pilot project, a **carpooling programme** co-funded by EIT Urban Mobility and the French company Karos Mobility, targeted **commuting to industrial zones**, where around 40,000 employees work. While general car use in the city was around 20%, commuting trips exceeded 50% by private vehicle, with almost no carpooling. Surveys conducted by the city revealed high willingness to participate: 90% of companies were open to promoting a carpooling app, and 52% of employees were willing to share rides with colleagues or nearby workers.

The Karos Mobility App
—Karos Mobility

Carpooling in Vitoria-Gasteiz

Vitoria-Gasteiz has embraced carpooling opportunities by rewriting car commutes:

Commuting covers **28%** of all travels in Vitoria-Gasteiz — **52%** by car

Carpooling
2.6%
Average of drivers and passengers carpooling when commuting

Private car use
70%
Average of drivers opting to drive their cars for commuting

52% companies based in Vitoria-Gasteiz showed willingsness to adopt **an app to encourage car-sharing/carpooling**

KAROS App

65.8K km travelled in 24 months

106K kg CO₂ saved

320K € savings

Trips origin **OR** destination in VG + **1.5K** trips x week

Trips origin **AND** destination in VG + **500** trips x week

250K trips x week

66% users who made more than **10 trips x month**

80% users who made more than **6 trips x month**

74% users who **arranged trips 1 day in advance** or less

80% users who **responded within 2 hours**

Data on carpooling in Vitoria-Gasteiz and with Karos
—CEA Vitoria-Gasteiz; Karos Mobility

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'Carpooling could be a very useful and effective tool to tackle congestion, especially if we manage to increase the number of trips.'

—Garnika Ortiz

The **Karos Mobility app** allows users to register as drivers, passengers, or both, and provides options based on origin, destination, date, and time. **Pricing incentives** were introduced to encourage participation: for trips under 15 kilometres, drivers received €1.50, while passengers paid €0.60, with the remainder subsidised by project funding. Longer trips incurred an additional €0.10 for passengers, roughly matching the cost of a bus ticket.

Over the first 24 months, from September 2023 to September 2025, the pilot facilitated more than 65,800 trips, saving an estimated 106 tons of CO_2 and generating over €320,000 in combined savings for drivers and passengers. **Usage patterns demonstrated high engagement**, with 74% of trips booked the same or previous day 75% of trips confirmed within two hours, and 66% of users completing more than ten trips per month.

Participation was balanced across gender and age groups, with the 30–40 age range most represented. Peak travel times occurred in the morning between 6:00 and 8:00, and in the afternoon between 13:00 and 17:00.

Garnika Ortiz also noted the **sensitivity of participation to funding incentives**. A six-month gap in financial support led to a sharp decline in weekly trips from 1,500 to 250, which increased again once incentives were reintroduced, though never reaching pilot-phase levels due to new municipal restrictions. Since July 2025, additional incentives from energy-saving certificates have been introduced, but their full impact remains to be evaluated.

Smart, safe, and inclusive mobility in Trikala

George Gorgogetas, Electrical and Computer Engineer at e-Trikala S.A., presented the ELABORATOR project, a comprehensive initiative enhancing sustainable mobility and road safety in Trikala, Greece, and other European cities.

Located in the Thessaly region of central Greece, Trikala is a medium-sized city with around 85,000 residents, over 75% of whom live in the urban area, while the rest are spread across eight surrounding rural sections covering more than 600 km². Despite its flat topography and compact city centre—ideal conditions for cycling —**Trikala faces significant car dependence**, with about 50,000 registered vehicles. Limited public transport in rural areas exacerbates this reliance, contributing to congestion, environmental strain, and safety risks for pedestrians and cyclists. Baseline surveys confirm that many citizens—particularly women and cyclists—feel unsafe in public spaces, highlighting the need for smarter, more inclusive mobility options.

e-Trikala S.A., the municipal company coordinating the city's digital transformation, originated in 2004 as a local broadband initiative and became a municipal enterprise in 2008. Its expertise spans e-transportation, e-health, e-education, Geographic Information System (GIS), and network infrastructure, aiming to leverage Information and Communication Technology (ICT) for improving citizens' daily lives. The city has **implemented over 45 European projects**, positioning Trikala as a national leader in smart, citizen-focused innovation.

> 'When people are involved in designing their city, they are more likely to use, respect, and value the solutions we implement.'
>
> —Gorgogetas

SMART
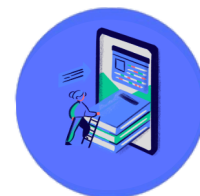Smart City since 2010, has been involved in **45 EU projects**

SUSTAINABLE
Part of '100 Climate Neutral and Smart Cities by 2030' EU Mission

AMBITIOUS
Municipal Strategy Plan to reform and digitalise public sector

DIGITAL
First and renowned Greek 'Digital City' since early '00

The four top characteristics of Trikala
—Trikala; POLIS

Under the <u>Lighthouse Cities initiative</u>, the **ELABORATOR project** recipe for Trikala builds on its already existing foundation to improve safety, accessibility, and sustainability through a mix of infrastructure, behavioural, and digital measures. Key interventions include:

- **Park-and-ride stations at city entrances**, encouraging residents from surrounding areas to leave cars outside the centre and continue by municipal bike-sharing or public transport.
- **Cycle lane redesign**, enhancing continuity and safety while reducing conflicts between cyclists and cars. Embedded sensors monitor usage and support adaptive management.
- **Smart crossings in high-risk locations**, especially near schools, integrating lighting, sensors, and **audio cues** to improve visibility and protect pedestrians and vulnerable users.
- **A unified mobility application, the <u>SMARTA app</u>**, which consolidates travel information and booking for buses, bike-sharing, carpooling, and other sustainable transport modes, with plans to integrate ELABORATOR services.

Central to Trikala's approach is **citizen co-creation**. Through participatory workshops, online questionnaires, site visits, and meetings with local stakeholders—including schools, businesses, and community groups—more than 1,000 citizens contributed feedback shaping the interventions.

Participants consistently emphasised the importance of education and awareness alongside technology, calling for more road safety training, continuous bike lanes, accessible crossings, and communication campaigns promoting new services such as park-and-ride.

Preliminary evaluations highlight that technological solutions alone are insufficient without strong public engagement. Activities such as **European Mobility Week** events, **hands-on cycling sessions**, and **real-time feedback tools** have fostered community participation and ensured that interventions respond to lived experiences. In parallel, sensor-based monitoring of air quality and mobility flows supports evidence-based planning and iterative improvement of the measures.

Q/A

Q1

on project's *refugee inclusion*

Could you share more information about the project experience with Ukrainian refugees?

Postma's response:

Postma noted that while the Active Cities project does not yet have detailed data, there is some information available from other sites, including observations by social workers.

Q2

on *privacy protection* and *user trust*

Have you faced challenges around privacy in getting people to use the Pin Bike device?

Leserri's response:

Leserri explained that privacy is a key consideration. All Pin Bike projects comply with GDPR, and the company holds ISO 27001 certification, confirming robust management of sensitive data. Users generally do not raise concerns, as accepting terms and conditions is standard for digital tools. Privacy concerns are more common among cities and companies, which need to ensure safe technology for their communities.

Q3

on *age requirements*

Are there age restrictions for using Pin Bike?

Leserri's response:

Users must be at least 16 years old to independently download and use the app in Europe, though member states can set lower ages with parental consent (eg, 13 in Sweden, 14 in Italy). Pin Bike follows national laws, welcoming younger users where allowed.

Q4

on *incentives*

Which other types of non-monetary incentives might support carpooling in Vitoria-Gasteiz?

Garnika Ortiz's response:

Garnika Ortiz noted that while the city has not implemented additional non-monetary incentives, there are examples in other

Q/A

regions where cooperative companies encourage carpooling by offering discounts on products and services. These schemes have shown promising results.

Q5

on *stakeholder engagement* and *co-creation*

How do you engage stakeholders and bring them together in Trikala?

Gorgogetas' response:

Gorgogetas emphasised long-term engagement. He gave the example of taxi and bus companies, explaining that early involvement (before solutions are fully developed) ensures stakeholders feel like collaborators rather than passive participants. This builds trust, encourages input, and integrates their knowledge into project design.

Q6

on *women's safety* and *urban design*

How do you address women's safety concerns in public spaces in Trikala?

Gorgogetas' response:

Gorgogetas clarified that while serious violence is rare, perception of safety is a key concern. Feedback from questionnaires showed that women often avoid poorly lit or isolated streets. The municipality receives this data to prioritise safety measures, while project interventions (eg, new bike lanes, park-and-ride stations, smart crossings) are designed with safety in mind.

Q7

on *carpooling support* and *shared mobility*

Are there complementary measures to support carpooling in Vitoria-Gasteiz?

Garnika Ortiz's response:

Garnika Ortiz shared that the city has launched a pilot car-sharing program in collaboration with a social enterprise, providing electric cars accessible to residents. The initiative is in its first year, with plans to expand to additional neighbourhoods if successful.

Q/A

Q8

on *city scale* and *inclusive mobility potential*

What are the advantages of Small and Medium-sized Cities for implementing inclusive mobility projects?

Leserri's response:

Leserri emphasised that smaller cities can have quicker access to resources, closer community connections, and larger impacts with fewer bureaucratic hurdles. They can adopt innovations piloted elsewhere without extensive trial-and-error.

Postma's response:

Postma highlighted the social advantage of closer community contact. Small and medium-sized cities can make bigger leaps toward innovative mobility systems, as they are less tied to traditional infrastructures.

Gorgogetas' response:

Gorgogetas highlighted flexibility and visibility. In medium-sized cities, projects are less likely to get lost, and citizen and stakeholder engagement is easier due to stronger personal connections. Long-term continuity is possible, as community knowledge and involvement remain stable across years and administrations.

Garnika Ortiz's response:

Garnika Ortiz added that direct, personal contacts make citizen and stakeholder engagement easier, facilitating more responsive and inclusive mobility planning.

Key conclusions

The session highlighted how medium-sized cities can implement inclusive, sustainable, and citizen-centred mobility projects. Drawing on the diverse experiences of Leeuwarden, Trikala, Vitoria-Gasteiz, and Pin Bike's cities, several key conclusions emerged:

1 Active travel is central to sustainable mobility.

Walking, cycling, and wheeling are not only transport modes but also underpin broader mobility systems

2 Infrastructure shapes behaviour and safety.

Well-designed streets, cycle lanes, park-and-ride facilities, and smart crossings encourage the adoption of sustainable mobility.

3 Gamification can drive behavioural change.

Gamification, combined with incentives, can motivate citizens to shift from private cars to active or multimodal transport, supporting health, sustainability, and local economies.

4 Citizen engagement is critical.

Co-creation ensures solutions respond to lived experiences and fosters community ownership.

5 Equity and inclusion must be integral.

Mobility solutions should consider all users, including women, children, the elderly, people with disabilities, and other vulnerable groups.

6 Data-driven planning enhances effectiveness.

Combining quantitative data (sensors, travel logs, app usage) with qualitative feedback (surveys, workshops, observational studies) enables evidence-based decisions

7 SMCs have unique advantages.

Smaller urban areas can act faster, engage citizens more directly, and see tangible results quickly.

8 Iterative, adaptable approaches work best.

Temporary interventions, pilot projects, and flexible designs allow cities to test, evaluate, and refine solutions before scaling up.

These insights collectively show that SMCs, using technology, participatory design, and evidence-based strategies, can create **inclusive mobility systems that reduce car dependence** and enhance urban liveability.

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