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for Smart Cities

SMART CITY CHALLENGE 2025

City Challenge

Max 3 pages

send to smartcity@taltech.ee by Sept 30, 2025

Challenge Title – (max 5 words, no acronyms) **Unlocking Traffic Data Insights**

City/county and country **Cēsis Municipality, Latvia**

Main contact from your city/county – name, organization, job title, e-mail, phone **Madara Jenerte,**
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What is the future urban challenge that would need a solution to?

- Please describe the challenge of your city / county neighboring a city?

Cēsis Municipality has accumulated large datasets from traffic counts (cycling, pedestrian, car traffic in several spots in the city) and public transport ticket validations. These could provide critical evidence for infrastructure planning, identifying safety hotspots, and optimizing bus routes. However, due to limited analytical capacity, the municipality is currently unable to use these data effectively. As a result, decisions about new infrastructure or public transport improvements risk being made without solid data support.

- Which category your challenge is primarily in: safe city, happy city, and climate resilient city?

Safe city + Climate resilient city.

- Why is it important for your city to solve it? How big priority it is for you and why?

Mobility planning is a top priority because Cēsis is a growing regional hub with strong tourism, commuting, and educational functions. Understanding traffic flows is essential for reducing congestion, improving pedestrian and cyclist safety, and cutting transport-related emissions.

- Is this a unique challenge/problem of your city, why or is this by your knowledge a challenge/problem that many cities have – which kind of other cities?

This problem is particularly pressing for small and medium-sized cities, which typically lack in-house data analysts or GIS teams. Although traffic and public transport data are increasingly collected, these municipalities do not have the capacity to transform the information into actionable insights that could guide infrastructure priorities and public transport network development.



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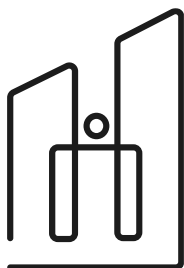


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1. Innovation.

- How have you solved that issue so far? Why aren't the present solutions good enough? Are there legal obstacles, which ones?

As part of the SUMP for BSR project, we have installed AI-powered traffic counters that recognize different transport modes and measure modal split at key locations. However, the municipality currently lacks the capacity to analyze these data and turn them into actionable insights. Proper use of these datasets would allow evidence-based decisions on where to prioritize cycling infrastructure, improve street layouts, and optimize overall mobility.

Regarding public transport, ticket validation data from CATA, the state-subsidized operator, remains largely unused. While CATA has little incentive to increase ridership, the city is highly interested in making routes more efficient and attractive. Analyzing these data could help identify underperforming routes and support decisions to improve public transport services for residents.

- What should be the main features, characteristics of the future solution to be potentially best for that challenge or problem?

A scalable, user-friendly analytical tool that can:

- Integrate existing traffic counting datasets (manual and automatic) and public transport ticket validation data with GIS.
- Visualize patterns in time and space, including peak hours, safety risks, emission hotspots, and underperforming bus routes.
- Provide scenario modeling (e.g., pedestrianization, bike lane investments, road closures, and optimized public transport routes).
- Support evidence-based decisions for cycling infrastructure placement and overall mobility planning.
- Be usable by municipal staff without advanced programming or data science skills.

2. Expected impact of your pilot solution.

- What is the expected impact to your city environment you expect to see if the challenge gets solved?

More accessible, safer, and climate-friendly mobility options, including optimized bus services, leading to higher satisfaction, increased public transport usage, and a stronger sense of safety in public space.

- What is the expected impact to your citizens you expect to see if the challenge gets solved?



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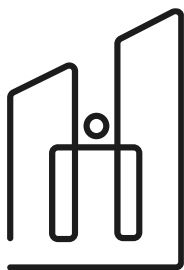


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Evidence-based decision making, reduced reliance on external consultants, more transparent communication with residents, and the ability to monitor and improve both active and public transport services based on real data.

- What is the expected impact to your city governance you expect to see if the challenge gets solved?

Evidence-based decision making, reduced reliance on external consultants, more transparent communication with residents, and the ability to monitor and improve both active and public transport services based on real data.

3. Piloting

- Why would you be interested to become a piloting partner of a proposed solution to the challenge you are describing here? Describe shortly your capability to participate.

Cēsis wants to move from “data collection” to “data intelligence”. Piloting would allow us to test new tools on real datasets and co-create scalable solutions relevant to other small/medium cities.

We can provide:

- **Access to existing datasets (traffic counts, ticket validation data, GIS).**
- **Staff engagement from the planning and GIS division.**
- **Political backing for testing solutions in live policy processes.**



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