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EnCLOD

Pilot Action: NOVA GORICA

Monitoring Traffic and Air Quality through Data

How Nova Gorica is using Open Data and IoT sensors to improve air-quality monitoring, support sustainable mobility and strengthen evidence-based urban governance

Location: Nova Gorica, Slovenia

Focus: Air quality, traffic monitoring & sustainable urban mobility

Data: Traffic flows, vehicle speeds, air quality, environmental data

Tools: Telraam traffic sensors, air-quality sensors, LoRaWAN, Open Data platforms, environmental dashboards

Stakeholders: University of Ljubljana, Urban Municipality of Nova Gorica, municipal staff, researchers, students, private sensor hosts and citizens

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CONTEXT

As Nova Gorica prepared for the **European Capital of Culture GO! 2025**, the city needed better information to understand **how traffic affects air quality**. Previous monitoring relied on isolated surveys, making it difficult to develop evidence-based policies for sustainable mobility and environmental protection.

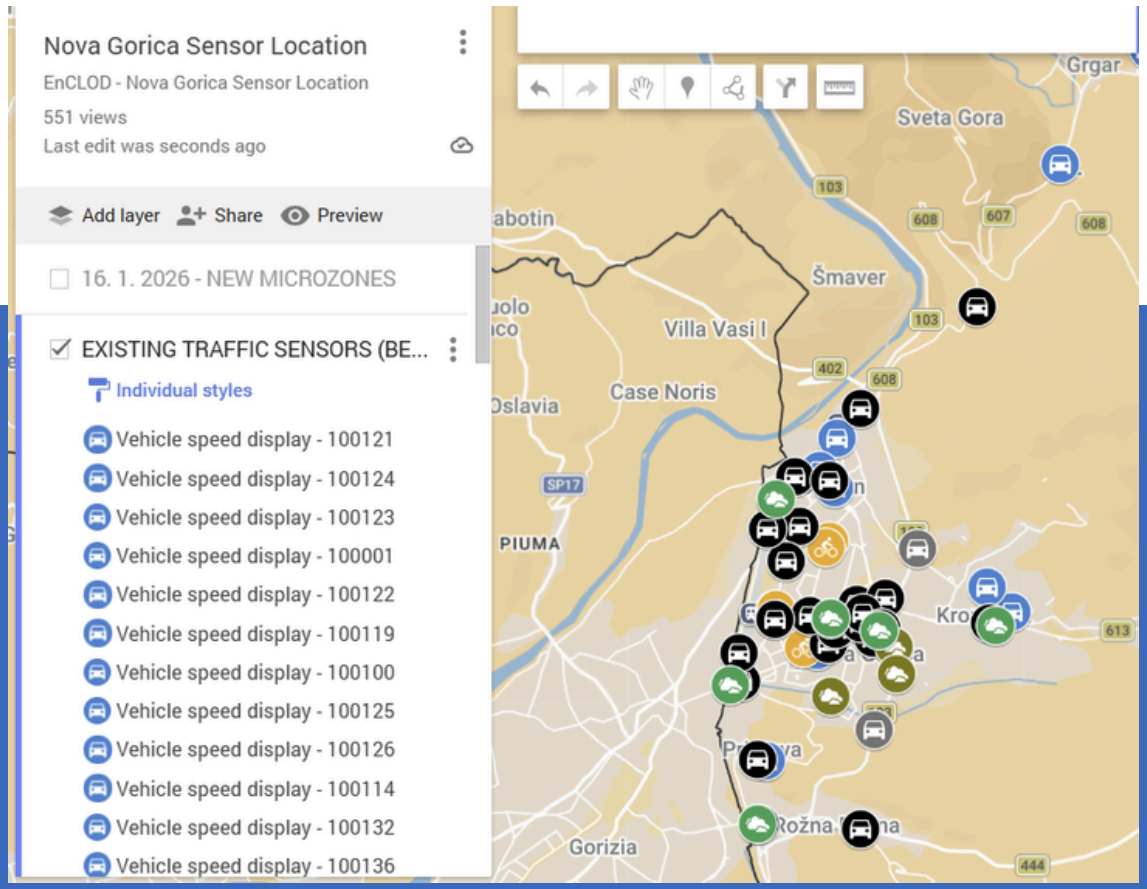
The pilot addressed this challenge by **creating the city's first integrated monitoring network combining traffic and air-quality data**, supporting smarter urban planning and long-term environmental governance.

WHAT WAS IMPLEMENTED

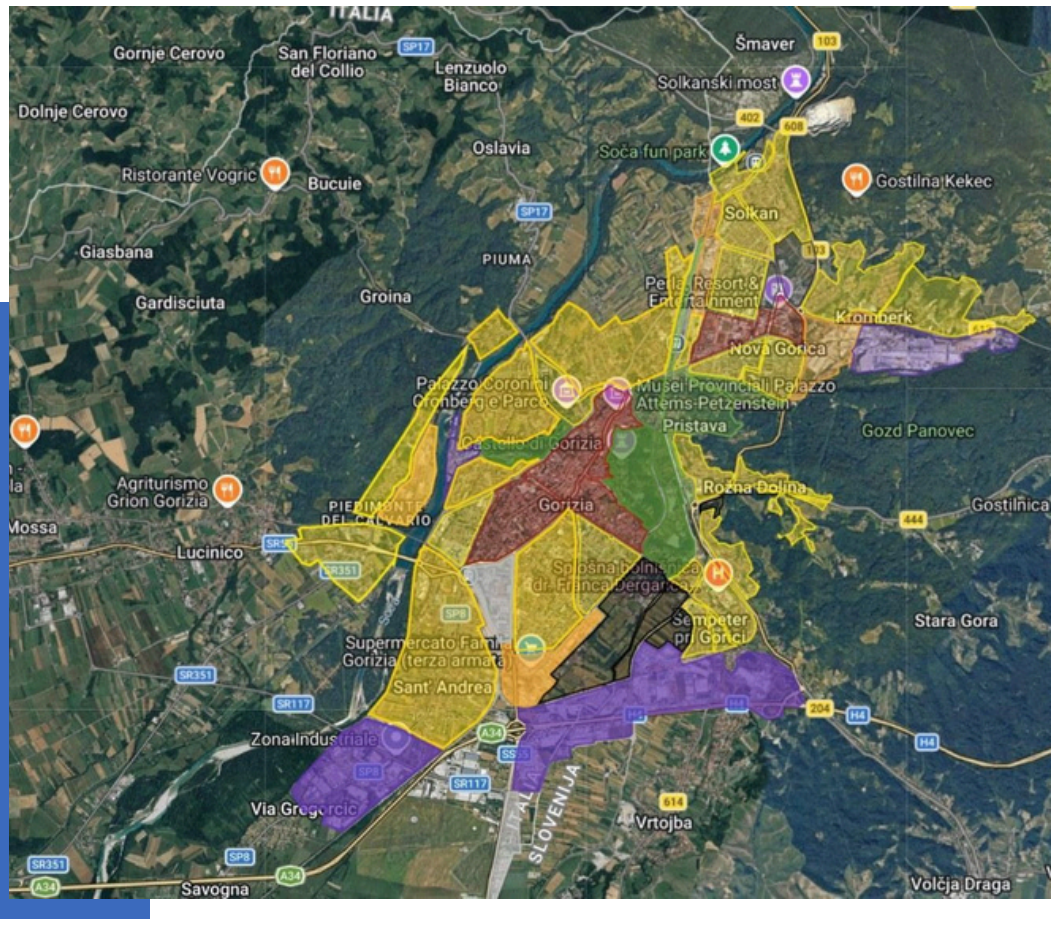
The University of Ljubljana and the Urban Municipality of Nova Gorica **deployed an integrated network of 24 traffic sensors, 7 air-quality sensors, and one reference monitoring station across the city.**

The sensors collect near real-time information on traffic volumes, vehicle types, air pollution and environmental conditions. Data are published openly through online dashboards and APIs, making them accessible to public authorities, researchers and citizens.

The pilot also included **workshops for municipal staff and students**, engagement with local sensor hosts, and the SMART City HACK challenge, where participants developed innovative applications using Open Data.



Map of the deployed cross-border sensor network (traffic and air-quality sensors). Available here.



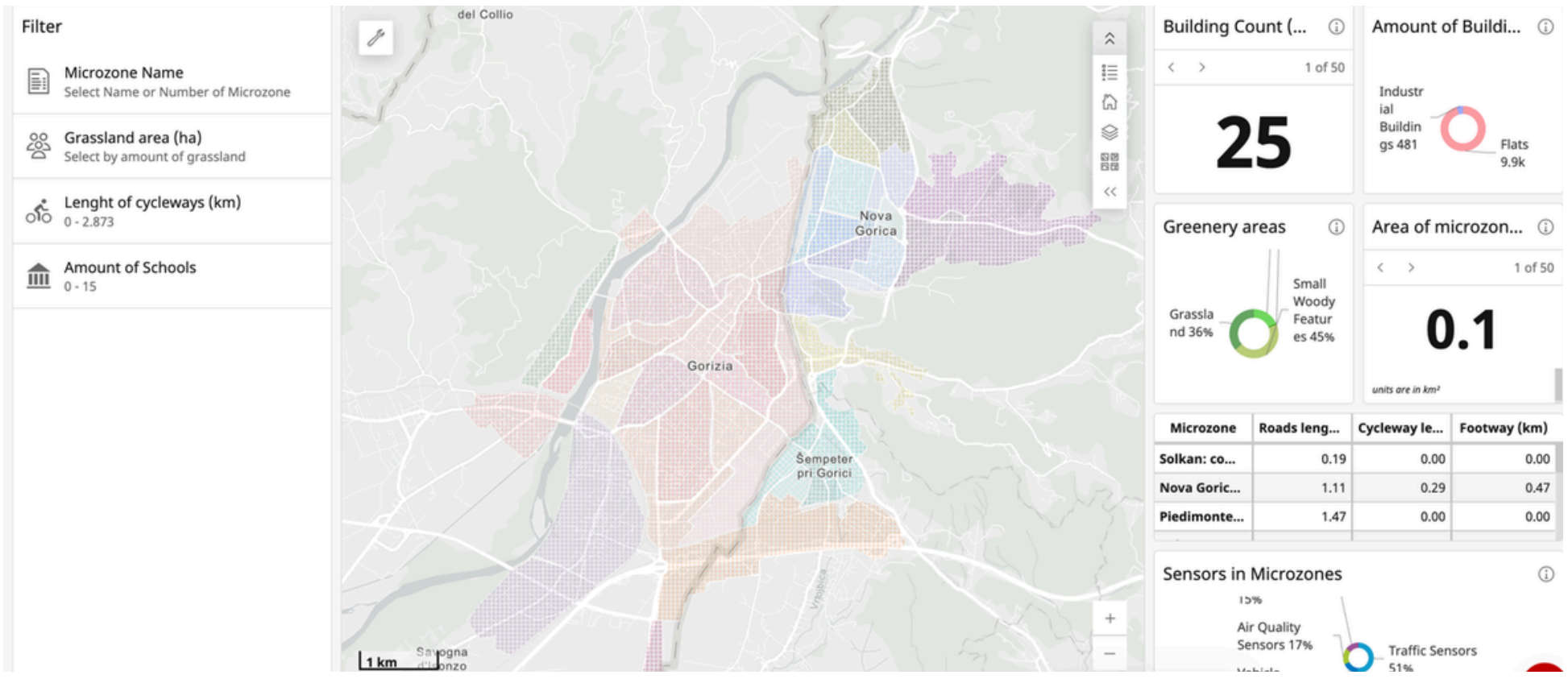
Cross-border microzoning layer covering Nova Gorica and Gorizia. Available here

Traffic & Air-Quality Sensor Network in Nova Gorica-Gorizia: Teleram S2 – Outdoor module

Traffic & Air-Quality Sensor Network in Nova Gorica-Gorizia: Outdoor environmental sensors

MAIN RESULT

- **24 Telraam traffic sensors** deployed
- **7 air-quality sensors and 1 reference station** installed
- **32 IoT devices monitoring traffic and environmental conditions**
- **15-minute Open Data updates**
- **Traffic and air-quality data published** through open dashboards and APIs
- **SMART City Hackathon generated innovative prototype solutions**
- **New municipal commitment to treat sensor data as a public good**
- **Foundations established for a future municipal Open Data portal**



EnCLOD ArcGIS (ESRI) dashboardd. Available here

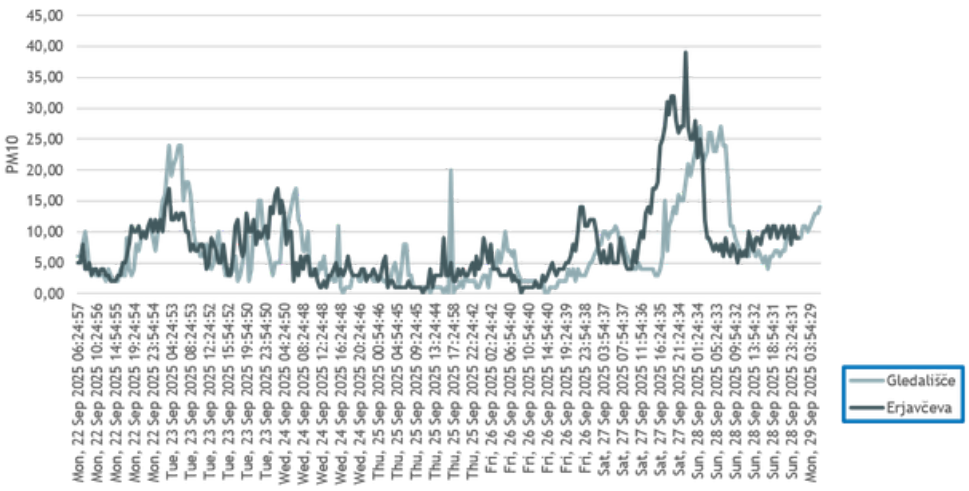
IMPACT ON LOCAL GOVERNMENT AND THE CITY

The Pilot Action introduced continuous monitoring as a permanent tool for urban governance, replacing occasional traffic surveys with real-time data. It strengthened municipal capacity, supported the development of a new Air Quality Plan, and improved cooperation between local authorities, researchers and stakeholders.

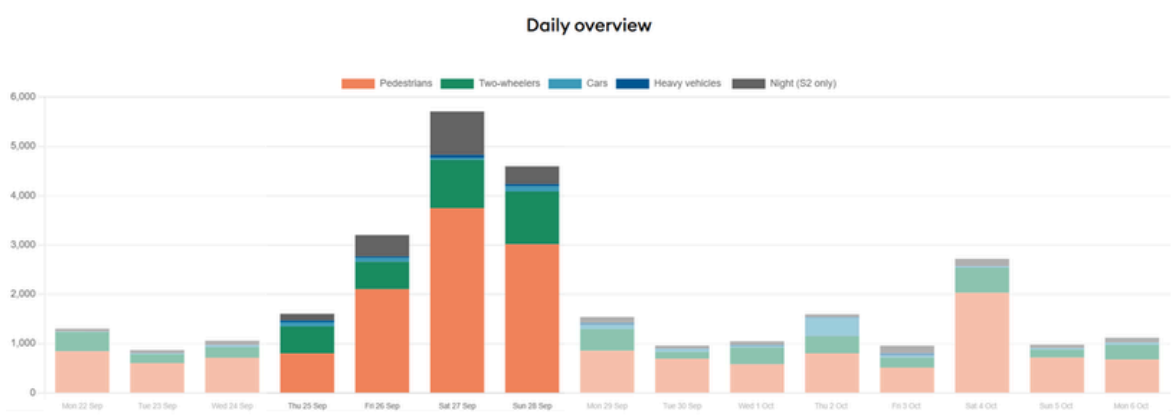
IMPACT ON CITIZENS/STAKEHOLDERS

Citizens gained open access to traffic and air-quality information, supporting more informed daily choices. Workshops and the SMART City HACK engaged students, developers and local innovators, while private sensor hosts helped expand the city's monitoring network.

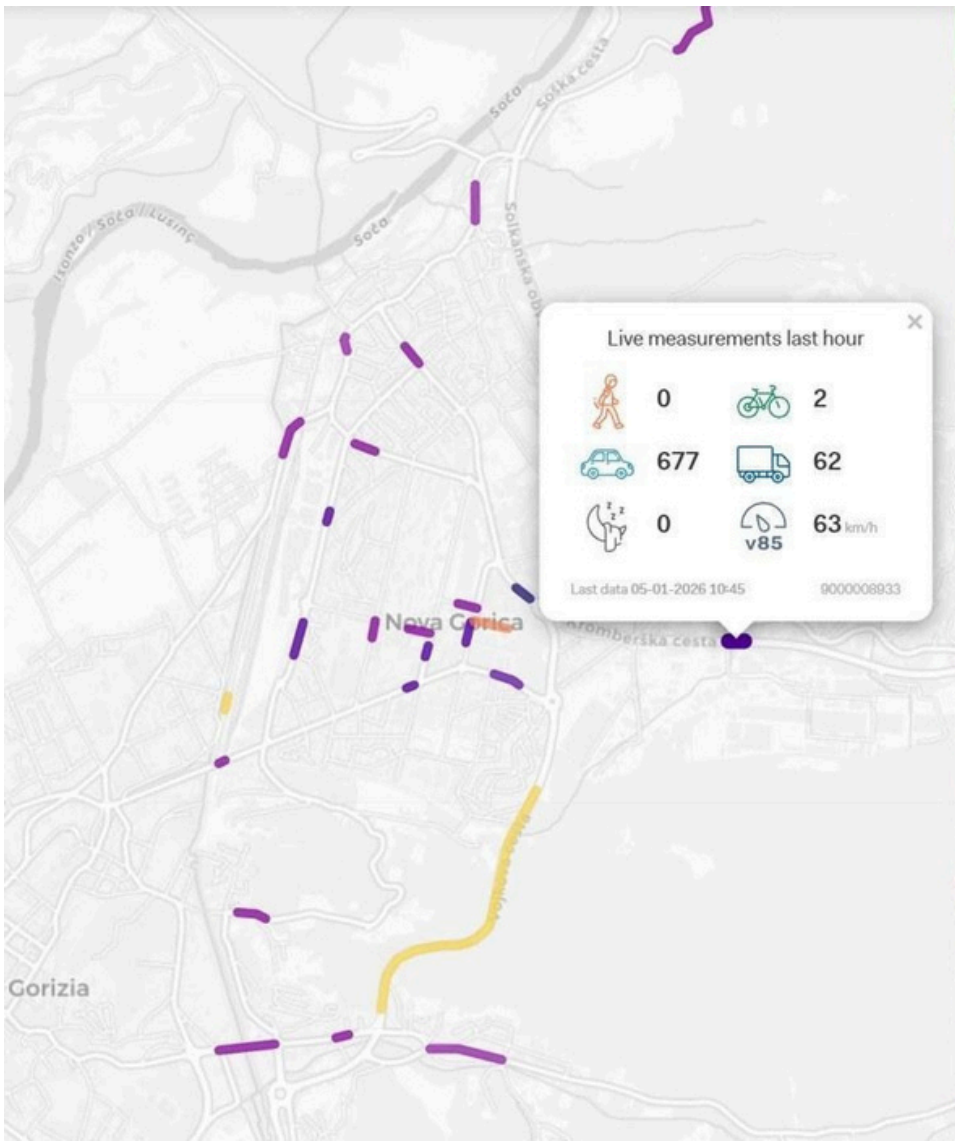
The interactive spatial installation to present urban data in the Municipality Building in Nova Gorica



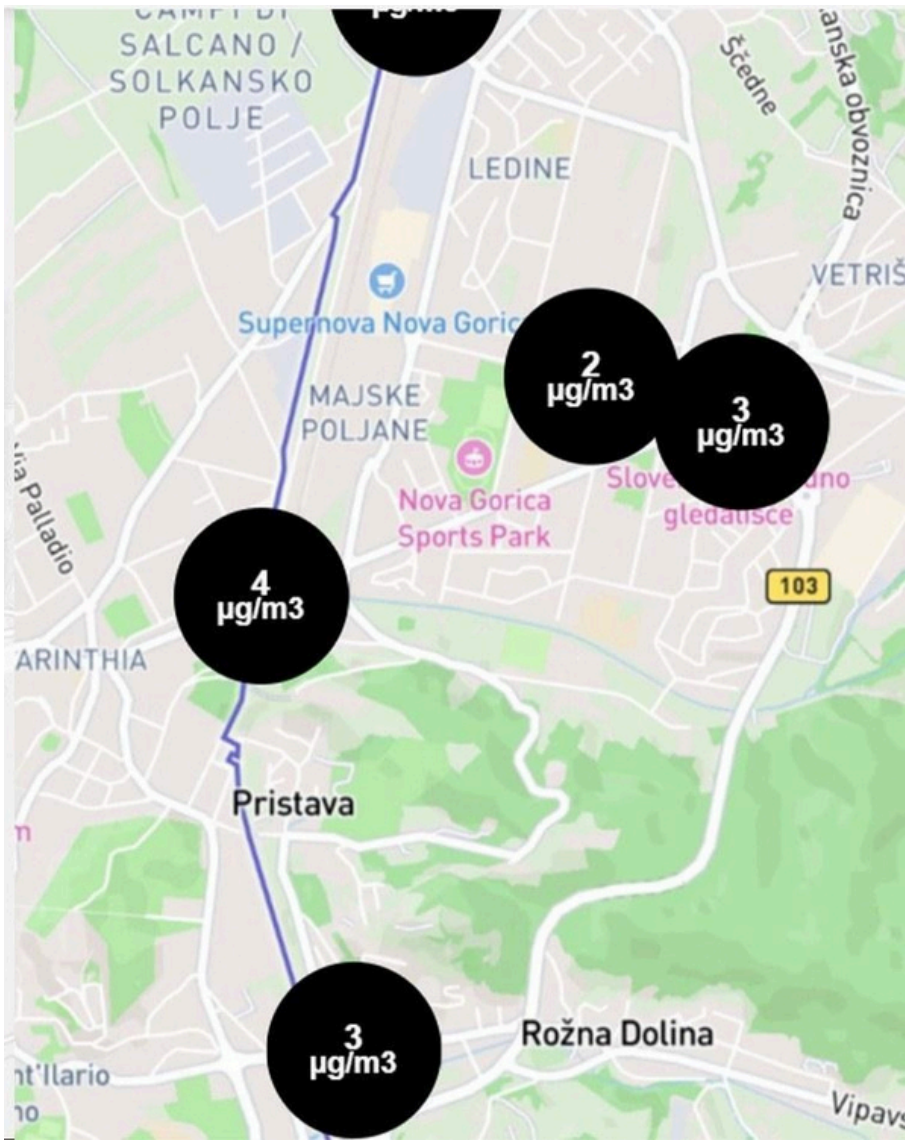
Example of air-quality data during major events.



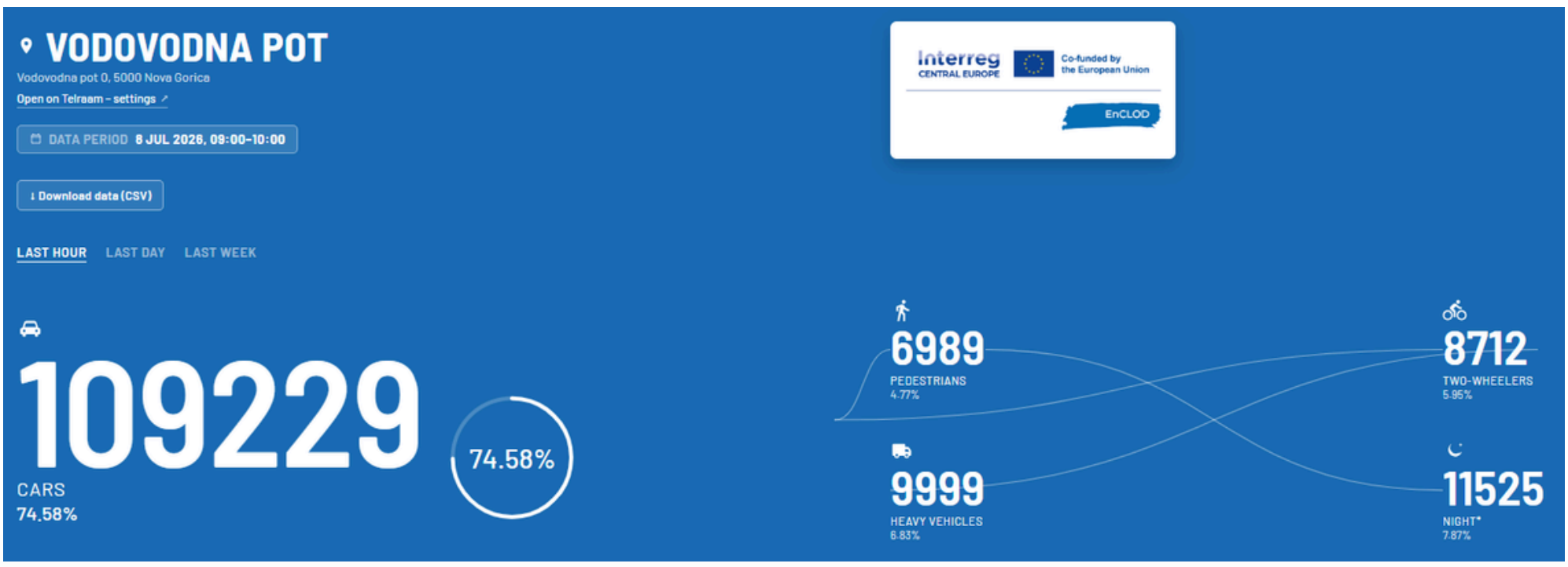
Example of an analytical output for an event location.



The live monitoring tool: the Telraam traffic map. Available here



The live monitoring tool: the open air-quality dashboard. Available here.



Open Data dashboard

FUTURE GOALS

- **Implement the new municipal Air Quality Plan**
- **Develop a dedicated Open Data portal**
- **Expand the traffic and air-quality sensor network**
- **Continue publishing Open Data**
- **Strengthen cooperation with Gorizia (Italy)**
- **Organise future hackathons and capacity-building activities**
- **Support future Digital Twin development**

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ABOUT THE PROJECT

The project EnCLOD aims at strengthening the governance capacity of 5 local public authorities in Central Europe by promoting the use of Open Data (OD) and the Internet of Things (IoT) sensor networks. This initiative strengthens multi-level governance, promotes civil society involvement, and fosters public-private collaboration. Within the five pilot areas - Vicenza (Italy), Olomouc (Czech Republic), Debrecen (Hungary), Zilina (Slovakia), and Nova Gorica (Slovenia) - a specific challenge related to mobility/transport, environment, or climate change policy area is addressed through the development of 5 local Action Plans for the effective usage of Open Data and IoT opportunities for territorial governance and city-region planning. Furthermore, project activities will significantly increase awareness and knowledge of public authorities on OD and IoT potentialities for territorial governance, through case study collection and capacity building activities. Citizens' engagement will be enhanced through the organisation of events like "hackathons" and raising awareness activities.

PARTNERS INVOLVED IN THE PILOT ACTION OF NOVA GORICA

UNIVERSITY OF LJUBLJANA Faculty of Architecture

MESTNA OBČINA NOVA GORICA

OTHER PROJECT PARTNERS

IUAV

Provincia di Vicenza

DKV

epc

city:one

UNIVERSITY OF ŽILINA

alda SRL Benefit Corporation

Palacký University Olomouc

CITIQ Intelligent technologies for urban mobility