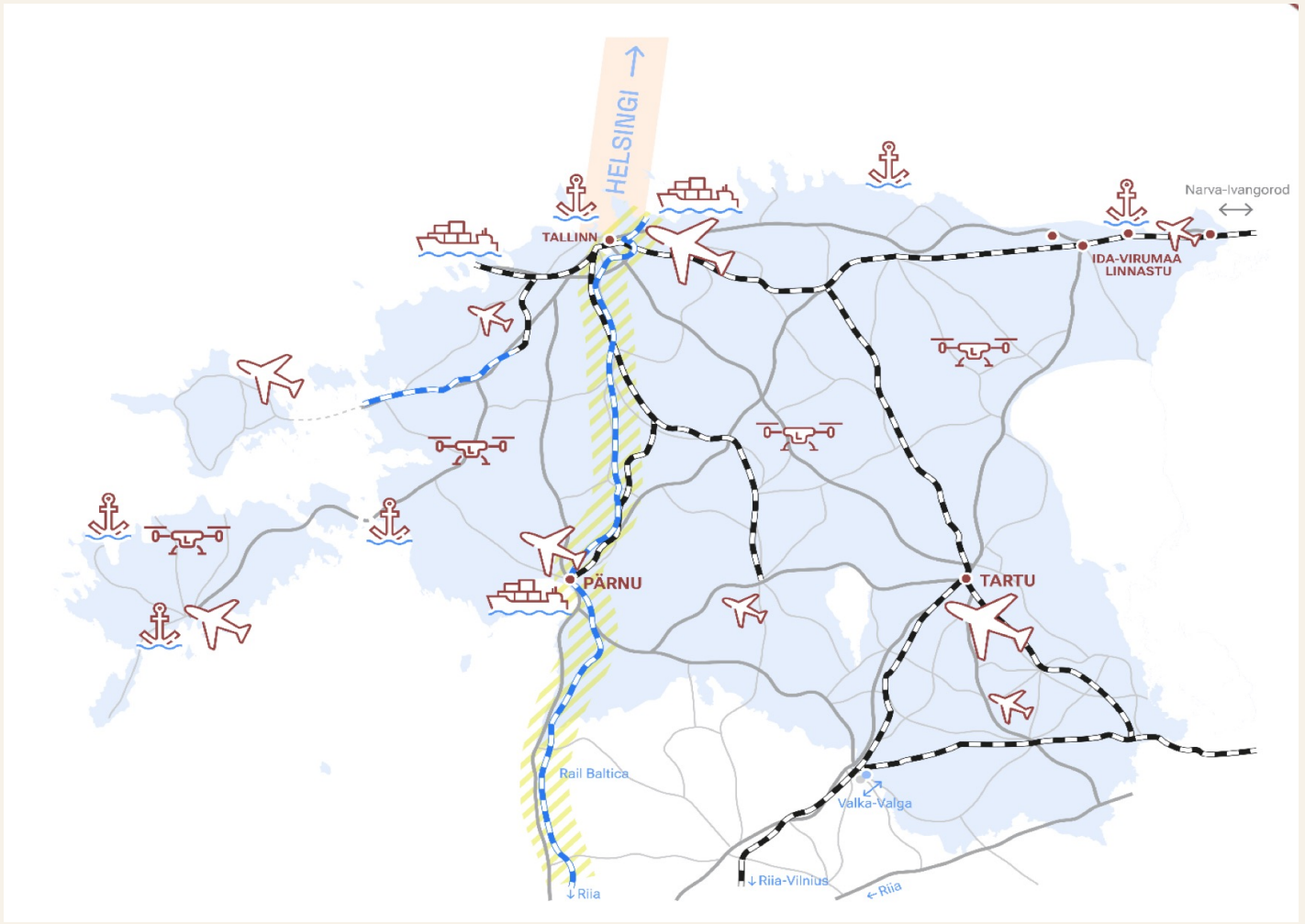
Collecting and representing data: challenges, outcomes, and lessons learned
Tartu case study

Kertu Vuks

TARTU



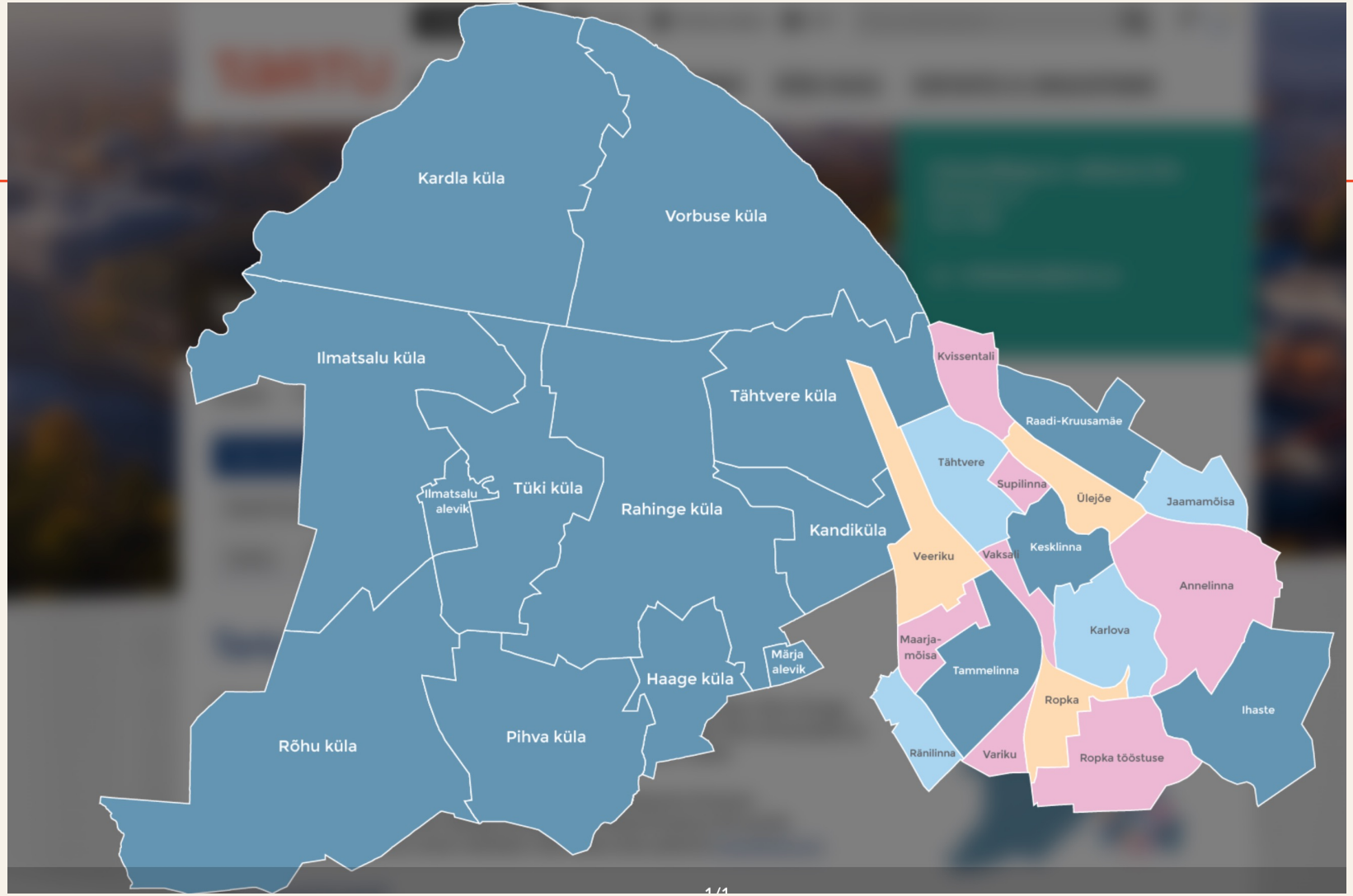
Source:Estonian national plan 2050 (ÜRP)

Tartu- a city for people

- The first City in the Baltics, almost 1000 years old.
- Close to 100 000 inhabitants, of which about 1/5 are students (9 higher education institutions).
- Area 154 km2 – second largest City in Estonia.
- Ethnic composition: Estonian 78%, Russian 12%, Ukrainian 4%, others 6%.
- The Center of Estonian culture – Estonian National Museum, the first Estonian theatre, the first song festival, UNESCO City of Literature, European Capital of Culture 2024.
- University of Tartu ranks in the top 1% of the world's best universities.
- Our aim is to be part of international economy and culture while maintaining our core values – compact and sustainable living enivronment and cooperation.
- Main marketing focuses: living environment, culture and sustainability.
- European Cultural Capital 2024

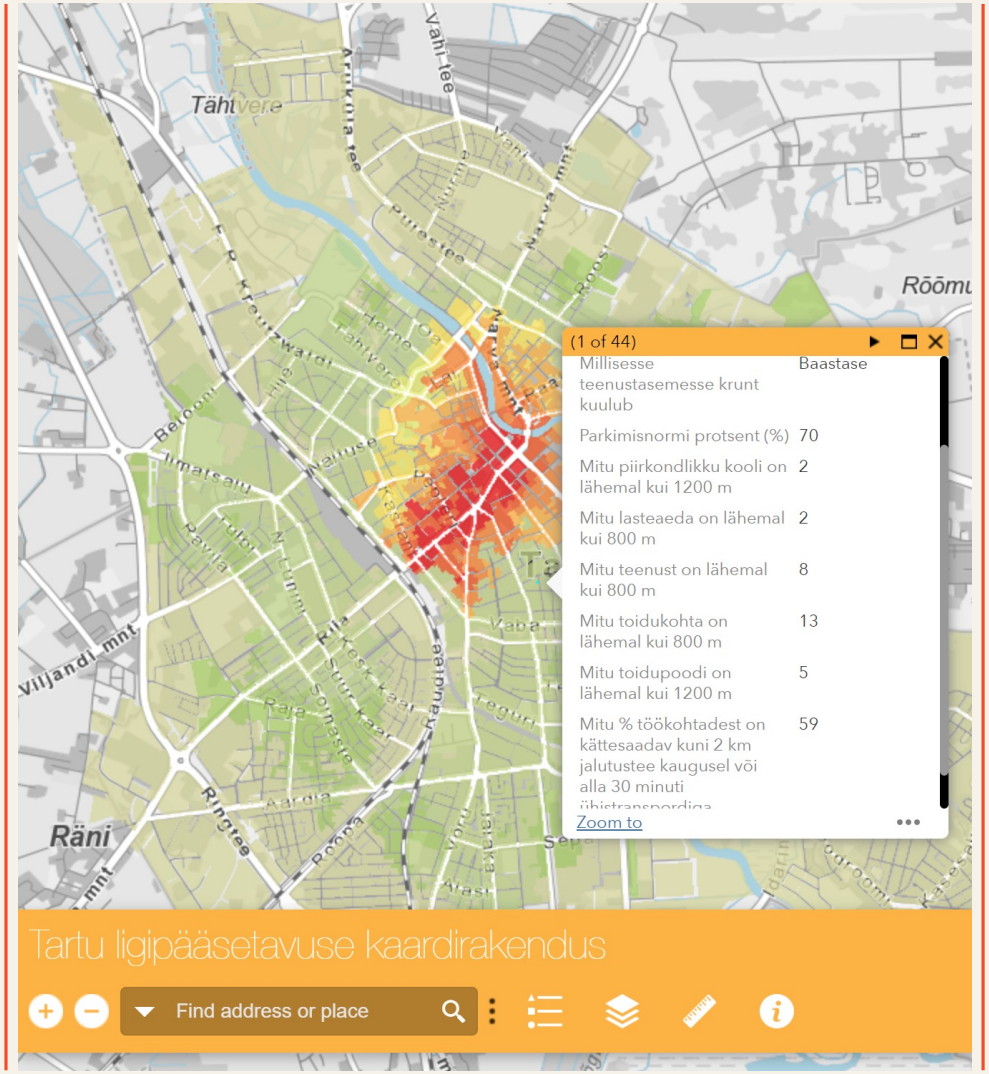
Credit: Mana Kaasik

Credit: Ragnar Vutt

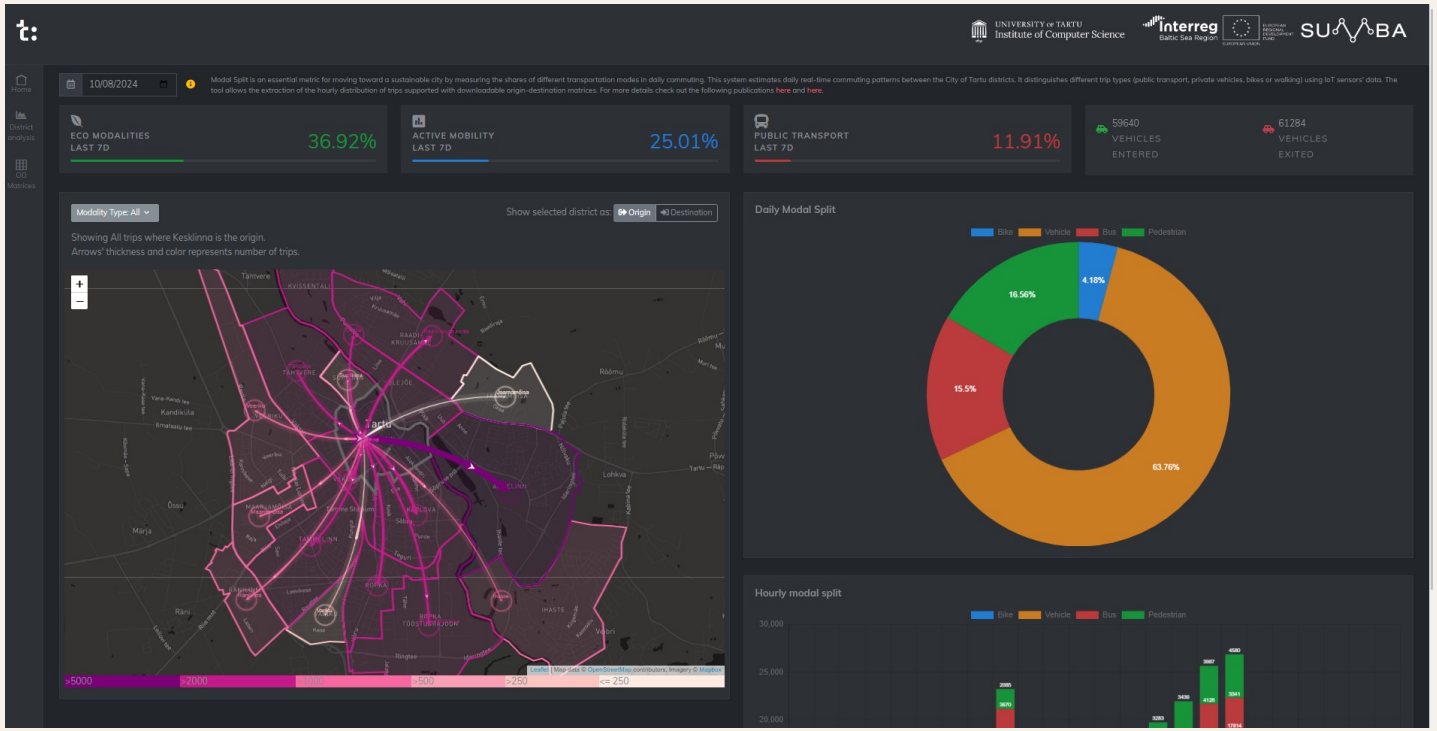

Kardla küla
Vorbuse küla
Ilmatsalu küla
Tähtvere küla
Ilmatsalu alevik
Tüki küla
Rahinge küla
Kandiküla
Haage küla
Märja alevik
Rõhu küla
Pihva küla
Kvissentali
Raadi-Kruusamäe
Tähtvere
Supilinna
Ülejõe
Jaamamõisa
Kesklinna
Veeriku
Vaksali
Annelinna
Karlova
Maarja-mõisa
Tammelinna
Ihaste
Ropka
Ränilinna
Variku
Ropka tööstuse

Accessibility map

- Better informed citizens
- Data-driven planner
- Targeted urban development



Where people come from and where they go



Collaboration with research institutions

Tartu Smart Bike Share

Tartu Smart Bike Share Bicycles since 2019

750+ bikes

- including 500+ electric bikes

100+ stations

28,000+ users

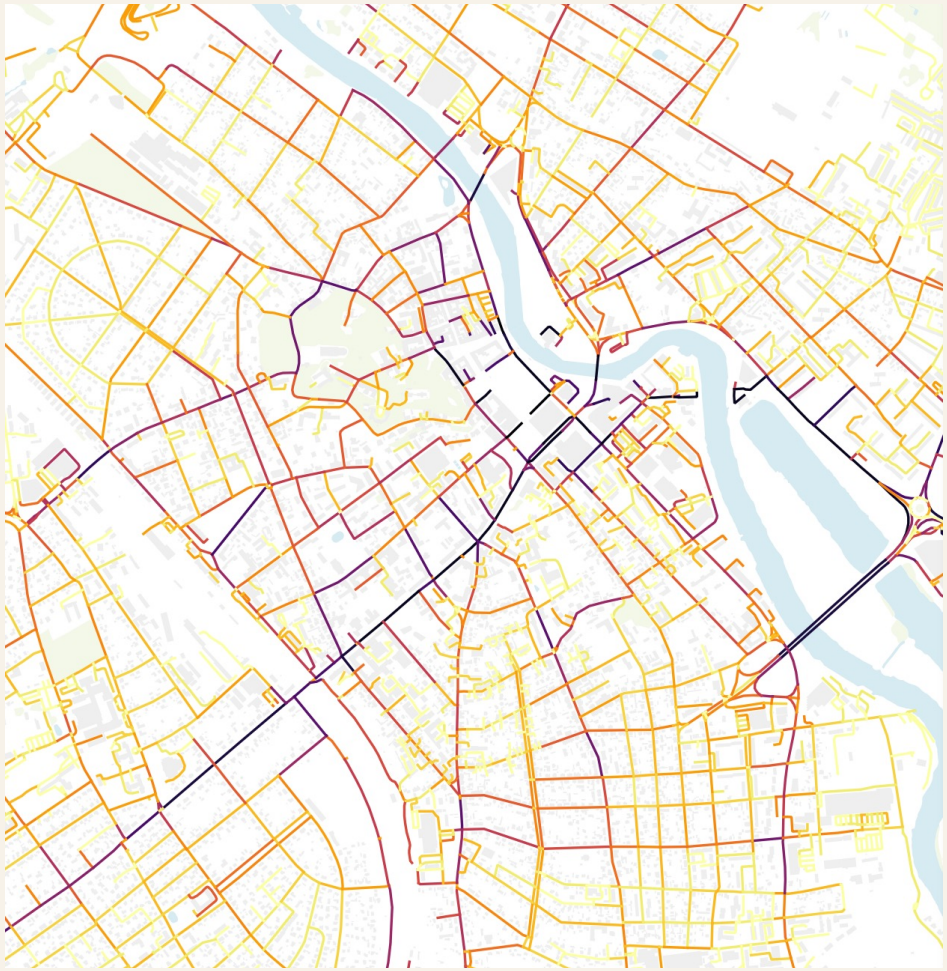
Total distance travelled since 2019 14,700,000km

Credit: Mana Kaasik

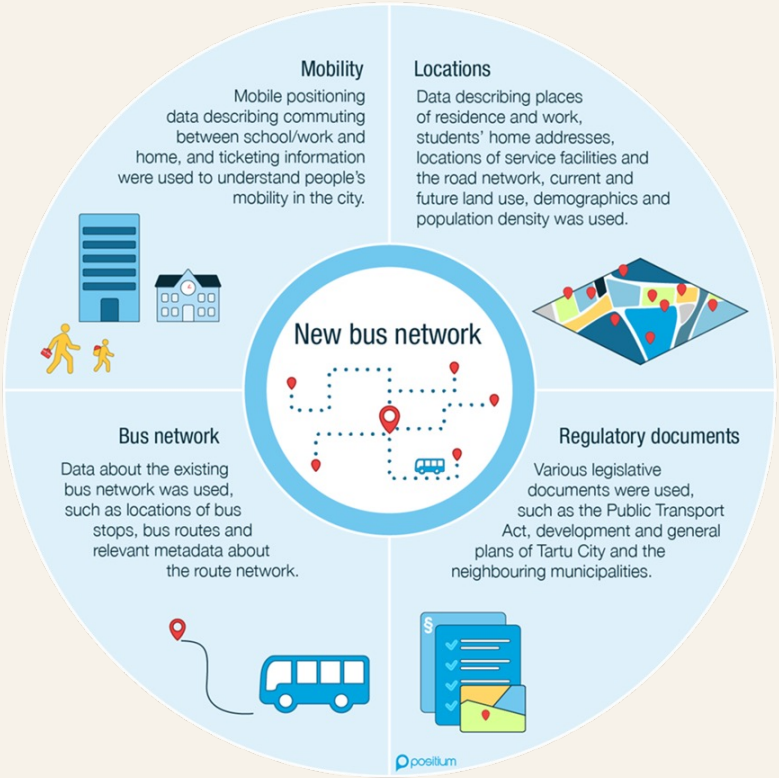
Credit: Mana Kaasik

Bike-share trip patterns

Bike-share trip distribution across the street network



Bus network


Mobility
Mobile positioning data describing commuting between school/work and home, and ticketing information were used to understand people's mobility in the city.
Locations
Data describing places of residence and work, students' home addresses, locations of service facilities and the road network, current and future land use, demographics and population density was used.
New bus network
Bus network
Data about the existing bus network was used, such as locations of bus stops, bus routes and relevant metadata about the route network.
Regulatory documents
Various legislative documents were used, such as the Public Transport Act, development and general plans of Tartu City and the neighbouring municipalities.
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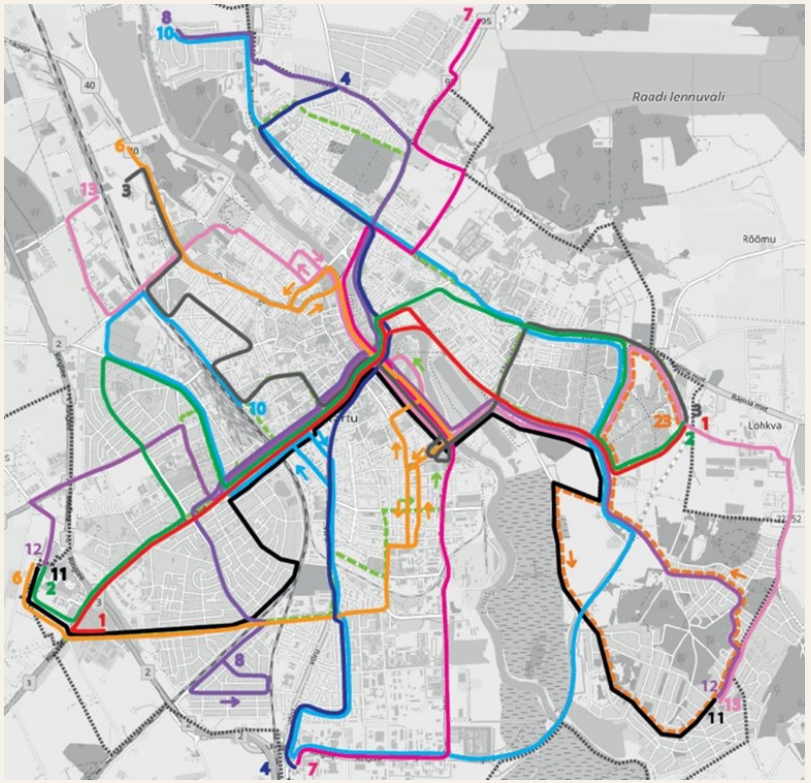

Raadi lennuvali
Rõõmu
Lohkva

Real time data

- 2016–2017, the City of Tartu installed eight automatic active mobility counters.
- The devices are EcoCounter counters manufactured in France, capable of distinguishing between pedestrians and cyclists.
- Count data is automatically stored in a central database and can be monitored in real time.
- The data supports analysis of traffic volumes on pedestrian and cycling paths, as well as the movement patterns of cyclists and pedestrians.

Real time data

Testing. Learning. Improving.

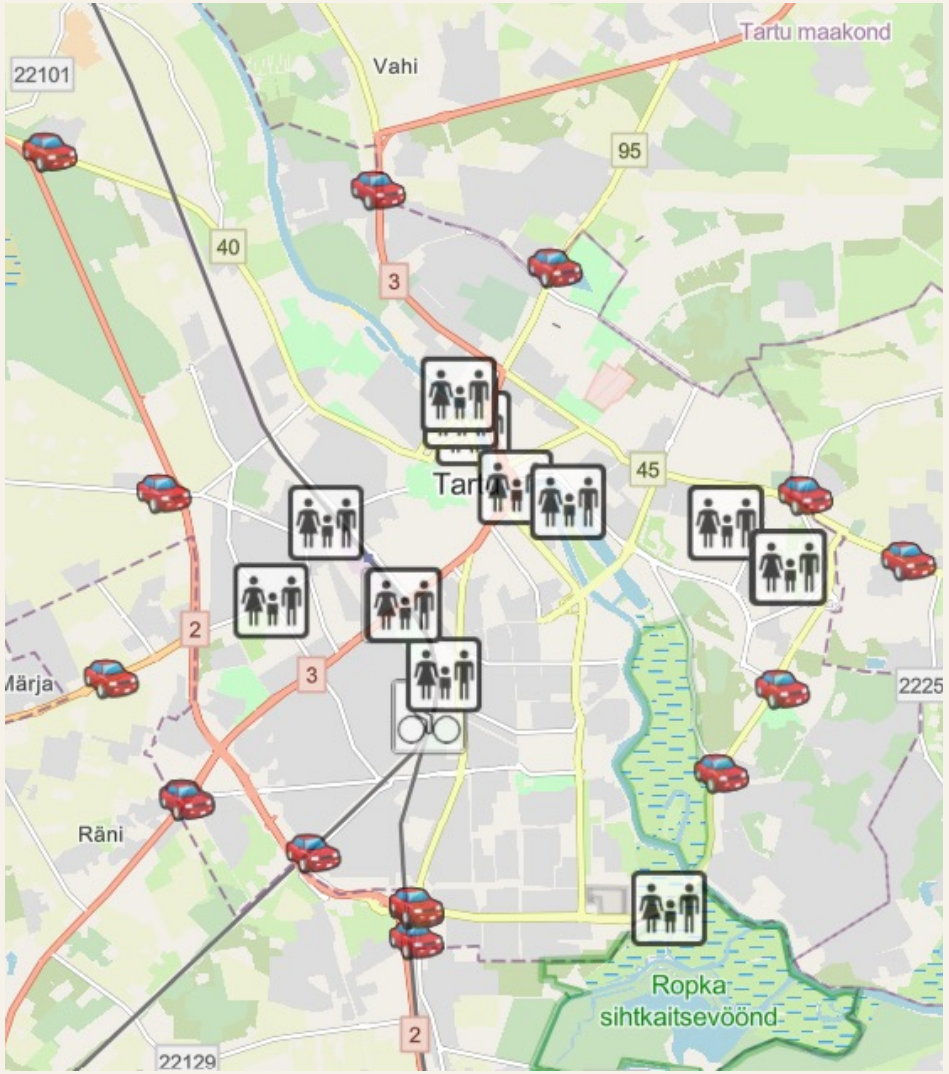
Long-term piloting of technologies to understand cost, maintenance and performance.

Informed technology choices.

Scaling solutions based on evidence and real-world experience.

Data accessible in ArcGIS.

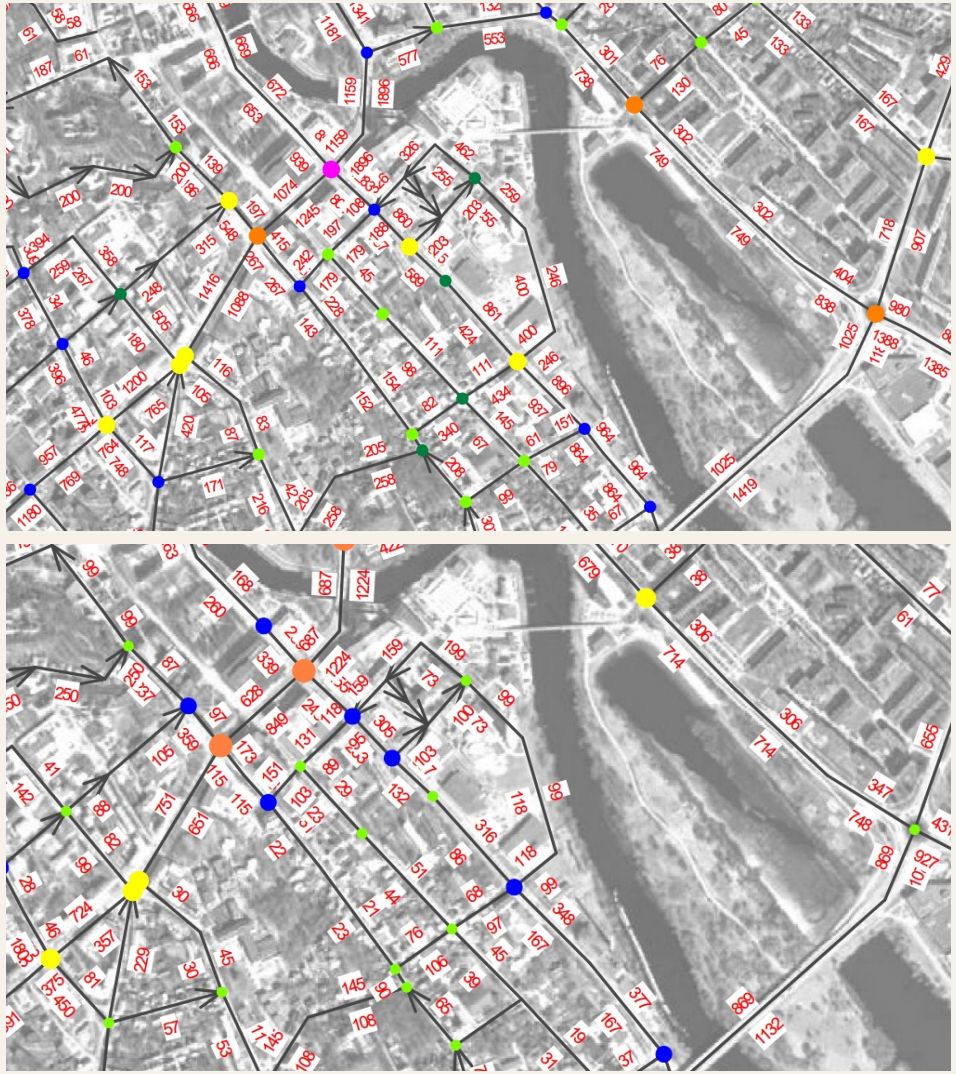
Enabling everyday use by city staff.



Model

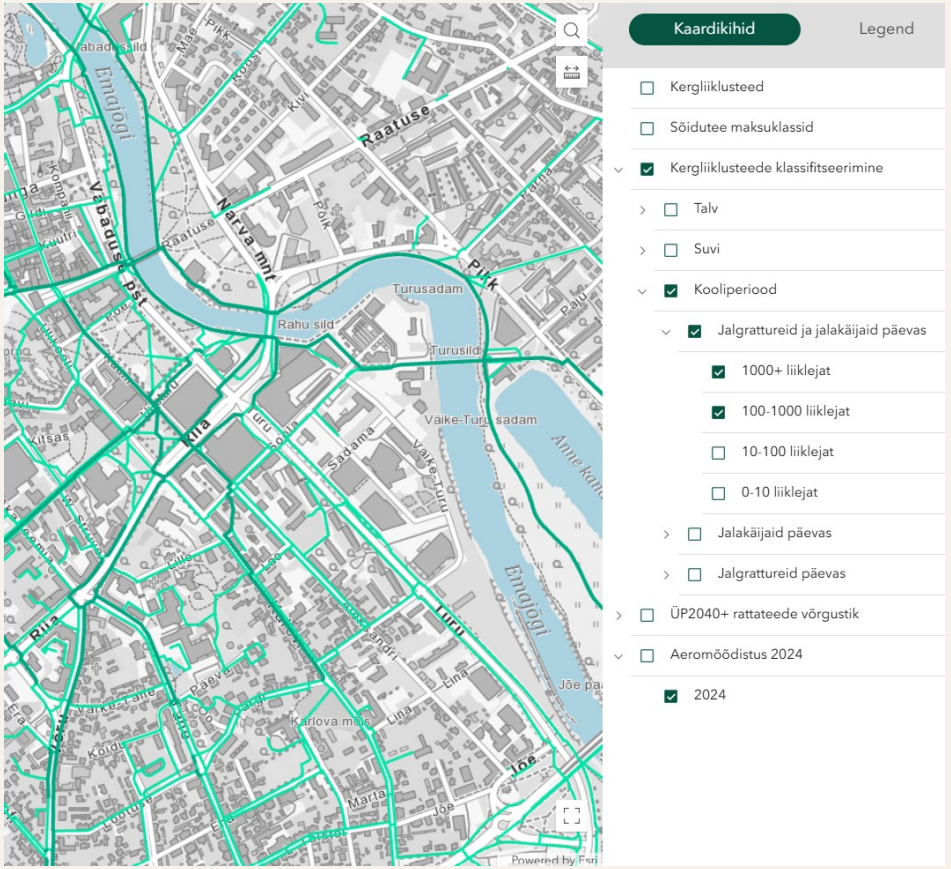
Tartu traffic 2023 vs 2040

Exploratory scenario showing potential traffic changes under climate plan targets



Model

Model of existing walking and cycling volumes



Thank you!

TARTU