



GISPO

Så här löser du GIS-problem med Open Source!

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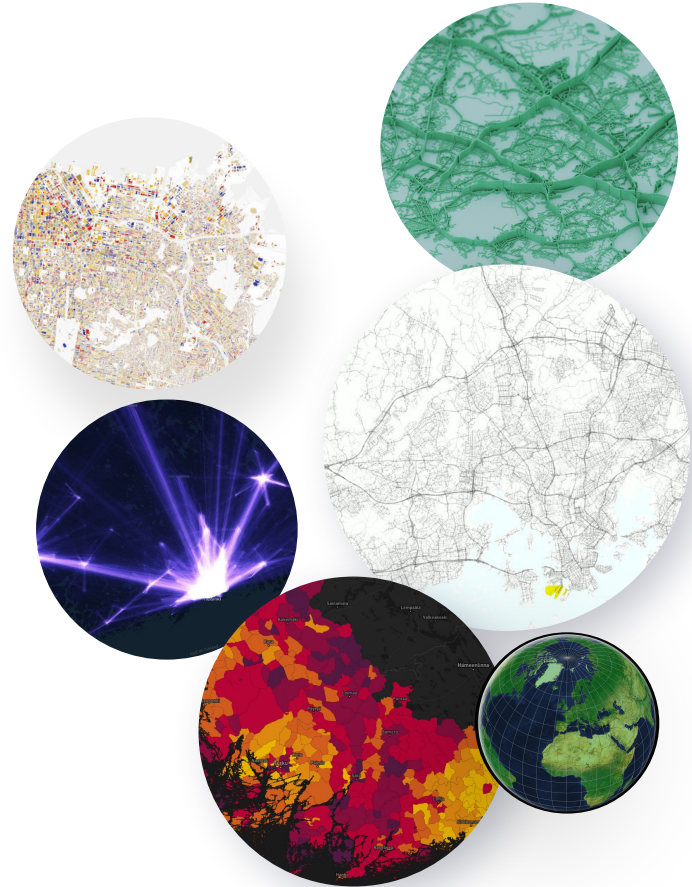
Sanna Jokela,
CEO, GIS specialist
Loves gardening



Pauliina Mäkinen
GIS specialist
Optimization wizard and
football referee

GISPO LTD

- Founded 2012
- 12 employees
- **We help our customers to use FOSS4G solutions & open data**
 - Gispo has offered training to 100+ organizations and over 1000 people
- Software development, system integrations, training, support & consulting
- **Open source advocate and capacity building with open source**



OPEN SOURCE GIS STACK

PostGIS



GeoServer



GeoNode



GDAL



PostgreSQL



GEOS
Geometry
Engine
Open
Source



kepler.gl



python™



Usual workflow for our projects

Customer needs, interviews, workshops, questionnaires

Gather available data + enrich data (QGIS, PostGIS, interfaces)

Database design (pgModeller + PostGIS)

QGIS configurations (forms, project, visualisations, relations) or plugin

Training and support

Publishing data interfaces (e.g. with GeoServer)

Creating web service for data (e.g. Kepler, Oskari, Leaflet, Geonode)

Develop & maintain

A detailed, light gray map of a city grid, showing streets and building footprints. The map is centered on the text 'USE CASES'. At the bottom of the image, there is a white wavy shape that resembles a stylized horizon or a decorative border.

USE CASES

CO2 PLUGIN FOR QGIS

Precalculated CO² information:
Traffic, Heating, Construction, Electricity usage

PostGIS

QGIS plugin
(GitHub)

Present situation, user adds:
Urban zoning layers about population, jobs, buildings

Heavy calculations: e.g. finding addresses...

Bonus: ready made visualizations!

Results:
250m*250m grid with CO² tons of different main emission sources in requested years

Future predictions, user adds:
Zoning elements from land use plans, target year, plans for center networks and intensive public transport stations



Test result: prediction on how land use planning, traffic station planning and new centres affect the future emissions from traffic, heating and building construction with chosen scenario model

2019

Biggest CO2 sources / grid

- ▣ Heating and cooling
- ▲ Electricity
- Traffic
- ◆ Construction



Total CO2 emissions (t)

- 0 - 286
- 286 - 762
- 762 - 1538
- 1538 - 2794
- 2794 - 4837
- 4837 - 8146

CASE: Meteorological data, FMI2QGIS Plugin

The screenshot displays the QGIS desktop application. At the top, the title bar reads '*Untitled Project — QGIS [dev]'. Below it is a menu bar with options: Project, Edit, View, Layer, Settings, Plugins, Vector, Raster, Database, Web, Mesh, Processing, Help. A comprehensive toolbar follows, containing icons for navigation, editing, and analysis. The main map area shows a topographic map of Europe with labels for various countries and cities. On the left, the 'Browser' panel lists data sources such as Google Satellite, Open Weather Map, and OpenStreetMap. The 'Layers' panel at the bottom left shows 'OpenStreetMap' as the active layer. On the right, the 'Processing Toolbox' is open, displaying a search bar and a list of processing algorithms, including 'FMI2QGIS'. At the bottom of the window, a status bar provides technical details: 'Coordinate: 4420735,8103000', 'Scale: :34911980', 'Magnifier: 100%', 'Rotation: 0,0 °', 'Render', and 'EPSG:3857'.

Project Edit View Layer Settings Plugins Vector Raster Database Web Mesh Processing Help

Browser

- Google Satellite
- Google Satellite Hybrid
- Google Terrain
- Google Terrain Hybrid
- Open Weather Map Clouds
- Open Weather Map Temperature
- Open Weather Map Wind Speed
- OpenStreetMap
- OpenStreetMap H.O.T.
- OpenStreetMap Monochrome
- OpenStreetMap Standard
- OpenTopoMap
- Stamen Terrain

Layers

- OpenStreetMap

Processing Toolbox

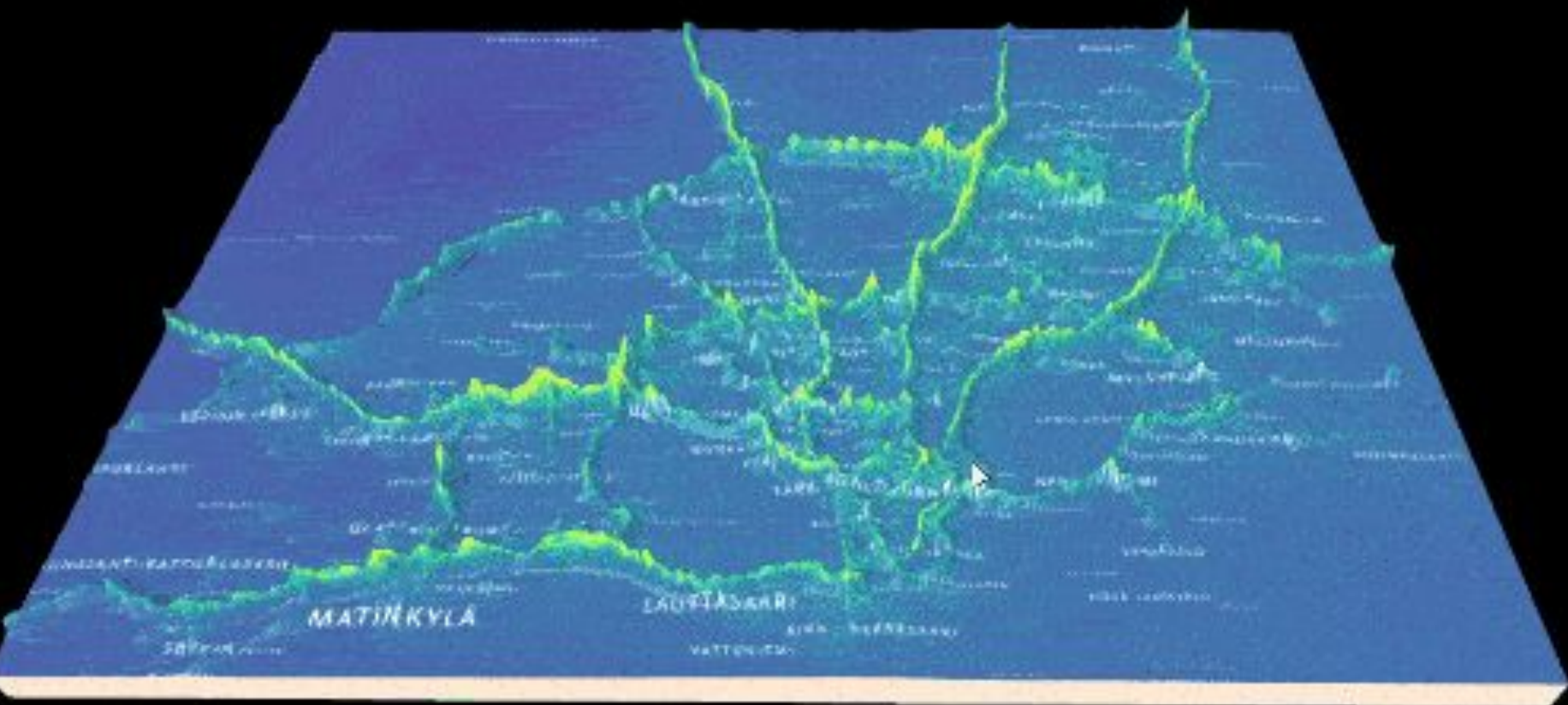
Search...

- Recently used
- Cartography
- Database
- File tools
- Interpolation
- Layer tools
- Mesh
- Network analysis
- Plots
- Raster analysis
- Raster creation
- Raster terrain analy...
- Raster tools
- Vector analysis
- Vector creation
- Vector general
- Vector geometry
- Vector overlay
- Vector selection
- Vector table
- Vector tiles
- FMI2QGIS
- GDAL
- GRASS
- SAGA

Type to locate (Ctrl+K)

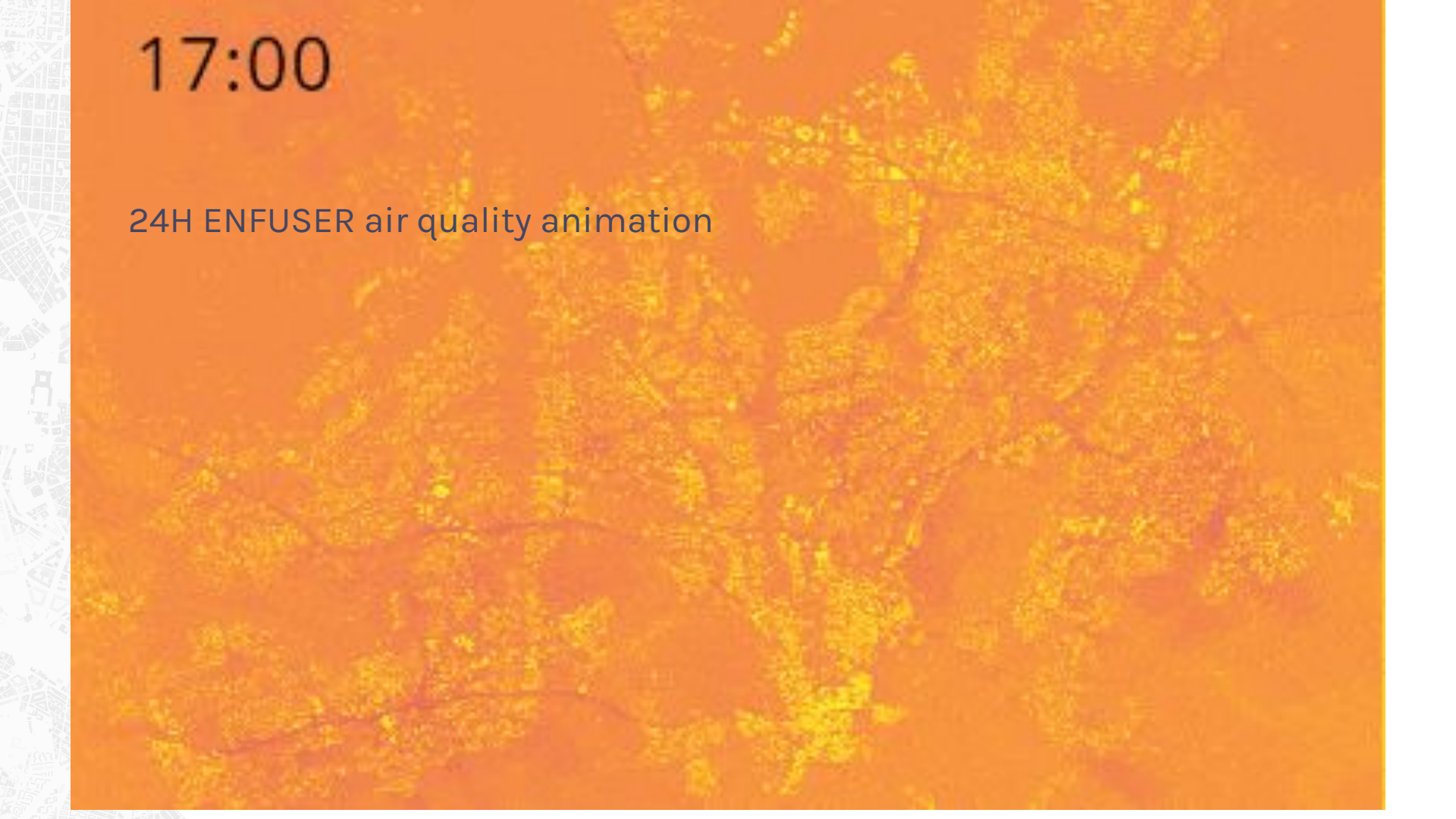
Coordinate: 4420735,8103000 Scale: :34911980 Magnifier: 100% Rotation: 0,0 ° Render EPSG:3857

Average NO2 emissions in Helsinki

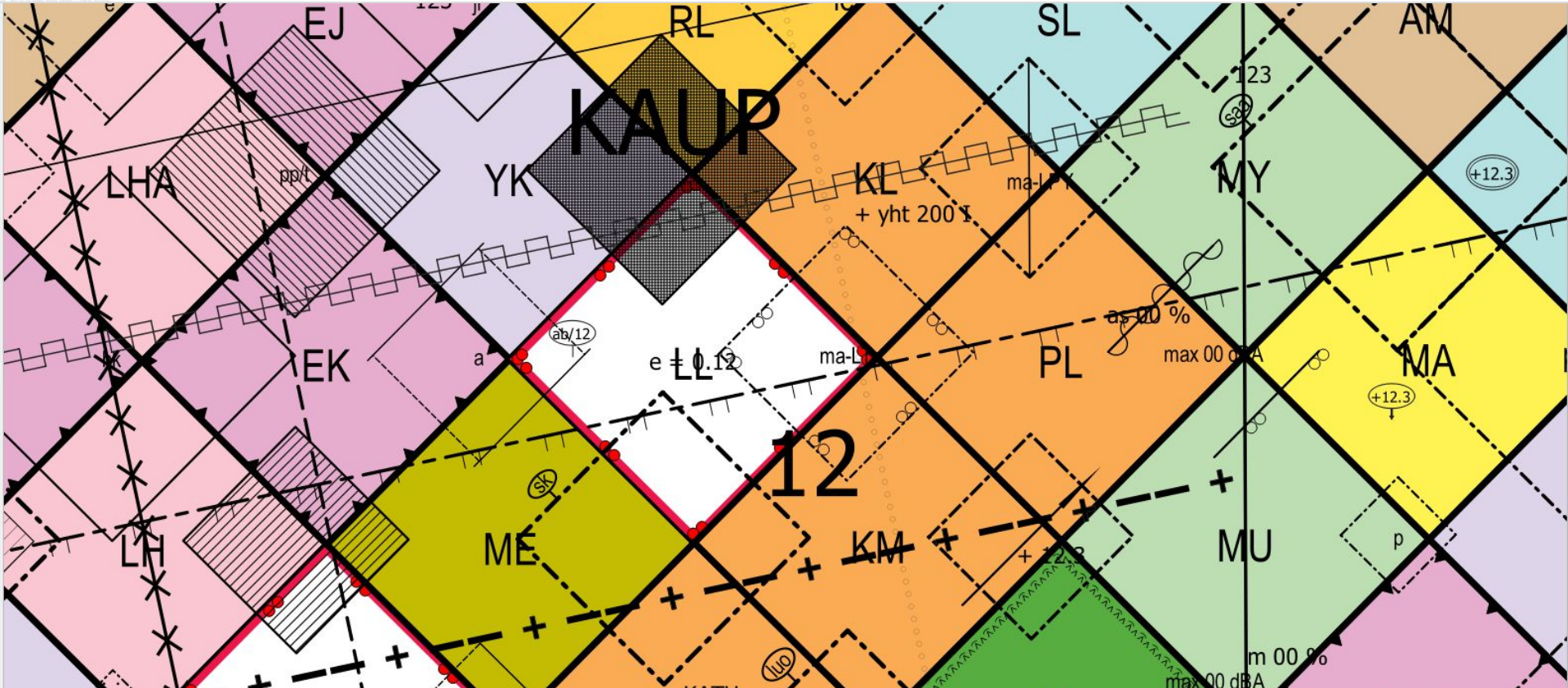


17:00

24H ENFUSER air quality animation



CASE: Land use planning: QGIS with PostGIS



LAND USE PLUGIN

Yleiskaava - Kohteen attribuutit

Perustiedot yleiskaavasta | Kaavamääräys | Teema | Lisätiedot | Kaavaelementit

Syötä kaavan perustiedot

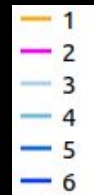
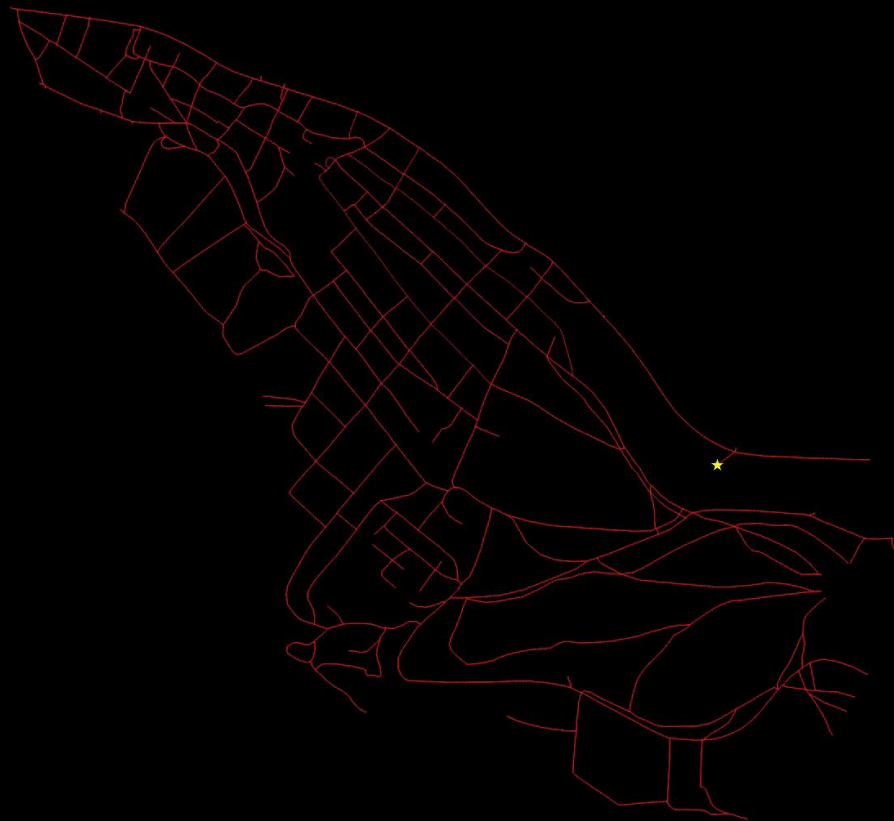
Kaavan nimi	NULL
Kaavatunnus	NULL
Kieli	Suomi
Kaavoitusvaihe	aloitusvaihe
Kaavatyyppi	yleiskaava
Vahvistajan tiedot	NULL
Taustakartta	
Viimeisin muokkaaja	sanna_gispo

Päiväykset

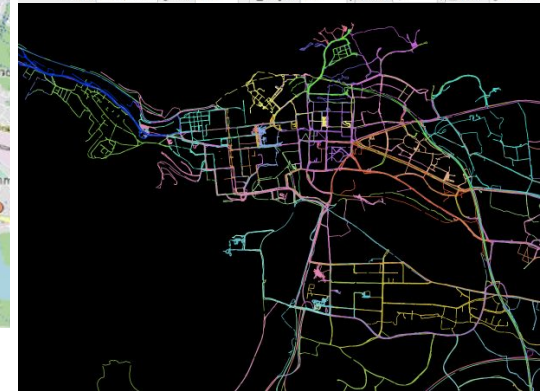
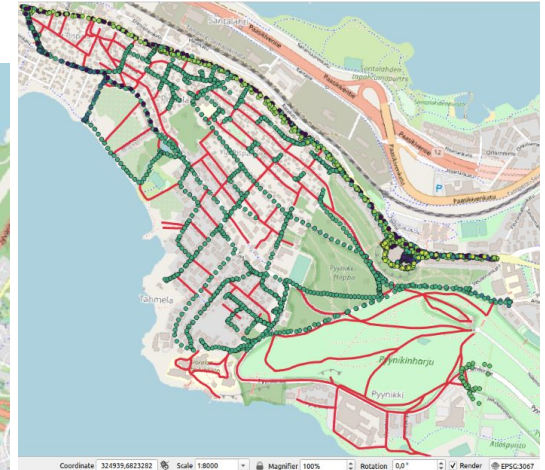
Luomispäivämäärä	2020-09-22 1
Voimaantulopäivämäärä	NULL
Kumoamispäivämäärä	NULL
Poistamispäivämäärä	NULL

OK | Peru

CASE: Optimized routes for snow ploughing



Using PostgreSQL Foreign Data Wrapper



OSKARI

Kalastuksen sähköiset asiointipalvelut | Kalastusrajat | Svenska

Haku Tietoa

Kartalla Vaillussa paikassa Hae

N 67°10'44.6", E 23°55'19.99" (ETRS-TM35FIN)
N 60° 26' 36.0", E 22° 11' 27.5"

Rajoitukset

Aurajoen edustan isorysäkieltoalue JS

Keskittä kartalla

Voimassa tänään 1.1 - 31.12
Joksuukalastuksen kieltö (meressä)

Lisätiedot: Vaelluskalavesistön edustan merialueella ei ilman aiemmin saavutettua oikeutta saa asettaa isorysää myyntiin koimea kilometri lähemmäksi joen suuta. (kalastuslaki 66 §) Kalastuskieltoalue ei perustu maanmittauslaitoksen määrittelyyn jokisuulueen rajaan vaan kalatalousviranomaisen näkemykseen

Aurajoen edustan trooli- ja nuottakielto JS

Raisiojoen edustan isorysäkielto JS

Raisiojoen edustan trooli- ja nuottakielto JS

Raisiojoen edustan verkkokielto JS

Viimeiset palvelupaikat sekä suunnitteluohjeet

Palvelupisteen haku

Etsi palvelupiste

Kunta

Akaa

Palvelupiste

Akaan palvelupiste

Palvelupisteen tiedot

Käyntiosoite
Kirkkotori 10
37800 Akaa

Aukioloajat
> Maanantai: 09:00 - 12:00
> Tiistai: 09:00 - 12:00

Akaan palvelupiste

Käyntiosoite
Kirkkotori 10, 37800 Akaa

Aukioloajat
Ma - Ti: 09:00 - 12:00

Kela palvelupisteessä asiakas saa palveluneuvojalta kaikkiin Kelan etuuksiin liittyvää henkilökohtaista neuvontaa ja palveluopastusta. Asiakas voi myös jättää hakemuksen tai asioida asiakaspäätteellä. Palvelemme myös ajanvarauksella puhelimitse ja palvelupisteessä. Lue lisää ajanvarauksesta www.kela.fi/ajanvaraus.

LANDMÆLINGAR ISLANDS

LEITA

KORTALÖG

VALIN LÖG

GÖGNIN MÍN

KORTAÚTGÁFA

SKYRINGAR

LEIÐBEINGINGAR

DEMAKORT

Heimildir

Kort

Landslag

Island

Atlas

Myndþekja LMI

Animation speed

Skip ahead

Fast None

1/1/1987 2:00 AM

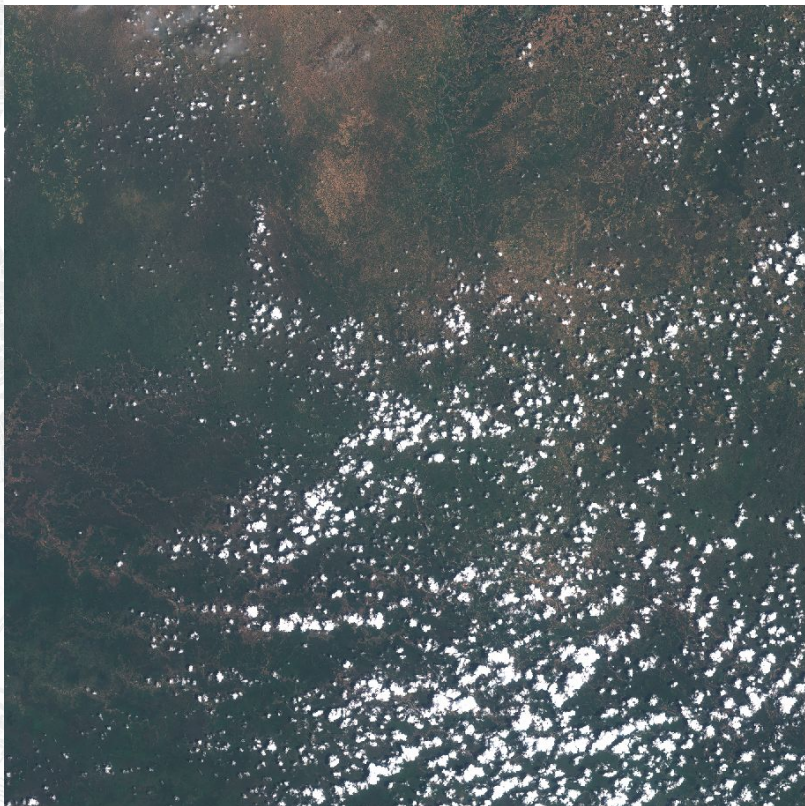
Skýringar

Sveitarfélög tímalina

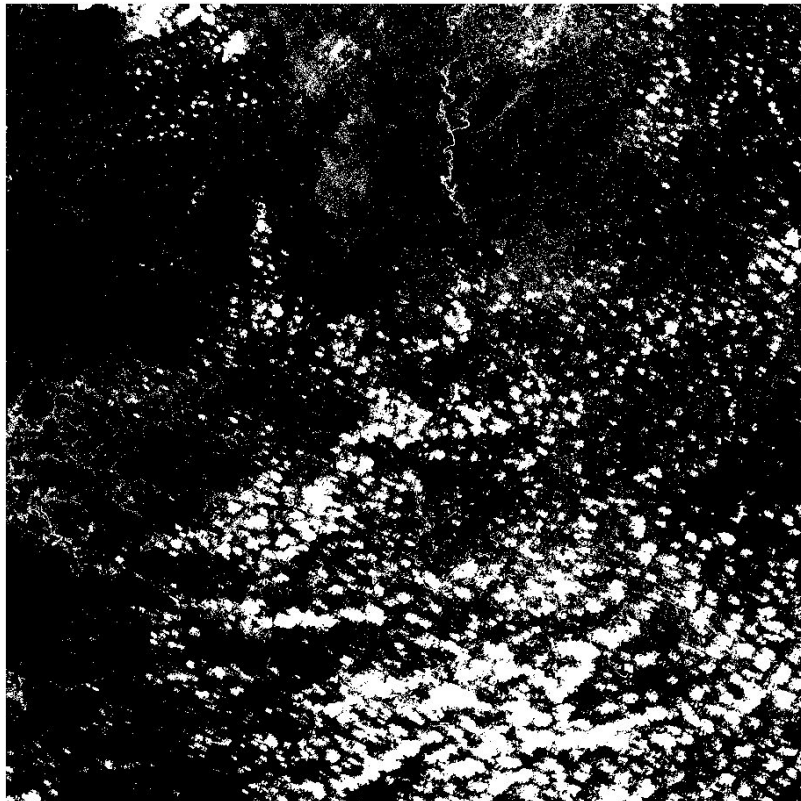
- LMI saga sveitfelaga
- Nýtt
- Nafnbreyting
- Lögun breytilist
- Breyting væntanlæg
- Engin breyting

CASE: Cloud detection

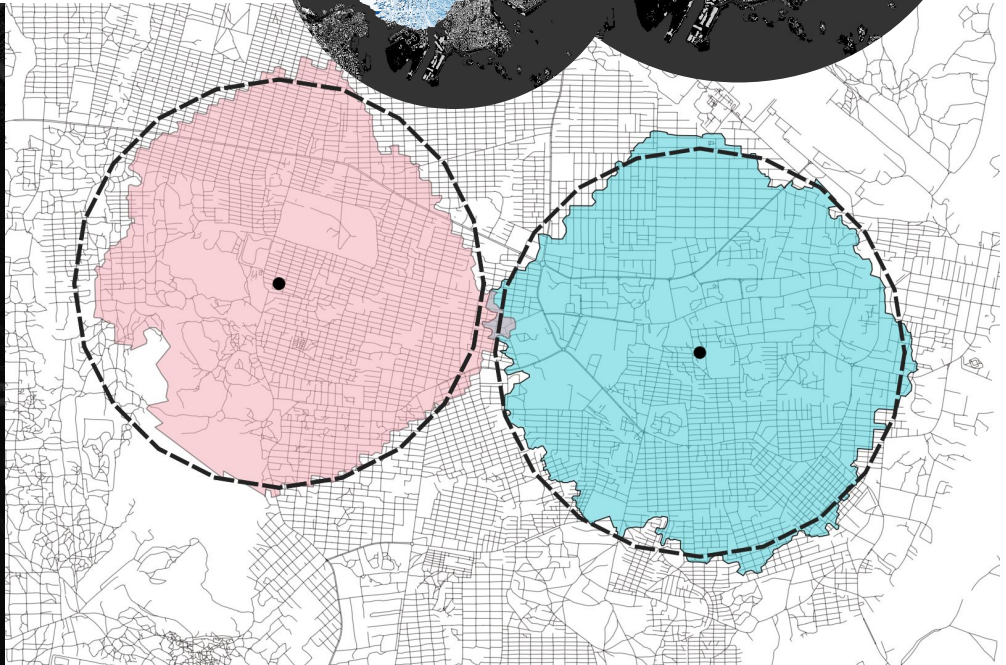
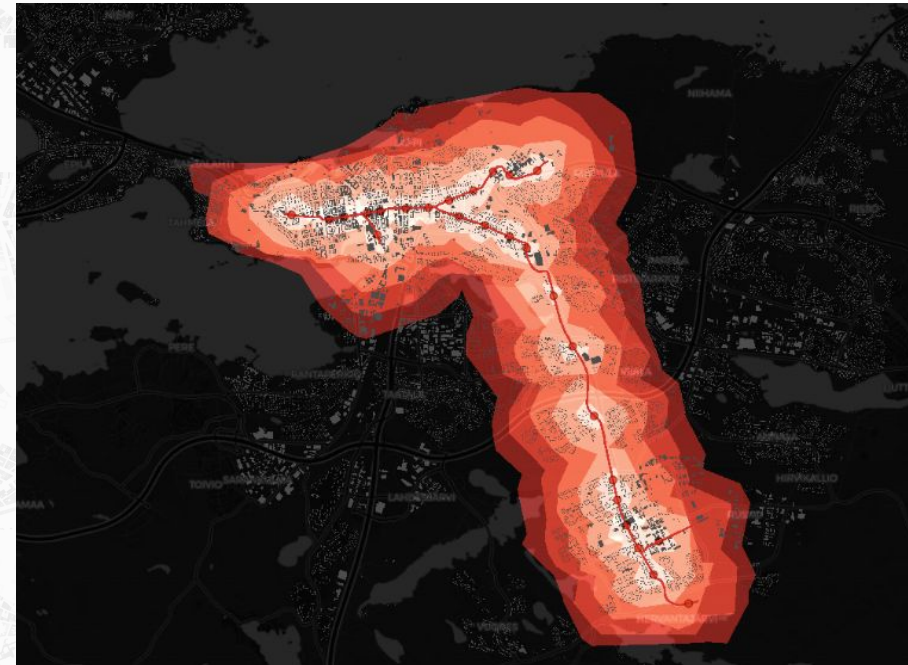
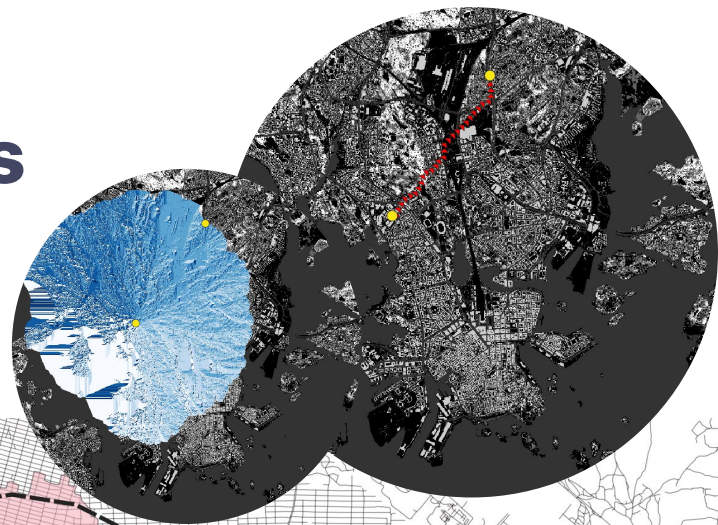
Ground truth



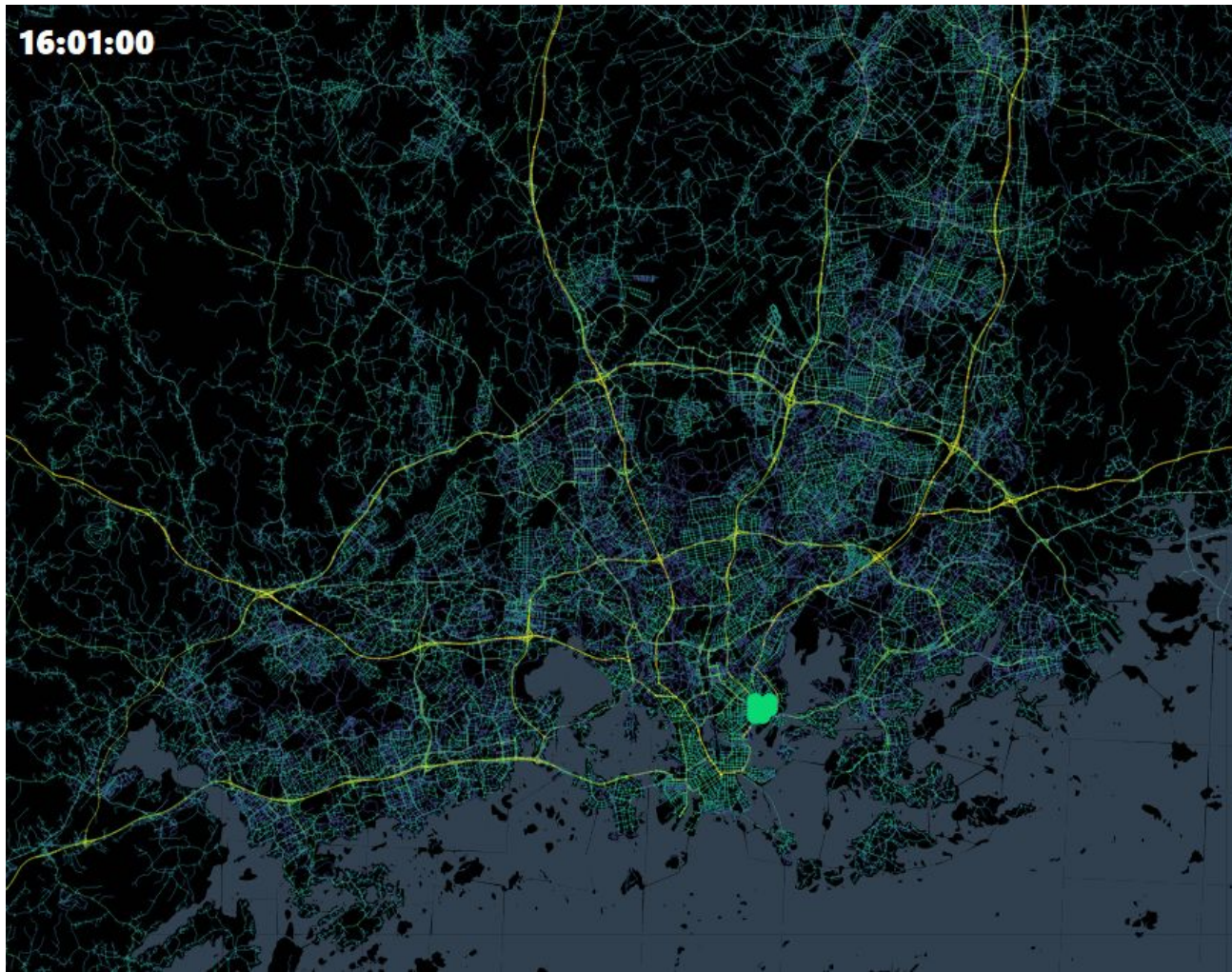
Predictions



CASE: Accessibility analysis

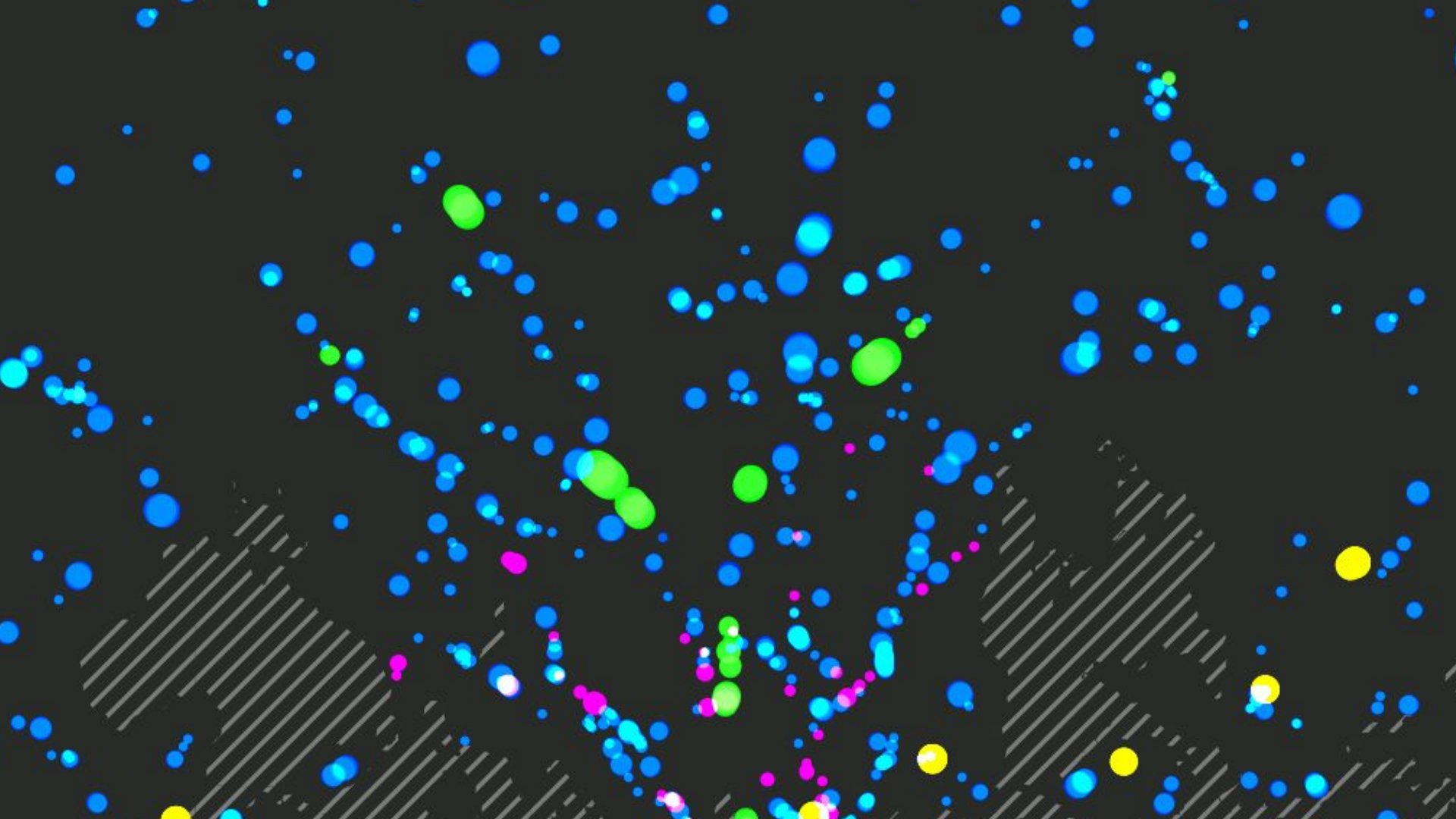


**The effect of
the choice of
the means of
transport to
the distance
covered at a
certain time
window**





BONUS: VISUALISATIONS





SETTING UP FOSS4G ENVIRONMENT



How to set up FOSS4G environment?

1. PostgreSQL/PostGIS database to store and handle organization data (also user roles and safety issues)
2. QGIS for editing, analysing and visualising data (also possible to create different profiles, like “tools most likely to use”)
3. Publishing: several options
 - a. QGIS Server + Lizmap (simple, works for small amount of end users)
 - b. GeoServer + suitable web map client (efficient, scalable, INSPIRE)
4. Support the users
5. Maintain and develop :)

Thank you!

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