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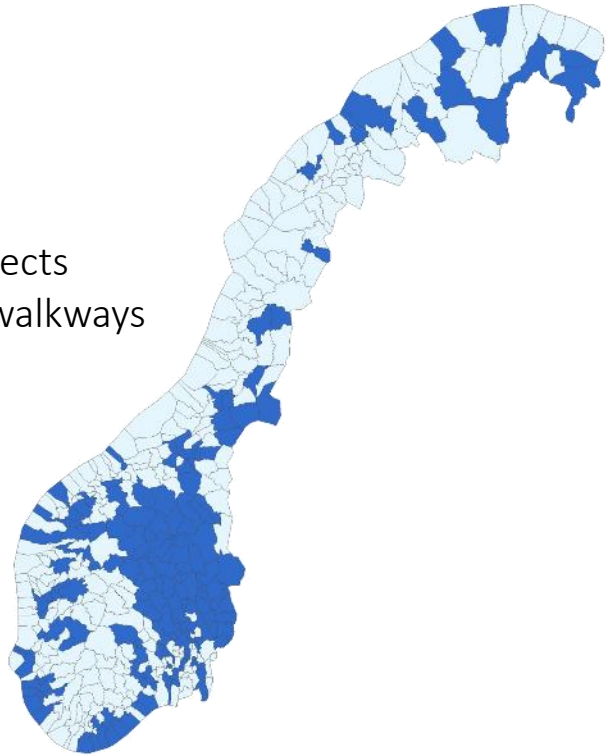
Mapping Norway

Sven Michaelis & Kathrin Bögelsack, Norwegian Mapping Authority

Status of mapping in Norway

36182 objects
1193 km walkways



urban areas in 186 municipalities

4818 objects
1312 km tracks

recreational areas in 226 municipalities

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Why are we doing it?

Areal planning

- Check status and make to-do lists
- Planning maintenance requirements
- Planning accessible belts through towns
- Location site study for retirement homes, recreational areas (good places)

Statistics

- Status of Accessibility
- Development of indicators for accessibility
- Check use of public funding through before-after analysis

Public health

- Show activity possibilities for disabled people
- Increase motivation amongst people with special needs
- Avoid fall accidents

and

- TOOL TO SEE – for all users and stakeholders → local inhabitants, organizations, politicians

method

Preconditions

- Low user treshhold
  - Easy to use
  - No requirement for expensive equipment
- Validation relies on quantifiable values
- Objects have geometri
- Representative data
- Free access to data

A lot to think of

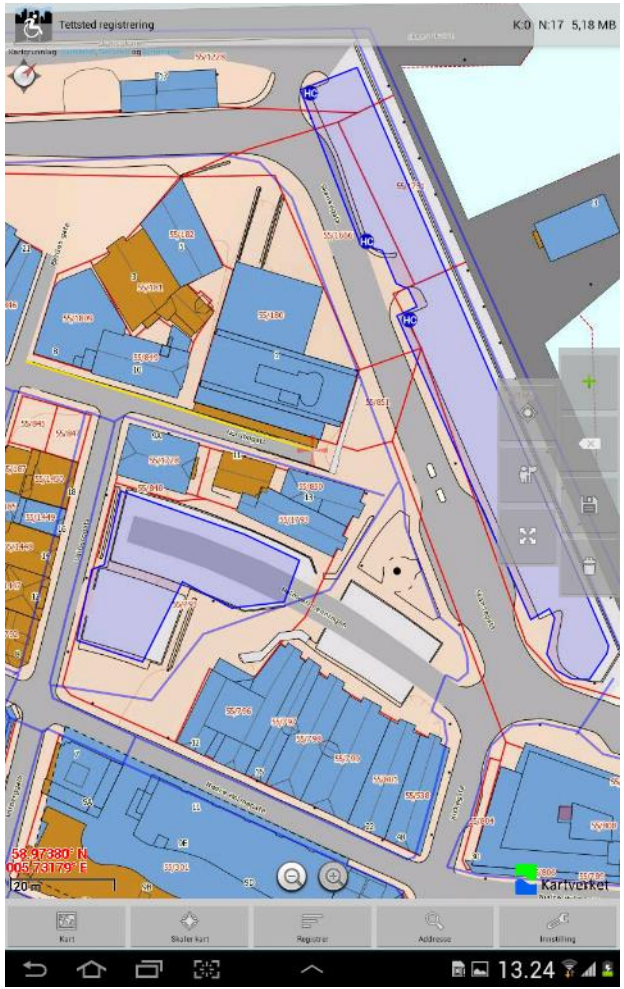


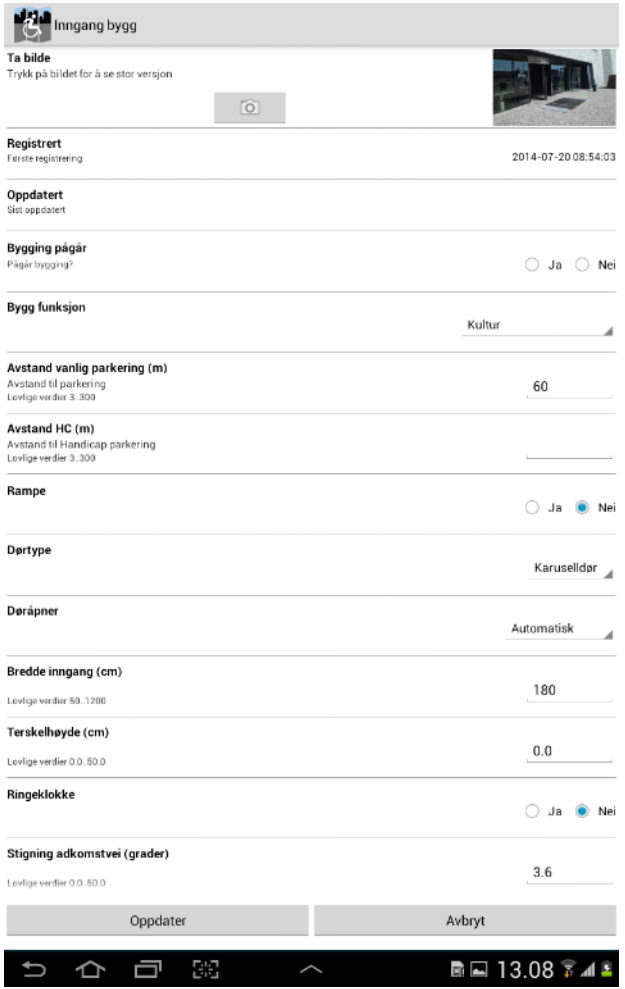


Let’s start simple



«tilgjengelighets-App» - a mapping tool for the field





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Mapping in:

Towns and district centers

Recreational areas

Funded by:

Ministry of Local Government & Regional Development

Ministry of Children, Equality & Social Inclusion

Carried out by:

Federal/municipal authorities, associations

Den Norske Turistforening

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Dataflow

app

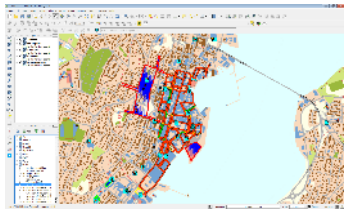
Data server

GEONORGE

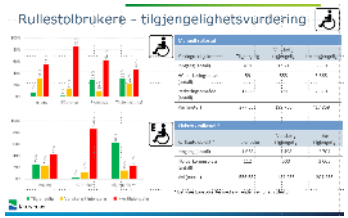
Map portal

Web Map Service (WMS)
http://www.norgeskart.no

Web Feature Service (WFS)



Data download (use for Analysis in GIS systems)



Status reports

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Validation of accessibility

Problem: How to create **comparible data** over a **long time span** following a **standardized method**?

Solution: map values and automate the validation of accessibility and error checks

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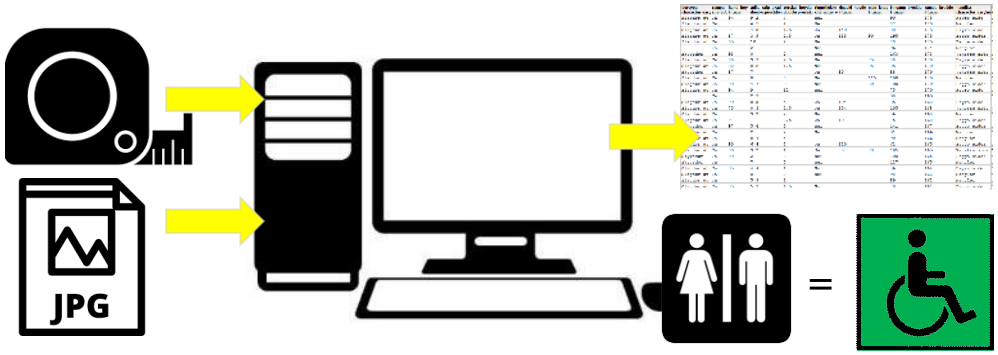


Advantages

- Adjustment to future changes in standards/technology
- Validation can be calculated automatically from the measured values
- The database can be expanded

Outlook

Mapping

- Evaluate options for automated data collection – first tests showed that laserdata were not accurate enough yet, minimum of 5 points per m2 required

Data

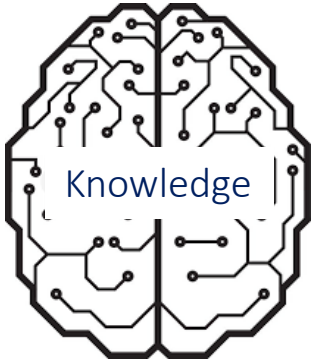
- How can access to data becomes easier?
- How can private users get mostly possible benefits from our data (user driven maps)?
- Will data quality be improved with the help of "crowdsourcing" and “error messages” from users?
- Test the use of crowdsourcing and consider error reporting module integration in Norway Map APP

Administration and Information

- How can maintenance of UU data be included in municipal daily life?
- How can local government participation be improved?
- What is our function in the future (user support and education)?
- How to find private companies for publishing our data in commercial APPs?

Problems

Communication



Prioritisation

Economy

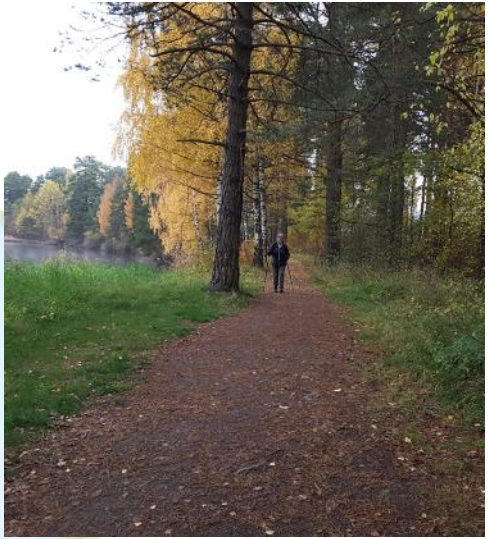
Technical challenges

Time

examples

Hønefoss - Along the river "Elvelengs"– a walking trail for alle

- Mapping: town center and surrounding recreational areas
- Result: "Strategy for Universal Design" and counselling group to implement National Goal for Norway in district planning.
- Activities: A walkway along the river is made accessible for wheelchairs. All results are published on the municipalities website.



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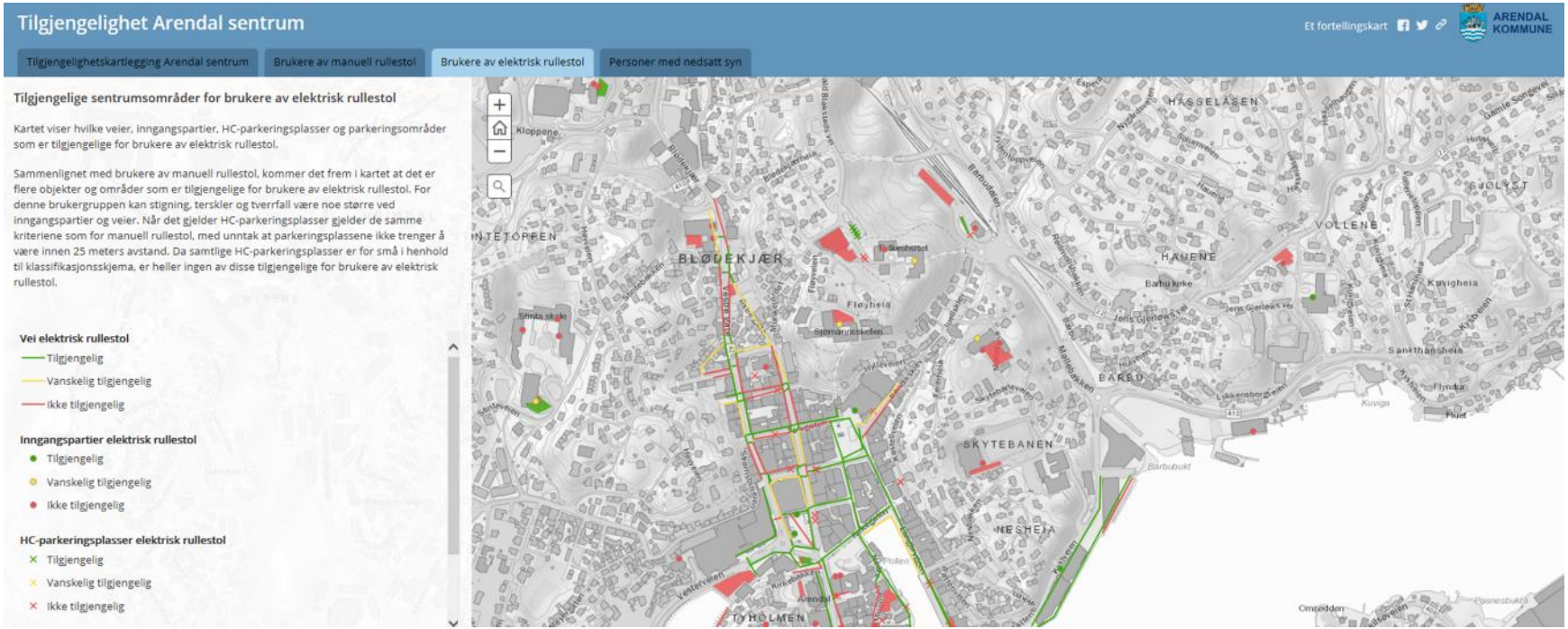
Arendal - a web solution for public information

- Mapping: town center and surrounding recreational areas
- Result: a web map service to presents the data to the public, and publishes it on the municipality's website sing ArcGIS Online
- Activities: make priority lists in cooperation with the council for people with disabilities



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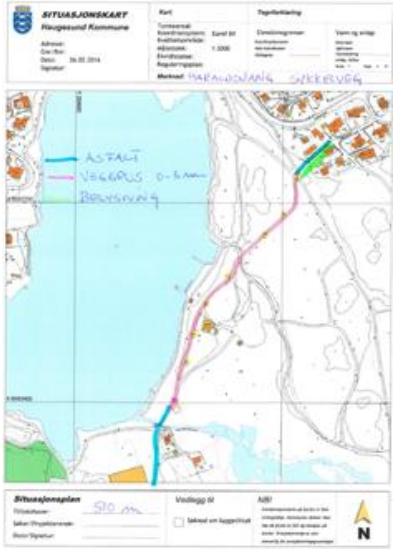
Haugesund - a recreation area for all close to town

- Mapping: town center and surrounding recreational areas
- Result: Improve accessibility in a popular recreational area and create connection between town center and recreational area
- Activities: Widening and levelling of tracks, improve lighting



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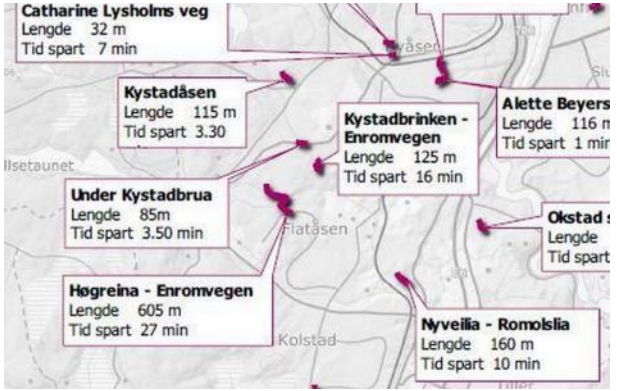
Trondheim - snarveier (shortcuts)

- Mapping: town center and surrounding recreational areas
- Result: Trondheim has long-term focus on creating a better living environment and increase the town's accessibility. The mapping is a contribution to a set of base data for local planning e.g. locate problems like lack of lighting, uneven surfaces and steep slopes, requirement for benches
- Activities: improve cover and lighting of paths and walkways that make up an important part of the continuous network of walkways, set up more benches



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Akershus - “Kyststi”- the coastal walkway

- Kyststi – more pictures and information comes later

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Ålesund – update for a city center

- Mapping: town center
- Result: Ålesund an old Art Nouveu city has long-term focus on creating a better living environment and increase the town's accessibility. The mapping is a contribution to a set of base data for local planning e.g. locate problems like lack of marking, uneven surfaces and steep slopes
- Activities: improve cover and marking of paths and walkways step by step through the whole city

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Oppegård - a walkway into district center

- Mapping: the wider town area and surrounding recreational areas
- Result: the problems identified through the mapping will be included in the districts main plan and the action plan for the road and path network. Mapping has helped to visualize and clarify the challenges. This makes it easier to formulate objectives for improvement of accessibility and anchor them in the district planning.
- Activities: Distribute slope over the entire route of a walkway, thus creating a continuously accessible walkway from several residential areas into the districts center.

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information
data use

website

Accessibility and universal design -

This website contains a map server, results of the ongoing mapping, articles, methodical guidelines for mapping, links and tips for employees of local authorities, companies, and other stakeholders within city- and recreational planning.

Contacts

- Sven Michaelis
  National project leader
- Kathrin Bögelsack
  Trøndelag, Møre og Romsdal, Sogn
- Eli Brager
  Østlandet

About the project

- Mapping of accessibility
- About Norgeskart-accessibility
- Results of the mapping project
- Norgeskart-accessibility (map server)

Related sites

- Wheelmap.org (interactive map server for wheelchair accessibility)
- The Norwegian Association of Disabled
- The Deltasenter`s website on universal design

https://www.kartverket.no/geodataarbeid/universell-utforming/

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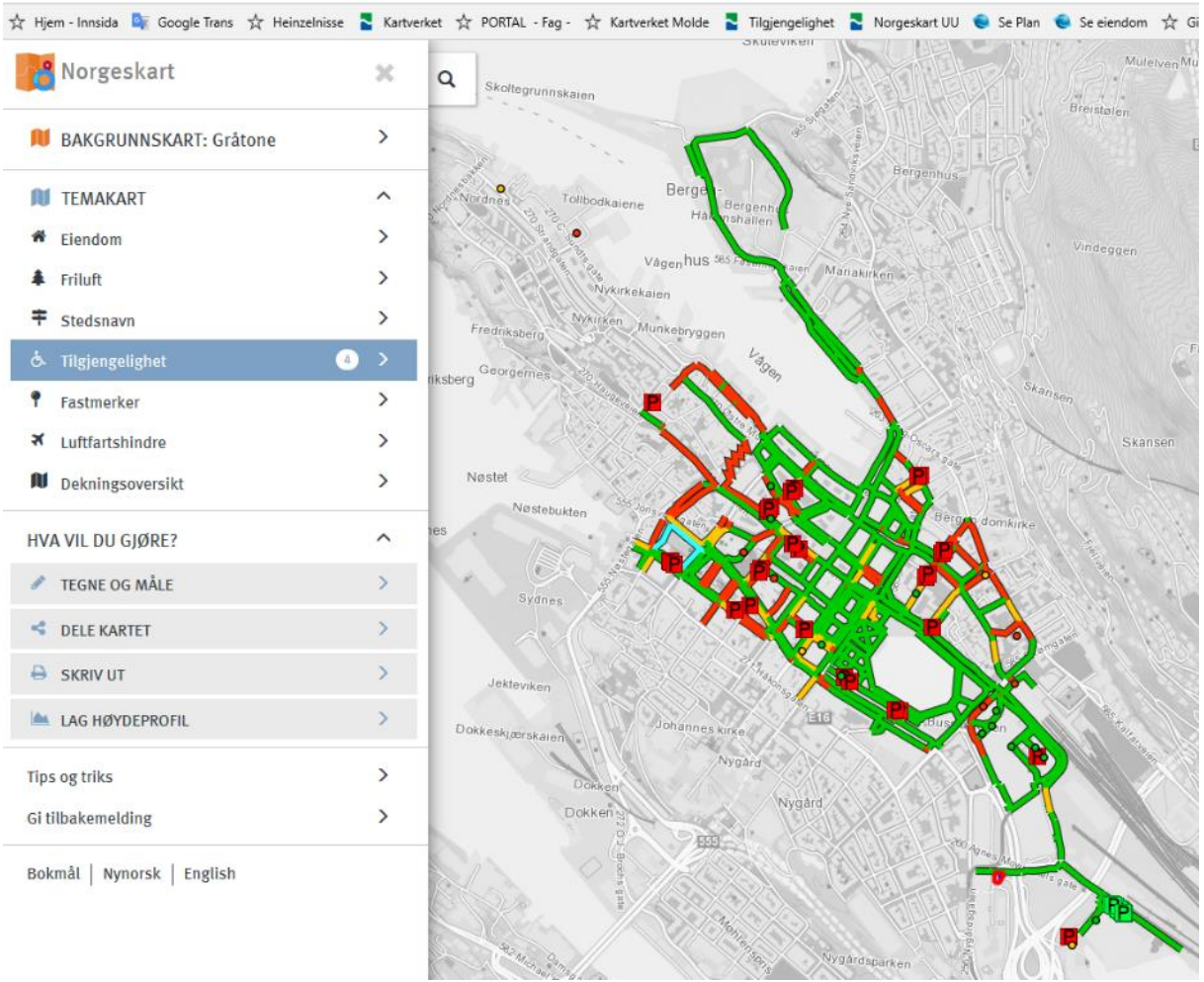
Norgeskart – web map server (WMS)

- Norway's online kartportal
- improved for mobile and tablet



http://www.norgeskart.no

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Geonorge.no - national website for map data and location information

- UML-modell
- Metadata
- Product description
- Report tools
- Access to
- WMS
- WFS
- Download

https://kartkatalog.geonorge.no

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- Film link – how to make ppt reports

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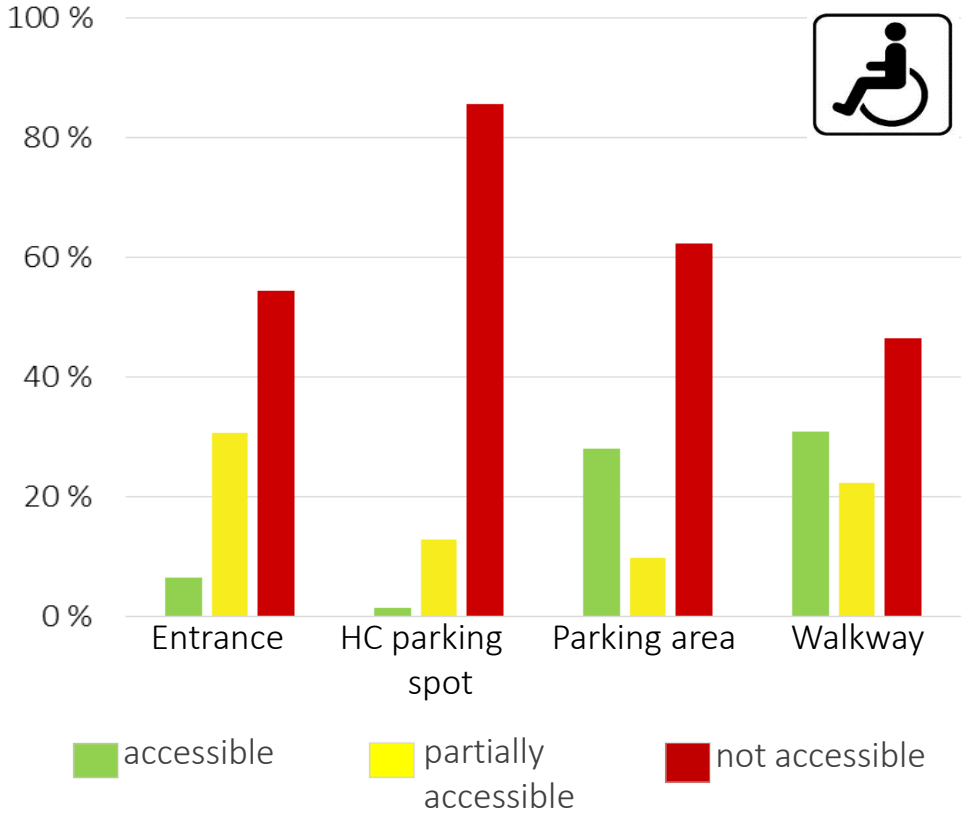
- regional/ national **situation**



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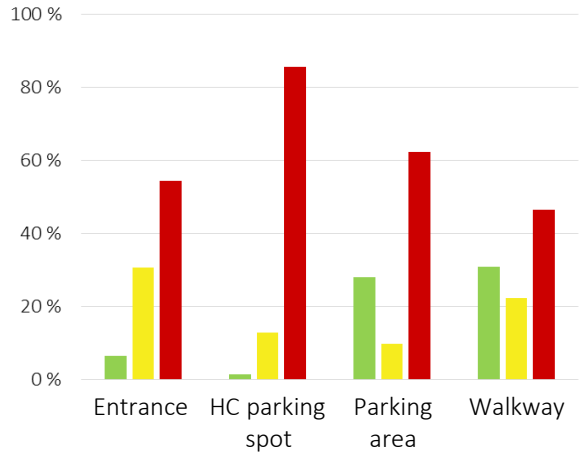
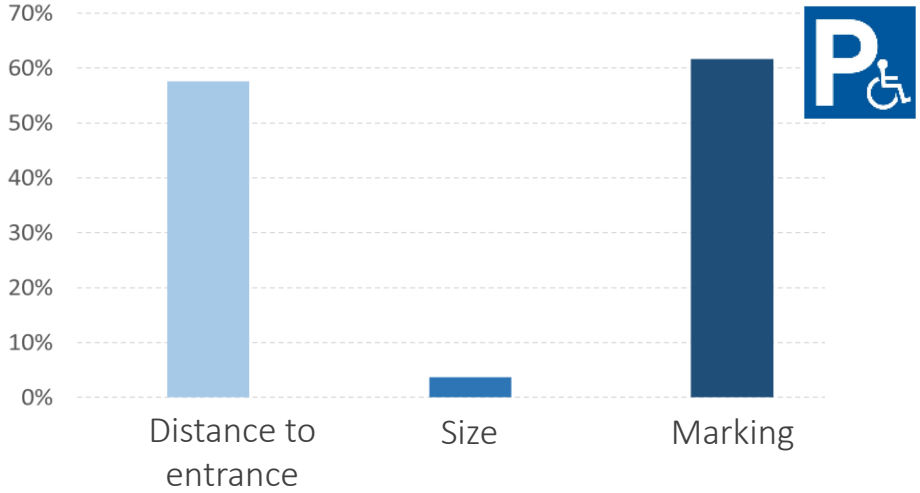
- regional/ national **situation**
- feature analysis –
  What are the problems?





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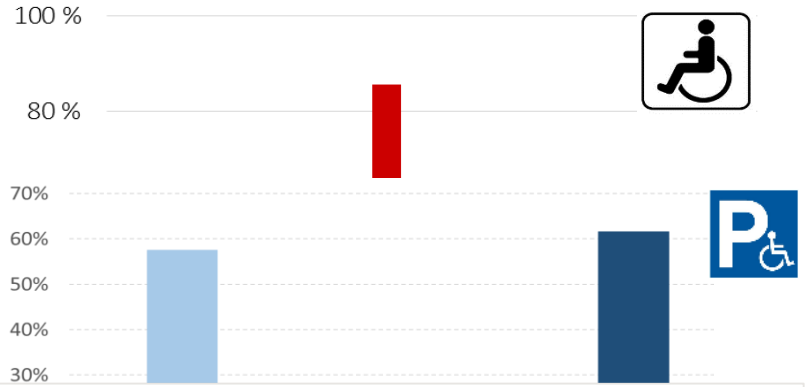
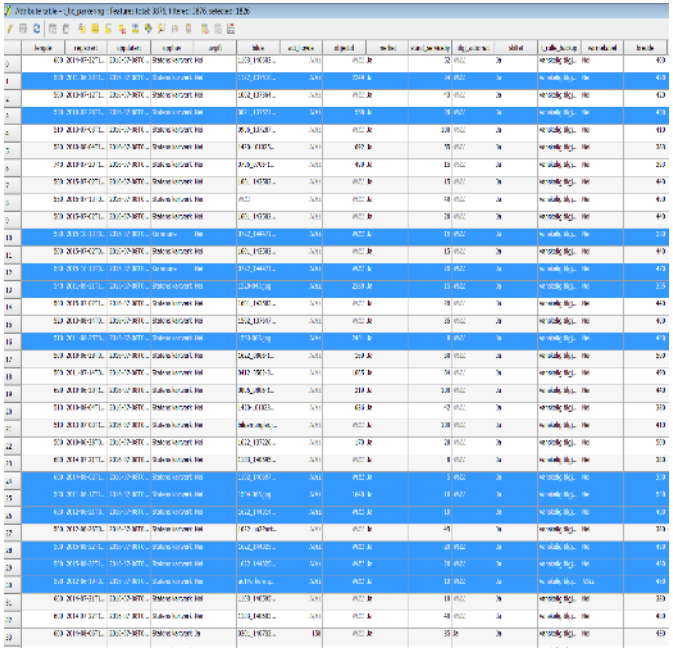
- regional/ national **situation**
- feature analysis –
  What are the problems?
- Spatial analysis-
  Where are the problems?





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- Negative examples – more pictures and information comes later

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- QGIS – short presentation of analysis options
- Available HC parking spots

- Develop a QGIS GUI based on the WFS with a simple user-interface
- Film?

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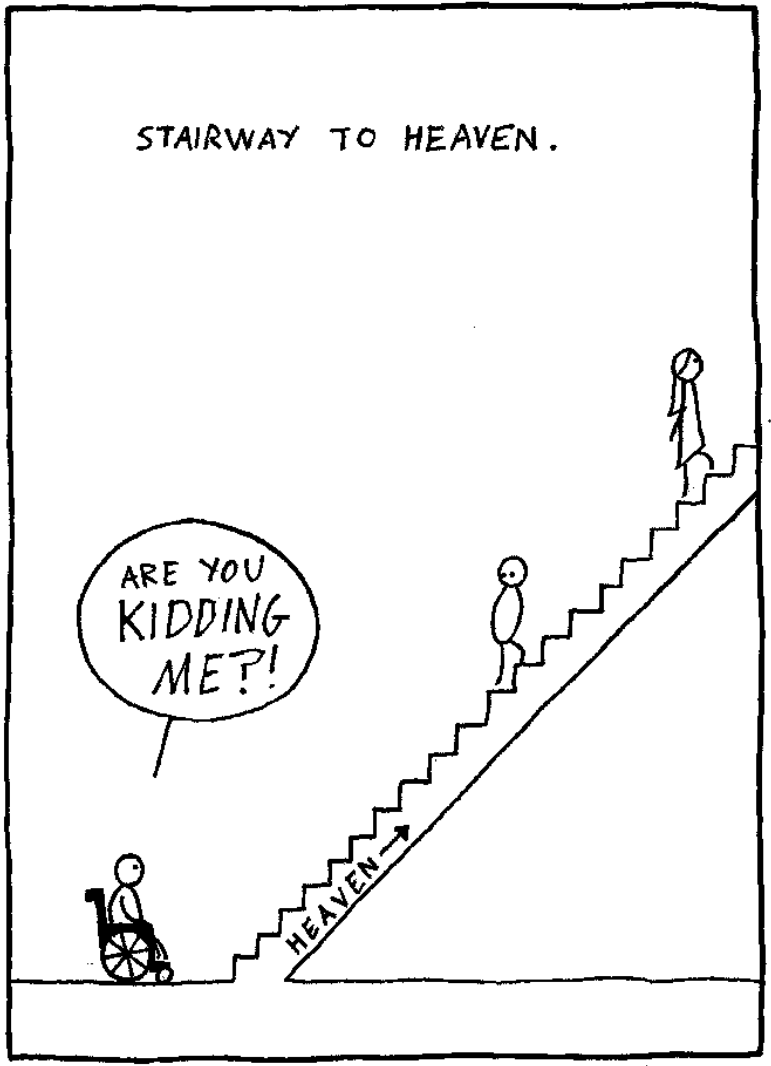
"The government says we need to replace our corporate ladder with a ramp."



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