# WAYFINDING FOR BICYCLE TRAFFIC

SIGNPOSTER:
TOOL FOR CREATING
GENERAL PLANS FOR
WAYFINDING

Niko Palo 7.6.2022





# Keskusta Centrum HERTTONIEMI 43 naiknitus Abraham Wetterin tie do Keskusta Centrum Hertonäs Itäkeskus 3,4 Östra centrum do Roihuvuori Laajasalo Degerõ Kasberget Tammisalo **Tammelund** Itäkeskus Östra centrum 3,6 Roihuvuori Kasberget Tammisalo **Tammelund**

# Wayfinding for cycling in Helsinki

#### The Challenge

The bicycle path network is broken and routes are challenging to follow intuitively.

#### **Our approach**

City need a GIS-based general plan where the content for signposting is planned and kept up to date. The traffic sign phase of process is an easy task as the content is firmly set in the general plan.

#### The result

Helsinki city will have ready-to-go plans of wayfinding for cycling. The plans are to cover the whole city. Eventually the citizens will have easily followable bicycle paths throughout the city. Quality wayfinding is very cost-effective way to improve cycling facilities.



### WHY WE NEED A GENERAL PLAN FOR WAYFINDING?

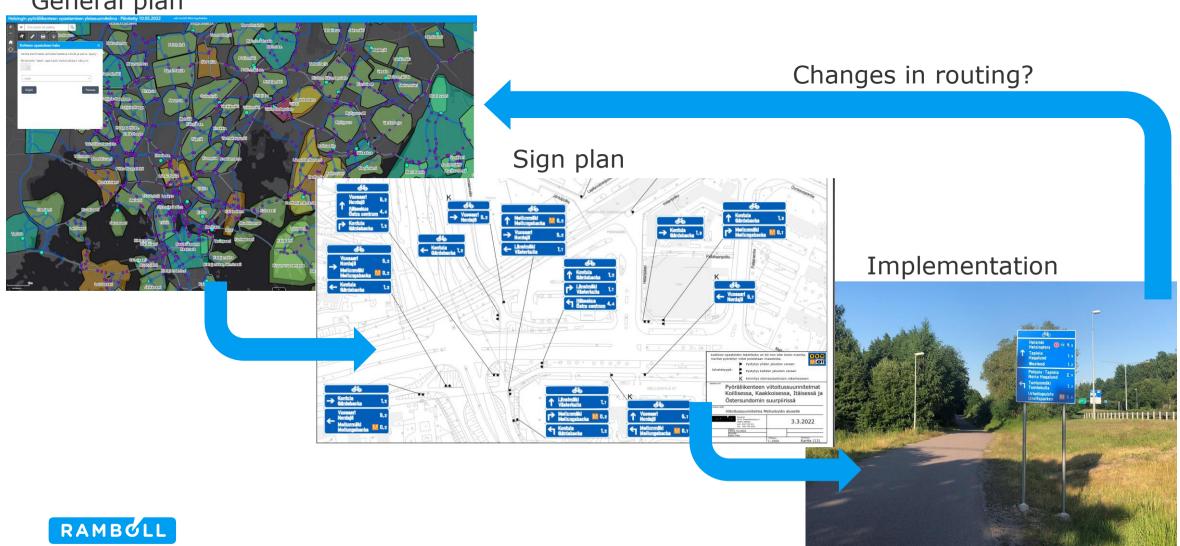
- It is a master plan securing the continous wayfinding for the whole area
- Cities are in constant change there will be changes in routing and destinations
- There are multiple consultants working simultaneously with multiple plans; but the wayfinding system must be continous in all parts of the city
- Easy to make traffic sign plans when the content for the signs are already decided and the distances are being calculated in general plan





# **PROCESS**

General plan



# CYCLING WAYFINDING GENERAL PLAN & ARCHIVE

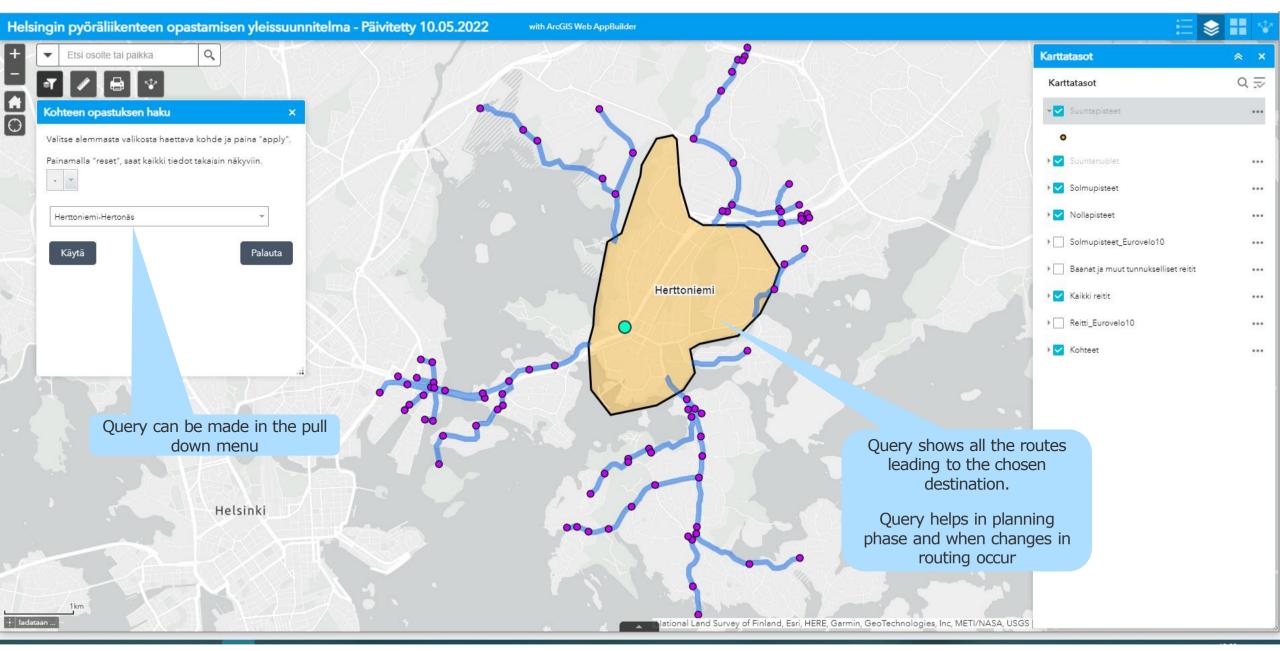
#### General plan determine:

- Signposted cycling routes within the cycling network
- Destination area borders and their hierarchy levels
  - long distance, intermediate, local and special destinations
- Each destination's central "zero-point", to which the distances are computed.
- "Knot points" i.e. points/intersrections, where there is a need for quidance
- Direction points: to which destinations does one guide from each "knot point", and the distances between the knot-point and the destinations.
- The general plan can also include other declarations about symbols (often a route number) to be used in the signs.



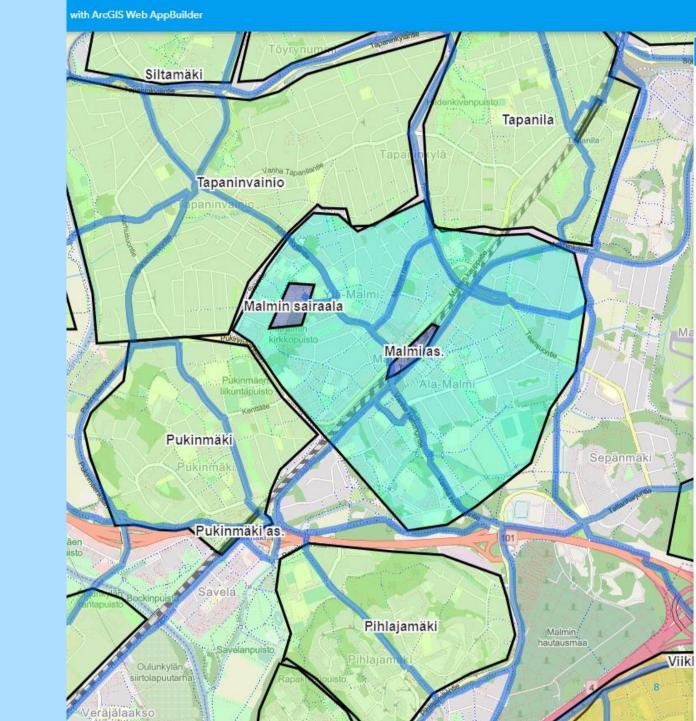






### THE SIGNPOSTER

- Written in Python script, used through a <u>Jupyter notebook</u>
- Creation of knot and direction points based on the cycling network
- Assigning destinations to direction points
- Computing distances to destinations in direction points
- Principles of guidance can be adjusted by changing signposter's parameters.
- Roughly 80 % of the work can be automated
- Outputs are .shp files



# STAGES IN CREATING A BIKE GUIDANCE PLAN & WHERE SIGNPOSTER CAN HELP

- 1. Defining destination areas and their zero-points
  - not automatized.
- 2. Defining the cycling network
  - not automatized.
- 3. Creation of knot- and direction points based on the cycling network
  - Fully automatized using Signposter.
- 4. Assigning destinations to direction points
  - Automatized for the major part in Signposter, if guidance parameters have been provided to the Signposter-tool.
- 5. Computing distances
  - Fully automized.



### THE BENEFITS OF THE SIGNPOSTER

- Significant time-savings in (boring) routine parts of work
- Higher quality of the output, without errors due to manual work.
- Warnings about potential discontinuity, typos etc.
- All data can be also manually fixed (and prevent overwrite)
- Easy to update when routes are changing:
  - run script for calculating new distances and show changes on map







# REFERENCES

Kumpula

# **General (and wayfinding sign) plans:**

- The city of Helsinki, Finland
- The city of Vantaa, Finland
- The city of Lahti, Finland
- The city of Jyväskylä, Finland
- The region of Hämeenlinna, Finland
- The region of Forssa
- Bicycle highway route no 1 in Espoo, Finland

# Other cycling wayfinding sign plans

- The city of Oulu, Finland
- The city of Joensuu, Finland
- The city of Kuopio, Finland
- The city of Turku, Finland
- The city of Rovaniemi, Finland
- The city of Pori, Finland

### Case exsample in Helsinki:

https://rambollglobal.maps.arcgis.com/apps/webappviewer/index.html?id=e5d064db9a1f44f2825de8f7dcab0647



# **MORE INFO**

Niko Palo

niko.palo@ramboll.fi
c.ramboll.com/cycling



