2a. Initialize reference data

This notebook:

- Loads the polygon defining the study area and then creates a grid overlay for the study area.
- Loads the reference data.
- Processes the reference data to create the network structure and attributes needed in the analysis.

Sections

Load data for study area and create analysis grid

This step:

- Loads settings for the analysis from the configuration file `config.yml`.
- Reads data for the study area.
- Creates a grid overlay of the study area, with grid cell size defined in `config.yml`.

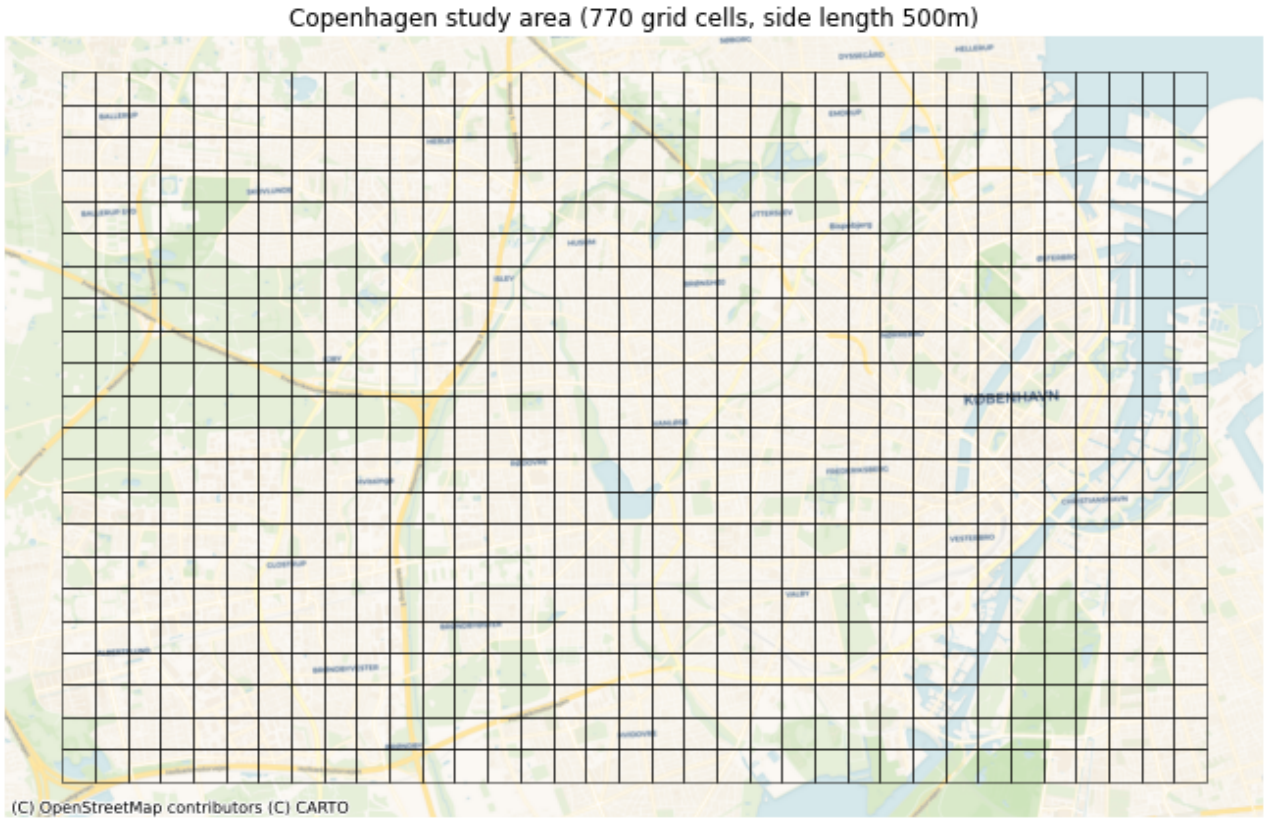
Load data for study area

The study area is defined by the user-provided polygon. It will be used for the computation of **global** results, i.e. for the entire study area.

```
The size of the study area is 181.38 km2.
```

Create analysis grid

```
The grid contains 770 square cells with a side length of 500 m and an area of 0.25 km2.
This grid will be used for local (grid cell level) analysis:
```

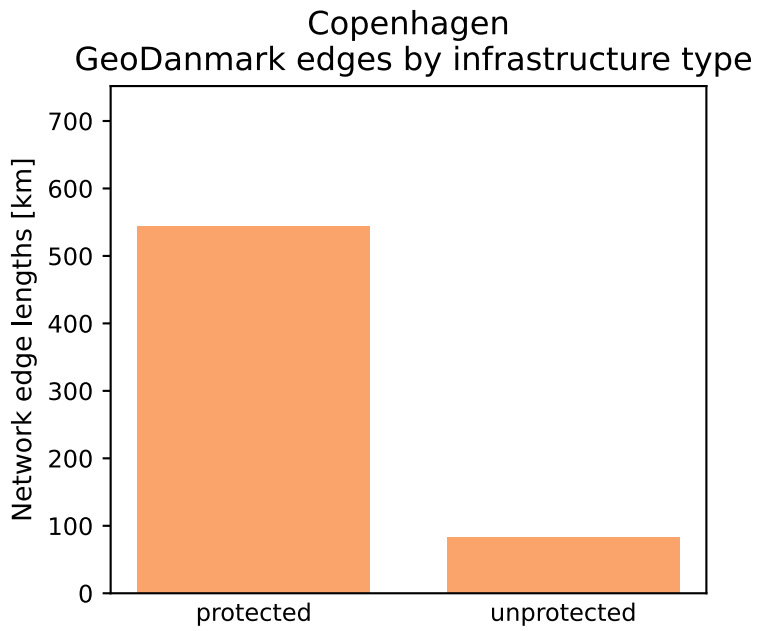


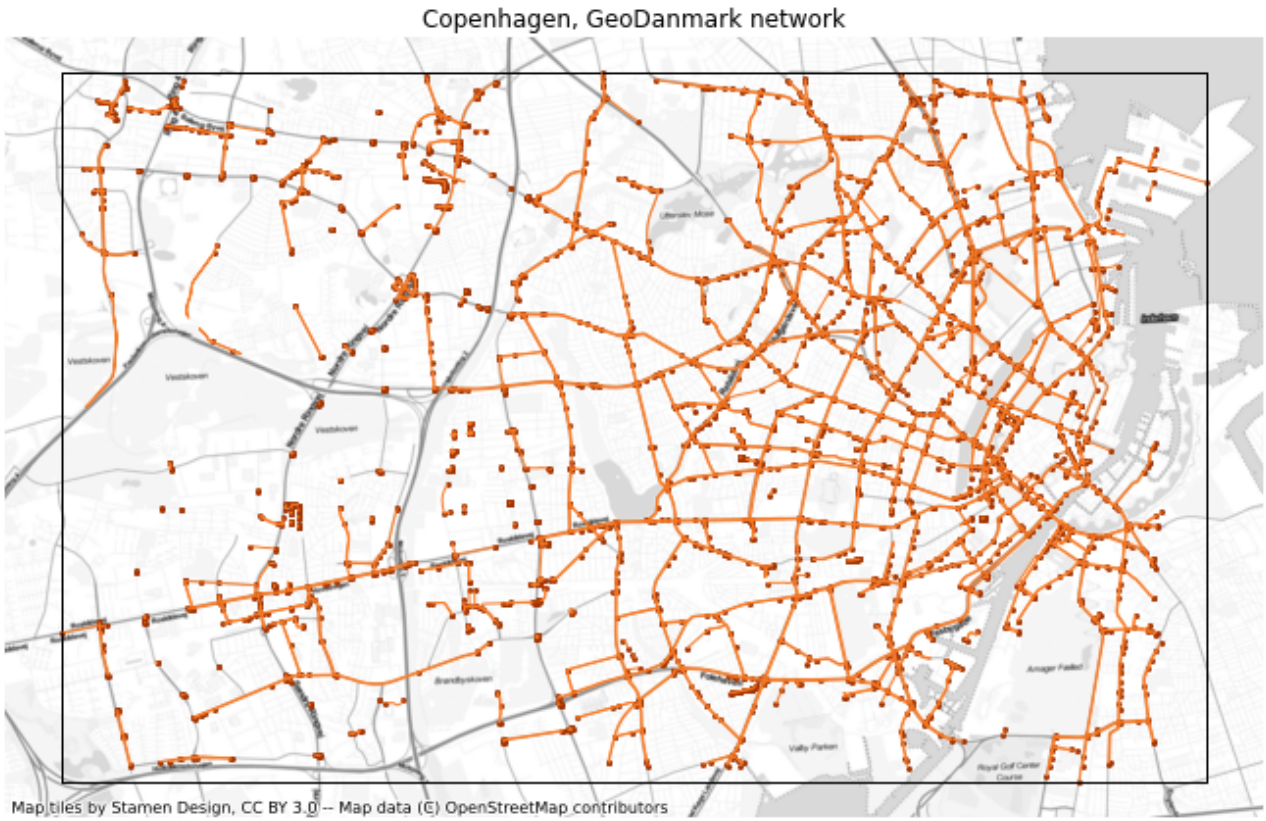
Load and preprocess reference data

This step:

- Creates a network from the reference data.
- Projects it to the chosen CRS.
- Clips the data to the polygon defining the study area.
- Measures the infrastructure length of the edges based on the geometry type and whether they allow for bidirectional travel or not.
- Simplifies the network.
- Creates copies of all edge and node data sets indexed by their intersecting grid cell.

```
The GeoDanmark data covers an area of 169.76 km2.


Edges where the protection level is 'protected': 46097 out of 53580 (86.03%)
Edges where the protection level is 'unprotected': 7483 out of 53580 (13.97%)


Using global settings for cycling direction.


Using global settings for geometry type.


The length of the GeoDanmark network is 626.48 km.
```


Copenhagen
GeoDanmark edges by infrastructure type
Network edge lengths [km]
0
100
200
300
400
500
600
700
protected
unprotected


Copenhagen, GeoDanmark network
Map tiles by Stamen Design, CC BY 3.0 -- Map data (C) OpenStreetMap contributors