



Maperitive

Making Your Own Maps

by Igor Brejc

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- Goals
- Main features and capabilities
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- Future plans
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Maperitive & Me

- Living in Maribor, Slovenia
- Professional software developer
- Long-running love for cartography
- Joined OSM in 2007
- OSM speciality: hiking

Why Maperitive?

- Started as Srtm2Osm, Kosmos
- Existing solutions (Mapnik, Osmarender) lacking simplicity of use, immediacy and interactivity
- Wanted to have my own project to play with
- Kosmos needed a total overhaul (including a more googleable name)

Goals For Maperitive

- Simple to use...
- ... and yet powerful enough...
- ... to produce professional-looking maps
- Single-stop shop for making OSM maps
- Things should work out of the box
 - Convention over configuration

Main Features

- Rendering rules (special DSL)
- Embedded command-line interface
 - Scripting
- Web maps integration (browser-like)
- Integration with SRTM + custom DEMs
 - Contours, hillshading, hypsometric coloring
- Web map tiles generator
- Exporting to bitmap and SVG

Rendering Rules

- Specify features (what to render?)

```
boundary country : boundary=administrative  
    AND (admin_level=2 OR admin_level=4)  
    AND NOT natural=coastline
```

- Specify rules (how to render?)

```
target : aeroway line*  
  define  
    min-zoom : 9  
    line-color : #9D9595  
  if : aeroway line runway  
    define  
      line-width : 9:1;10:1;11:2;13:6;15:20  
  else  
    define  
      line-width : 9:1;11:1;13:3;15:10  
  draw : line
```

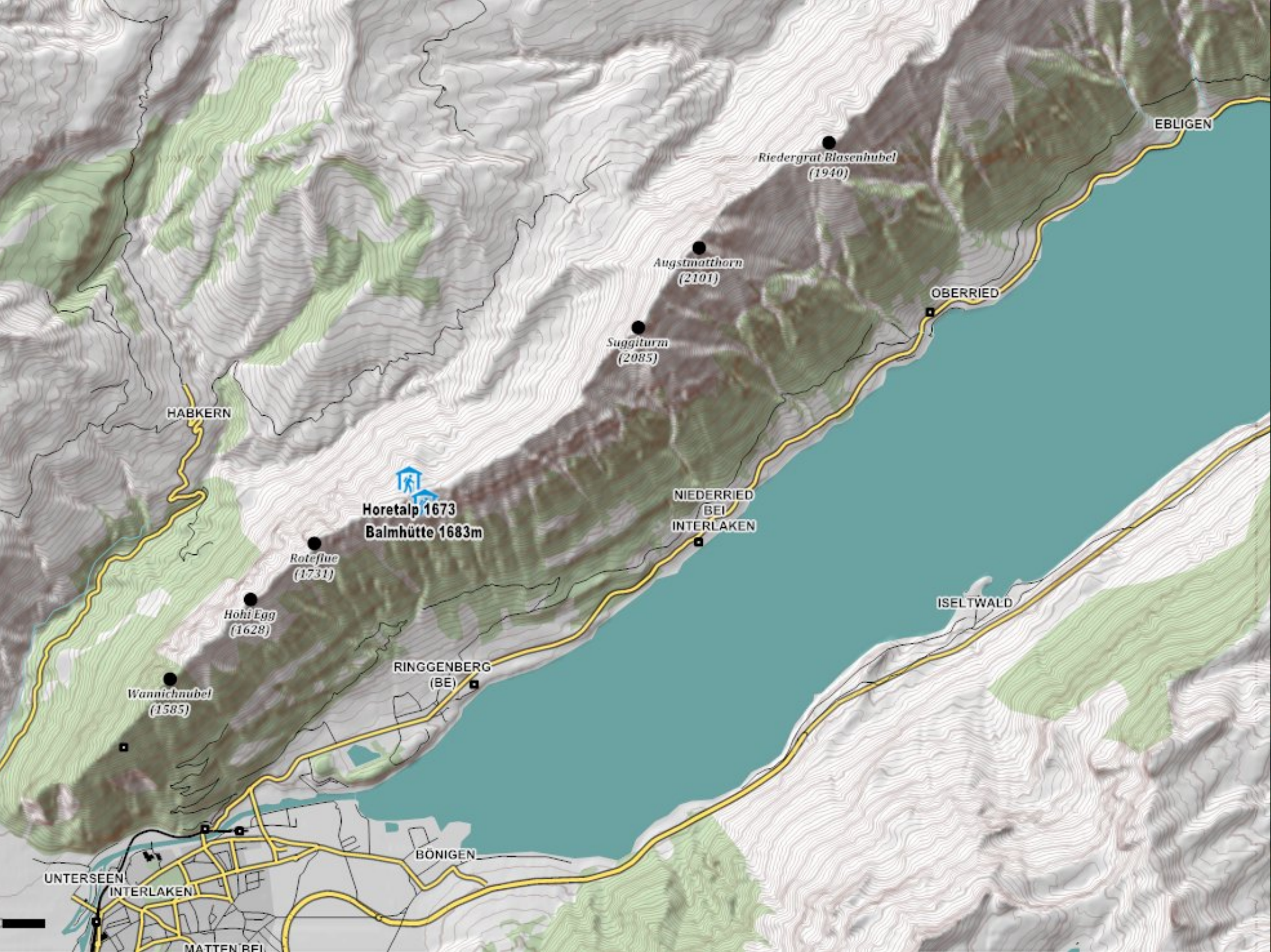
Commands And Scripts

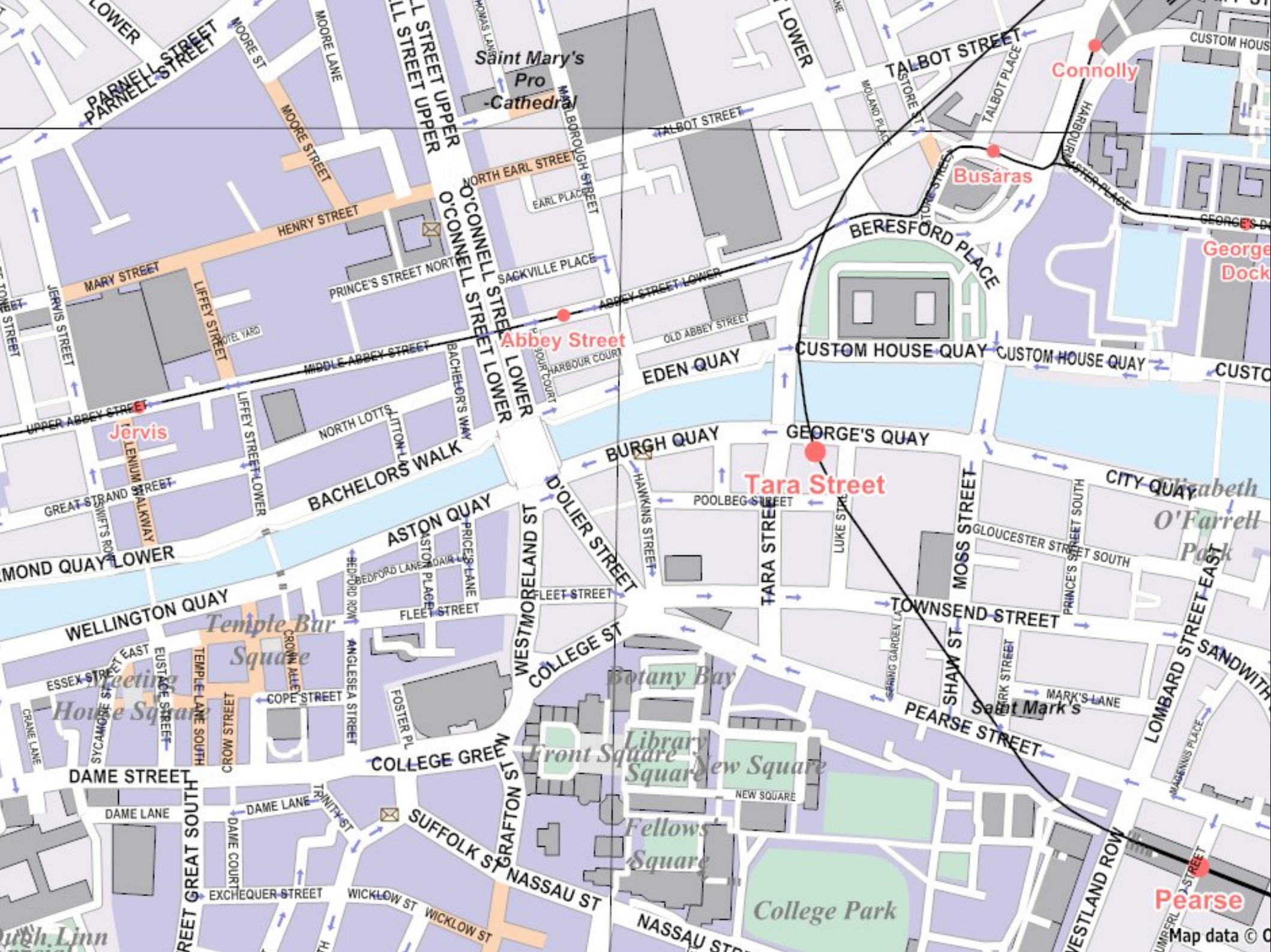
- Everything is available through the command line
- Common functions also through the GUI
- 81 commands currently available

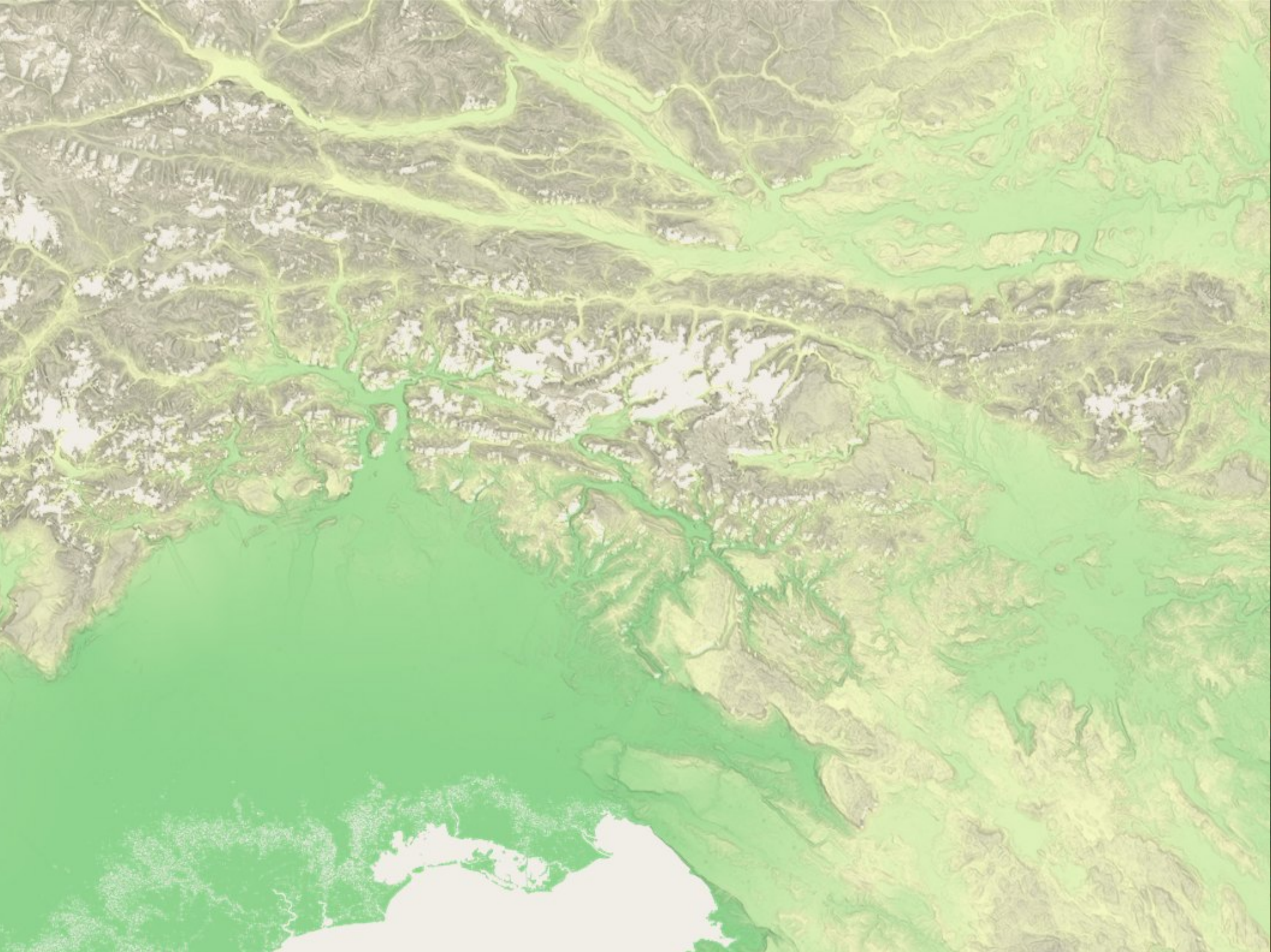
```
clear-map
set-setting name=map.decoration.grid value=False
use-script-dir
use-ruleset location=dublin.mrules
load-source Dublin.osm.bz2

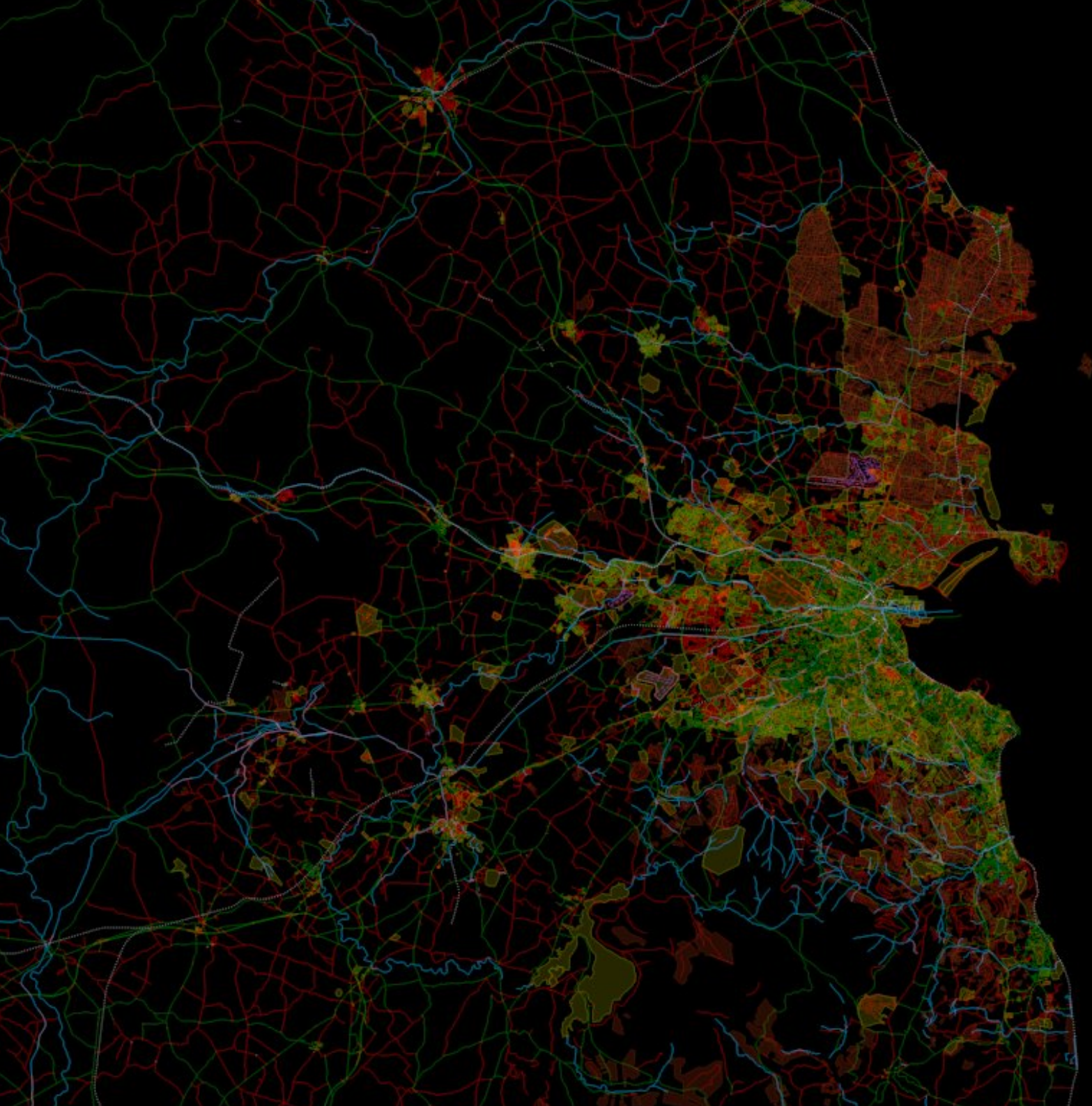
bounds-set -6.65831251676464,53.3270920303852,
           -6.3469551584,53.5082149

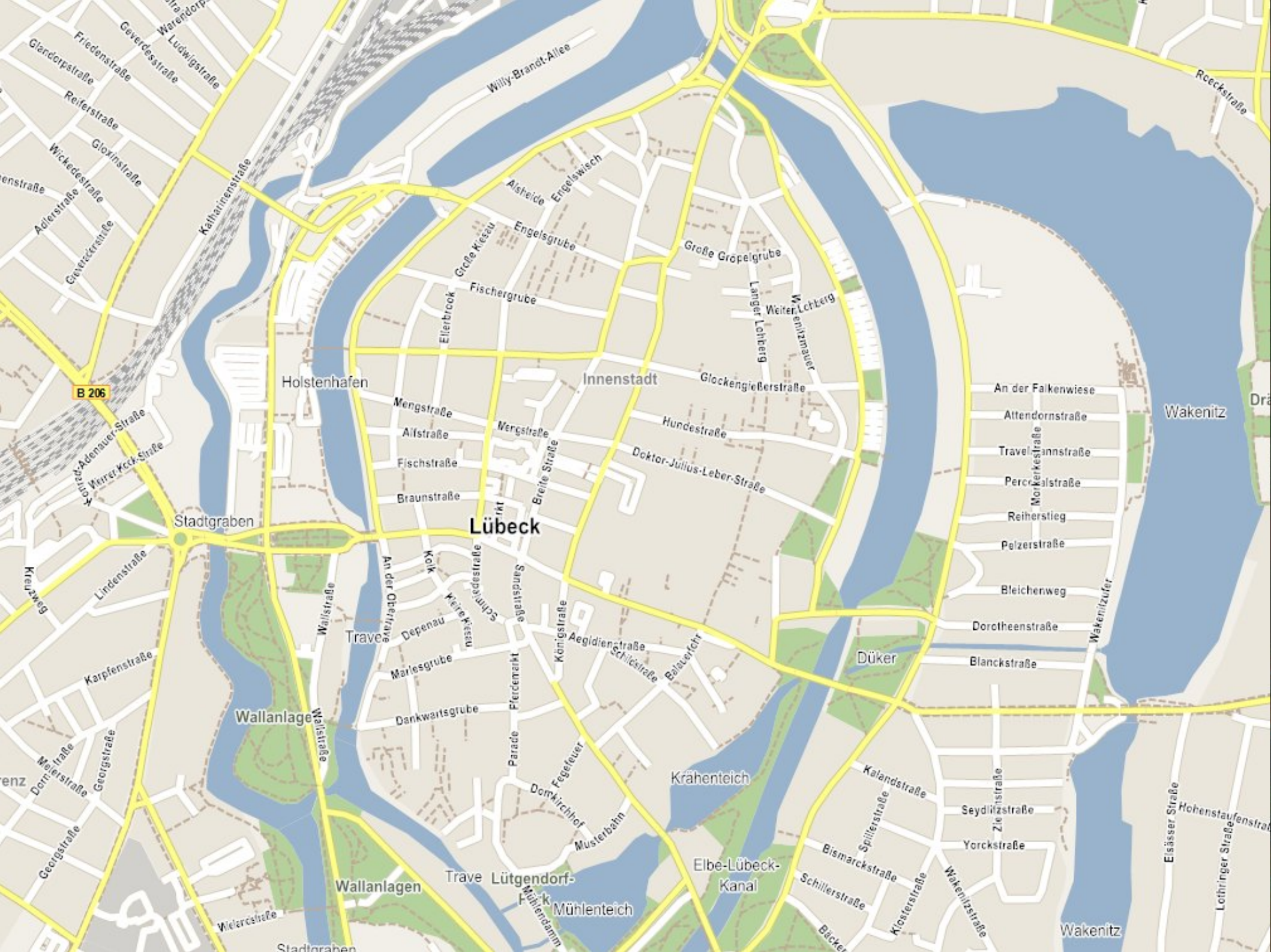
export-svg file=extra\Dublin-NW-illustrator.svg
          zoom=16 compatibility=illustrator
          ai-autorescale=true
```











Challenges & Future Plans

- Interactivity vs quality vs quantity
 - Render quickly
 - Render with quality
 - Render big maps with lot of data
- Database support (PostGIS, spatialite)
- Using Direct2D for rendering

Challenges & Future Plans

- How to extract info from data?
- Poor support for OSM relations
- OSM data is raw data – it needs preprocessing before rendering
- Example: bus route relations
 - Multiple ways in a relation
 - Multiple relations in a way
 - Rendering a bus map without loss of information
- Example: OSM Mapnik map & transparent boundaries
 - Inconsistent rendering because several admin levels are rendered separately one atop the other

Challenges & Future Plans

- Possible solutions:
- Transforming raw OSM data into more advanced data structures (like networks, graphs)
- More advanced toolset for data analysis and synthesis
- Perhaps even a new file storage format for these transformations
 - Or storing it into DB
- Python for scripting
- Extensibility (plug-ins)

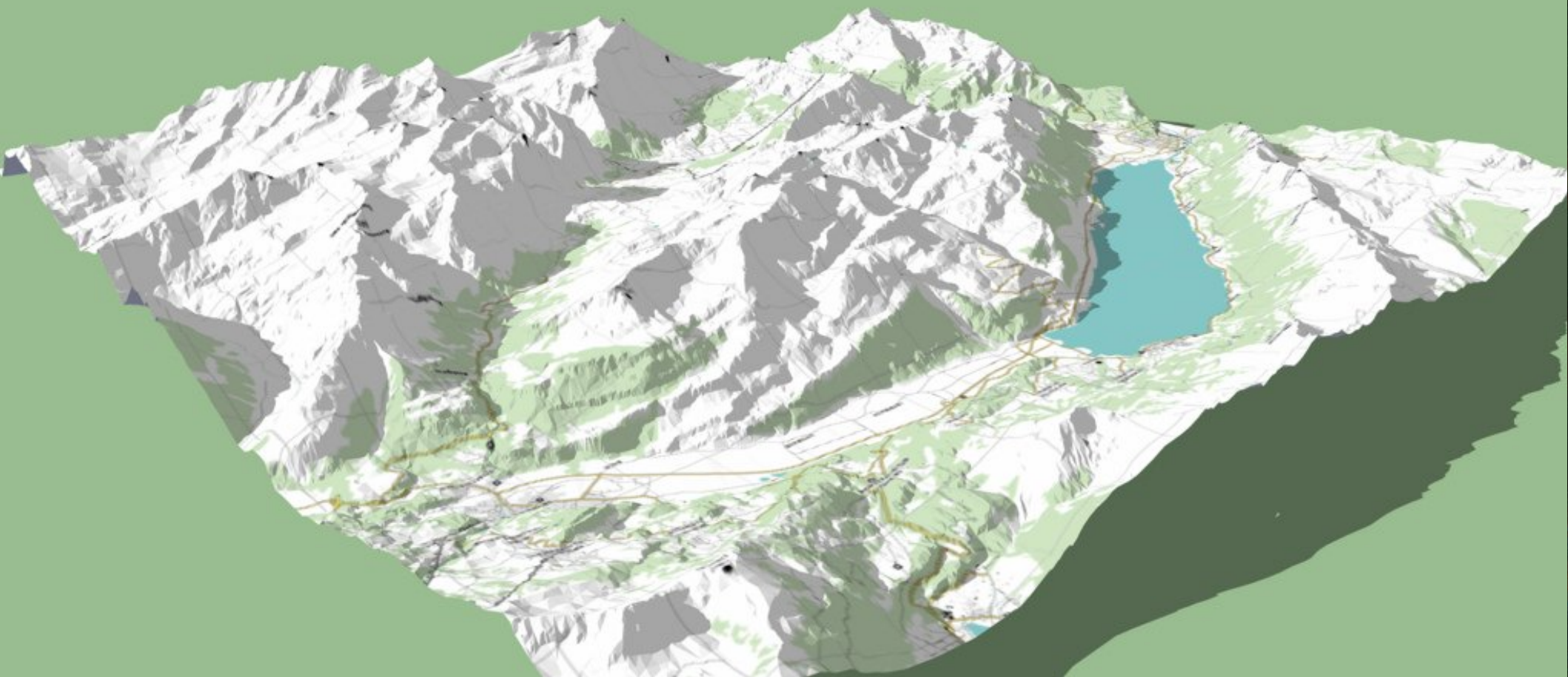
Challenges & Future Plans

- Map labeling improvements
 - Detecting overlaps, duplicates
 - Repeating labels for long streets
 - Abbreviations
- Support for shapefiles, GeoTIFFs
- Other projections, rotating the map
- Headless mode – no GUI
- Multi-core tiles generation
- Maperitive Remote – REST WS
- GUI improvements
- Map drawing editor?

Experimental

- 3D map export in COLLADA format
- Export to RaphaelJS







Discussion...