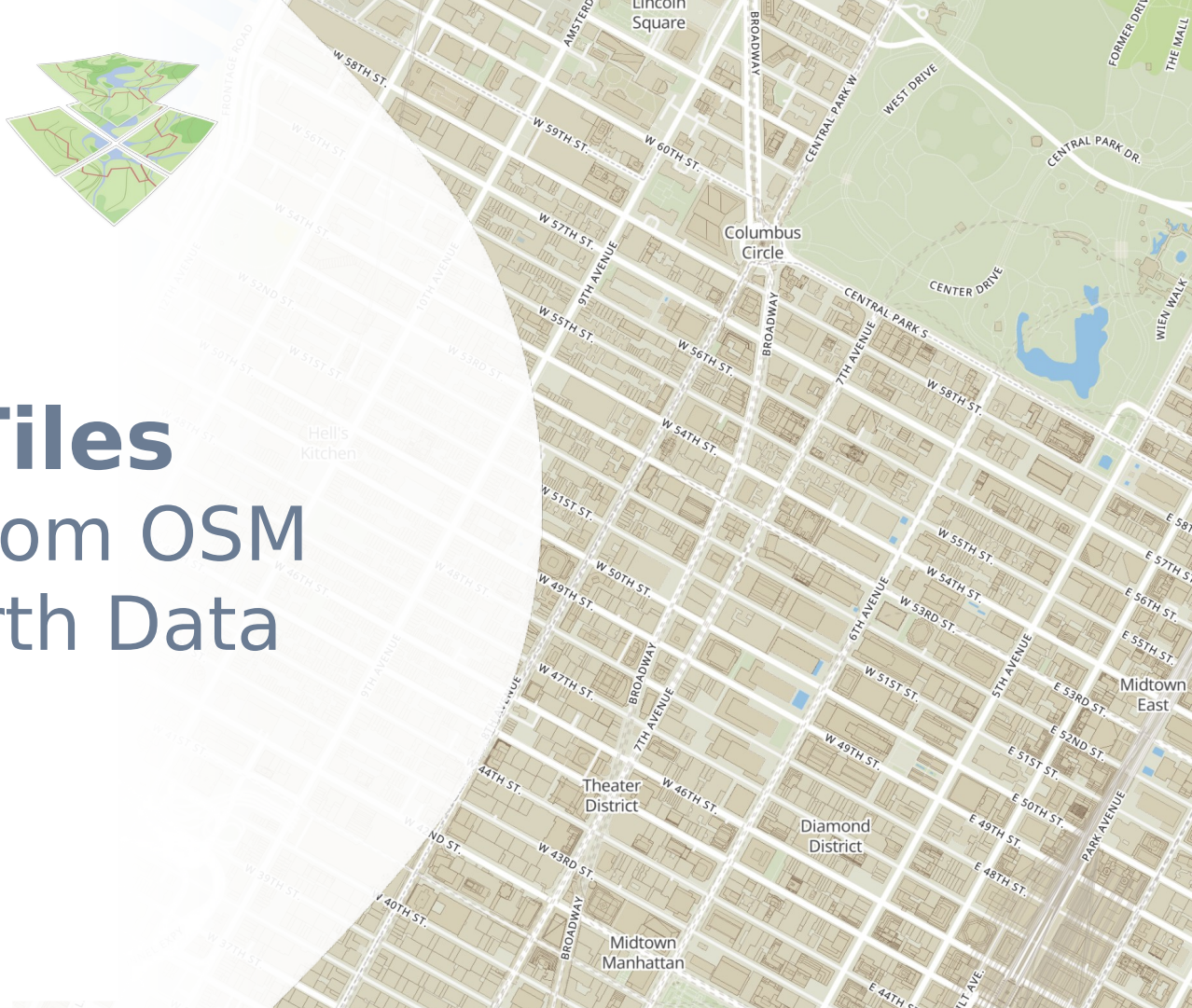


OpenMapTiles

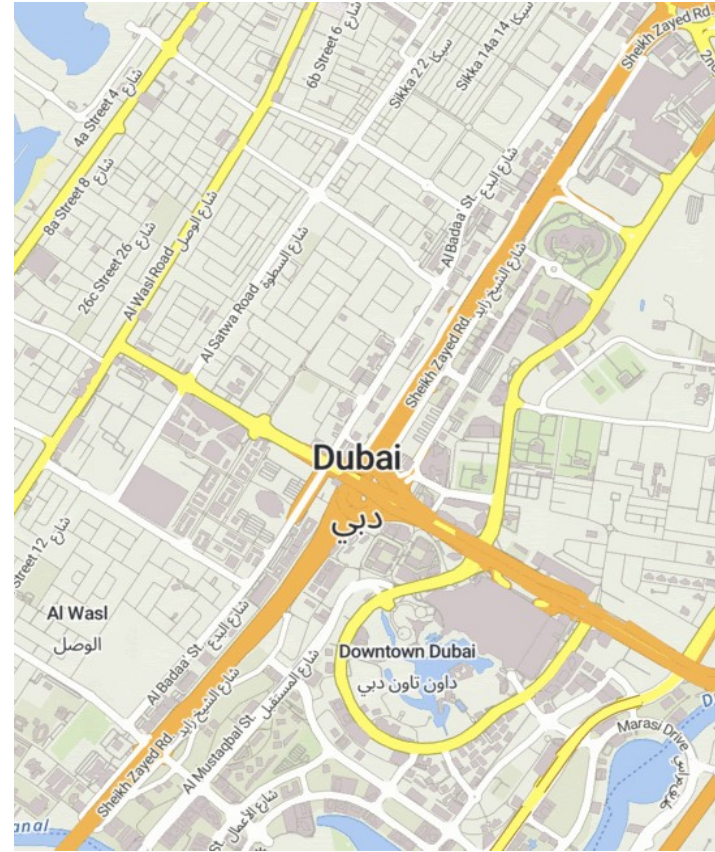
Vector tiles from OSM & Natural Earth Data

Tomáš Pohanka, Ph.D.



Content

- About OpenMapTiles, history
- Latest release
- New version in progress
- Future development vision
- SotM CZ 2022, 2020, 2019, 2017



Briefly about OpenMapTiles

- **Open-source**, multiplatform tools for setting up custom styled **world maps**
 - <https://github.com/openmaptiles>
 - <https://openmaptiles.org>
- Convert **OpenStreetMap** database into **vector tiles**
- Applicable on **any data source** for creating vector tiles
- Fully **dockerized** stack from imported data to generating **vector tiles** (MVT)
- Easy to maintain which features you would like to have in vector tiles
- Customizable content of vector tiles



Project OpenMapTiles

☆ 1.7k stars 🍴 486 forks

- Project running for almost **6 years**
- Active community
- Maintained by MapTiler team
- Constant improvements in the data and map style (“look and feel”)
- **General purpose map** (without thematic layers e. g. ski layer)
- Originated with the idea of 64 GB for **the whole world in 64 GB** flash drive
- Now the whole planet has approx. **93 GB** - up to zoom 14



Used by

More than **350 million** of people interact with **OpenMapTiles maps** every



and many other companies and projects

Open-Data

implementations

- Swisstopo
- Institut Cartogràfic i Geològic de Catalunya
- Luxembourg's national geoportal
- Inspiration for Ordnance Survey OpenZoomStack



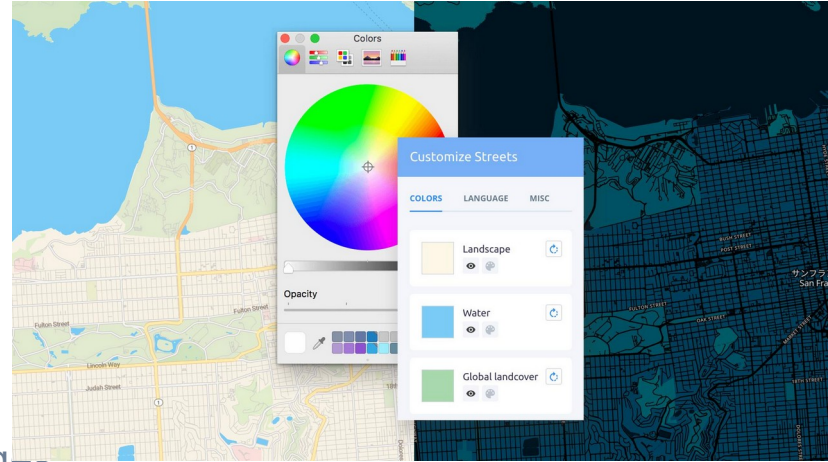
MapTiler platform

MapTiler Cloud

- Hosting service for OpenMapTiles
- Vector and raster tiles, static maps
- Platform for map styling

MapTiler Data

- Download service for pre-generated packages
- Area extracts and weekly updates



Starting with OpenMapTiles

- Multiplatform
 - **Linux**
 - Apple macOS
 - Microsoft Windows
- Docker, docker-compose
- Make targets

Use `quickstart.sh area=czech-republic`
or manually run each step



OpenMapTiles repos

OpenMapTiles

- **Schema**
 - Features from OSM.pbf
 - Zoom definitions
 - Calling OpenMapTiles-Tools
by `make` targets

OpenMapTiles-Tools

- Docker images with
 - Database
 - Static data
- **Imports**
- Tools for **generating tiles**



Starting with OpenMapTiles

- Main setup files
 - **openmaptiles.yaml**
 - **.env**

openmaptiles.yaml

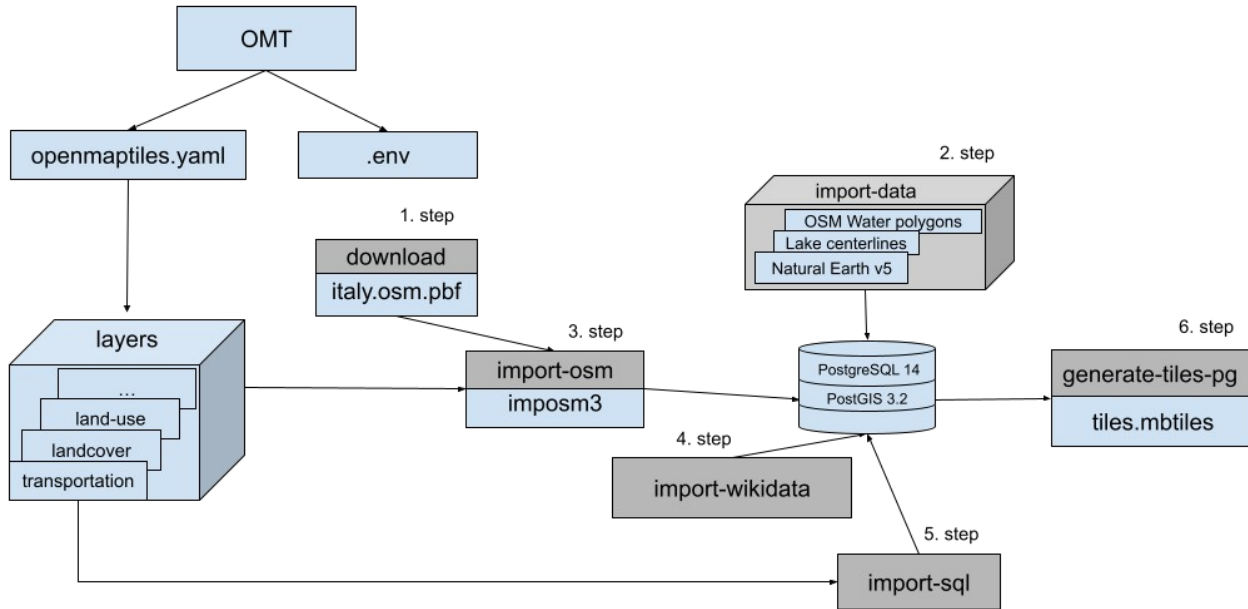
- included layers
- mbtiles metadata
- included languages



.env

- mbtiles properties
 - min/max zoom
 - name of file
- PostgreSQL properties
 - # of threads
 - connection string

Starting with OpenMapTiles



6 simple steps:

1. make **download**
area=italy
2. make **import-data**
3. make **import-osm**
4. make **import-wikidata**
5. make **import-sql**
6. make **generate-tiles-pg**

=> [tiles.mbtiles](#)



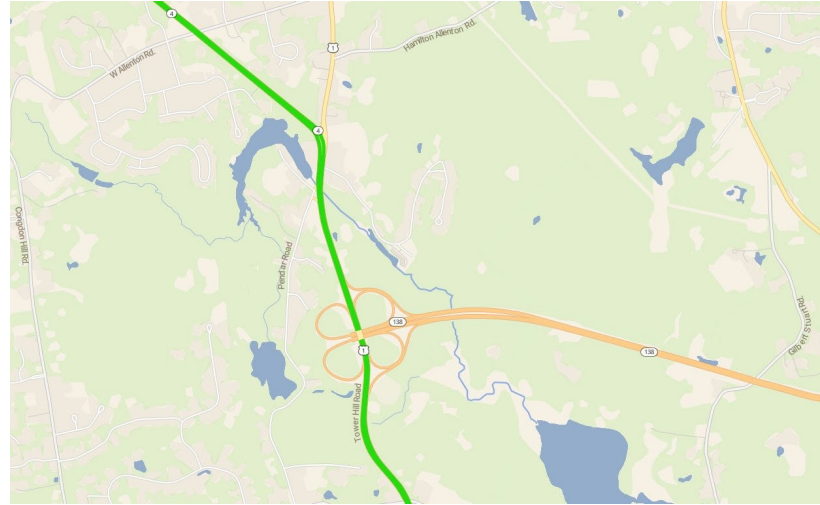
Release v3.1x

- Released in May 2022 (3.13.1)
- Between **v3.12.2** and **v3.13.1** merge
 - **125** pull requests
 - **117** files changed
 - **19** individual contributors
 - **+ 3984** and **- 1425** lines of code
- Between **v3.13.1** and **v3.14**
 - **17** pull requests
 - **368** files changed
 - **10** individual contributors
 - **+ 15 991** and **- 103** lines of code



Updates in OpenMapTiles 3.13

- Schema related changes - **better route maps**
 - **Expressway tag**
 - Mainly in USA
 - High-speed road but not motorway



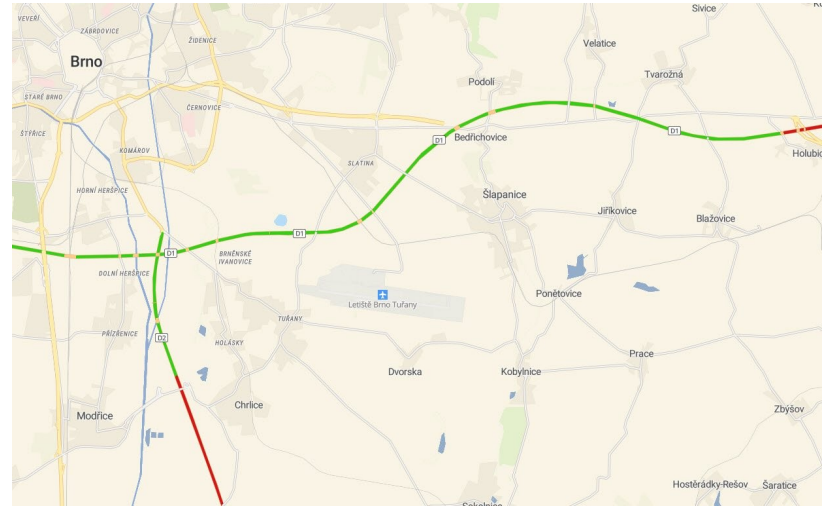
Updates in OpenMapTiles 3.13

- Schema related changes - **better route maps**

- **Expressway tag**

- **Toll tag**

- must be paid a fee?



Updates in OpenMapTiles 3.13

- Schema related changes - **better route maps**

- **Expressway tag**

- **Toll tag**

- **Access tag**

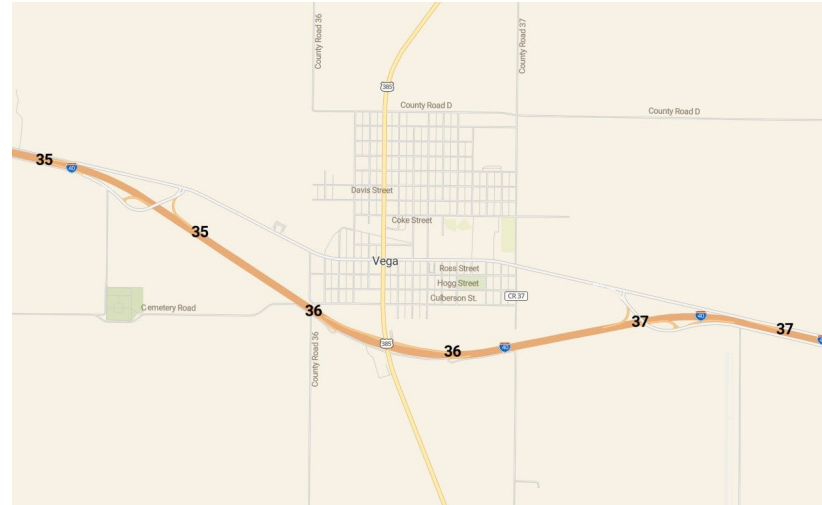
- possibilities to style private roads



Updates in OpenMapTiles 3.13

- Schema related changes - **better route maps**

- **Expressway tag**
- **Toll tag**
- **Access tag**
- **Concurrent route labels**
- **Motorway Junctions**
 - name of crossroad on highway



Updates in OpenMapTiles 3.13

- Schema related changes - **better route maps**

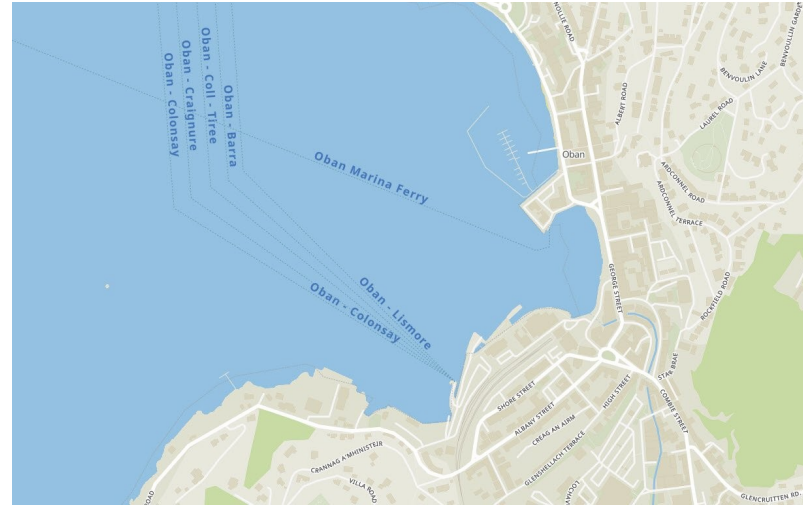
- **Expressway tag**
- **Toll tag**
- **Access tag**
- **Concurrent route labels**
- **Motorway Junctions**
- **Road network tag**
 - now network tag available also for transportation_name layer



Updates in OpenMapTiles 3.13

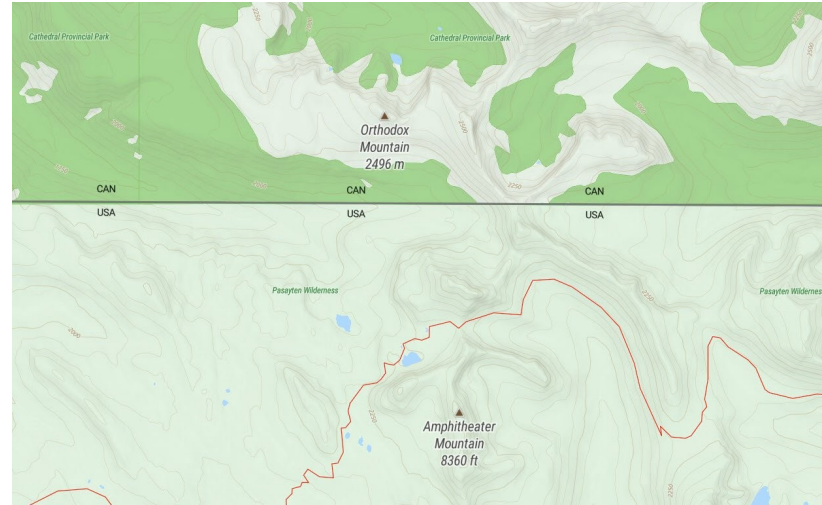
- Schema related changes - **better route maps**

- **Expressway tag**
- **Toll tag**
- **Access tag**
- **Concurrent route labels**
- **Motorway Junctions**
- **Road network tag**
- **Shipway and aerialway labels**



Updates in OpenMapTiles 3.13

- Schema related changes - **and many other**
 - **Customary units for mountain peaks**
 - USA mountains in feet **by default**



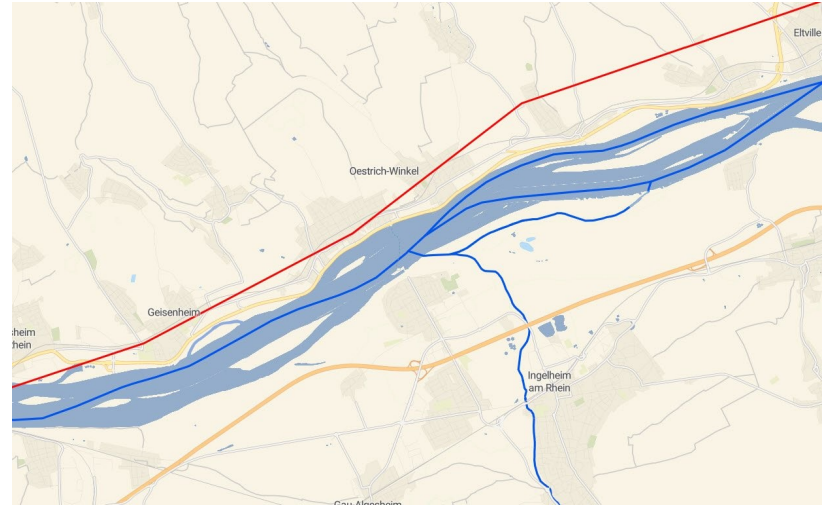
Updates in OpenMapTiles 3.13

- Schema related changes - **and many other**
 - **Customary units for mountain peaks**
 - **More topographic information**
 - Cliff edges
 - Aretes
 - Ridges



Updates in OpenMapTiles 3.13

- Schema related changes - **and many other**
 - **Customary units for mountain peaks**
 - **More topographic information**
 - **Improved precisions of waterways**
 - Waterway layer
 - Based on OSM instead of Natural Earth
 - Zooms 6 - 8



Updates in OpenMapTiles 3.13

- Schema related changes - **and many other**
 - **Customary units for mountain peaks**
 - **More topographic information**
 - **Improved precisions of waterways**
 - **ATM, aerialway, locksmith tags**



Updates in OpenMapTiles 3.13

- Schema related changes - **and many other**
 - **Customary units for mountain peaks**
 - **More topographic information**
 - **Improved precisions of waterways**
 - **ATM, aerialway, locksmith tags**
 - **Import border directly from osm.pbf with imposm/SQL**

Full list of changes

<https://github.com/openmaptiles/openmaptiles/releases>



Updates in tools

- Move from tools version **v5.3.2** (OMT 3.12.2) to **v6.2.0** (OMT 3.13.1)
- **50** commits
- **107** changed files

- **Speed** and **stability improvements**
- **Bumps** new **version** of packages
- **Append mode** for **import-osm** step
- **Propagate variables** from **openmaptiles.yaml**



Version 3.14

- Update to latest **Natural Earth v 5.2.1** 
 - **Fixed bugs**, new Wikidata IDs, 3 years of updates (from 4.1)
- Added new tags 
 - Bus guideway
 - Shrubbery
 - Parcel lockers
- Mark capital cities up to admin level 6 (counties) 
- Update to **PostgreSQL 14** with **PostGIS 3.2** (OMT  v7)

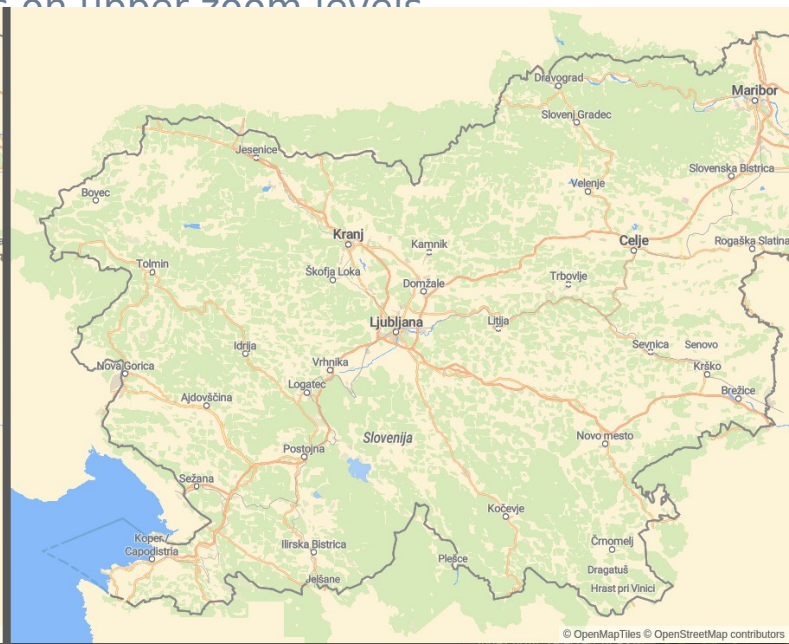
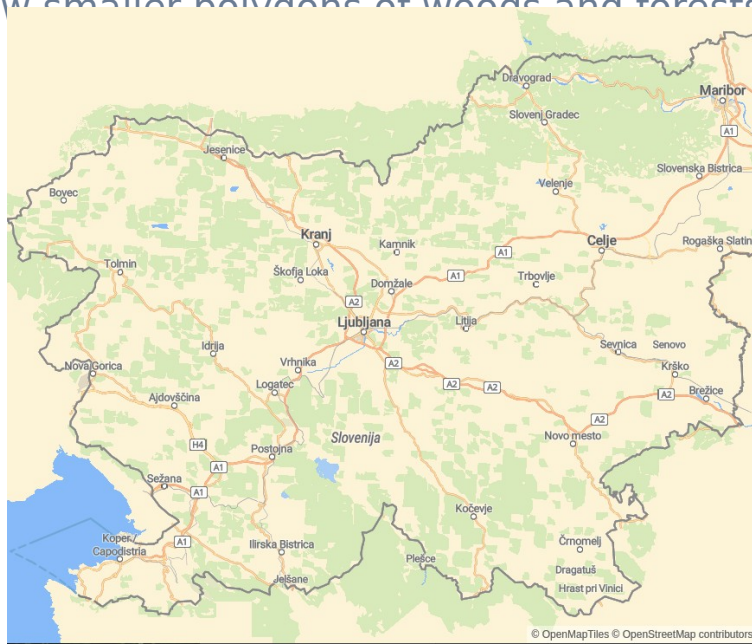


Version 3.14



● Improved landcover layer

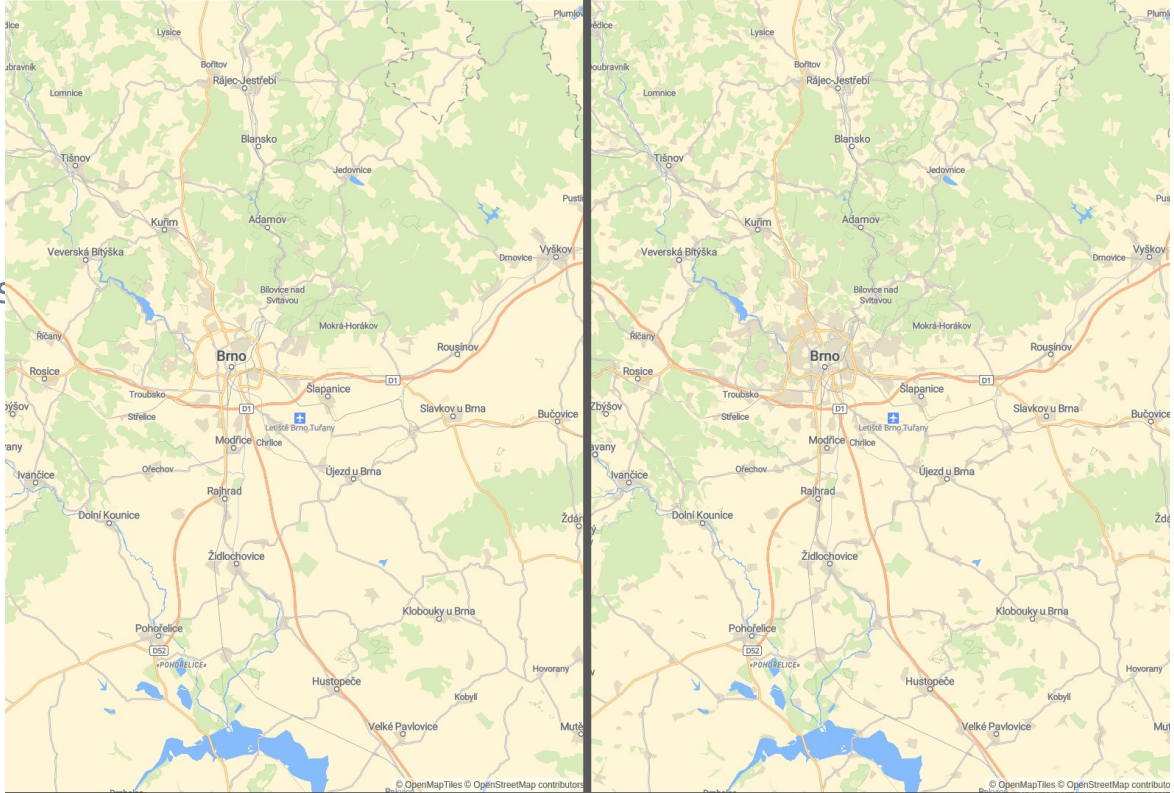
- Show smaller polygons of woods and forests on upper zoom levels



Version 3.14



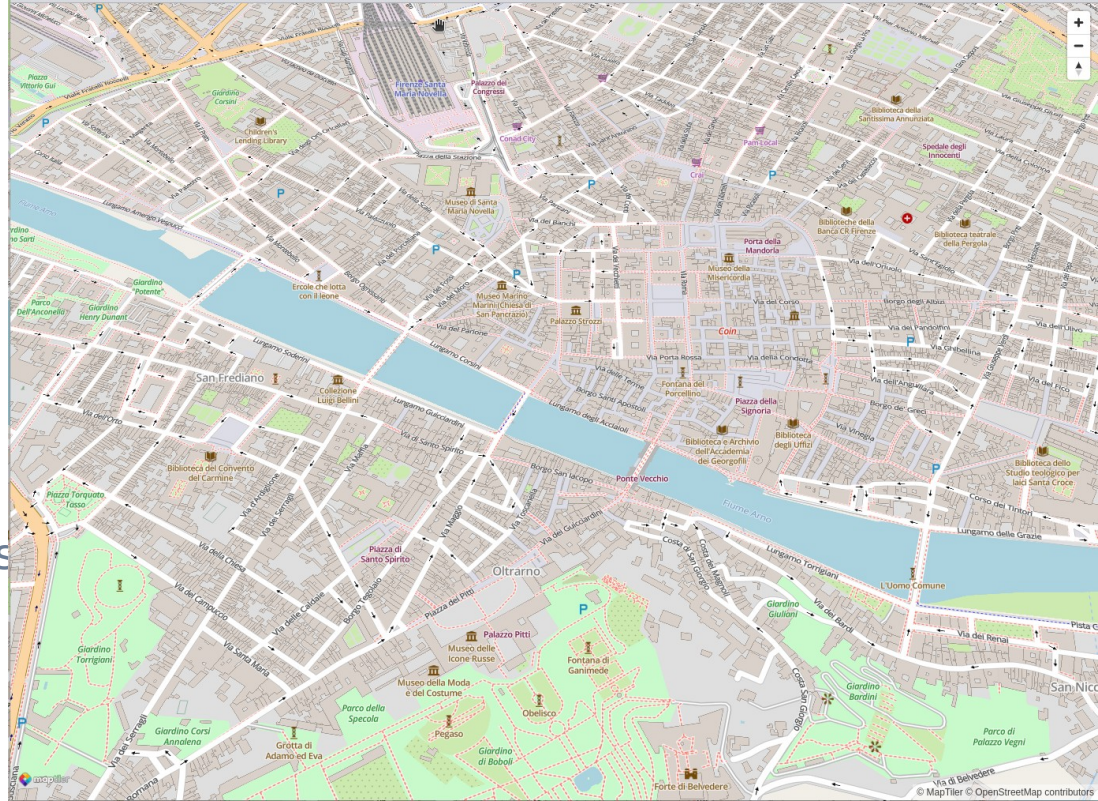
- Improved landuse layer
 - Shows grouped residential areas
 - More areas on lower zooms
 - Uses the same logic like for buildings on zoom 13



Version 3.14



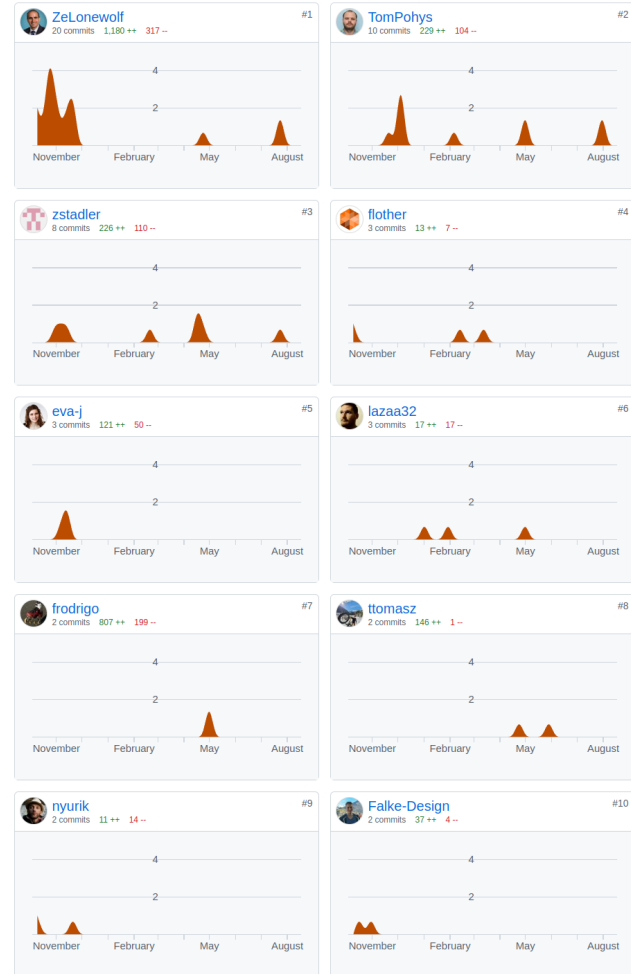
- Default OpenMapTiles style
- “Show all features”
(a la **OSM Carto**)
- Part of the OMT repo
- Bind schema change with
style change
- Generated together with tiles



Community!

Big THANKS to

- **Brian Sperlongano**
(@ZeLenewolf)
- **Zeev Stadler** (@zstadler)
- **Matt Riggott** (@flother)
- **Frédéric Rodrigo** (@frodrigo)
- **@ttomasz**
- **Yuri Astrakhan** (@nyurik)
- **many others for contributing!!!**



Roadmap for future

- Catalogue of layers
 - More **layers** and **features**
 - Pick what you need & generate including style
- Higher precision
 - More **precise** geometry
 - Extend schema with **zoom level 15**
- Faster generating (planetiler, ...)
- Real time updates of OSM - diffs (serving directly from PostGIS on deep zooms)





**OpenStreetMap
Foundation**

- **OSMF considering OMT** for official OSM vector tiles
- Project to have more **open governance**:
 - Technical steering committee - community decisions on PRs and direction
 - Considered licence switch from **CC-BY to CC0 on Schema**
 - Releases on schedule defined by community
 - Fixes on communication & website
 - Boosted collaboration - cooperation with OSM community



OpenMapTiles

- **Open-source community** project
- Developed by companies and enthusiasts
- Latest stable release v3.14
- Active development on v3.1x
- Future ideas in v4
- Take a look at last year's workshop on YouTube
 - codes <https://github.com/maptiler/foss4g-workshop/>
- openmaptiles.org

