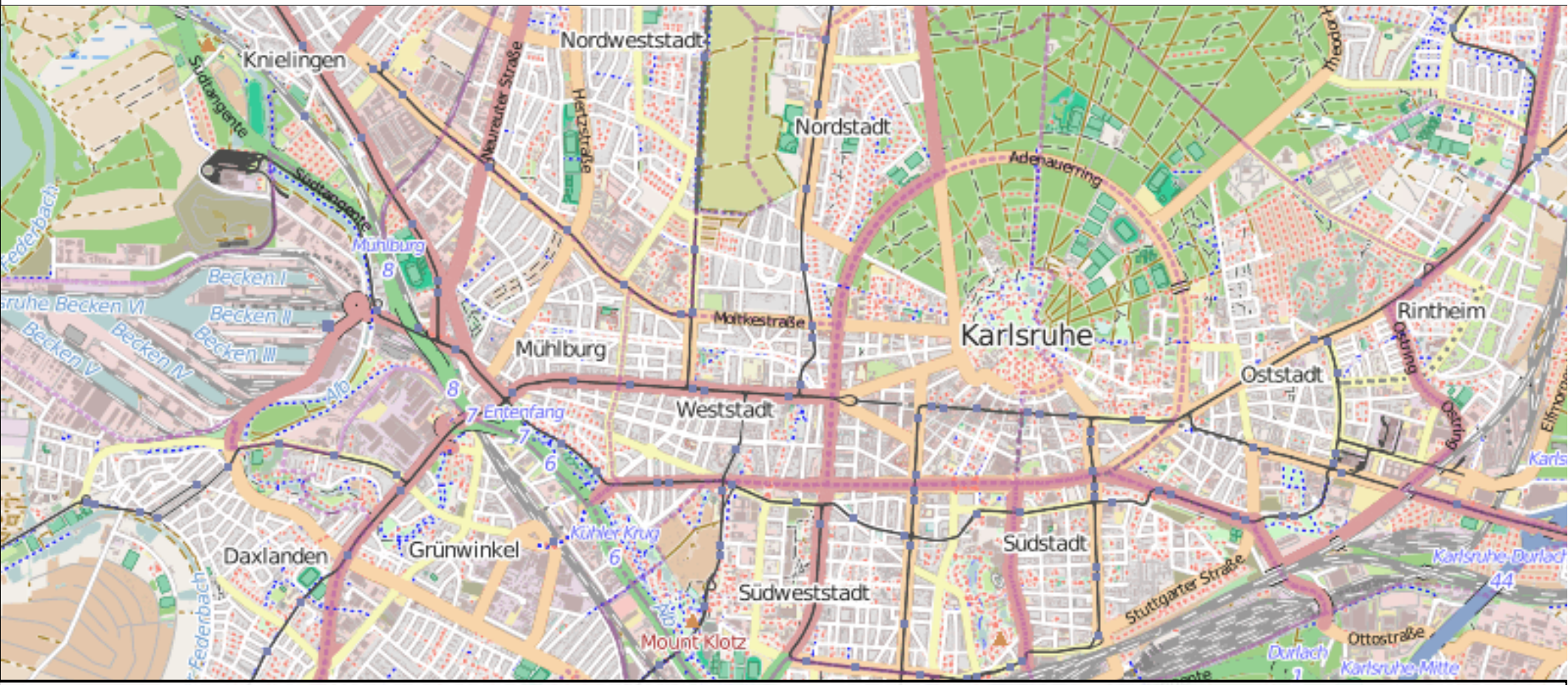
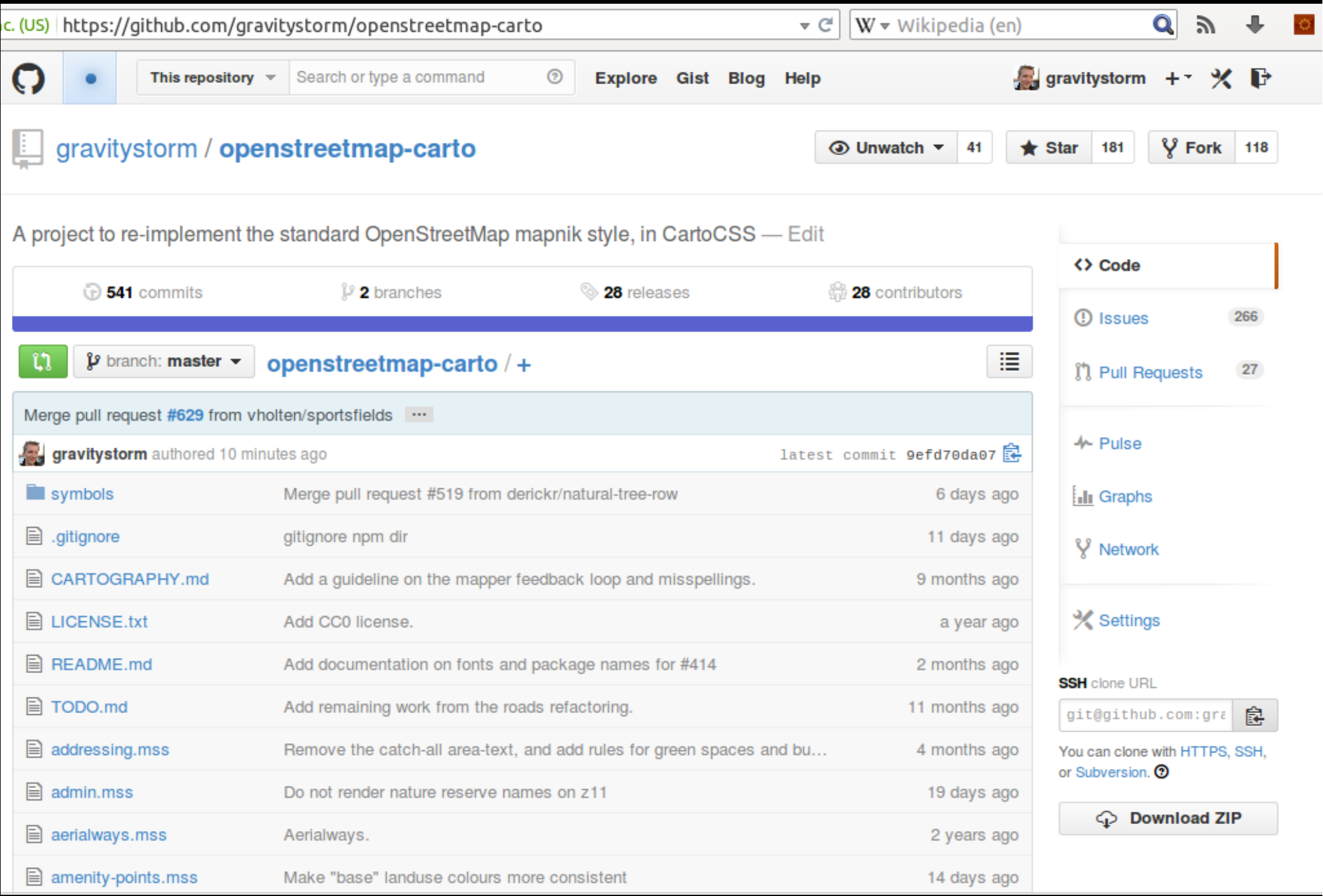
Workshop: openstreetmap-carto

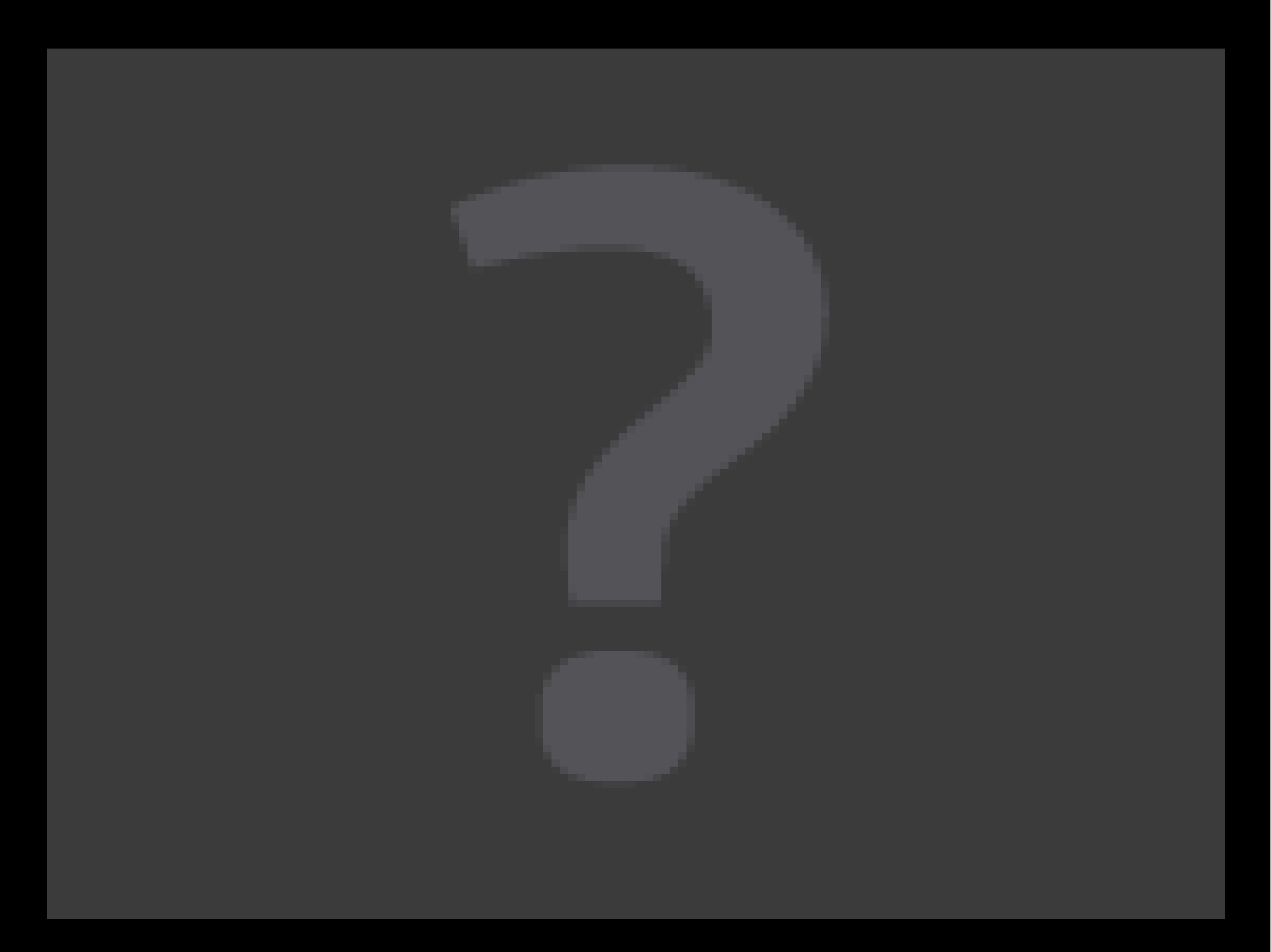


Andy Allan
andy@gravitystorm.co.uk
github.com/gravitystorm/openstreetmap-carto

github.com/gravitystorm/openstreetmap-carto


https://github.com/gravitystorm/openstreetmap-carto
Wikipedia (en)
This repository
Search or type a command
Explore
Gist
Blog
Help
gravitystorm
gravitystorm / openstreetmap-carto
Unwatch 41
Star 181
Fork 118
A project to re-implement the standard OpenStreetMap mapnik style, in CartoCSS — Edit
541 commits
2 branches
28 releases
28 contributors
branch: master
openstreetmap-carto / +
Merge pull request #629 from vholten/sportsfields
gravitystorm authored 10 minutes ago
latest commit 9efd70da07
symbols Merge pull request #519 from derickr/natural-tree-row 6 days ago
.gitignore gitignore npm dir 11 days ago
CARTOGRAPHY.md Add a guideline on the mapper feedback loop and misspellings. 9 months ago
LICENSE.txt Add CC0 license. a year ago
README.md Add documentation on fonts and package names for #414 2 months ago
TODO.md Add remaining work from the roads refactoring. 11 months ago
addressing.mss Remove the catch-all area-text, and add rules for green spaces and bu... 4 months ago
admin.mss Do not render nature reserve names on z11 19 days ago
aerialways.mss Aerialways. 2 years ago
amenity-points.mss Make "base" landuse colours more consistent 14 days ago
Code
Issues 266
Pull Requests 27
Pulse
Graphs
Network
Settings
SSH clone URL
git@github.com:gra
You can clone with HTTPS, SSH, or Subversion.
Download ZIP

Installation



mapbox.com/tilemill

Mapbox

Documentation CartoCSS Reference

TileMill

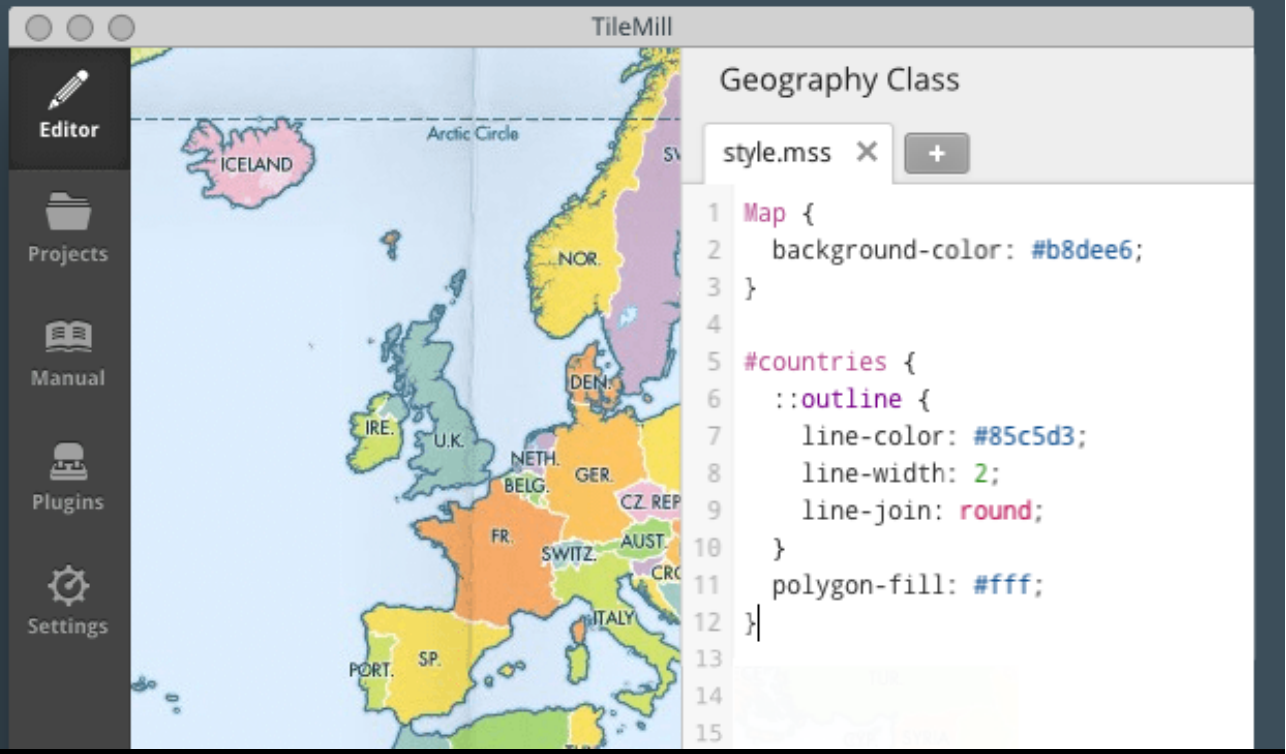
Create beautiful interactive maps

Whether you're a journalist, web designer, researcher, or seasoned cartographer, TileMill is the design studio to create stunning interactive maps.

Mac OS X	Ubuntu	Windows

Ubuntu **Download**	install-tilemill.tar.gz **30 MB**

Upgrade notes Changelog More install details



osm2pgsql + postgis

Rich data

OpenStreetMap data is rich and detailed, containing huge amounts of data which is relevant to people on the ground - the people who collected it.

Features include:

- Roads, railways, waterways, etc...
- Restaurants, shops, stations, ATMs and more.
- Walking and cycling paths.
- Buildings, campuses, etc...

Loading OSM data

This guide describes how to install, set-up and configure all the necessary software to have a database of OpenStreetMap data which you can use to render maps or develop stylesheets. The step-by-step instructions are written for Ubuntu Linux 14.04 LTS (Trusty Tahr), but have notes on adaptations needed for Ubuntu 12.04 LTS (Precise Pangolin). They should transfer without much difficulty to other distributions. Basic Linux command line and PostgreSQL knowledge is required. The machine used for the database can either be a desktop machine or a machine you have remote access to.

Software Installation

This guide covers installation of osm2pgsql and loading a PostgreSQL/PostGIS database with OpenStreetMap data. Before starting, make sure your Ubuntu system is fully up-to-date:

switch2osm.org/loading-osm-data/

Setup

You need OpenStreetMap data loaded into a PostGIS database (see below for dependencies). These stylesheets currently work only with the osm2pgsql defaults (i.e. database name is 'gis', table names are 'planet_osm_point' etc).

It's probably easiest to grab an PBF of OSM data from metro.teczno.com or geofabrik. Once you've set up your PostGIS database, import with osm2pgsql:

```
osm2pgsql -d gis ~/path/to/data.osm.pbf --style openstreetmap-carto.style
```

Additionally you need some shapefiles.

Scripted download

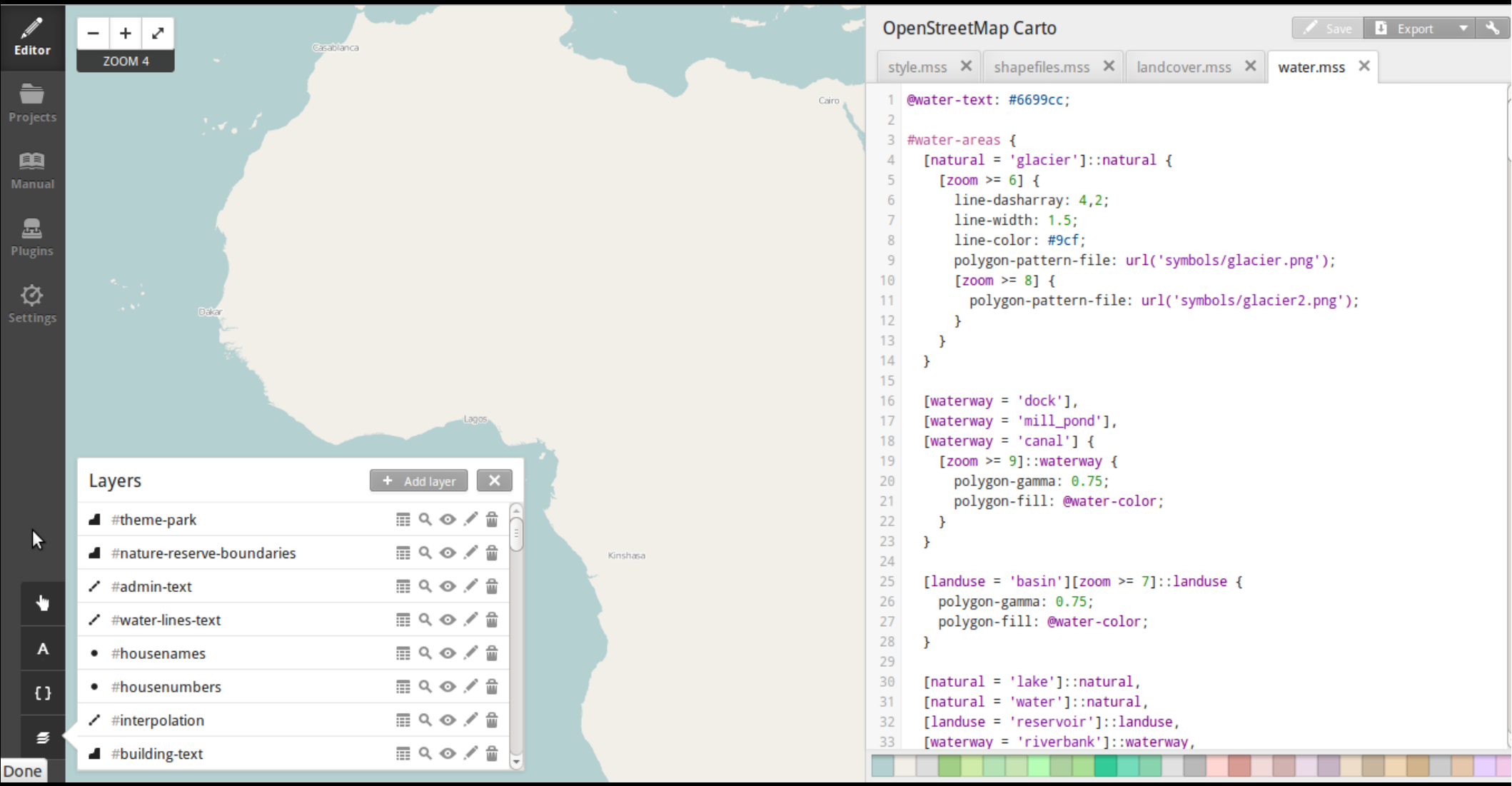
To download the shapefiles you can run the following script from this directory. No further steps should be needed as the data has been processed and placed in the requisite directories.

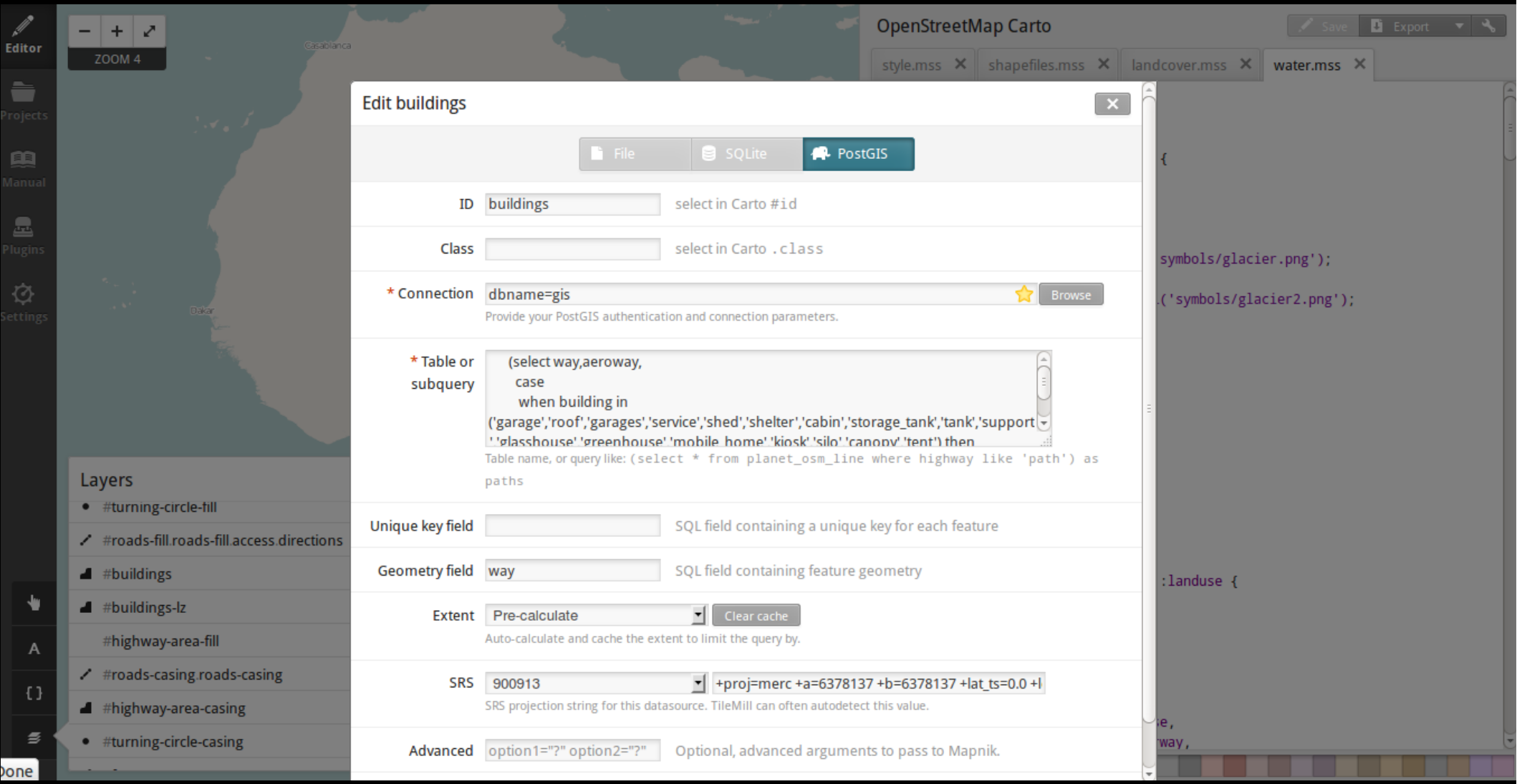
```
sh get-shapefiles.sh
```

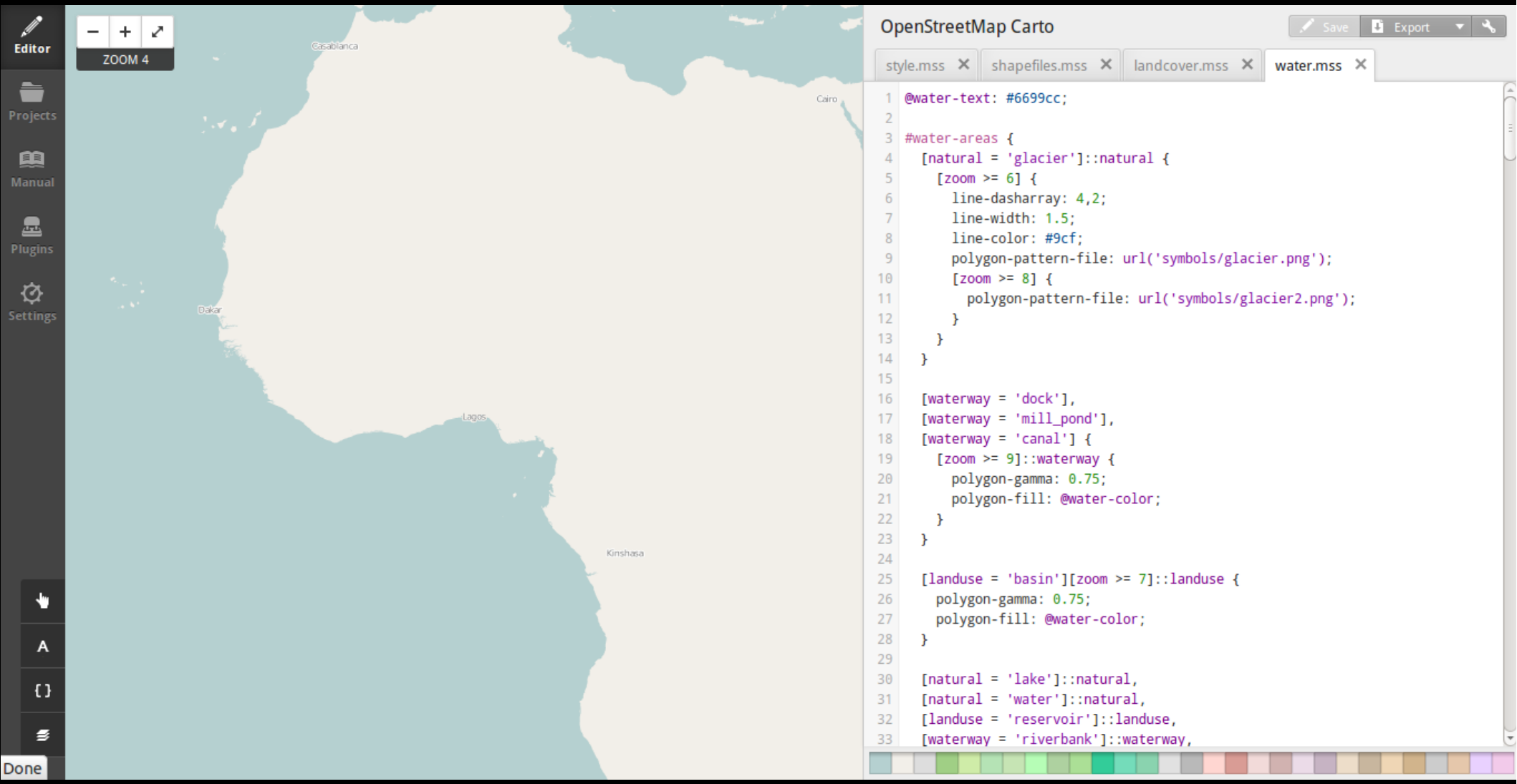
Editing

addressing.mss
admin.mss
aerialways.mss
amenity-points.mss
amenity-symbols.mss
buildings.mss
citywalls.mss
ferry-routes.mss
landcover.mss
placenames.mss
power.mss
project.mml
roads.mss
shapefiles.mss
stations.mss
style.mss
water-features.mss
water.mss

```
{
  "geometry": "linestring",
  "extent": [
    -179.99999692067183,
    -84.96651228427099,
    179.99999692067183,
    84.96651228427098
  ],
  "Datasource": {
    "type": "postgis",
    "table": "(select way,name from planet_osm_line where waterway='dam') as dam",
    "extent": "-20037508,-19929239,20037508,19929239",
    "key_field": "",
    "geometry_field": "way",
    "dbname": "gis"
  },
  "id": "dam",
  "class": "",
  "srs-name": "900913",
  "srs": "+proj=merc +a=6378137 +b=6378137 +lat_ts=0.0 +lon_0=0.0 +x_0=0.0 +y_0=0.0 +k=1.0 +units=m
+nadgrids=@null +wktext +no_defs +over",
  "advanced": {},
  "name": "dam"
},
```


Editor
Projects
Manual
Plugins
Settings
ZOOM 4
Casablanca
Cairo
Dakar
Lagos
Kinshasa
Layers
Add layer
#theme-park
#nature-reserve-boundaries
#admin-text
#water-lines-text
#housenames
#housenumbers
#interpolation
#building-text
Done
OpenStreetMap Carto
Save
Export
style.mss
shapefiles.mss
landcover.mss
water.mss
@water-text: #6699cc;
#water-areas {
[natural = 'glacier']::natural {
[zoom >= 6] {
line-dasharray: 4,2;
line-width: 1.5;
line-color: #9cf;
polygon-pattern-file: url('symbols/glacier.png');
[zoom >= 8] {
polygon-pattern-file: url('symbols/glacier2.png');
}
}
}
[waterway = 'dock'],
[waterway = 'mill_pond'],
[waterway = 'canal'] {
[zoom >= 9]::waterway {
polygon-gamma: 0.75;
polygon-fill: @water-color;
}
}
[landuse = 'basin'][zoom >= 7]::landuse {
polygon-gamma: 0.75;
polygon-fill: @water-color;
}
[natural = 'lake']::natural,
[natural = 'water']::natural,
[landuse = 'reservoir']::landuse,
[waterway = 'riverbank']::waterway,


Editor
Projects
Manual
Plugins
Settings
ZOOM 4
Casablanca
Dakar
OpenStreetMap Carto
Save
Export
style.mss
shapefiles.mss
landcover.mss
water.mss
Edit buildings
File
SQLite
PostGIS
ID
buildings
select in Carto #id
Class
select in Carto .class
* Connection
dbname=gis
Browse
Provide your PostGIS authentication and connection parameters.
* Table or subquery
(select way,aeroway,
case
when building in
('garage','roof','garages','service','shed','shelter','cabin','storage_tank','tank','support
','glasshouse','greenhouse','mobile_home','kiosk','silo','canopy','tent') then
Table name, or query like: (select * from planet_osm_line where highway like 'path') as paths
Unique key field
SQL field containing a unique key for each feature
Geometry field
way
SQL field containing feature geometry
Extent
Pre-calculate
Clear cache
Auto-calculate and cache the extent to limit the query by.
SRS
900913
+proj=merc +a=6378137 +b=6378137 +lat_ts=0.0 +l
SRS projection string for this datasource. TileMill can often autodetect this value.
Advanced
option1="?" option2="?"
Optional, advanced arguments to pass to Mapnik.
Layers
#turning-circle-fill
#roads-fill.roads-fill.access.directions
#buildings
#buildings-lz
#highway-area-fill
#roads-casing.roads-casing
#highway-area-casing
#turning-circle-casing
symbols/glacier.png');
('symbols/glacier2.png');
:landuse {


Editor
Projects
Manual
Plugins
Settings
ZOOM 4
Casablanca
Cairo
Dakar
Lagos
Kinshasa
A
{ }
Done
OpenStreetMap Carto
Save
Export
style.mss
shapefiles.mss
landcover.mss
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@water-text: #6699cc;
#water-areas {
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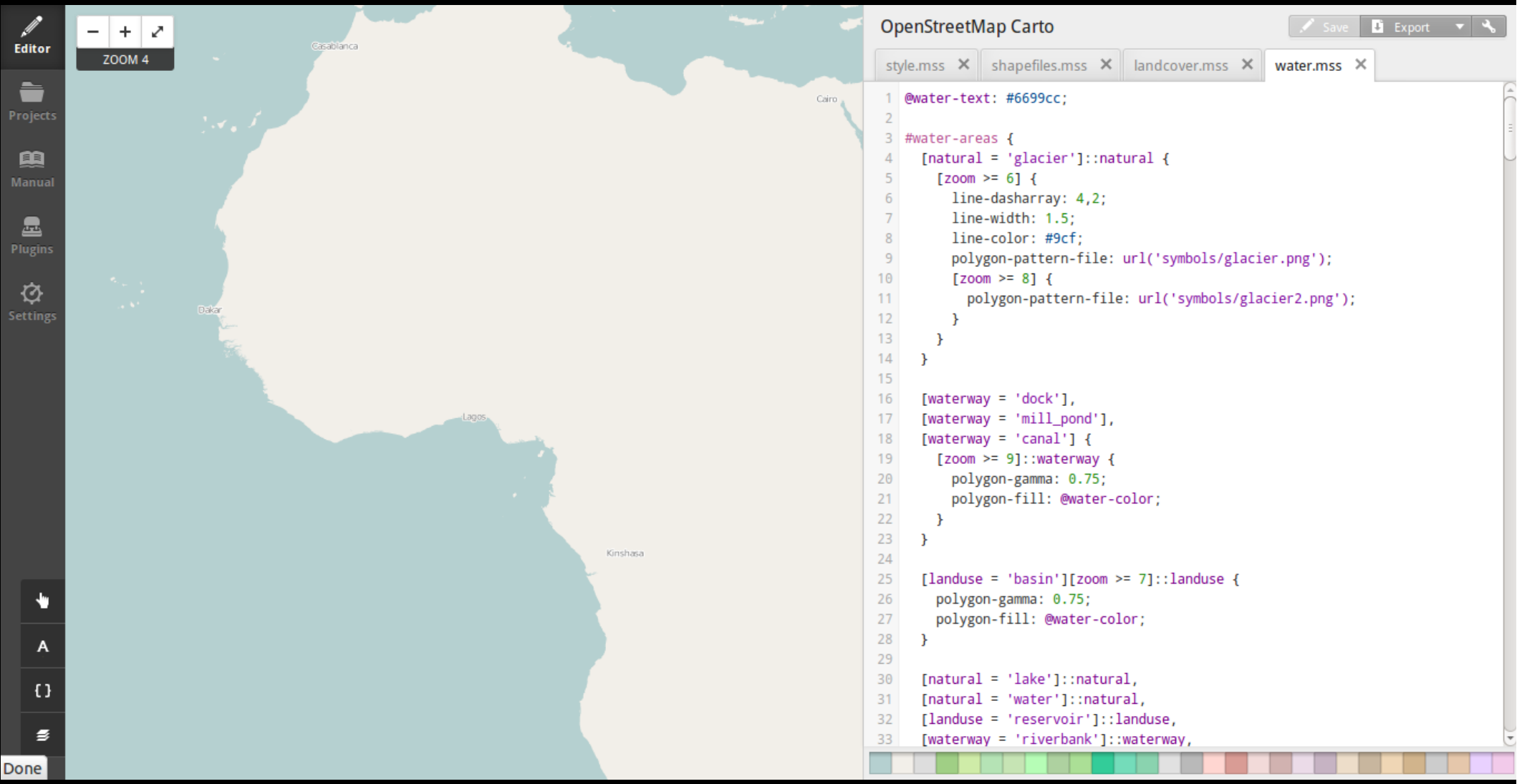
line-width: 1.5;
line-color: #9cf;
polygon-pattern-file: url('symbols/glacier.png');
[zoom >= 8] {
polygon-pattern-file: url('symbols/glacier2.png');
}
}
}
[waterway = 'dock'],
[waterway = 'mill_pond'],
[waterway = 'canal'] {
[zoom >= 9]::waterway {
polygon-gamma: 0.75;
polygon-fill: @water-color;
}
}
[landuse = 'basin'][zoom >= 7]::landuse {
polygon-gamma: 0.75;
polygon-fill: @water-color;
}
[natural = 'lake']::natural,
[natural = 'water']::natural,
[landuse = 'reservoir']::landuse,
[waterway = 'riverbank']::waterway,


Editor
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Plugins
Settings
ZOOM 4
Casablanca
Cairo
Dakar
Lagos
Kinshasa
A
{ }
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Export
style.mss
shapefiles.mss
landcover.mss
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}
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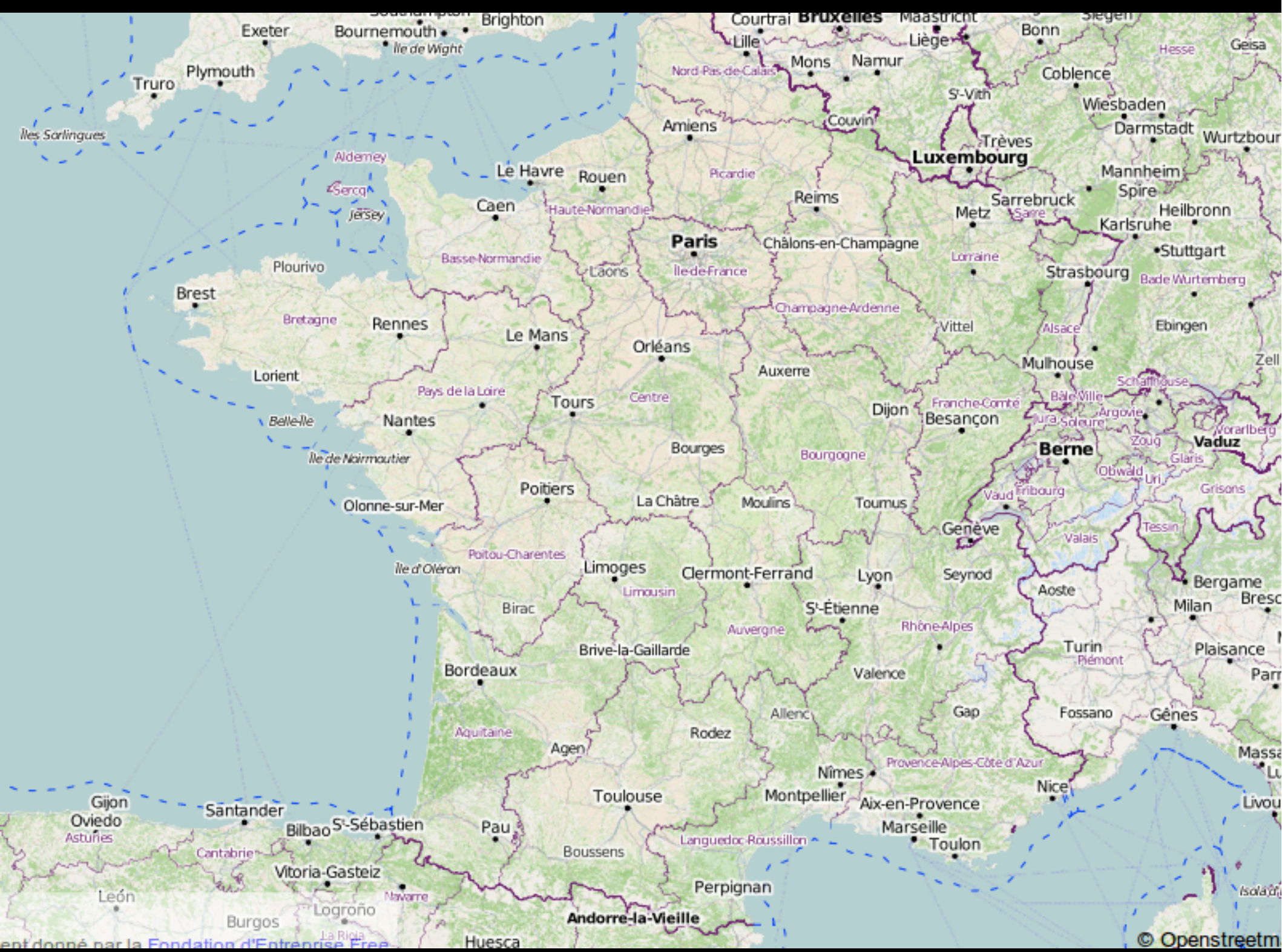
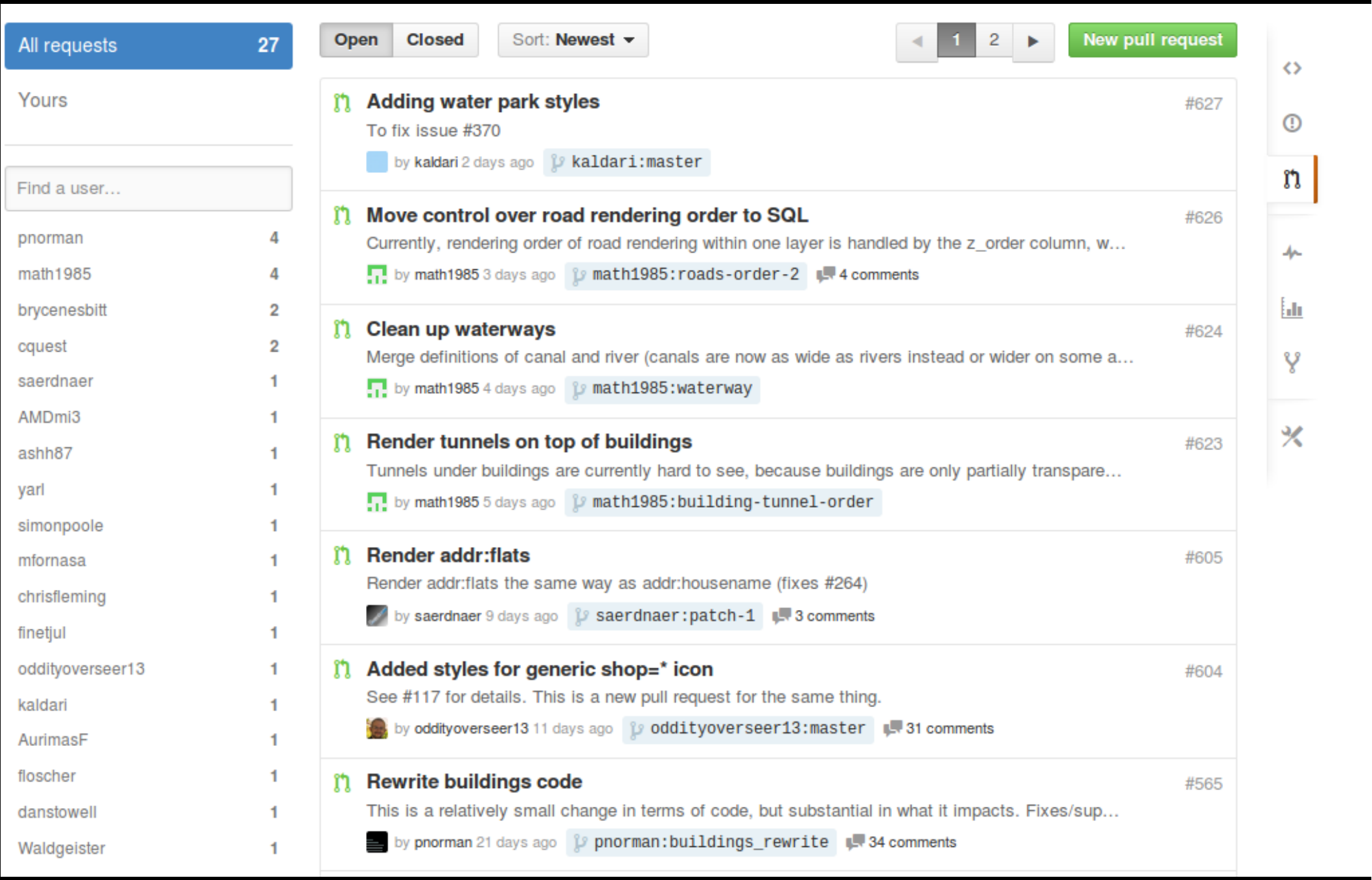
polygon-fill: @water-color;
}
}
[landuse = 'basin'][zoom >= 7]::landuse {
polygon-gamma: 0.75;
polygon-fill: @water-color;
}
[natural = 'lake']::natural,
[natural = 'water']::natural,
[landuse = 'reservoir']::landuse,
[waterway = 'riverbank']::waterway,

Create Your Own Style

https://github.com/cquest/osmfr-cartocss


Exeter
Bournemouth
Brighton
Ile de Wight
Plymouth
Truro
Îles Sorlingues
Aldernay
Sercq
Jersey
Courtrai
Bruxelles
Maastricht
Bonn
Lille
Liège
Mons
Namur
Nord-Pas-de-Calais
Coblence
Hesse
Geisa
S'-Vith
Wiesbaden
Darmstadt
Wurtzbour
Amiens
Couvin
Trèves
Luxembourg
Mannheim
Spire
Le Havre
Rouen
Picardie
Reims
Sarrebruck
Sarre
Metz
Heilbronn
Karlsruhe
Caen
Haute-Normandie
Paris
Châlons-en-Champagne
Stuttgart
Lorraine
Basse-Normandie
Plourivo
Laons
Ile-de-France
Strasbourg
Bade-Wurtemberg
Brest
Champagne-Ardenne
Bretagne
Rennes
Le Mans
Vittel
Alsace
Ebingen
Orléans
Mulhouse
Lorient
Auxerre
Pays de la Loire
Tours
Centre
Schaffhouse
Bâle-Ville
Dijon
Franche-Comté
Besançon
Argovie
Soleure
Jura
Vorarlberg
Belle-Ile
Nantes
Zoug
Vaduz
Berne
Bourges
Bourgogne
Glaris
Ile de Noirmoutier
Obwald
Uri
Poitiers
Vaud
Fribourg
Grisons
La Châtre
Moulins
Tournus
Olonne-sur-Mer
Genève
Tessin
Valais
Poitou-Charentes
Ile d'Oléron
Limoges
Clermont-Ferrand
Lyon
Seynod
Bergame
Limousin
Aoste
Birac
S'-Étienne
Milan
Auvergne
Rhône-Alpes
Brive-la-Gaillarde
Turin
Plaisance
Piémont
Bordeaux
Valence
Allenc
Gap
Fossano
Gênes
Aquitaine
Rodez
Agen
Provence-Alpes-Côte d'Azur
Nîmes
Nice
Toulouse
Montpellier
Aix-en-Provence
Gijon
Oviedo
Santander
Bilbao
S'-Sébastien
Pau
Marseille
Toulon
Asturies
Cantabrie
Languedoc-Roussillon
Boussens
Vitoria-Gasteiz
Perpignan
León
Navarre
Logroño
Burgos
La Rioja
Andorre-la-Vieille
Huesca
© Openstreetm

Contributing to the Style


All requests 27
Yours
Find a user…
pnorman 4
math1985 4
brycenesbitt 2
cquest 2
saerdnaer 1
AMDmi3 1
ashh87 1
yarl 1
simonpoole 1
mfornasa 1
chrisfleming 1
finetjul 1
oddityoverseer13 1
kaldari 1
AurimasF 1
floscher 1
danstowell 1
Waldgeister 1
Open
Closed
Sort: Newest
1
2
New pull request
Adding water park styles
#627
To fix issue #370
by kaldari 2 days ago
kaldari:master
Move control over road rendering order to SQL
#626
Currently, rendering order of road rendering within one layer is handled by the z_order column, w…
by math1985 3 days ago
math1985:roads-order-2
4 comments
Clean up waterways
#624
Merge definitions of canal and river (canals are now as wide as rivers instead or wider on some a…
by math1985 4 days ago
math1985:waterway
Render tunnels on top of buildings
#623
Tunnels under buildings are currently hard to see, because buildings are only partially transpare…
by math1985 5 days ago
math1985:building-tunnel-order
Render addr:flats
#605
Render addr:flats the same way as addr:housename (fixes #264)
by saerdnaer 9 days ago
saerdnaer:patch-1
3 comments
Added styles for generic shop=* icon
#604
See #117 for details. This is a new pull request for the same thing.
by oddityoverseer13 11 days ago
oddityoverseer13:master
31 comments
Rewrite buildings code
#565
This is a relatively small change in terms of code, but substantial in what it impacts. Fixes/sup…
by pnorman 21 days ago
pnorman:buildings_rewrite
34 comments

help.github.com/articles/creating-a-pull-request

Create a pull request to propose and collaborate on changes to a repository. These changes are proposed in a *branch*, which ensures that the `master` branch is kept clean and tidy.

Before you can open a pull request, you must create a branch and then add commits to the branch. Pull requests can only be opened if there are differences between your branch and the upstream branch.

1. On GitHub, navigate to the repository to which you'd like to propose changes.
2. In the "Branch" menu, choose the branch that contains your commits.

3. To the left of the "Branch" menu, click the green **Compare and Review** button.

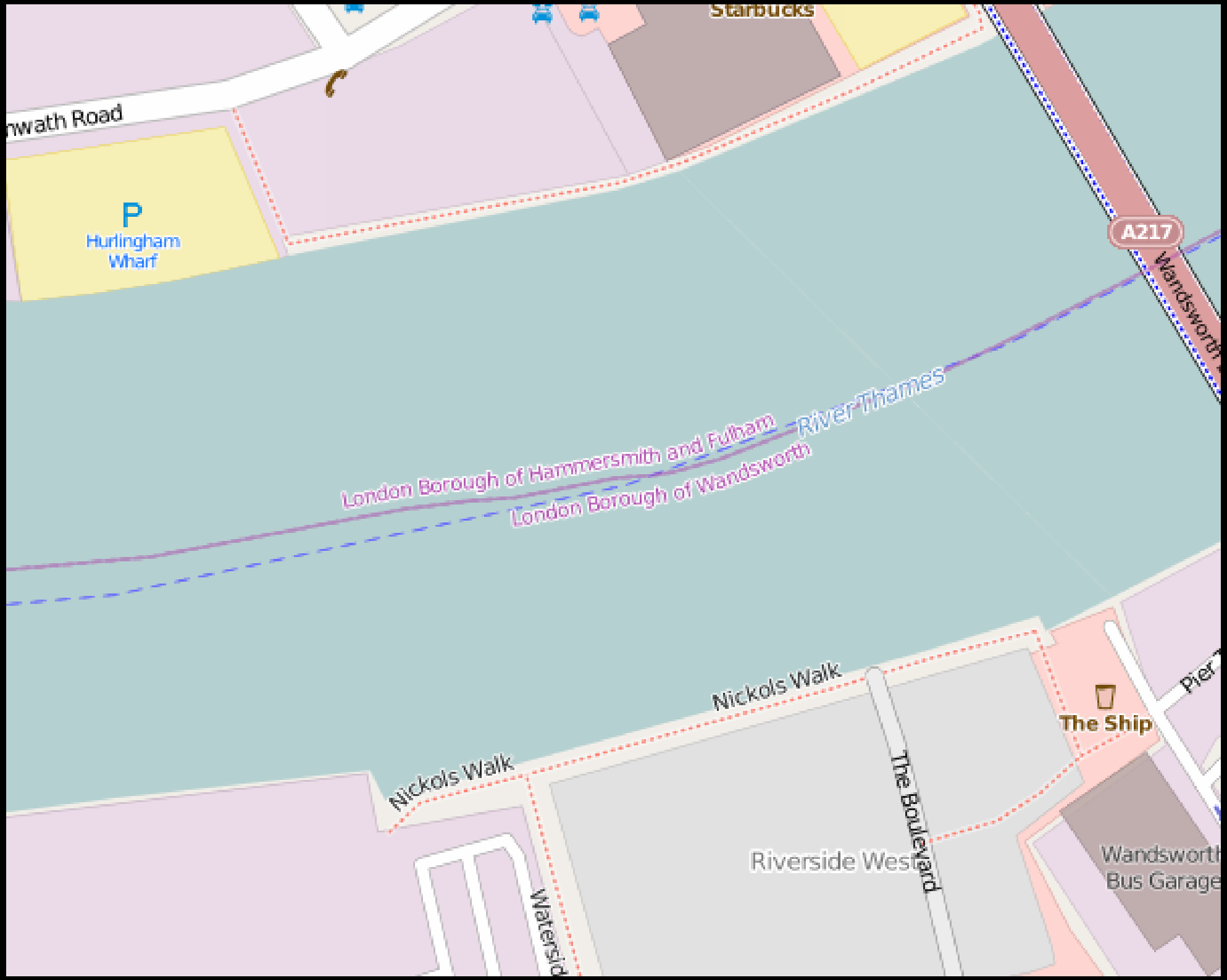
4. The Compare page will automatically select the base and compare branches; to change these, click **Edit**.

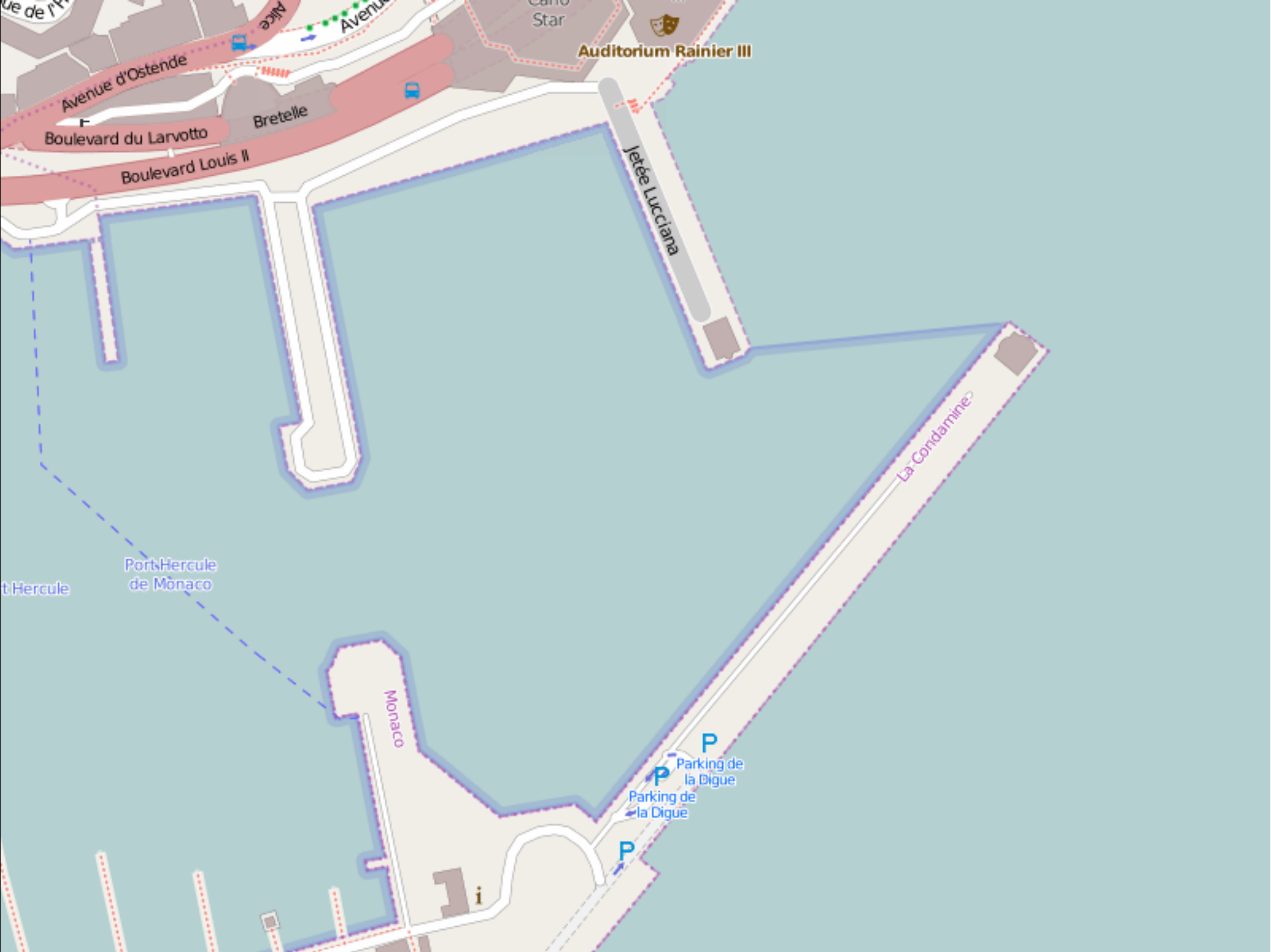
5. On the Compare page, click **Create pull request**.

6. Type a title and description for your pull request.

7. Click **Send pull request**

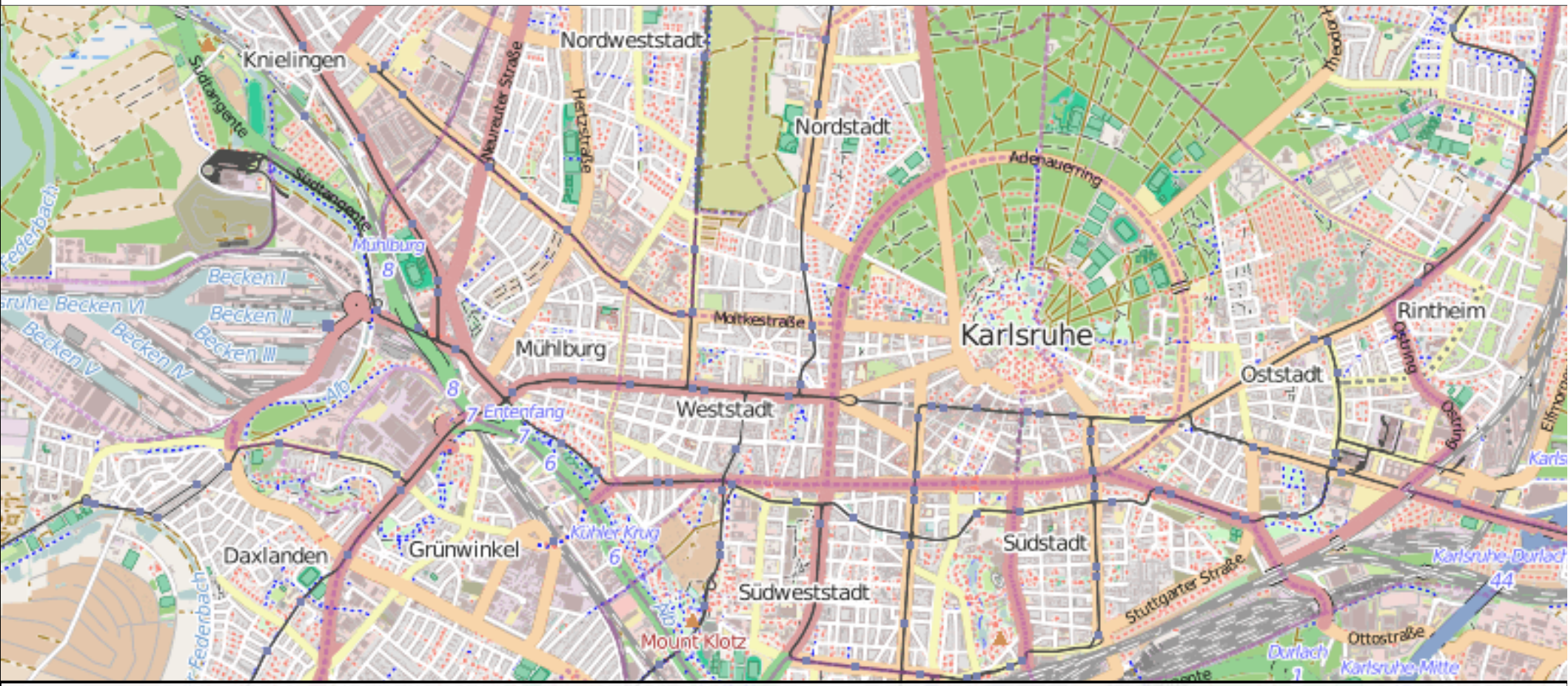
After your pull request has been reviewed, it can be merged into the repository.


Starbucks
nwath Road
P
Hurlingham
Wharf
A217
Wandsworth
London Borough of Hammersmith and Fulham
River Thames
London Borough of Wandsworth
Nickols Walk
Nickols Walk
The Ship
The Boulevard
Riverside West
Wandsworth
Bus Garage


Avenue d'Ostende
Boulevard du Larvotto
Bretelle
Boulevard Louis II
Auditorium Rainier III
Jetée Lucciana
La Condamine
Port Hercule
de Monaco
Monaco
Parking de
la Digue
Parking de
la Digue

Have fun!

Thank you!



Andy Allan
andy@gravitystorm.co.uk
github.com/gravitystorm/openstreetmap-carto