OpenStreetMap & Wikimedia

AWESOME TOGETHER

WIKIMANIA SINGAPORE

Dennis Raylin Chen / Supaplex
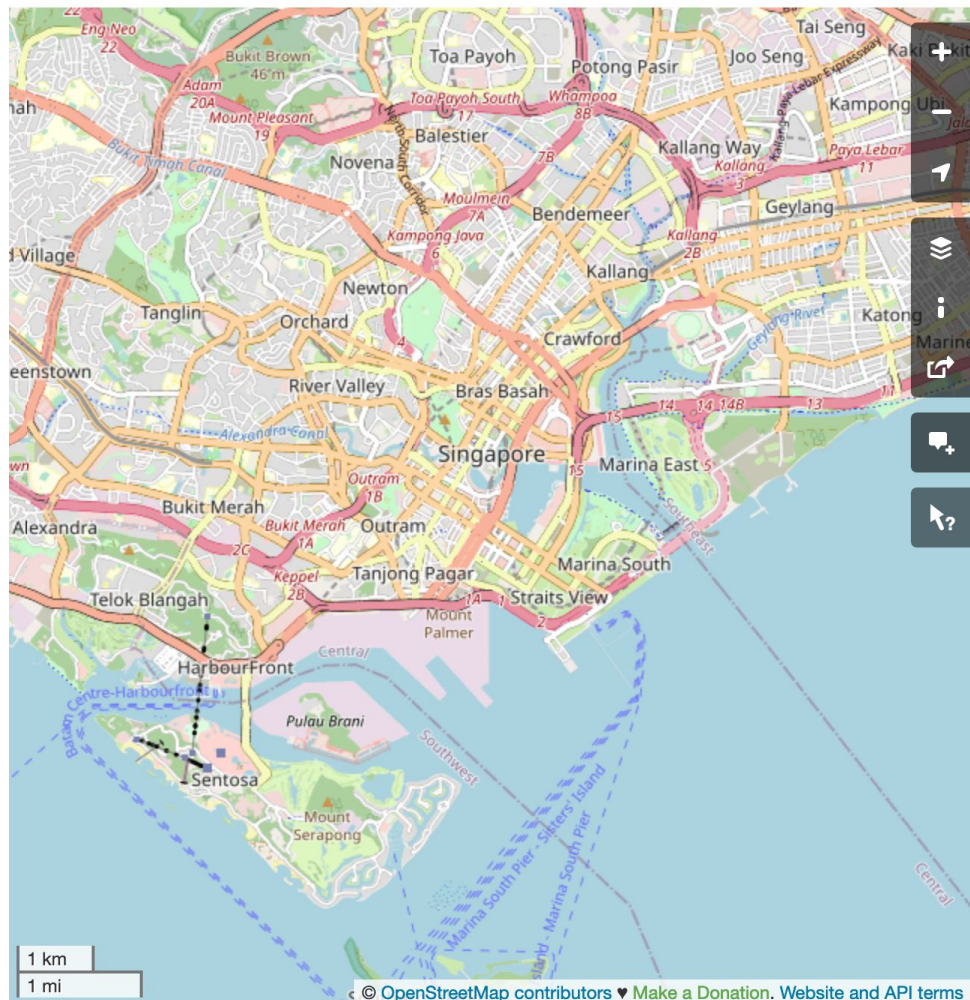Eugene Alvin Villar / seav

OpenStreetMap? What's that?

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OSM?

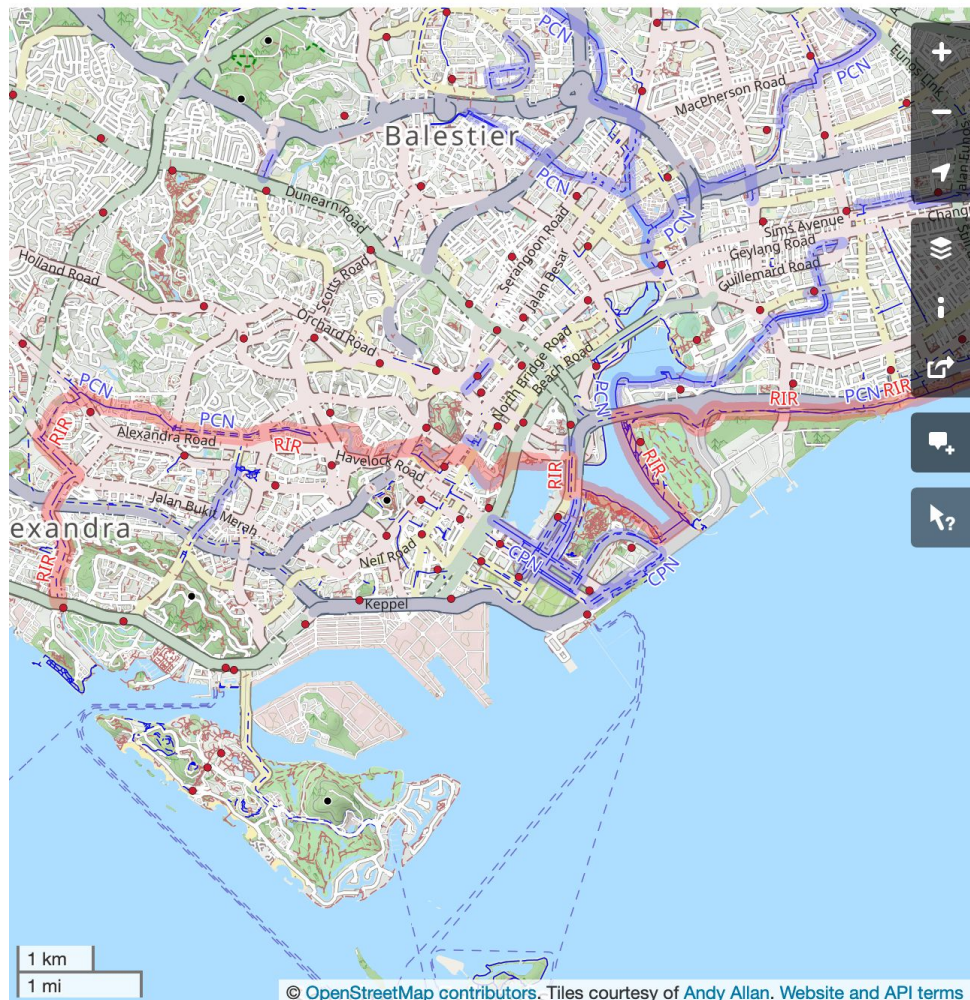**OpenStreetMap** is the largest crowdsourced project to map the whole world!

OSM?

Usual way to introduce OSM:

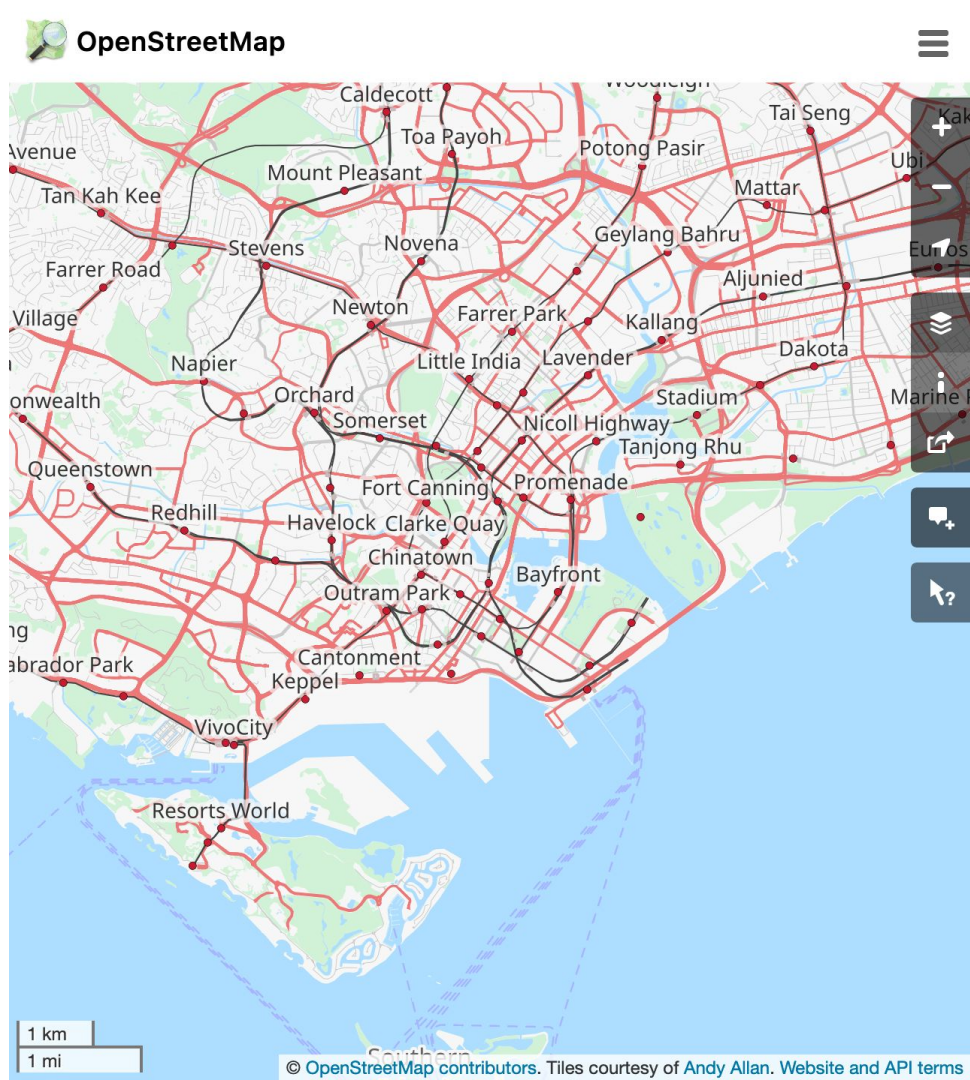*"OpenStreetMap is like Wikipedia for maps"*

OSM?

More accurate way to introduce OSM:
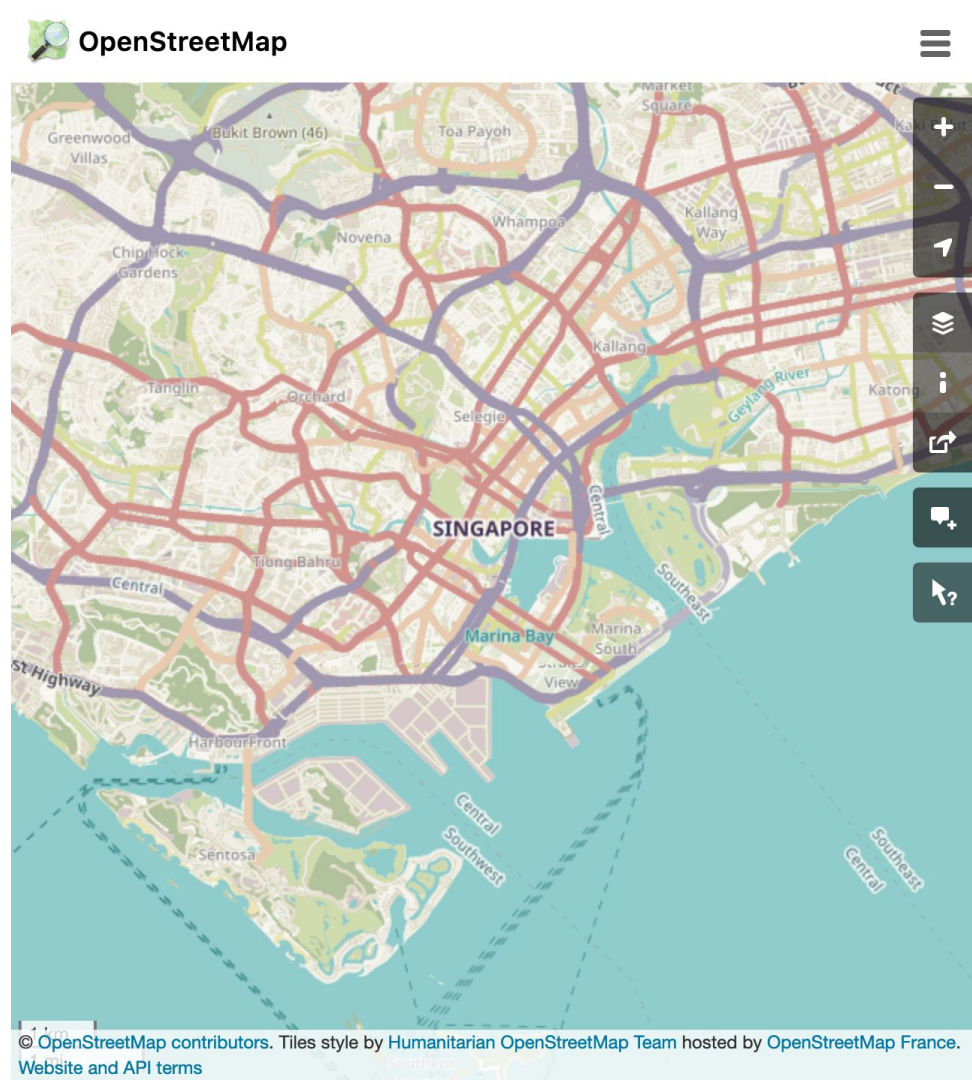
"OpenStreetMap is like Wikidata for geographical data"

(But only if you are already familiar with Wikidata!)

OSM?

OpenStreetMap was started in the United Kingdom in 2004 and is overseen by the OpenStreetMap Foundation (OSMF), registered in England and Wales.
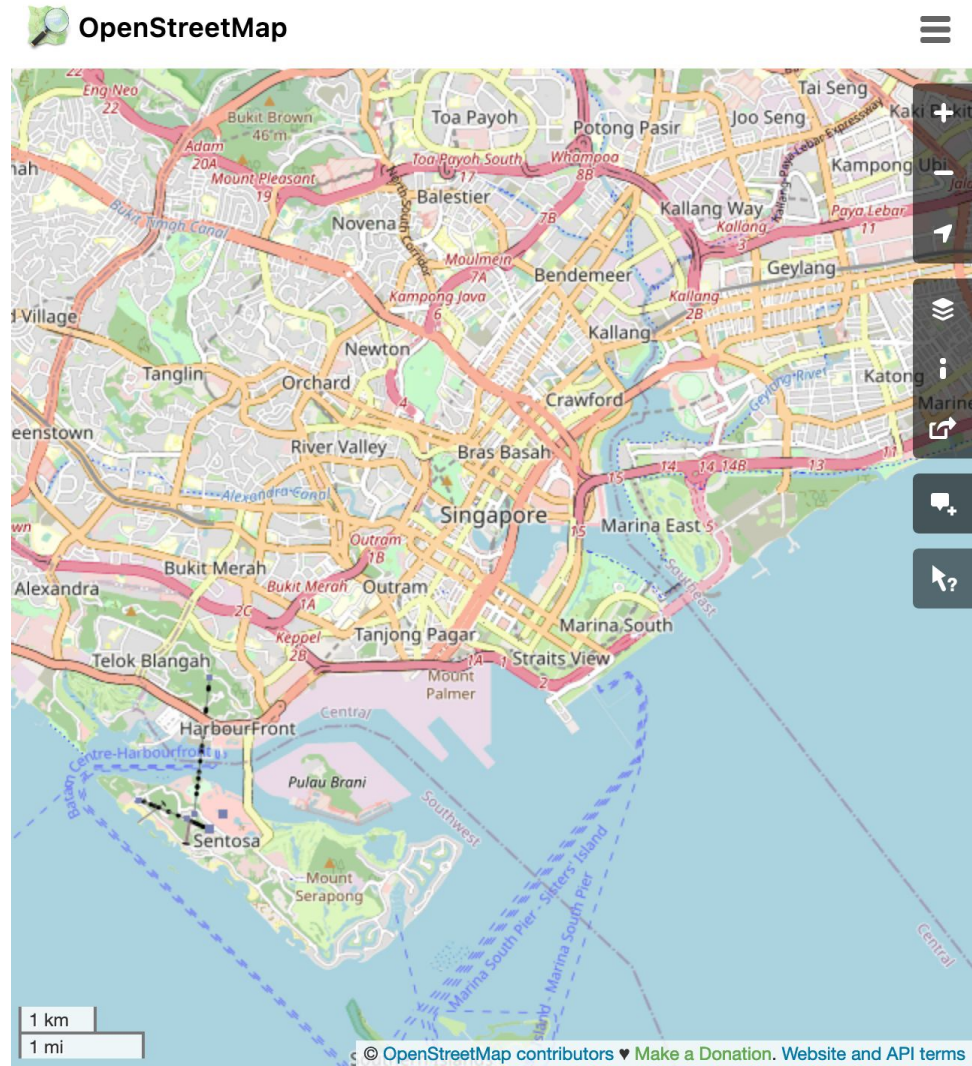
OpenStreetMap's data model

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Data model

OSM and Wikidata have quite a lot in common, both being crowdsourced, open data projects.

Data model

While Wikidata has items, statements, properties, values, qualifiers, references, labels, descriptions, etc., …

Data model

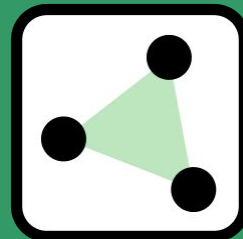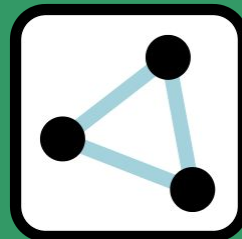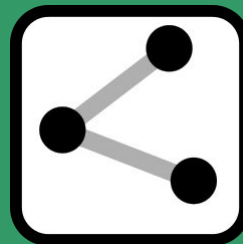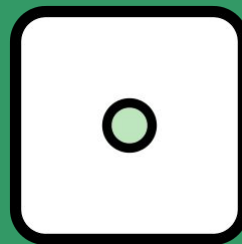... OSM has nodes, ways, relations (that have members and roles), tags, keys, values, etc.

Data model

Nodes, ways, and relations model the geometry and topology of objects.

Tags (key-value strings) describe the actual "things" those objects represent.
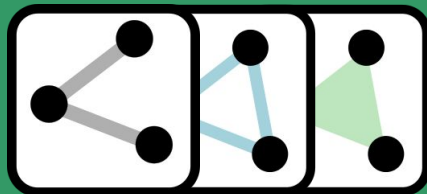
Data model

OSM tags are quite similar to Wikidata statements:

OSM key ≈ Wikidata property

OSM's tags are not strictly controlled—users can invent and add any tag they like! There is a tagging proposal process for common tags, though.

Suntec Singapore item (Q20983933):

official website (P856) = https://www.suntecsingapore.com/

date of official opening (P1619) = 1995-08-30

coordinate location (P625) = 1°17'37.7"N, 103°51'26.1"E

Suntec Singapore way (393090489):

addr:housenumber = 1

addr:street = Raffles Boulevard

addr:postcode = 039593

website = https://www.suntecsingapore.com/

Data model

Data modeling discussions on the [Wikidata:Project chat](#) page are actually quite similar to discussions on OSM's [tagging](#) mailing list.

(Folksonomic ontology is hard!)

∧ Building that has changed uses ✎

Are there any good models of how to deal with a building that has changed uses over time? This came up with Mercy Friary (Q47766776)/Museum of Fine Arts of Seville (Q2163496). I'm not sure I found a satisfactory solution -- it seems here like what I've done associates the physical building with Mercy Friary (Q47766776) and there is no item for the religious community that happened to reside in the building (whereas the museum that happens to reside in the building gets its own item). Is there a better way to do this? Calliopejen1 (talk) 05:33, 10 October 201

- Looking for a case I hoped would be handled correctly, I discovered t Post Office (Q5532118) and Hotel Monaco (Q5911750), despite beir building, have no linkage at all beyond both being given as

[Tagging] Guard booth building type

Mateusz Konieczny [matkoniecz at tutanota.com](#)
Mon Oct 7 07:02:03 UTC 2019

- Previous message (by thread): [\[Tagging\] Feature Proposal - Voting - traffic_calming=dynamic_bump](#)
- Next message (by thread): [\[Tagging\] Guard booth building type](#)
- **Messages sorted by:** [date] [thread] [subject] [author]

```
What would be the best tagging for guard booth minibuildings?

I think that building=guard_booth would be the best one for objects constru
as guard booth.

Such objects are housing guard, usually at entrance to parking lot, industr
closed private residential complex, military base etc.

Is there better name than "guard booth"? "guard shed" was a previous version that I had
```

Linking OSM
with Wikidata

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WD ⇒ OSM

Wikidata items on places can link to OSM objects using the following properties:

- **OSM relation ID** (P402)
- **OSM way ID** (P10689)
- **OSM node ID** (P11693)

WD ⇒ OSM

Ontology: Wikidata items/properties for geographical features can link to "equivalent" OSM classes using the **OSM tag or key** (P1282) property.

0 references

Brockhaus and Efron Encyclopedic Dictionary
statement is subject of Q24467653
0 references

Small Brockhaus and Efron Encyclopedic Dictionary
statement is subject of Q24772093
0 references

Sytin Military Encyclopedia
statement is subject of ...98057
0 references
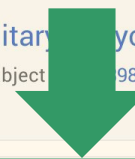
OSM tag or key
Tag:man_made=lighthouse
0 references

equivalent class
http://dbpedia.org/ontology/Lighthouse
described at URL http://mappings.dbpedia.org/index.php/OntologyClass:Lighthouse
retrieved 16 June 2015
1 reference
imported from Wikimedia project DBpedia

has part

image

Leuchtturm in Westerheversand crop.jpg
3,606 × 2,894; 8.36 MB
0 references

studied by
pharology
0 references

pronunciation audio
0:00
LL-Q188 (deu)-Sebastian Wallroth-Leuchtturm.wav
1.4 s; 131 KB
language of work or name German
0 references

WD ⇒ OSM

Other properties:

There are a few other OSM-related properties in Wikidata:

- **OSM numeric user ID** (P8754)
- **OSM Name Suggestion Index ID** (P8253)

WIKIDATA

(P8754)

English

OpenStreetMap numeric user ID

numeric identifier for a user on OpenStreetMap

OSM numeric user ID | OSM ID | osm user ID | Openstreetmap user

Data type

External identifier

Statements

instance of

⧫ Wikidata property to identify online accounts

0 references

⧫ numeric ID

0 references

country

⧫ United Kingdom

0 references

applicable 'stated in' value

⧫ OpenStreetMap

0 references

Wikidata property example

⧫ Allan Phillip Mustard

OpenStreetMap numeric user ID 1960718
website username or ID apm-wa
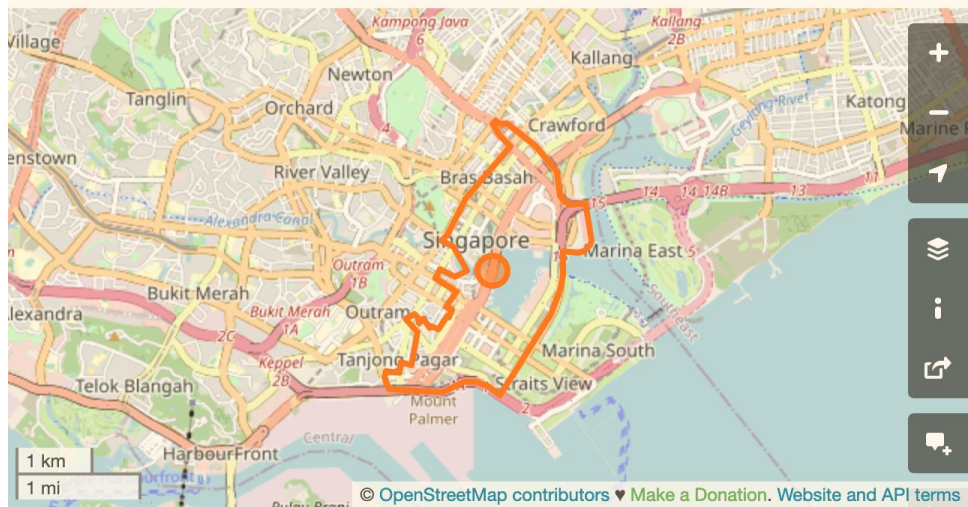URL https://www.openstreetmap.org /user/apm-wa ↗

0 references

OSM ⇒ WM

OSM objects can link to corresponding Wikipedia articles and Wikidata items using the **wikipedia=*** and **wikidata=*** tags respectively.

OSM ⇒ WM

There are also several Wikidata secondary tags such as:

- **brand:wikidata=***
- **architect:wikidata=***
- **artist:wikidata=***
- **name:etymology: wikidata=***

OpenStreetMap

Location: 52.5313942, 13.3429669

Tags

artist:wikidata	Q28406050
artist_name	Herakut
artwork_type	mural
inscription	As Long As You Are Standing, Give A Hand To Those Who Have Fallen.
tourism	artwork
wheelchair	yes

OpenStreetMap

Node: Europcar (1719500135)

Modified via wheelmap.org

Edited about 2 months ago by wheelmap_visitor
Version #6 · Changeset #73869547
Location: 52.5045062, 13.3424821

Tags
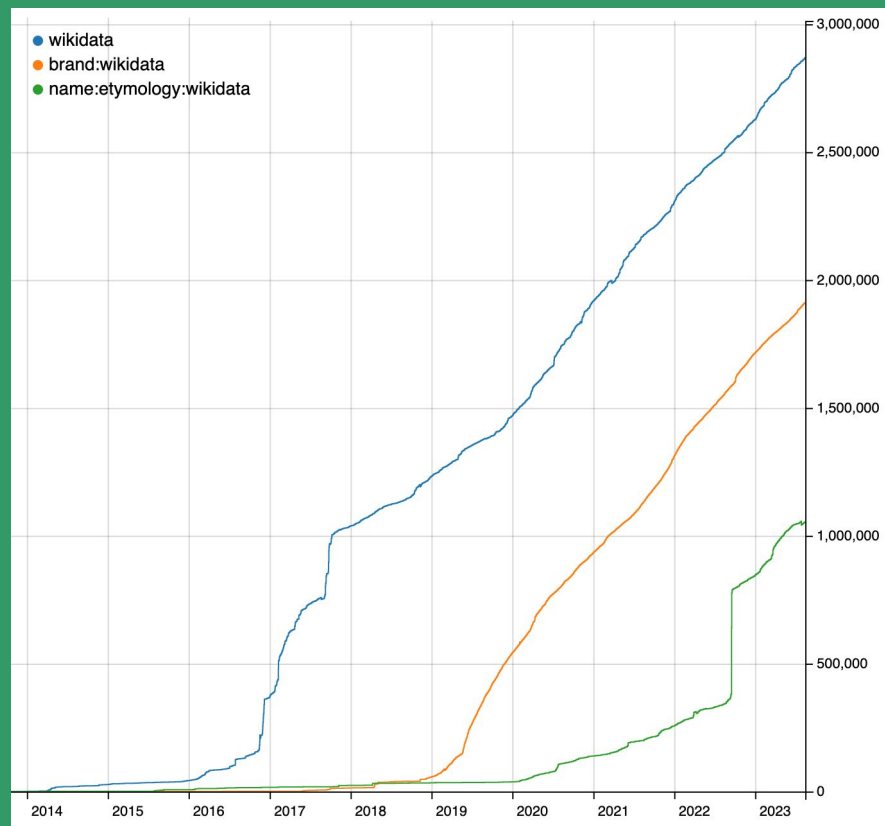
amenity	r_rental
brand	Europcar
brand:wikidata	Q1376256
brand:wikipedia	en:Europcar

OSM ⇒ WM

There are now almost **3M** objects in OSM with **wikidata** tags, almost **2M** with **brand:wikidata** tags and over **1M** with **name:etymology: wikidata** tags.

OSM maps and data in Wikimedia

Interactive Maps

OSM data powers WMF's **Kartotherian** map tile service, which is used by the **Kartographer** MediaWiki extension.

Understand

The label "Marina Bay" is a little fuzzy. The bay is the body of water created by reclaiming land around the mouth of the Singapore River and blocked off from the sea by the **Marina Barrage**, but Singaporeans used to associate the name "Marina" with the Marina Square shopping mall and the many hotel developments around it on the north shore of the river. The half to the south of the river, or **Marina South**, was mostly unused reclaimed land until the government targeted it as Singapore's new downtown hub, turning it into the core of Singapore's urban transformation efforts. Now its centrepiece, the **Marina Bay Sands** hotel and casino, dominates the city skyline while sharing the spotlight with the super trees of **Gardens by the Bay**.
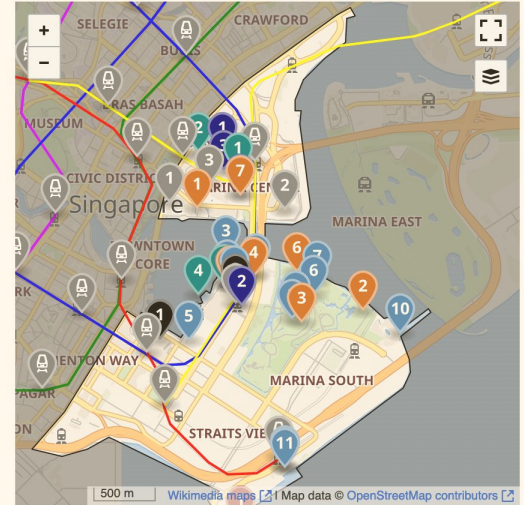
Map of Singapore/Marina Bay

Get in

Interactive Maps

Kartographer maps can also pull and overlay geometry from OSM.

Search Wikimedia Commons

Category:Downtown Core Planning Area

Subcategories

This category has the following 20 subcategories, out of 20 total.

B

▶ Beach Road, Singapore (9 C, 17 F)

▶ Benjamin Sheares Bridge (1 P, 30 F)

▶ Bugis, Singapore (8 C, 17 F)

C

▶ Central Business District, Singapore (29 C, 28 F)

▶ Civic District, Singapore (17 C, 3 F)

▶ Coleman Street, Singapore (4 C, 6 F)

H

▶ High Street, Singapore (3 C, 1 F)

▶ Hill Street, Singapore (4 C, 6 F)

▶ Housing and Development Board flats in the Downtown Core (1 C, 1 F)

K

▶ Killiney Road, Singapore (2 F)

M

Downtown Core

urban planning area of Singapore

Upload media

🌐 **Wikipedia**

Instance of	• downtown • planning area of Singapore
Location	Central Region, Singapore
Inception	1995
Area	2.66 ±0.01 km²

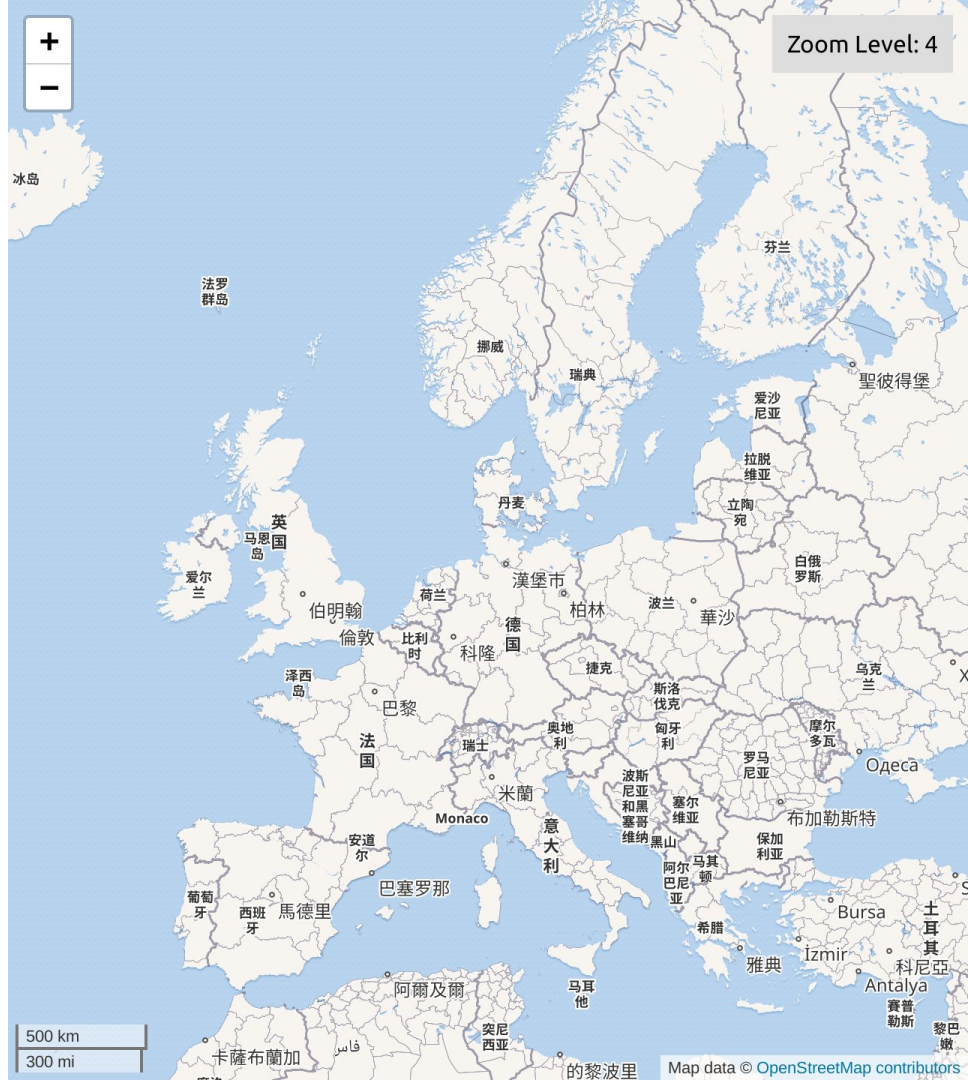1 km | Wikimedia maps | Map data © Op...

🌐 1° 17′ 12.12″ N, 103° 51′ 14.4″ E

Authority file

Interactive Maps

In 2018, WMF [released](#) localised map tiles for Kartotherian, leveraging OSM's **name:*=*** tags.

Zoom Level: 4

500 km
300 mi

Map data © OpenStreetMap contributors

Wikidata use in OpenStreetMap

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Brands

OSM's **Name Suggestion Index** uses Wikidata to provide brand identity and improved tagging.

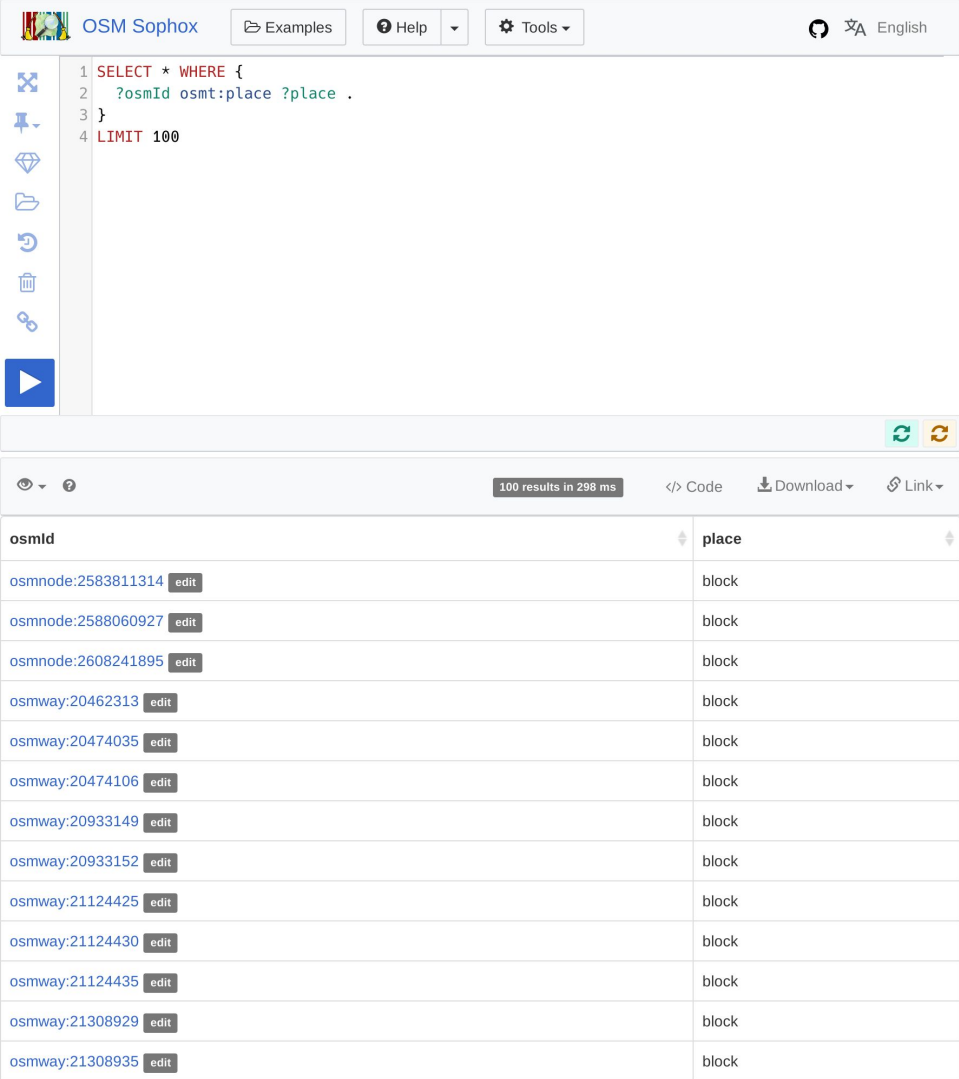https://github.com/osmlab/name-suggestion-index
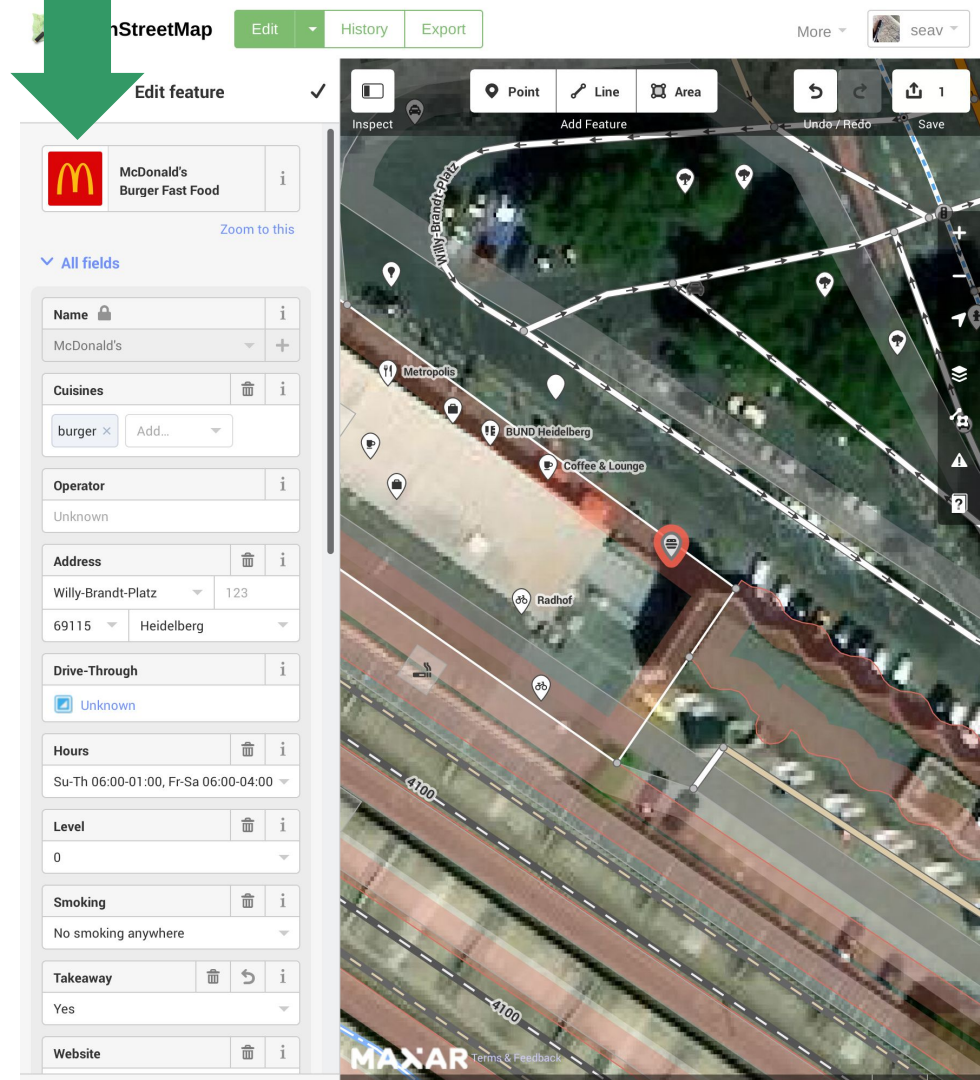
Federation

Sophox is a SPARQL endpoint for OSM data. This service can use RDF federation to also query linked Wikidata items.

https://wiki.osm.org/Sophox
https://sophox.org/

Geocoding

In 2019, OSM had a GSoC project to use **wikidata=*** tags in **Nominatim**, OSM's default geocoder, for better search results.

*Note: Nominatim already uses **wikipedia=*** tags.*

OpenStreetMap

tchaddad's diary

Recent diary entries

End of Project Summary

Posted by tchaddad on 2 September 2019 in English (English)

Summer has come to an end, and so this post is to wrap up the progress made over the course of the "Add Wikidata to Nominatim" project. Overall, the main contributions are documented in the 4 preceding diary posts, and in:

- updated steps for extracting Wikipedia data and calculating importance scores
- a new script for extracting Wikidata items and place types

These new processes have made big improvements in several OSM-to-Wikipedia comparison metrics as compared to equivalent numbers from 2013 (when the previous Wikipedia snapshot was taken).

Improved Numbers

For context, the number of Wikipedia articles in the top 40 languages in 2013 was 80,007,141, and the number of Wikipedia articles for the same 40 languages in 2019 was 142,620,084 - an increase of ~78%.

Within these article records, in 2013 it was possible under the old processing steps to attach latitude and longitude numbers to 692,541 articles, while in 2019 it was possible to enrich 7,755,392 records with location information - an increase of ~1,020%. This particular statistic largely reflects an improvement in the source Wikipedia / Wikidata projects.

More exciting, with the old method of linking Wikipedia articles to osm_ids, it was possible to link 313,606 Wikipedia article importance scores to osm_ids, but with the new method that uses both Wikidata item ids, and Wikipedia pages together, the number of Wikipedia article importance scores that can be linked has risen to 4,730,972 - an increase of ~1,409%. This increase is due to both the large number of Wikipedia and WIkidata tags added by OSM contributors since 2013, as well as the inclusion of Wikidata item ids in the linking process for the first time via this project.

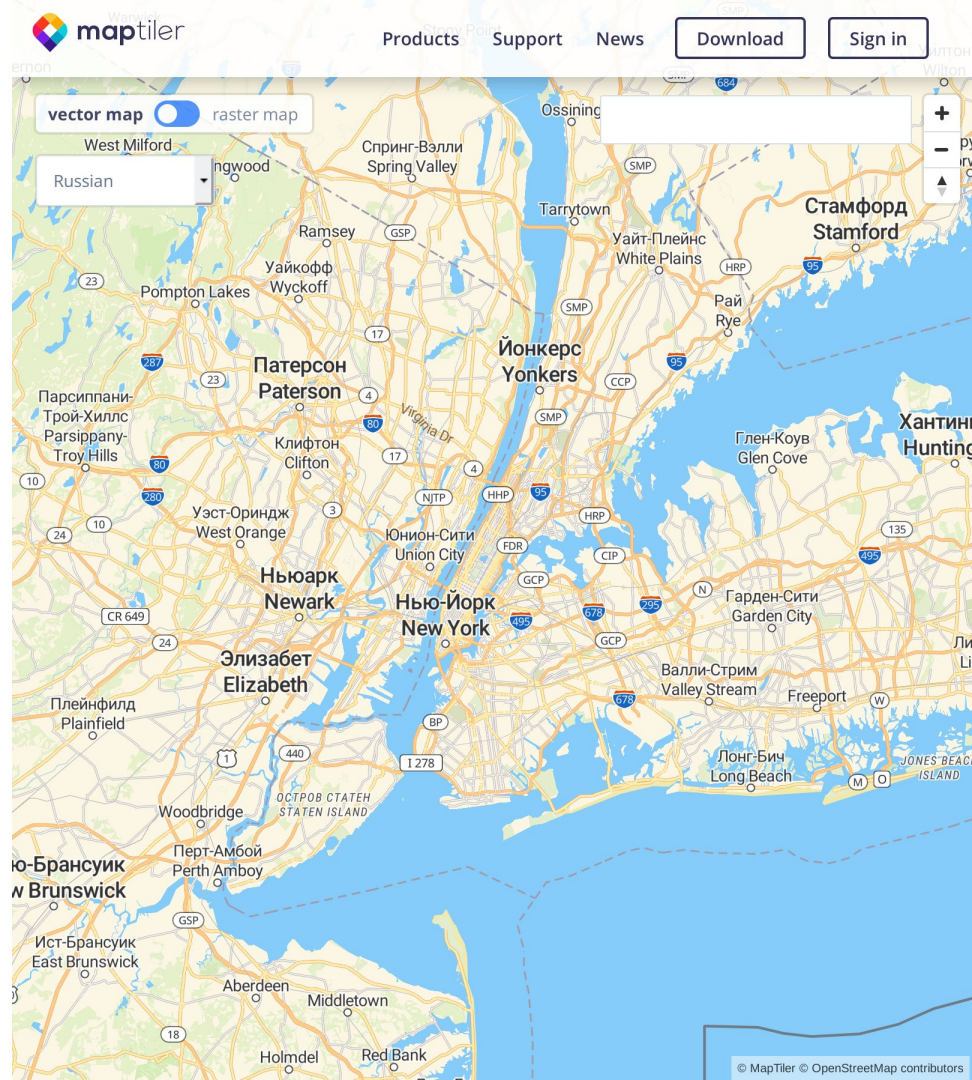**Future Work**

Although the project technically concludes today, there are obviously always areas of future work where more gains can be made. These include:

Localisation

Mapbox, **MapTiler**, and other companies that leverage OSM, use Wikidata to power their localised map products.

*In case of missing **name:*=*** tags in OSM, they pull labels from Wikidata.*

Structured tag info

The OSM Wiki has the **Wikibase** extension installed. This is *intended* to provide better machine-readable data on OSM's tags.

OpenStreetMap Wiki

Search OpenStreetMap Wiki

highway=motorway (Q4980)

High capacity highways designed to safely carry fast motor traffic.

Contents

Statements

instance of	use on relations
tag	is prohibited
0 references	0 references

permanent tag ID	group
highway=motorway	highways
0 references	0 references

key for this tag	Wikidata concept
highway	Q46622
0 references	0 references

image

A4-passante di mestre dd.png
image caption Αυτοκινητόδρομος (Greek)
0 references

implies

surface=paved
0 references

oneway=yes
0 references

motor_vehicle=yes
0 references

hgv=yes
0 references

motorcar=yes

OSM-Wikimedia projects & initiatives

Taiwan

The Wikidata and OSM Taiwan communities have organised projects to map and link data on villages and rivers.

wikidata.planetoid.info

WikiData 與 戶役政資訊系統資料代碼 整合

狀態：🏷 已建立鄉鎮條目　🏷 未建立且無推薦鄉鎮條目

#	省市縣市	村里代碼	村里名稱	維基數據ID	維基數據標籤	新增月份	刪除月份	經緯度	開放街圖ID	狀態
1	臺灣省南投縣信義鄉	10008120015	卡里布安村	Q111824545	卡里布安村	2022/06		Point(120.8872 23.60442)	14436973	已建立鄉鎮條目
2	臺灣省彰化縣鹿港鎮	10007020030	鹿和里	Q111585996	鹿和里	2022/03		Point(120.4474 24.0663)	14211025	已建立鄉鎮條目
3	臺灣省彰化縣鹿港鎮	10007020031	鹿東里	Q111585997	鹿東里	2022/03		Point(120.44487 24.0551)	14211024	已建立鄉鎮條目
4	臺灣省彰化縣埤頭鄉	10007220018	永豐村	Q97022928	永豐村	2021/12		Point(120.44938449 23.897372673)	9684890	已建立鄉鎮條目
5	臺南市關廟區	67000290020	龜洞里	Q96977129	龜洞里	2021/12				已建立鄉鎮條目
6	桃園市桃園區	68000010080	經國里	Q110270177	經國里	2021/12		Point(121.3061 25.01368)	13903421	已建立鄉鎮條目
7	桃園市八德區	68000080051	興中里	Q110270173	興中里	2021/12		Point(121.2831 24.92482)	14017883	已建立鄉鎮條目
8	桃園市中壢區	68000020087	興華里	Q110270175	興華里	2021/12		Point(121.24439 24.97528)	14014974	已建立鄉鎮條目
9	桃園市桃園區	68000010081	檜樂里	Q110270178	檜樂里	2021/12		Point(121.3193 25.01838)	13903361	已建立鄉鎮條目
10	桃園市八德區	68000080049	福元里	Q110270171	福元里	2021/12		Point(121.2884 24.93459)	14017882	已建立鄉鎮條目
11	桃園市大園區	68000060020	青峰里	Q110270167	青峰里	2021/12		Point(121.2172 25.0256)	13985401	已建立鄉鎮條目

India

Wikimedians of Kerala UG, together with OSM Kerala, collaborate with each other to map admin areas, rivers, train stations, etc.
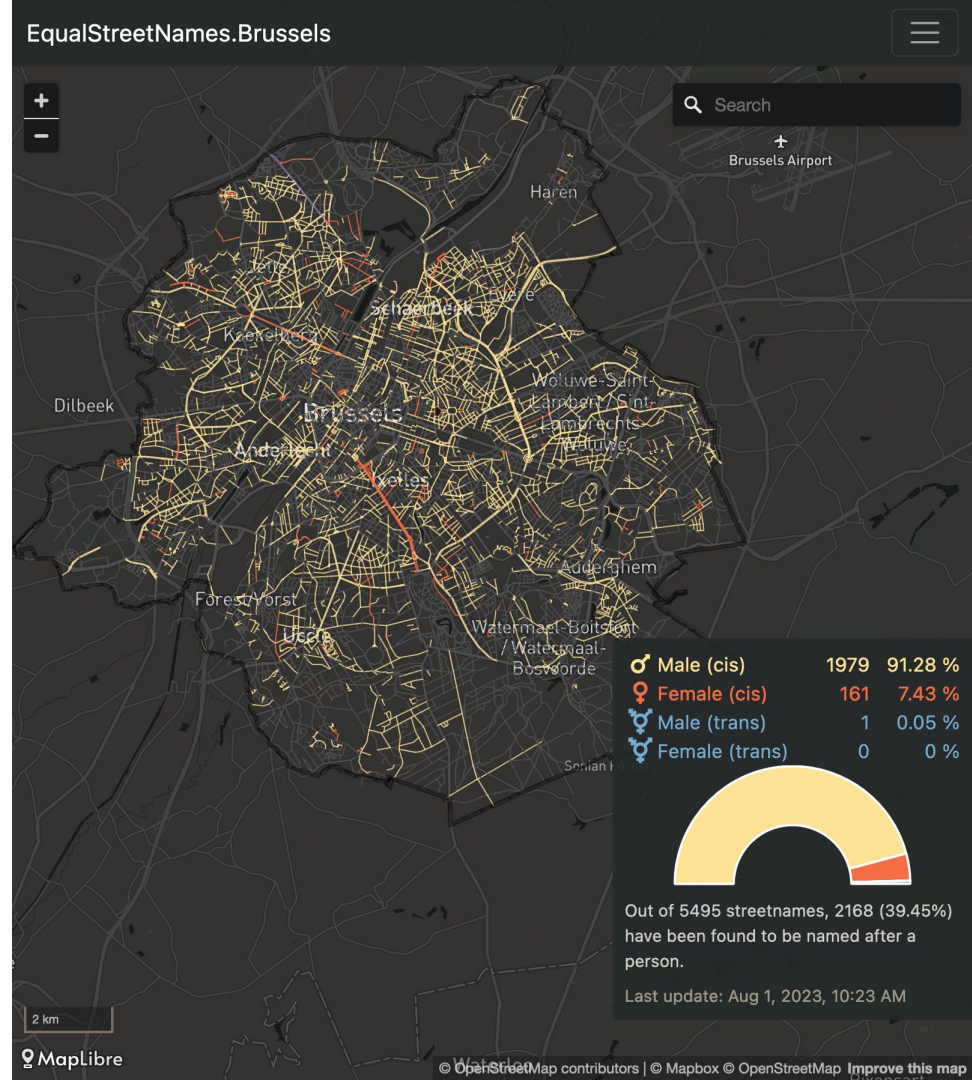
Belgium

Open Knowledge Belgium created the **EqualStreetNames** project to map the gender gap in street names.

equalstreetnames.brussels

EqualStreetNames.Brussels

♂ Male (cis)	1979	91.28 %
♀ Female (cis)	161	7.43 %
⚧ Male (trans)	1	0.05 %
⚧ Female (trans)	0	0 %

Out of 5495 streetnames, 2168 (39.45%) have been found to be named after a person.

Last update: Aug 1, 2023, 10:23 AM

Etymology

Daniele Santini created the **Open Etymology Map** to show where objects on the map get their names from.

etymology.dsantini.it

Airports

The **Open Airport Map** depicts details of airports as mapped in OSM together with data pulled from Wikidata.

openairportmap.org

Copyright and cultural issues

WIKIMANIA
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OSM ⇒ WD

Wikidata can't import coordinates from OSM, which is under the **Open Database License** (ODbL).

(EU/UK have database rights, conflicting with the U.S. "facts are not copyrightable" doctrine.)
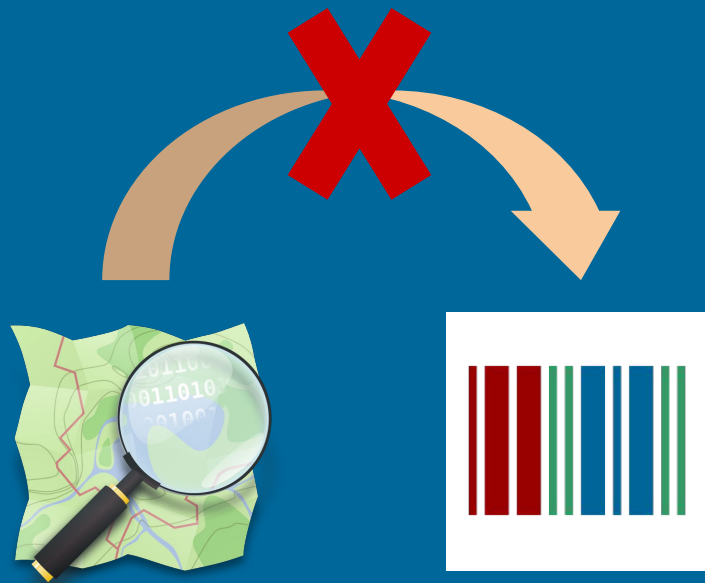
WD ⇒ OSM

OSM **will not** import geodata from Wikidata despite CC0 because of data provenance issues.

("It is an established principle in OSM that we don't import geodata from Wikipedia.")

Paid mapping

Paid editing in Wikimedia is frowned upon. But paid mapping is common in OSM.

Nearly 1 in 6 edits in 2019 in OSM came from companies.

Anderson, Sarkar, Palen [2019]

Anderson [2021]

Finances

As of June 2022, the **WMF** has net assets of $250M and expenses of $146M.

The **OSMF**, on the other hand has an approved budget of only €681K for 2023.

OSM-Wikidata linking tool

WIKIMANIA
SINGAPORE

Linking tool

A semi-automated, user-assisted editing tool developed by Edward Betts to add **wikidata=*** tags to OSM.

osm.wikidata.link

github.com/Edwardbetts/osm-wikidata
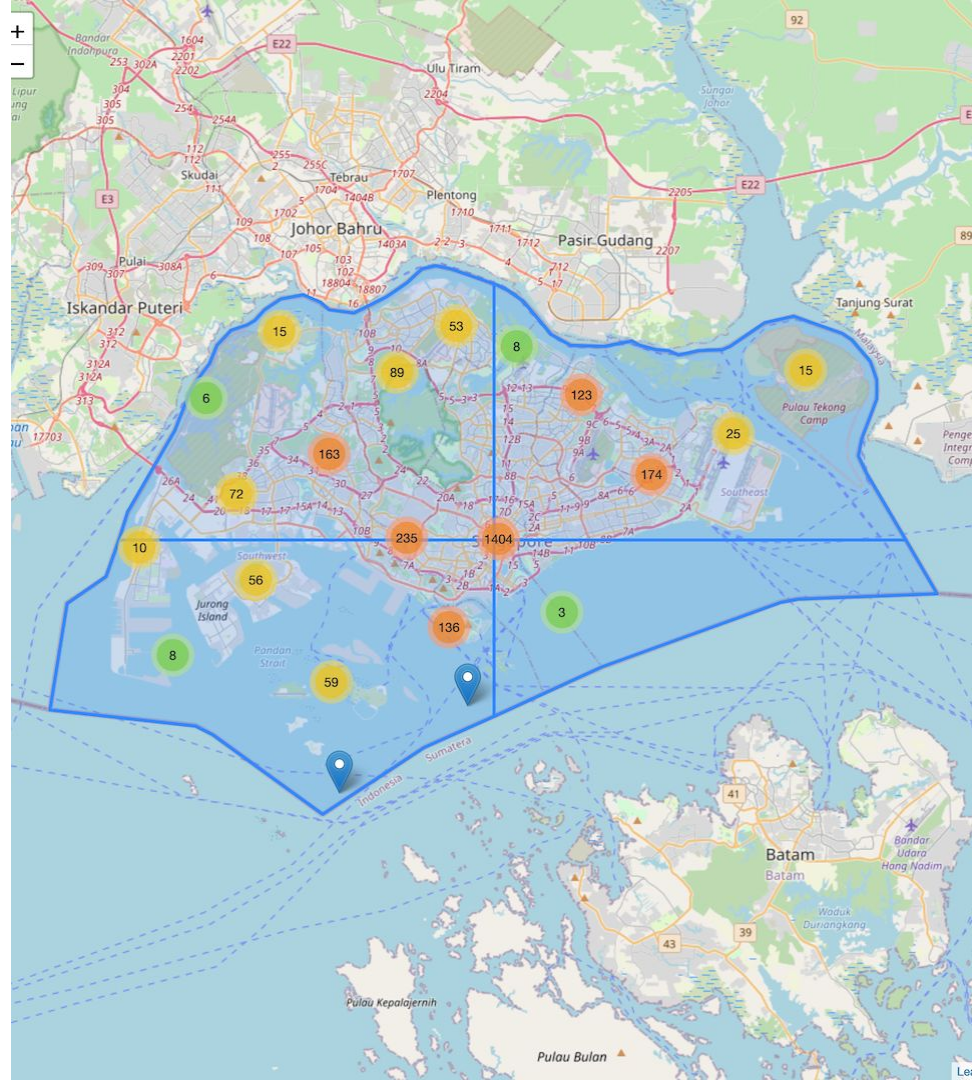
Basic usage

After logging in with your OSM account, you select a place of interest, let the tool run, and then select OSM objects that will have their Wikidata tags added.
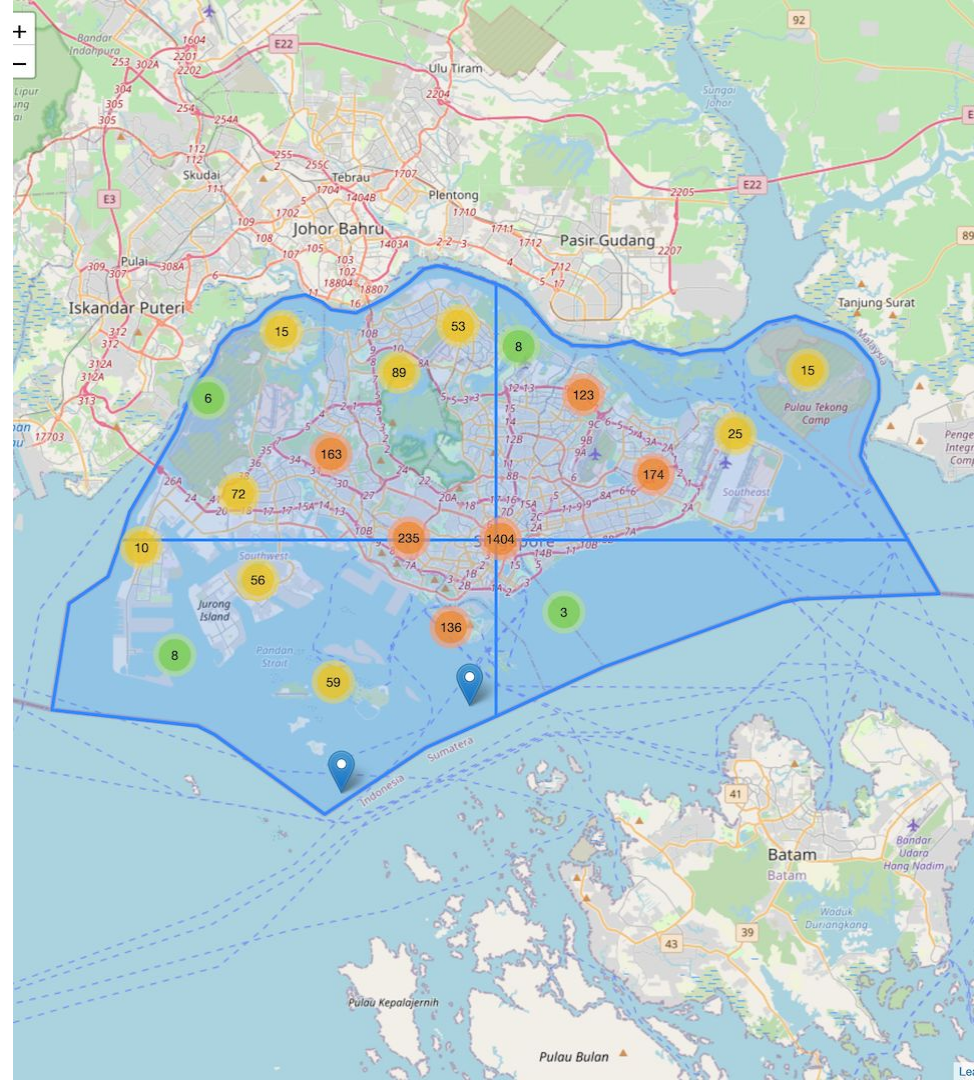
OSM ↔ Wikidata matcher

Two great projects cataloguing the world, even more powerful when linked together.

Search for a place, pick one and leave the matcher to run for a few minutes. Then check out the list of matches.

Singapore

search

Singapore

None

Split into 5 chunks.

current: load entity: Chinese Garden,
Singapore (Q5100456)
connected to task queue
retrieving items from wikidata
wikidata query complete
loading categories from English language
Wikipedia
categories loaded
items saved to database
2,659 Wikidata items found
getting wikidata item details
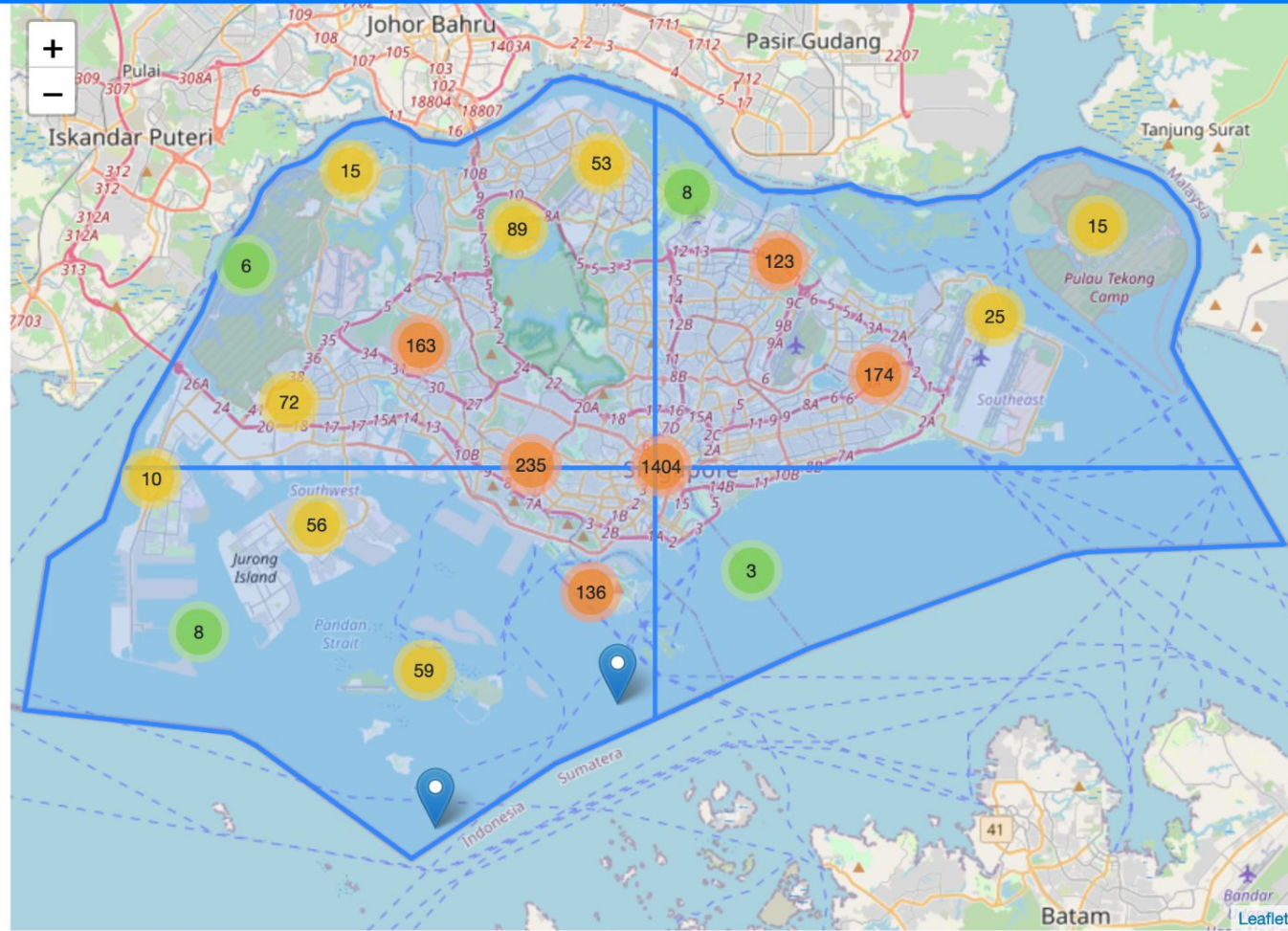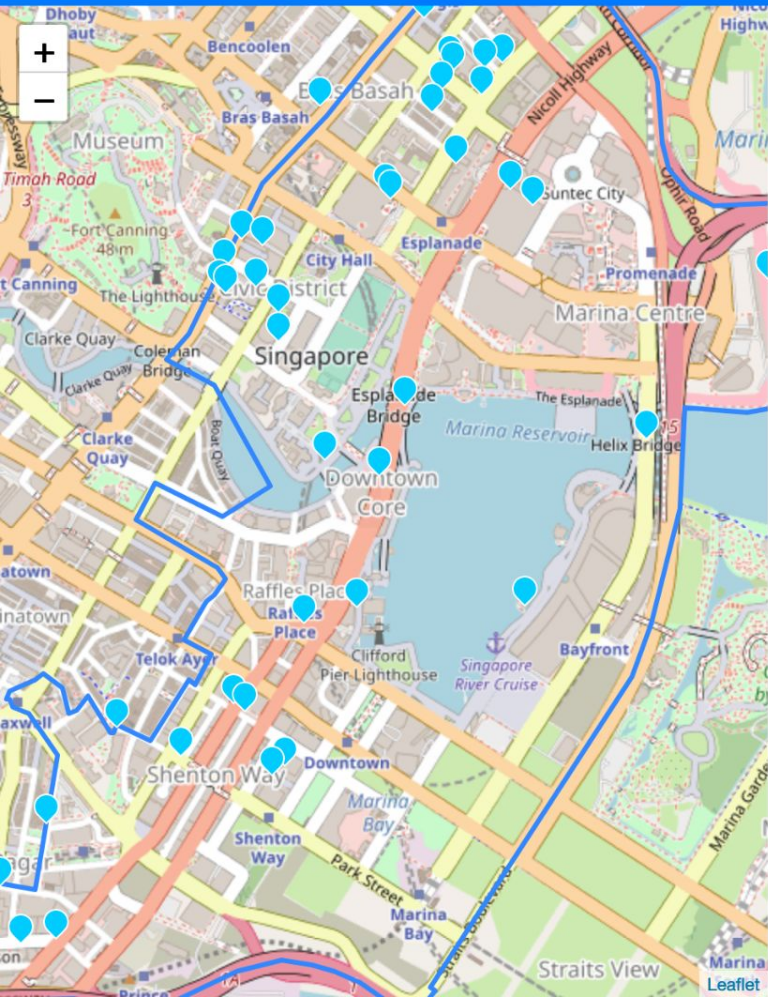
Downtown Core, Singapore, Central, Singapore
category: place — type: suburb — OSM: relation 12943475

Latest matcher run: Tue, 15 Aug 2023 10:32

Please **check each match carefully** before uploading to OpenStreetMap.

If in doubt, **contact the local mapping community** before adding Wikidata tags.

Match candidates | Already tagged | No match

40 candidates found

Run matcher again

Type filter

☐ business enterprise (Q4830453): **27** matches — *organization involved in the trade of goods, services, or both to customers for pay*

☐ hotel (Q27686): **20** matches — *establishment that provides lodging paid on a short-term basis*

☐ commercial building (Q655686): **20** matches — *building used for commercial use*

☐ lodging (Q5056668): **20** matches — *type of residential accommodation*

☐ architectural structure (Q811979): **8** matches — *designed structure*

show: more / all (another 7 available)

\+
−
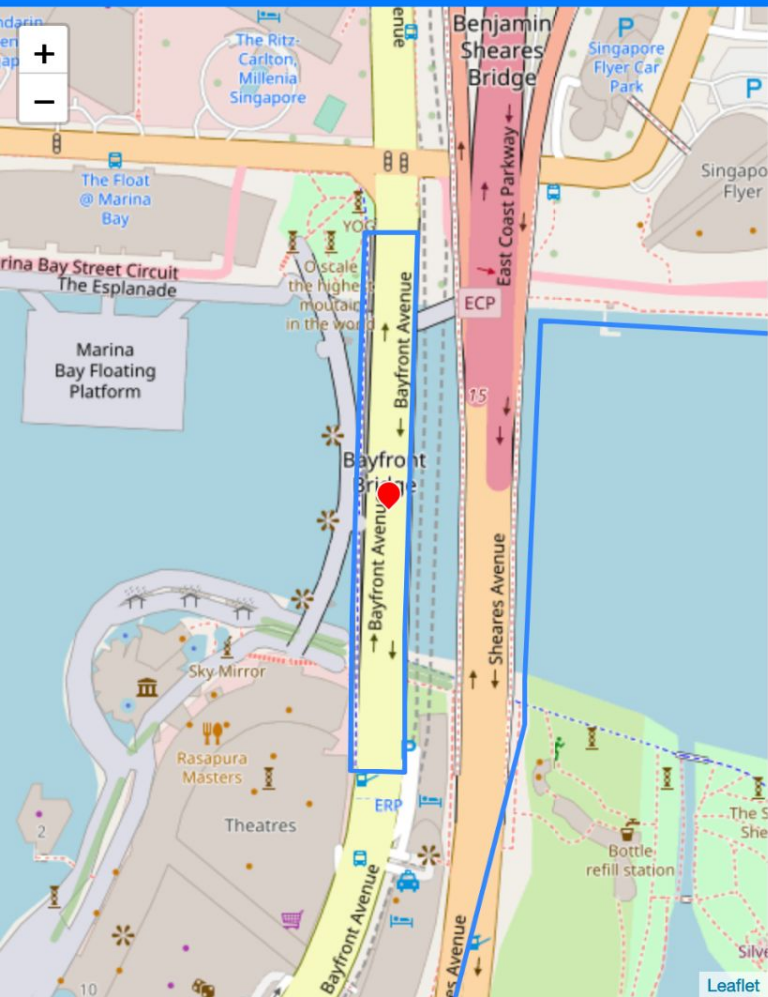
☑ Bayfront Bridge (Q17750009)

item type: bridge [show on map] Wikidata ⧉

Summary from Deutsch / German Wikipedia (dewiki) ⧉
Die **Bayfront Bridge** ist eine Straßenbrücke in Singapur. Sie überquert den Marina Channel, der sich kurz nach der Mündung des Singapore River in die Marina Bay an der Grenze der Planungsgebiete Downtown Core und Marina East befindet. Sie verläuft zwischen den Brücken Helix Bridge und Benjamin Sheares Bridge in ihrer unmittelbarer Nachbarschaft. Die Brücke, über welche die Bayfront Avenue verläuft, wurde 2010 erbaut.

Matches from OpenStreetMap

Bayfront Bridge (way) [OSM ⧉]
[exact location] [name match]
[toggle name match detail] [toggle OSM tags]

Leaflet

Downtown Core

[back to candidate list](#)

Downtown Core, Singapore, Central, Singapore
category: place — type: suburb — OSM: relation 12943475

Please **check each match carefully** before uploading to OpenStreetMap.

If in doubt, **contact the local mapping community** before adding Wikidata tags.

change comment: [SG] add wikidata tag to bridge   **save**

1 matches to upload

Untick the checkbox next to a match if you don't want the wikidata tag added to OSM.

Wikidata	OSM	distance	matching tags
☑ Bayfront Bridge (Q17750009)	Bayfront Bridge	(way)	man_made=bridge

Search Where is this? Go ➡

Way: Bayfront Bridge (1160851851) ✕

Version #3

[SG] add wikidata tag to bridge

Edited less than 1 minute ago by seav
Changeset #139950090
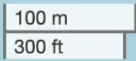
Tags

layer	1
man_made	bridge
name	Bayfront Bridge
name:zh	海湾桥
wikidata	Q17750009

Nodes

▼ 13 nodes

5846583503 (part of ways The Helix Bridge (687668440) and The Helix Bridge (687668440))

Mappers are using the tool

- Uploads by 444 mappers

- 25K changesets uploaded to OpenStreetMap

- 727K Wikidata links added by the tool (26% of all Wikidata tags)

OSM and Wikidata match criteria

- entity type AND
- coordinates AND
- name OR street address OR identifier
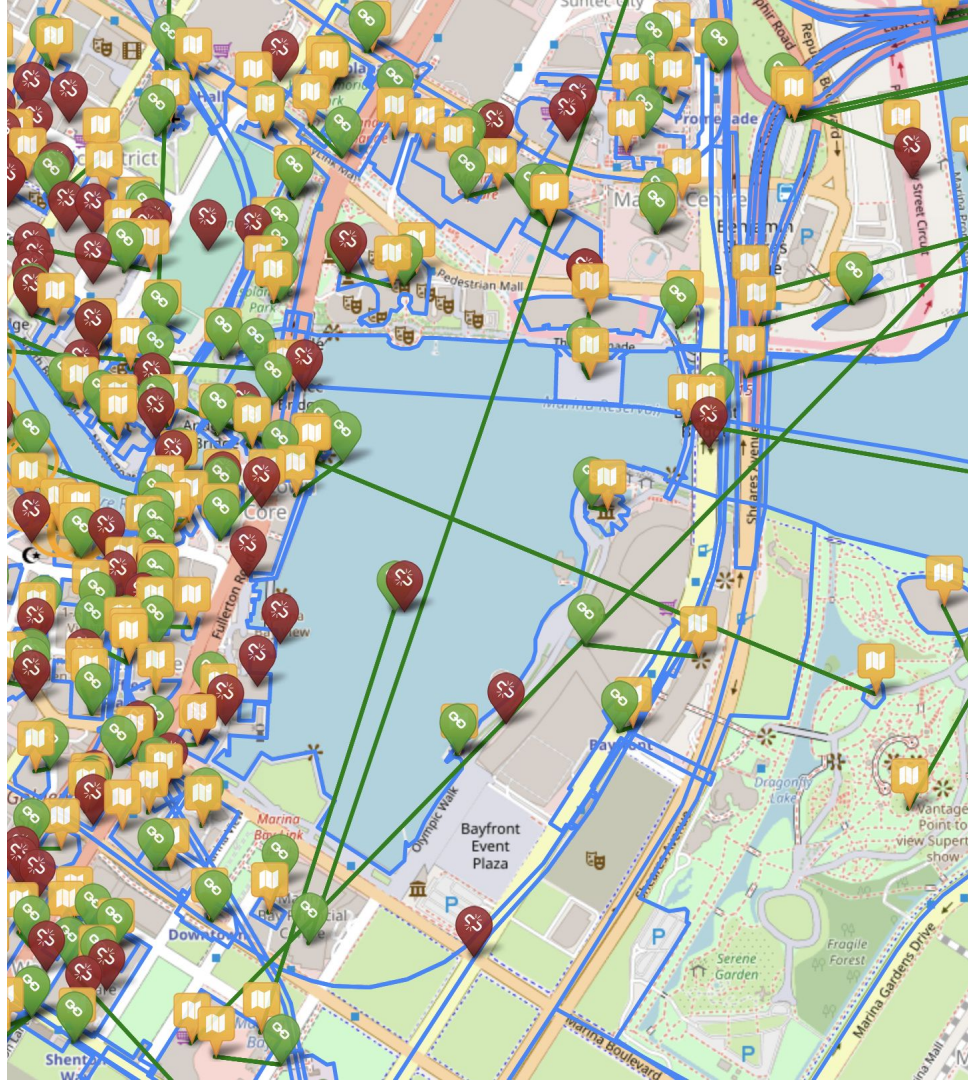
Match on identifier

- Railway station code
- IATA airport code
- ICAO airport code
- FAA airport code
- ISO 3166-2 country code
- NRHP reference number
- UK Government Statistical Service code
- FIPS 6-4 (US counties)
- FIPS 5-2 (code for US states)
- USGS GNIS ID
- IBNR ID
- National Heritage List for England number
- EDUBase URN
- Admiralty number (lighthouse)
- Website
- World Heritage Site ID

Version 2

Currently, Edward is developing a new version of the tool that loads data faster than version 1. (But may be a bit harder to use.)

map.osm.wikidata.link

github.com/Edwardbetts/owl-map

Demo!

We will be having a demo/workshop of the linking tool (version 1) at the Expo Space area starting at 15:30 UTC.

OpenStreetMap & Wikimedia

AWESOME TOGETHER

WIKIMANIA SINGAPORE | Dennis Raylin Chen / Supaplex
Eugene Alvin Villar / seav