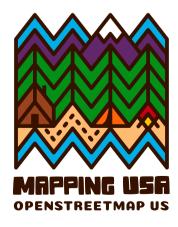
# Tools for linking Wikidata and OpenStreetMap

Edward Betts November 12<sup>th</sup> 2022



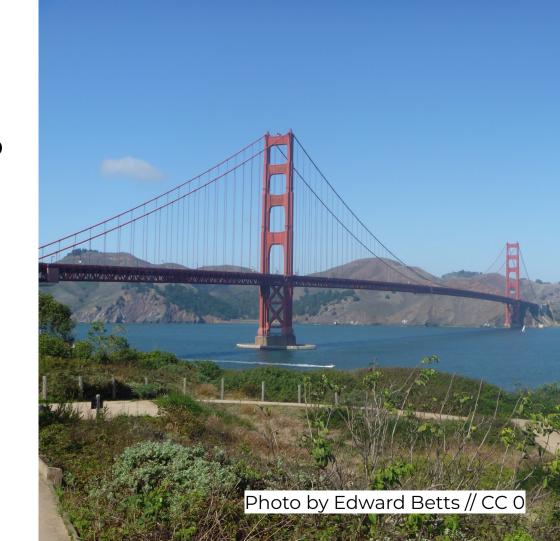


## Why add links between OSM and Wikidata?

- OpenStreetMap has detailed geometry
- Wikidata has more labels, images and identifiers
- Linked Open Data (LOD)











### **OWL Places**

osm.wikidata.link

Web interface for linking places in OSM to Wikidata

OSM → Wikidata Search Recent changes About ▼ Random Edward settings logo

#### OSM ↔ Wikidata matcher

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

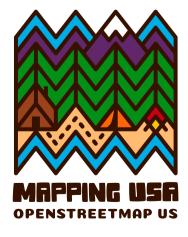
Search for a place, pick one and leave the matcher to run for a few minutes. Then check out the list of matches.

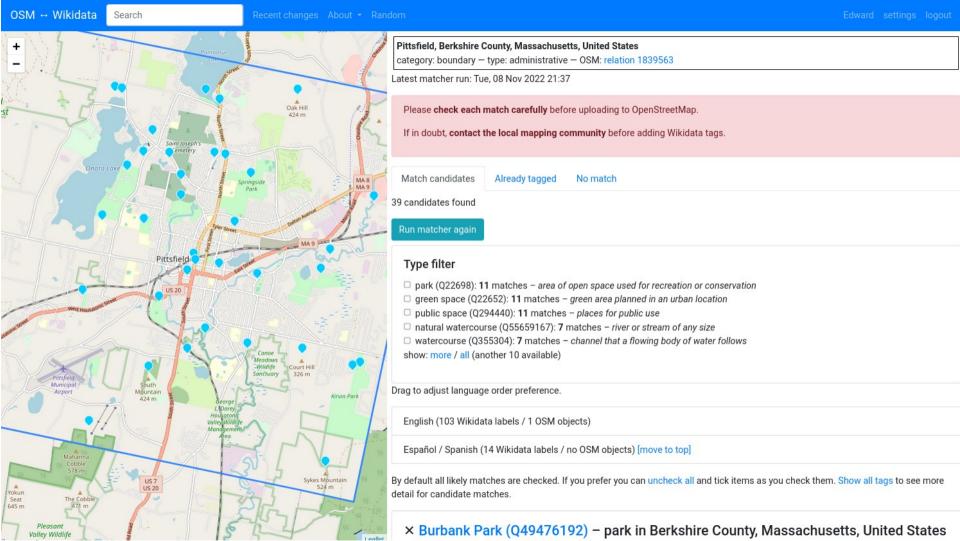
place name

search



osm.wikidata.link





Sykes Mountain

Valley Wildlife

item type: house show on map Wikidata 2

Summary from English Wikipedia (enwiki)

The Charles Whittlesey Power House is a historic house located at 575 South Street in Pittsfield, Massachusetts, Built about 1912, this Tudor Revival house and its landscaped setting are a rare local example of the country house style propounded by the English architect Edwin Lutyens. The house was built for Charles Whittlesey Power, a local businessman who also served one term as mayor of Pittsfield. It was listed on the National Register of Historic Places on August 8, 1997.

NRHP reference number: 97000820

Matches from OpenStreetMap

575 South Street (way) [OSM 3]

909 feet from Wikidata address match

toggle OSM tags

■ Providence Court (Q7252412) – historic former hospital building at 379 East Street in Pittsfield, Massachusetts

item type: construction show on map Wikidata ☑

Summary from English Wikipedia (enwiki) Providence Court, previously St. Luke's Hospital, is a historic former hospital building at 379 East Street in Pittsfield, Massachusetts. The Colonial Revival building was constructed in 1926, and was the first Roman Catholic hospital in Berkshire County. St. Luke's merged with Pittsfield General Hospital in 1967 to form Berkshire Medical



East Street

■ Providence Court (Q7252412) - historic former hospital building at 379 East Street in Pittsfield, Massachusetts

item type: construction show on map Wikidata

Summary from English Wikipedia (enwiki)

Providence Court, previously St. Luke's Hospital, is a historic former hospital building at 379 East Street in Pittsfield, Massachusetts, The Colonial Revival building was constructed in 1926, and was the first Roman Catholic hospital in Berkshire County. St. Luke's merged with Pittsfield General Hospital in 1967 to form Berkshire Medical Center, in the nation's first mergers between religious and non-sectarian hospitals. The building was converted into elderly housing in 1978-1981. It was listed on the National Register of Historic Places in 1987.

NRHP reference number: 87001107

Matches from OpenStreetMap

379 East Street (way) [OSM [] 94 feet from Wikidata address match

toggle OSM tags



□ Canoe Meadows Wildlife Sanctuary (Q17490645) - Protected Landscape in Massachusetts

item type: protected area show on map Wikidata & website: http://www.massaudubon.org/get-outdoors/wildlife-sanctuaries/canoe-meadows

: USGS GNIS ID: 606016

edit

Read View history ☆ ⇔ ⇔ More ∨



Create a new Item Recent changes Random Item Query Service Nearby Help

#### Donate

Switch to old look Lexicographical data

Create a new Lexeme Recent changes

Tools

What links here Related changes

Random Lexeme

Special pages Permanent link

Page information Concept URI

Cite this page Automatic addition

In Wikipedia

#### Providence Court (Q7252412)

historic former hospital building at 379 East Street in Pittsfield, Massachusetts

St. Luke's Hospital

Item Discussion

#### ▼ In more languages

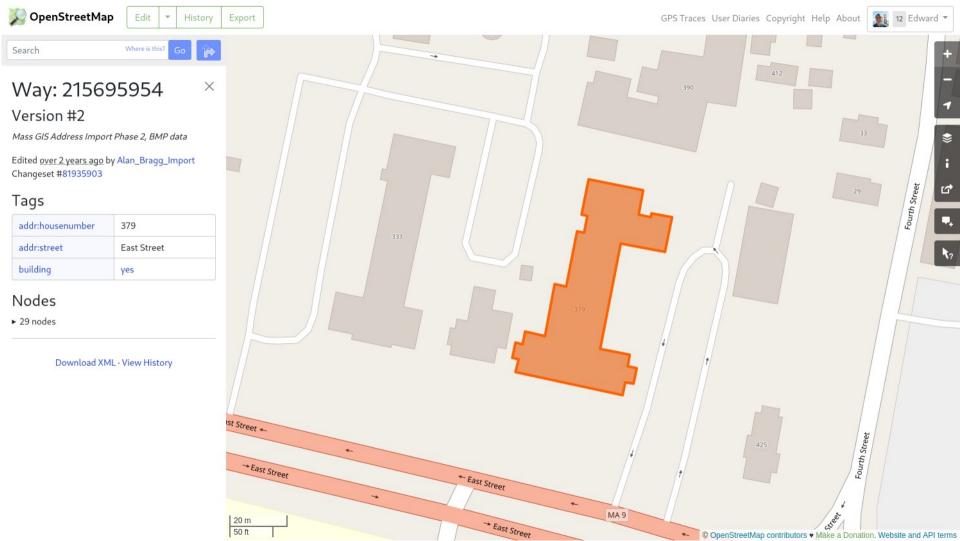
Configure

Language	Label	Description	Also known as
English	Providence Court	historic former hospital building at 379 East Street in Pittsfield, Massachusetts	St. Luke's Hospital

#### Statements







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<u>Wikidata item</u> Add to the New Pages Feed

Add interlanguage links

Print/export

Download as PDF Printable version

Languages

#### **Providence Court**

Article Talk

From Wikipedia, the free encyclopedia

Providence Court, previously St. Luke's Hospital, is a historic former hospital building at 379 East Street in Pittsfield, Massachusetts. The Colonial Revival building was constructed in 1926, and was the first Roman Catholic hospital in Berkshire County. St. Luke's merged with Pittsfield General Hospital in 1967 to form Berkshire Medical Center, in the nation's first mergers between religious and non-sectarian hospitals. The building was converted into elderly housing in 1978–1981. It was listed on the National Register of Historic Places in 1987.[1]

#### Description and history [edit]

Providence Court is located on the north side of East Street (Massachusetts Route 9), several blocks east of Pittsfield's central business district. It is a five-story brick and stone structure, in a T shape with a horizontal block at the front and a long projecting wing to the rear of the center. It is basically Colonial/Georgian Revival in character, with limestone trim that includes corner quoining, window sills and keystones, and belt courses. The ground floor, essentially a raised basement, is finished in rusticated limestone, while the upper floors are predominantly in brick. The main entrance, set between the first and second levels, is sheltered by a limestone portico with Tuscan columns. [2]

The Roman Catholic Diocese of <u>Springfield</u> decided in 1916 to establish a hospital in Pittsfield, and dedicated a facility in two converted residences the following year. This space proving inadequate, the diocese purchased the Allen estate on East Street, and converted the estate house into a maternity ward. The present building was constructed on the grounds of the former Allen estate between 1923 and 1926, to design by ecclesiastical architect <u>John W. Donohue</u> of Springfield. It was operated as St. Luke's Hospital until 1967, when it was married with Pittsfield General Hospital to form what is now known as Barkshire.



ead Edit View history

Coordinates: @ 42°26′51″N 73°14′47″W



Providence Court



Show map of MassachusettsShow map of the United StatesShow all

Location

Pittsfield.

East Street

■ Providence Court (Q7252412) - historic former hospital building at 379 East Street in Pittsfield, Massachusetts

item type: construction show on map Wikidata

Summary from English Wikipedia (enwiki)

Providence Court, previously St. Luke's Hospital, is a historic former hospital building at 379 East Street in Pittsfield, Massachusetts, The Colonial Revival building was constructed in 1926, and was the first Roman Catholic hospital in Berkshire County. St. Luke's merged with Pittsfield General Hospital in 1967 to form Berkshire Medical Center, in the nation's first mergers between religious and non-sectarian hospitals. The building was converted into elderly housing in 1978-1981. It was listed on the National Register of Historic Places in 1987.

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Matches from OpenStreetMap

379 East Street (way) [OSM [] 94 feet from Wikidata address match

toggle OSM tags



□ Canoe Meadows Wildlife Sanctuary (Q17490645) - Protected Landscape in Massachusetts

item type: protected area show on map Wikidata & website: http://www.massaudubon.org/get-outdoors/wildlife-sanctuaries/canoe-meadows

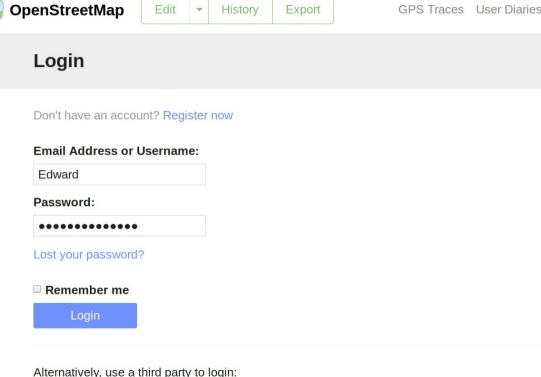
: USGS GNIS ID: 606016





## Saving to OpenStreetMap

## Login via OpenStreetMap OAuth OpenStreetMap Edit History Export



lward s

#### **Pittsfield**

back to candidate list

Pittsfield, Berkshire County, Massachusetts, United States category: boundary — type: administrative — OSM: relation 1839563

Please check each match carefully before uploading to OpenStreetMap.

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

change comment: Add wikidata tags within Pittsfield, Massachusetts

sav

8 matches to upload

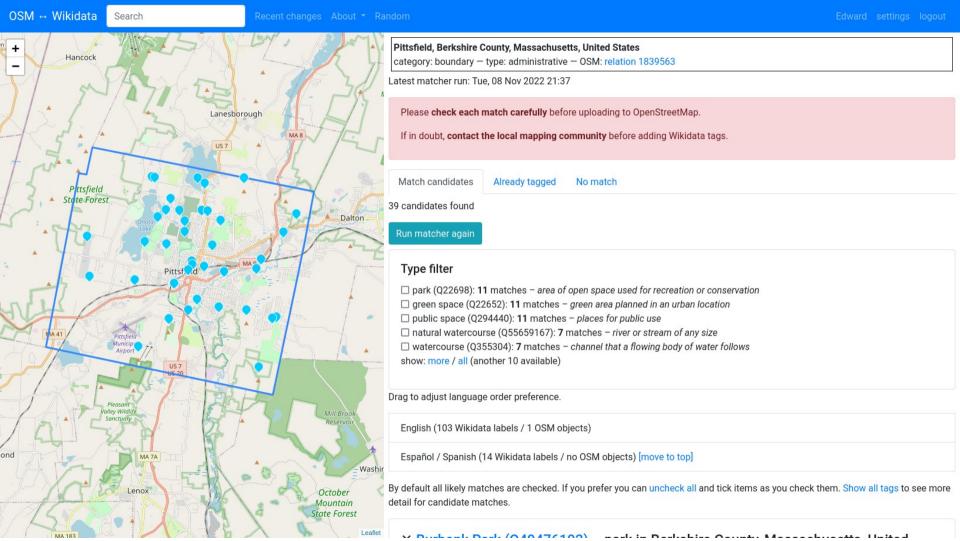
Untick the checkbox next to a match if you don't want the wikidata tag added to OSM.

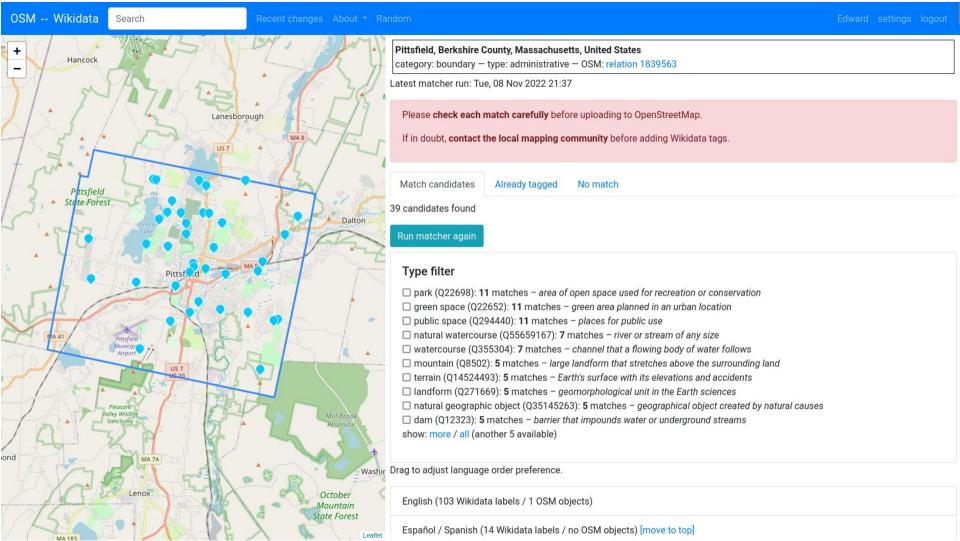
	Wikidata	OSM	distance	matching tags
<b>~</b>	Charles Whittlesey Power House (Q5083511)	575 South Street	(way, 909 feet)	building, building=yes
<b>~</b>	Providence Court (Q7252412)	379 East Street	(way, 94 feet)	
<b>~</b>	A. H. Rice Silk Mill (Q22073883)	55 Spring Street	(way, 46 feet)	
<b>~</b>	Bel Air Dam (Q48979941)	Bel Air Dam	(way, 331 feet)	waterway=dam
<b>~</b>	Government Mill Dam (Q48987772)	Government Mill Dam	(way, 424 feet)	waterway=dam
<b>~</b>	Lower Pecks Pond Dam (Q48992888)	Lower Pecks Pond Dam	(node, 323 feet)	waterway=dam
<b>~</b>	Onota Lake Dam (Q48995057)	Onota Lake Dam	(way, 422 feet)	waterway=dam
<b>~</b>	Pontoosuc Lake Dam (Q48996184)	Pontoosuc Lake Dam	(way, 450 feet)	waterway=dam

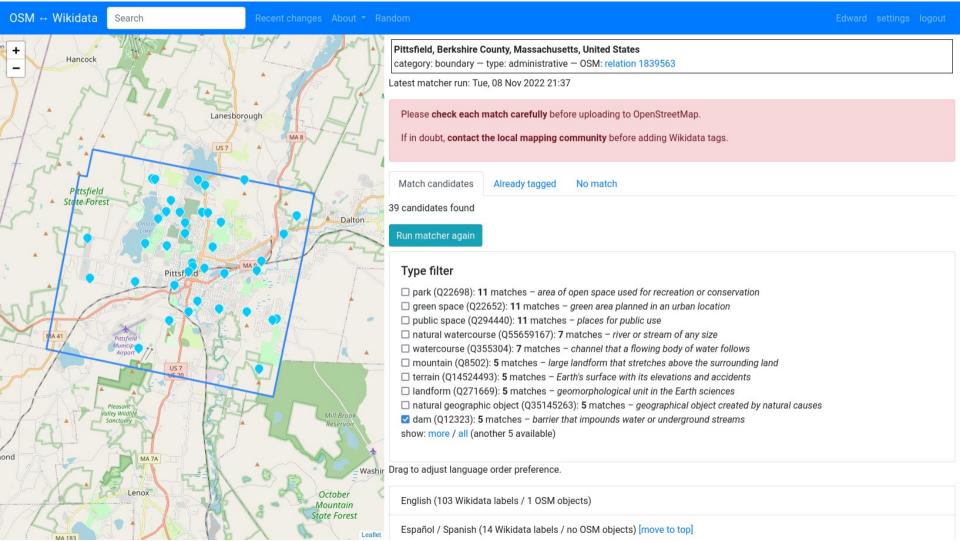


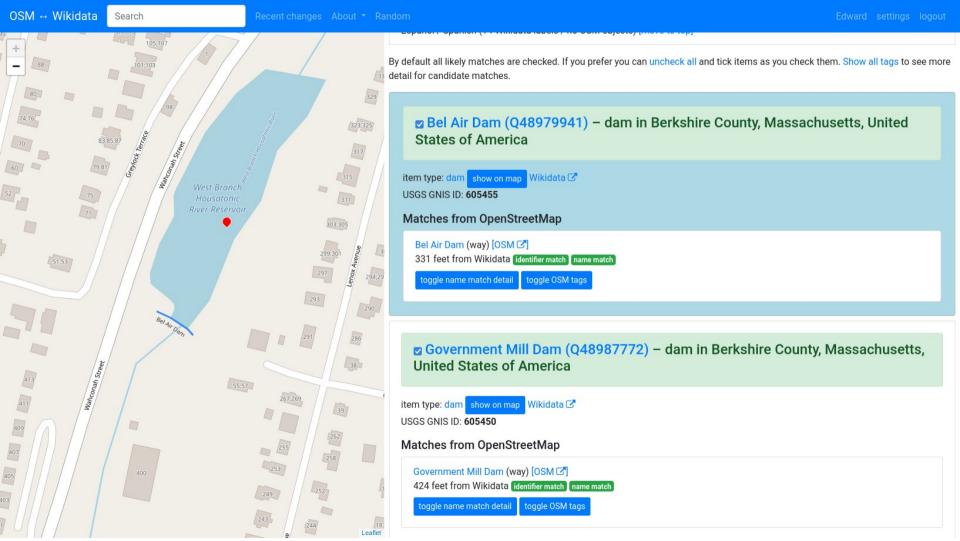


### Type filter









OSM → Wikidata Search Recent changes About \* Random

back to candidate list

Pittsfield, Berkshire County, Massachusetts, United States

category: boundary – type: administrative – OSM: relation 1839563

Please check each match carefully before uploading to OpenStreetMap.

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

change comment: Add wikidata tags to dams in Pittsfield, Massachusetts

sav

5 matches to upload

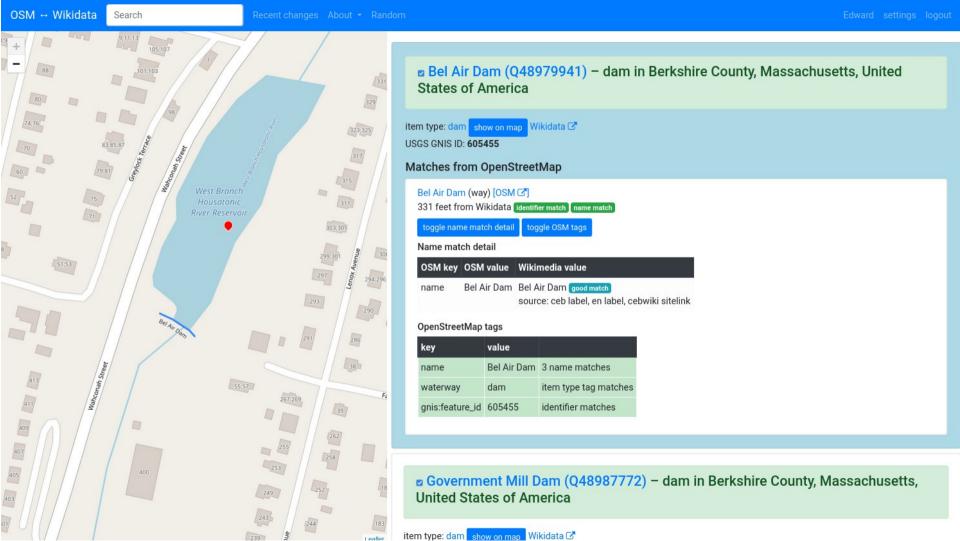
Untick the checkbox next to a match if you don't want the wikidata tag added to OSM.

	Wikidata	OSM	distance	matching tags
<b>~</b>	Bel Air Dam (Q48979941)	Bel Air Dam	(way, 331 feet)	waterway=dam
<b>✓</b>	Government Mill Dam (Q48987772)	Government Mill Dam	(way, 424 feet)	waterway=dam
<b>~</b>	Lower Pecks Pond Dam (Q48992888)	Lower Pecks Pond Dam	(node, 323 feet)	waterway=dam
<b>~</b>	Onota Lake Dam (Q48995057)	Onota Lake Dam	(way, 422 feet)	waterway=dam
<b>✓</b>	Pontoosuc Lake Dam (Q48996184)	Pontoosuc Lake Dam	(way, 450 feet)	waterway=dam





## Matching criteria





Q Search Wikidata

文A English Edward ♣1 -99







Random Item Query Service Nearby Help

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Concept URI Cite this page Automatic addition

In Wikipedia

#### Bel Air Dam (Q48979941)

Read View history ☆ ⇔ ⇔ More ∨ Item Discussion dam in Berkshire County, Massachusetts, United States of America edit

#### ▼ In more languages

Configure

Language	Label	Description	Also known as
English		dam in Berkshire County, Massachusetts, United States of America	

All entered languages

#### Statements

dam edit instance of ▶ 1 reference + add value







Q Search Wikidata

XA English Edward ♣1 □9

Also known as





dam (Q12323)

Item Discussion

Read View history ☆ ⇔ ⇔ More ∨

edit

▼ In more languages

barrier that impounds water or underground streams

Configure

Label Language

English dam

barrier that impounds water or underground streams

Description

All entered languages

#### Statements



#### Switch to old look

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Main page Community portal Project chat

Lexicographical data

Create a new Lexeme Recent changes

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What links here Related changes Special pages Permanent link

Page information Concept URI

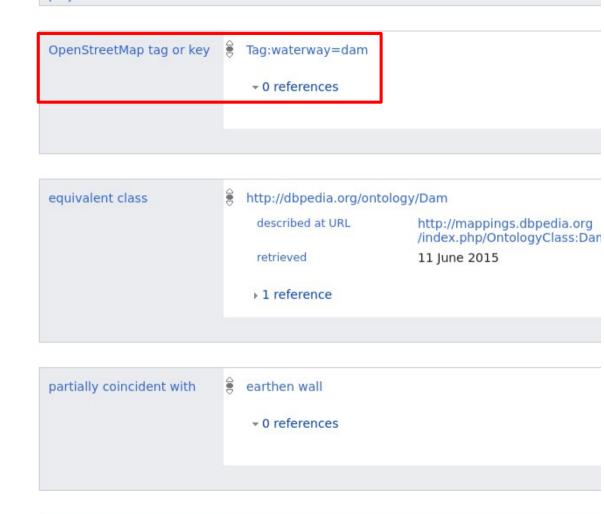
Cite this page Automatic addition

In Wikipedia

### **OSM** tag

Wikidata has a property for OpenStreetMap tag or key

The Wikidata item for dam has the OSM tag 'waterway=dam'



## OpenStreetMap and Wikidata matching 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
- FIPS 6-4 (US counties)
- FIPS 5-2 (code for US states)
- USGS GNIS ID

- IBNR ID
- National Heritage List for England number
- UK Government Statistical Service code
- EDUBase URN
- Admiralty number (lighthouse)
- Website

## Not using Wikipedia tags to find matches

- Sometimes wrong
- Less interesting problem
- Expected somebody else to
- Plan to do it eventually











## Unsupported item types

### **Tunnels**

Wikidata usually represents tunnels as a single item

OSM often represents them as two ways, one for each direction of traffic or tunnel bore

The software should be changed to recognise tunnels and add the Wikidata tag to both ways







### **Rivers**

OSM represents rivers as linear relations

The matcher uses a tool called osm2pgsql to load OSM data into Postgis for querying

The only type of relation supported by osm2pgsql is a polygon

The data model it uses has no support for linear relations







### Tram stops

Wikidata represents tram stops in both directions as a single item

OSM represents tram stops as a two node, one for each direction

The nodes are combined into a single relation

These relations are unsupported in osm2pgsql, so the matcher fails to identifier the relation



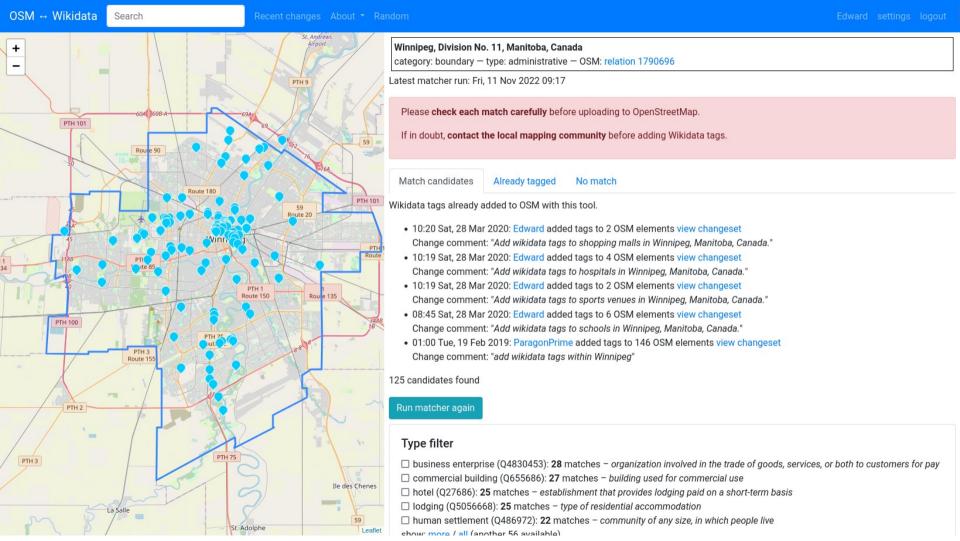


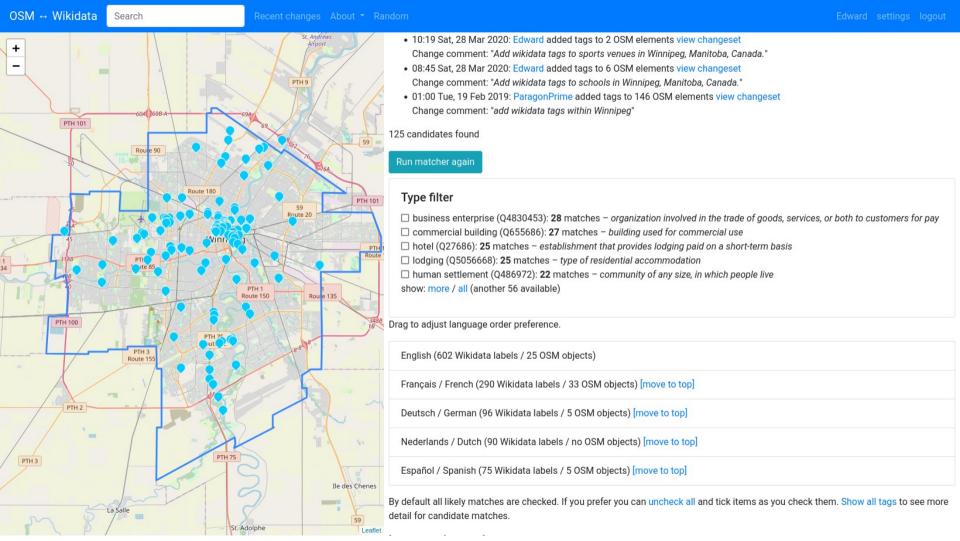


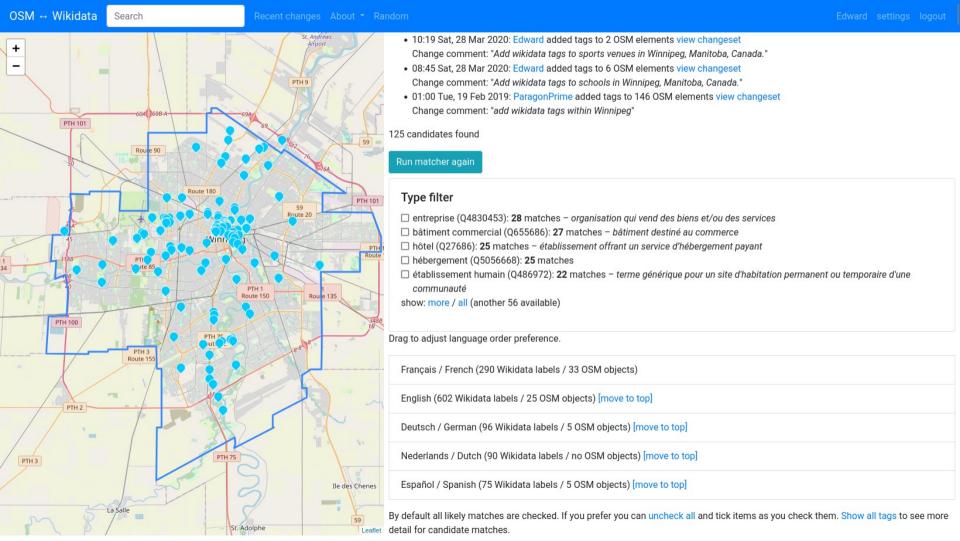




## Language switcher









#### 

item type: musée / couvent show on map Wikidata

Summary from Français / French Wikipedia (frwiki)

Le Musée de Saint-Boniface est un musée situé à Winnipeg dans le Manitoba au Canada. Le musée de Saint-Boniface est consacré à la culture métisse et francophone ainsi qu'au patrimoine historique franco-manitobain. Il est situé au 494, avenue Taché, entre l'avenue de la Cathédrale et la rue Despins, à Saint-Boniface, faisant partie du district Riel de la ville de Winnipeg. Le bâtiment principal conventionnel, qui s'élève au fond d'un grand jardin, fait face à la rivière Rouge. Le musée est situé à côté du Collège universitaire de Saint-Boniface et de la cathédrale

de Saint-Boniface.
Street address:

494, avenue Taché, Winnipeg, MB R2H 2B2

494 Tache Avenue, Winnipeg, MB R2H 2B2

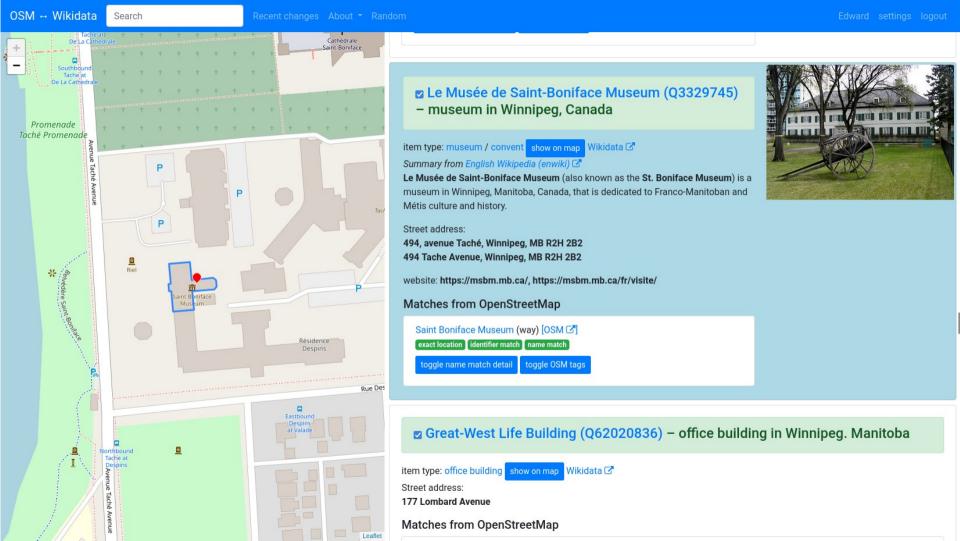
website: https://msbm.mb.ca/, https://msbm.mb.ca/fr/visite/

#### Matches from OpenStreetMap

Saint Boniface Museum (way) [OSM 🗗]
exact location identifier match name match
toggle name match detail toggle OSM tags



☑ édifice de la Great-West Life (Q62020836) – immeuble de bureaux à Winnipeg (Manitoba)







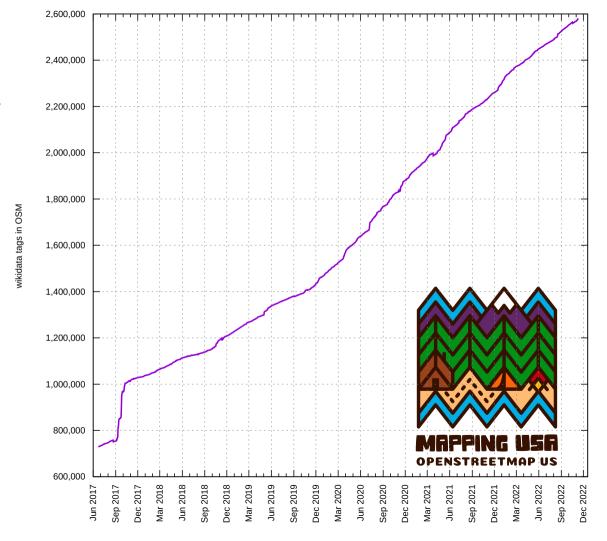
## **Statistics**

## Tag count

There are 2,580,000 objects with a 'wikidata' tag in OpenStreetMap



WIKICONFERENCE NORTH AMERICA



## Mappers are using the tool

**Mappers** 

Changesets

Wikidata tags added

Added by this tool

385

23k

669k

26%

Number of people who have used the tool to edit OSM

Uploaded to OpenStreetMap

Things that have been matched

Percent of wikidata tags in OSM added by this tool





## Licenses

#### **Different licenses**

- Wikidata is licensed CC0 or Public Domain
- OpenStreetMap uses the Open Database License (OdbL)
- Copying data from OpenStreetMap to Wikidata would violate the OdbL







## Different intellectual property jurisdiction

- OpenStreetMap asserts database rights which exist under European law
- Wikidata operates under US intellectual property rules
- Facts are not protected in US law









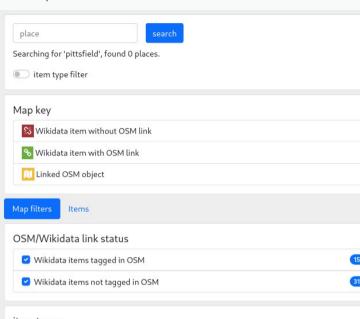


## **OWL Map**

map.osm.wikidata.link

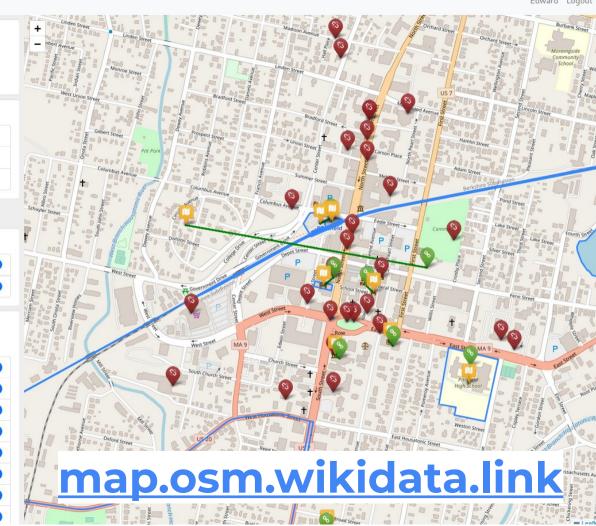
Map-based web interface for linking OSM to Wikidata

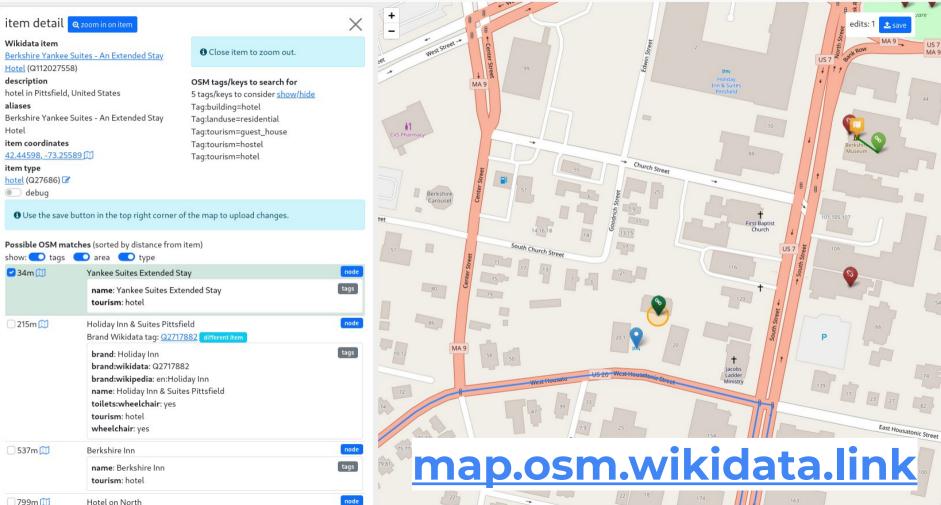
OWL Map Home Documentation



# item types select all clear selection whistoric district (Q15243209) only destroyed building or structure (Q19860854) only high school (Q9826) only nonprofit organization (Q163740) only human-made geographic feature (Q811430) only hotel (Q27686) only hotel (Q27686) only 2

railway station (Q55488) only



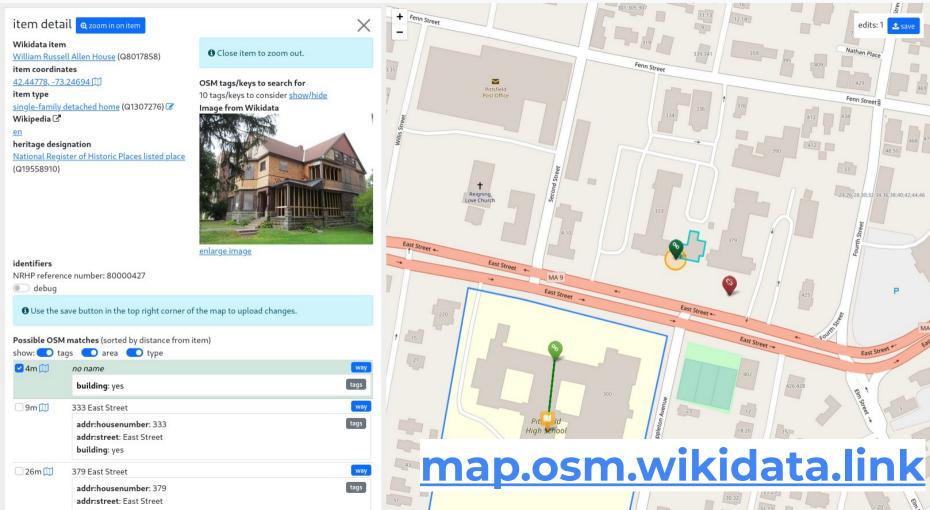


OWL Map Home Documentation Edward Logout

edits: 1

Fenn Street β

East Street \*



OWL Map Home Documentation Edward Logout

#### Upload to OpenStreetMap

6 Editing is live, changes will be uploaded to OpenStreetMap. 2 edits to upload Changeset comment +wikidata ♣ Save to OpenStreetMap

#### William Russell Allen House (Q8017858)

item type

single-family detached home (Q1307276)

OSM matches

4m no name

add tag: wikidata=Q8017858

#### Berkshire Yankee Suites - An Extended Stay Hotel (Q112027558)

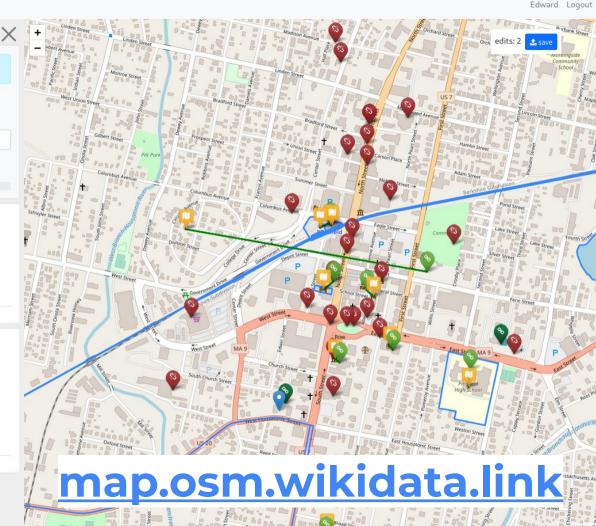
description

hotel in Pittsfield, United States

item type

hotel (Q27686) OSM matches

34m Yankee Suites Extended Stay add tag: wikidata=Q112027558

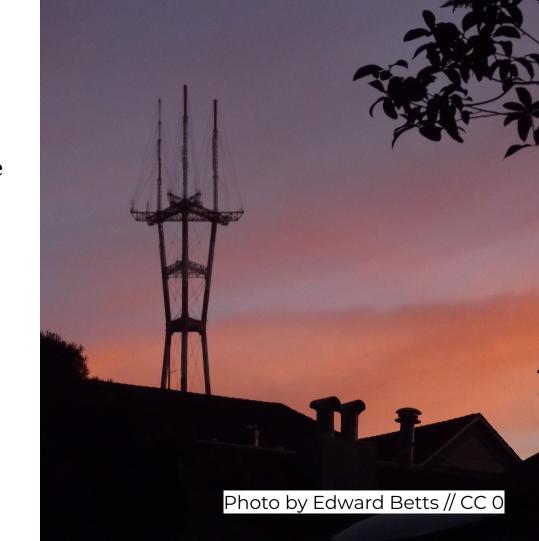


### **OWN Map progress**

- OWL Map is too slow
- Need a more powerful machine or to optimise the database
- Ultimately the two tools should be combined into one

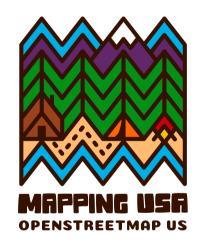








**NORTH AMERICA** 



## osm.wikidata.link