



## Part 2: TeachOSM Instructor Workflow

[TeachOSM.org](https://TeachOSM.org)

Maggie Cawley, Steven Johnson

# Why is OSM in the classroom different?

Here's why:

- You need equitable assignment of work volume
  - What do you do when you have:
    - Varying high/low density infrastructure in your chosen area
    - Areas that already have some complete tracing
  - Do you assign grid cells?
  - Do you set a quota (buildings/roads)?
- You need to track who-did-what (that pesky grading element)
  - You also need to prevent overlap as much as possible
  - How DO you grade it?

# What we're covering today

- Workflow
  - Setting up a project
  - Assigning the work
  - Conducting training
  - Grading
- Sites/tools used
- Resources

# Our Workflow

## 1. Choosing where to map

investigating quality of available imagery and level of completion in OSM

## 2. Assigning the work

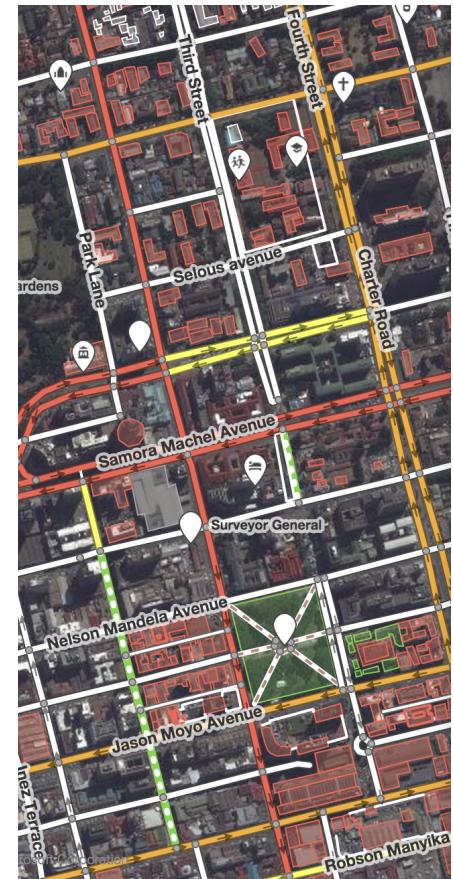
Setting up a task and choosing a work allocation method

## 3. Conducting Training

Choosing an editor, and planning events

## 4. Grading OSM Assignments

Viewing individual students work and number of edits



# 1 Setting up a project

**How do I pick a study area for my group?**

# Setting up a project

- Where will this be?
  - Local neighborhood, campus, city, or a study site abroad
    - Working with a partner can make this easy for you, it can dictate where you map
  - Determine the approximate boundary of the study area
- You will need to “scout” your chosen area
  - Virtually (using OSM and other mapping services)
    - What is the level of tracing difficulty
    - Quality of imagery available for the area
  - Scout on foot (if practical/accessible)

# Successful Community Partnerships

- DC Great Streets
- Georgia Avenue Mapping Project
- GIS Day Farmers Markets
- George Washington University
  - Red Cross, World Bank, USAID
- George Mason
  - Red Cross Missing Maps

# 2 Assigning the work

**Tools & Techniques for equitable assignment of work**

# Assigning the work

- Set up a project in TeachOSM Tasking Manager ([tasks.teachosm.org](http://tasks.teachosm.org))
  - Request admin rights to create a task ([info@teachosm.org](mailto:info@teachosm.org))
  - Use OSM credentials to log onto Tasking Manger
  - Create a new project from drop down under OSM user name

The screenshot shows the TeachOSM Tasking Manager interface. On the left, there's a list of projects:

- #9 Edmonds Community College (EDCC Mapathon) - 16% complete
- #8 Tela, Honduras - 32% complete
- #6 Choloma, Honduras - 40% complete

On the right, there's an "About the Tasking Manager" section with a detailed description of the tool's purpose and a "RAHinton" user dropdown menu. The "Create a new project" option in this menu is highlighted with a red box.

**About the Tasking Manager**

OSM Tasking Manager is a mapping tool designed and built for the Humanitarian OSM Team collaborative mapping. The purpose of the tool is to divide up a mapping job into smaller tasks that can be completed rapidly. It's mapped and which areas need the mapping validated. This approach facilitates the distribution of tasks to the volunteers of emergency. It also permits to control the progress and done (ie. Elements to cover, specific tags to use, etc.).

**RAHinton**

- Your page
- Messages
- logout
- Users list
- Manage licenses
- Create a new project

# Creating a Project

- STEP 1 – zoom to your chosen area and draw a polygon around your area of interest
- STEP 2 – Choose Square grid or arbitrary geometries.
  - Using a square grid is most common
- STEP 3 – Choose tile (square) size: XS - XL
  - Considerations on density and type of features
- STEP 4 – Add project title along with descriptive and contextual information.
- STEP 5 – Save, Review and when ready, Publish

# Creating a Project

- STEP 1 – zoom to your chosen area and draw a polygon around your area of interest

TeachOSM Tasking Manager

About en ▾

Project New

Step 1

Draw the area of interest on the map.

or

Import a GeoJSON or KML file.

Want to use an .osm file instead?  
You can use [GeoJSON.io](#) to convert it to GeoJSON.

Leaflet | Map data © OpenStreetMap contributors

# Creating a Project

- STEP 1 – zoom to your chosen area and draw a polygon around your area of interest
- STEP 2 – Choose Square grid or arbitrary geometries.
  - Using a square grid is most common
- STEP 3 – Choose tile (square) size: XS - XL
  - Considerations on density and type of features
- STEP 4 – Add project title along with descriptive and contextual information.
- STEP 5 – Save, Review and when ready, Publish

# Creating a Project

## Step 2 - Type of project

**Square Grid**



Area of interest is automatically split into grid cells. Each one is a task.

**Arbitrary Geometries**



Each polygon represents a task.

[Back](#) [Next](#)

area and draw a polygon around

## Step 3

Tile size

A new project will be created with **30** tasks.

[Back](#)

[Create project](#)

with descriptive and contextual

- STEP 5 – Save, Review and when ready, Publish

# Creating a Project

- STEP 1 – zoom to your chosen area and draw a polygon around your area of interest
- STEP 2 – Choose Square grid or arbitrary geometries.
  - Using a square grid is most common
- STEP 3 – Choose tile (square) size: XS - XL
  - Considerations on density and type of features
- STEP 4 – Add project title along with descriptive and contextual information.
- STEP 5 – Save, Review and when ready, Publish

# Creating a Project

TeachOSM Tasking Manager

## 10 - Untitled project - Edit

Description Instructions Area Imagery Priority Areas Allowed Users Misc

Status Priority

Draft medium

Name of the project

en fr es de pt ja lt zh\_TW id da pt\_BR ru it

TeachOSM Workshop (Huron, SD)

Short Description

en fr es de pt ja lt zh\_TW id da pt\_BR ru it

This project is created for the TeachOSM Workshop held during the State of the Map Conference, June 6-8, NYC.

Description

Edit Preview

en fr es de pt ja lt zh\_TW id da pt\_BR ru it

For this project we are mapping all building, road and water features in Huron, SD. Many of the roads have been mapped but not many of the buildings.

# Creating a Project

TeachOSM Tasking Manager

## 10 - Untitled project - Edit

Description Instructions Area Imagery Priority Areas Allowed Users Misc

### Entities to Map

roads, buildings, water features

The list of entities to map.

### Changeset Comment

#hotosm-task-10 #SOTMUS2015 #TeachOSMWorkshop from bing imagery

Comments users are recommended to add to upload commits.  
For example: "Guinea, #hotosm-guinea-task-470, source=Pleiades, CNES, Astrium"

### Detailed Instructions

Edit Preview en fr es de pt ja lt zh\_TW id da pt\_BR ru it

For this project we are mapping all building, road and water features in Huron, SD.

using iD editor, be sure to tag each feature appropriately and save often.

Common TAGS  
building=yes  
building=residential building  
building=apartments  
building=house

# Creating a Project

- STEP 1 – zoom to your chosen area and draw a polygon around your area of interest
- STEP 2 – Choose Square grid or arbitrary geometries.
  - Using a square grid is most common
- STEP 3 – Choose tile (square) size: XS - XL
  - Considerations on density and type of features
- STEP 4 – Add project title along with descriptive and contextual information.
- STEP 5 – Save, Review and when ready, Publish

# Creating a Project

TeachOSM Tasking Manager

#10 - TeachOSM Workshop (Huron, SD) (Draft)

Instructions Contribute Activity Stats

This project is not published yet. [Publish](#)

For this project we are mapping all building, road and water features in Huron, SD. Many of the roads have been mapped but not many of the buildings.

Entities to Map ?  
roads, buildings, water features

Changeset Comment ?  
#hotosm-task-10 #SOTMUS2015 #TeachOSMWorkshop from bing imagery

For this project we are mapping all building, road and water features in Huron, SD. using iD editor, be sure to tag each feature appropriately and save often.

Common TAGS  
building=yes  
building=residential  
building=apartments  
building=house . . .

[Start contributing](#)

About en RAHinton

Edit Export

Map showing the area around Huron, SD, with a grid overlay. The map includes roads, buildings, and water features. A legend at the bottom left indicates the status of features: Cur. worked on (0), Invalidated, Done, and Validated. A scale bar shows distances in both kilometers and miles. The map is powered by Leaflet and OpenStreetMap contributors.

# Creating a Project

- STEP 1 – zoom to your chosen area and draw a polygon around your area of interest
- STEP 2 – Choose Square grid or arbitrary geometries.
  - Using a square grid is most common
- STEP 3 – Choose tile (square) size: XS - XL
  - Considerations on density and type of features
- STEP 4 – Add project title along with descriptive and contextual information.
- STEP 5 – Save, Review and when ready, Publish

# 3 Conducting training

**Training students on editors, and fun ways to engage your audience**

# Conducting training

- Intro to OSM
- Create account
- Learn iD



# Engaging the students



- Project intro (invite partner to brief them on the areas)
- Execution / Introduction of workflow
  - Create an OSM account, and editor demo
  - Provide tracing guide (specific to the area)
  - Tasking out the work (OSM tasking manager/quota system)
  - Local Mapping (if practical) (Field Papers)
  - Keeping track (overpass turbo)
- Mapping party/Mapathon (optional, but FUN!)

# Field Papers

## Field Papers

**MAKE**  
an atlas to print      **UPLOAD**  
pages you've marked      **WATCH**  
recent activity

1. AREA      2. INFO      3. LAYOUT

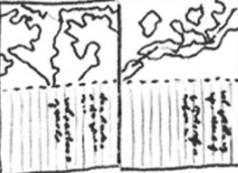
### Choose a Layout

Add a UTM grid overlay to each map? (What's [UTM](#)?)

Add the Red Cross overlay (for disaster relief efforts)

  
 Maps Only  
one per page

  
 Maps + Notes  
on their own pages

  
 Maps + Notes  
on same page

## Field Papers

## **MAKE**

an atlas to print

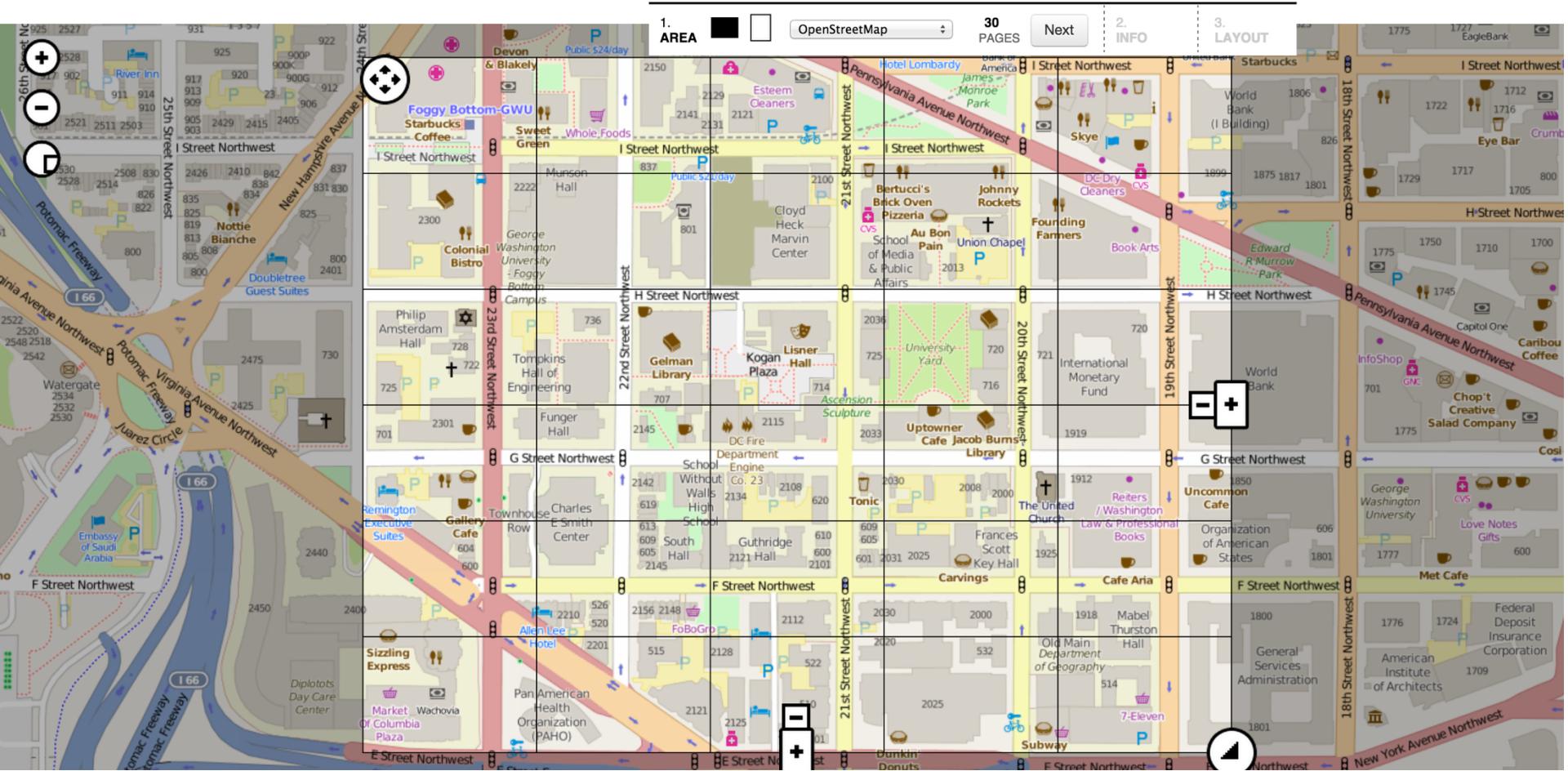
## **UPLOAD**

## **WATCH**

recent activity

**EXTEND**  
with advanced tools

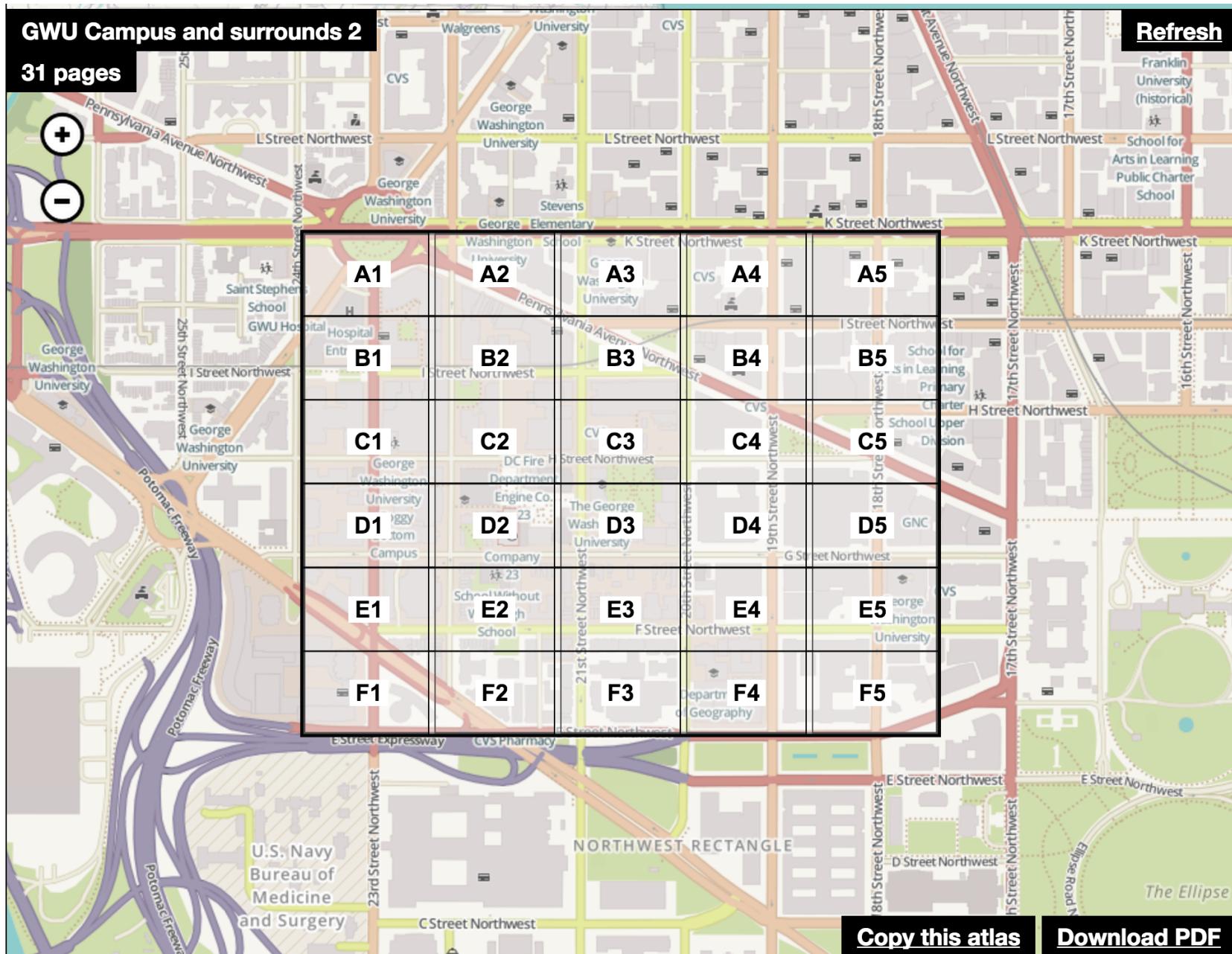
**LOG IN**  
or create an account



## GWU Campus and surrounds 2

31 pages

[Refresh](#)



[Copy this atlas](#)

[Download PDF](#)

# Mapillary: collaborative photo mapping

The screenshot shows the Mapillary website interface. At the top, there's a navigation bar with links like 'How it works' and 'Edit'. A user profile for 'peterneuba...' is visible. On the left, there are icons for mobile devices and a map of Europe. The main area is titled 'My Uploads' and displays a grid of street view photos from various locations. Each photo has a green 'GPX' button in the top right corner. Below the grid, a video player is shown with a play button, a timestamp of '01:03', and a 'HD' button. The video title is 'Introducing Mapillary' and it was posted by 'Mapillary' 10 months ago. The video description explains that Mapillary is a service for crowdsourcing street view photos using smartphones and computer vision. It also mentions the music 'Spybeat' by Langhorns. The background of the page features a large image of a coastal city.

1. Go

\*Available for iPhone and iPad

My Uploads

Jörgen Kocksgatan, Malmö

01:03 HD

Mapillary

from Mapillary 10 months ago NOT YET RATED

Mapillary is a service for crowdsourcing street view photos using smartphones and computer vision. This video briefly introduces how Mapillary works. See [mapillary.com/](http://mapillary.com/) for details.

Music: "Spybeat" by Langhorns. [langhorns.com](http://langhorns.com)



# 4 Grading OSM assignments

**Suggestions for Instructors who need to include evaluation**

# Tracking your Work: Overpass Turbo

<http://overpass-turbo.eu/>

The screenshot shows the Overpass Turbo web application. At the top, there is a navigation bar with buttons for Run, Share, Export, Wizard, Save, Load, Settings, Help, and a search bar containing "overpass turbo". To the right of the search bar are two tabs: "Map" (which is selected) and "Data". Above the map area, there is a green button labeled "Flattr this!".

The main area consists of two parts: a code editor on the left and a map on the right. The code editor contains the following OpenStreetMap query:

```
1 {{user=namehere}}
2
3 <osm-script output="json">
4   <union>
5     <query type="node">
6       <user name="{{user}}"/>
7       <bbox-query {{bbox}}/>
8     </query>
9     <query type="way">
10       <user name="{{user}}"/>
11       <bbox-query {{bbox}}/>
12     </query>
13   </union>
14   <print mode="body"/>
15   <recurse type="down"/>
16   <print mode="skeleton"/>
17 </osm-script>
```

The map on the right displays a geographic area with various streets, buildings, and geographical features. Several specific locations are labeled with blue text boxes:

- Junction to Q.T. Santos Elementary School
- Adobtial Subdivision
- Junction to Divine Mercy Center
- Barangay Ligaya
- Purok Naval
- Toledo Subd.
- Guinoo Subdivision
- Dadiangas South
- Rajah Bulan Airbase
- General Santos City International Airport

A scale bar indicating "3 km" is located at the bottom left of the map. On the far left edge of the slide, there is a vertical decorative bar consisting of an orange segment at the top and a teal segment below it.

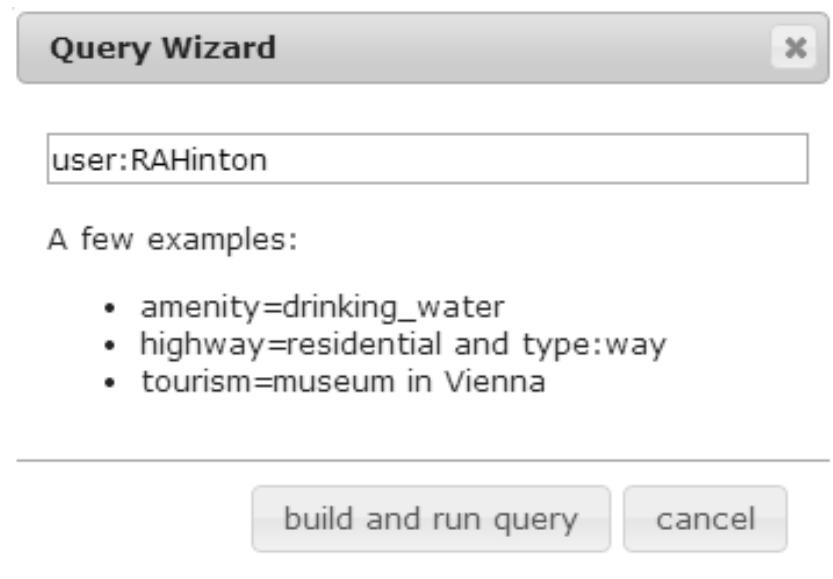
# Overpass Turbo

- With overpass turbo you can run Overpass API queries and analyze the resulting OpenStreetMap data interactively on a map.

<http://overpass-turbo.eu/>

1. Navigate to the area your are working
2. Click the Wizard button
3. Use the following syntax to search for your OSM edits:

user: your\_osm\_name



# OSM Grading: The Quota Method

- Example: Quota of **2000** “nodes”
  - All contributions are **Weighted on Completeness**
  - Marked on Quality, Coverage and Sticking to Area
  - You’ll be graded following the rubric below

	A	B	C	D	E	F	G	H	I
1	Name	OSM Username	% Complete	Quality (70%)	Coverage (20%)	SticktoArea (10%)	Weighed total	TOTAL	
2	1	Student 1		90	60	15	8	7.47	7.47
3	2	Student 2						0	0
4	3	Student 3						0	0
5	4	Student 4						0	0
6	5	Student 5						0	0
7	6	Student 6						0	0
8	7	Student 7						0	0
9	8	Student 8						0	0
10	9	Student 9						0	0
11	10	Student 10						0	0

# TeachOSM.org

The Instructors resource for collaborative mapping in the classroom

# TeachOSM.org

- Materials required to identify, assign, manage and grade the module are available on the site
  - Step-by-step OSM module design (for instructors)
  - Simple to advanced work flow options
  - Demo videos of how to set up tasks and assign cells
  - Sample grading rubric
  - OSM teaching material for instructors
    - Instructional powerpoints/youtube videos
    - How to edit in id editor (best practices for tracing)
    - Tagging procedures and etiquette

# Example OSM Projects



THE GEORGE  
WASHINGTON  
UNIVERSITY  
WASHINGTON, DC



American  
Red Cross



USAID  
FROM THE AMERICAN PEOPLE



- Natural Disaster Hotspot List
  - Chittagong, Bangladesh (2011)
- American Red Cross
  - Columbia (2012)
  - Indonesia (2012)
  - Philippines (Haiyun) (2013)
  - Harare, Zimbabwe (2014)
- USAID & World Bank Open Cities
  - Kathmandu, Nepal (2013)
- USAID GeoCenter
  - Mindanao, Philippines (2014)
  - Bangladesh (2014)

# Sample Ideas for Projects

- Conduct a street survey in your neighborhood:
  - [http://teachosm.org/en/cases/DCGreatStreets\\_survey\\_casestudy/](http://teachosm.org/en/cases/DCGreatStreets_survey_casestudy/)
- Map for disaster relief/preparedness:
  - <http://mapgive.state.gov> and <http://missingmaps.org/>
- Add historical features to OpenHistoricalMap:
  - <http://ow.ly/MfhZw>
- Map local food resources:
  - <http://teachosm.org/en/cases/farmers-market/>
- Start a student mapping society:
  - <https://www.facebook.com/GWHMS>

# Resources

- LearnOSM (<http://learnosm.org/en/>)
- HOT Tasking Manager (<http://tasks.hotosm.org>)
- TeachOSM Tasking Manager (<http://tasks.teachosm.org>)
- MapGive videos (<http://mapgive.state.gov/>)
- TeachOSM site (<http://teachosm.org/en/>)



Please contact us if you have any questions

**Steven Johnson** [sejohnson8@gmail.com](mailto:sejohnson8@gmail.com)

**Richard Hinton** [rhinton@gwu.edu](mailto:rhinton@gwu.edu)

**Nuala Cowan** [nuala@gwu.edu](mailto:nuala@gwu.edu)