

## **Observations on an OpenStreetMap mapping party organised as a social event during an open source GIS conference\***

Peter Mooney<sup>1</sup>, Marco Minghini<sup>2</sup>, Frances Stanley-Jones<sup>3</sup>

<sup>1</sup>Department of Computer Science, Eolas Building, Maynooth University, Maynooth, Co. Kildare, Ireland, [Peter.Mooney@nuim.ie](mailto:Peter.Mooney@nuim.ie)

<sup>2</sup>Department of Civil and Environmental Engineering, Politecnico di Milano, Como Campus, via Valleggio 11, 22100 Como, Italy, [marco.minghini@polimi.it](mailto:marco.minghini@polimi.it)

<sup>3</sup>Professional GIS Specialist, Commercial LBS, San Jose, California, USA, [stanleydashjones@yahoo.com](mailto:stanleydashjones@yahoo.com)

### **Abstract**

We discuss an OpenStreetMap (OSM) mapping party organised during the Free and Open Source Software for Geospatial (FOSS4G) Europe 2015 conference held in Como, Italy in July 2015. While primarily the mapping party was organised as a conference social event, there was also the serious goal of collecting and adding geographic data to the OSM database of Como city. Our paper describes the organisation, planning and structure of the mapping party. Results show that considerable amounts of data was collected and uploaded to OSM. Overall there was very good interest in the mapping party with 40 participants. While the majority of participants were delegates at the conference and consequently could be considered highly skilled GIS practitioners only a very small number had actually contributed data to OSM in the past. We discuss the key lessons learned and overall positive and negative aspects of this mapping party.

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## 1. INTRODUCTION

OpenStreetMap (OSM) is a collaborative project to create a free editable map of the entire world. It is probably the most famous example of crowdsourced cartography on the Internet today. At the time of writing (January 2016) there are almost two million and a half registered contributors to OSM (see [http://www.openstreetmap.org/stats/data\\_stats.html](http://www.openstreetmap.org/stats/data_stats.html)). There are a myriad of ways that a person can collect and contribute to OSM. While many of these methods involve the individual collecting data on their own and then using software to upload and edit this in OSM, however so-called mapping parties add a social dimension to data collection in OSM (Perkins and Dodge, 2008). Mapping parties are an informal means by which both experienced OSM contributors and people new to the project can meet and collect and edit OSM data (Hristova et al, 2013). Dodge and Kitchin (2013) argue that mapping parties are an example of how geographic knowledge production is changing rapidly within a shifting political economy and sociotechnical landscape.

The informal structure of mapping parties means that there is no strict protocols dictating how such an event should be organised or structured. However there are a few general guidelines. Usually mapping parties are initially organised by a small number of OSM contributors to collect OSM data specifically related to a geographical area, event or other activity such as a humanitarian disaster (Latif et al, 2011; Soden and Palin, 2014). The strategy for data collection is usually based on survey of geographic areas or features which are currently poorly or under-represented in the OSM database. Given the potential mix of experienced and inexperienced participants in a mapping party there is often a tendency to concentrate on simple geographic features and information such a Point of Interest (POI) and associated metadata. This provides a basis to introduce new participants to OSM using a carefully considered approach to the level of technical detail considered in the data collection.

Ideally data collected during the mapping party should be contributed 'live' to OSM that is as soon as possible after the mapping party's data collection has concluded. Consequently mapping parties are usually located in cafes, restaurants and other public spaces where WiFi internet access is available to facilitate the upload of the collected data. Crucially, the mixture of experienced OSM contributors and those less experienced members allows for a collaborative learning environment. Experienced OSM contributors can demonstrate how OSM data is uploaded and edited using data collected during the mapping party.

The remainder of the paper is organised as follows. Section 2 will outline the organisation of the mapping party, the strategy for data collection, how the mapping party was actually implemented and a brief discussion of some results from the mapping party. Section 3 provides some discussion on the lessons learned from the mapping party. While overall this venture was very successful there were some aspects which did not perform as we would have liked and shall require more careful planning in any future mapping parties. The paper closes with some conclusions and overall commentary on the mapping party experience within an open source geospatial conference.

## **2. MAPPING PARTY**

The OSM mapping party described in the following was held during the second edition of the FOSS4G Europe conference, which took place in Como, Northern Italy on July 14-17, 2015 (<http://europe.foss4g.org/2015>). In the aggregative spirit of this conference and to celebrate the International Map Year 2015-2016 (<http://mapyear.org>), the organizers proposed four contemporary social mapping events on July 15 aimed at gathering together different geospatial communities. In addition to the OSM mapping party, an indoor mapping party aimed at creating the indoor navigation graph of the conference building, a Web-based land coverage validation game (Brovelli et al, 2015) and an emotional mapping action to create an emotional map of Como – not described in this paper – were also arranged. We did not have specific expectations for the OSM mapping party. As a group of researchers interested in OSM we wanted to experiment with organising a mapping party during a GIS conference.

### **2.1. Organization of the OSM Mapping Party**

Though the OSM and FOSS4G communities are strongly connected and partially composed of the same people, to the authors' knowledge this was only the second OSM mapping party which has happened during a FOSS4G event. There was a previous mapping party held during FOSS4G 2007 in Victoria, Canada ([http://wiki.openstreetmap.org/wiki/Victoria\\_mapping\\_party\\_-\\_September\\_2007](http://wiki.openstreetmap.org/wiki/Victoria_mapping_party_-_September_2007)). The mapping party was conceived and devised by a small number of people (including two of the authors of this paper) who were not just involved in the conference organization but are also researchers on OSM and active OSM mappers themselves.

#### **2.1.1. *Event Advertisement***

The mapping party was advertised long before the conference through many channels: an announcement of the event with a general description was posted on the conference website (<http://europe.foss4g.org/2015/Mapping%20parties>); the mapping party was reported in the official OSM events list

([http://wiki.openstreetmap.org/wiki/Past\\_Events](http://wiki.openstreetmap.org/wiki/Past_Events)) with a detailed description on the OSM wiki ([https://wiki.openstreetmap.org/wiki/Como\\_foss4ge\\_2015](https://wiki.openstreetmap.org/wiki/Como_foss4ge_2015)) which provided info on the location, schedule, purpose and contact; and finally the mapping party was promoted through the official communication channels of FOSS4G Europe 2015 (mailing list and social medias) as well as those of the co-organizing associations: Politecnico di Milano, Open Source Geospatial Foundation (OSGeo), International Cartographic Association (ICA) and International Society for Photogrammetry and Remote Sensing (ISPRS).

### 2.1.2. *Event planning*

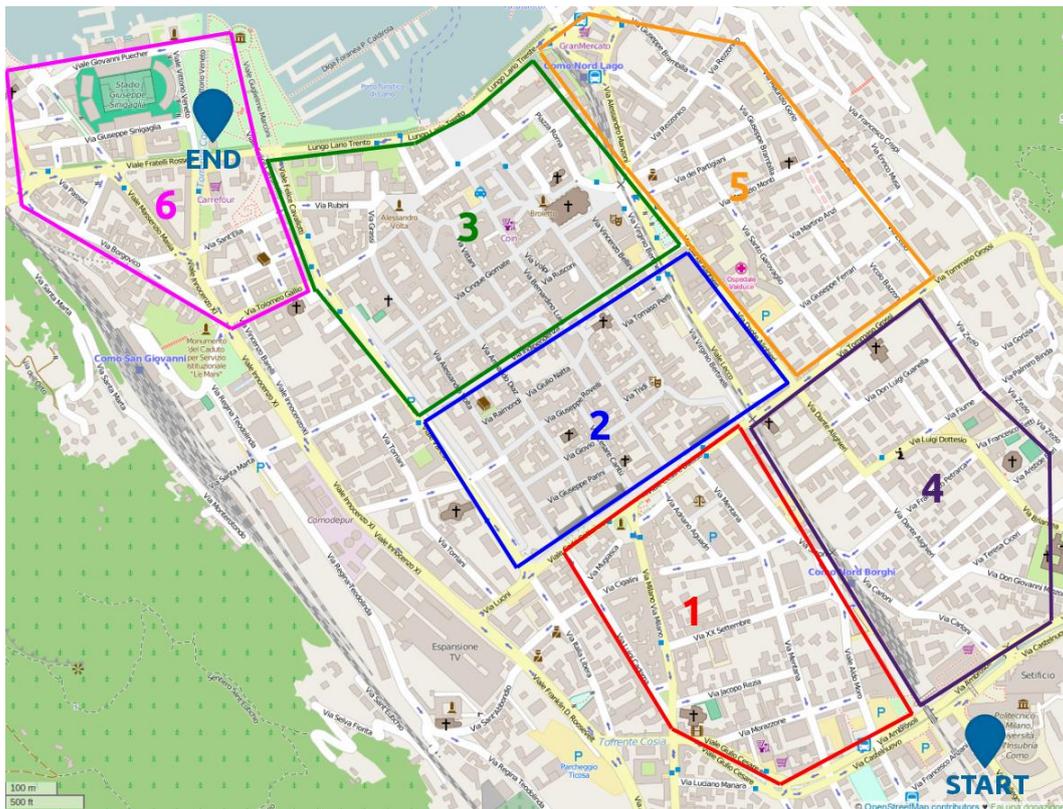
The mapping party was organized as composed of two main stages: 1) the actual mapping around the center area of Como city; and 2) a practical session to teach how to upload the collected data into the OSM database. The first stage was planned on July 15 starting at 4:30 pm after the end of the conference sessions and lasting until 8 pm when another social event, the conference ice-breaker party, was scheduled. The second stage was planned for the following day, July 16, during the lunch break of the conference inside one of the available rooms. A mapping party presentation to introduce the event was also scheduled during the FOSS4G Europe opening session on July 15, and a second one to present the outcomes was planned for the closing session on July 17.

Being a mapping party held during a conference, initially it was difficult for the organizers to get a good a priori estimation of the number of participants. Even later when FOSS4G Europe 2015 went sold out with the limit of 400 registered people reached one month before the event, it was still very hard to estimate the number of participants due to a number of reasons, e.g. the possible lack of interest in an OSM mapping party, the very hot weather that could discourage people to spend hours walking around the city, and the presence of other three mapping parties at the same time that might potentially disperse the conference delegates. A more realistic expectation could instead be done concerning the participants' degree of knowledge and experience in OSM, which (regardless of the number of participants) was supposed to be highly heterogeneous.

These considerations allowed the organizers to better formalize the objective of the OSM mapping party and, consequently, to choose the most efficient way to accomplish it. In line with the spirit of the conference, the primary goal was to introduce people to OSM and have fun together while enjoying Como city and collecting useful data to improve its map. The organizers decided to focus data collection on specific information which was largely missing in the OSM Como map, e.g. tourist elements (hotels, restaurants, monuments, shops, etc.) and daily life features (house numbers, recycling containers, transport elements, etc.). Considering the presence of OSM newbies, a simple strategy for data collection was chosen based on field papers (<http://fieldpapers.org>). This service allows printing of OSM maps (centered and zoomed on a specific area), to draw map features and take notes on while in the field, and finally to use them (as scanned

georeferenced basemaps or simply in their paper version) to record data in an OSM editor. Field papers were preferred to GPS receivers, available only in a small number (probably too low compared to the – unknown – number of participants) and whose usage required some previous experience or a dedicated training session which was not possible due to the short time available. Clearly, experienced participants coming with their own GPS receivers would be left free to use them as well as to record other elements than those suggested. The OSM mapping party using field papers was planned in the following way. Como city centre, which includes the areas inside and just outside the old Roman walls, was divided into 6 areas having approximately the same extent (see Figure 1). Each area would have been assigned to a different group of participants; in case of very few (10-15) participants, the organizers agreed to focus the mapping effort only on the Como historic center (areas 2 and 3 in Figure 1). The meeting point was set outside the Como Campus of Politecnico di Milano (the conference venue) while the ending point was the café close to Lake Como where the ice-breaker party was scheduled in the evening (see Figure 1).

**Figure 1: OSM Map of Como City Centre Showing the Starting and Ending Points of the Mapping Party and the Subdivision into 6 Mapping Areas.**



## **2.2. Execution of the OSM Mapping Party**

### *2.2.1. Field Data Collection*

In terms of participation, the OSM mapping party was the most popular among the four organized during FOSS4G Europe 2015. 40 people joined the event with a gender imbalance in favour of females, that were 24 against 16 males. The participants were a mixture of expert OSM mappers, less experienced OSM contributors and people new or almost new to OSM. As the experienced OSM mappers were only 5, it was agreed to form 5 groups each led by one of them. Compared to the original subdivision of Como city center, area 5 – being the most uncomfortable to reach considering the meeting point after the mapping party – was discarded (see Figure 1). Also, with the purpose of maximizing the communication efficiency within the single mapping groups it was decided to form two groups entirely composed of Italian participants, and the remaining three groups composed instead of visitors to Como city.

After dividing in groups the organizers gave a brief explanation on how to use field papers, which kind of information the mapping party was to focus on, and other tricks useful to collecting OSM attribute data (e.g. to take pictures of the opening hours of restaurants and shops). Then the 5 groups moved to their assigned areas and performed the mapping task using field papers. Most of the groups decided to split into sub-groups of 2-3 people to further subdivide the area assigned and thus minimize the effort. This was also imposed by the very hot temperature and high humidity which made it difficult to support long outdoor walks. The 5 groups met again at the designated café around 7:30 pm after a 2-3 hours-long mapping party. One of the field papers used during the event which shows the drawings and annotations made is shown in Figure 2.

### *2.2.2. Data Upload*

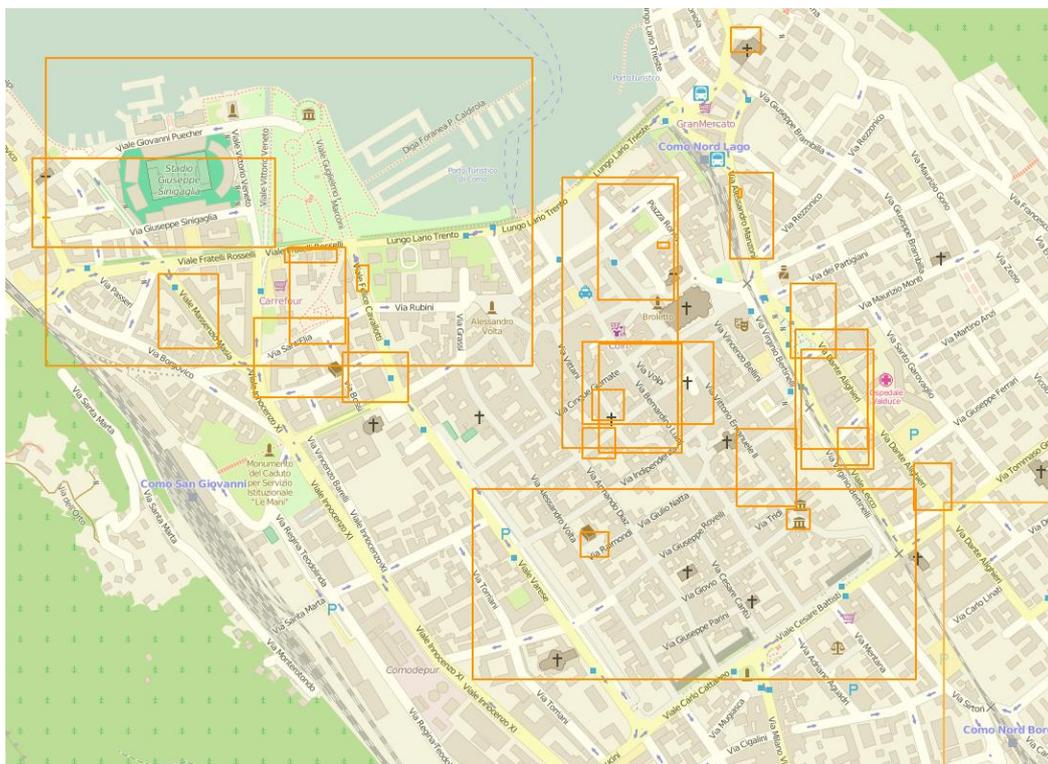
As mentioned before, the day after the OSM mapping party the organizers set up a practical session to show the participants how to upload the collected data into the OSM database. As it happened during the mapping party, the atmosphere was very informal and relaxed and allowed the meeting to be run on a questions/answers basis rather than a formal practical workshop. The organizers showed the step-by-step procedure to upload the data collected on field papers using both the OSM iD (<http://wiki.openstreetmap.org/wiki/iD>) and JOSM (<https://josm.openstreetmap.de>) editors and how to choose the right tags to identify the OSM nodes added. The iD editor is a simple Web-based editor for OSM while JOSM is a desktop-based software tool for more advanced editing of OSM. On the other side the participants, fewer than the 40 counted the day before, could receive answers to any specific question and then start themselves to add their data.



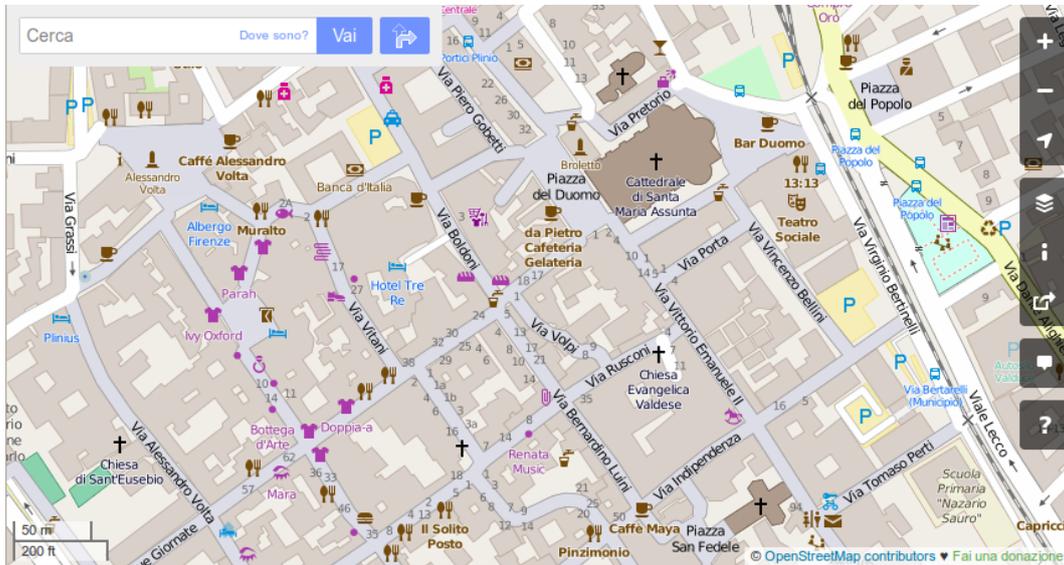
statistics extracted in the immediate aftermath of the mapping party give a clear understanding of the mapping effort performed. The OSM nodes in Como city centre were 37078 on July 13 (before the mapping party), 37380 in the evening of July 16 (after the data upload session) and 37767 on July 22 (one week after the mapping party). At the time of writing (January 2016) the number of nodes in Como city centre is 38672 which is only about 1000 additional nodes in the months since our mapping party. Monitoring of data upload in the mapping party areas showed a constant increase in the number of nodes even at later stages (also after the summer). Many POIs having remarkably enriched the OSM map of Como city center in November 2015 (shown in Figure 4) are likely to be in a large part the consequence of the July mapping party as from our understanding local OSM activity is not very intense.

On a wider scale our mapping party has not contributed a very large amount of data. However we feel that the structure of the mapping party where experienced OSM contributors facilitated data upload from the field papers assisted in ensuring that the data contributed was of very high quality.

**Figure 3: Editing Activity on the Como OSM Map Recorded on Friday, July 17 (One Day After the Data Upload Session).**



**Figure 4: Detail of the OSM Map of Como City Centre in November 2015 Showing Results of the July's Mapping Party, e.g. Shops, Restaurants and House Numbers.**



### 3. DISCUSSION

There are a few aspects to this mapping party that are important to identify. This mapping party was a social event at a conference with a related topic, that of Open Source Geospatial. The participants of both the conference and mapping party were ethnically and professionally diverse and most had only the FOSS4G in common. Thus the mapping party added another opportunity for common ground. It gave the participants, who may have heard of OSM the opportunity to experience field data collection first hand. According to Hristova et al (2013) many of the first timers may not continue contributing to OSM, but a few should. This could potentially add an unmapped place to the data, as many of the less dedicated contributors do so to add to their home area. Even for those that do not continue, their experience may prompt them to encourage others to do so.

The fact that 10% of the attendees of the conference attended the OSM mapping event is evidence that the advertising and electronic method for joining was done very well. Although we have no statistics to support this it might be that attendance was only exceeded by the restaurant/brewery event. Anecdotal evidence suggests that participants anticipated this informal, action oriented, event to be comfortable and interesting.

There were two physical components to the mapping party, data collection and data upload. The data collection method based on field papers was low-tech but

allowed for several potential barriers to participation, to be overcome. These barriers, cost of providing enough GPS units, the time it would take to upload and train users on a phone application, international connectivity costs for non residents, may have reduced the number of participants. It did make data input more difficult because of the lack of uniformity of notations and illegibility of writing. This might have been mitigated even on paper by adding a form to write the data in or as some collectors did, taking a picture and linking it by number to the paper form and referring to the photo during the data upload.

The composition of the mapping groups was defined linguistically and by personal choice. There were 5 groups, of those, two were composed of Italian speakers, and the other three used primarily English, the official language of the conference. This arrangement was satisfactory and none of the English speaking groups reported having any language barrier problems, however in another environment there might be. Having a "local" in each group, to interpret the landscape or run interference if the group ran into issues with local citizenry, could be beneficial.

Although much of the data was uploaded it was a manual process and the unavoidable training required took up a large part of the allocated meeting time. Other mapping parties have used significantly more time for this part of the process (Perkins and Dodge, 2008). This left a major portion of the job of uploading to a much smaller group of participants, to be done at a later time. To this date not all data collected seems to have been uploaded. This could be attributed to several reasons such as, lack of time in the upload session, incomplete training, lack of confidence in using OSM tools, the social component missing as encouragement to complete the task. More time on the second phase may have allowed for completion of the entire process while collection was still fresh in the minds of the collectors. For future mapping parties we suggest a few new ideas. To track changes in the local OSM map we would encourage mappers to include a hashtag or code in changeset comments for all data uploaded. While motivating the local community to participate is beyond the scope of most mapping parties it might be useful to target universities, colleges and schools in the local area. Finally we suggest allocating more time to the overall mapping party event.

The lessons from this mapping party are not necessarily transferable to situations such as those OSM mapping activities after a natural disaster such as an earthquake. Our participants used field papers as their only source of map data. In situations such as disaster mapping much of this will be carried out by remotely located OSM contributors tracing imagery from remotely sensed imagery and other Web-based mapping.

#### **4. CONCLUSIONS**

Our paper has described an OSM mapping party which was organised during the FOSS4G Europe 2015 conference in Como, Italy. Overall the mapping party was a success. We feel that we, as the mapping party organisers, gained a lot of experience for running similar mapping parties in future events like this. We were very pleased with the levels of participation. There was a high number of young participants with more women than men participating. We were very pleased with this outcome. Glasze and Perkins (2015) and Stephens (2013) argue that there is a very apparent gender divide in the generation of user-generated representations. As user-generated representations are reproduced and utilized by almost every mobile application or Web-based map there is a risk that the gender divisions in the creators and content are endlessly reproduced.

There were a number of useful lessons learned during the mapping party which are transferable to other mapping parties in OSM. The emphasis of our mapping party was on collecting easily verified information such as names of buildings, house numbers, position of objects such as bus stops and trash cans and so on. This was a successful strategy as about 700 nodes were contributed to the OSM database for Como city. Some of the non-Italian speaking groups encountered local city residents who were curious as to what the groups of people were doing during the mapping party. Due to language difficulties it was not always possible to explain clearly what the mapping party was about. We recommend that future mapping parties prepare some information sheets or cards which mapping party participants can carry and present to curious local residents.

We found that dividing the mapping tasks and data collection into small groups (2-3 people) in each area helped to avoid duplication and allowed the groups to survey opposite sides of the street, survey different geographical features in the same area, etc. The field papers worked particularly well for 2-3 people. The field papers have their advantages and disadvantages. Participants used additional paper to record metadata and other geographic information. Some groups took photographs of information signs, bus stop signs, etc. to assist in extracting high resolution attribute information about objects in the data collection phase. A disadvantage of the field papers was that we almost always needed the person who annotated the field paper to be present during the data upload stage. We recommend that groups should also have a means of recording (smartphone, tablet computer, pen and paper) additional information about the area.

Unfortunately data collection and orientation using field papers was made difficult by the quality of the underlying OSM base mapping for Como in July 2015. Much of the building polygon data and road infrastructure data in the OSM Como database is more than 5 years old. Mapping party leaders decided that the mapping party would make no changes to the polygons representing buildings in

the city as there really needs to be a revision of this data in OSM for Como. The mapping party leaders were concerned about any activity which would upset the local OSM community or disturb work which may have already been in progress. We recommend that mapping party organisers always attempt to gain an understanding of the local OSM community and current initiatives before embarking on mapping party data collection.

Geography students all over the world take part in field surveys as part of their studies. In this respect there are many shared characteristics with a mapping party. The key difference the participants found in their experience of this mapping party was how complex the urban environment can be in terms of surveying and recording attribute information about geographical features. Even in a relatively small city such as Como all participants noted that there was a great deal of geographical information they would like to have recorded but found themselves somewhat limited by the use of field papers and their understanding of what is *acceptable* in OSM's database. The major advantage offered by a mapping party such as this is the opportunity to collect geographic information accurately at street level which is not possible by any other method of survey.

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