

PEBA

The "PEBA - Piano per l'Eliminazione delle Barriere architettoniche" (Plan for the elimination of architectural barriers) is a legislative tool aiming at ensuring full accessibility of urban paths, spaces and buildings for all the people. The local administration of Padua financed the creation of the PEBA of the city, with the brand "Padova + Accessibile" (Padua more accessible). More information at <http://www.comune.padova.it/peba>. The two main criteria for the development of the plan have been a wide participatory vision and the use of open geospatial tools for analysis. OpenStreetMap has been selected as the core tool for mapping accessibility elements.



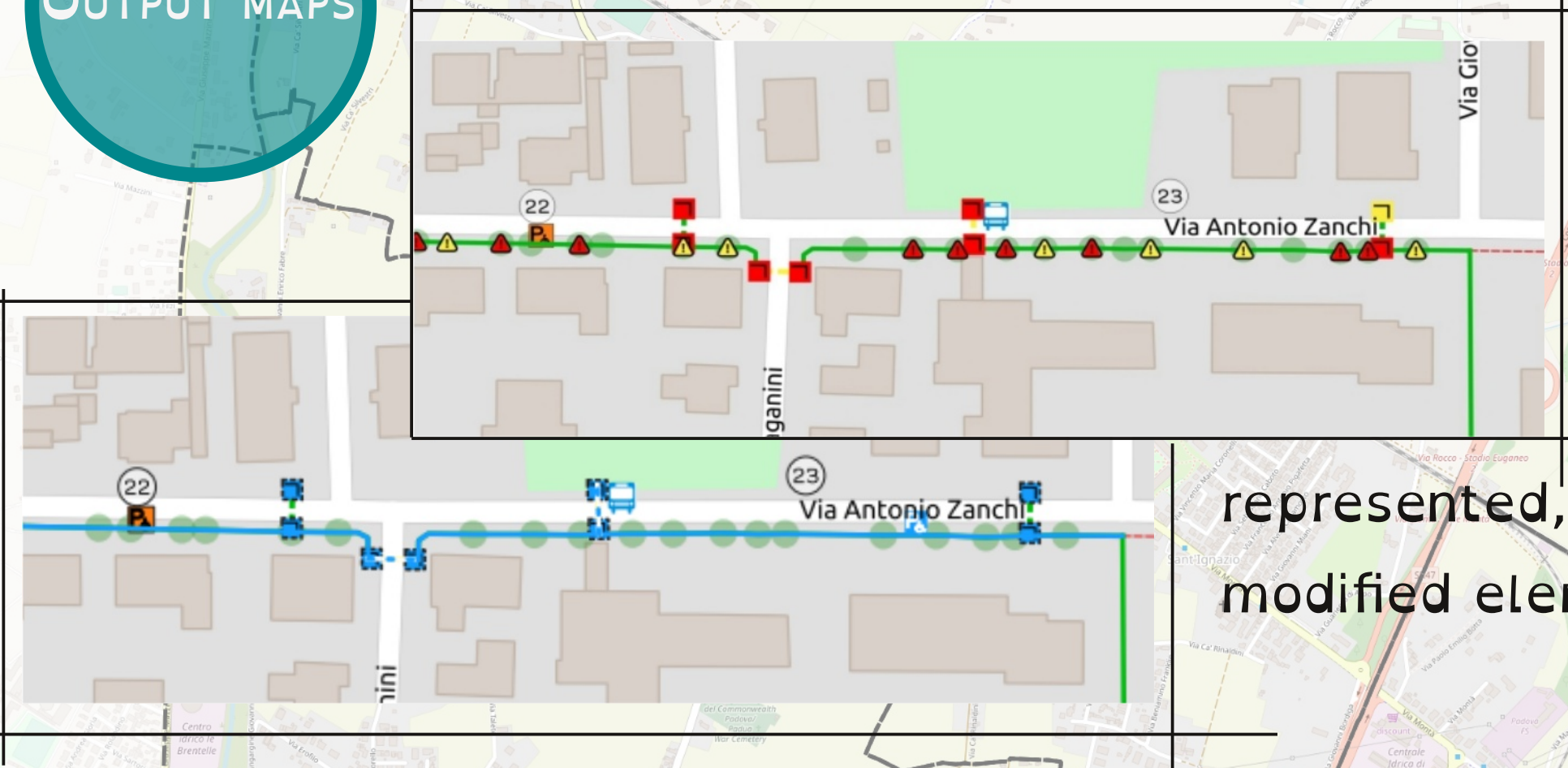
PARTICIPATORY MEETINGS

10 meetings were organised in 10 different locations, corresponding to the 10 sub-departments of the city. The aim was to present the project and collaboratively decide the areas/paths to be mapped and where to assess accessibility during the following mappings events.

MAPPING

10 mapping events were organised with citizens and local organizations both as demonstration and training for the use of mapping tools (FieldPapers, Mapillary, OSMAnd), and for collection of local expertise on accessibility. Then expert mappers finalized the collection in information and the upload on OpenStreetMap.

OUTPUT MAPS



Data from OSM has been automatically categorised in several accessibility classes, in accordance with the national and regional legislation. Two different types of maps have been produced: **current status**, with footways, crossings, kerbs and obstacles represented, and **project status**, with modified elements included in the plan.



Various open tools have been used: *FieldPapers* during mapping events; *OsmAnd* during technical mapping; *Mapillary* for collection of street-level pictures; *JOSM* for editing OpenStreetMap data; *QGIS* for the production of final cartographic maps of the official plan.



# Planning Urban accessibility with OpenStreetMap



Alessandro Sarretta, Rachele Amerini, Elena De Toni  
for contacts: [alessandro.sarretta@gmail.com](mailto:alessandro.sarretta@gmail.com)

Key	Values	Description
<b>smoothness</b>	good intermediate bad	State of the paving
<b>width</b>	<number> m	Width of the footway/path in metres. Between the number and the unit of measure there should be a space.
<b>incline</b>	<number>%	Slope of the footway/path in %. Between the number and the symbol % there should be no space.
<b>incline:across</b>	<number>%	Cross slope of the footway/path in %.
<b>height</b>	<number> m	Difference in height of the sidewalk from the driveway surface.
<b>lit</b>	yes/no	Presence of lighting

TAGGING SCHEME

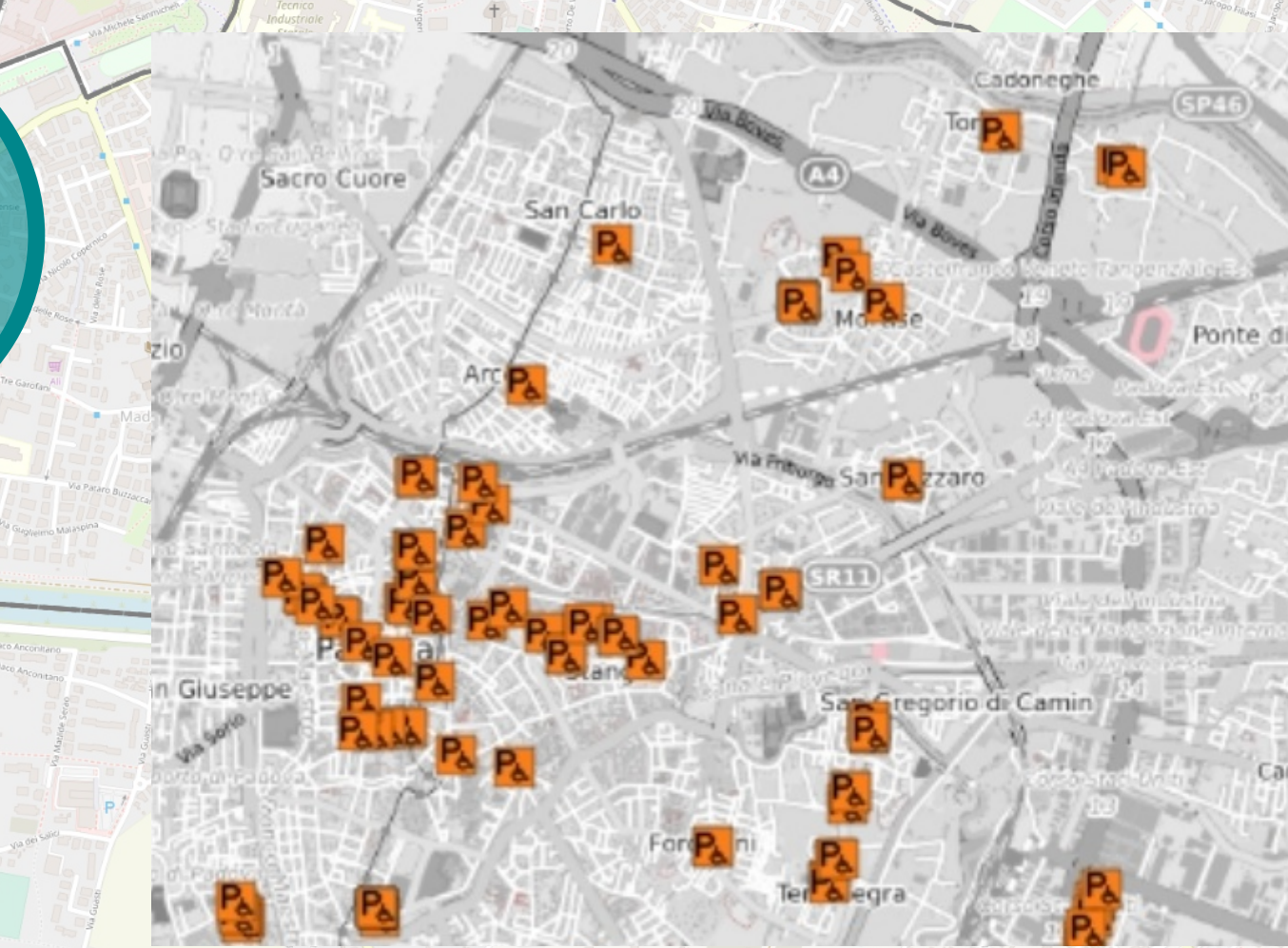
Key	Values	Description
<b>kerb</b>	flush lowered raised	No apparent transition (~0 cm) There's a kerb <2 cm There's a kerb >2 cm
<b>kerb:height</b>	<number> m	Height of the kerb in m.
<b>tactile_paving</b>	yes/no primitive	Presence of tactile paving at the intersection. Presence of decorative tactile elements that can be used for orientation accidentally, but no typical tactile ground elements.
<b>traffic_signals:sound</b>	yes/no	Presence of sound signals helping to cross
<b>lit</b>	yes/no	Presence of lighting

Key	Values	Description
<b>obstacle</b> (obstacle:description)	pole planter tree drain	Type of obstacle narrowing of making difficult to pass.
<b>obstacle:foot</b> <b>obstacle:wheelchair</b> <b>obstacle:blind</b>	yes/no/limited	Describes whether the obstacle is specific to a vehicle or usage.
<b>width</b>	<number> m	Width of the footway/path in metres in the point/area where the obstacle is present.
<b>height</b>	<number> m	Height of the obstacle from ground (in case e.g. of traffic sign).

Key	Values	Description
<b>amenity</b>	<a href="#">parking_space</a>	A single parking space on a parking lot
<b>disabled</b>	<a href="#">designated</a>	Defines the specific designation for people with disabilities

PARKING SPACES

During the activities of the PEBA, a short guide on how to map parkings for people with disabilities was produced and then shared and promoted to a few associations working on disabilities. In 4 months the number of these parking spaces increased from 0 to ~140, allowing the production of a dynamic map that is being continuously updated.



- 10 meetings with citizens and associations
- 66 invited associations
- 40 km of footways/paths mapped
- 137 disabled designated parking spaces
- 370 geolocated +reports
- 229 obstacles observed
- 1.5 km of non-accessible sidewalks
- 17 km of sidewalks with limited accessibility

- 1000 kerbs mapped
- 400 crossings mapped
- 31% inaccessible kerbs
- 10000 images uploaded in Mapillary
- 60000 €/km costs estimated
- 155 buildings assessed
- 12 recurring situations
- 37 standard intervention typologies

PEBA IN NUMBERS

CONCLUSIONS

The PEBA (Plan for the elimination of architectural barriers) of the city of Padua has been the first example in Italy of the direct use of OpenStreetMap as main tool to collect information and derive decisions for the characterization of accessibility of public areas and paths. In the area of Padua, data in OSM have been improved in relation to information on accessibility of public areas and path, especially for disabled people; in addition to this, through the involvement of citizens and local organizations, the use of open source technology and the revision and application of a tagging scheme for OpenStreetMap, accessibility information will be easily updated and extended in the future.

**CREDITS**  
The local administration of Padua (Comune di Padova) funded the realization of the PEBA, including participatory meetings and mapping events and activities (contact person arch. Alberto Marescotti). Wikimedia Italia provided free patronage for mapping events; various Wikimedia Italia volunteers contributed to the mapping and editing activities. Image "Padova+accessibile" by arch. Alberto Marescotti. Font OpenDyslexic ©. Background image ©OpenStreetMap contributors. Project manager Elena De Toni.

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