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## **Toward a more Liveable and Accessible Cycle Path Network in Padova: A Participatory Mapping Process**

RealCORP - 23<sup>rd</sup> International Conference on Urban Planning  
and Regional Development in the Information Society  
*Expanding cities – Diminishing space*

4-6 April, 2018    TU Wien, Austria



# PISTE *ri*CICLABILI



Piste riCiclabili is a participatory mapping project born in 2016 and still underway, funded by the University of Padova and led by the Department of Civil, Environmental and Architectural Engineering (ICEA), with the collaboration of the professional master in "GIScience and Unmanned System for the integrated management of territory and natural resources".

The project aims at the following goals: a participatory mapping of critical issues and attributes of the urban cycle path network of the city of Padova and the implementation of an open source geoportal for collecting and sharing georeferenced reports.

University students are a central element of this project, but participation is open to anyone on a voluntary basis.

# Events 2017

padova

PISTE riCICLABILI

CEA GIScience

## venetoniaight

29.09.2017

la notte europea dei ricercatori

Mappatura partecipativa di Esposizione dati spaziali  
Dalle 17.00 alle 24.00  
di fronte al Palazzo del Duca, strada DICCA

BICICLETATA  
Bicicinema Festival  
Sab 07.10.2017 - Piazza della stazione,  
Fond. Museo - Ore 18.00

### Bicicinema

Proiettare un futuro diverso

PADOVA 6 • 7 • 8 OTTOBRE 2017



# How are data collected?

The project uses are two ways of mapping:



1. Guided mapping on printed municipality maps during public participatory events



2. Digital mapping via smartphone app geoODK Collect and via web through Jotform platform

# How are data collected?



**Paper mapping**

**VS**

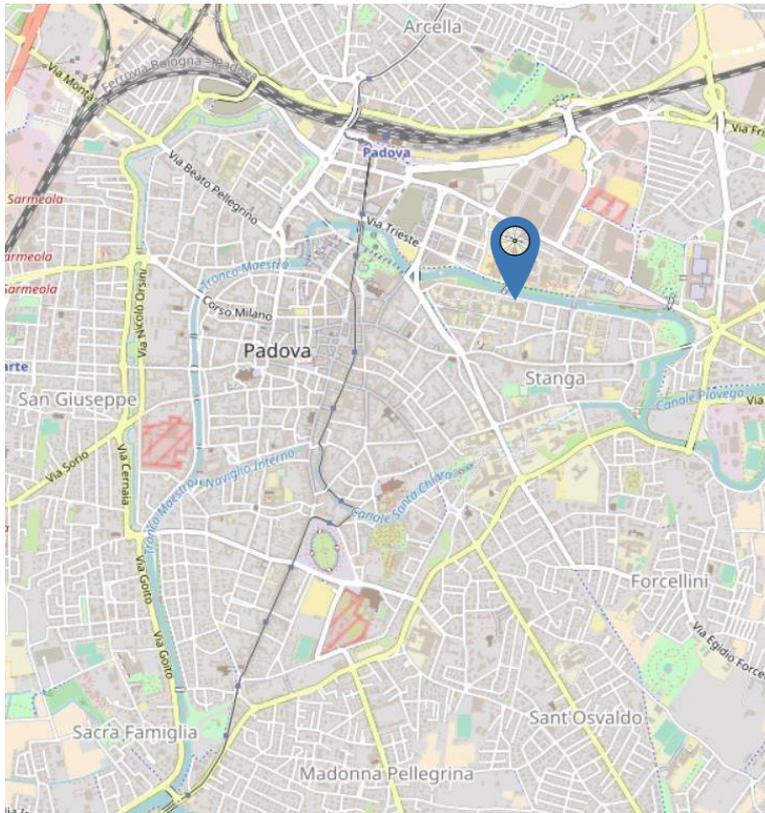
**digital mapping**

**Pros and cons:**

- Involvement / Accessibility
- Support material production
- Commitment in data collecting
- Commitment in data processing
- Data accuracy
- Amount of associated information

# What are the data collected?

## POSITION

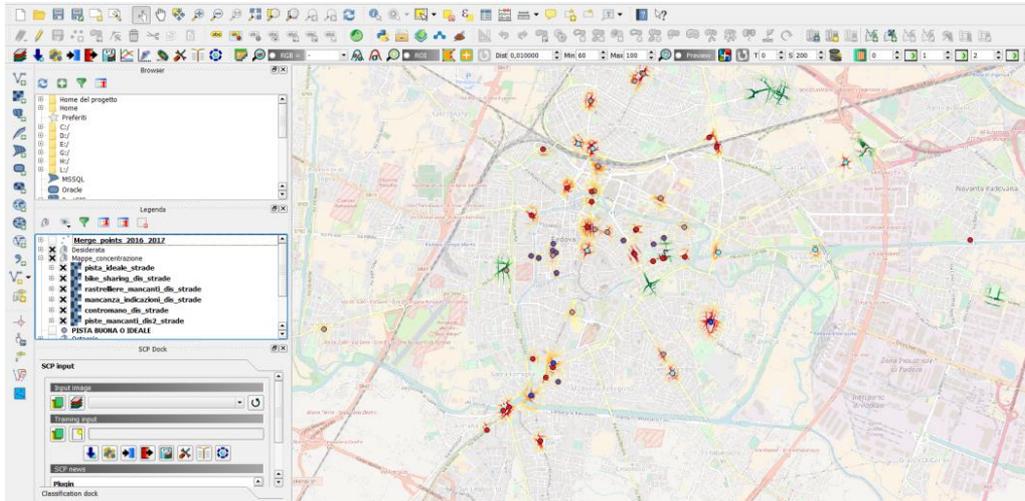


## ISSUE CATEGORY

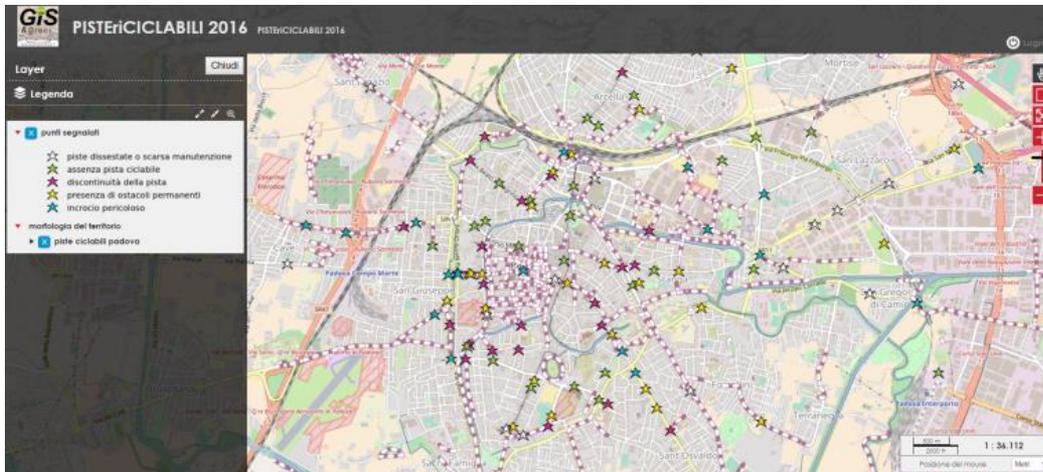
- MOBILE OBSTACLE
- FIXED OBSTACLE
- DISMAL CYCLE PATH
- DISCONTINUED CYCLE PATH
- DANGEROUS CYCLE PATH
- MISSING CYCLE PATH
- MISSING BIKE RACKS
- LACK OF ADEQUATE INDICATIONS
- BIKE SHARING STATION NEEDED
- POSSIBILITY TO GO THROUGH THE OTHER DIRECTION NEEDED
- GOOD OR IDEAL CYCLE PATH

# How are collected data used?

## GIS processing



## webGIS publishing



# Tools used

## Data collection



ODK allows to:

- A) **Build** a data collecting form
- B) **Collect** data on a mobile device and send them on a server
- C) **Aggregate** collected data and convert them in other formats

### A) ODK Build



### B) GeoODK Collect



### C) ODK Aggregate



## Data processing

## Csv format

## Notepad

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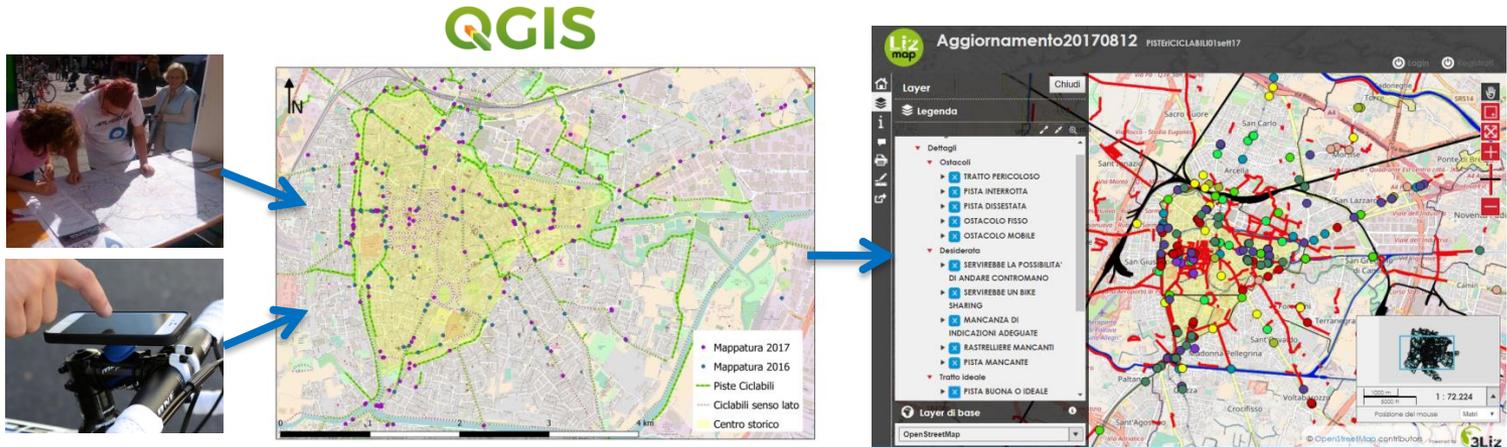
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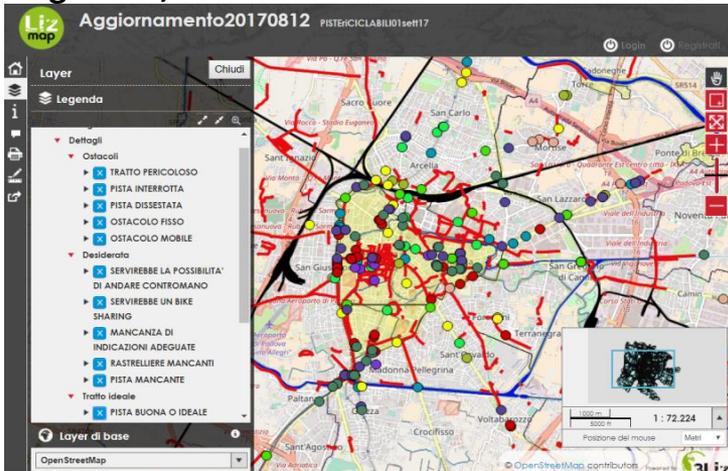
# Tools used

## WebGIS publishing

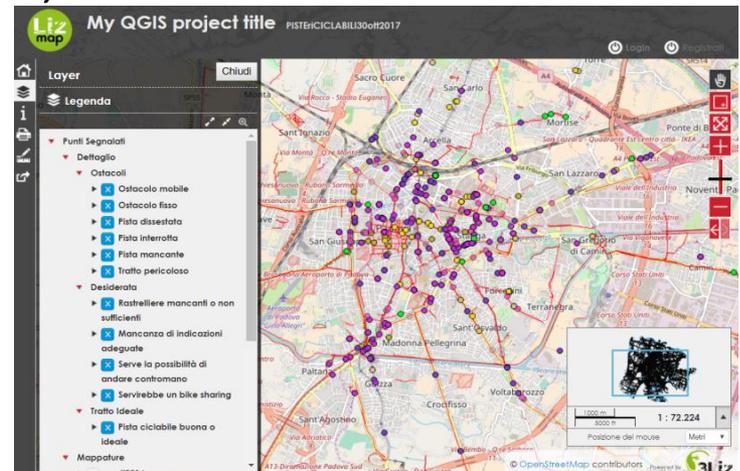
Collected data are processed and styled in QGIS, then published on web and periodically updated through the Lizmap open source platform



August 12, 2017

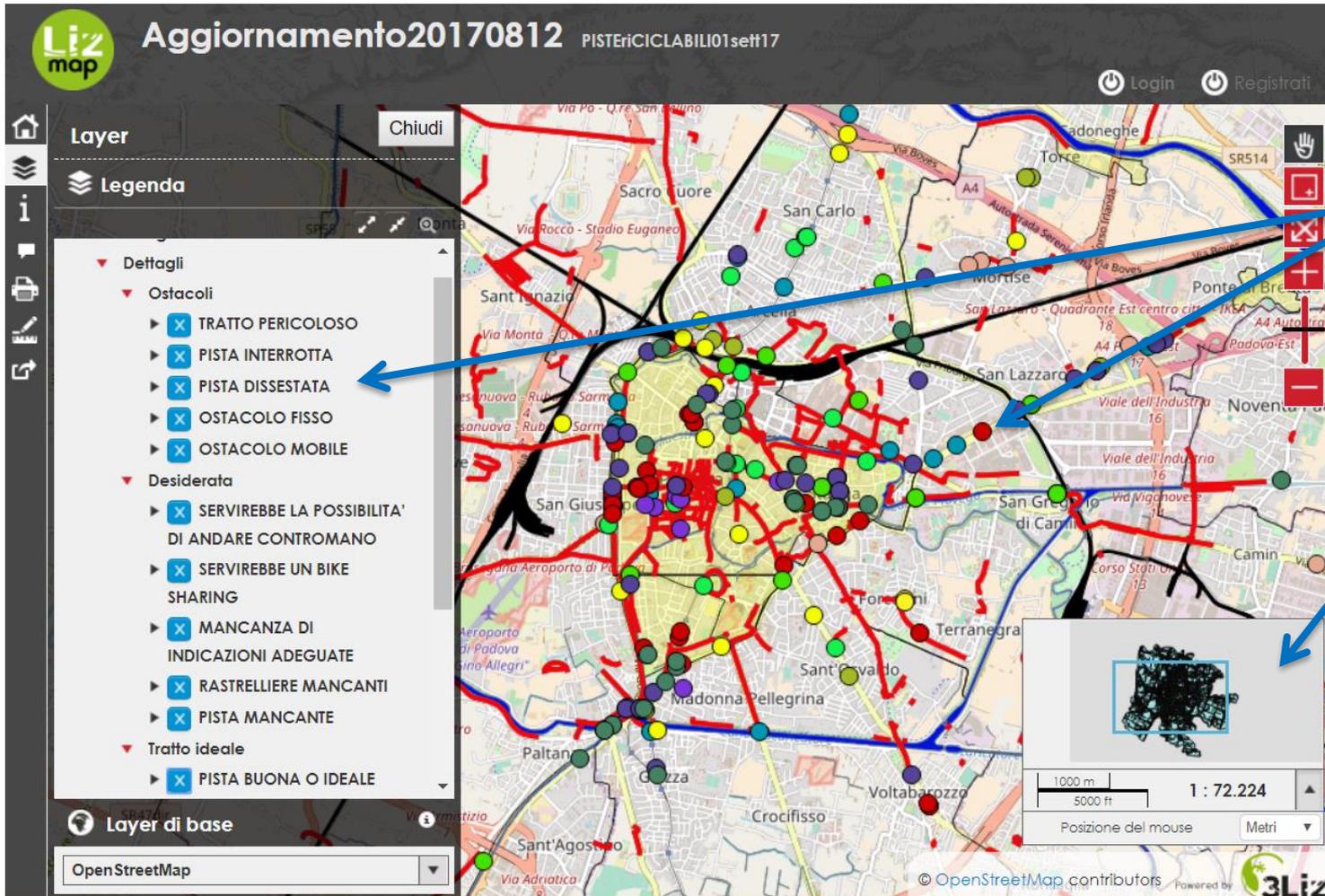


October 30, 2017



# Tools used

## WebGIS publishing



Categories

Key plan



# Tools used

## WebGIS publishing

Popup

Chiudi

**OSTACOLO FISSO**

**Campo**

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maptip	username

## Popup

Liz map

Aggiornamento20170812 PISTERICICLABILI01seff17

Login Registrati

1000 m 5000 ft 1 : 72.224

Posizione del mouse Metri

© OpenStreetMap contributors Powered by Liz

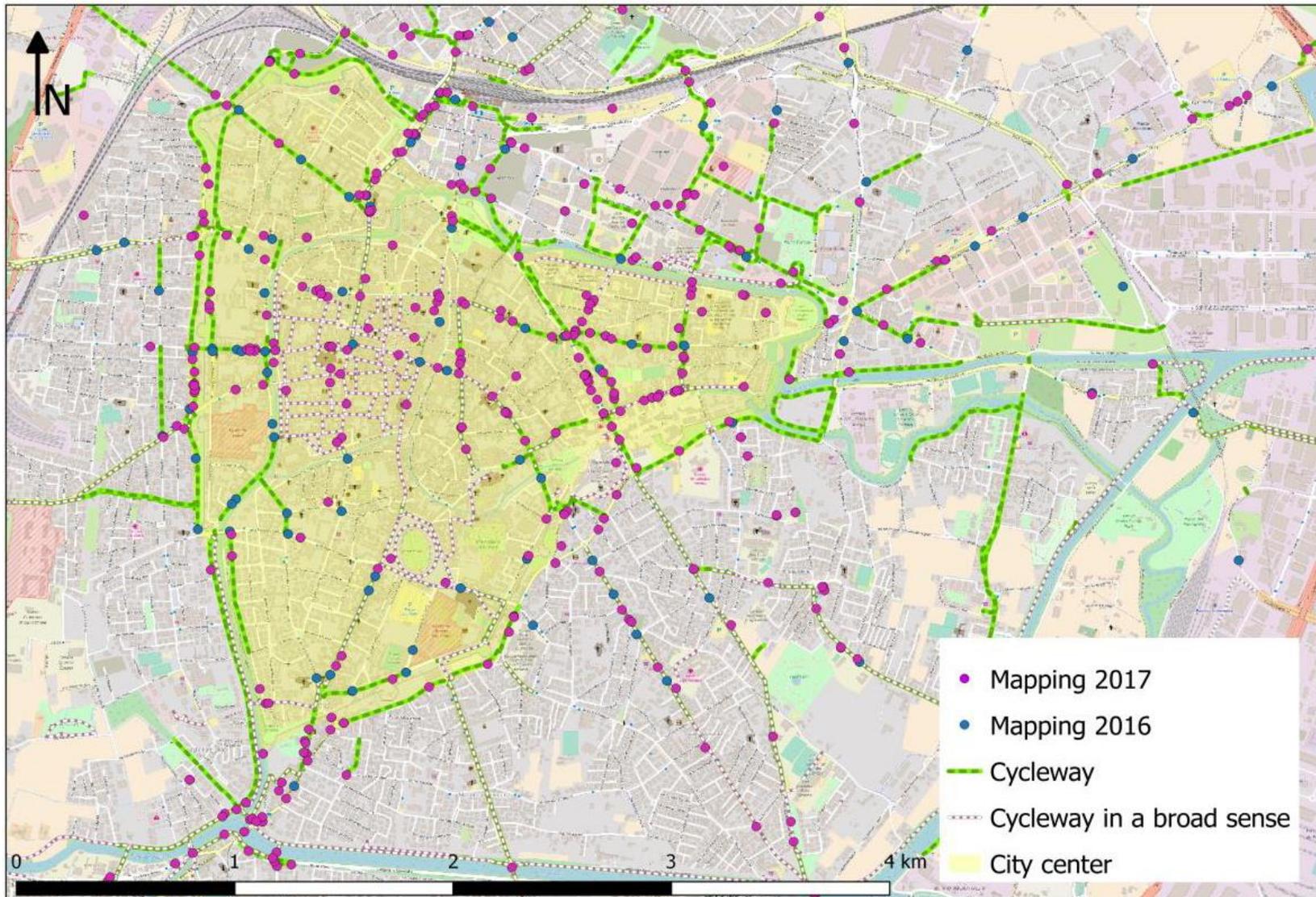


# Data collected

# Total reports

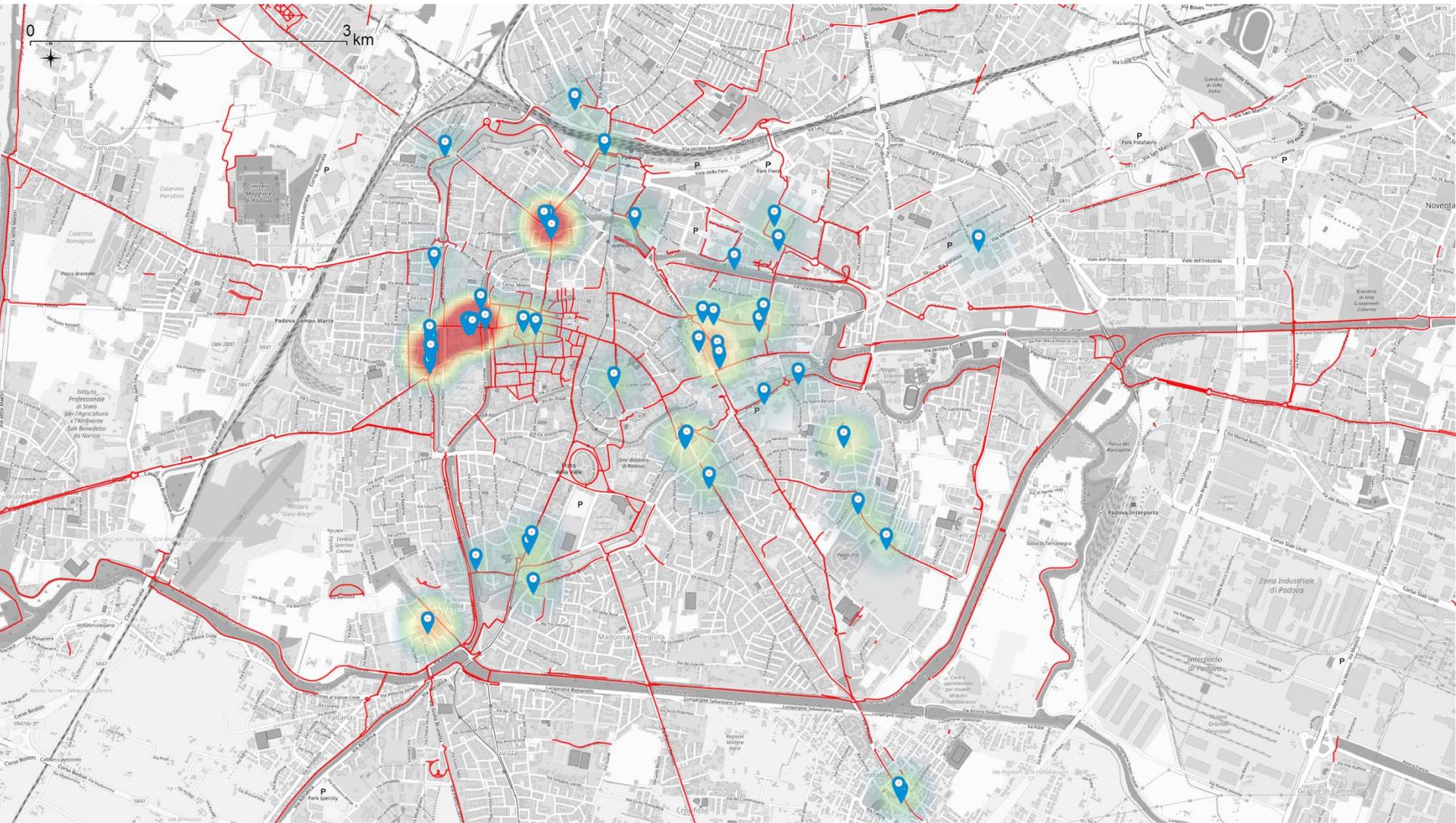
2016 Mapping = 116

2017 Mapping = 682



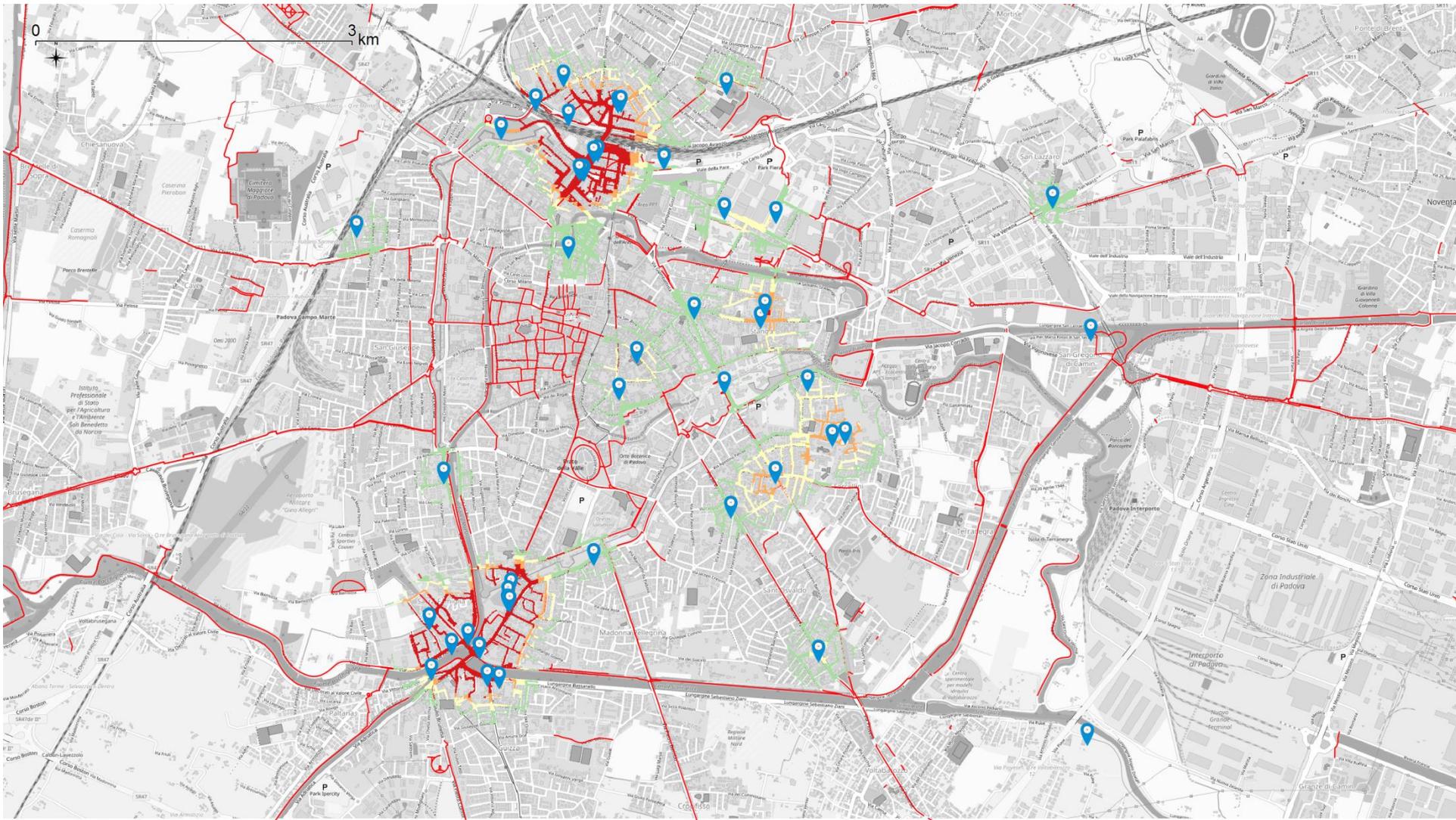
# Obstacles

Issue: **MOBILE OBSTACLE** 71 reports



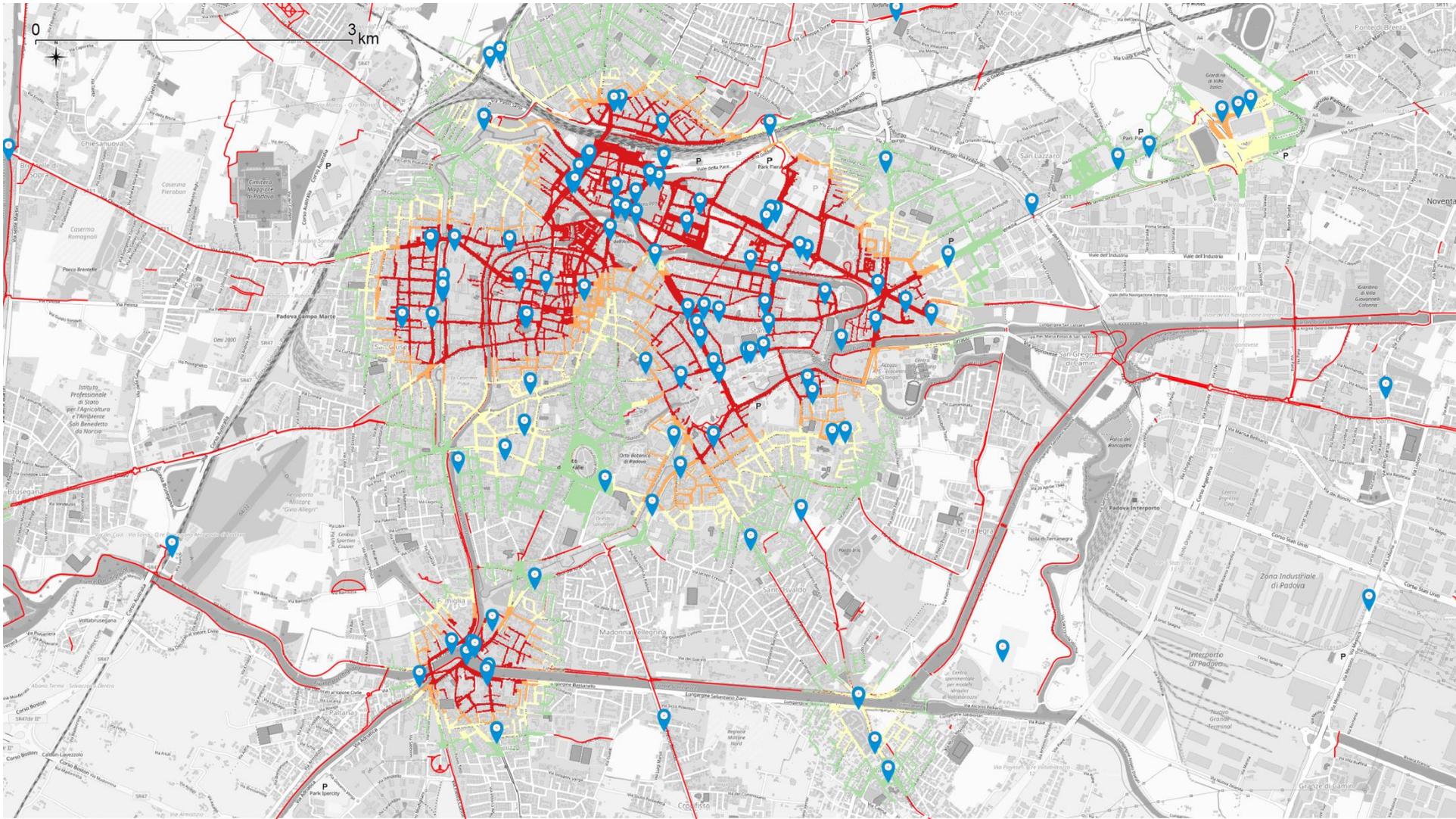
# Obstacles

Issue: **FIXED OBSTACLE** 57 reports



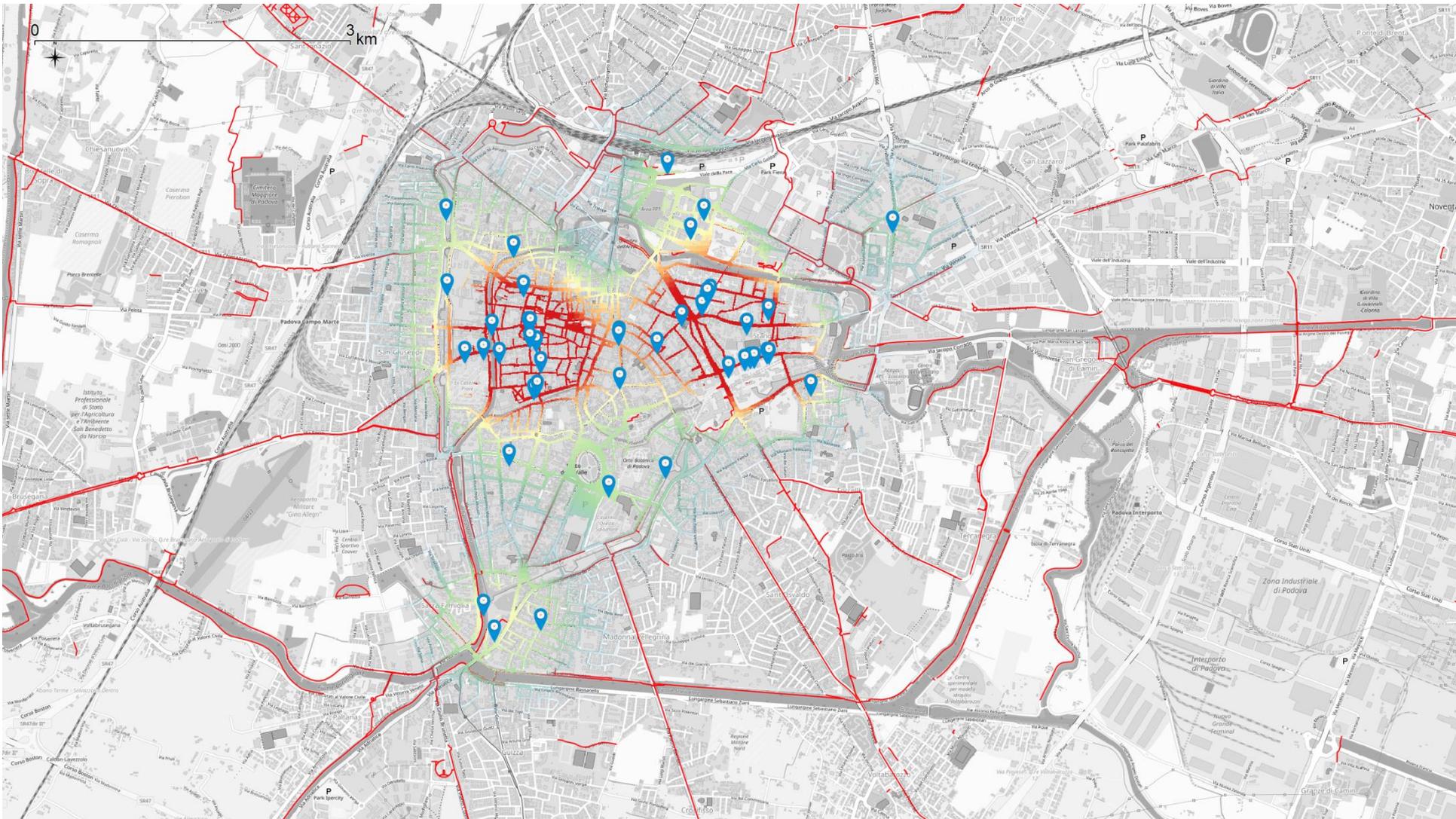
# Obstacles

Issue: **DANGEROUS CYCLE PATH** 138 reports



# Desiderata

**Issue: POSSIBILITY TO GO THROUGH THE OTHER DIRECTION**  
**NEEDED 47 reports**



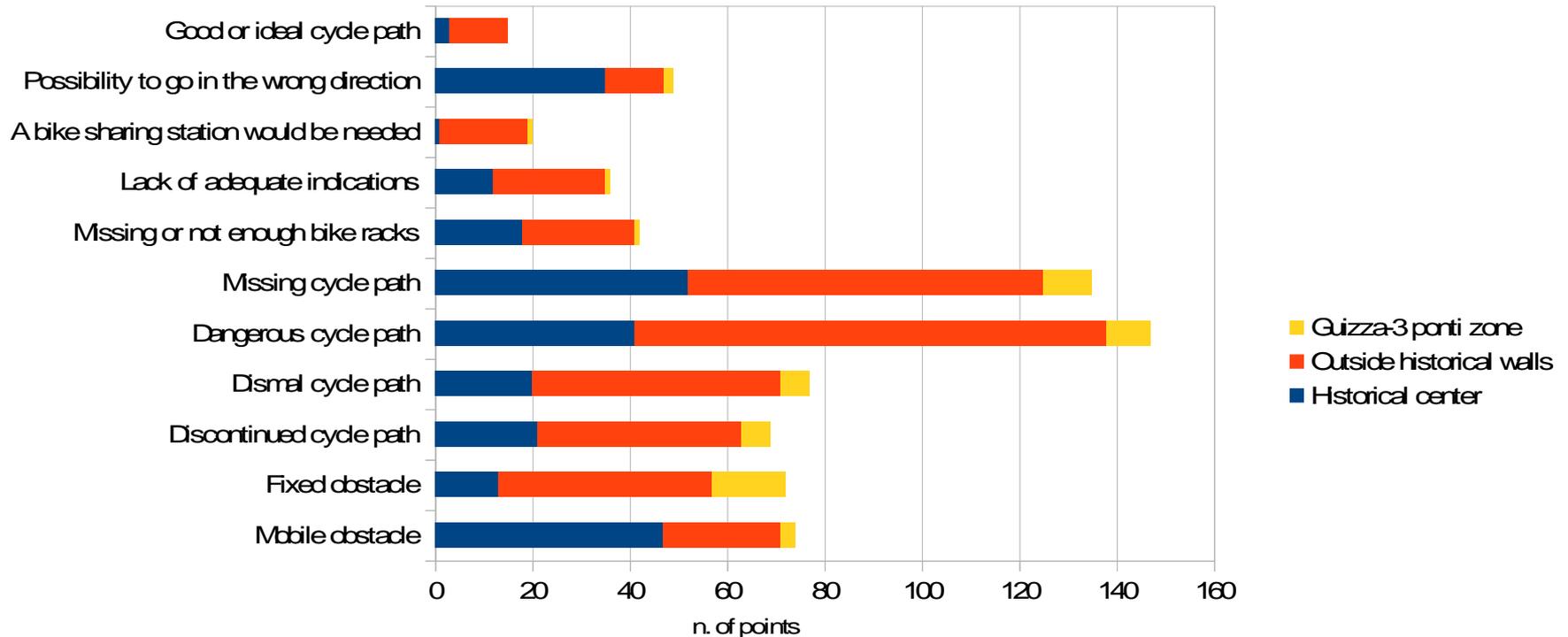
# Results

Number of points divided by attribute categories collected during 2016 and 2017

Attributes	Points mapped 2017	Points mapped 2016
Mobile obstacle on the cycle path	71	50
Fixed obstacle on/close to the cycle path	57	
Discontinued cycle path	63	
Dismal cycle path	71	15
Dangerous cycle path	138	20
Missing cycle path	125	31
Missing or not enough bike racks	41	
Lack of adequate indications	35	
A bike sharing station would be needed	19	
It would be needed the possibility to go in the wrong direction	47	
Good or ideal cycle path	15	
Total	682	116

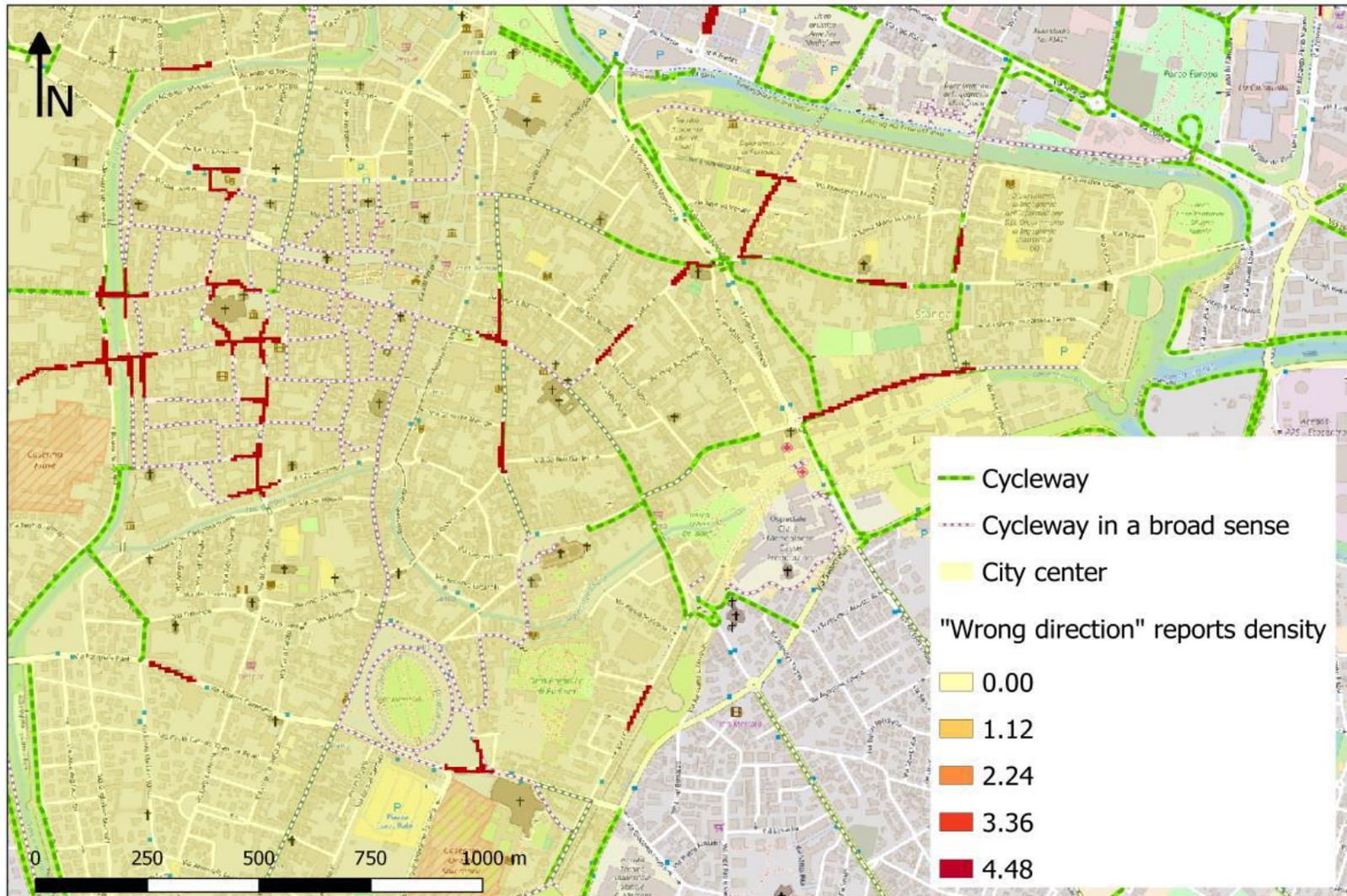
# Results

Distribution of the mapped points (in x-axis the number of points, in y-axis the different attribute categories) inside (blue) or outside (red) of the historical centre of Padova, collected during 2017.



# Results

Density map of points related to the attribute “It would be needed the possibility to go in the wrong direction”.



# Conclusions

In conclusion the project has showed a good participation by students and citizens and the data collected allowed the creation of a precious database. Over **600 georeferenced reports** represent a good base to perform spatial analysis with the aim to localize the priority intervention areas.

On this point, also the public administration have showed an interest to undertake a collaboration. Indeed, there have been several moments of collaboration with the municipality, and in particular with the bicycle office, for the promotion of the project.

The whole data collected have been shared with the contributors, the institutions and any other interested party through a webgis based on the Lizmap platform, available from the project webpage.

*Thank you for listening*

Guglielmo Pristeri  
guglielmo.pristeri@unipd.it

