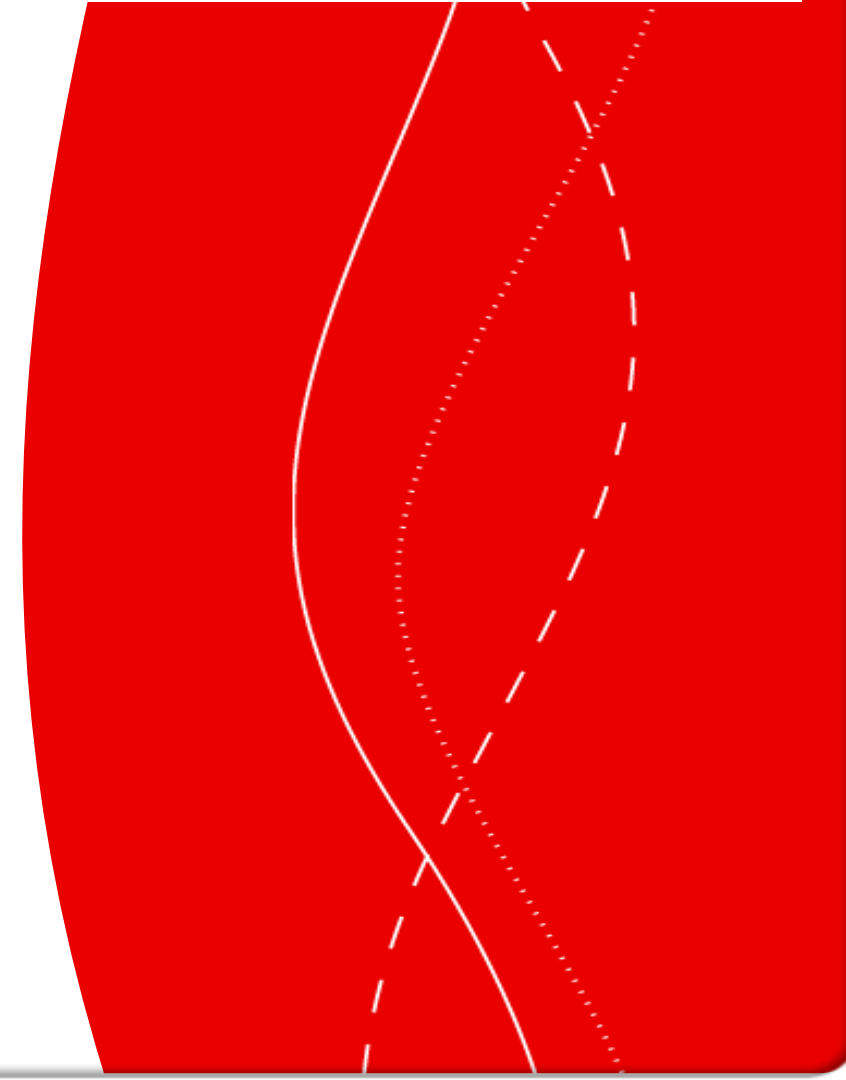




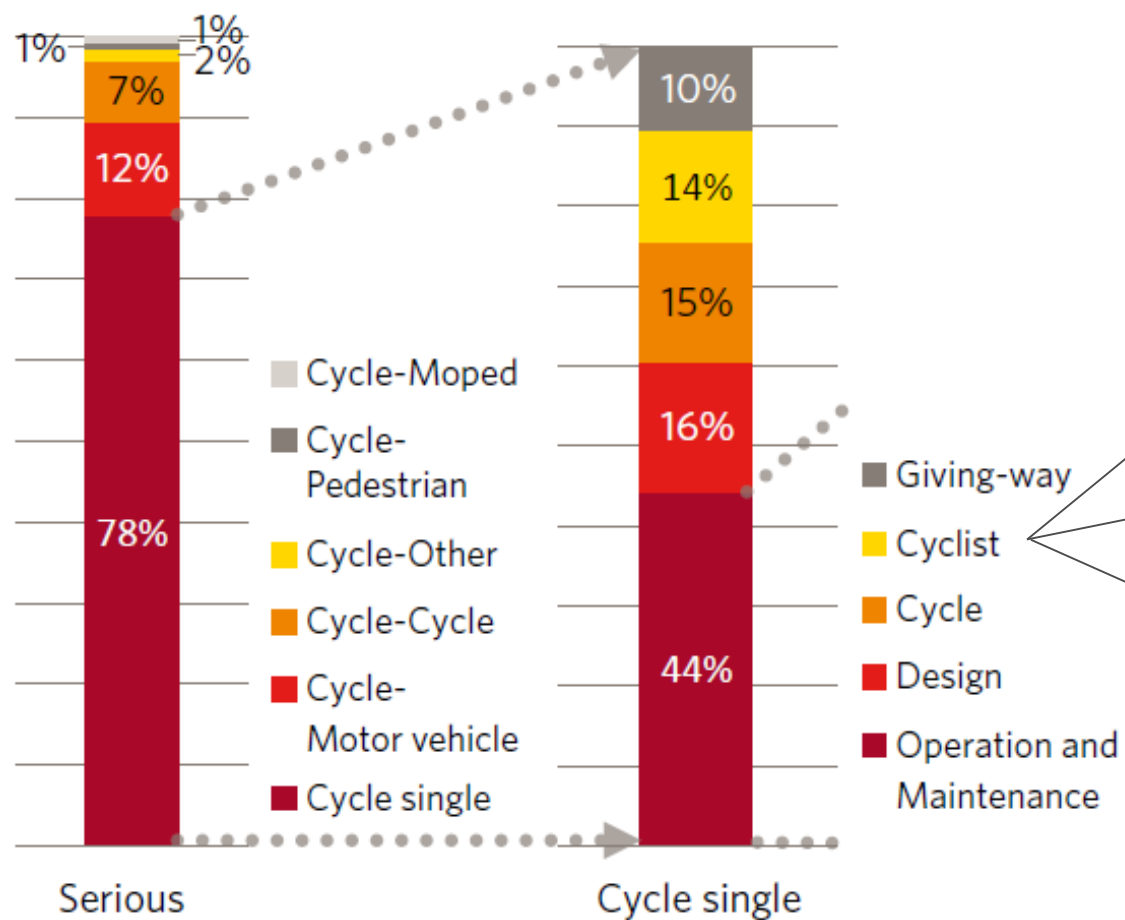
Cyclists' speed – field observation and measurements

Jenny Eriksson, Anna Niska, Susanne Gustafsson, Gunilla
Sörensen

ICSC 2018, Barcelona

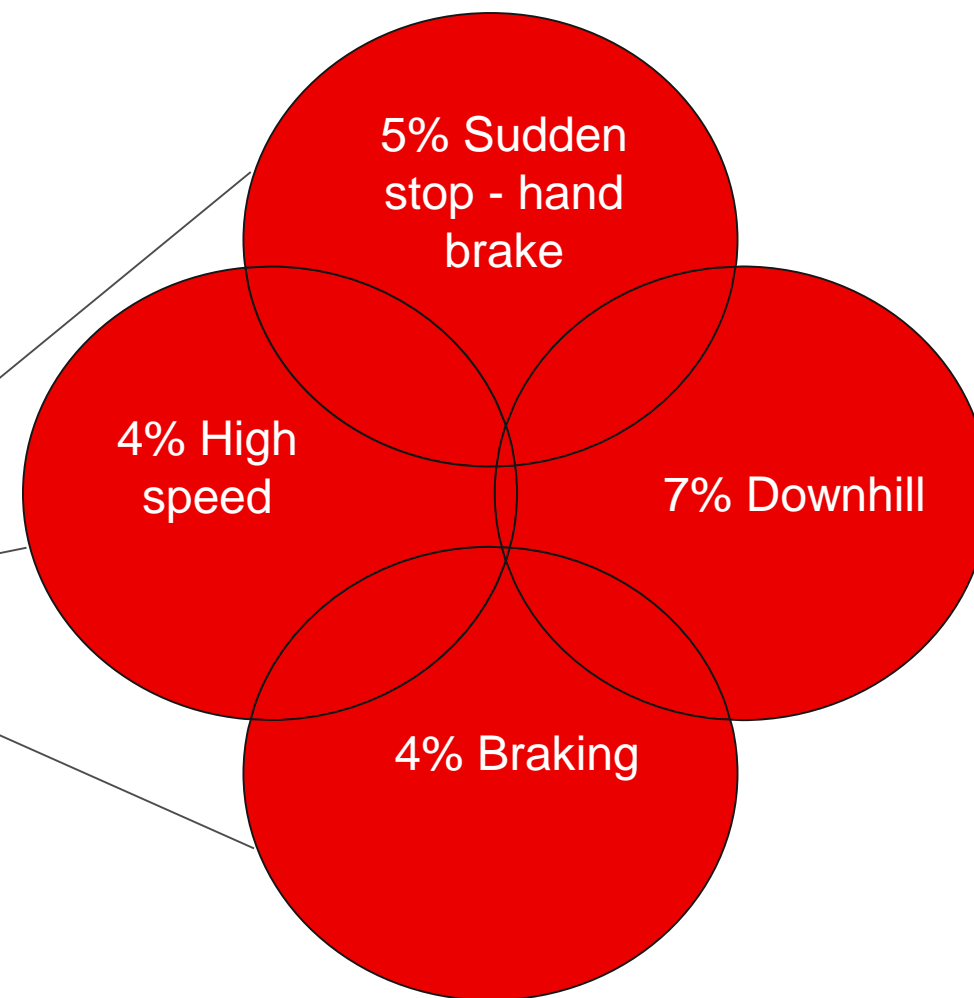


Background



Source: VTI report 801 (2013).

Seriously injured person: >1% medical impairment



Note that each single cycle accident can have several causes

Aim

The aim of this study is to enhance the understanding of cyclists' speeds.

Limitation: Only pedestrian and cycle paths



Material and method

Data from existing measurements: 17 sites (3 Municipalities)
10 from Stockholm, 6 from Linköping and 1 from Eskilstuna
Problems! Mostly collect flows. Speed aggregated by hour.

New measurements: 5 sites (2 the same as the existing)
1 in Stockholm, 4 in Linköping
Individual level, 1-10 days

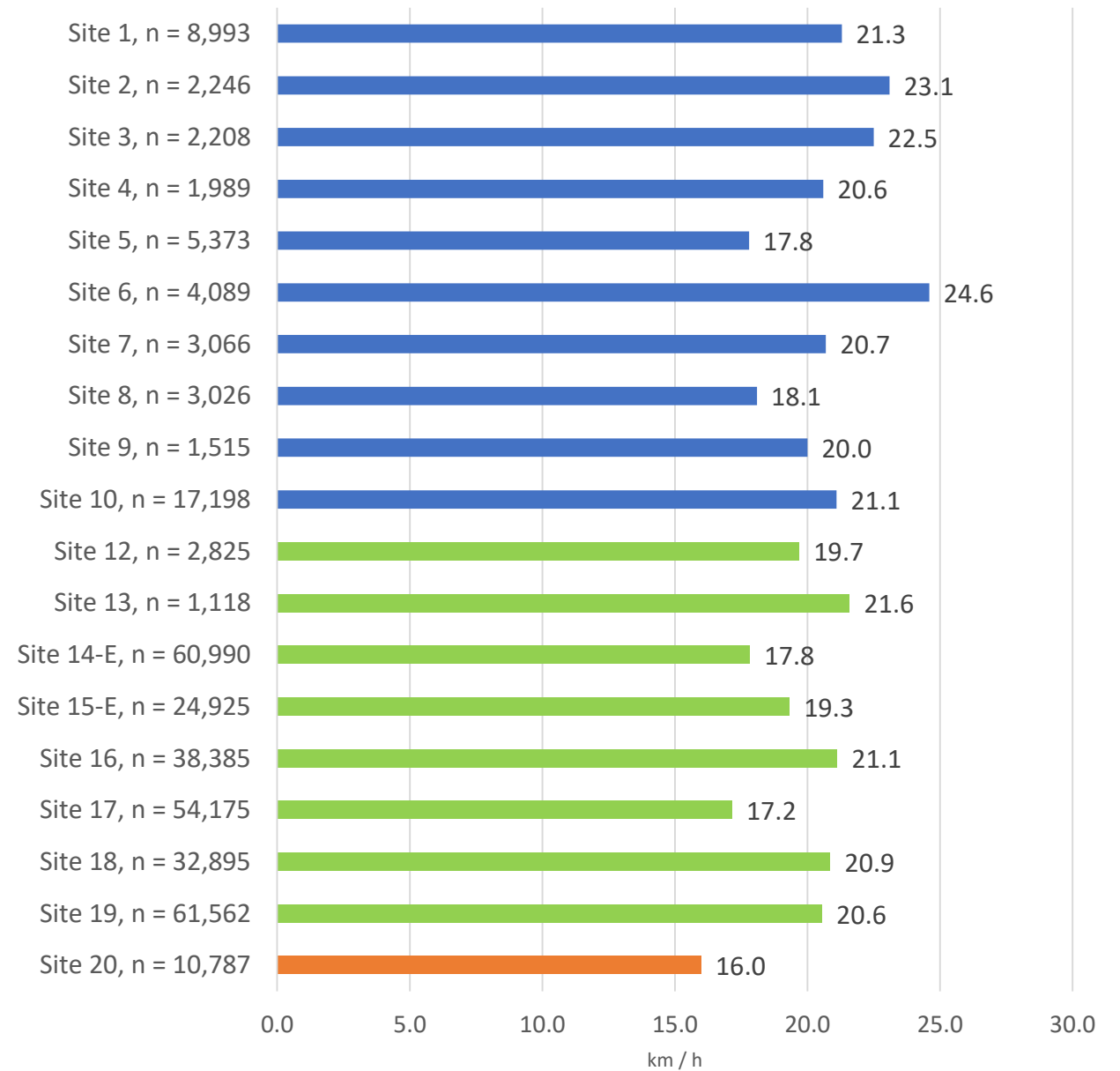
Observation study: same sites as the new measurements
2-4 occasions, ~1 hour

Average speed

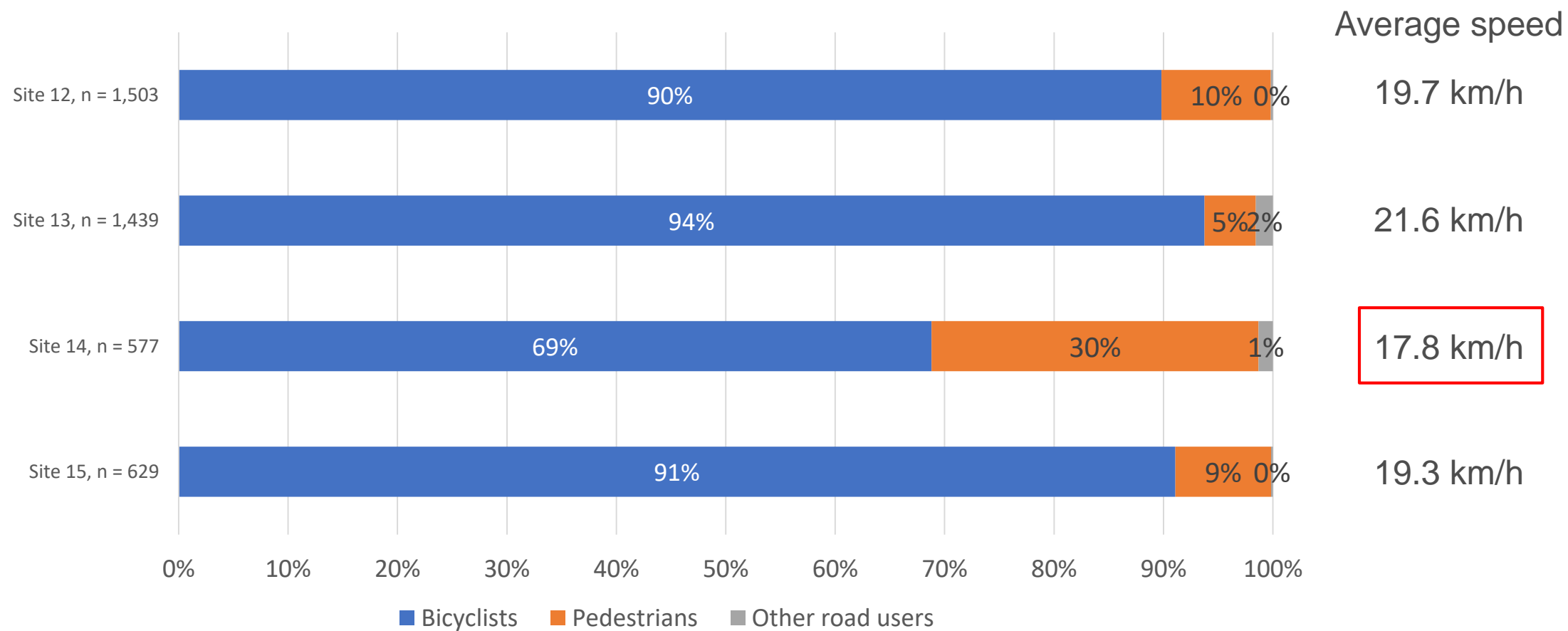
Blue bars= Stockholm

Green bars= Linköping

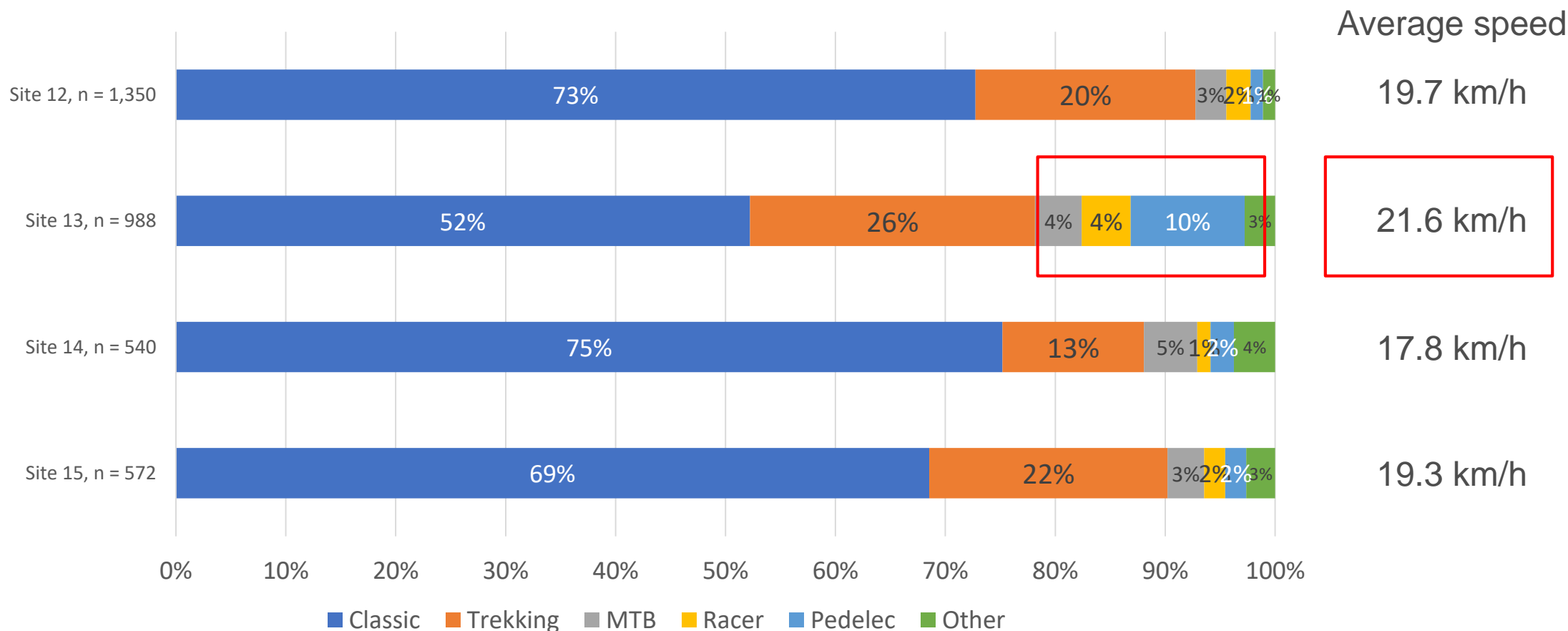
Orange bar= Eskilstuna



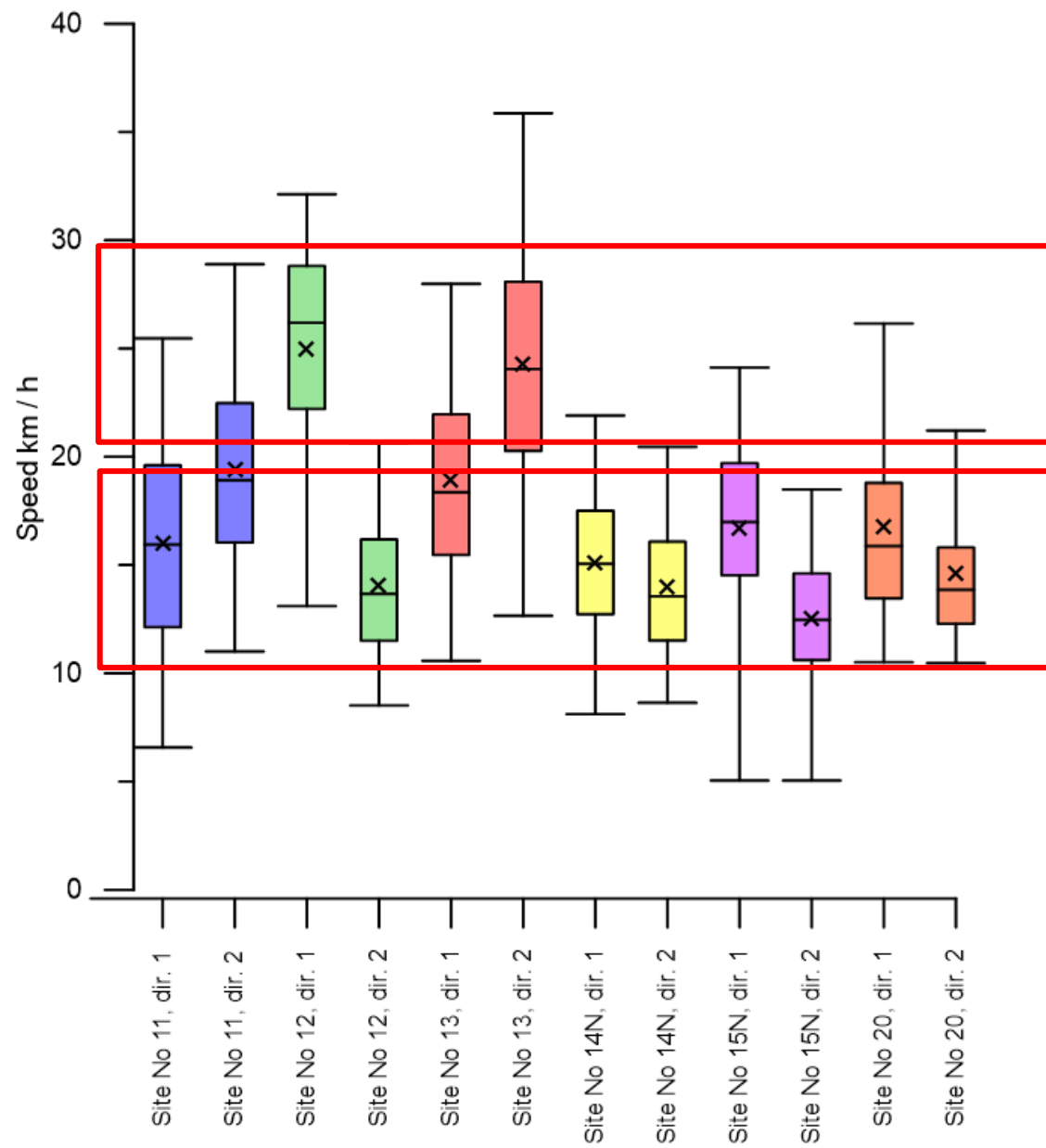
High pedestrian flow - lower speed



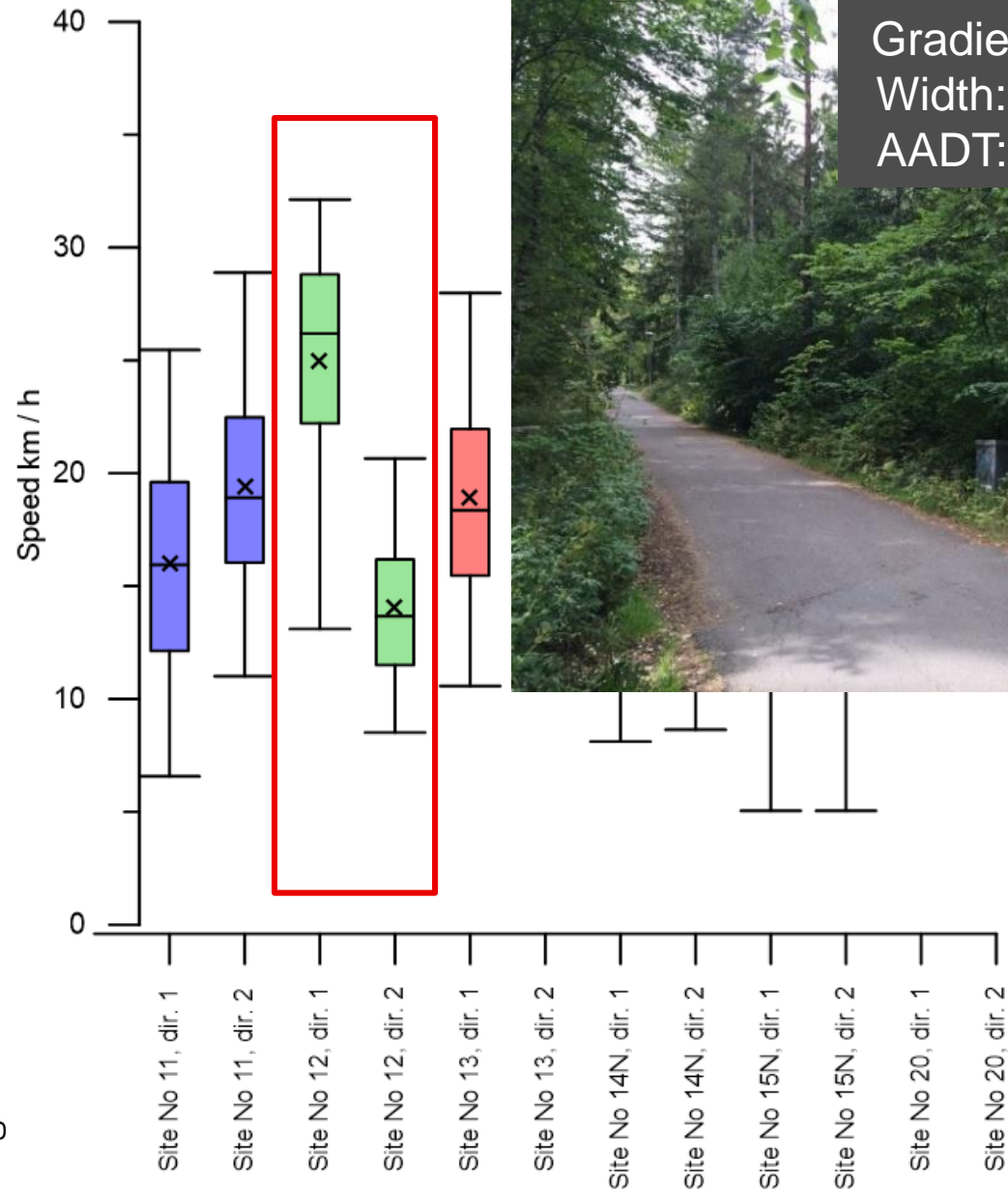
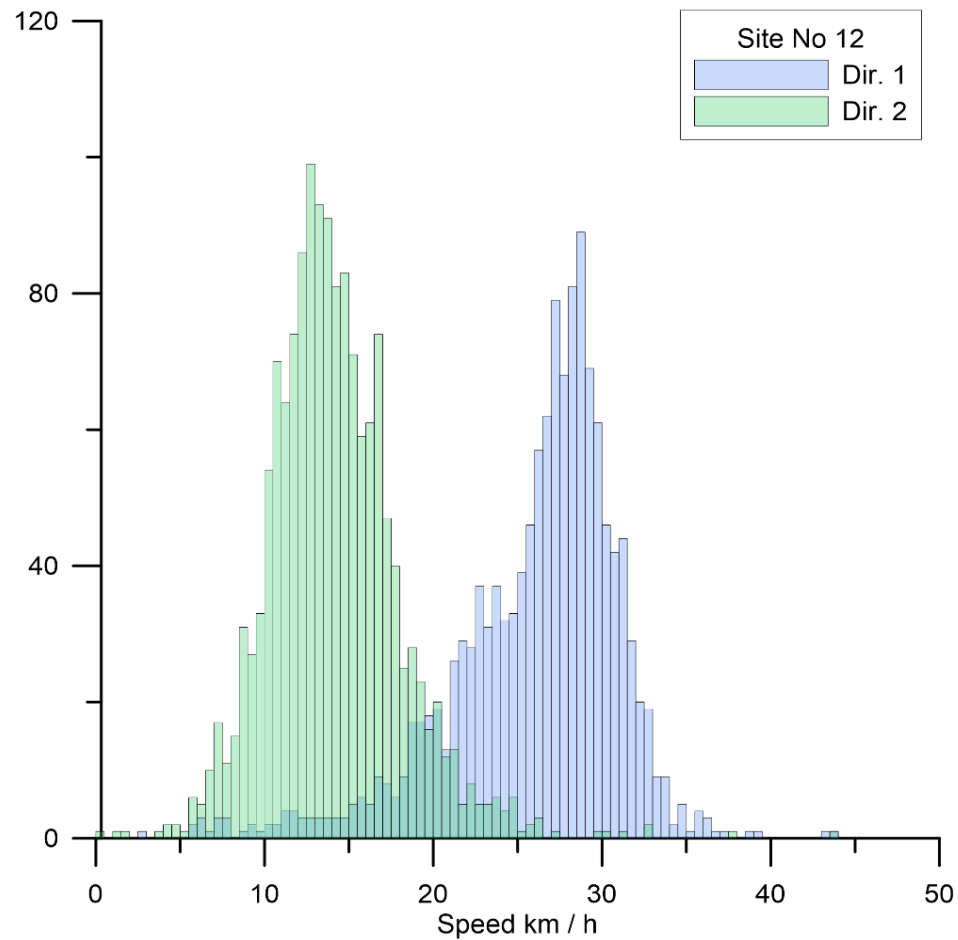
More racers /pedelecs - higher speed



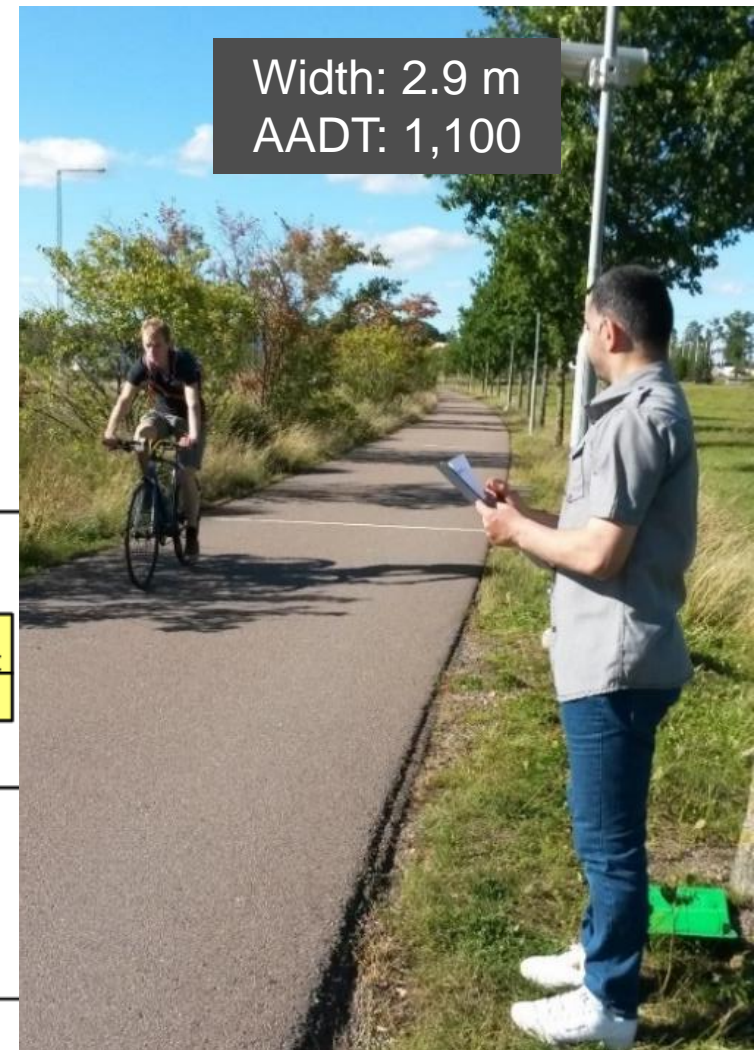
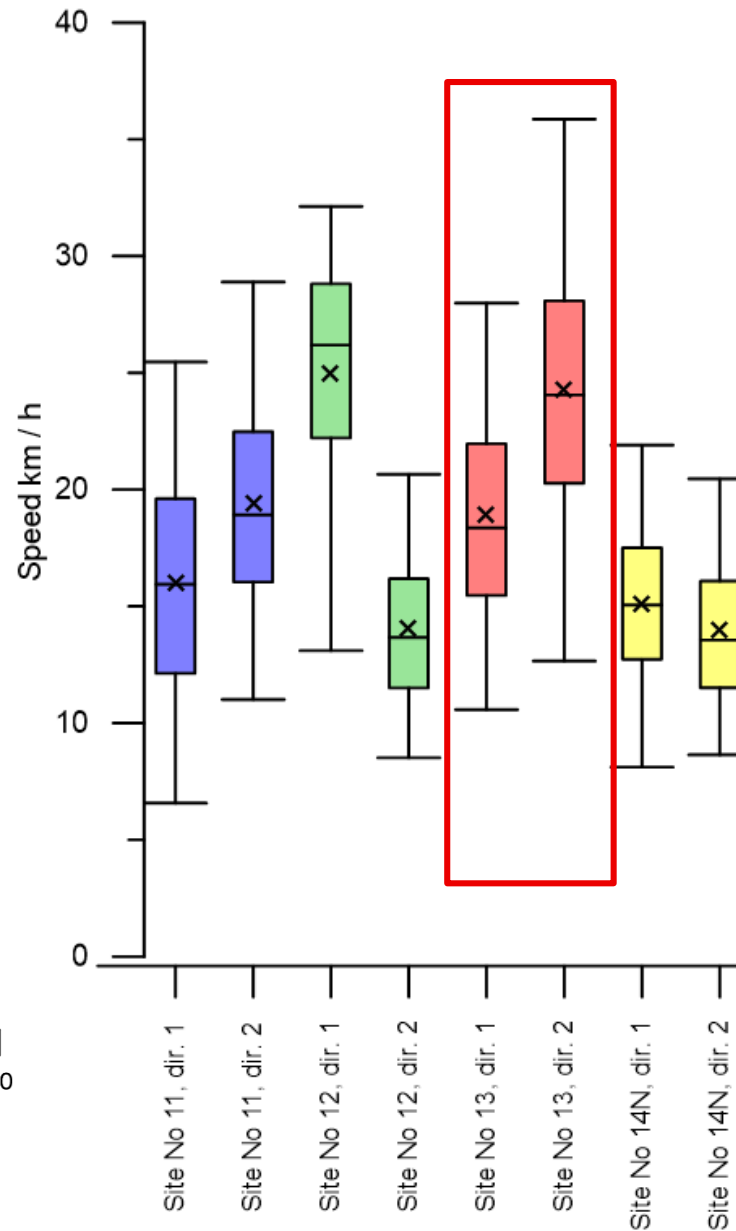
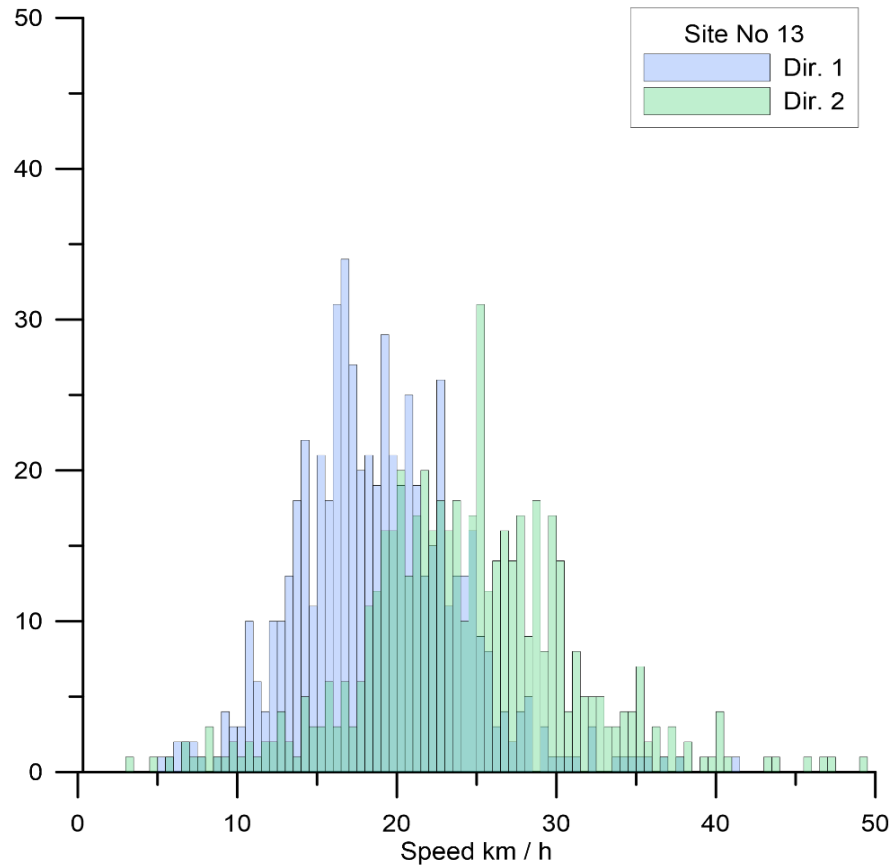
Boxplot



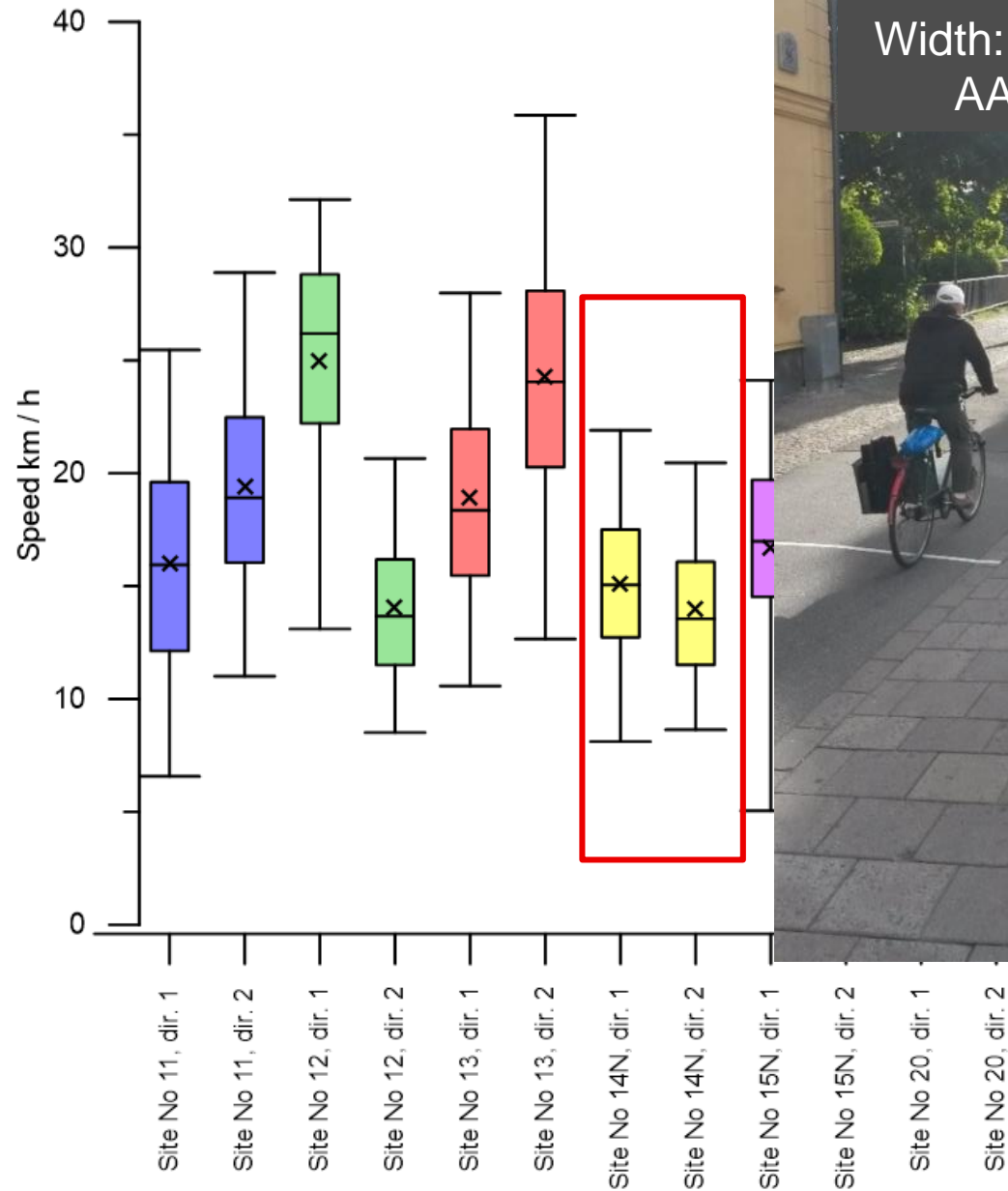
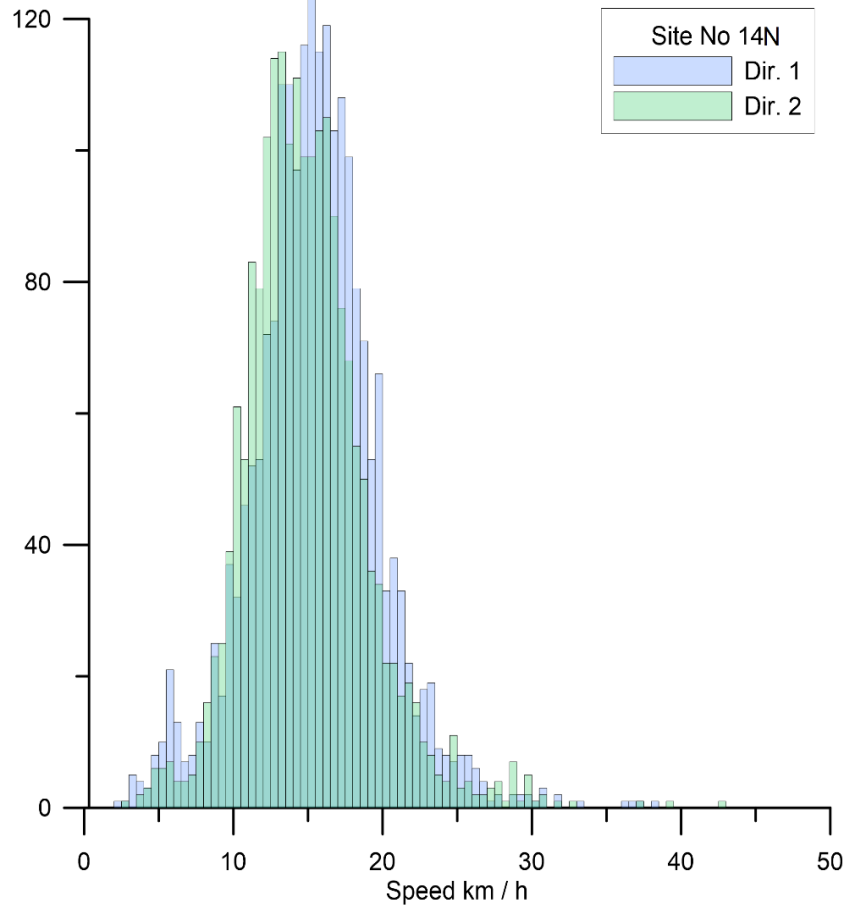
Site 12 – sloping path



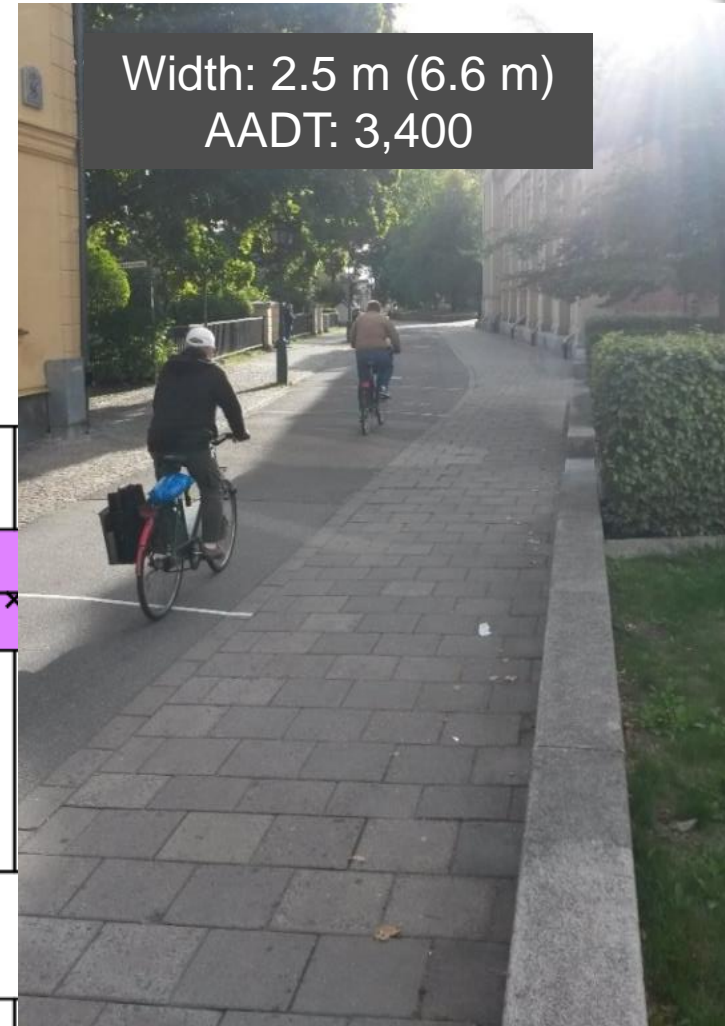
Site 13 – commuter route



Site 14 – near city center



Width: 2.5 m (6.6 m)
AADT: 3,400



Conclusions

- Cyclists' average speed varied between 16 - 25 km/h at the 19 sites.
- The variation depended on location and road user composition:
 - Lower average speeds: uphill slopes, close to crossings or where the pedestrian flow was high,
 - Higher average speeds: downhill slopes and commuter paths.
- Connection between average speed and the width of the distribution – the higher the average speed, the greater the speed distribution.

The connection to traffic safety?

How speed data can contribute:

- It is important to consider downhill/uphill, width and separation (including directions) when designing bicycle paths,
- we observed that the speed was relatively high at certain sites where both pedestrians and cyclists had to share space,
- what will happen with the number of cyclist who use pedelecs? If increasing, will it give higher speeds? (In Sweden the Government currently refund 25% of a purchased pedelec).

How to move on?

This study is a first step in trying to describe the distribution of cyclists' speeds.

The next step, which would require more data, is to relate the outcome of accidents to the speed distribution, and to investigate how high speeds affect the accident outcomes.

But how? Suggestions?

And also, further evaluation of measurement equipment is needed!



Thank you for your attention!

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