

# Data sheet: how to choose the location for bicycle counters?

## 1. Overview

The installation of automatic bicycle counters has become the standard for monitoring the use of a cycling route or network. Permanent counters make it possible to know the level of use of the route and its evolution over time. The addition of qualitative surveys at the same site provide data also that makes it possible to estimate the economic impact of the route or network.

Prior to installation, it is important to choose the right locations for these counters. The objective? Select a series of locations to provide a representative view of the entire observed route or network. For a relevant selection, a global reflection is necessary.

## 2. Allocation on the route

When several counters are installed to monitor a route, it is interesting to divide the route into homogeneous sections. This route typology is purposefully kept simple and includes:

- the type of existing development (dedicated site / lane shared with motor vehicles),
- the tourist services or amenities offered (density of places to visit, accommodation, proximity to train stations...),
- the type of environment (urban, peri-urban, rural),
- the collection of cyclists (crossings, bridges...).

It is then advisable to install one counter per type of section, plus possibly one at the beginning and one at the end of the route.

When a route crosses several administrative zones, or when it is managed by several authorities, it is desirable to favor a global vision or, at the very least, a coordinated vision of the choice of locations. The objective is to avoid redundant or too close counters.

The density of counters should be adapted to the popularity of the cycle route and the economic impact. A higher density of counters is necessary in high tourist or very busy sectors because the issues with maintaining data accuracy are high. A lower density of counters is acceptable in more diffuse sectors (in terms of environment or usage) to provide an acceptable level of data quality.

### 2.1. How to choose different types of infrastructures?

The type of infrastructure has a strong impact on the profile of the cyclists who use it, particularly for tourist routes. Implementing counters on various types of facilities will thus provide a representative view of the different types of cyclists' profiles using the monitored route (utility, recreational, sports, tourists, etc.).

To adapt the monitoring to the type of installation, it is therefore necessary to install counters on sections with homogeneous characteristics over significant distances. The distance to be considered as significant may vary according to the type of infrastructure and its geographical location (urban, peri-urban, rural).

#### 2.1.1. What are the main types of infrastructures to be observed?

##### → Route in shared lanes

**Definition:** shared lane routes use tracks that are accessible to motor vehicles and bicycles. They can take the form of:

- a bike lane,
- traffic on the shoulder

- or traffic sharing the entire track.

Usually, in rural areas, tourists' routes on shared roads use networks with flows of motorized vehicles less than 1,000 vehicles/day. In urban areas, these routes use areas with quiet traffic (zone 30, two-way cycling...).

In the case of a shared route/section, to select the counter point location, check:

- The pavement gauge (the track width has an impact on the material to be installed: number of loops, length of pneumatic tubes...)
- The level of traffic on the road by motorized vehicles
- Speed limit (20, 30, 50, 80, 90 km/h)

### → Exclusive lane routes (green lane or cycle paths)

**Definition:** exclusive lane routes use greenways or cycle paths.

Greenways are lanes reserved for non-motorized vehicles, pedestrians and riders. Usually, these infrastructures take the form of towpaths along canals and rivers, old railways, coastal promenades, forest roads, old paths or path through urban parks. They are developed in the context of bicycle tourism, but also to promote local travel, whether for leisure or daily/commuting purposes.

Bicycle lanes are strictly reserved for two or three-wheels cycles.

In the case of a route or section developed on a dedicated lane, to choose the location of the counter point, consider checking:

- The pavement gauge (the track width has an impact on the material to be installed: number of loops, length of pneumatic tubes...)

### 2.1.2. What is a homogeneous section?

A section of route will be considered as homogeneous starting from a mileage of road surfaced in a uniform way and presenting the same characteristics of tourist offer densities, populations... (for example 10 km of shared road or 10 km of exclusive site). This mileage varies according to the environment (rural, peri-urban, urban), the population density, the density of nearby tourist offers or the proximity of a large urban center.

Overall, the higher the density of supply or population, the smaller the distances to consider (5 to 10 km). Conversely, the lower the density of supply or population, the longer the distances to be considered for a homogeneous development (30 km).

#### → In rural areas

Generally, in rural areas, developments of 20 km or more, treated in a uniform manner, constitute homogeneous sections. However, this distance will have to be lowered in the case of major tourist areas or increased in less frequented areas.

This distance will also have to be adjusted as major urban centres approach, which are likely to cause a great deal of variation in ridership.

#### → In urban or peri-urban areas

In urban or peri-urban environments, the distance defining the homogeneity of an infrastructure is very variable. It is highly dependent on the density of population, housing and tourist accommodation. This distance may vary from 5 to 10 km depending on conditions.

Choosing the right counter location(s) depends on the purpose of the monitoring. If one wants to measure the tourist impact of an itinerary, it may be relevant to prioritise the settlements on sections on dedicated lanes. In all cases, it can be interesting to give priority to settlements over quality infrastructures, whether they are shared lanes (30 cycle lane zones), dedicated lanes, or

even dedicated crossings (or not). It is often the case for these infrastructures that investments are the most expensive and critical for success, as well where cyclists are potentially more "captive" of the infrastructure. It is therefore useful to have an evaluation of frequentation and return on investment.

## 2.2. Choosing different volumes and types of frequentation

The type of use is often linked to the type of infrastructure, but other elements can influence the profile of cyclists encountered. The presence or not of major tourist points of interest, tourist accommodation, points of interest related to daily life (college, activity areas, train station, swimming pool, library, leisure base).

When evaluating a tourist itinerary, the ideal solution is to find sites where the most homogeneous types of practices can be identified: long distance cycling/cycling outing on several days (itinerancy), holiday tourism, leisure excursions, local sports or urban practice. The objective is to identify the seasonality of each of these practices to make the extrapolation of survey data to the year reliable.

As far as possible, it is therefore recommended to install counters in both:

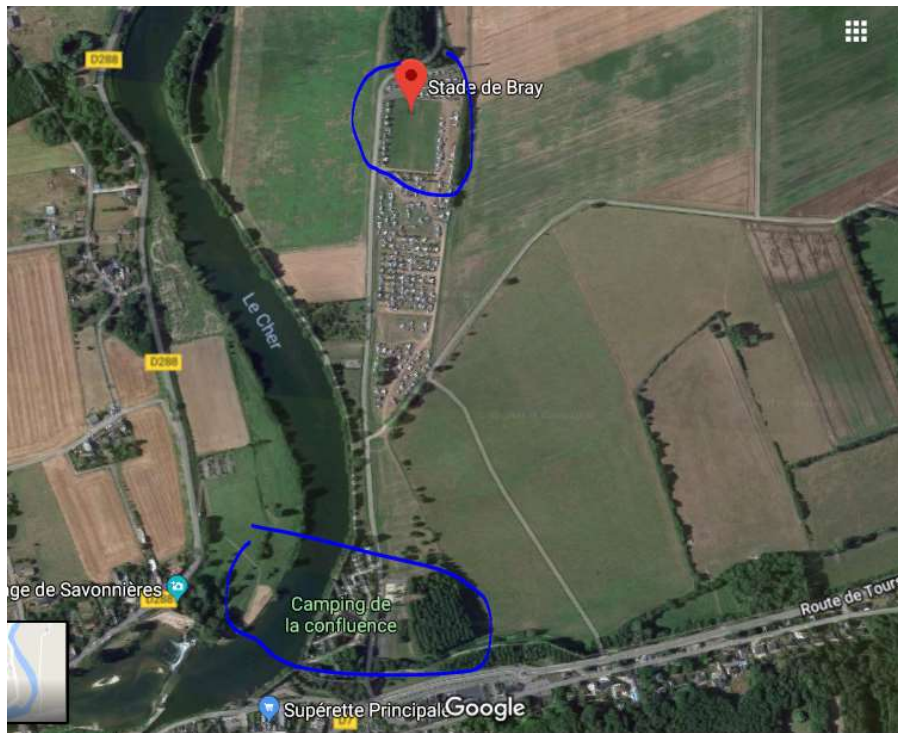
- Very touristic areas with high density in points of interest and high density in tourist beds to capture tourists in stay, if possible by choosing:
  - o sites with a strong "utilitarian" dimension for tourists (between a campsite and a city center for example),
  - o sites with a high 'visit, discovery' dimension (close to an important tourist site or on a part common to the route evaluated and to a cycle loop).
- Very remote areas with low population density and tourist accommodation, with few points of tourist interest, to attract more specifically cycle tourers.
- Areas in urban proximity (less than 10 km from the centre) with high leisure use to measure the use of the route for day trips.
- Specific urban areas for everyday use or an express bicycle network, where appropriate.

In urban areas, it will be necessary to be attentive to the weight that can be added by local bicycle traffic linked to a daily point of interest generating round trips:

- Schools, colleges
- Sports infrastructures (stadium, swimming pool, etc.)
- Leisure base
- ...

*Example: case of the Savonnières counter (La Loire à Vélo).*

*This counter was initially installed at the entrance of the village on the green road serving the village and the campsite for an evaluation of tourist traffic. After analysis of the data over a long period and a site visit, the location was modified because the data proved to be "polluted" by the bicycle traffic recorded between the village and the football field (for the return trips of the children on Wednesdays).*



Similarly, in tourist areas (especially along the coast), attention should also be paid to the weight of return trips between a large accommodation centre (campsite, holiday centre, etc.) and shops or access to the beach.

Whatever the environment, avoid stopping areas (traffic lights, stops...), slowdown areas (steep slopes - especially when using pneumatic counters) and areas generating return trips (parking, rest or picnic areas...).

### 2.3. Information to gather and tools to choose counter locations

To carry out the spatial analysis allowing the definition of homogeneous sections, it is necessary to have the following information, if possible in cartographic form:

- Map presenting the types of infrastructure (whatever the format: a minimum paper or GPS traces and ideally GIS with the typology of the infrastructure)
- Map with points of interest (POI) and activities (geographical coordinates): POI and services
- Bed capacity of tourist accommodations per city or ideally from geolocation bases of accommodations
- Population density per city (or ideally on square of 200 m by 200 m)
- Number of entrances to places of visit (leisure sites, monuments...).

On the scale of an itinerary, it is recommended to try conduct analyses over administrative boundaries and consider things on a global scale.

In France, a GIS shared on a national scale (Observatoire National des Véloroutes et Voies Vertes-ON3V) and a geostandard allow the visualization, aggregation and export of GIS data from

all local authorities. These tools are useful for a quality spatial analysis for the definition of counters locations at the scale of an entire route, for example.

**For further information:**

- ON3V: <https://www.velo-territoires.org/observatoires/observatoire-national-des-veloroutes-et-voies-vertes/>
- Geostandard: <https://www.velo-territoires.org/observatoires/observatoire-national-des-veloroutes-et-voies-vertes/geostandard-velo/>

**To remember:**

- The typical spacing between two counting points on a route can vary from 10 to 50 km depending on population and accommodation density
- Mix counting points by environment type (urban/peri-urban and rural)
- Mix the points by type of infrastructure (dedicated site / shared site)
- Consider various types of frequentation
- Prioritise locations on homogeneous sections
- Anticipate according to an expected volume: above 50 passages/day for permanent counts, to be completed possibly by temporary counting campaigns on zones with lower frequentation.
- Avoid the proximity of very localized round-trip centres (schools, colleges, between the beach and a campsite...)
- Avoid the installation at a stop (traffic lights, stop...), slowdown (coast) or near car parks, rest areas or picnic areas.

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