Using GPS data from the European Cycling Challenge

In support of the cycling policy of the European Metropolis of Lille (MEL – France)

- **15th largest European Metropolis, with 1.1 million inhabitants**

- **4th largest urban area in France** after Paris, Lyon and Marseille (611,45 km² surface area)

- **2.2 million inhabitants** in a Franco-Belgian European Metropolis

- **A young population:** 35% of inhabitants are under 25 years old

- **85 municipalities** making up a both rural and urban metropolis
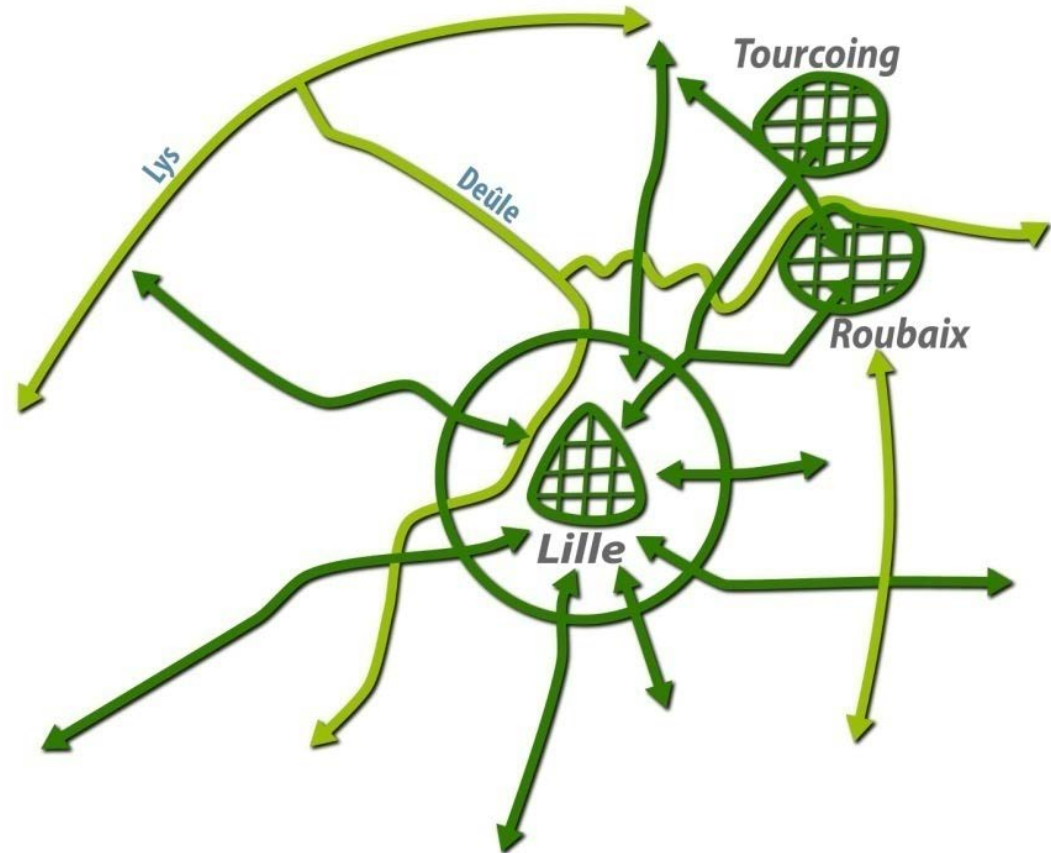
The Metropolis of Lille caracteristics :

- Polycentric,

- Half urban and half rural,

- Almost flat everywhere !

- Has the same beautiful weather than Belgium or Netherlands : perfect for urban cycling !

Infrastructures :

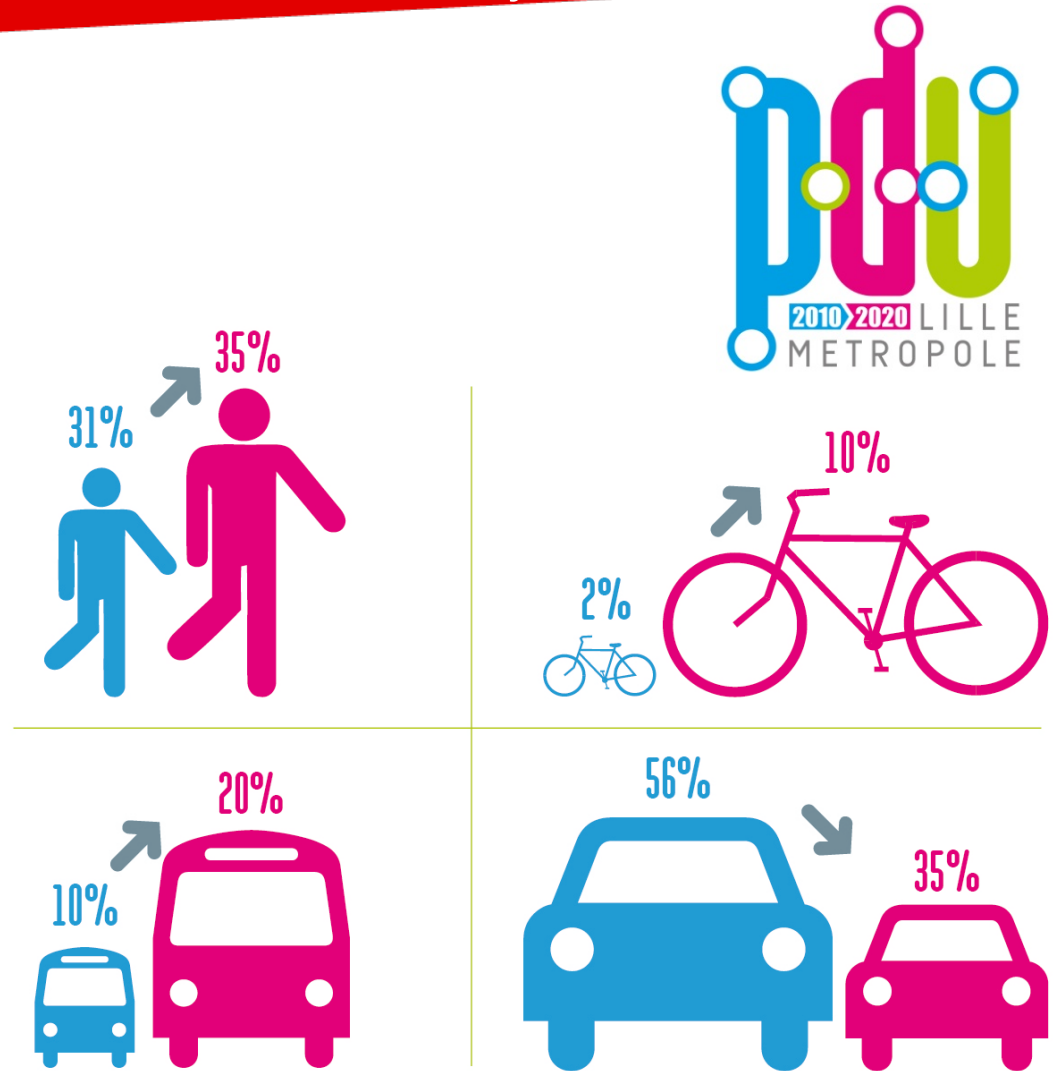- 700 km cycling paths

- 2 metro and 1 tramway line.

Quintuple cycling daily practice (from **2%** to **10% in 2020**)

Actions related to :

- Infrastructure
- Bike parking
- Services
- Communication and promotion

→ **European Cycling Challenge**

31% 35%

10%

2%

20%

10%

56%

35%

2010 > 2020 LILLE METROPOLE

MEL MÉTROPOLE EUROPÉENNE DE LILLE

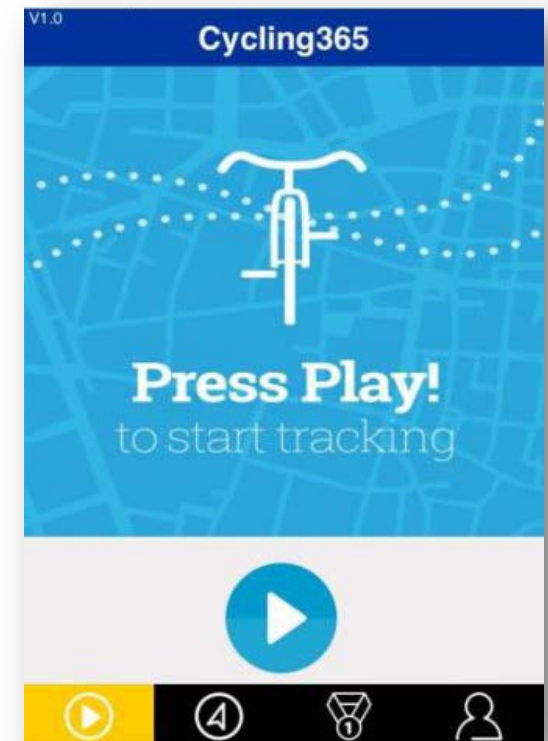Objectives : Behaviour change, Cyclist's motivation, Daily physical activity and Active urban planning
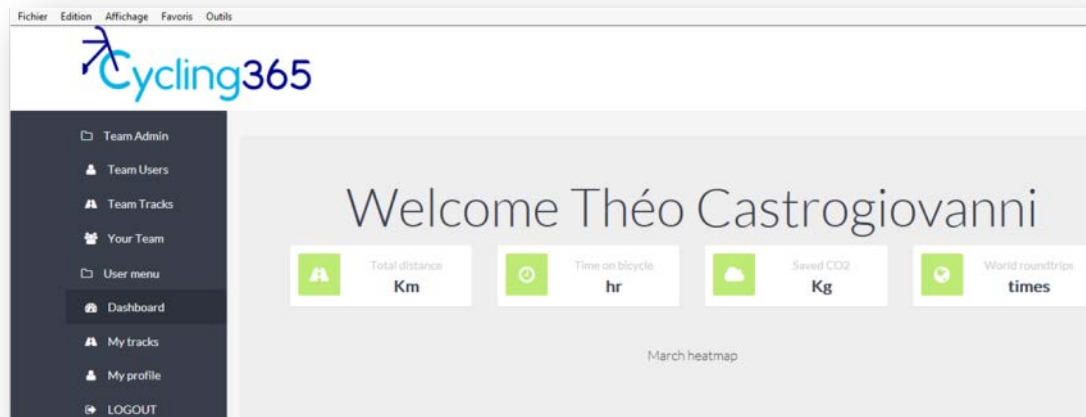
Since 2012, between **1st- 31 May**

A **game** involving 52 european cities (2016)

MEL : 1 600 persons registered, **1 000 actively participated**

More than **100 teams** were created (universities, companies, public institutions…)

Tools : an app' and a platform

First of all : a great mobilisation and lots of fun !

14753 4KM

Our closing event, 2/06/2016, Btwin store (Décathlon)

We have several sources, but they are all incomplete :

- **Household surveys** : carried out every 10 years, quite small sample of cyclists (2%)
- **Counting loops** : 30 points on a large territory (611 km²)

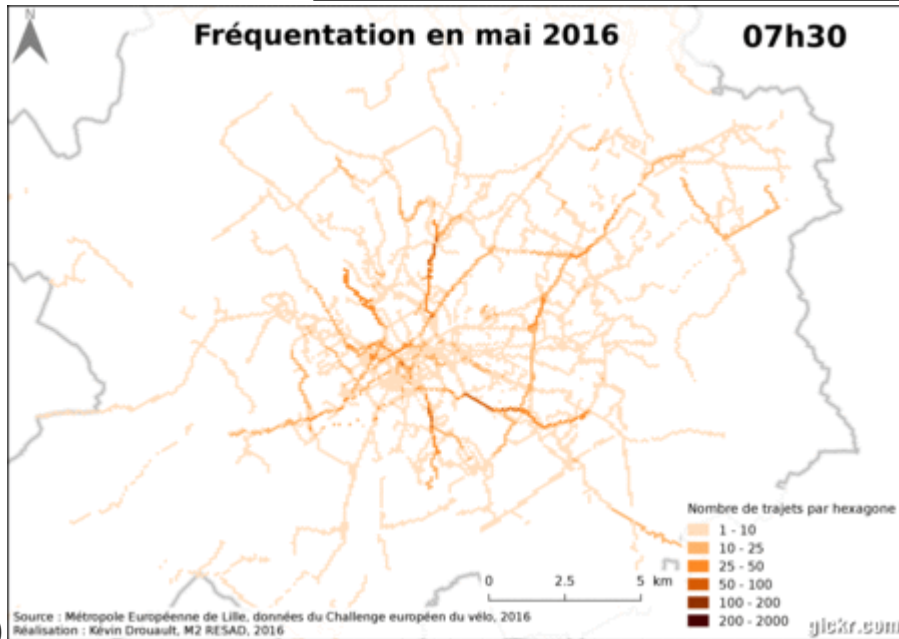**GPS data gives us insight about :**

- Itineraries, speeds
- Use of existing infrastructure
- Profiles and trips purposes (limited information)

→ **GPS Data from the Challenge is complementary and cheaper !**

→ **We're going to compare it to the 2016 Household survey** (at the first view : some correlations, % male / female for example)

RAW DATA
.CSV format (or GPX)

GIS Software

HEATMAPS

FLOWMAPS

Fréquentation en mai 2016 — 07h30

Nombre de trajets par hexagone
- 1 - 10
- 10 - 25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 2000

0   2.5   5 km

Source : Métropole Européenne de Lille, données du Challenge européen du vélo, 2016
Réalisation : Kévin Drouault, M2 RESAD, 2016

glckr.com
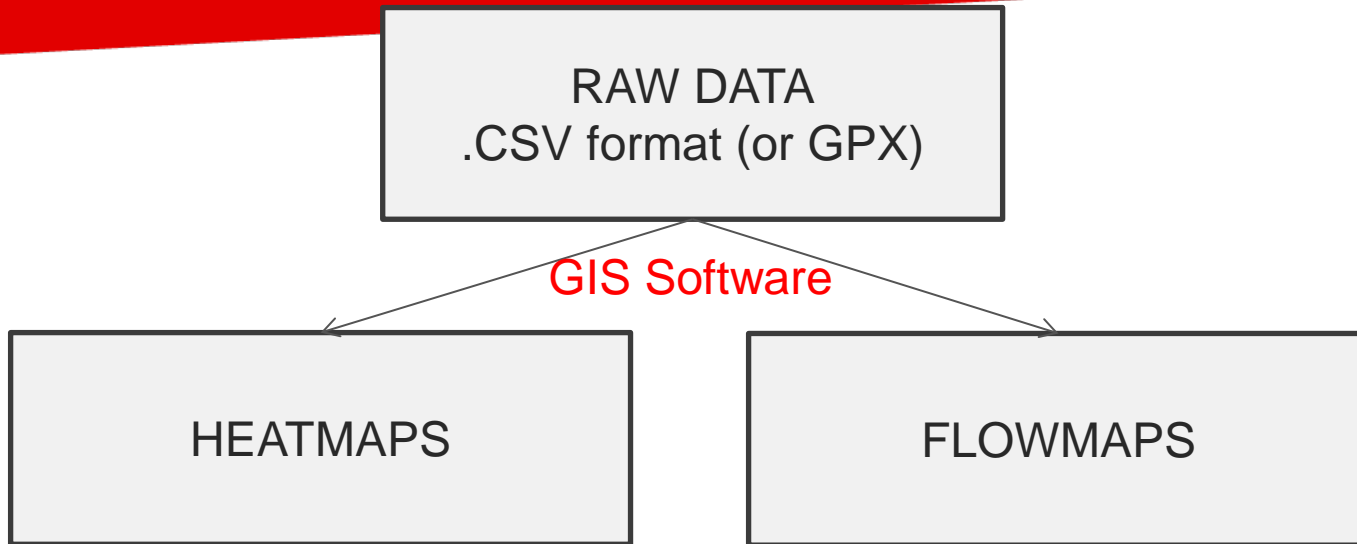
Thanks to this data, a comparison is possible with :
- **existing** infrastructures
- **planed** infrastructures

And…
Creating Origin-Destination matrices is possible!

45 % : origin and/or destination in **Lille**

25 % : exchange trips between Lille and its **neighbouring cities**
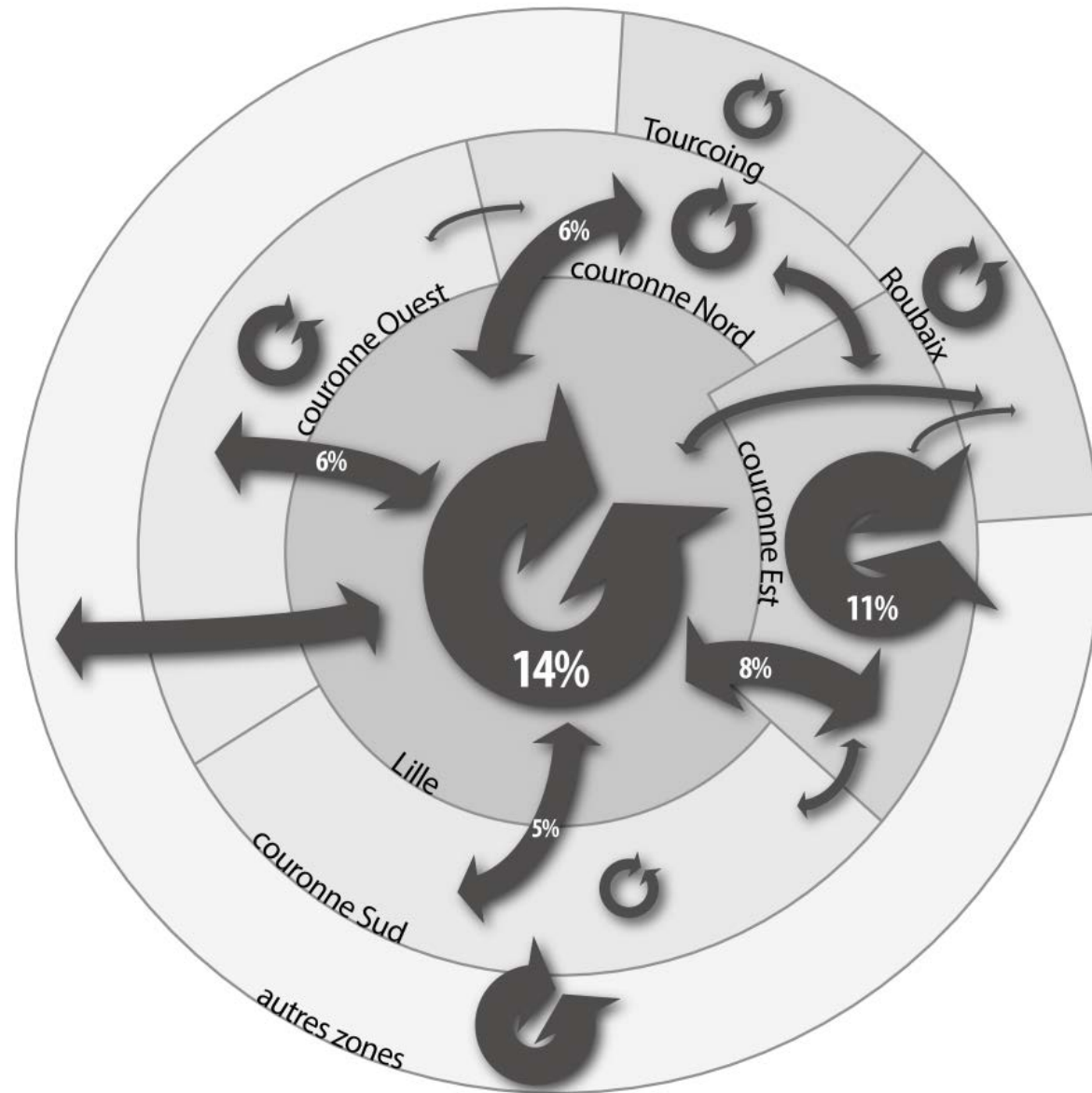
33% : origin and/or destination in the **eastern territory**

→ **In deep analysis will be only possible on those territories**

- Due to GPS precision, we chose to represent a pattern of large hexagones

  → **Visual analysis**

- Main roads clearly comes up

European Cycling Challenge 2016 heatmap

Number of trips in each hexagon

- 1 - 50
- 50 - 100
- 100 - 200
- 200 - 500
- 500 - 1000
- 1000 - 2000

Credits : Métropole Européenne de Lille, European Cycling Challenge 2016
Realisation : Kévin Drouault, M2 RESAD, 2016

0   3.5   7 km
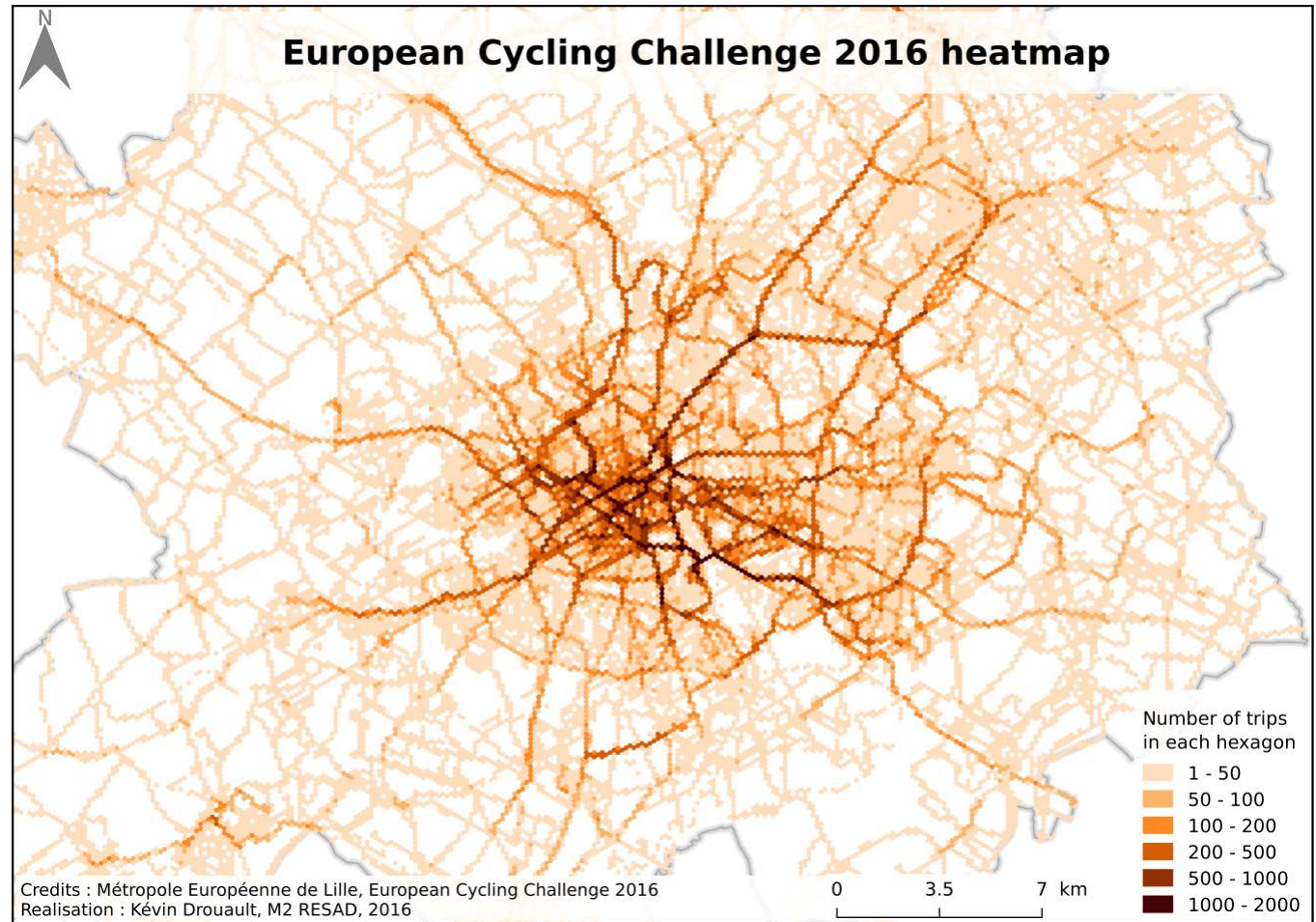
MEL **MÉTROPOLE** EUROPÉENNE DE LILLE

- Our cycling scheme : A **primary** and a **secondary** network

- Building **uninterrupted** bicycle connections

→ A posteriori : **validate** of our cycling scheme, and **adapt** it if needed.

Decision support
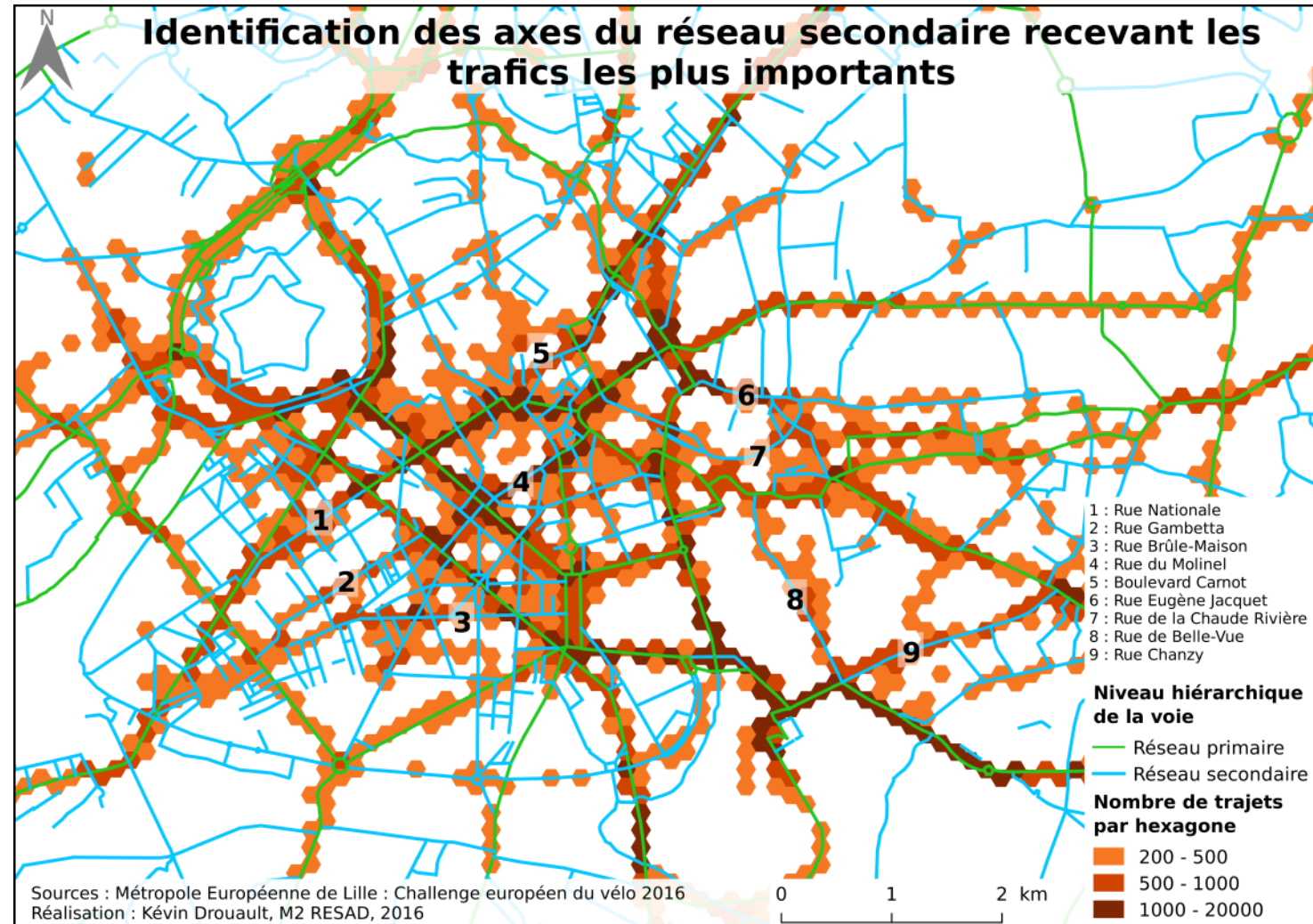
Identification des axes du réseau secondaire recevant les trafics les plus importants

1 : Rue Nationale
2 : Rue Gambetta
3 : Rue Brûle-Maison
4 : Rue du Molinel
5 : Boulevard Carnot
6 : Rue Eugène Jacquet
7 : Rue de la Chaude Rivière
8 : Rue de Belle-Vue
9 : Rue Chanzy

Niveau hiérarchique de la voie
— Réseau primaire
— Réseau secondaire

Nombre de trajets par hexagone
200 - 500
500 - 1000
1000 - 20000

Sources : Métropole Européenne de Lille : Challenge européen du vélo 2016
Réalisation : Kévin Drouault, M2 RESAD, 2016

0   1   2 km

- A **major problematic point** of the Cycling scheme

- Direct access to the railway station

→ **2 Million** € of road works are planned

→ Search of **grants** and partnerships

→ This map shows that this point has **a large territorial influence**

Cycling trips on the « Fives » bridge

Cumul des trajets passant par le pont
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 200
- 200 - 20000

Source : Métropole Européenne de Lille, données Challenge européen du vélo, 2016
Réalisation : Mathias Fontaine (MEL) et Kévin Drouault (M2 RESAD), 2016

0   1.5   3 km

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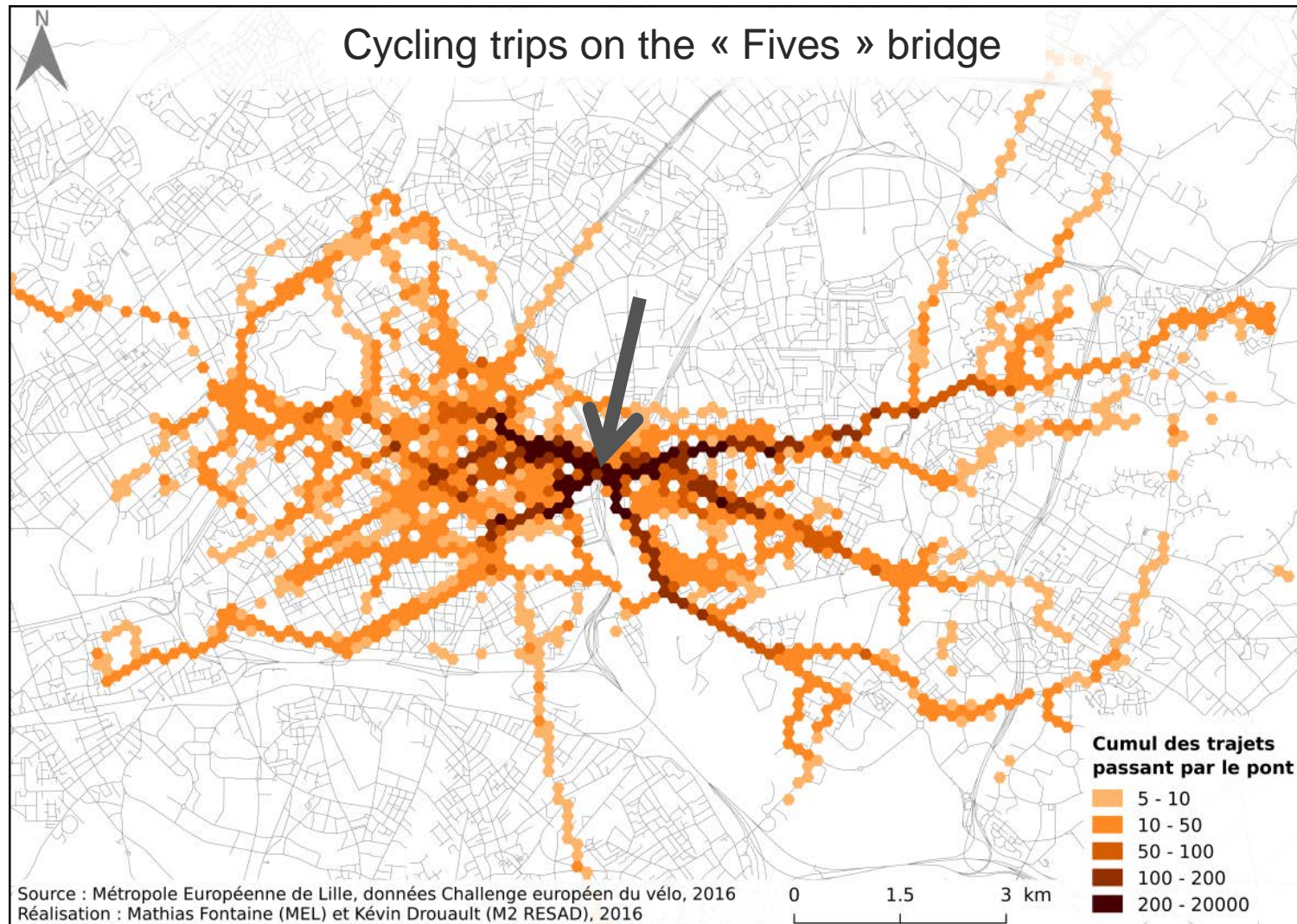
Do you have any questions ?

Elodie VANPOULLE
Active modes (cycling – walking)
evanpoulle@lillemetropole.fr

Benoit WIATRAK
Mobility management and smart mobility
bwiatrak@lillemetropole.fr

MEL
MÉTROPOLE
EUROPÉENNE DE LILLE

1, rue du Ballon
CS 50749 59034 LILLE CEDEX
Tél : +33 (0)3 20 21 22 23
Fax : +33 (0)3 20 21 22 99

www.lillemetropole.fr