

More info = more money

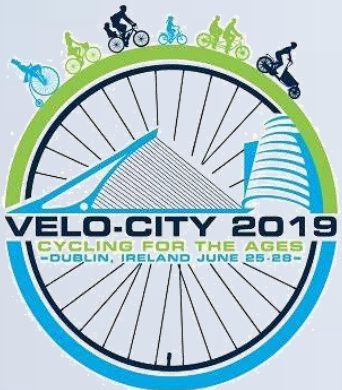
Is a cycling city a smarter city?!

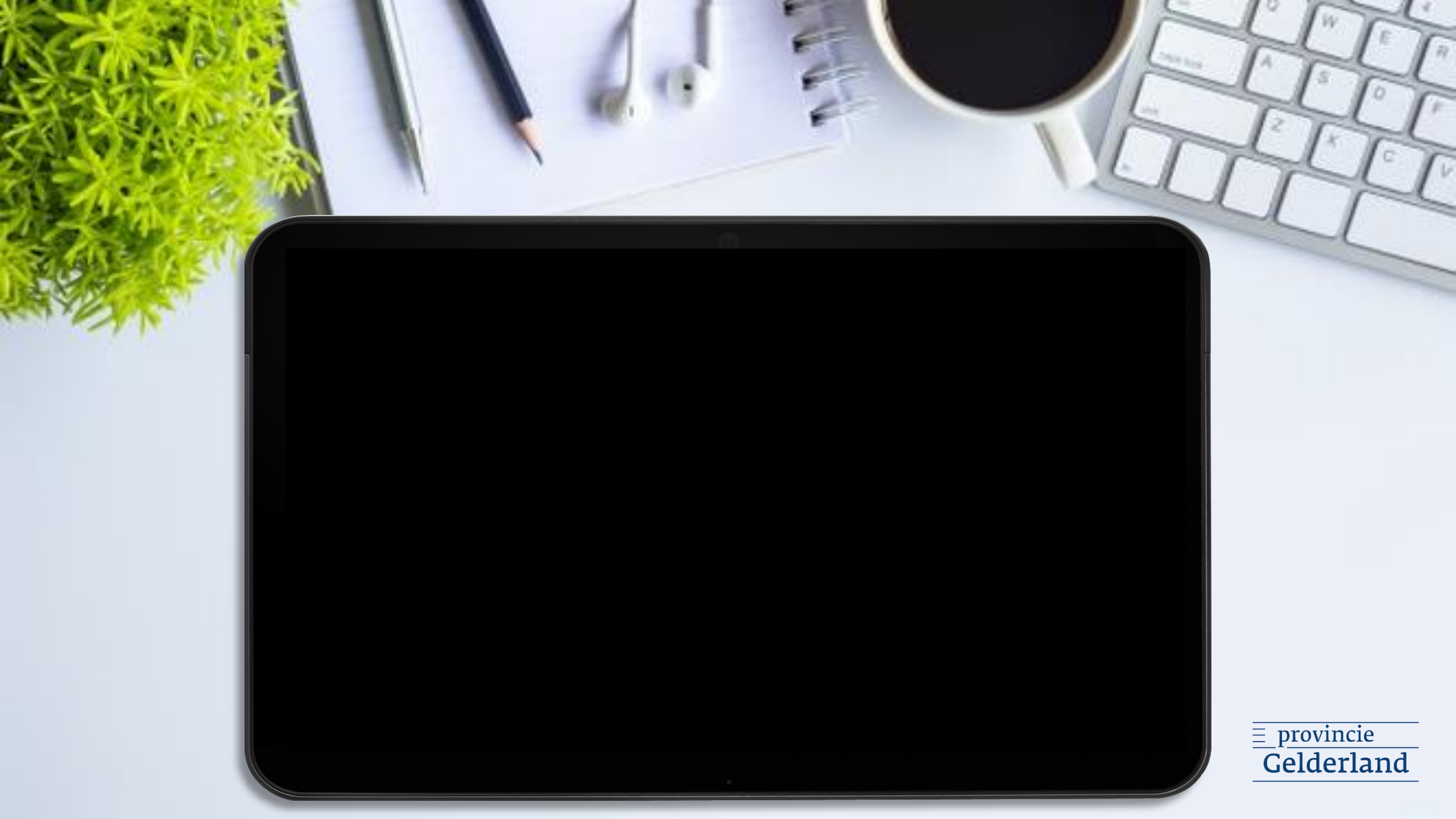
Velo-City 2019 | Dublin | Ireland | June 25 - 28


Anita Stienstra | Joost de Kruijf

Program leader Cycling | Cycling research innovator

Provincie Gelderland | Breda University of applied sciences







The Dutch cycle a lot

The Netherlands has great cycling infrastructure

We all benefit from cycling!

Although we also do not exactly know how to enhance cycling best ...

... we are learning fast!

And that is what we would like to share and discuss this with you!

≡ provincie
Gelderland

Facts and figures:

- 🚲 Largest Dutch province
- 🚲 6 regions
- 🚲 51 municipalities
- 🚲 2.1+ million inhabitants
- 🚲 178.500 businesses
- 🚲 1 million jobs
- 🚲 172.000 pupils
- 🚲 Regional cycle network
2.100 km
(total network 4.000 km)
- 🚲 Cycling related industry





SUSY cyclewear

Steco

i d e n o v a

B
BLACKSMITH



STELLA

SPARTA

SPECIALIZED

Lepper

R vanraam
Lets all cycle

KONINKLIJKE
Gazelle



RAINBOW
FOR PURE PLEASURE

Timmerije
NEXT LEVEL IN PLASTICS

BASIL

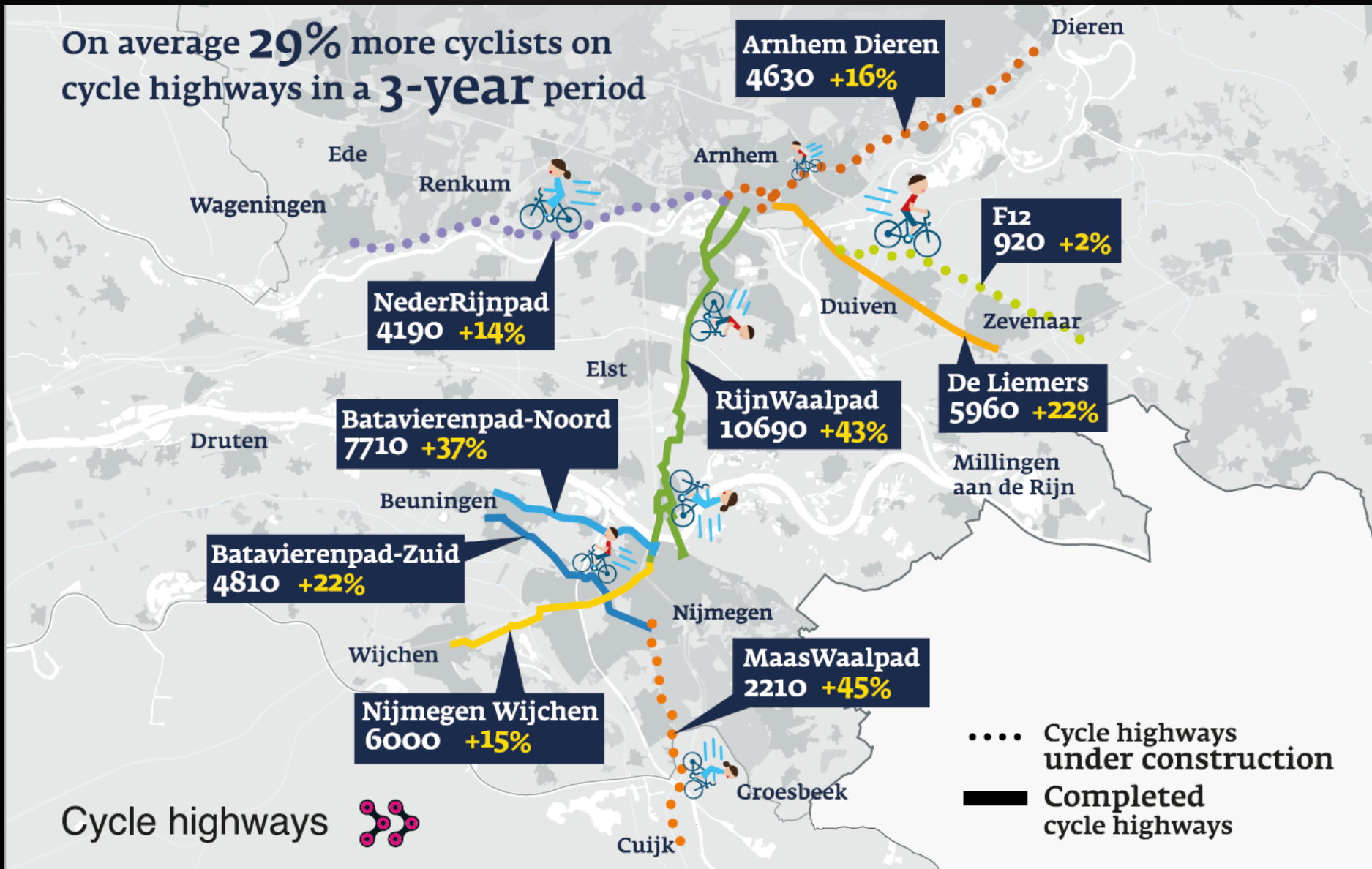
HESLING
BIKE STYLE PRODUCTS

SHIMANO

Cycling growth on Cycle Highways in Gelderland 2015-2018

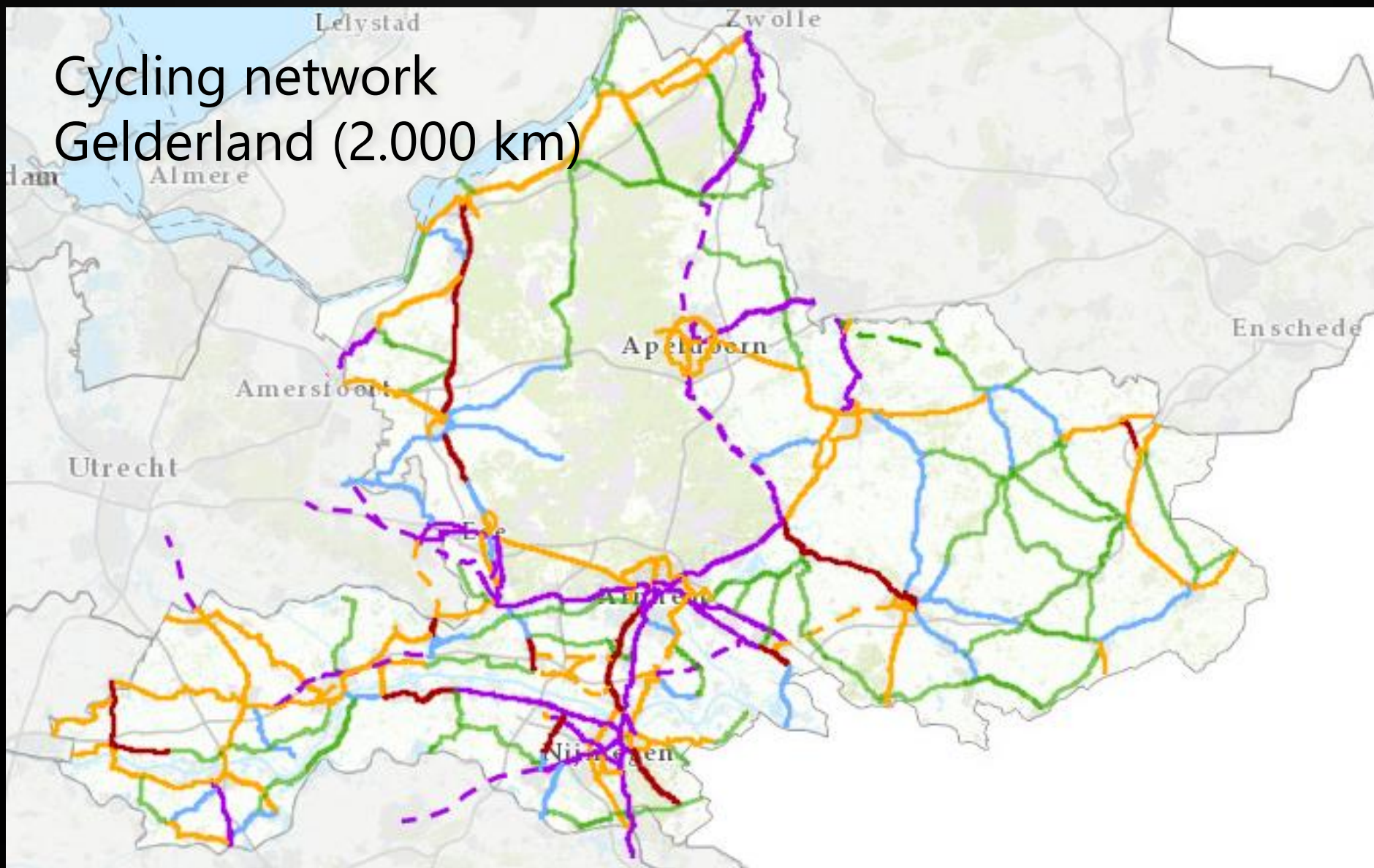


On average **29%** more cyclists on cycle highways in a **3-year** period



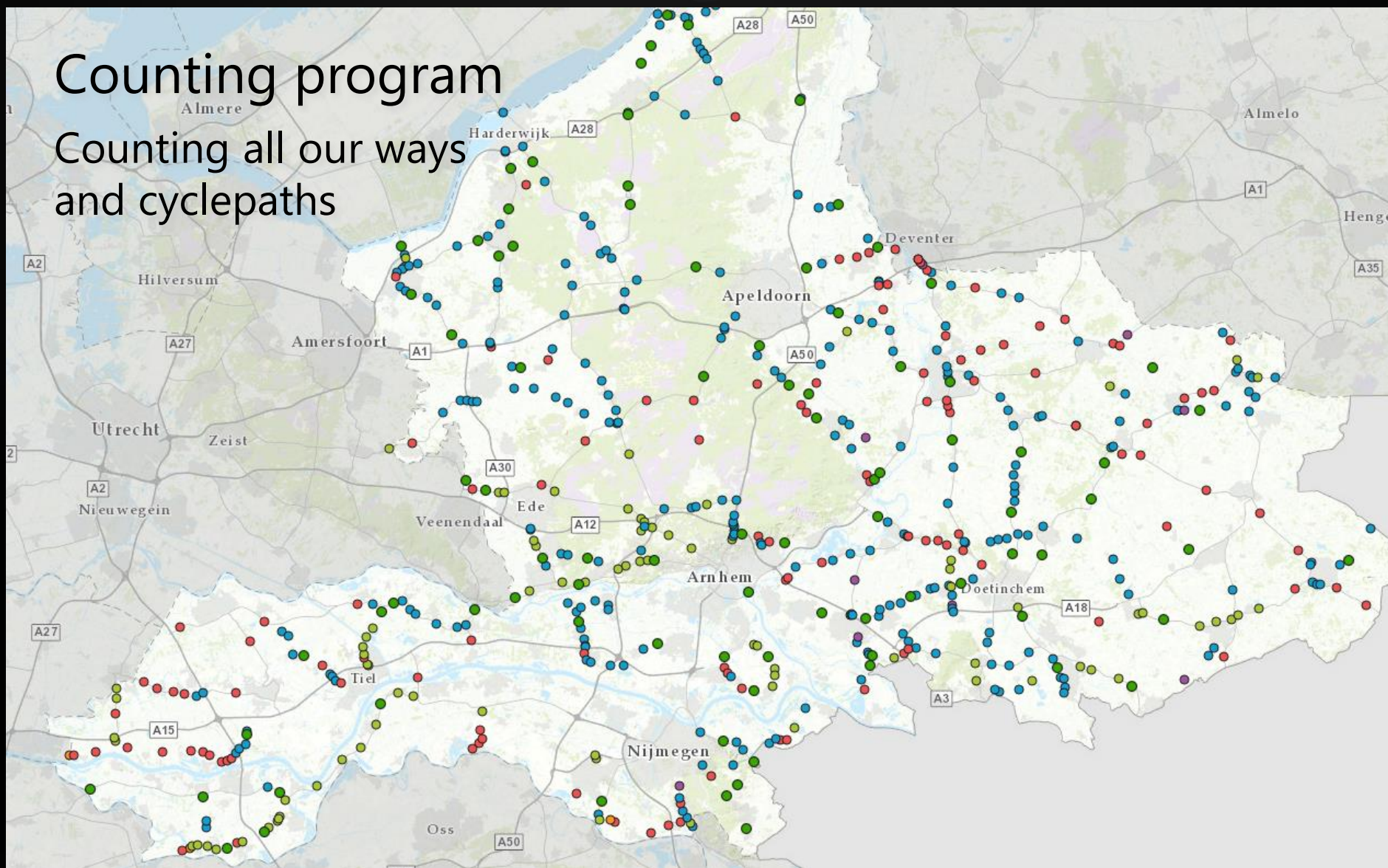
Cycle highways 

Cycling network Gelderland (2.000 km)



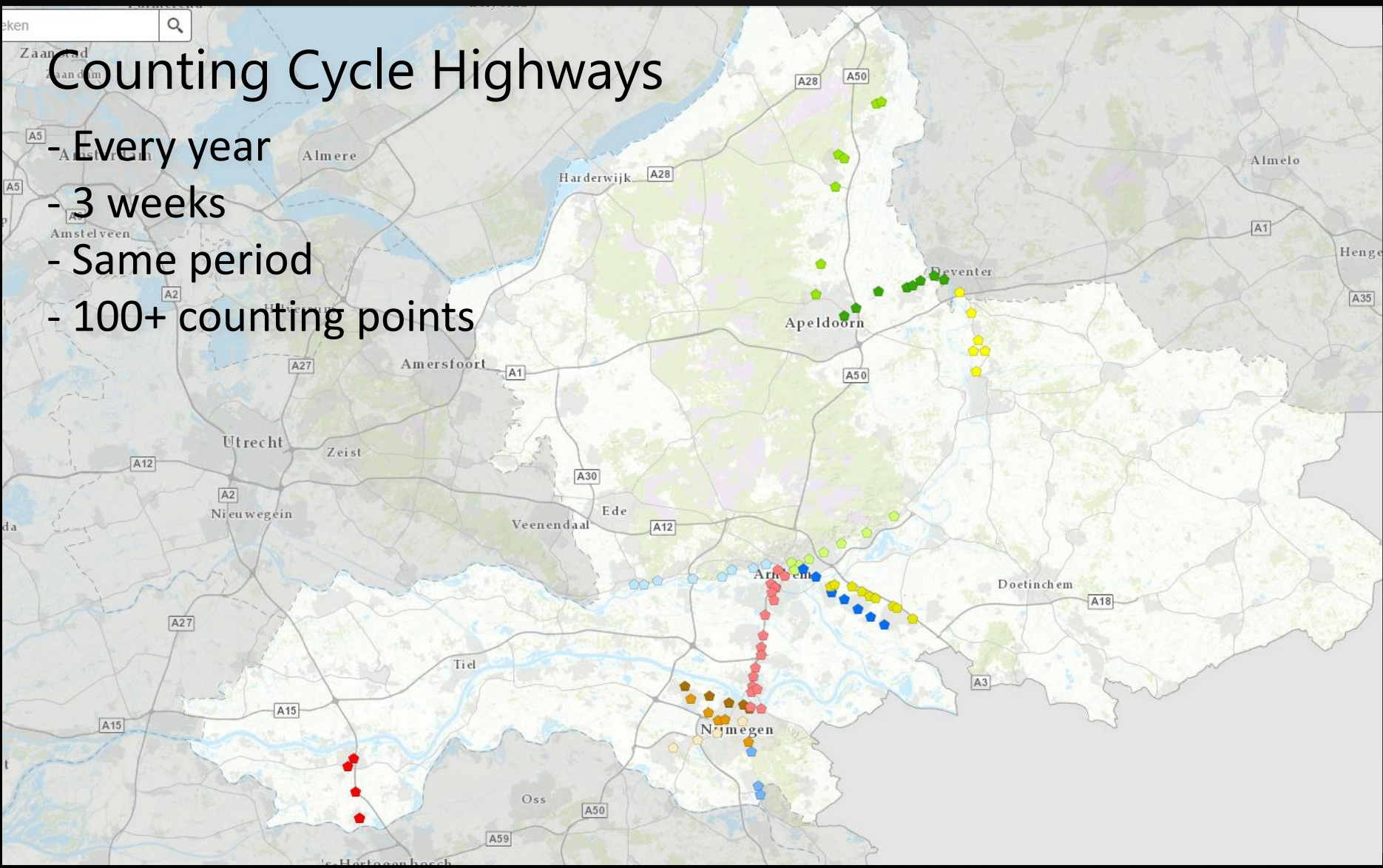
Counting program

Counting all our ways
and cyclepaths

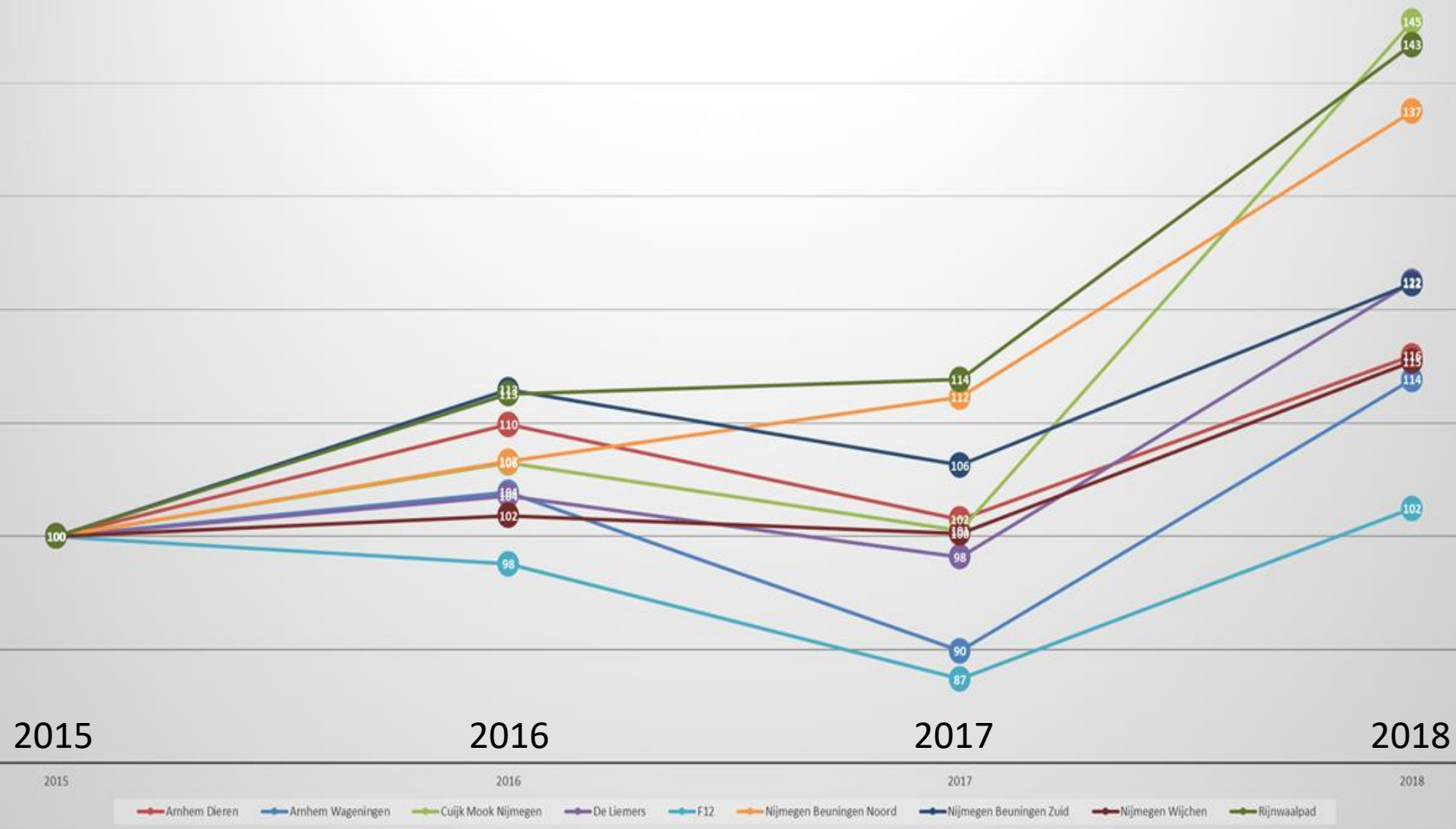


Counting Cycle Highways

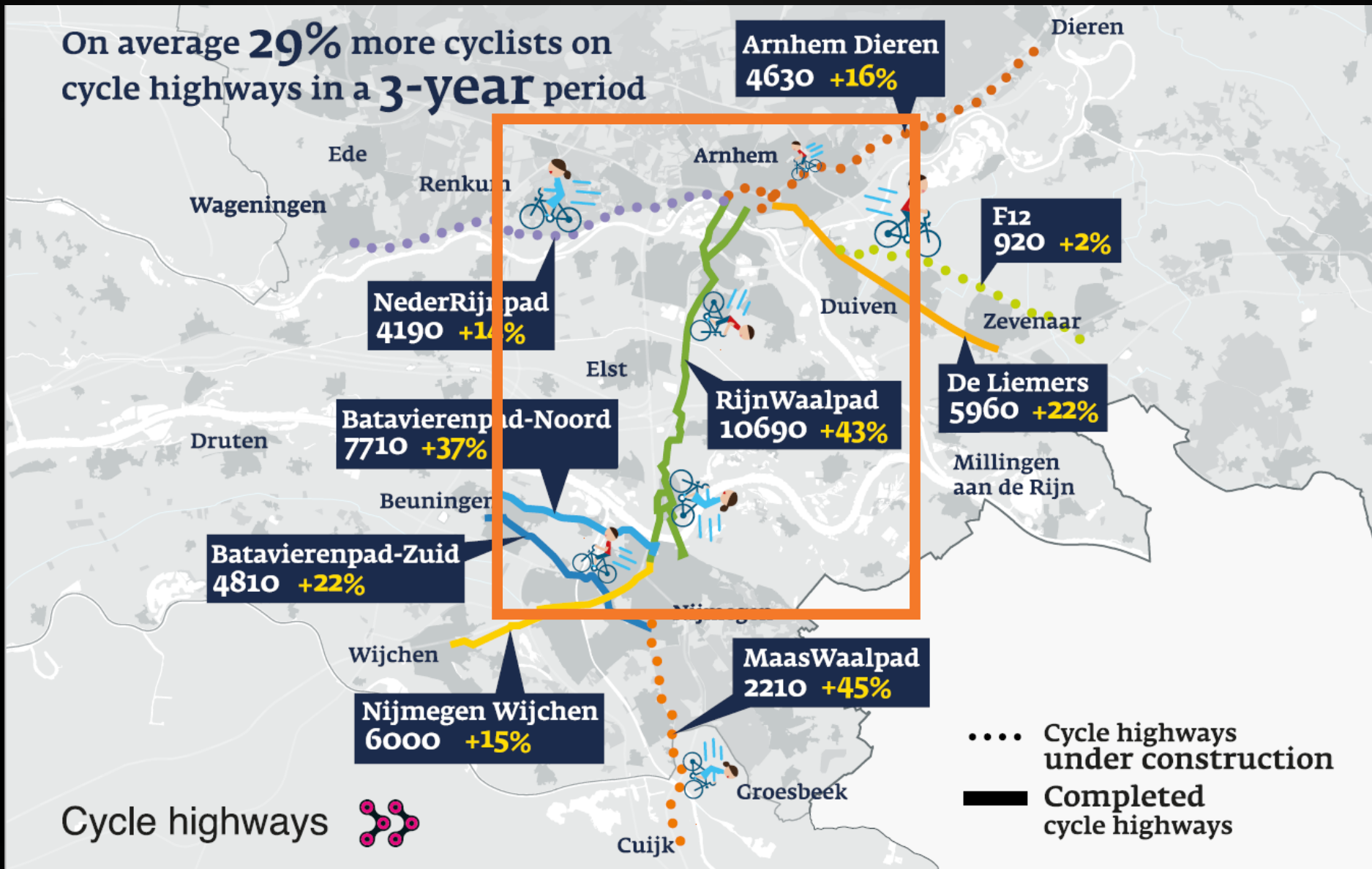
- Every year
- 3 weeks
- Same period
- 100+ counting points



Index aantal fietsers naar snelfietsroute (2015 = 100)



On average **29%** more cyclists on cycle highways in a **3-year** period



Cycle highways 

Facts and figures:

- 🚲 University of applied sciences, academy for Built Environment & Logistics
- 🚲 Situated in Breda
The Netherlands
- 🚲 Leading in Cycle Data and knowledge
- 🚲 Research innovation on Cycle Highway development
- 🚲 Team with Gelderland in CHIPS

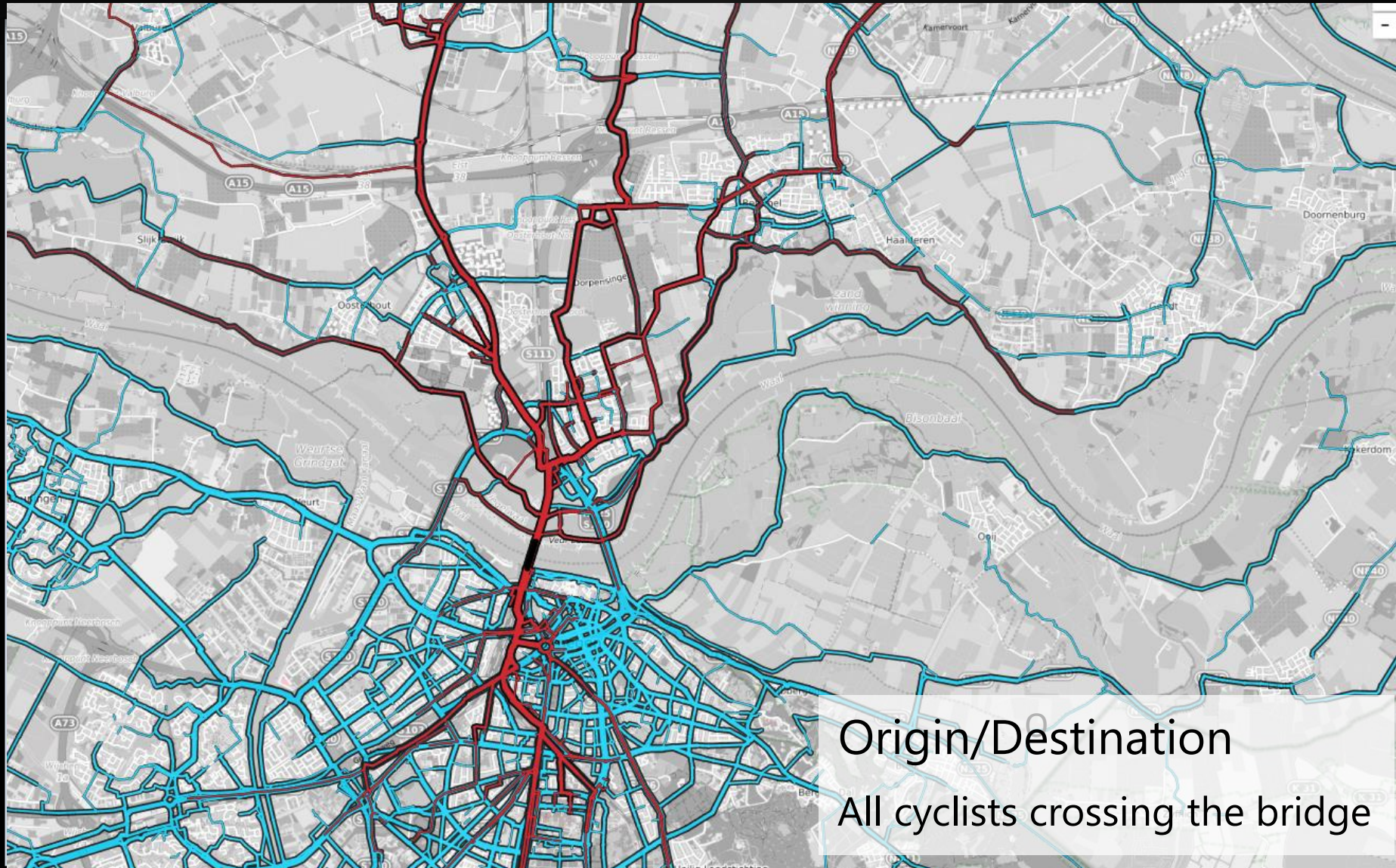




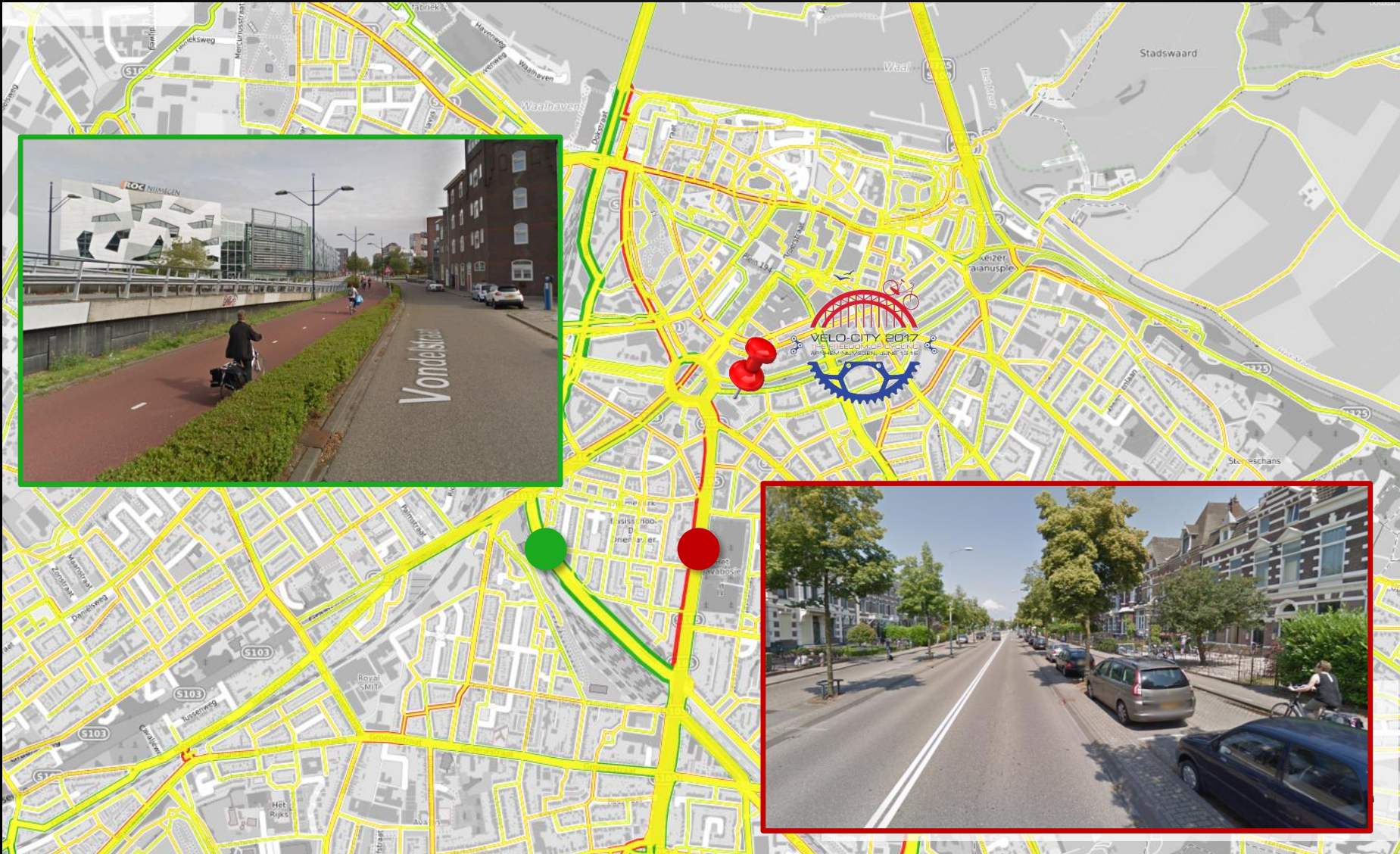
Smartphone added to the table

- Cycling incentive programs
- GPS data collection
- New range of possibilities (cycling routes & speeds)
- Visualisation of heat maps, speed maps, delays
(Cycleprint, BC analytics) Velocity 2017
- Merge of GPS-data en counting data
- Enhancing Cycling policy !!





Origin/Destination
All cyclists crossing the bridge

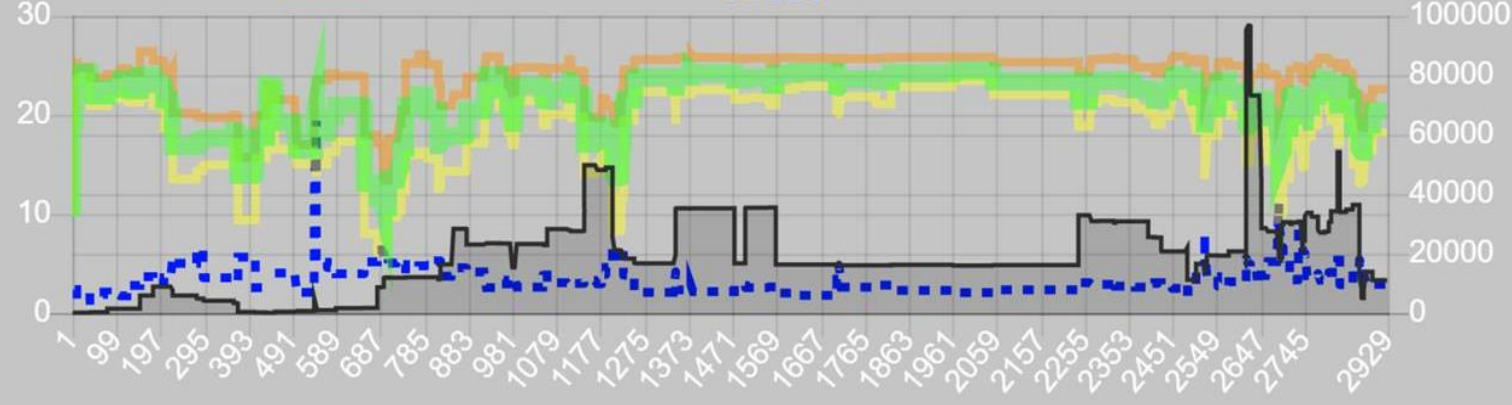




🕒 22 km/uur 🚲 18 km 🕒 49 min.

Weg - Tijd - Snelheid - Aantal ▾

 Aantal waarnemingen
 Afstand
 Snelheid Mediaan
 Snelheid 20-percentiel
 Snelheid 80-percentiel
 Standaarddeviatie snelheid



RijnWaalpad

Arnhem

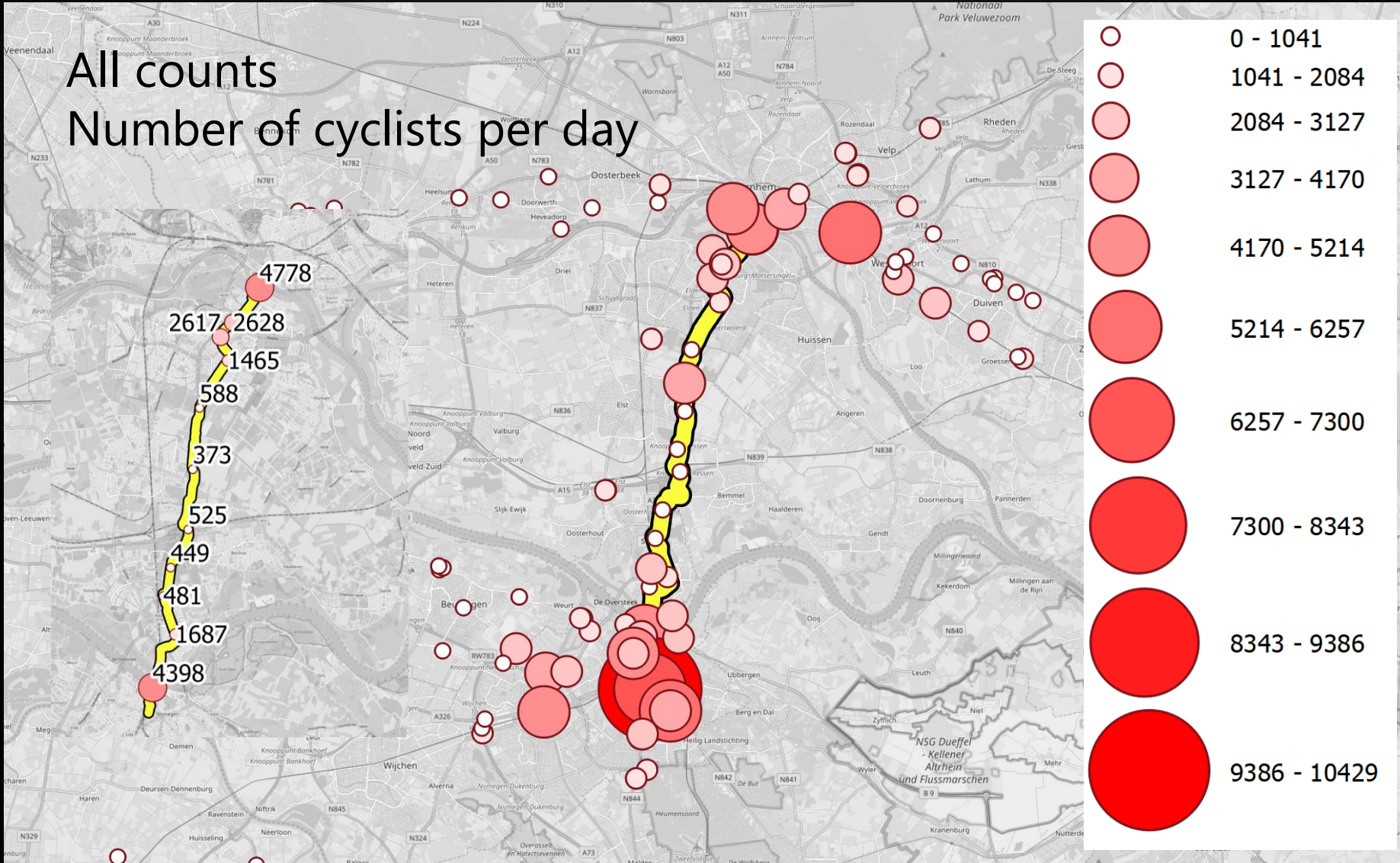
Nijmegen

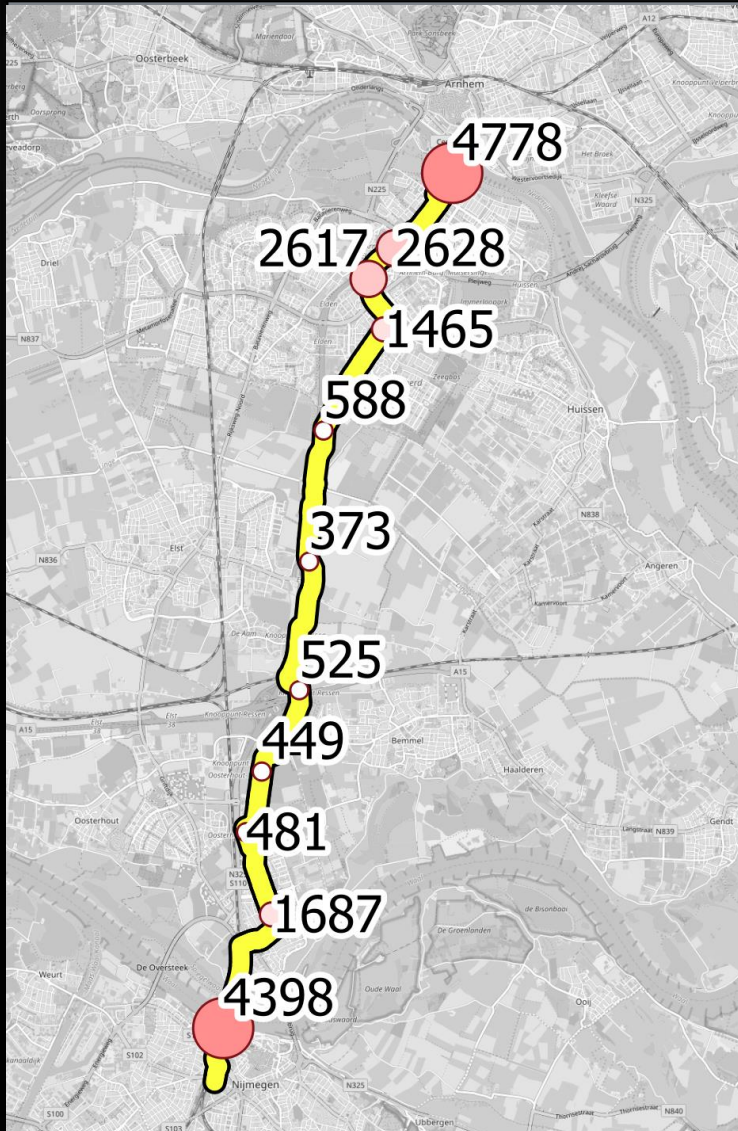


≡ provincie Gelderland

All counts

Number of cyclists per day

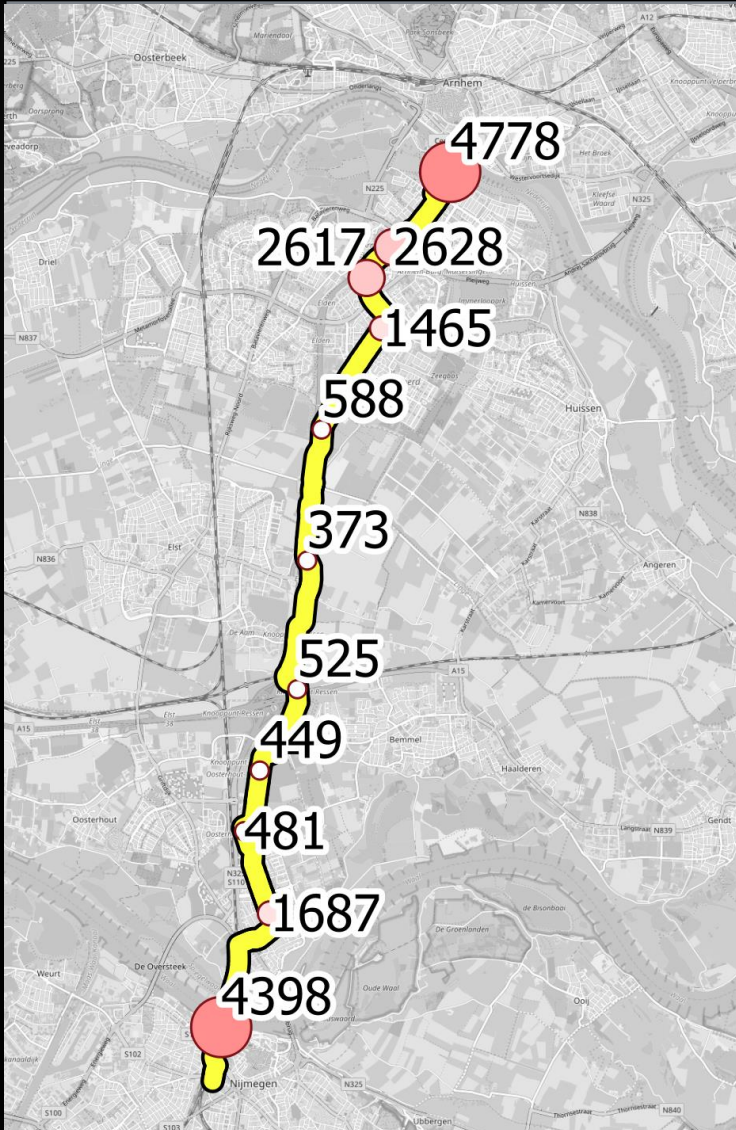




Name	Place	Count	Tracks	Percentage
John Frostbrug west	Arnhem	4.778	401	8%
Fietspad Nijmeegseweg zuidoost	Arnhem	2.628	389	15%
Huissensedijk	Arnhem	2.617	400	15%
Fietspad Kruisstraat	Arnhem	1.465	470	32%
Fietspad RijnWaalpad	Overbetuwe	588	356	61%
Sillestraat gemengde weg	Overbetuwe	373	343	92%
Fietstunnel A15 (RijnWaalpad)	Lingewaard	525	366	70%
Zwarteweg gemengde weg (noord)	Nijmegen	449	355	79%
Zwarteweg zuid (Notenlaantje)	Nijmegen	481	353	73%
Visveldsestraat gemengde weg	Nijmegen	1.687	534	32%
Snelbinder	Nijmegen	4.398	1.332	30%
Total		19.989	5.299	27%

Name	Place	Count	Trip Length	Cycling km
John Frostbrug west	Arnhem	4.778	5,3	25.323
Fietspad Nijmeegseweg zuidoost	Arnhem	2.628	7,5	19.710
Huissensedijk	Arnhem	2.617	9,2	24.076
Fietspad Kruisstraat	Arnhem	1.465	8,4	12.306
Fietspad RijnWaalpad	Overbetuwe	588	10,5	6.174
Sillestraat gemengde weg	Overbetuwe	373	10,9	4.066
Fietstunnel A15 (RijnWaalpad)	Lingewaard	525	10,8	5.670
Zwarteweg gemengde weg (noord)	Nijmegen	449	9,9	4.445
Zwarteweg zuid (Notenlaantje)	Nijmegen	481	9,6	4.618
Visveldsestraat gemengde weg	Nijmegen	1.687	6,4	10.797
Snelbinder	Nijmegen	4.398	5,1	22.430
Total		19.989	8,5	170.088



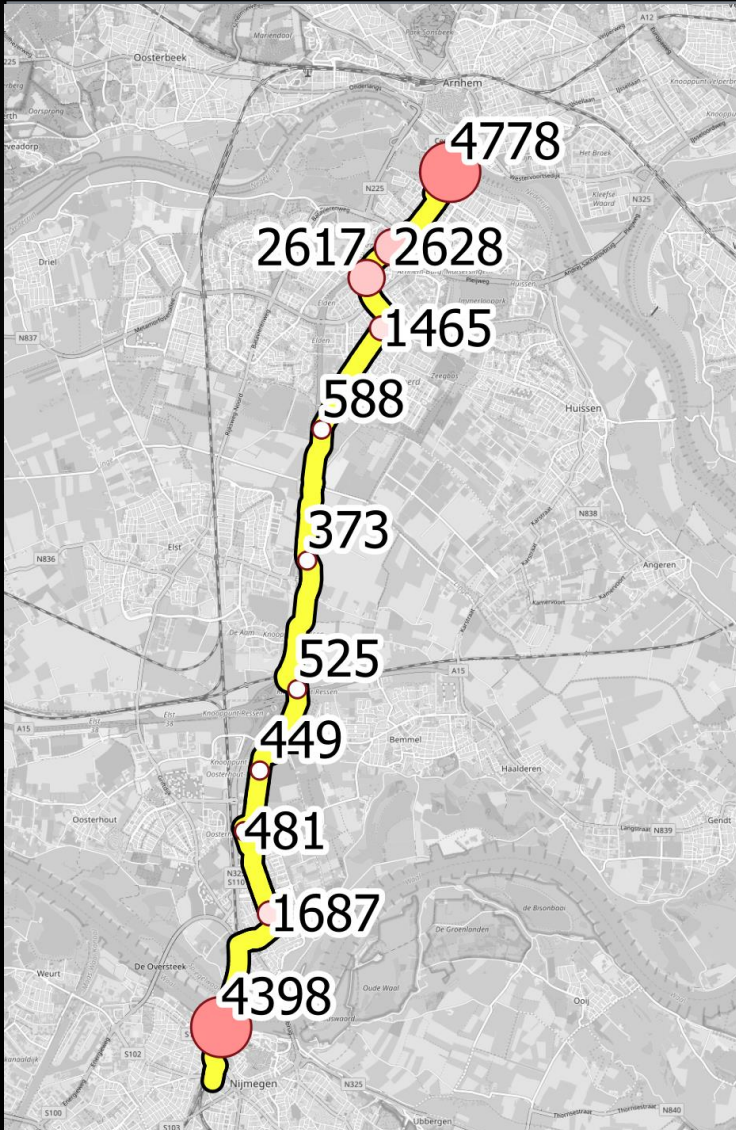


140.000 km cycling per working day
 3,5 times round the world

Driving 140.000 by car would produce
 23.000 kg CO₂ per day. 8 millions of
 kg CO₂ per year!!

But be aware of double counting the
 same cyclist on more than one
 location, and missing cyclists!





Sum of tracks: 5299

Unique tracks at count locations: 2573
(average cyclist is counted 2,06 times)

Correction: 68.000 km each day

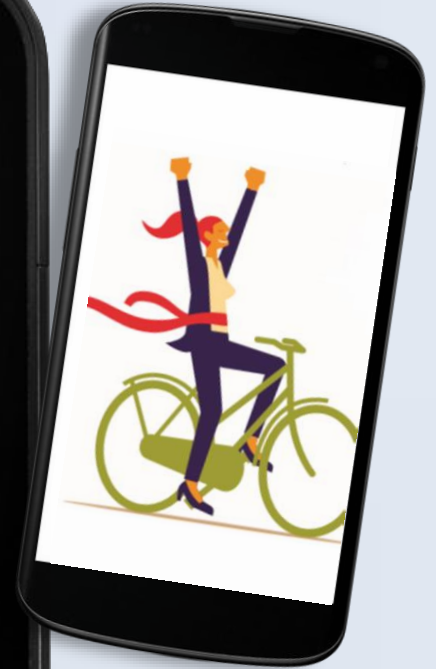
Total unique tracks on cycle highway: 4133
(only 62% of all users touches at least one count location)

Correction for non-counted cyclists *)

Total 95.000 km each day

Total 15.000 kg CO2 per working day

*) taking into account shorter triplength of these trips





Back to Cycling policy

- Cycling is good for health, economical accessibility and liveability
- 5,2 million kg CO₂ per year not wasted due to cycling between Arnhem and Nijmegen.
- Work of 4.330 hectare forest (43 km²)
- Gelderland = 5.136 km²

** 1 hectare forest 12.000 kg CO₂

Encon (24kg CO₂/tree and 500 trees per hectare)





We succeeded

- Successful grant scheme
- Showing success to public and policy
- Insights: more cyclists = more money for cycling
- Linking opportunities to existing/planned infra works

So a cycling city is a smarter city!



“

Looking at the actual behaviour of cyclists will not only learn us more about their preferences, it also enables us to make the switch to customer friendly cycle policy

28th June 2019 | VeloCity Dublin

Anita Stienstra



Joost de Kruijf

