More info = more money

Is a cycling city a smarter city?!

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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!
We cycle a lot
We have great cycling infrastructure
We all benefit from cycling
We also do not what we are dealing with…..
but we are learning fast!
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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
Cycling growth on Cycle Highways in Gelderland 2015-2018
On average 29% more cyclists on cycle highways in a 3-year period
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
Every year - 3 weeks - Same period - 100+ counting points

Counting Cycle
Highways
On average 29% more cyclists on cycle highways in a 3-year period

Cycle highways

- NederRijnpad: 4190 (+14%)
- Batavierenpad-Noord: 7710 (+37%)
- Batavierenpad-Zuid: 4810 (+22%)
- RijnWaalpad: 10690 (+43%)
- De Liemers: 5960 (+22%)
- Arnhem Dieren: 4630 (+16%)

Cycle highways under construction
- Niemegen Wijchen: 6000 (+15%)
- MaasWaalpad: 2210 (+45%)

Completed cycle highways
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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
We cycle a lot. We have great cycling infrastructure. We all benefit from cycling. We do not know what we are dealing with, but we are learning fast! And that is what we would like to share and discuss with you.

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
All cyclists crossing the bridge.

Origin/Destination
22 km/uur  
18 km  
49 min.
All counts
Number of cyclists per day
<table>
<thead>
<tr>
<th>Name</th>
<th>Place</th>
<th>Count</th>
<th>Trip Length</th>
<th>Cycling km</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Frostbrug west</td>
<td>Arnhem</td>
<td>4,778</td>
<td>5.3</td>
<td>25,323</td>
</tr>
<tr>
<td>Fietspad Nijmeegseweg zuidoost</td>
<td>Arnhem</td>
<td>2,628</td>
<td>7.5</td>
<td>19,710</td>
</tr>
<tr>
<td>Huissensedijk</td>
<td>Arnhem</td>
<td>2,617</td>
<td>9.2</td>
<td>24,076</td>
</tr>
<tr>
<td>Fietspad Kruisstraat</td>
<td>Arnhem</td>
<td>1,465</td>
<td>8.4</td>
<td>12,306</td>
</tr>
<tr>
<td>Fietspad RijnWaalpad</td>
<td>Overbetuwe</td>
<td>588</td>
<td>10.5</td>
<td>5,670</td>
</tr>
<tr>
<td>Sillestraat gemengde weg</td>
<td>Overbetuwe</td>
<td>373</td>
<td>10.9</td>
<td>4,066</td>
</tr>
<tr>
<td>Fiets tunnel A15 (RijnWaalpad)</td>
<td>Lingewaard</td>
<td>525</td>
<td>10.8</td>
<td>5,670</td>
</tr>
<tr>
<td>Zwarteweg gemengde weg (noord)</td>
<td>Nijmegen</td>
<td>449</td>
<td>9.9</td>
<td>4,445</td>
</tr>
<tr>
<td>Zwarteweg zuid (Notenlaantje)</td>
<td>Nijmegen</td>
<td>481</td>
<td>9.6</td>
<td>4,618</td>
</tr>
<tr>
<td>Visveldsestraat gemengde weg</td>
<td>Nijmegen</td>
<td>1,687</td>
<td>6.4</td>
<td>10,797</td>
</tr>
<tr>
<td>Snelbinder</td>
<td>Nijmegen</td>
<td>4,398</td>
<td>5.1</td>
<td>22,430</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>19,989</td>
<td>8.5</td>
<td>170,088</td>
</tr>
</tbody>
</table>
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
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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)
Nederland

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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.