09.

Network Planning

Not all roads lead to Amsterdam, but with such an advanced bicycle infrastructure, there are plenty of routes one can take to their destination. This is exactly where network planning comes to play: divides different modes and speeds into a variety of networks, allowing people of all ages and abilities to reach their school, work, the café or the museum safely.

Photo: Maurits Lopes Cardozo

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Photo: Dutch Cycling Embassy

Photo: Dutch Cycling Embassy

Sustainable Safety

Reason for intervention

Traffic systematically allows for human failure, resulting in fatal accidents. As people will always have flaws, make mistakes and deliberately ignore rules, the traffic system should not allow for these mistakes to be made or it? should reduce their impact.

Objective

A new vision on road safety needed to be developed in order to prevent severe crashes and (almost) eliminate severe injuries when crashes do occur

Chosen intervention

The SWOV and the Ministry of Infrastructure and Water Management developed a vision is based on five principles 1) functionality (of roads), 2) homogeneity (of mass, speed and direction of road users), 3) predictability (of road course and road user behaviour by a recognizable road design), 4) forgivingness (of both the road/street environment and the road users) and 5) state awareness (by the road user). Following these principles, all roads were categorised and designed accordingly, 30 and 60 kilometre per hour zones were defined, all traffic from the right has right of way and permanent traffic education became institutionalized.

Lessons learned

1. The measures taken between 1998 and 2007 resulted in a 30% decrease in traffic fatalities, saving approximately 1,650 lives.
2. Risk decreased with 2.6% to an average of 5.8%.
3. The benefits proved to be two to four times higher than the costs.
4. One of the main barriers turned out to be discussions about conflicting interests in terms of physical space and financial means.

> “ The measures taken between 1998 and 2007 resulted in a 30% decrease in traffic fatalities, saving approximately 1,650 lives.”

PROJECT INFO

Location:
National

Duration of the project:
First stage 1998 - 2007,
second stage 2003 - 2017
and third stage 2018

Involved organisations:
SWOV, Ministry of Infrastructure and Water Management

Read more:
SWOV (NL)
Bicycle Dutch (EN)

Photo: Dutch Cycling Embassy

Three Levels of Infrastructure Delft

Reason for intervention

In the 1970s, the Netherlands started to experiment with modern cycling infrastructure: high-quality design, improved detailing, and dedicated space for people on bikes. Following the demonstration sites in Tilburg and The Hague, the City of Delft developed a different approach to cycling infrastructure to repair the lack of cohesion and directness of the first pilot sites. These two criteria were cited as the two main reasons cyclists did not use these facilities.

Objective

The main objectives were to increase the modal share of cycling and to enhance cycling safety. The secondary objectives were to improve the accessibility for cyclists and to improve cycling as an attractive mode of transport. This should be achieved through the working mechanisms of the reduction of trip lengths, reduction of trip travel time and separation of traffic flows.

Chosen intervention

Planners from the City of Delft identified not one, but three cycling networks of varying grid sizes. First, the Urban Network (grid mesh: 400- to 600-meters) for trip lengths of two- to three-kilometres. Second, the District Network (grid mesh: 200- to 300-meters) for trips of one- to two-kilometres. Third, the Neighbourhood Network (grid mesh: 100- to 150-meters for trips of 500-meters to one-kilometre. To implement the following interventions were necessary: 1) improve route quality in regard to comfort and safety, 2) install contraflow for cyclists in one-way streets, including instalment of bi-directional paths and 3) improve position and safety of cyclists, especially for the elderly and young at intersections.

Lessons learned

1. When improving the network, the development and implementation of bicycle parking facilities is essential.
2.It is important to look beyond the “normal” rush hour commuting patterns, as the bicycle network is used for many non-commuting trips by different types of cyclists (e.g., children, elderly, etc. At that time (In the 70’s), there was a tendency to plan for men commuting during rush hour, therefore forgetting many care trips predominantly made by women.
3. Users stated their dislike of circuitous routes, even if they were made safer and more comfortable. Convenience was key.

> “ When improving the network, the development and implementation of bicycle parking facilities is essential.”

PROJECT INFO

Location:
Delft

Duration of the project:
Planning: 3 years (1976 to 1979); first phase implementation plan: 5 years

Involved organisations:
City of Delft, Rijkswaterstaat, and others.

Read more:
Verkeerskunde (NL)
Bicycle Dutch (EN)

Photo: Gemeente Zoetermeer

Photo: Gemeente Zoetermeer

Improving Social Safety at Night

Reason for intervention

Zoetermeer has an extensive and traffic-safe network of cycle paths, connected by tunnels and bridges. However, cyclists felt less safe in the evenings on some parts of the route.

Objective

The municipality of Zoetermeer wanted to make sure the cyclists felt safer during the darker hours of the day when using the route, so that residents continue to cycle in the dark.

Chosen intervention

Night network (*Nachtnet*) Zoetermeer connects schools, shopping centres, sports facilities and entertainment venues with residential areas. The route is in sight of houses, so that there is more social control. To improve the social safety and awareness of the network even further, Mobycon analysed which aspects along the route have a negative effect on social safety. They provided advice on how this can be improved, as well as how the findability can be increased. Besides the right infrastructure and surroundings, it's also about behaviour. Cyclists can use a free app, which shows the routes of the night network and enables users to share their location with friends.

Lessons learned

1. When working on traffic safety, social safety shouldn't be underestimated.
2. Bridges and tunnels can have a negative impact on the perceived safety of cyclists.
3. The perceived safety is not limited to physical aspects such as infrastructure. Behaviour and confidence play a big role as well. To increase these aspects of safety, a free app was launched.

> " When working on traffic safety, social safety shouldn't be underestimated."

PROJECT INFO

Location:
Zoetermeer

Duration of the project:
2014 - 2015

Involved organisations:
Municipality of Zoetermeer, Mobycon

Read more:
Nachtnetfiets (NL)
Video explanation via YouTube (EN)