

# Bicycle policies of the European principals: continuous and integral





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# Preface

The first edition of this Fietsberaad publication, in April 2006, brought together a number of reports on traffic policies in several cities with a relatively high degree of bicycle use, covering an extended period. Each report provides a specific picture of the course of development of bicycle use in a town and the relation between bicycle use and local policies. These concern five Dutch cities well-known in the Netherlands for their bicycle use: Groningen, Amsterdam, Enschede, Zwolle and Veenendaal. Five other cities have been selected from neighbouring countries that also have a sizeable level of bicycle use: Münster and Freiburg in Germany, Copenhagen and Odense in Denmark and Ghent in Belgium.

The immediate reason for this publication was a study by Boersma & Van Alteren, seeking an explanation for the high degree of bicycle use in Groningen by qualitative means. The Groningen report as well as most of the other reports were slightly adapted versions of articles published earlier in *Fietsverkeer* magazine.

Publication 7 has been requested and downloaded often, as well as the English translation published at the same time. Since the book had gone out of print, a decision was made early in 2009 to update the ten reports to a certain extent. Often by including a final paragraph with the major developments over the last few years; sometimes (in particular for Odense and Copenhagen) changes were more drastic, actually amounting to new reports.

The ten town reports each paint a picture of the way bicycle policy has contributed to the high degree of bicycle use over time. Ten unique stories, with nevertheless quite a number of similarities, that may serve as examples of the way in which an even higher degree of bicycle use may be attained – over time!

Victor Molkenboer,  
chairman Fietsberaad



# I. Introduction

**'Continuous' and 'integral'.** These two words together reflect the essence of explanations for high degrees of bicycle use at a local level, as has become apparent from various studies in recent years. Continuous, consistent bicycle policies. Policies incorporated into a wider policy context of locally deeply-felt objectives.

## I.I Continuous and integral municipal bicycle policies

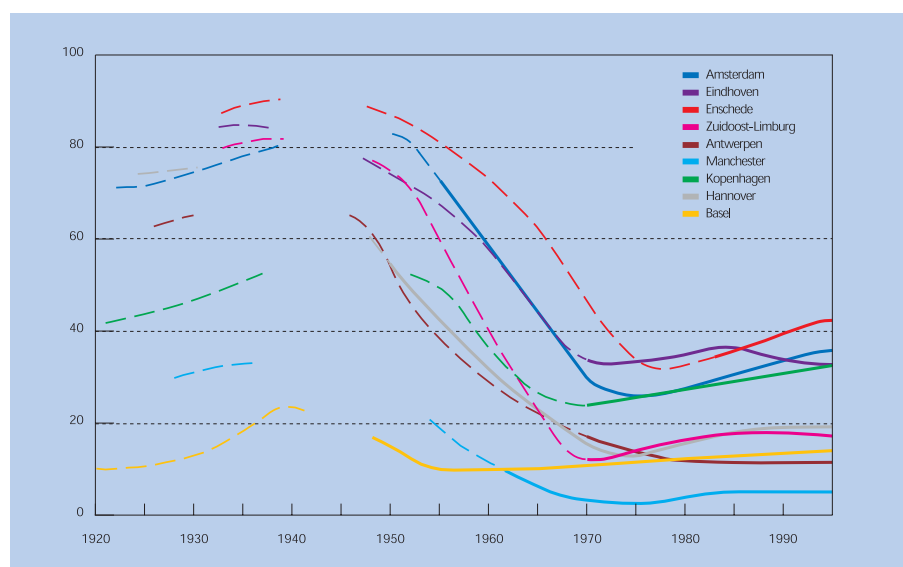
### *Continuous*

The above-mentioned words, with the emphasis on continuous, have already been the subject of a 1999 study by Stichting Historie der Techniek (SHT), attempting to explain differences in the development of bicycle use in a number of European cities. In this study giving bicycle use a long-term and, in retrospect, mature place in traffic policy early on is considered to be an important explanation for the fairly exceptional development of bicycle use in the Netherlands, compared to cities in neighbouring European countries.

Albert de la Bruhèze, A.A. and F.C.A. Veraart (Stichting Historie der Techniek), *Fietsverkeer in praktijk en beleid in de twintigste eeuw. Overeenkomsten en verschillen in fietsgebruik in Amsterdam, Eindhoven, Enschede, Zuidoost-Limburg, Antwerpen, Manchester, Kopenhagen, Hannover en Basel*, RWS-publicatie 63, April 1999.

For this historical research three cities in the Netherlands have been studied with a relatively high degree of bicycle use (Amsterdam, Eindhoven and Enschede) as well as an urban area with a low degree of bicycle use (Zuidoost-Limburg: Kerkrade-Heerlen). In neighbouring countries five cities were studied: cycling town Copenhagen, Manchester (where bicycles are absent) and Antwerp, Basel and Hannover, that are intermediate between the two in bicycle use.

*Reconstructed trend lines of bicycle percentages in total number of trips by car, bicycle, moped and public transport, 1920-1995 (in %)*



The curves in all nine trend lines are highly similar. From 1900 onwards the bicycle, initially a recreational vehicle for a small elite, very quickly became a utilitarian mass product for the middle and lower classes. All cities demonstrate, albeit to different degrees, a relatively high degree of bicycle use up until the 1950s. Differences in bicycle percentages among cities



before the Second World War bear little or no relation to the position of the automobile, but are correlated to the degree to which townspeople go on foot and in particular to the (early) development of a good public transport system (as was the case in Manchester). The sharp decline in bicycle use, particularly in the 1960s, is due to the rapid advance of the private car. From the 1970s onwards a stabilisation or renewed growth of bicycle use may be discerned everywhere.

In addition to the general similarities in the trend lines in the figure strikingly demonstrates the differences. The SHT report draws the conclusion that the final differences between the cities in the 1990s can clearly be explained:

- A high bicycle percentage (over 30%) for Amsterdam, Eindhoven, Enschede and Copenhagen, where a public transport system never developed that cannibalised bicycle use and where bicycles had always been a standard component of traffic policy: 'Accepting the cyclist as a 'normal' traffic participant with equal rights in the 1950s and 1960s has been (...) a crucial factor: the realisation of an infrastructure for cars does not occur at the expense of cyclists; the collective bicycle image is quite positive and above all else 'rational''
- An average bicycle percentage (approx. 20%) for Zuidoost Limburg and Hannover. Here the advance of the car led to a more distinctly pro-car policy and an urban planning that was more focused on cars.
- A low bicycle percentage (approx. 10% or less) in Antwerp, Manchester and Basel, where the strong influence of an early and highly functional public transport system (Manchester) as well as car-oriented traffic policies provide the explanation: 'The decline caused by the arrival of the private car continues continuously and without obstructions, as all relevant factors of influence are pointing in the same direction: a negative collective image, a highly car-focused policy, implementation of large-scale car infrastructure, strong sub-urbanisation (...).'



*Eindhoven, end of the working day at Philips factories at Emmasingel, 1939.*

photo : Philips concernarchief





photo: Historisch-topografische Atlas Gemeentearchief Amsterdam

**Amsterdam, Stadhouderskade with Overtoom to the right, February 1939.**

The three cities with a relatively low percentage of bicycle use – Antwerp, Basel and Manchester – have for decades conducted emphatic and explicit policies strongly aimed at facilitating car use. These policies were based on socially supported ‘images’ representing the future role of the bicycle as limited. From the 1950s onwards bicycle infrastructure was actually ‘removed’: bicycle paths were turned into car lanes, bicycle lanes became parking lanes. In Antwerp in 1939 cyclists were obliged to cycle one after the other, as they were felt to take up too much space. In Basel the local council wrote in 1944: *‘Prinzipiell ist heute zu sagen, daß in der eigentlichen Stadt Radfahrwege nicht mehr erwünscht sind.’* (‘As a matter of principle it might be stated that nowadays bicycle paths are no longer advisable in the town.’) Even worse: in 1951 the use of the public bicycle parking facilities was made obligatory, in combination with a maximum length of stay of one to two hours!

This is in contrast to cities with a relatively high percentage of bicycle use: Amsterdam, Eindhoven, Enschede and Copenhagen. There the actual traffic situation, including the role played by the bicycle, remained the basis for policies, without any highly normative pre-conceptions about the future. In the 1950s and 1960s most of the cities in the Netherlands demonstrated at least a certain degree of tolerance of bicycle traffic in their traffic policies. It is this acceptance of reality that even now is largely responsible for the constant, high percentage of bicycle use in the Netherlands.

### **Comparative bicycle history of Germany and the Netherlands**

In 2009 a thesis was published by the German scientist Anne-Katrin Ebert: *Ein Ding der Nation: Das Fahrrad in Deutschland und den Niederlanden, 1880-1940*. Ebert, too, describes divergent developments after the Second World War, among others the space allocated to cars in the reconstructed German cities, as opposed to the ancient inner cities in the Netherlands that were badly accessible to cars. Her main emphasis is however on the preceding decades, the First World War and the interbellum period. Even at that time, she states, the bicycle had become typical for the Netherlands. Ebert feels the explanation is primarily provided by the status of bicycle use. In the Netherlands the bicycle long remained a symbol of the middle class, whereas in Germany it soon became the means of transport for the lower classes. The position of the Dutch middle class was stronger anyway. The German middle class, after all, was stuck to a higher extent between the old aristocracy and the rapidly increasing working class in industrial Germany. A striking example is provided by the difference between the largest bicycle-promoting organisations. In the Netherlands ANWB was a bourgeois association with liberal and nationalistic values. In Germany *Solidarität* was the largest cycling union – a workers’ union.



photo: Gemeentearchief Enschede

*Enschede, Hengelosestraat. Bicycle parking at the rear of V&D department store, 1939.*

### *Integral*

The emphasis on 'integral' traffic policy is readily apparent in recent studies attempting to statistically explain the differences in bicycle use between cities. On behalf of Fietsberaad Research voor Beleid has drawn up an explanatory model of municipal bicycle use in 2006, on the basis of previous attempts. The explanatory model, encompassing 11 different factors, has in statistical terms an  $R^2$  of 0.726, indicating its explanatory value. That means that almost 73% of the variance in bicycle use between cities is explained by these factors. That is very high and we may therefore consider this a model with a high explanatory value. More than one third of the explanatory value of this model is provided by the four factors representing elements of 'integral traffic policy' (travel time ratio between bicycle and car, car parking fees, percentages of bus, tram, underground and surface built-up area).

## **I.2 Cycling cities in Europe**

The ten reports presented here are chiefly *specifications* of the general trend of 'continuous' and 'integral'. Each town has its own story, with a different emphasis due to particularly local circumstances. The similarities and differences between the ten reports will be analysed in more detail at the end of this publication, in chapter 12. Ten cities with respectable bicycle use.

Often higher bicycle percentages are claimed. Upon closer examination, however, these only refer to local trips within municipal boundaries, or specific segments like commuter traffic. The table above and the national surveys below only provide data that are known to relate to the bicycle percentage in *all* trips (by inhabitants of the town or country concerned). These figures are derived from many sources; at least two per town (minor differences having been erased).

*Bicycle use in ten European ‘cycling cities’, in descending order of bicycle percentage*

	inhabitants	bicycle % in all inhabitants' trips
Groningen	182.000	37%
Zwolle	116.000	36%
Münster	272.000	36%
Veenendaal	62.000	32%
Kopenhagen	502.000	32%
Enschede	154.000	31%
Amsterdam	747.000	28%
Odense	187.000	26%
Freiburg (im Breisgau)	218.000	22%
Gent	237.000	17%

The Netherlands, Denmark, Germany and Belgium are the countries with the highest bicycle use in Europe. Within these countries, the ten cities discussed here really are foremost as far as bicycle use is concerned. Bicycle use in these countries and cities is of an altogether different level than elsewhere in Europe:

- In **The Netherlands** the bicycle percentage in the model split has been approx. 26% over the last decades. The top cities score between 35% and 40%; cities with the lowest bicycle use rank between 15% and 20%.
- In **Denmark** the bicycle percentage is between 15 and 20%. Differences in bicycle use between the cities are relatively small; bicycle use in the cities is quite commonly at a level of 20% of all trips. Only Odense and Copenhagen (far) surpass this: Odense approx. 26% and Copenhagen nearer to 32%.
- In **Germany** on average 10% of all trips are made by bicycle. The western federal states have a higher average bicycle use, especially Nordrhein-Westfalen. Next to Münster and Freiburg there are more cities with bicycle percentages between 20% and 30% there. In other federal states bicycles are by no means absent either; Berlin for instance has a bicycle percentage of approx. 10%.
- **Belgium** has an average bicycle percentage of not much more than 8%. Many cities in Flanders approach the level of Ghent: somewhat over 15%. The town of Bruges even has a slightly higher bicycle percentage.

For many European countries and cities low bicycle percentages certainly do not automatically imply a high degree of car use. There are also large differences between countries and cities as far as numbers of pedestrians and particularly public transport users are concerned. South European cities are often characterised by high ‘walking’ percentages, for instance San Sebastian in Spain: 3% bicycle against ‘only’ 34% car, because public transport plays an important role in San Sebastian (19%), but mainly walking - a striking 44% of all trips. London has a similar pattern, albeit slightly less extreme: only 1% bicycle, as compared to 18% public transport and 37% walking, and therefore a mere 44% car. The lowest car percentages are found in cities with relatively high scores for walking, cycling and public transport. Many cities in Switzerland show a somewhat comparable pattern: over 20% walking, over 10% bicycle and approx. 30% public transport – resulting in a relatively low car use (approximately 30% in Basel, Bern and Zürich).

Although average bicycle use is much lower in other European countries, there are some striking extremes:

- In **Great Britain** bicycle use is on average only 2% (London even slightly lower), but there are several incidental cases with a much higher degree of bicycle use (York and Hull 11%, Oxford and particularly Cambridge close to 20%). A similar pattern – even slightly more extreme – can be discerned in Sweden and especially Italy.





**Västerås**

- **Ireland** scores 3% - 4%, with virtually no upward extremes (Dublin 5% at most).
- In **Sweden** bicycle use is on average 7% of all trips; for cities this is 10%. Peaks: Lund and Malmö 20%. The small town of Västerås (115,000 inhabitants) has an incredible 33% bicycle percentage according to a source quoted time and time again.
- In the **Czech Republic**, as in other Eastern European countries, there are a few cities with some degree of bicycle use (Ostrava, Olomouc and České Budějovice, between 5% and 10%) and some with an even higher bicycle use (Prostejov 20%). However, average use is low: far below 5%.
- **Austria** has an average bicycle percentage of 9%, with Graz (14%) and Salzburg (19%) as extremes.
- **Switzerland** scores approximately 11% for bicycle use, with several cities at a slightly higher level, like Bern (15%), Basel (17%) and particularly Winterthur (approx. 20%).
- **France** has a low average bicycle use (5%), nor has it many extremes: Strasbourg 12%, Avignon 10%.
- Although in **Italy** average bicycle use is as low as 5% , with Rome even far below 1%, there are a number of striking exceptions. Especially the Po valley, with cities like Parma (over 15%) and with Ferrara as the best-known extreme example: around 30% bicycle percentage. Another remarkable town elsewhere in Italy is Florence (over 20%).

This survey clearly indicates how much bicycle use varies within Europe, by country and in particular by town. Nowhere are the Dutch levels of bicycle use even approached, Denmark and Nordrhein-Westfalen coming closest. At the same time, however, it is obvious that even in non-cycling countries there are nevertheless some cities with respectable levels of bicycle use, for instance in Great Britain, the Czech Republic, Sweden and Italy.

## 2. Groningen: the compact cycling city

To many other cities in the Netherlands and abroad, Groningen sets as example as regards bicycle climate and bicycle use. What has made these two factors so prominent here? The answer revolves around three key words: policy, coherence and continuity. Local authorities for instance conduct a wide-ranging bicycle policy, firmly anchored in overall transport and traffic policies. In addition urban planning has for decades focused with perseverance and vision on a compact town, providing the citizens with many activities well within cycling distances. This, putting it briefly, is the success of vision, political choices and official effort.

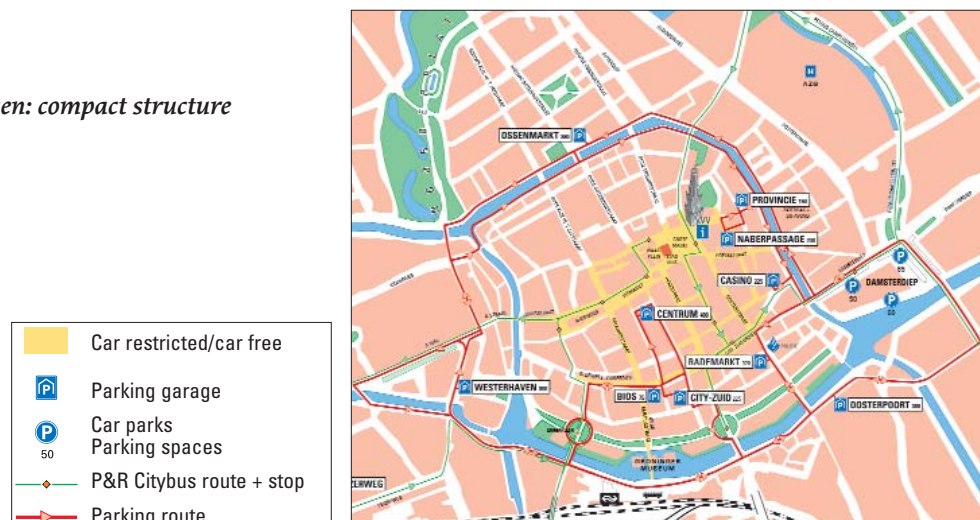


### *Groningen, the town*

Groningen has been a regional centre from the thirteenth century onwards. As a Hanse town it had been a centre of trade and industry for centuries. A university town, Groningen still ranks seventh in number of citizens, although its population has hardly increased since the 1950s: from 150,000 to 185,000.

The town has a compact building structure, even though the number of residents per hectare of residential area decreased from 136 to 71 between 1964 and 2000. Within a 3-km radius from the centre of the town 78% of all residents live and 90% of all jobs can be found; nearly all buildings are found within a 5-km radius. The main road network is coarse and intended as a concentration area for car traffic. Its structure is characterised by five radial routes connecting the town centre with the suburbs, and a ring road to which radial arterial roads from the surrounding region connect. Around the car-restricted, partly car-free town centre a car park distribution ring road is operational (eleven parking garages, all of them nearby) for the inner town and the adjoining residential neighbourhoods.

### *Groningen: compact structure*





### *Groningen cycling city: how come?*

In 2002 Fietsersbond, the Dutch cyclists' union, proclaimed Groningen 'Cycling City of the Year'. As regards bicycle use the town has topped the ratings of Dutch cycling cities for years: the percentage of trips by bicycle of Groningen residents has been hovering at just under 40% for almost twenty years. This awards Groningen the first place among the major cities, occasionally being replaced by Zwolle. How have Groningen local authorities managed to achieve all this? Is this merely the result of bicycle policy 'in a strict sense'; activities based on policies directed purely at bicycle traffic? Not likely, in view of Groningen's relatively high Fietsbalans score as regards competitiveness of bicycles compared to cars and the town's urban density. These scores indicate a relation with integral transport and traffic policies and with urban planning.



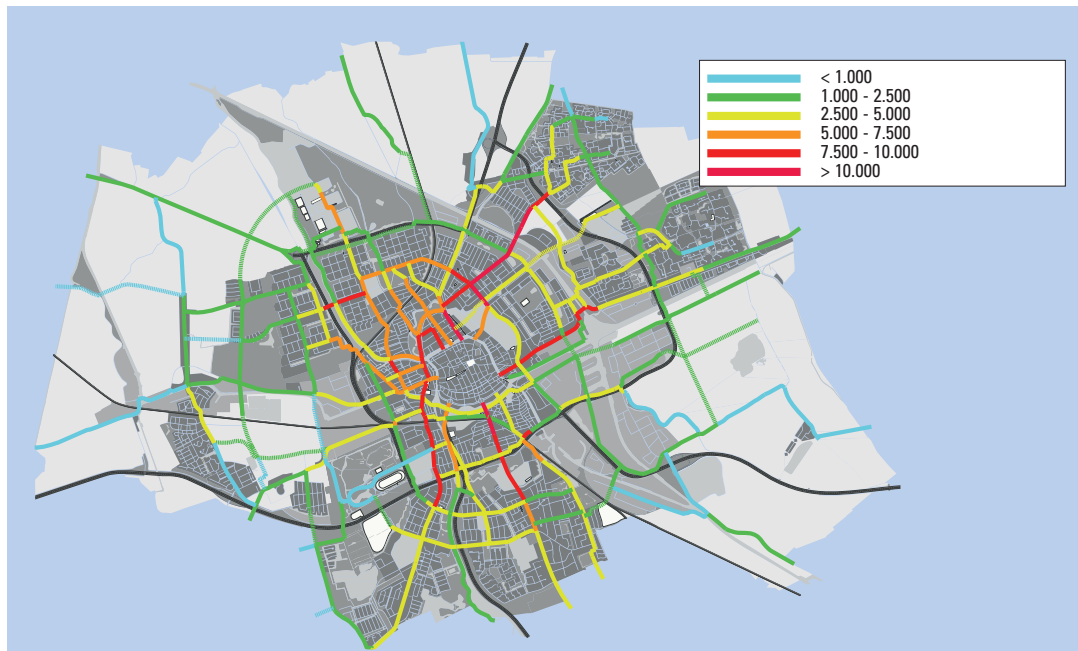
#### **Diverse data**

Groningen is approaching a 40% percentage in bicycle use for all trips of its residents. That is very high, but at the same time there are other data in circulation that appear much higher and/or imply a stronger growth.

These are not mutually contradictory; these are simply not quite similar. Groningen local authorities themselves regularly communicate data about internal, local trips by residents: 60% of these trips occurs by bicycle. Of course the percentage of bicycle use is higher when related only to these (on average short) local trips as opposed to all trips of Groningen residents. The Fietsbalans data concern the bicycle percentage in all short trips by residents, up to a distance of 7,5 km. In that case Groningen scores 47%.

Other data concerning Groningen are based on counts. The town has a fixed network of sites where the number of cyclists is counted over extended periods. In 2008 at all of these sites a total of 216,000 cyclists a day were counted; a 9% increase over 2007. However, these types of counted data are significantly more sensitive to fluctuations, amongst others weather influences. Nevertheless: a percentage in transport increasing by 9%, will grow for instance from 37% to 40%. An increase by 2 or 3 per cent in transport percentage is very high, but certainly not completely impossible or imaginary.

### *Traffic data per 24 h on main bicycle routes in Groningen*



The map shows that by 2000 Groningen possessed a number of heavily used radial bicycle routes, in particular the route from Beijum along Korreweg and routes along Hereweg, Paterswoldseweg and Damsterdiep. In particular, the route Pleiadenlaan-Eikenlaan-Asingastraat-Sumatralaan-Kapteynstraat is heavily used as a cross connection. Ebbingestraat is used heavily as well. The overall number of cyclists on the inner city cordon, which means all cyclists from the various origins towards the town centre, is approximately 150,000 cyclists per 24 hours.



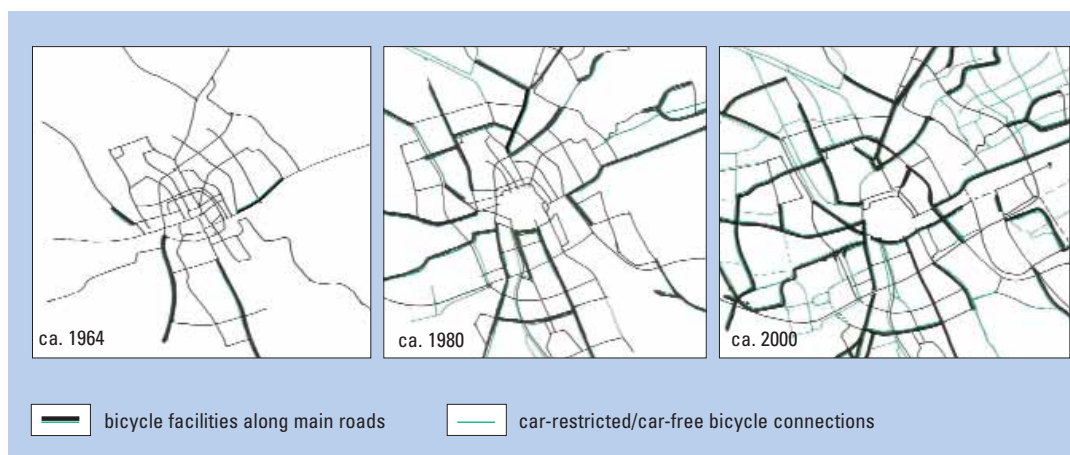
### *Bicycle policy*

The figure first displays the main bicycle facilities around 1964; a time when only a few facilities specifically intended for cyclists had been realised. Separate bicycle paths had only been constructed along Hereweg-Herestraat, Paterswoldseweg and part of Friesestraatweg. Although the first municipal bicycle policy document appeared in 1986, bicycle policy had received attention before. The 1969 *Verkeersplan Centrum Groningen* already assigned priority to bicycle traffic facilities. Preventing detours for cyclists received much attention when one-way traffic was introduced in order to influence traffic circulation. It was felt important to create uninterrupted, straight bicycle routes as part of a route network.

The 1976 *Verkeerscirculatieplan* devoted much attention to bicycle traffic as well. Out of the almost 6.4 million Euros spent on the implementation of this plan 2.7 million was intended for bicycle facilities. Implementing all these plans meant that the infrastructure for bicycle traffic would steadily expand in the years to come.

Gerrit van Werven, at the time policy official and responsible for drawing up the 1986 *Nota Fietsvoorzieningen*, states this was the first policy document concerned solely with cycling in the Netherlands. Although Delft admittedly had a document as well, this was restricted to the bicycle network. Groningen local authorities on the other hand had an integral plan, aimed at a wide range of bicycle policies.

### *Main bicycle infrastructure approx. 1964, 1980 and 2000*



In the early 1980s an experiment was started with a guarded bicycle parking facility in the town centre. Tests were successful and were followed up. By now the town has a network of almost thirty guarded bicycle parking facilities. Next to traffic safety, social safety also received increasing amounts of attention. This was transformed by local authorities into a bicycle policy budget, in part with financial support from the national and provincial authorities.

*Nota Fietsverkeer 2000* demonstrates that Groningen local authorities invested overall almost 23 million Euros in bicycle facilities over the period between 1989 and 2000, for example bicycle paths and bridges and asphaltting bicycle paths. These are both investments specifically for bicycle traffic as well as investments in bicycle traffic piggybacking in other plans. *Nota Fietsverkeer 2000* itself resulted in additional expenditures by local authorities: 4 million Euros up to and including 2002 and another 5.5 million Euros for the period between 2003 and 2006.

The figure also shows the main bicycle facilities by 2000. When compared to the situation existing around 1964 it is obvious that a great number of bicycle facilities have been realised between 1964 and 2000.





### *Integral traffic policy*

In 1964 the car had only just begun its advance in the Netherlands. At this time the Grote Markt beltway in the town centre of Groningen handled 23,000 motor vehicles every 24 hours while there were 43,000 on the canal beltway surrounding the ancient inner city. The load imposed on the Grote Markt beltway was only a little below the total amount of traffic entering and leaving the town!

In the present situation, with the advance of the car reaching its peak, there are approximately 800 buses and taxis and 30,000 motor vehicles every 24 hours. Apparently, an effective policy has been implemented over the past four decades.

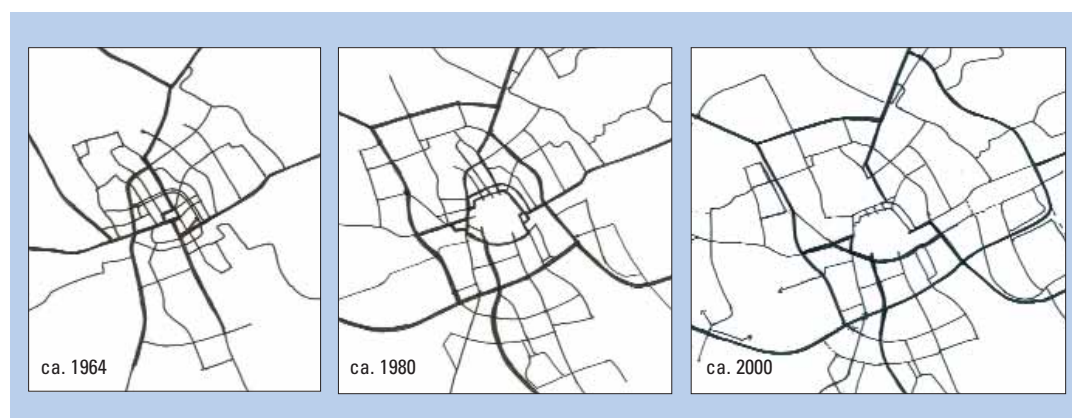
Car traffic boomed in the 1960s, a development which was expected to continue even more strongly. It is remarkable that in 1965 car ownership in Groningen was slightly above the national average (110 cars per 1,000 inhabitants versus the national average of 100 cars per 1,000 inhabitants). Between 1955 and 1968 car traffic in Groningen tripled. Between 1960 and 1968 it doubled again. Use of public transport fell dramatically over the same period. The number of passengers on one of Groningen's main public transport lines fell by 45% between 1958 and 1967 (from 2 to 1.1 million passengers per year).

In 1969 this led local authorities to present a traffic circulation plan with a sweeping vision: *Verkeerscirculatieplan Groningen 1968-1969*. This provided for a distributory ring road closely encircling the town centre (Diepenring and Zuiderdiep). The traffic structure would moreover consist of three tangents: the inner, middle and outer tangents. The distributory ring road and the inner and middle tangents would require major demolitions for traffic purposes.

The plan evoked much resistance and local authorities eventually concluded that, apart from economic development, attention should also be paid to a liveable, small-scale inner city as a venue for all kinds of activity and with a mixture of residential, working and shopping functions favouring pedestrians, cyclists and public transport. This put paid to the plans for construction of the inner, middle and outer tangents. Only Zuiderdiep was completely transformed into an arterial road consisting of four to six lanes, in accordance with the basic principles of *Verkeerscirculatieplan Groningen 1968-1969*.

These changed views were recorded in *Doelstellingennota 1972*, the 'bible of the progressive town government' according to Nieuwsblad van het Noorden newspaper. In concrete terms the amended policy implied re-distribution of the available public space. The term 'stadserf' came to apply to the area surrounding Grote Markt. More space was allotted to pedestrians and cyclists. The dominant function of Zuiderdiep for car traffic was counteracted by constructing bus lanes and town-centre stops for district buses as well as the construction of separate bicycle paths.

### Arterial road structure for car traffic, approx. 1964, 1980 and 2000



A new version of *Verkeerscirculatieplan* (VCP) was drawn up (1975). In order to reduce through car traffic from the town centre, the inner city was divided into four traffic sectors: 'cake wedges'. Passing straight from one sector to another became impossible by car, but this was possible by bicycle. The town centre was opened up by way of a 'loop system' (one loop per sector). Through car traffic was barred from the town centre and car drivers heading for the town centre were directed to car parks in the vicinity of the town centre along the shortest possible route.

The plans were highly controversial but were carried through despite fierce opposition, especially by entrepreneurs in the town centre (September 1977).

VCP was actually not intended to remove all car traffic from the town centre. It was meant to keep through car traffic away from the town centre and to guide drivers heading for the town centre to nearby car parks as directly as possible. VCP resulted in the car traffic arterial road structure around 1980, shown in the figure above. The shift in traffic load by cordon compared to 1964 demonstrates the major consequences of VCP, see the table:

#### *Shift in traffic load by cordon (motor vehicles per 24 hours)*

	1964	1980	2000
outer cordon	38.000	120.000	280.000
inner city cordon	43.000	24.000	30.000
Grote Markt cordon	23.000	1.200 *	800*    * buses and taxis

For years to come blazing passions were to play a part in the further development and implementation of municipal traffic policy. By taking measures like improvement of pedestrian facilities and linking the 'quieter' town centre streets on to busier streets local authorities aimed to further improve competitiveness of the town centre, without counteracting the VCP's positive effects on traffic and the environment.

After completion of the entire ring road system in 1987 it became possible to close off Leliesingel, cutting through Noorderplantsoen. After ten years of discussion on the pros and cons a pilot closure

was implemented in 1993. A referendum was conducted in October 1994 resulting in a very narrow 51% majority in favour of closure. A definitive closure was decided on.

Assessment shows that bicycle traffic on Leliesingel through Noorderplantsoen has increased by approx. 30%. Over half of all car traffic that used to take this road through Noorderplantsoen changed to the ring road system after the closure.



Due to the bad experiences generated by VCP and heated discussions surrounding the Noorderplantsoen referendum, local authorities organised an elaborate participatory process in the mid 1990s, preparatory to developing a local traffic policy for the period until 2010. This process clearly demonstrated that there was still resistance to the policy being implemented by Groningen authorities (from the implementation of VCP onward) of barring non-essential cars from the town centre and ensuring a good quality of life for pedestrians, cyclists and residents.

At the start of this process two camps could clearly be distinguished: 'local authorities do not try hard enough for cars' versus 'local authorities do not try hard enough for public transport and bicycles'. The former group largely consisted of people of the surrounding regions working in the town or using town facilities. The second group consisted mainly of residents inconvenienced by the growth of car traffic. By encouraging public debate more support for traffic and transport policies in Groningen was gradually obtained. The essence of the policy outlined in *De bereikbare stad leefbaar* is that a distinction is made between areas inside and those outside the ring road. There are no demolitions for roads scheduled inside the ring road, and efforts are directed at a limited improvement of infrastructure only (the approach routes), at traffic management and at devaluation of sections of Diepenring. There the quality of life for residents is emphasised.

From the 1980s onwards parking policy became an increasingly directive policy instrument. Parking fees and maximum parking stays were introduced within a wide circle around the town centre. Between 1980 and 2000 the surface of the parking-fee area increased from 1.2 km<sup>2</sup> to 5 km<sup>2</sup>. At present there are eleven parking garages, providing a total number of 3,600 places.

Most garages charge € 1.70 - 2.00 per hour. In addition public transport has been heavily promoted, including a P+R Citybus system. No fewer than seven large P+R sites are located on all edges of town. From here people may take the P+R Citybus to the centre and back again.

### *Urban planning*

By 1964 Groningen was the most densely-populated town in the Netherlands. Until that time the municipal boundaries had only allowed expansion close to the existing town.

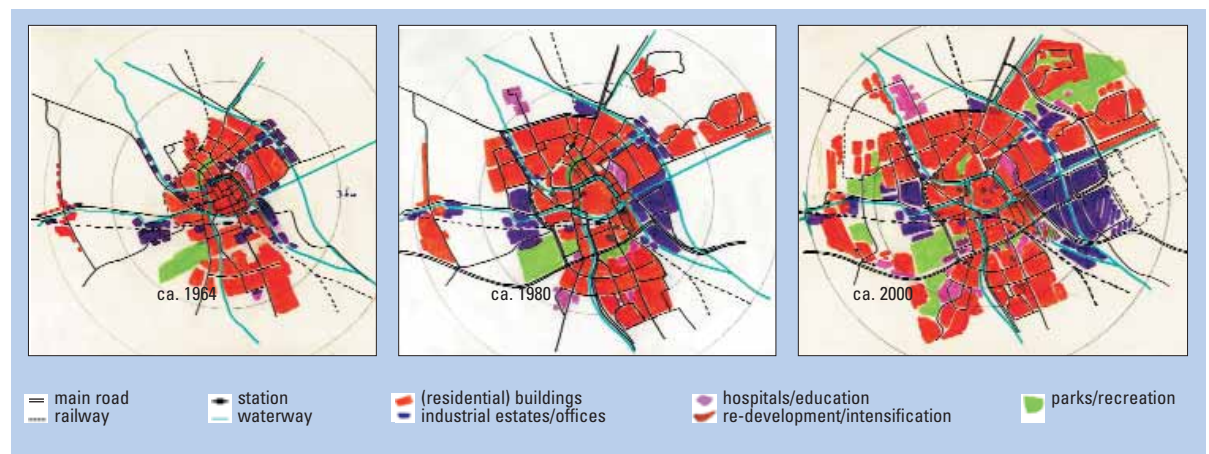
The town was given slightly more room to breathe when its boundaries were enlarged in January 1969 by the annexation of Hoogkerk and Noorddijk. From then on expansions were subject to the principle of 'segmented sectors': new residential neighbourhoods at some distance from each other and from the town centre, each with its own centre and green lungs in between. In the early 1970s the general idea was that a strong increase in population was



to occur. In Groningen this led to the construction of Vinkhuizen, a neighbourhood with a metropolitan character (including high-rise apartments). To the south of the town construction of De Wijert-Zuid was started, a residential neighbourhood for the more affluent. Within the new expansions of the 1970s quite a lot of public housing has in general been realised.

Due to the combination of increases in urban scale and housing dilution, a nation-wide trend, the picture of a compact town had disappeared by 1980. Yet policy has continued to be directed towards attracting major economic and social facilities to the town centre and its vicinity. The humanities department of the university for instance was concentrated in the town centre, and the university hospital (currently UMCG) remained, renovated and expanded there.

#### *Urban structure by 1964, 1980 and 2000*



Apart from what turned out to be a fairly limited expansion from the 1980 onwards, urban planning in Groningen continued to consider the value of a compact town. With businesses moving away from the town centre and its surroundings to new estates, room became available in and near the centre for housing and office accommodation. Service and office employment increased considerably here. Large-scale retail facilities were realised adjoining the town centre (Westerhaven) and its immediate sphere of influence (IKEA). Outside the town centre local authorities opted for a relatively small-scale expansion model, the so-called annex model. This provided greater flexibility than the development of large, new residential neighbourhoods. This also allowed optimal use of existing infrastructure and facilities like neighbourhood shopping centres and allowed a high building density. Concentration of high-quality facilities of various types contributed to the reinforcement of the central position of the town within the region and assisted in fighting suburbanisation.

By 2000 the urban structure is characterised by a high degree of condensation. The 1980 outer limits of the town have been maintained. One of the results is that most destinations within the town remain well within cycling reach, even though the current average moving distance will undoubtedly be higher than in the 1960s due to the considerable decline in population density in residential neighbourhoods from then on. Apparently its effects have been compensated by a good (bicycle) traffic policy intended to make bicycle use more attractive. This was accomplished for instance by the construction of high-quality direct routes for cyclists emphatically – not for drivers – to and from the neighbourhoods farthest from the town centre.

#### *Explaining the Groningen success*

Ever since the early 1970s this focus on a compact town has been the leitmotiv of planning and traffic policy for Groningen, at managerial as well as official levels. In an interview Niek Verdonk, former director of the municipal department of town development, building and housing once observed: 'Coincidence, tendency and good luck are not the only, and certainly not the first success factors in the urban design of Groningen. That is passion. A basic attitude



sometimes labelled as obstinate by discussion partners during verbal contests about right and wrong in housing construction. It is this attitude that is the basis of urban planning in Groningen.'

Whereas Groningen policies concerning the town centre and traffic are continuously characterised by fierce political struggles, bicycle policy has always enjoyed council-wide support in Groningen. This is still the case today, even where it concerns making budgets available.

The table below demonstrates to what degree the Groningen town centre profits from the various transport modalities. Considering all visitors and overall volume of trade the bicycle is of major economic importance as well: 31% of visitors and 34% of volume of trade. Of course mostly local people are concerned: 46% of Groningen residents cycles to the inner city and provides 56% of all sales to residents there. Visitors from the surrounding region and from elsewhere in the Netherlands travel somewhat more often by public transport than by car, but visitors by car spend considerably more.

*Poll of passers-by in Groningen town centre 2004; percentages of major transport modalities in number of visitors and actual volume of trade*

	percentage of visitors				percentage of trade			
	walking	bicycle	public transport	car	walking	bicycle	public transport	car
local visitors	32%	46%	13%	9%	19%	56%	14%	25%
regional visitors	1%	22%	41%	36%	0%	21%	32%	40%
supraregional visitors	5%	7%	48%	39%	4%	5%	39%	37%
<b>total</b>	<b>20%</b>	<b>31%</b>	<b>27%</b>	<b>21%</b>	<b>11%</b>	<b>34%</b>	<b>25%</b>	<b>35%</b>

*Source: Goudappel Coffeng, Detailhandelsmonitor 2004 Gemeente Groningen, January 2005.*

More recently the data of this poll have changed to some extent. The overall percentage of the bicycle in the total number of visitors fell, for instance, from the above-mentioned 31% in 2004 to 25% in 2006 and 28% in 2008. Anyway strong fluctuations that also raise some questions about reliability margins. The percentage of visitors by car increased in particular from 2006 onwards: 27%/30%/29%. And according to the latest poll results the percentages of bicycles, public transport and car are now equal.



### 'Priority for bicycles keeps town accessible.'

In a December 2003 article in *Verkeerskunde* magazine, **Cor van der Klaauw**, at that time traffic policy civil servant of Groningen, responded to this editorial statement: 'Flow of car traffic will always be given priority by local traffic experts.' A few quotes of his response:

- Promoting bicycle use is crucial for local authorities; it creates space for unavoidable car traffic. Even more important: more people on bicycles means fewer cars in streets. It is expected that the inevitable growth of car traffic in Groningen can be accommodated within the present infrastructure. As a result, the decision to expand infrastructure can be delayed. This is a nice additional advantage in these days of shrinking infrastructure budgets.
- However, Groningen would not be a 'cycling city' if the bicycle did not form an integral part of urban planning and traffic and transport policies. Priority for bicycles is reflected in the following spearheads:
  - the town centre is accessible from various new residential neighbourhoods without having to pass a single intersection with traffic lights;
  - traffic lights are removed wherever possible. This happened in about seven locations over the past few years;
  - heavy bicycle flows (10,000 cyclists every 24 hours) have precedence over car traffic (Korrebrug);
  - four-direction green lights have been introduced at intersections with traffic lights that have separate traffic lights for cyclists (Herebrug and Emmabrug);
  - cyclists are given the green light twice per cycle wherever possible;
- All of this implies that the above editor's statement does not apply to Groningen. A subtitle to the '*Fietsstad 2002*' signs on the Groningen approach roads should therefore be: 'Groningen traffic experts give priority to the bicycle to keep the town accessible to public transport and unavoidable car traffic.'



*Parking facilities in the Groningen town centre*





### *'Stap op!' Cycling measures 2007-2010*

*Nota Fietsverkeer 2000* led to considerable expenditures in bicycle infrastructure over the period up to and including 2006, as described above. The document was still relevant after that, as it ensured that the measures considered urgent remained at the top of the wish lists. A plan with a new title was drawn up – *Stap op!* – but the intrinsic decisions did not change. As a matter of fact bicycle policy has more or less turned into a mere implementation issue in Groningen. No grand, evocative stories or thick policy documents, but mainly formulating and implementing concrete measures. *Stap op!* Does provide some new themes or accents in bicycle policy: more attention for bicycle-friendliness of traffic lights, school environments and children's independent cycling.

For the period 2007-2010 measures have been planned for a total of € 10,1 million. No less than € 3 million of this to be spent on a bicycle bridge alongside Plataanlaan across Reitdiep, € 2,3 million for a bicycle path along the railway to Noord and € 1,1 million for bicycle paths along Duinkerkenstraat and Antwerpenweg. It is remarkable that part of these measures are not items from earlier campaigns that were not yet implemented, but rather new suggestions provided by citizens. Groningen residents were asked to provide suggestions for measures. An earmarked budget of € 1 million over 4 years was available for 'new wishes': mainly asphaltting existing bicycle paths, introduction of two-way traffic on bicycle paths, shortcuts and bicycle parking.





### **Traverse Groningen systematically: well-considered signposting helps all types of cyclists**

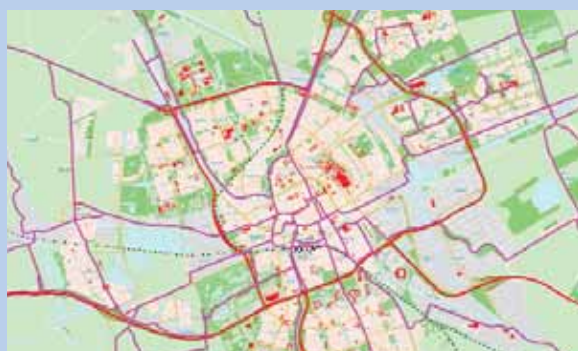
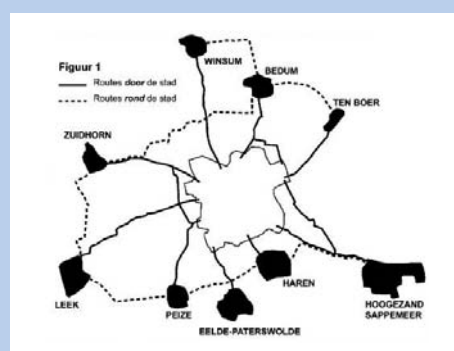
*Since 2007 Groningen possesses a completely independent system of signposting for cyclists. Cyclists without local knowledge may find the shortest route through town to nearby towns. As well as to specific destinations in the town.*

A 1996 signposting document provided the incentive for the new system of signposting. One of its basic principles was separating the systems of signposting for cars and bicycles. Another contributing factor was the introduction of the parking route information system (PRIS) which led to the disappearance of numerous signs intended for bicycles as well as cars. In addition urban developments such as construction of new bicycle routes and new origins and destinations required a different approach. In all, sufficient cause for a completely independent, separate and newly realised system of signposting for cyclists. The decision was made in late 2004.

### **Distinguishing various types of cyclists**

The signposting plan distinguishes between towns in the Groningen region and specific destinations in the town itself. Particularly for (recreational) cyclists without local knowledge it is hard to find routes through town and destinations in town. The signposting plan is aimed mainly at this category. Cyclists to the larger towns like Zuidhorn, Bedum and Peize are guided through the town. Around the town and in the suburbs the names are signposted of nine larger towns located at 10 to 15 km from the Groningen town centre. Routes from Groningen to these towns are completely signposted. The routes to (18) smaller towns and villages are indicated from the edge of town. The start of the signposting depends on the size of the town concerned. The route to Hoogkerk, for example, starts before the route to Dorkwerd.

The second part of the signposting system refers to major destinations in the town itself. A selection has been made on the basis of importance for recreational cyclists or those without local knowledge, the number of visitors and how easy it is to find the route. Ultimately this led to the selection of ten destinations, from tourist office and the railway station to the local camping and Euroborg. Signs for these destinations start at a relatively short distance, but sooner if the route is hard to find. Outside the town the signs only designate 'Groningen', until the beginning of the built-up area, and in the other direction the relevant larger and smaller towns. Within the town itself the larger towns are signposted as well, besides 'Groningen-centrum'. In the town centre itself the specific central destinations are stated as well.



### **Main and secondary routes**

A further distinction has been made between main routes and secondary routes. On both types of route the same destination is designated. The main route guides cyclists along a direct and comfortable route. Delays are avoided as much as possible. In secondary routes tourist appeal is paramount. This may be at the expense of directness and comfort. The main routes have been signposted with the traditional white signs with red lettering. The secondary routes can be recognised by the white signs with green lettering. The entire project has by now been realised by ANWB, at a cost of over 300.000 Euro.

*Dirk Ligtermoet, Fietsverkeer nr. 16, May 2007, page. 18-19.*

### *2009: emphasis on bicycle network*

Even in the town which has had for years the most comprehensive, least classical bicycle policies by Dutch standards, bicycle policies consist nowadays from a financial point of view mainly of improving the bicycle network. For 'communication and promotion' € 100.000 is earmarked out of the € 10,1 million; mainly information on measures to prevent bicycle theft. For bicycle parking € 270.000: a six-month experiment with free guarded parking in the town centre, a guarded parking near a swimming pool, extra capacity in the town centre and railway station and the long-term project 'Stadsfietsen'. Of course the necessary measures may be classified somewhat differently. But the picture stays the same: Groningen invests mainly in several large network activities. Because those require the highest financial expenditures, considering the cycling climate Groningen has already created.

### *The success of the Stadsfietsen project*

This innovative project, or rather programme, has been developed to try and solve the problems concerning quality and space in the town centre, caused by the numbers of bicycles parked there. And in an emphatically bicycle-friendly way. **Jaap Valkema**, consultant bicycle policy for Groningen local authorities, formulates this as 'making bicycle parking more manageable'. Another first for Groningen: no emphasis on regulations and repression, but a positive approach of the enormous bicycle use leading to a minimising of the ensuing nuisance. Which appears to be quite successful.

First of all, starting in 2005, no fewer than 1500 extra bicycle stands have been located in the town centre. A 'normal' course of action. After extensive surveys and study the sequel consisted of three striking elements:

- rush-hour stands;
- red carpets;
- free guarded parking.



**Rush-hour stands:** Starting in 2007 each Thursday morning approximately 130 extra rush-hour bicycle stands were positioned in the Groningen town centre. These supplied an additional 1300 spaces. On Sunday morning the stands were collected and removed. The rush-hour stands should ensure there are fewer bicycles parked outside stands, creating a nuisance. At peak times on average 75% of the rush-hour stands were filled. In this way the aim of regulating bicycle parking was most certainly fulfilled. A detail that strikingly demonstrates the bicycle-friendliness of Groningen: if a bicycle is still fixed to the rush-hour stand on Sunday, the rack will be cut loose, instead of the bicycle lock.



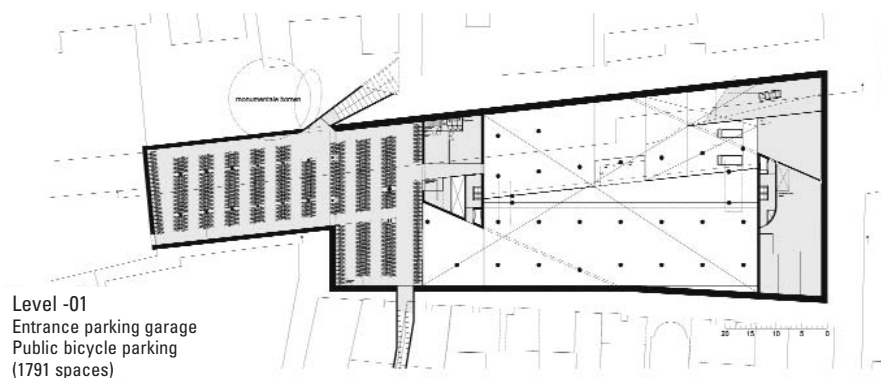
**Red carpets:** Even more elbow grease and effort are required for the red carpets, introduced at the same time. On seven different locations these are put down each morning and picked up each evening. Literally carpets as a passageway through the shopping streets. The aim is to motivate people not to park their bicycles on the routes, so pedestrians can walk easily and safely. And this is effective. To a great extent bicycles are parked alongside the red carpets only. This started out as an experiment, but has been continued thanks to the success.



**Free guarded parking:** Groningen once led the way in the number of guarded parking facilities in the town centre. In making these free – a trend elsewhere in the Netherlands – it was rather slow, although it was clear in Groningen, too, that as long as guarded parking facilities are to be paid for, these will not reach their full potential. From 2007 the four bicycle parking facilities in the town centre became free of charge, initially as an experiment.

The Stadskietsen project is a success. Overall, but also all the constituent parts. The number of bicycles parked outside stands has fallen by 10-14%, despite an increase in the number of bicycles in the town centre. And in particular the most obnoxious ones have disappeared. The guarded parkings saw a 34% increase in customers. Due to the success the guarded parkings in the town centre will continue to be free of charge, and the red carpets and rush-hour stands will remain in the town centre as well. A number of rush-hour stands will be replaced by permanent stands.

Attempts are also made to increase bicycle parking capacity in the town centre in a more structural way: a bicycle basement below the 'Groninger Forum' (a building on Grote Markt) is to lure many bicycles away from the street. Initially room for 1000 bicycles was planned, but upon closer consideration 1500 to 2000 places would be needed. Politicians, too, insisted estimates to be generous in view of the experiences at Centraal Station (see below). In the latest design of Groninger Forum some 1800 spaces are projected in a bicycle basement.





### **Stadsbalkon: Bicycle parking at Groningen station**

*Enormous numbers of bicycles at the railway station a problem? Certainly, it is hard to manage this well in urban planning. That this essentially can be done successfully is demonstrated by Groningen. Implementation, organisation and use of the new Stadsbalkon as a classic example for the Netherlands.*

Next in line after traffic routes and the bus station, the bicycle parking facilities and the Groningen station forecourt could do with a major overhaul. Double use of the land would be necessary in order to accommodate all functions in the confined station area.

Immediately in front of the station building, at a minimum distance to the platform entrances, a remarkable square has been designed, with a parking facility for 4650 bicycles underneath: Stadsbalkon. Costs over 10 million euro. The project was to a large extent finished in the autumn of 2006; the last part of the bicycle parking opened in January 2007.

### **Bicycles below the square**

The square is remarkable. Curving in all directions, striking colours, trees planted in the bicycle parking and 'growing through the ground', ends to the side of the square ascending into 'nothingness'. The parking facility underneath is at least as extraordinary. The enormous space, with bicycles in two layers and wide paths, is impressive. The bicycle route, including a sort of mini-roundabout, is very special, as it passes in front of the railway station straight through the parking facility. When cycling from east to west or vice versa there is no longer a need to cross to the north of Stationsweg. The Stadsbalkon bicycle parking facility is below ground level, but can by no means called 'indoors'. It is not a bicycle basement – the space is too open and accessible from the east and west. But the closed sides towards the railway station and Stationsweg do make it a closed space, to a certain extent. Groningen authorities therefore decided at an early stage that there would be close supervision. Which has been realised, to a degree unknown in the Netherlands. At any time there are two or three supervisors. The 24-hour supervision is partly funded by local parking fees, partly by a security budget. The close supervision has already been effective. There are no complaints and the parking is immensely popular. According to the local police reporting of bicycle theft at the railway station has fallen enormously (from approximately 6 to 1-2 bicycles a day). The close supervision, which has become highly preventative and service-oriented as well in hectic everyday practice, has also led to an extremely low percentage of bicycles parked in the wrong places. People tend to behave when supervised, and anyway the supervisors do not hesitate to simply move bicycles.



### **Unexpected use**

At the time the decision was made to build the Stadsbalkon bicycle parking, in 2001, it was meant to provide a solution for all unguarded parked bicycles. During construction several temporary facilities have been built, most important of which was the bicycle tower in the western corner of the station square: two floors with two-layer parking provided room for some 1000 bicycles. After partial completion in September 2006 the newly available 2700 spaces underneath Stadsbalkon proved to be filled to capacity at peak times – in addition to the 1000 spaces in the bicycle tower. It was therefore decided to maintain the bicycle

tower 'for the time being'. Latest counts demonstrate that there are well over 6,000 bicycles near the railway station, which would far exceed the capacity of various stands (800 spaces) and the Stadsbalkon parking, which was being equipped for 4150 spaces.

The question is, of course, why the 2000 forecast, stating that Stadsbalkon would suffice for all bicycles, is so grossly being exceeded a mere six years later. Local authorities feel the major cause is the increase in the number of students, among these in particular an increasing percentage of students living at home (and often travelling to Groningen by train): 27% more students over 6 years; well over 30% more students living at home. In addition regional bus services have been discontinued, leading to more train passengers.

### **Supervision or surveillance?**

A semi-indoor space with close supervision from a supervisory station at a central location in the parking – is that still 'unguarded'? Cyclists will consider this a hybrid at the very least. In common parlance this confusion is apparent, too. An telling example: one of the town councillors refers in her weblog to the 'semi-sunk, large, free, guarded bicycle parking' and to '24-hour surveillance'. Actual practice wins out over theory: cyclists experience Stadsbalkon parking facility to some degree as free and guarded. And that immediately implies the risk that the guarded parking will lose customers and available capacity will go unused elsewhere. That is the more relevant in Groningen as the guarded parking facility – on as perfect a location– is large and quite well-used. Local authorities estimate the capacity to be 2700 bicycles and actual average occupancy at 2000. The guarded parking does appear to suffer from the opening of Stadsbalkon. NS Fiets reported considerable decreases over November 2006 as compared to November 2005, both in day-tickets (20% less), weekend tickets (40%) and monthly subscriptions. In addition to student numbers and a general increase in bicycle use, this appeal to cyclists that used to park at a fee might provide an important explanation for the unexpected use of the Stadsbalkon parking facility.

*Dirk Ligtermoet - Ligtermoet & Partners, Fietsverkeer nr. 15, Feb. 2007, page. 26-27.*



Groningen has dropped the plan to ever demolish the bicycle tower. At the back of the railway station another 800 parking spaces were added. Local authorities and NS Fiets together devised a good way to decrease peak occupancy rates in the unguarded parking facilities, which is experimental for the time being and will be evaluated in late 2009: the guarded parking facility is free of charge during the busiest time of the week, from Friday afternoons at 1.00 p.m. until Monday morning 1.00 a.m.



### 3. Zwolle: separation, wherever necessary

Zwolle is among the top cities of the Netherlands as far as bicycle use and more in particular 'bicycle street climate' are concerned. This is clearly demonstrated by the several Fietsbalans Cycling City of the Year nominations. Is there an explanation for this? An interview with the main actors: Willem Bosch, the face of bicycle policy in Zwolle for almost twenty years and Rutger Ekhart, municipal transport and traffic policy consultant.



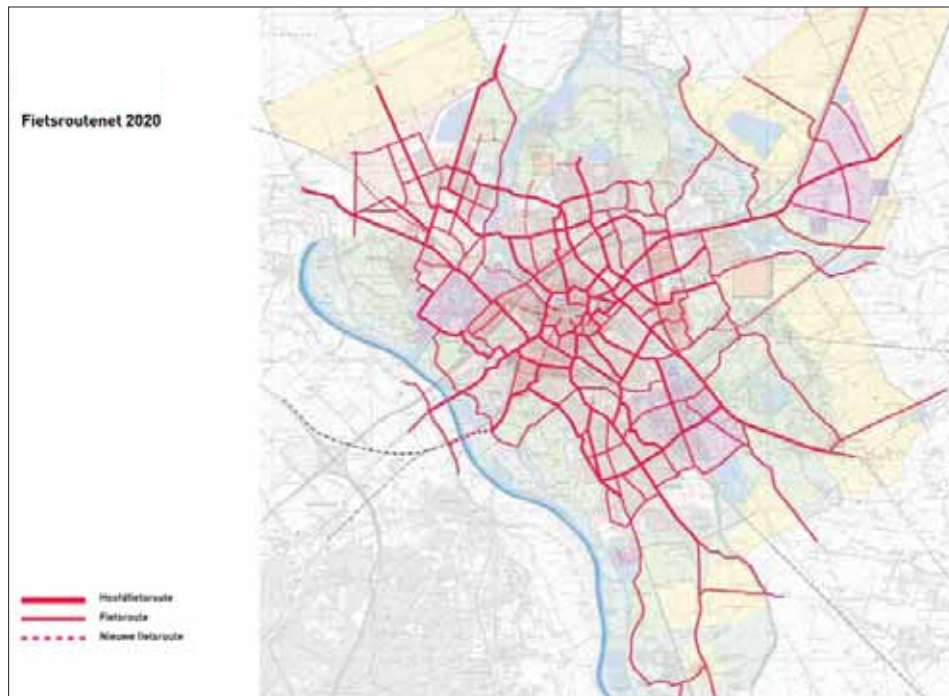
'For decades we have been working towards giving cycling a prominent place. This is a consistent policy; not something that's only been introduced recently.' To **Willem Bosch** it is obvious: the success of Zwolle can primarily be attributed to the structural and continuous improvement of facilities for cyclists. Simply making cycling more attractive. He is quick to add that it is undoubtedly a matter of mentality as well. Within the Zwolle context bicycle use certainly is not a way to increase one's status, but it does not indicate poverty or any other problem either. To the citizens of Zwolle cycling is just part of the game and in this respect Bosch detects a clear difference with the west of the Netherlands, as well as with a province like Noord-Brabant.

#### *Urban planning aspects*

The quality of bicycle facilities and something like 'local character': do these factors provide the explanation or is there something more? Conditions for bicycle use in Zwolle surely do not appear very conducive at first sight. Certainly, the highly compact, ancient town centre (700 by 700 metres within the Stadsgracht boundary) provides no opportunities to accommodate large numbers of cars, enhancing the competitive position of bicycle trips to the town centre. Yet, as far as urban planning factors are concerned, this is offset by the function of the town centre and the not exactly compact lay-out of the town.

When comparing the 25 largest cities of the Netherlands (over 100,000 inhabitants) Zwolle would more or less seem a dream come true: a high percentage of children, a high appraisal of one's own house, little unemployment, a good investment climate and many jobs. All this results in a national top position (nr. 1) in an entrepreneur's survey on local investment climate and more or less the same (nr. 2) in a compound indicator for economic vitality. And especially in this town of socio-economic dynamics cycling ranks exceptionally high! Source: Gemeente Zwolle, *Vergelijk Zwolle: Zwolle in beeld 2008; zo scoort Zwolle binnen de 100.000+-gemeenten, 2008.*

Zwolle clearly is a central town; a provincial capital where all concomitant functions are concentrated. At the same time it is surrounded by a region containing many medium-sized towns highly dependent on Zwolle. Therefore, accessibility of the town centre and employment locations are major issues; the surrounding towns within cycling distance have relatively few inhabitants. The structure of the town is remarkable. Unlike Zutphen, Deventer and Kampen, the town centre is not at or near the river IJssel. Nevertheless Zwolle mainly expanded along the linear direction of the river. Furthermore there is a striking connection to the motorway network; the A28 actually traverses the town at 400 metres from the town centre. The neighbourhood of Ittersumerbroek in the south of the town is more than 4 km in a straight line from the centre; the farthest point of the new expansion location (Stadshagen) is nearly as far away. These are considerable internal distances for a town this size (116,000 inhabitants).



### ***Raised eyebrows***

Nevertheless Bosch and Ekhart merely raise their eyebrows when these factors are suggested as 'negatively affecting bicycle use'. They never look at it this way and feel this is not true, anyway. Take the A28, for instance. Without any doubt this ensures perfect connections by car. But a barrier to bicycle traffic? **Ekhart:** 'Cyclists on the routes to Aalanden, Stadshagen and Westenholtte really are not aware of crossing the A28. This motorway fits in so well from an urban planning point of view that it poses no problem at all to cyclists.' Nor are the avenues that together form the Zwolle ring road

heavy barriers in everyday practice, or the railway line traversing the town at a right angle to the motorway. The same goes for the Zwarte Water, behind which Stadshagen arose. 'In developing Stadshagen the decision was once again immediately made to construct a central bicycle-public transport axis toward the centre. This has been realised. But the bridge across the Zwarte Water does not lie north-west as we wanted, but more at a right angle to the Zwarte Water. This was mainly on nautical grounds. In cases like these you have to give in from time to time, you cannot win everything all of the time. But first and foremost there had never been any doubt at any level of local government about the desirability of realising this central bicycle-public transport-axis and diverting more cars around the town. This is what is most striking here: bicycle use is standard for the inhabitants, bicycle policy is standard for public servants and local authorities. We seldom see discussions about basic assumptions.'

Are Stadshagen and Zwolle-Zuid too far to cycle regularly? Bosch and Ekhart do not think so. Nor is this an opinion frequently aired in Zwolle. Obviously the data on high bicycle use show that they are right, but they can also provide an explanation: 'Both in Zwolle-Zuid and in Stadshagen (in future) a lot of attention is paid to locating certain functions in these neighbourhoods, on a relevant scale. Of course these are not independent neighbourhoods, but many trips can in actual fact occur within these neighbourhoods, which will benefit cycling anyhow. The most important factor is the exact essence of our bicycle policy: when heading for the town centre and the railway station our direct, comfortable routes without major delays outweigh the rather long distances in everyday practice.'

There are various explanations for the speed and comfort of these bicycle routes. The most fundamental part of the explanation for the successful Zwolle bicycle policy is that it is built at the level of traffic structures, of networks. Continuous and unchanged efforts from the 1970s onwards allowed local authorities to realise the main part of a main network of bicycle routes. This main network is only rarely in touch with the busiest parts of the car network. Efforts have always been consciously directed at avoiding parallel main routes for cars and bicycles. The concept of separate bicycle paths along traffic arteries is therefore a relatively minor phenomenon in Zwolle. In Zwolle-Zuid and Noord for instance the great majority of bicycle routes pass through quiet residential streets. Or, rather, through residential streets made quiet by means of circulation measures. Take Middelweg for instance, a busy car route in Zwolle-Zuid and therefore not a main bicycle route. The main bicycle routes run parallel, but at 200 metres to the west and 500 metres to the east of Middelweg. There are numerous other examples when we compare car and bicycle networks.

Source: AGV, Verkeers- en vervoersplan Zwolle deel 3: Fietsverkeersplan (text), 1978.

The main advantage of these segregated structures to cyclists is that the main routes contain far fewer intersections regulated by traffic lights. In actual fact only where bicycle routes cross the busiest car routes. For this reason local authorities have been working for years on transforming these intersections into flyovers or tunnels. This for instance has already been implemented on all intersections with IJsselallee and several intersections with Zwartewaterallee and Ceintuurbaan.

### **Bicycle tunnels 2.0: even in tangential routes**

Between the latest residential neighbourhoods, Westenholte and Stadshagen, a barrier to bicycle traffic was created by a railway line with busy arterial roads on either side. On this route between two new residential neighbourhoods Zwolle created a perfect cycling solution as well: the spacious, airily designed Rozentunnel.



Zwolle clearly is a town of bicycle tunnels and local authorities have for years been paying lots of attention to social safety issues there as well. It is precisely this emphasis on social safety that was an added incentive to plan the main bicycle routes along residential streets wherever possible. This ensures more intense social control than on separate, screened-off bicycle paths. Good lighting along main bicycle routes has long been an issue in Zwolle as well. The 1995 policy document *Rapper op de trapper* already referred to 'nocturnal routes': a selection of main bicycle routes that was to meet the highest lighting requirements, among other things.

In *Rapper op de trapper* much attention was paid to bicycle-friendly solutions at intersections, as a consequence of the aim to achieve comfortable segregated routes. 'In Zwolle we increasingly decide to give cyclists priority over cars, wherever this can safely be done. This policy will be continued.' There is also plenty of attention to traffic light management, with five policy rules for bicycle-friendliness.

### **Tunnel town, but bridges as well**

The new Westenholterbrug is an impressive bicycle bridge. But confusing as well, with three sides. It mainly provides a route from both Westenholte and the south of Stadshagen to the town centre. The bridge passes over an intersection of two arterial roads as well as a railway line. The large difference in height is bridged very gradually.







*Van Karnebeek tunnel*

### *City of bicycle lanes and bicycle streets*

Besides being a city of bicycle tunnels Zwolle is a city of bicycle lanes as well, another consequence of the policy decision to segregate main bicycle routes from other roads. Whereas elsewhere in the Netherlands a bicycle lane is often a stopgap solution caused by a lack of space for separate paths, this is usually a well-considered, positive choice in Zwolle. In deciding in favour of bicycle lanes comfort for Zwolle cyclists plays a role as well. Bicycle lanes are, after all, far easier to fit into maintenance schemes than separate bicycle paths. The lanes are an integral part of the road anyway, which is a major advantage in anti-icing campaigns as well. The positive choice is clearly demonstrated: no narrow lanes that defy all traffic guidelines, making it impossible for cyclists to ride next to each other, but generally wide, comfortable lanes. Zwolle aims for a width of no less than 2 metres. Most bicycle lanes are 1.75 metres wide anyway (except on routes like the avenues surrounding the town centre, where they are 1.50 metres wide). They also occur in streets with relatively little car traffic.

This is the exact reason why Zwolle intends to apply the concept of 'bicycle streets' as well. Bosch: 'We see bicycle streets as an opportunity to take yet another quality step for cyclists on our main routes. These routes have become relatively free of car traffic already, so the bicycle-street idea is meant to emphasise the preferred position of bicycle traffic on these routes even more.'

Early in 2004 the first Zwolle bicycle street has been realised (Vondelkade). Fietzersbond found that three-quarters of all users were positive. Well-known drawback: cyclists feel pressured by cars approaching them from behind. No reason for local authorities to give up. On the contrary, Zwolle is the first town to have drawn up a bicycle street plan (October 2005). This contains a list of streets suited for transformation into bicycle street. The main criterion is that it is used by more bicycles than cars. If any of these streets are due for renovation, it is made into a bicycle street on principle. Zwolle has a uniform lay-out for this: the road is predominantly red, like a bicycle path (and asphalted as a matter of principle), with narrow black strips to the left and right of the road. These are to be used by cars and indicate the difference with a 'real' bicycle path.

After Vondelkade Spoolderbergweg, Groot-Wezenland and Zwarteweg were re-designed in recent years. Residents there had quite a number of objections. They resisted narrowing the pavement in favour of car parking spaces in the original bicycle street design and the removal of speed bumps (mainly because of the speeds of mopeds). At the same time everybody



understood something had to be done on this very busy bicycle route (8,000-12,000 cyclists per 24 hours). The bicycle street design was implemented eventually and Zwolle intends to continue these conversions.

### *Bicycle versus car*

Zwolle pays special attention to realising good bicycle facilities. This bicycle policy brooks no compromises and is widely supported. It is primarily an independent issue and is in general not in opposition to car traffic facilities. Not only the networks, but also the fields are segregated in the sense that bicycle policy development is not continuously put in the perspective of competition with cars.

That implies that bicycle policy is often not a very political issue. Willem Bosch can remember quite a few times where bicycle policy was a serious political issue – for instance all those measures taken in and around the avenues (the ‘inner ring road’) in the early 1990s. But those were the exceptions. ‘Groningen, Amsterdam, that’s where you hear these ideological town council discussions. Here in the east that is far less often.

Certainly, we do a lot for cyclists and sometimes that was at the expense of car facilities, and certainly this sometimes led to commotion. Yet our leitmotiv is that for cyclists, too, it is far better to keep striving towards these strongly segregated structures. Reducing car volume and car speeds remains an issue on our radial main bicycle routes, which for ages have been used intensively by cars as well. Still we persistently try to find a way out. Take for instance Assendorperstraat. Ten years ago we did not get our way, but we later did: one-way traffic for cars, despite the numerous shops.’





*Assendorperstraat*

The same largely applies to (car) parking policy in and around the town centre, says Bosch. 'This is another issue in which we are no leaders.' Only now drastic measures are being taken in parking capacity in the town centre. Almost all street parking places will be removed, while replacement capacity is being realised in parking garages and outside the avenues. In the past there was fierce political discussion concerning parking, especially in the late 1980s with the *Parkeernota*. At that time our parking fees were increased to a level that can even now be considered as relatively high in the Netherlands.

### *Green fingers*

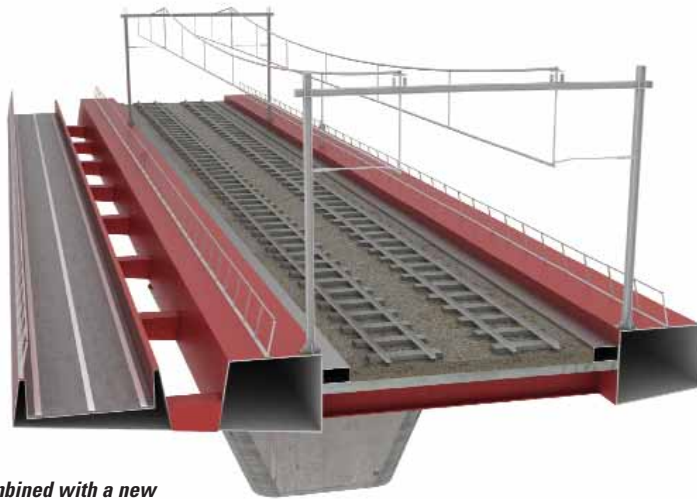
All these efforts towards segregated main structures turned out so well for Zwolle that the town never felt the need to decide to open up new neighbourhoods by diverting car traffic around them. In the recent expansions local authorities did indeed provide more direct and shorter routes to bicycle and bus than to cars, but the car routes still take a fairly central course through the town. Nowhere is the well-known phenomenon of a ring road as boundary between new residential neighbourhoods and the countryside. This has always been an emphatic political principle: Zwolle was to remain a green town. There have always been 'green fingers' stretching out almost into the town centre. 'The site of the town offices, just behind the railway station, still had cows grazing until the 1990s', Bosch says. The transition from town to countryside was to remain gradual on all sides, so no sharply-defined ring road barrier.

Small wonder that Zwolle's scores in the first round of Fietsbalans were low as regards car-bicycle travelling-time ratios. Emmen, Dordrecht and Zoetermeer were even worse; Apeldoorn and Ede were almost as bad. Like Zwolle, there is quite a lot of cycling in Apeldoorn and Ede. There seems to be a connection: Ede, Apeldoorn and Zwolle are quite spacious, maybe even village-like towns offering good facilities for bicycles as well as cars. The two are not mutually exclusive. And all three towns are located more or less in the east of the Netherlands. Yet again a matter of local character?

### *Almost finished*

Bosch and Ekhart might seem reluctant to admit it, but it is an inevitable conclusion: the bicycle policy of Zwolle as regards bicycle routes within the town is almost completed. 'My estimate is that 90-95% of the routes are currently how we envisaged them.' All that remains is tackling a few intersections and upgrading a few main routes into bicycle streets, but this more or less sums it up. The core of the activities will from now on be optimisation and good management and maintenance. As well as attention to regional bicycle connections.





***New bicycle bridge (combined with a new railway bridge) across the IJssel to Hattem***

A crucial element in the history of Zwolle bicycle policy is continuity in its aims, from urban planning right through to design level. In fact, most of the 1978 *Fietsverkeersplan* still stands in essence, except for some adaptations due to town expansions unforeseen at the time. The thirteen main bicycle routes in *Rapper op de trapper* (1995) still constitute the main network, supplemented by some tangential routes and routes to the latest residential neighbourhoods. The great majority of the plans of the above policy documents have been realised as well, although not according to the strict planning of *Rapper op de trapper*, which involved a four-year programme and a related earmarked budget of 9.9 million guilders (almost 4.5 million Euros). These earmarked budgets simply never materialised. With hindsight Bosch and Ekhart do not appear to regret this. After all, if continuous, integral assessment of all projects also allows the implementation of a considerable number of bicycle projects, so much the better. Often this was also possible by piggybacking onto larger projects, a recent example of which is the above-mentioned Ceintuurbaan project: essentially improving car flow, but at the same time three long-awaited bicycle tunnels are realised as well.

A 2001 BYPAD-audit stated that in Zwolle approximately 10% of all expenditure on infrastructure goes to bicycle facilities and that traffic officials roughly spend the same amount of time on 'bicycles' as they do on 'cars'. 'When considered over a period of roughly twenty years, this is a pretty accurate picture', confirms Bosch.





### *Bicycle parking: from stagnation...*

A clear, coherent vision, realised persistently over many years. Although this might be the picture of Zwolle policy as regards bicycle routes, this is not true for bicycle parking. In all local bicycle plans parking in the town centre was mentioned as a point of attention, but that is where matters rested for a long time. Admittedly, the situation in the town centre was far from simple.

The extent of the public space is extremely limited. Zwolle as a matter of fact has no major squares suitable for bicycle parking. Good solutions providing concentrations of bicycle parking capacity imply inevitably indoor. What little progress was made, was also partly due to the position taken by the bicycle department officials, typifying the bicycle-friendly policies. Bosch stated in 2005: 'Bicycle parking facilities are the final piece of bicycle policies. If you want to do it properly you must situate them in the right spots. For this reason I have been consciously resisting plans for parking facilities in the wrong locations for years, because these were too far from the town centre or the bicycle routes. Nor have I ever supported plans to discourage or even prohibit bicycle parking in streets as long as there are no good alternatives. So far, unguarded bicycle parking has been possible almost all over the town centre.'

In hindsight, by 2005 the road to an effective bicycle parking policy in the town centre had already been taken. After a 2002 bicycle parking plan, listing supply and demand by sub-sector, an accurate spatial investigation of possible sites for extra capacity was conducted in 2004. By then awareness had grown that there was an immediate need for implementation of high-quality bicycle-friendly improvements and that this was not to be or remain an isolated item of bicycle policy. Support grew for a clear, wide-ranging and phased approach:

- A. start by making existing guarded parking facilities free of charge, in order to maximise occupancy and minimise nuisance in the streets;
- B. effect considerable improvements in quality and quantity in the supply of unguarded bicycle parking facilities within a few years;
- C. realise a large (indoor) guarded parking close to Grote Markt in the long term.

### *...to structural solutions*

The three guarded parking facilities already present in Zwolle had been no great success in the past. Making them free of charge in 2005 ensured a high increase in occupancy. In 2005 over twice as many bicycles were parked under guard as in 2004. In particular the parking facility at the central location of Meerminneplein attracted many customers, and more importantly many extra visits: 130% more people who parked. Overall 77,000 in 2005. The success was lasting. In 2006 there were again 30% more customers than in 2005.

The second step in the bicycle parking policy was to enlarge and improve the unguarded supply of parking facilities. As early as 2004 the target was stated as 675 extra spaces. However, Fietzersbond investigated (other) possible locations, with overall room for no fewer than 1500 bicycles, in October of 2005. Local authorities could choose which were most suitable. In the meantime a decision was to be made for a single type of bicycle parking facility, suited to the Zwolle situation. A test site was organised with various types of facility. Citizens could indicate their preferences. This eventually led to a model specifically designed for Zwolle. This was extra wide, in order to prevent problems with handlebars, cables and saddlebags getting entangled. Early in 2009 the first extra stands have been installed, overall some 350.



The third stage is still to come: another large guarded parking facility at a prime location. The plan for underground parking at Melkmarkt, providing room for some 600 bicycles, has been seriously delayed by legal procedures concerning properties scheduled for demolition.



### ***Vibrant bicycle policy***

It is clear that Zwolle bicycle policy continues to develop with new accents and new levels of quality. Ongoing developments in 'hard', infrastructural policy that in Zwolle are visibly generated by a widely accepted conviction that cycling should be promoted. In part this is demonstrated by the, to Dutch standards, relatively large amount of attention paid to non-infrastructural measures in Zwolle in recent

years. Under the title of 'Het Nieuwe Fietsen' local authorities, together with a consulting agency, looked for new approaches and means of promoting cycling. They also participated in an extensive market survey (2009), specifically on cycling in the new residential neighbourhood of Stadshagen. Residents of that neighbourhood indicated right away that within their neighbourhood the bicycle is a perfect means of transport: it is for 63% of residents the means of transport used most often within their neighbourhood, as opposed to 19% who travel by car and 13% who walk! The residents' wishes concern the safety of the routes and opportunities for parking their bicycles at the shopping centre.

The support for bicycle policy is most obvious in political situations. For ages aldermen in Zwolle have been to a large extent aldermen for bicycle traffic. The current alderman, **Janco Cnossen**, began a speech by introducing himself as 'the alderman of Cycling'. Which is quite unique in the Dutch situation. There is no shortage of towns with officials endorsing good bicycle policy, with a certain amount of political support. But aldermen emphasising their credentials in bicycle policy, that appears to be a diminishing phenomenon. This is offset by Zwolle, where this is more or less a tradition.

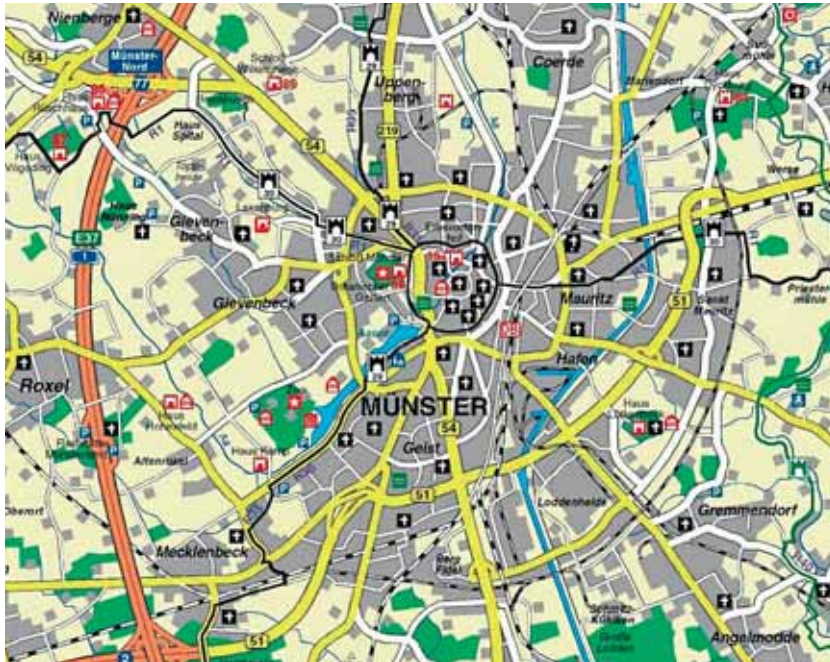


### **Political pronouncements on cycling**

The degree to which bicycle policy is politically an issue in Zwolle can clearly be discerned in the new Mobiliteitsvisie (October 2008). Bicycle policy is not a chapter hastily added at the last moment. The value of cycling is mentioned in many places and included in policy statements. Zwolle is characterised as a cycling city and it is acknowledged that the strong growth of Zwolle requires a traffic policy that is different from a mere facilitating of car traffic. Bicycle traffic is a major issue in the seven policy spearheads. More or less indirectly in the spearhead 'Urban planning as an instrument to adjust mobility consequences of planning decisions' and emphatically as a spearhead in itself in 'Local bicycle use will be maintained at the current high level and regional bicycle use will be strengthened'. 'For the area in and around the town centre flow of bicycle traffic has the highest priority, over public transport and the car', according to Mobiliteitsvisie.

## 4. Münster: Germany's no. 1 cycling city

Either it rains in Münster, or its bells are tolling. That is what the Germans say about this Westphalian town. And people cycling everywhere, one should add, for bicycles have been dominant in its streets for many decades. Bicycle use increased even more during the past twenty years. Good bicycle policy undoubtedly contributed to this state of affairs. A good reason to go and have a look around this city, where the degree of bicycle use is considerably higher than in any other German city.



Münster region

At first sight the flat surroundings, brick houses, stepped gables in Prinzipalmarkt and the great numbers of cyclists give Münster the appearance of a Dutch rather than a German town. This first impression is reinforced by the sight of congested bicycle paths during peak hours and randomly parked bicycles. Early in 2004 Münster was twice elected cycling city no. 1. First by cyclists on the occasion of the *Fahrradklimatest*, organised by the ADFC cyclists' union, BUND (the German Friends of the Earth) and the ministry for the environment. A few weeks later by experts, at the initiative of ADAC, the German Automobile Association. We can therefore conclude that it is a joy to cycle in Münster, and has been so for ages. The city also won the *Fahrradklimatest* back in 1991.

### Mobility data

Münster most likely is the only German town conducting mobility behaviour polls among residents, visitors and commuters on a regular basis. The data obtained are a sound basis for traffic policy and the decision-making process. Bicycle traffic is integrated into polls and policy alike. A survey of the modal-split studies on Münster is presented below, divided by transport modality of local residents:

	1982	1990	1994	2001	2007
private car	38%	38%	37%	39%	36%
public transport	7%	7%	9%	11%	10%
bicycle	28%	34%	32%	34%	36%
walking	24%	21%	20%	13%	15%
other	3%			3%	3%
total	100%	100%	100%	100%	100%



The considerable fluctuations in the percentages indicate that interpretations should be restrained. It is however very obvious that bicycle use in Münster is extremely high and in no way decreasing. This size of bicycle use wins Münster deservedly a place among the top cycling cities in Western Europe and makes it far and away the ultimate cycling town in Germany.

The Münster mobility polls also demonstrate what is characteristic for transport patterns in Münster. First of all it is remarkable that residents of Münster venture relatively little out of town. The average trip distance is, at 6.9 km, considerably lower than for example overall in the Netherlands (11.0 km). At the same time bicycles in Münster are used for relatively long distances. The average bicycle trip is somewhat longer at 3.4 km than in the Netherlands (3.0 km). And numbers are particularly impressive over a distance of 7.5-15 km: in Münster some 22% of all bicycle trips are in this category, as opposed to approximately 15% in the Netherlands.

### *Centre of Münsterland*

A 1,200-year-old former Hanse town, Münster is a solitary, urban centre in the predominantly agricultural Münsterland. The town is situated at a junction of roads, railways and the Dortmund-Ems canal between the Ruhr Area and the North of Germany. In the modern-day urban structure and the radial road pattern the development of this town into the centre of the Münster principality can still be discerned. The railway network was constructed in the nineteenth century. Two ring roads were laid out after 1901: one around the ancient town centre and one around the nineteenth-century suburbs. A centre of knowledge, administration and services for a region of over 1.5 million inhabitants, Münster provides employment to over 150,000 people, 66,000 of whom are commuters. Its university, seven polytechnics and centres for research and technology transfer make Münster a true city of knowledge. Approximately 60,000 students and 33,000 school pupils, in part from the region, ensure a relatively young population: half of all inhabitants is below thirty. After a strong increase between 1945 and 1975 (from 76,000 to 262,000) the number of inhabitants rose only slightly over the past decades.

### *Post-war reconstruction*

In 1945 63% of the city was destroyed, and even 91% of the heart of the town. For practical reasons and because of a certain predisposition to the past it was decided to reconstruct the town centre in a traditional way, maintaining the existing street and plot pattern and reproducing the pre-war townscape. This in contrast to other German towns, where the ideal of the 'Autogerechte' town characterised reconstruction activities. Building density in the neighbourhoods surrounding the town centre was increased by constructing higher buildings than before the war. Bicycle traffic became a component of general traffic policy as a matter of course, and all main roads were provided with



*Lambertkirche*

photo: Presseamt Stadt Münster

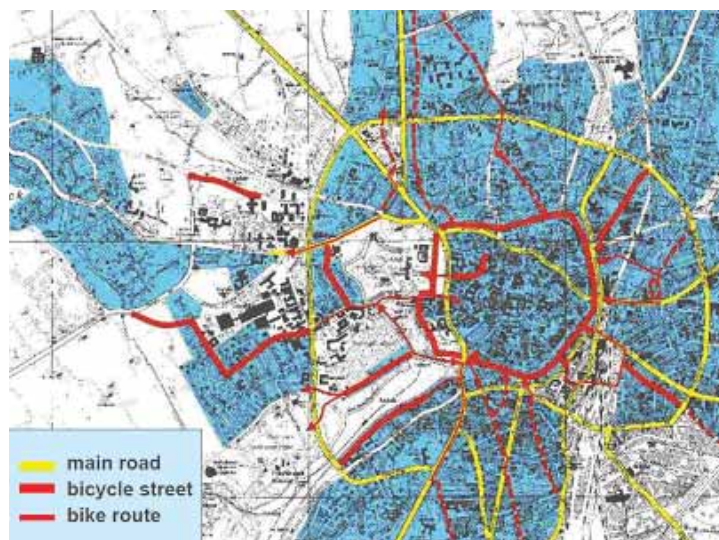




adjacent bicycle paths for reasons of traffic safety. With bicycles sinking into oblivion elsewhere and many bicycle facilities disappearing between the 1950s and 1970s to make room for cars, the Münster bicycle facilities were well-maintained and steadily expanded. Why? Presumably because 'bicycles just happened to be there'. This gradually resulted in a coherent network of bicycle paths, connecting all neighbourhoods with the town centre. The Promenade on the former ramparts is now a priority through bicycle route with a length of 4.5 km. It is a green ring road encircling the ancient town centre, only accessible to pedestrians and cyclists. Some 12,000 cyclists make use of it on busy weekdays.

Although inhabitants and politicians often prefer the *Bordsteinradwege*, mostly narrow bicycle paths on the pavement, bicycle lanes and bicycle suggestion lanes have been constructed along arterial roads as well since 1996. Most of these are wider and can handle larger numbers of cyclists.

Apart from arterial roads a secondary network of connections has been constructed since the early 1980s through 30 km/h areas (containing bicycle streets as well), pedestrian areas, parks and so on. The fine mesh of this network provides direct connections and limits unnecessary detours. Münster has in this way acquired a bicycle network that is dis-entwined from the main car structures to a remarkable extent. With the Promenade as its basis and connecting ring it extends various solitary routes into the residential neighbourhoods.







*Promenade*

### ***Bicycle laboratory***

In the early 1980s cycling was given a boost. In the first place by a growing environmental awareness, in the second place by the realisation that traffic problems cannot be solved merely by building more roads and that increased bicycle use can improve a town's accessibility and quality of life. The room offered by traffic regulations to experiment with new bicycle measures was used to the maximum: cycling in two directions in one-way streets, bicycle streets, temporary access to pedestrian areas for cyclists, cyclists on bus lanes, buses on cycle lanes and so on. Particular emphasis was put on safe design and regime of intersections. Nearly all regulated intersections in the main road network have separate traffic lights and regimes for cyclists. A green wave for cyclists is no exception. There are bicycle locks resembling an OFOS, ensuring that cyclists receive a green light ahead of the other traffic participants, allowing them to turn left safely. A combination of functions with sometimes even special lanes (see photos).



Since the late 1980s the Ministry of Traffic of Nordrhein-Westphalia has supported these 'experiments' to allow other cities to take advantage of the experiences in Münster. Within the scope of the programme *Fahrradfreundliche Städte und Gemeinden in Nordrhein-Westfalen* Münster became one of the first five model cities meant to prove that an increase in bicycle use is also possible at a pre-existing high degree of bicycle use. Many of the measures tried out in Münster and the other model cities were incorporated in 1995 into new design guidelines and in 1997 in the updated version of the traffic regulations.

## ***Safety***

Cycling in Münster is by no means dangerous. Only in some 9% of all accidents are cyclists involved. Since 2004 there are annually some 700 lightly injured cyclists (1300 for all transport modalities), approximately 250 severely injured cyclists (over 600 for all traffic participants) and an average of two fatalities (as compared to six fatalities over all modes of transport). In other words: cyclists account for almost half of all road casualties.

This led local authorities to emphasise safety in recent years, in cooperation with no fewer than 26 (local) organisations: the *Ordnungspartnerschaft Verkehrsunfallprävention*.



Efforts are directed towards prevention, and expressed in campaigns to influence behaviour. The majority of these are conducted by the partnerschaft. For cyclists these include among others campaigns on bicycle lights, children's behaviour and even 'safely mounting and dismounting'.

## ***Bicycle parking***

Bicycle parking has long been an issue in Münster. This is inevitable, as the town centre and the station area are swamped by parked bicycles. Moreover, bicycle theft is high. The policy is fairly traditional: bicycle stands near all main destinations and in the station area short-term parking zones and tow-away campaigns. In the early 1990s rules for the number and quality of bicycle parking facilities in new or renovated buildings were included in local building regulations. In 1999 a beautiful bicycle parking facility opened at the railway station, the largest in Germany, providing room for 3,300 bicycles. The intention was to provide a solution for the increasingly chaotic parking of bicycles in the station square. Soon after opening the parking facility had an average occupancy of 80%. Some 96% of users are permanent customers, over 70% are commuters who use their bicycles to reach their destinations from the railway station. This bicycle parking facility resulted in more bicycle use. A third of customers are now using their bicycles more frequently, while a quarter had never used their bicycles before. Despite the success of this bicycle parking facility, the number of bicycles



***Bicycle parking at railway station***

photo: Presseamt Stadt Münster



parked in the station square has not decreased. Therefore many more people are apparently coming to the station by bicycle now than in the past. Overall there are some 6,000 bicycles parked near the station at peak times. A majority of people use the bicycle parking facility, despite a fee of 70 Euro a year.

### *Integral traffic policy*

As in many other German towns, Münster traffic policy changed in the 1990s from demand – meeting to more directive. The main objectives of the 1993 *Verkehrsbericht* were: optimal use of the existing traffic space and guaranteeing the town's quality of life and accessibility. This meant replacing as many car rides as possible by *Umweltverbund* trips: walking, cycling, public transport and combinations of these three. It was acknowledged that measures should be taken at a great distance from the town to ensure fewer cars in the town centre, that the traffic function must decrease and the residential function must increase with proximity to the town centre, and that a stricter parking regime and higher parking charges are necessary. Most of these measures have now been implemented. The car-restricted, partly car-free town centre can no longer be traversed by car. By bicycle this is possible, albeit on a few routes only at certain times. Recent car parking policy aims to have the ring road around the town centre perform like a parking belt, lined with parking garages and parking places catching most of the traffic bound for the town centre. Not all cars, a few parking garages will remain in the town centre. The parking belt is an addition to earlier measures – stations outside the city and transferiums at the edges of the town – to provide for visitors and regional commuters.

The *Verkehrsbericht 1993* introduced a directive parking policy, distinguishing various target groups as regards charges, walking distances, parking duration, permits and so on. All over the city there is a regime of resident parking or paid parking. The parking policy also covers private parking spaces. Whereas many German towns specify a compulsory minimum number of parking spaces per building, Münster has set a maximum instead. If this maximum leads to a shortage, the building owner will have to pay local authorities for the provision of public parking places.

Münster has passed a local ordinance that part of the returns may also be used for public transport and bicycle measures. This provides however only a small amount of the overall costs of Münster bicycle policy, amounting to some 2 million Euro a year.



photo: Presseamt Stadt Münster

*Interior of the railway bicycle parking*



### *Urban planning*

Although increasingly less of a truly compact city, Münster has consistently aimed policies at attracting major economic and social facilities (services, trade, administration) in or near the town centre or along the radial main roads. Manufacturing industry is mainly located along the north-south axis and near the harbour. Like other cities, Münster has seen increasing suburbanisation since the 1960s. Young families in particular are moving to the surrounding towns, but retain their jobs in town, leading to a steep increase in commuter traffic by car. The increasing burden of commuter traffic in particular led to a change towards 'inward development' in the late 1980s. So far this has been reasonably successful: 71% of the population still lives within a 6-km radius from the town centre. As a result, many trips are short and within cycling distance. In the 2003 *Flächennutzungsplan 2010* (comparable to a master plan) the key words are still: increased mingling of urban functions, short distances, high density, decentralised concentration, traffic-, space- and energy-saving spatial structures and so on.

### *Campaigns for and by cycling*

In Münster, as elsewhere, bicycle policy is mainly infrastructural policy, but within a wide range of non-infrastructural measures. As mentioned before: many measures, many campaigns to promote safety. But also a varied, continuous series of activities and products aimed at promoting bicycle use. Even billboards...

For Münster local authorities the bicycle is also a means of promoting the town, for instance on the town's website. The English part of their website makes it abundantly clear: 'Why not take the time to explore Münster by bike? We offer a full range of special tours, information, and assistance including bicycle sightseeing tours and a list of bike rental stations. A tour of Münster's bicycle highlights is a truly unforgettable experience!' And no fewer than 11(!) bike rental agencies are mentioned on the site. The town website goes to a lot of trouble to explain bicycle policy, even including a *Virtuelle Radtour*: a trip along 28 examples of infrastructural bicycle measures. Münster is proud to be *Fahrradhauptstadt* and demonstrates this in various ways, including an extensive leaflet aimed at its residents. It emphasizes and explains bicycle policy, the strategy behind *Radfahren in Münster 2010*.



### *Radverkehrskonzept 2010*

In 2004 the Münster town council accepted a compact bicycle policy strategy. No elaborate long-range plan with meticulously specified measures, but a general description of desirable features. Crucial in this new strategy was perhaps a kind of transition from a promotion-based policy to a more managerial, maintaining, stabilising policy. No longer aiming for large increases, no more 'getting people on their bikes', but rather optimising the many existing features. The Radverkehrskonzept 2010 specifies three basic ideas and a larger number of policy themes:

1. **Improve traffic safety:** closely examine dangerous locations; safer vehicles (in particular lighting and timely repairs), safe school routes and training of school children.
2. **Expand and maintain bicycle infrastructure:** realise some missing links and upgrade bad bicycle facilities; in addition more bicycle parking facilities on all types of locations and an expansion of sign-posting.

**3. Information, communication and improved services:** aim for a strong cyclists' union (ADFC) to support cyclists; approach new students; encourage debates, particularly on-line, about possible measures and provide information on measures implemented. This description of policy in three basic ideas clearly demonstrates, in an indirect way, to which extent bicycle policy has outgrown the initial stage of mainly infrastructural improvements. After all, the first point contains to a large extent no infrastructural elements and the third point none at all.



## 5. Veenendaal: pampering every 300 metres

**A village that grew into a town: from 5,345 inhabitants to over 61,000 in 2005. Veenendaal is one of the many 'new towns' of the Netherlands, with all the features known from places like Capelle aan den IJssel, Zoetermeer, Hoofddorp and Nieuwegein: uniform residential neighbourhoods, large industrial estates and interchangeable 'boxes' along the motorway. Yet Veenendaal also has a feature absent in all those other towns: an extremely high degree of bicycle use, ranking it among the top-10 of Dutch towns. Nearly 31% of all trips made by inhabitants of Veenendaal are by bicycle. What makes people cycle so much in this new town? An explanation by Leo Smolders, head of the Veenendaal traffic department until 2005.**

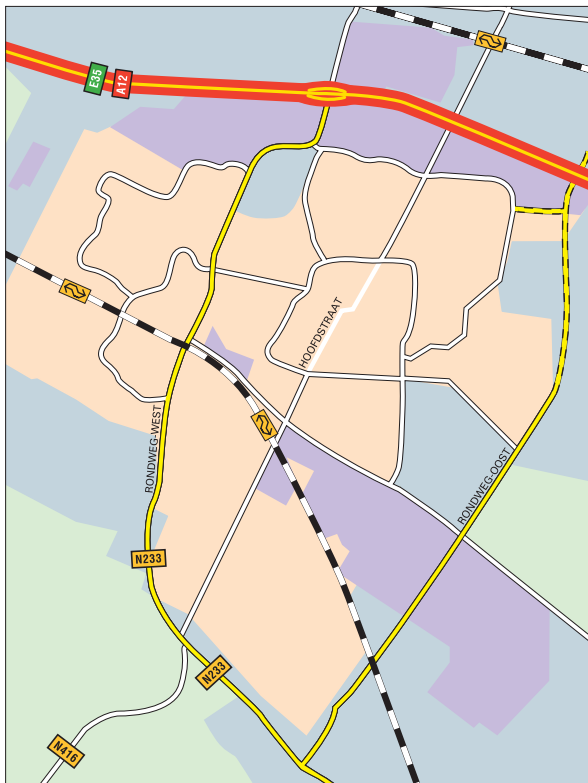
To Smolders the story starts way beyond bicycle policy. The structure of Veenendaal is a decisive factor. The built-up area is virtually a 4.5 by 4.5 km square, with the town centre neatly in the middle. Ideal for bicycle use. In its turn this structure is due to 'coincidences' like the limited municipal surface, but certainly also to intentional urban planning over the last few decades. Admittedly, Veenendaal had plenty of opportunities for effective urban planning at that time, for two reasons.



### *Many urban planning opportunities*

First of all, Veenendaal is certainly not the quintessential agricultural village suddenly turned centre of urban growth after the Second World War. As a former fen community Veenendaal still displays a pattern of straight roads, due to the structure of the fen waterways. It had become a relatively large village as early as the 18th century, with a considerable industrial sector. In the first half of the 20th century the textile and tobacco industries flourished, only to quickly disappear after 1970. The resulting vacant central sites provided many urban planning opportunities. Partly due perhaps to this industrial past, Veenendaal retained control of its urban planning and economic developments for a long time. A balance between working and living was sought, quite successfully so. Until the 1980s the town was successful in maintaining a situation of 'employment for residents'. The retail trade also tried to maintain such a balance, even more successfully. Veenendaal now has near-perfect retail comprehensiveness for its inhabitants. This obviously has important effects on traffic: many local 'cycleable' trips. Secondly, it was important that Veenendaal was given a growth duty in the 1996 *Tweede Nota over de ruimtelijke ordening in Nederland*. The village was to grow into a town of 100,000 inhabitants. Although this was not fully realised, from the 1970s onwards one residential neighbourhood after another was being constructed. This often allowed instant construction of good bicycle facilities, both on a structural and a design level, funded within the overall operating budget of the new residential neighbourhoods. And all this with a keen eye on good accessibility by bicycle of all local facilities. See map 9 of the bicycle network: all shopping centres and nearly all schools are directly connected to bicycle routes.





*Veenendaal*

neighbourhoods Dragonder-Oost and Veenendaal-Oost. Completion of this route is expected by the end of 2007. The traffic structure plan drawn up by Goudappel Coffeng and decided on in 1998, clearly demonstrates the merits of the eastern ring road: through traffic is diverted around town almost completely, and traffic to the town centre is managed quickly via both ring roads. Together with the excellent locations of the industrial estates (all on the edge of town, near the exit roads) this ensures a single, more or less continuous residential area in Veenendaal, without intense traffic functions.

### *Consistency in traffic policy*

Veenendaal's rapid growth occurred at a time when the town had already agreed on a master plan, drawn up in 1948 by urban planner Van Embden. This plan really intended Rondweg-West to become a ring road. But this was not to be. The original plans to realise new construction to the south of the town were changed when re-opening of the railway to Utrecht became a possibility. However the railway company required an expansion (over 5,000 houses) to the west of Veenendaal. This made Rondweg-West into a central axis as well as the only connection onto the motorway. By that time another projected main route, Rondweg-Oost, had already become an issue. This route, nearly on the eastern town boundary, was to handle all north-south through traffic in any case. By now it is also meant to open up the southern industrial estates (300 companies) as well as the new residential



### *Cycling to shops*

Rondweg-West also made it possible to restrict car access to the town centre, because through north-south traffic was now able to take another route. The former north-south route along the central shopping street (Hoofdstraat) was renovated, initially as a home zone with one-way traffic for cars, later (1988) as pedestrian area, accessible to cyclists at most times as well. Barring cars from the town centre was further promoted by the gradual construction of a central ring road. This central ring road could be completed in the late 1970s thanks to the fact that a number of industrial estates to the west of the town centre were vacated.

*Buurtlaan east*



### Free guarded parking: the power of simplicity

Demand for guarded bicycle parking facilities in Veenendaal arose in 1990 among shopkeepers. The idea was that local authorities would provide bicycle parking facilities and shopkeepers would contribute to operating costs. The shopkeepers' wishes were well-received by local authorities and the local cyclists' union. Bicycle stands, a shed for the guards, railings, ready. As car parking was free of charge at the time, local authorities took it for granted that bicycle parking would be free of charge as well. In this way success was ensured and a first expansion was soon to be followed by a second, resulting in a total of 250 bicycle places.

A few years later the swimming pool was provided with a bicycle parking facility for 400 bicycles. On fine summer days this can easily be enlarged to 1,300 places by placing extra railings. In the town centre the bicycle parking area of a municipal office was upgraded to a free bicycle parking area during office and shopping hours. This bicycle parking is almost four times as large on Friday and Saturday nights and open to three o'clock in the morning, to accommodate the entertainment industry. Each time investment costs are low as staff are provided by employment schemes, keeping costs down. The latest addition was the bicycle parking facility at Veenendaal Centrum railway station. Local authorities provided the paving and the railway company paid for a parking facility for 400 bicycles. As this has been fully occupied from day one onwards, enlargement is required. The annual costs, € 60,000 for all bicycle parking facilities together, are covered by the municipal parking fund.

### *Culture*

Hardly tangible and difficult to copy to other towns, to Smolders the crucial issue is broad, continuous social support. Broad support, not only among civil servants, but also in politics. All the way up to mayor and aldermen, who, certainly in the past, went practically anywhere by bicycle, without being ostentatious. 'There is no need for us to explain the importance of cycling to the council. Cycling is our standard; it is deeply ingrained here.' As described above, this led in 1990 to the first guarded bicycle parking facility at the instigation of shopkeepers. One supermarket even contributed by sacrificing a few car parking spaces in front of its entrance, to have them replaced by bicycle parking facilities. Smolders favours the word 'organic': cycling is 'normal' and 'logical' in Veenendaal. Bicycle use, bicycle culture and bicycle policy are continuously reinforcing each other. The policy is also directed at reinforcing this culture: educational elements have been permanent issues in municipal policy. Children for instance receive a bicycle flag for their fifth birthday. In conjunction with 3V, much effort is put into school traffic examinations. For secondary schools there is an interactive programme on traffic safety and a bicycle inspection.

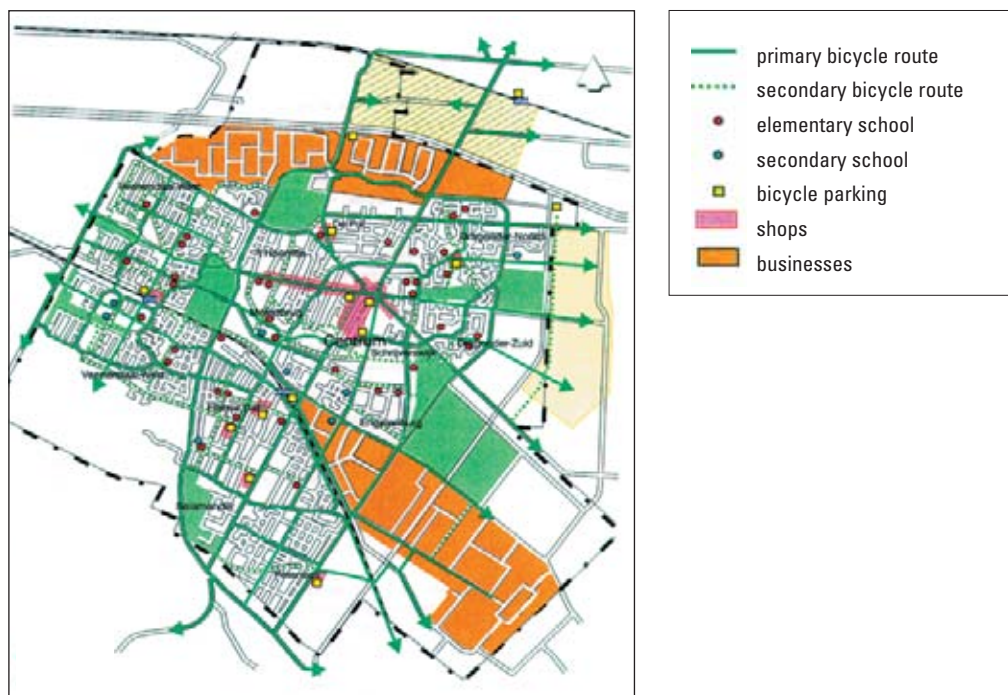


*Ambachtsstraat*

### *Ring road barrier*

Even after completion of Rondweg-Oost and the disappearance of through car traffic from the town, Rondweg-West will remain a busy route. Calculation models assume 22,000 vehicles / 24 hrs in 2010 (versus 25,000 to 30,000 on Rondweg-Oost by then) on this barrier between Veenendaal- West and the town centre. Of all intersections of Rondweg-West and the east-west bicycle routes there is only one fly-over. This is in contrast to the bicycle intersections with Rondweg-Oost, which have mainly been realised as tunnels. Smolders is nonetheless convinced that the barrier effect of Rondweg-West will continue to be slight, in part because some car intersections are T-junctions, while the crossing bicycle route is continued on the 'fourth leg' of the intersection. This allows speedy traffic light regimes.

### *The Veenendaal bicycle network, including guarded parking facilities*

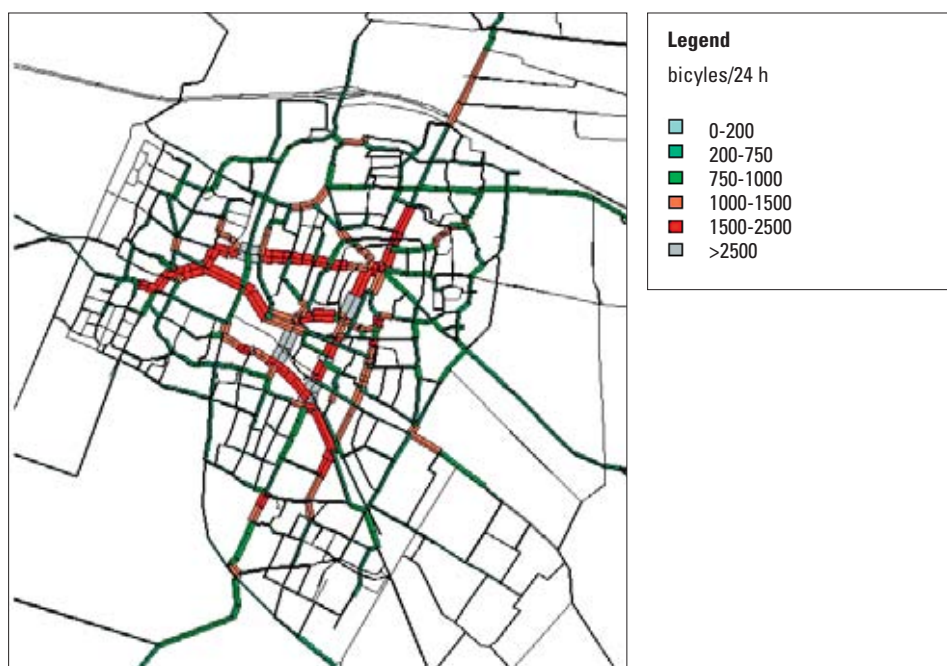


### *Mesh*

What is already obvious at the intersections with both ring roads is an essential characteristic of bicycle facilities in Veenendaal: the small, systematically upheld mesh of the network. The bicycle route network of Delft, to which the national government heavily contributed, is well-known far beyond the Netherlands. In this early 1980s project fixed widths were systematically applied: 500 metres for main routes, 200 to 300 metres for the local network and 100 metres for the residential network. Only very few towns really have applied this system right down to the very last route in the last decades. Veenendaal has, but with a philosophy all its own: no or virtually no distinction between network levels (or, in other words, the main and local networks overlap) and a strictly applied 300-metre mesh. That distance was already used in the early 1970s for the tunnels under the railway line in Veenendaal-West. For the new Rondweg-Oost this mesh is still strictly adhered to: twelve intersections over 4 km. Smolders: 'In this way we have been able to realise a fine-mesh network where the ideal line is practically always attained. Therefore very short detours, and more importantly: when heading for instance to the town centre, many inhabitants may choose between two or three possible routes. Different routes, each with its own characteristics, to suit anyone. It is obvious that it is effective: the socially less safe routes through parks are used relatively less in the evenings than their alternatives close by. In short, a really fitting supply for our citizens.'

In quantity this system of various equivalent parallel bicycle routes is clearly effective as well, as demonstrated for instance by the three routes from the southern neighbourhoods to the town centre: these are used by 2,000 to 4,000 cyclists every 24 hours (see map on page 51).

*Cycling data in Veenendaal: relatively many (parallel) busy routes*



*Comfort all the way down to the gutter*

Leo Smolders is convinced that this systematic, continuous effort spent on good bicycle facilities provides the explanation for the high level of bicycle use in Veenendaal. Apart from the factors mentioned above, such as a fine-mesh network and an enhanced bicycle culture, the design of these bicycle facilities is of equally great importance: comfort and speed over the entire route. In numerous instances in Veenendaal this led to the remarkable decision for bicycle paths- most of them in two directions- running next to a residential street with a very limited degree of car traffic. The idea behind this is that a high-quality uninterrupted route for bicycles prevails over the spatial advantages and costs of bicycle routes that partly run through car-restricted streets. And these routes are indeed perfect for cyclists! As a result, most of the bicycle routes in Veenendaal are a body of solitary stretches (especially in the latest residential neighbourhoods) and bicycle paths next to residential streets (mainly in the older neighbourhoods around the town centre). Bicycle routes in these 30 km/hr areas have without exception the right of way.

This attention in Veenendaal to good bicycle facilities does not stop at fine-mesh systems and through routes; it is the details that count. Cycling through Veenendaal, Smolders points out the right and wrong details time and again. Most striking of these: the asphalt of the bicycle path continues at the same level at intersections, gutters included. Except on the new path along Prins Bernhardlaan. Smolders, disappointed by the oversight, shakes his head.



**Boslaan**





***New bike path along De Grift***



***Bicycles in the town centre***

### ***Bicycle policies in Veenendaal after 2005***

Veenendaal and cycling after 2005 is essentially a matter of continuity, most certainly at the policy level. Veenendaal has never been a town of paper plans. Bicycle policy was much more a matter of (political) culture and subsequent actual projects and official attention. There have been no grand all-encompassing plans for traffic or bicycle policy after 2005. Veenendaal remains a town of down-to-earth bicycle policy.

### ***Cycling and parking in the town centre***

Since 2005 Veenendaal policy documents testify to an awkwardness in its new position as a 'town' meant to grow to 70,000 inhabitants by 2015, implying a strong concentration of buildings and residents (and hence traffic). Veenendaal has drawn up 'strategic plans' and similar documents. There is no direct bearing on bicycle policy, except for a single symbolic issue: in future bicycles are still not allowed or not allowed any longer in the central shopping street, Hoofdstraat. In *Centrumvisie 2030* it is assumed that this will no longer be allowed by 2030. Nor is parking a bicycle allowed. That implies numerous guarded bicycle parking facilities around the shopping district. The 2008 *Fietsparkeerplan centrum Veenendaal* evades the issue and proposes variants with and without 'cycling through Hoofdstraat'. In the first instance there would not be a need for guarded bicycle parkings as such, but in particular for more stands and possibly some type of security (Lock 'n Go-system). In the second instance a large parking facility beneath Markt is deemed necessary as well (at a cost of 1,5 million euro). Whatever the outcome of the debate, it is clear that at this time Veenendaal can no longer lay claim to the title of 'parking facility champion'. The free guarded parkings have partly been discontinued and partly lost a degree of surveillance (no longer full days). New facilities, improvements in the bicycle parking situation, have been awaited for some time now.

In May of 2009 a resolution was made: in the re-design of the Veenendaal shopping heart cyclists should emphatically be taken into account.

Because there is plenty of room for bicycle routes through the centre and Hoofdstraat. And moreover, because it has become clear that nobody actually advocates a prohibition to cycle.

This is in contrast to the network links and the construction and maintenance of bicycle routes. Here Veenendaal has acquired a tradition of perfect bicycle structures with a small mesh and comfortable routes, without mountains of memorandums and plans. At the recently completed Rondweg-Oost quite a number of (bicycle) tunnels have been constructed in order to optimise from the very start the bicycle relations between the new residential neighbourhoods to the east of the ring road and the town centre. Traffic safety is an issue as well. Various locations where cyclists are regularly victims of a traffic accident have been reconstructed. And with positive results: since 2000 the number of bicycle casualties has clearly fallen, despite an increase in bicycle use and number of inhabitants.

### *Enthusiastic cyclists*

In 2000 Veenendaal won the (first) Cycling City election in the Netherlands. It was again nominated in 2002 and 2008. Always with the same motivation: cycling in Veenendaal is exceptionally comfortable, peaceful, safe, relaxing, fun. Thanks to the perfect routes, both in design and maintenance. Residents of Veenendaal are in general therefore highly satisfied with the bicycle facilities. And they use their bicycles extensively.

The enthusiasm of Veenendaal residents for their local bicycle routes is extremely high. The latest elections for Cycling City 2008 (won this time not by Veenendaal but Houten), testify to this. On a website votes could be cast on either of 5 candidate towns. Of the 5641 website visitors casting a vote, 30% voted in favour of Veenendaal, number 1. The reactions at the same website on the reasons for the Cycling City jury for nominating Veenendaal, display the same degree of enthusiasm. The other towns often received critical reactions about dangers, bad maintenance, long waiting times, etc. Almost none for Veenendaal, just satisfaction, appreciation, pride! Cyclists' opinions are remarkably emotional, phrased in 'feelings'. Terms like wonderful, great, fantastic and quiet are central. These are directly related to the degree of maintenance of the bicycle routes and substantiated by safety (very often cycling separate from car traffic; safe intersections thanks to numerous roundabouts and tunnels) and speed arguments (direct routes and short waiting times).

The Veenendaal branch of Fietzersbond is no less satisfied. 'What is so special about the Veenendaal approach?', was the headline of the Fietzersbond website. And the answer is provided at once: mainly attractive bicycle routes, free guarded parking facilities, attention to detail and maintenance (cycling comfort).

## 6. Copenhagen: city (full) of bicycles

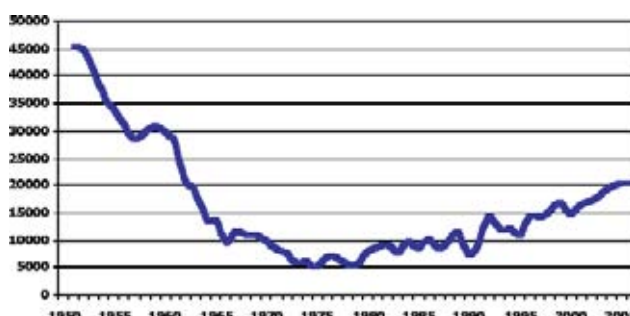
Unlike most large cities in Europe, Copenhagen has a true bicycle tradition. Bicycle use is widespread among all groups of residents. As usual, part of the explanation is rooted in history, but at the same time the systematic and large-scale bicycle policies of Copenhagen local authorities have been remarkable in recent years.



In 1920 the compact city of Copenhagen had 225,000 inhabitants, by 1950 this had grown to more than 770,000. This strong growth at a time when bicycles, unlike cars, were available to all, is a major element in explaining the high degree of bicycle use. This also marks the start of a true tradition, a lifestyle where cycling is perfectly normal, in a way that is comparable to the Netherlands. Since the 1950's bicycle use fell strongly, in accordance with overall trends in Europe (as well as the number of inhabitants: back to 550,000), but this trend has reversed from the early 80's onwards. Presently (2009) Copenhagen has 518,000 inhabitants. The Copenhagen metropolitan area has over 1.5 million inhabitants, which is particularly high in relation to the overall number of Danes: 5 million. Copenhagen is more or less equivalent to Denmark.

### *General and increasing bicycle use*

Since the mid-70's bicycle use in Copenhagen has been increasing, particularly in the town centre and its immediate surroundings. Counts on major routes around the town centre clearly demonstrate this:



*Trends in bicycle use in Copenhagen: cyclists towards the town centre over inner city cordon, morning peak hour 1950-2005*



The figure clearly demonstrates the essence of the Copenhagen story: over the past 30 years the number of cyclists visible in the confines of the quite compact inner city has quadrupled in the morning rush hour; and doubled over the past 15 years...

All data on bicycle use show positive trends only. The percentage of bicycles in all transportation of Copenhagen residents has grown to 32%, considerably higher than the average in the Netherlands. Significantly higher than bicycle percentages in that other European bicycle capital, Amsterdam, as well (even though that city with its 756,000 inhabitants is considerably larger and therefore less easy to cycle). There bicycles account for some 28% of all transportation:

	Copenhagen	Amsterdam
public transport	15%	18%
bicycle	32%	28%
car	26%	27%
walking	24%	24%
other	3%	3%

For sure, several towns in the Netherlands have considerably higher percentages for bicycle use, as much as 40% even. But those are small towns – less than 200,000 inhabitants.

Copenhagen local authorities mainly release data on commuter traffic. And usually not simply the commuting behaviour of Copenhagen residents, but the reverse: the modal split towards jobs in Copenhagen. That is the meaning of the 37% in 2008 mentioned among other data in the policy monitor (see below) - and in many presentations on Copenhagen. This number is high anyway for Copenhagen as many employed live in or near the city; much more so than is usual in the Netherlands, particularly in Amsterdam. These circumstances provide part of the explanation. In addition it is still truly remarkable that in 1996 a mere 30% of all Copenhagen employees commuted by bicycle whereas at present this has grown to no less than 37%.

### *Overwhelming bicycle use – and a particular cycling culture*

Observing the Copenhagen morning rush hour is a phenomenon. Even for Dutchmen who know all about bicycle towns. The numbers of cyclists continuously visible on the busiest routes, are incredible. One thing stands out immediately: Copenhagen truly is a 'city of bicycles' – in the sense that bicycle use is overwhelming. On the busiest routes more than 30,000 cyclists a day. These are numbers unknown elsewhere in Europe. In rush hour this provides unique images: continuous overtaking, a kind of bicycle caterpillar slowly spinning round itself. And at every traffic light a queue of cyclists – three abreast.



To a Dutchman these numbers are impressive, but so are the characteristics of the cyclists themselves, as these differ greatly from what is common in the Netherlands:

- highly visible: considerable numbers of cyclists are wearing a helmet; approximately 1 in 6.
- the bicycles are almost without exception nice, well-maintained, new – and often the sporty type.
- the manner of cycling is sporty as well. A considerable number of people pedal at a fierce pace. At traffic lights almost half of all cyclists are actually panting.
- certainly the morning rush hour consists nearly completely out of commuters and hardly any children on their way to secondary schools.
- cyclists obey traffic regulations quite well. In Copenhagen people do not feel this way, as other road users complain in considerable and increasing numbers about cyclists' behaviour. But compared to cycling in the Netherlands, everything is extremely tidy and disciplined. Over 90% of cyclists stop at a red light. Riding three abreast, with passengers on the back, mobile phone in use – rare occurrences. Choosing your own route across any type of public space, as long as it is a shortcut from X to Y – is compared to the Dutch cyclists' behaviour almost never to be seen.



#### **Behaviour of cyclists crucial??**

In the Copenhagen bicycle monitor harsh statements are made concerning cyclists' undesirable behaviour. That is because 63% of drivers are 'sometimes or often' angry about cyclists' behaviour. Over 80% feel cyclists to be breaking traffic regulations 'sometimes or often'. These surveys are taken extremely seriously. The conclusion is: 'Cyclist education should be taken seriously if Copenhagen is to continue to improve as a city for cyclists.' The mere phrasing of the questions might certainly warrant a more laconic approach. Sometimes, occasionally, angry at a cyclist....gosh!

#### ***Extremely utilitarian***

Probably everything is connected to everything else. And an 'external factor' like the relatively extremely low risk of theft will certainly be a crucial variable in all of this: better bicycles/other cyclists.

But the most striking feature is that Copenhagen appears to possess quite a specific cycling culture. Maybe basically different from the predominant cycling culture in the Netherlands.

Two catchwords appear to apply to Copenhagen cyclists:

- *conscious*: the conscious choice of a proud adult.
- *rational*: a deliberate choice, based on the clear advantages of bicycle use. There is a good reason for Copenhagen cyclists to say they cycle mainly because it is fast, simple and healthy.

The word *lifestyle* may be highly appropriate, since this refers more or less to a conscious decision by individuals, whereas the word culture refers more to an individual's environment. The very word *lifestyle* is frequently used by policymakers and people connected to the Copenhagen bicycle scene.

That cycling lifestyle translates into a different street scene when compared to the Netherlands. Cycling is less of a statement there, less conscious, less emphatic. Cycling in the Netherlands often looks less utilitarian as well, *more relaxed*.

Differences in cycling culture between Copenhagen and (for instance) Amsterdam should not be exaggerated, of course. From a European point of view, after all, the similarities are much more striking. With a bicycle percentage of 32% it is almost inevitable that bicycle use is high among all age and social categories. In recent years bicycle use has grown particularly among the elderly. Cyclists are evenly distributed over all income categories, unlike car owners (mainly higher incomes) and public transport users (mainly lower incomes). Cycling is simple 'socially accepted'. In Copenhagen it is pointed out that it is not unusual to see ministers and local authorities cycling to work.

### *Effecting a bicycle lifestyle*

Nevertheless there are differences in cycling culture and lifestyle at official and political levels in urban cycling policies that should not go unmentioned.

First of all: officially cycling policies are a mature and particularly independent issue.

Copenhagen possesses a bicycle team of currently 6 people. Projects are implemented everywhere in the organisation; the bicycle team is a clear and well-known information and co-ordination point. And within the bicycle team cycling culture, lifestyle and promotion of Copenhagen as bicycle town is an important issue.

Witness the presentations, among them by manager Andreas Røhl, on cycling in Copenhagen: mainly dealing with the position of the bicycle in Copenhagen – and much less with the details of cycling infrastructure. The main emphasis is on what cycling means for the city and its inhabitants. External champion is Gehl Architects, the bureau of the famous Jan Gehl, strongly contributing to positioning Copenhagen as '*a people approach*': urban design specifically for people. Gehl Architects uses to this end the striking images of streets full of cyclists versus empty streets or streets full of cars. And catchy slogans: *A city full of bicyclists is a friendly city – a people city*.

The Copenhagen bicycle team is also involved in more theoretical foundations of promotion: 'mainstreaming' bicycle traffic

*"A mainstream bicycle culture needs to be flexible enough to embrace both mass culture and individual sub cultures in order to be thoroughly successful. Cycling being as mainstream as it is, there is need for a common debate on the positive aspects of everyday cycling . (...) To meet these demands, the City of Copenhagen has set off a new campaign based on the brand "I bike CPH". This brand communicates positivity, participation and ownership- and a sense of community that is as flexible as the bicycle culture out on the streets. The campaign includes happenings on street level as well as an inter-active web 2.0 community."*





### *Pro-cycling politics*

Secondly: in local politics cycling policy is very much an item. To a certain degree it was a political issue in the latest local elections. And it is generally assumed that pro-cycling choices of nominee politicians were truly effective in those elections. Andreas Røhl provides several reasons for political support for cycling. The well-known social advantages (less congestion, environmental concerns, health, urban life) but he also mentions the possibility of some more inherently political motives: projects can often be implemented within a single term in office; bicycle policies are relatively inexpensive and highly visible. And finally, emphatically: 60% of voters has a bicycle as their main mode of daily transport...

This stronger political drive behind local bicycle policies goes with radical and clear objectives that are communicated as much as possible, too: 50% share of cycling to work and school (previous target 40%); 50% fewer casualties; 80% of all cyclists to feel comfortable. And that in 2015, an emphatic and major element in a larger ambition: becoming the world's eco-metropolis.



### *Perfect monitoring*

The attention paid to interaction with the inhabitants in Copenhagen cycling policy is matched by heavy monitoring of that policy. In the *Bicycle Account* biennial developments in bicycle use and safety have been recorded since 1996, as well as facts about the immediate results of municipal cycling policy. However, the most important and most frequently used part of the *Bicycle Account* is a standard bicycle satisfaction survey. There cyclists award scores on eight essential elements of cycling policy. The data in *Bicycle Account 2008* (published in 2009):

*Scores awarded by cyclists on eight essential elements of Copenhagen bicycle policy, 1996-2008*

	1996	1998	2000	2002	2004	2006	2008
Copenhagen city for cycling	7	8	8	8	8	8	9
Cyclist sense of security in traffic	6	6	6	6	6	5	5
Amount of cycle paths	6	6	7	6	6	6	6
Cycle path width	7	7	6	5	5	5	4
Cycle track maintenance	5	5	4	5	5	5	5
Road maintenance	2	3	2	3	3	3	3
Feasibility of combining cycling and public transport	5	4	5	5	5	6	5
Bicycle parking in town	4	3	4	3	3	3	3



The overall judgement of the cyclists (*Copenhagen cycling city*) is high and has been rising since 1996. Nevertheless there is a clear gap between the very high appreciation of the general issue of Copenhagen as a cycling city and the verdicts on actual bicycle facilities. There is hardly a positive trend there, on the contrary. The greatest decline is in the width of Copenhagen bicycle paths. This appears to be a direct consequence of the policy's success: increasing numbers of cyclists on the same infrastructure – leading to crowding. The numbers in recent years may actually now lead to congestion on bicycle paths along certain stretches of roads and in rush hour. Bicycle paths with a width of 2.20 metres can only handle approximately 2,000 cyclists an hour. Whereas rush hour numbers are approaching 3,000 cyclists on the busiest routes. Widening to 3 metres is advisable on the busiest routes and is being considered by local authorities.

### ***Raised adjoining bicycle paths***

Remarkable cyclists, remarkable numbers of cyclists- but certainly also remarkable bicycle facilities in Copenhagen. The range of facilities is severely limited. Where many other towns demonstrate a wide range and combination of bicycle lanes and bicycle paths, depending on time of construction and local circumstances, Copenhagen has almost no bicycle lanes separated from car lanes by markings only (18 km of bicycle lanes compared to 338 km of bicycle paths). Standard the bicycle paths, on either side of the road, are at least 2 metres, often 2,5 metres wide. A typically Copenhagen phenomenon is that these are usually '(raised) adjoining bicycle paths', according to Dutch terminology. The Dutch 'separate bicycle paths', with a clear distance/verge between car lane and bicycle path, are rare in Copenhagen. And 'solitary bicycle paths', with their own route, can occasionally be found, but then emphatically as part of a specific network, the *green routes* (see below).

The raised adjoining bicycle paths are a success in Copenhagen. No one is advocating fundamentally different types of facilities. Which is remarkable, particularly when combined with high numbers of cyclists. In the Netherlands it might be a cause for concern: no more than a kerb between the bicycle path and motorists; a great risk of falling when overtaking and landing among the cars. Not so in Copenhagen, maybe partly due to the fact that people seem to be cycling 2 (or 3) abreast relatively less often.

Highly similar bicycle facilities along highly similar roads. Because that is certainly also a factor: the Copenhagen bicycle network is concentrated along heavy radials, meant for motorists as well. Which leads to situations along stretches of road and at intersections that are or may be more or less similar. The best standard solutions are looked for in intersections, just like along the stretches of road (with raised adjoining bicycle paths). Where 'best' usually translates into 'safest'.

Since the bicycle path is so close to motor lanes, the most logical and common mechanism is essentially turning inwards at intersections. Making cyclists more visible. Copenhagen bicycle paths usually change into bicycle lanes a few metres before an intersection, lead straight across the intersection (since the 90's often marked in blue with white bicycle symbols) and change back into bicycle paths beyond the intersection.

Experiences with the blue intersection markings are positive. Studies show an increase in safety. In particular the number of accidents between cyclists going straight ahead and on-coming left-turning motorists has clearly fallen.

The search for the best solution is however still on regarding intersections with lengthened or shortened raised-adjoining bicycle paths. The solution for some of the conflicts is clear: cyclists meeting a red light should be positioned somewhat closer to the intersection than motorists waiting as well. Problems are caused by cyclists arriving at the intersection when lights are green. And that happens a lot, due to the huge numbers of cyclists on those radials and the long green phases on those radials for bicycles and cars (together). That makes right-turn lanes for cars highly advisable anyway. At the busiest moments, however, the situation is visibly 'wrong'. Motorists will eventually use even the tiniest gap in the rows of fast bicycles. In this respect it seems inevitable that increasingly a decision is made in favour of conflict-free solutions between cyclists going straight ahead and cars turning right.

### *Implementation of the bicycle network*

Bicycle facilities in Copenhagen go back a long way. Initially these were mainly recreational bicycle paths along arterial roads. The first bicycle path dates from 1920. By 1930 this had already grown to 130 km of bicycle paths. After 1945 the main issue was segregation of traffic types on the busiest main roads. Many bicycle paths were constructed particularly along new main roads. Presumably thanks in part to these facilities bicycle use stood its ground, even in the decades of decline and minimal attention by policymakers. The network of bicycle paths has since been almost completed - almost one hundred years of bicycle path construction bears fruit. Overall there is approximately 340 km of bicycle path nowadays (2009). And although this is by and large complete, there is still some degree of expansion every year. In 2008 another 5 km of bicycle path was added (and 4 km hugely improved). According to local planners there is still some 50-60 km to go.



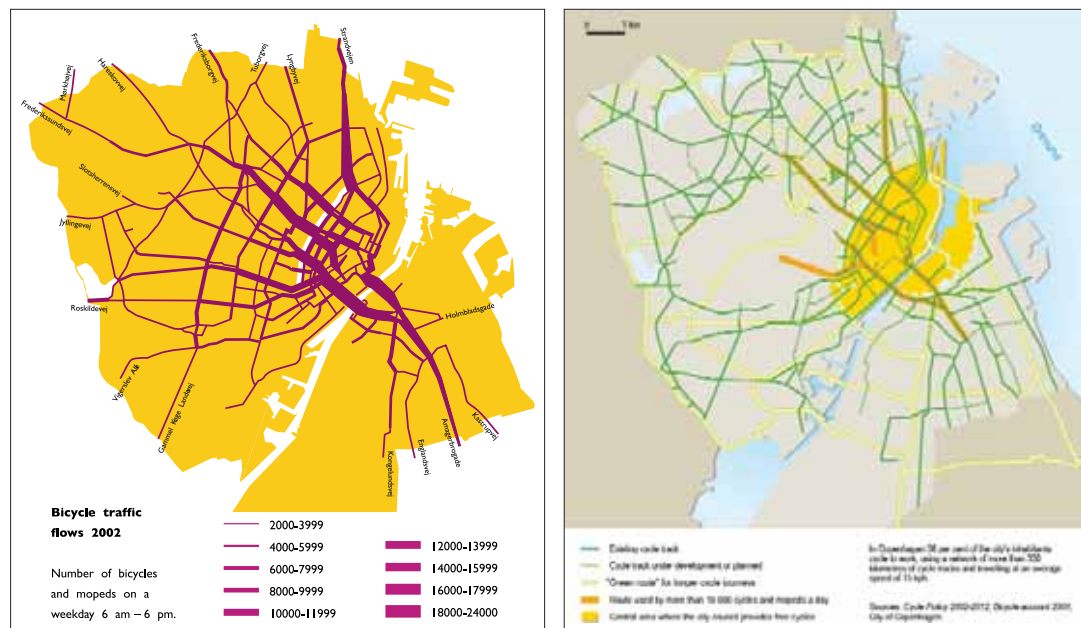


### Network choices: traditional radials versus park routes

The bicycle network of raised adjoining bicycle paths covers to a large degree exactly the same routes as car traffic. The busiest bicycle routes are the traditional radials that are also preferred routes for motor vehicles. This decision in favour of 'convergence' has a number of consequences. Cycling in Copenhagen means cycling in the noise and pollution of motor vehicles. At the same time it is also a very direct route - and cyclists are relatively little bothered by traffic lights on the radials themselves, as they are carried along in the long green phases for the neighbouring motor vehicles.

Huge numbers of cyclists do this on a daily basis, as the radials are so attractive – both to cyclists and motorists. Just look at the map: the busiest routes in Copenhagen are the last 3-4 km of five clear radial routes. As well as the route along Langebro and Andersens Boulevard, slightly less typically radial.

### Data on bicycles in Copenhagen



Note: west of the city centre is an area displaying hardly any bicycle routes. This is the independent municipality of Frederiksberg, completely enclosed by Copenhagen.

The convergence of bicycles and cars on those radials also explains most of the emphasis in Copenhagen bicycle policies. The large amount of attention to safe bicycle infrastructure on intersections is closely linked to the large numbers of intersections on those radials and their heavy load. And it is no more than fitting that Copenhagen should be one of the first cities to introduce green waves for cyclists. The first route where this was realised was a 2200-metre stretch of road with no fewer than 12 traffic lights...

#### Green wave Nørrebrogade (2004)

Nørrebrogade is the main bicycle axis in Copenhagen. Near the town centre at the time 30,000 cyclists a day, alongside 17,000 cars. A little over 2 km further along there were 15,000 cyclists and 16,000 cars. The effects of the green wave along 12 traffic lights (with considerable green phases in the main direction anyway) with a standard speed of 20 km/h, could easily be demonstrated. In the morning rush hour towards the town centre the advantage to cyclists was 2.29 minutes (6 stops less); in the opposite direction 1 stop was gained as well as 35 seconds. Effects in the afternoon were more difficult to gauge, as there is no clear rush hour. The effect (out of the town centre) is smaller, but still clear: 1.13 minutes advantage thanks to 3 stops less.

### *Green routes*

All attention has gone, both in the past and the present, to the bicycle facilities along these busy radials. The alternative has been positioned radically different in Copenhagen. Alongside or in contrast to the adjoining bicycle paths along arterial routes there are no routes with the same function through residential neighbourhoods, along low-traffic roads. There are only '*green cycle routes*'. Literally green: to a large extent winding through parks and complete car-free areas. There has been a distinct search for routes over longer distances and complete routes; even a complete network. There are some 22 green routes planned, each on average 5 km long. Of the overall 110 km some 41 km have been realised at this time. The speed is not impressive: in 1995 there were already 29 km in existence.

The network of *green routes* is emphatically not meant to be utilitarian. Copenhagen states:

"The green cycle routes are for recreation, bicycle exercise, running, walking, skateboarding and other games on wheels. In addition, they offer anybody cycling to their place of work or education the opportunity to cycle all or part of their daily journey through peaceful, green, car-free and bus-free surroundings."

### *Inevitable network choices: low(er) car traffic*

Few direct routes, only to a slight degree aimed at the major destinations, slow to be effected – it will be clear that in this way there will not be an alternative for the functional 'convergence' routes for a long time. And therefore the inevitable problems on the convergence routes will have to be addressed on their own. There are various solutions possible— and the beginnings can be discerned in Copenhagen as well:

- if the numbers of cars and bicycles become prohibitive at the busiest intersections, the time has come for the best but also most expensive solution: different levels. Copenhagen has more or less started on this road. The numbers of bicycle bridges and tunnels are still quite low, but increasing. As well as the realisation that this is necessary.
- if the numbers of cyclists on those busy radials outgrows the available room, additional room will have to be found. At the expense of motor vehicles. It is quite remarkable that this is already occurring in Copenhagen, and without too many problems: parking spaces are being sacrificed in favour of raised adjoining bicycle paths. All over the town the desire to decrease the number of lanes for car traffic will be growing. By now there is a precedent: Nørrebrogade has been closed to through traffic since 2008. This caused 40% fewer motor vehicles in rush hour, which pleased 67% of the local residents and added approx. 5000 cyclists to the approx. 30.000 that daily passed the most popular part of the street before the redesign.



Nevertheless Copenhagen – cycling capital in numbers of cyclists – is remarkable for the room still afforded to cars very close to the town centre. Heavily-used car routes at a distance of less than a kilometre from the town centre. Remarkably short car queues outside rush hour. The most extreme example: the intersection Gyldenløvesgade/Søgade: the radial route has 9 lanes for cars, at 900 metres' distance from the market (Nytorg). There Copenhagen appears to be a true car city!

Indirectly, without much ado and very cautiously, steps have been taken towards a kind of alternative network along low-traffic roads. Nørrebrogade is a first instance: closure for motor vehicles has shifted this route to some degree from the 'convergence-radials network' towards a 'low-traffic network'. The bicycle bridge in a *green route* across the busy Ågade/Åboulevard (2008) makes that route much more functional and to a certain extent radial as well. The bicycle bridge Bryggebroen across the harbour at Islands Brygge (2006) created a new functional route - and attracted 3,000 cyclists from the very first day, a number that at the latest count (2009) had increased to 8500.

### ***Bicycle plan***

The 2002-2012 Copenhagen bicycle plan concerns not only these issues of network and bicycle paths, even though financially at least this will be essential. Copenhagen spent on average between 10 and 15 million Euro on bicycle facilities over the past few years.

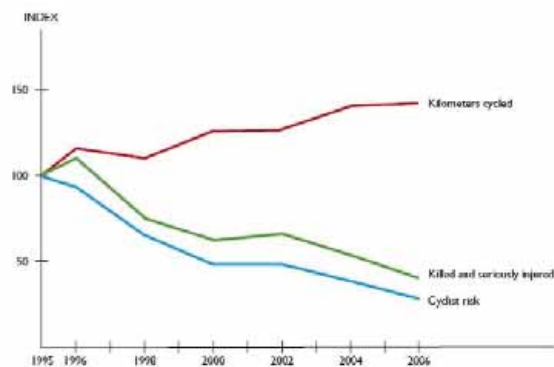
The remaining task is financially still considerable. The 50-60 km of bicycle path that are yet to be effected and the extra 70-plus km of *green routes* that are planned will require overall not much less than 100 million Euro... That will take some years yet!

The way in which the *Bicycle Account* is put to use is interesting. First of all there is a focus on present-day cyclists. After all, one-fifth of cyclists find Copenhagen not a pleasant place for cycling at all. Concrete improvements must prevent this group from giving up.

The subjective perception of *safety* is taken very seriously in Copenhagen. Whether justified or not, a perception of danger results in fewer cyclists than possible. Objectively safety is improving.

#### **Bicycle use and safety mutually reinforcing**

A phenomenon well-known in all bicycle towns and countries can clearly be discerned in Copenhagen as well: a considerable increase in bicycle use is coupled with a considerable decrease in the number of casualties. Reducing the risks for cyclists even more. In Copenhagen from the late 90's the number of serious casualties fell from over 200 a year to less than 100 a year from 2006 onwards.



Nevertheless the perception of safety is not optimal by far. The bicycle plan 2002-2012 proposes not to attempt an increase in safety (perception) by realising bicycle paths, but to completely focus on intersections instead.

*Comfort* requires a lot of attention as well, as demonstrated by the *Bicycle Account*: over half of all cyclists are dissatisfied about maintenance. Local authorities are therefore more than willing to tackle this issue in the bicycle plan.

Cyclists have long been not impressed by the maintenance of the routes. This is partly due to the high impact of bad surface over short distances, as actually 82% of the routes are well-maintained and 13% are acceptable. Annually this will require approximately 1 million Euro to improve and maintain quality.

In addition a plan has been drawn up to also sweep at weekends the approximately 50 km of bicycle paths that appear to be littered fastest. Snow-clearing will occur earlier in the mornings, well before rush hour. Sweeping and clearing now cost over 1 million Euro a year.



Moreover, bicycle parking is an issue that needs to be addressed more (witness the low marks in the *Bicycle Account*) and is actually being addressed of late, at destinations and train stations. In 2006 a start was made in removing abandoned bicycles. Simple parking facilities have been added in large numbers. Copenhagen meticulously records this: 20,500 'on-road parking spaces' in 2004; no fewer than 34,800 in 2008! Many, but at the same time much less than Amsterdam placed in the street (The officials of Amsterdam estimate approx. 200.000).



*The Veksø NO bicycle rack, the Copenhagen standard.*

Guarded parking? This does not appear to be an issue in Copenhagen, partly due to the low risk of theft, and also in part due to the fact that on many locations bicycles may be parked indoors or on private property. In combination with public transport the issue is not so much surveillance to protect against theft either. The more so since it is allowed to carry bicycles along on trains and underground. But most certainly also because cyclists do not perceive the need. At the Copenhagen main stations, Central Station and Nørreport Station, hundreds of bicycles are visible, as well as far too few parking facilities. The need for racks is obvious, not so for surveillance.

### *What makes them cycle so much?*

When all is said and done, it is still confusing to see the huge numbers of cyclists on the cycling axes in Copenhagen. In part this is some sort of optical illusion, a result of the strong clustering of all cyclists on those radials. Nevertheless Copenhagen is still the cycling capital of Europe, even in percentage of cycling. The quality and quantity of the bicycle infrastructure clearly match this. At the same time, however, the quality of the cycling network does not appear to be the cause for the numbers of cyclists and their rapid increase. In bicycle infrastructure Copenhagen is far less of a capital. And by no means is Copenhagen the *car-free capital*.



So after all still a 'culture' or 'lifestyle' – whatever that may be? To a certain degree this may be so. But some more tangible factors can be discerned, particularly when compared to Dutch towns:

1. the low numbers of car ownership in Denmark, in particular Copenhagen, due to high purchasing costs (almost twice as high as in the Netherlands). In the Netherlands car ownership per head is 21% higher than in Denmark. Amsterdam has 42 cars per 100 inhabitants, Copenhagen 22 – although it is not sure the data are comparable.
2. few opportunities for parking cars in the Copenhagen town centre. Of course this holds for visitors in many other towns as well. But Copenhagen appears to be exceptional: even employees struggle to find parking space. Major companies do not have private parking garages to a much lesser degree.
3. Low numbers of bicycle theft. Even in the Netherlands we know the spiral may be upward or downward: less theft, better bicycles, nicer to cycle, cycle more often, et cetera.

Yet it remains hard to explain. And the reality remains overwhelming: Copenhagen is indeed a city (full) of cyclists. And because it is so hard to explain and in several respects it appears the cycling climate may be improved a lot, a continued increase of bicycle use seems to be likely.

- *provided cyclists will demand their rightful place, even in traffic behaviour...*
- *provided Copenhagen will reduce the role of cars near the town centre, as dozens of other towns in Europe have done...*
- *provided cycling will be even nicer and more relaxed by additional improvements in the network...*

### City-bikes

The Copenhagen *city bikes* are known all over the world, particularly among tourists. A true attraction by now, these 'white bicycles' (2,000 of them at present) are currently available at 110 locations across the town centre, the area where they may be used at will and for free. Only a small deposit is required (a DKK 20 coin).

Initially the Copenhagen white-bicycle project had the same problems as many other similar projects elsewhere in Europe: many technical shortcomings and huge numbers of stolen bicycles almost caused a decision to stop. By 1996 however some major technical improvements have been effected and theft fell (by stepping up control outside the area of use). It has been a success ever since, particularly among tourists. Even though by now the concept is somewhat antiquated in view of the smart bikes sweeping over Europe.



## 7. Enschede: bicycle policy by way of the car

The Enschede traffic policy is a direct result of the urban planning and socio-economic blow the city suffered as a result of the disappearance of the textile industry in the 1960s. Dick Buursink, former Enschede town councillor (1978-1994) and alderman (1994-2001) and later among other things chairman of Fietsberaad looks back. How to concentrate mainly on car traffic and socio-economic developments and still be of service to cyclists.



*Molenstraat / Gemeentewerfstraat*

At the beginning of the twentieth century the rise of the textile industry transformed Enschede from a market town into an industrial centre. At that time the city consisted of a small centre surrounded by textile mills mainly located along the railway tracks, with working-class neighbourhoods in between. In the city's heydays there were approximately 25 large textile mills, including well-known names like Van Heek, Jannink and Ten Cate. By the late 1960s in short order most mills closed. Some 23,000 direct jobs were lost on a population of just under 140,000 in these years. As all factories had been located in fairly central positions – after all, the city only started expanding with the rise of the textile industry – the city now looked like it had been bombed. Enschede had changed into a desolate waste and lots of people found themselves in trouble. Ever since the city has been struggling to overcome this urban planning and socio-economic blow. This affected municipal traffic policy as well.

### *Rings and radials*

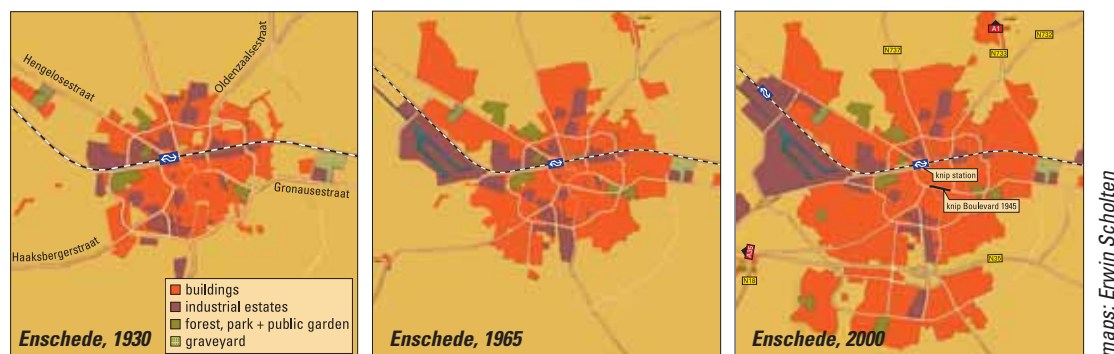
The Enschede city plan looks more or less like a spider's web, with two rings clearly visible around the town centre. The inner ring is the so-called centre ring. Buursink: 'Car traffic was soon forced back from that ring. Back in 1975, Enschede was the first town to decide on a pedestrian district and a number of streets had been made car-free, including Oude Markt. This was a first step.'

The outer ring is the boulevard ring, realised as early as the 1930s under mayor Edo Bergsma. He also happened to be president of the Dutch Automobile Association and apparently had a clearer vision than usual at the time. The boulevard ring more or less constituted the city boundary at the time. Radials cross this ring from all directions; most of them named after their place of destination - Hengelosestraat, Oldenzaalsestraat, Gronausestraat, Haaksbergerstraat. 'Increasingly,' Buursink explains, 'the radials brought through traffic inside the boulevard ring.'



So the second step was obvious: reserve the centre ring for destination traffic and prevent through traffic inside the boulevard ring. The station square, located to the north of the centre ring, is a fine example. Not so very long ago southbound through traffic just passed this place.' Nowadays this is an ultra-modern square only accessible to buses heading for their stops and to cyclists. 'Although the layout of this square recently won a prestigious prize, there are loud complaints. Take this roof for instance; it may be a designer's dream but it won't keep you dry in strong winds.'

### *Enschede in 1930, 1965 and 2000.*



### *Debate with the community*

When Dick Buursink became alderman, he introduced the above mentioned 'closure' at the railway station, followed by a similar closure in Boulevard 1945. This put an end to east-west through traffic south of the centre ring as well. For the new alderman however, winning public support for these radical measures was not an easy thing to do. 'Wittingly and unwittingly', says Buursink in a suddenly fanatical tone, 'I have always discussed with the community in a provocative, tough way. In plain words: if we do nothing right now we will have a total standstill within five or ten years. Of course I always substantiated my views with data. My approach was as practical as possible, translating numbers of parked cars into football field surfaces. Capacity computations of intersections. They could not get in a word edge-ways. I explained as best as I could that we had to choose for the bicycle if we wanted to keep the traffic problem at least manageable. Each cyclist creates room for a car. I had the newspaper take my picture, squeezed in between two cars and hands up high: now what do I do? The result was that a part of the populace saw red as well. Letters to the editor, for weeks on end.' He has to admit that it was indeed hard on the citizens of Enschede. He himself had already sold his car back in 1989: 'Too expensive for only limited comfort.' So it was easy to push this fervent Labour cyclist into an ideological corner: he just abhorred cars. 'Awareness, awareness, awareness; that was what drove me. The final result was that the council accepted Mobiliteitsplan 1998-2015, involving 35 actions, including those drastic closures.

### *Not two lanes*

Now for some traffic practice. We leave the town centre, with a last look at several restored buildings of the large Van Heek mill, providing an inkling of what Enschede in its textile days must have looked like. We arrive at the boulevard ring, at the Oldenzaalsestraat / Lasondersingel intersection. Four-directions green for cyclists here, but more importantly: the consequences of his traffic policy are obvious in this place, as the boulevard ring is very busy indeed.

To relieve the busy boulevard ring a decision was made at the time to lure boulevard ring traffic, too, outwards, by means of ring road structures well-removed from the city. That has been successful in the south-west (Usseler ring road, Westwal fly-over), the south (A35/N35 with sufficient capacity, also at junctions) and the south-east (Oostweg and Euregioweg; N35 extension planned to the German autobahn past Gronau). To the north however, this was impossible, nor is it ever likely, due to a badly situated exit, residential neighbourhoods and environmental concerns. With the result that the second economic centre next to the town



centre (university, business science park and football stadium to the west) is not properly connected to the A1. That means that all busy traffic north of the city will remain crammed onto the boulevard ring. However, when stopping your bicycle on Lasondersingel, it will immediately be clear that there once was an alternative. Instead of 'a third ring' a re-design of the boulevards; eminently practical in Enschede, where boulevards were generously laid out. Why no boulevard with two double lanes? If the trees in the central reservation had been removed and the pavements had been narrowed, this would have been easily feasible. Buursink: 'But that would have meant that there would be no room for cyclists, which was out of the question. The main infrastructure of this town does not belong to cars exclusively, it is everybody's. The boulevards are major routes to and from school. Telling cyclists to ride through residential neighbourhoods, which are not logical routes, will not be effective.' This sounds logical, but it is a strange phenomenon: a car-less alderman who is apparently not bothered that in the current situation - as planned by him - the boulevards only have bicycle lanes that double up as parking places instead of perfect bicycle paths. This does not however imply that the boulevards are dangerous to cyclists, as cars are segregated by way of central reservations and the car lanes are generously proportioned.

The fact that widening the boulevards could be prevented is partly attributable to the fact that in Enschede this became an issue relatively late. Twenty years earlier no-one would have complained about the need to cut down fine trees, but in the late 1990s that was *not done*. 'After the disappearance of the textile industry, a small, active professional work force remained. A large part of the 45+ age group was suddenly written off in the 1970s and lots of people, often poorly qualified, became dependent on disability benefits. It took some time for the active work force to regain a normal size. The town gradually transformed itself from an industrial into a thriving service town. Nowadays there are the polytechnic and the university, with 12,000 and 6,000 students respectively. There is employment in ICT and health care, for instance Medisch Spectrum

Twente, the country's largest non-university hospital and Roesing, a prominent rehabilitation and research centre. All this brought about a shift in work force. People on disability benefits gradually became senior citizens and there was an influx of people from elsewhere finding employment here. That causes a rise in local prosperity. In addition, as the largest town in the east of the Netherlands, the regional function continued to grow, with a music centre, a theatre and a wide range of hotels, restaurants and cafes. On Saturdays alone between 25,000 and 30,000 Germans visit the local market. Admittedly, developments have been somewhat slower than elsewhere and still are. There are still high unemployment figures. Not as bad as Rotterdam or Groningen, but towns like Amersfoort and Apeldoorn provide far more jobs than we do. Our population is now on the increase again. Due to the speed and complexity of these developments we did not notice until the 1990s that our town, too, had started clogging up.'

### *Marking time in bicycle policy*

In 2004 a new, large traffic plan was unveiled in Enschede: *Mobiliteitsplan 2004-2015*. The local branch of Fietzersbond had fiercely attempted to influence this document, armed in particular with the results of the first Fietsbalans. Enschede had not shone in this assessment, a major failure being the position of cyclists on the boulevards: wide bicycle lanes, but parked cars on and alongside these. This was not appreciated in Fietsbalans. The local branch of Fietzersbond kept insisting on changes, but Enschede local authorities refused to do so.

For that matter, Fietzersbond wishes in Enschede did not fundamentally differ from those of the local authorities in the period 2002-2004. In numerous instances Fietzersbond suggested extra efforts to be made, but in essence there were no disagreements.

To a certain extent that is still the case. The agreed-upon Mobiliteitsplan is being implemented, which contained important measures for bicycle traffic. There was and still is a clear ambition to keep improving the route network.

On the other hand those involved have the feeling that Enschede is increasingly less of a pioneer where cycling is concerned, both in ideas and in actual practice. There is less emphatic political support than before in Mobiliteitsplan. Objectives are formulated in a more general, less political way. Whereas before 2004 phrases were used like 'reducing increasing local car mobility and promoting public transport and cycling', nowadays the issue is 'maintaining accessibility'. Bicycle traffic is less prominent in actual measures as well, witness the list of projects in Mobiliteitsplan: for cyclists merely a (free) parking facility in the town centre and an item 'Bicycle routes town centre', with a 1 million Euro budget.

### *Parking facilities*

That free parking facility has materialised. A beautiful, large, maybe even luxurious free guarded parking facility at the very edge of the town centre, Van Heekplein. A parking with room for no less than 1100 bicycles. It attracts lots of cyclists: after 4 years the millionth visitor was celebrated. On average that is no less than 5000 bicycle parkings a week.

The success paved the way for a second free guarded parking facility in the town centre. This was opened in late 2006: 650 spaces in a basement in Brammelerstraat. This parking facility is mainly geared to the entertainment industry – and therefore open and guarded Thursdays through Saturdays until 5 a.m.

Additional parking news: in cooperation with ProRail local authorities are constructing a large free bicycle parking near the railway station, with room for 1000 bicycles.



*Lasondersingel, at the boulevard ring*





*Intersection Lonnekerspoorbaan-Roomweg*

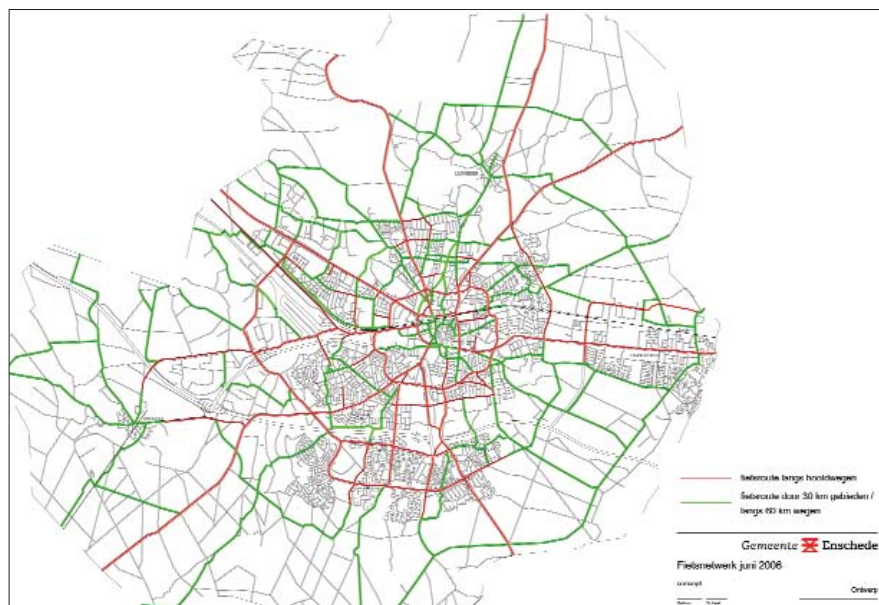
### ***Bicycle highway***

The bicycle network in Enschede is (still) closely interwoven with the car network. Time and again this gives rise to problems and conflicts, as acknowledged in Mobiliteitsplan:

‘As these routes often coincide with the arterial routes for cars, at intersections assessments have to be made between priorities for cars and those for bicycles.’

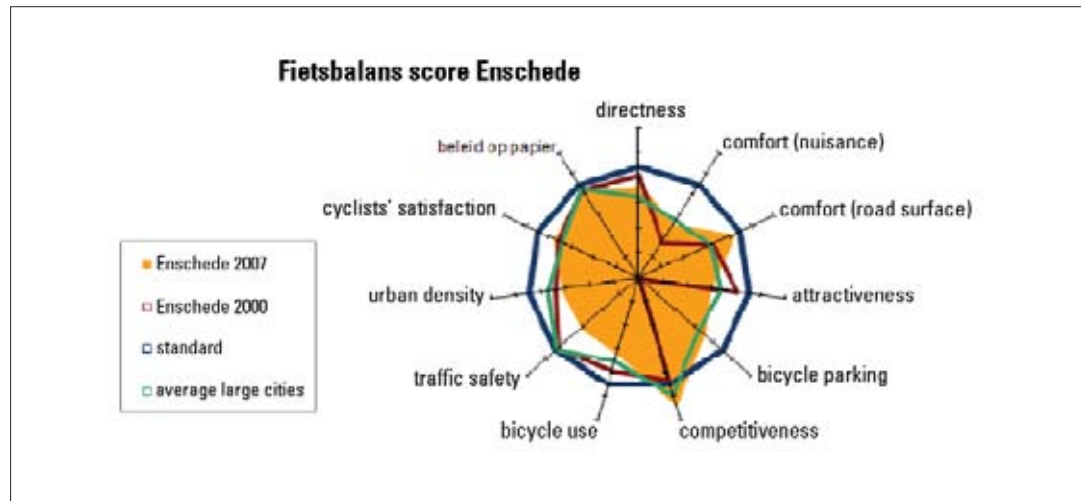
Enschede especially needs disentwining in view of the current emphasis on car accessibility: bicycle routes through residential neighbourhoods instead of along arterial roads. In this respect regional initiatives for the realisation of a supralocal network of perfect bicycle routes were extremely fortuitous. Regio Twente designed *Hoogwaardige Fietsnetwerk Twente*. A central part is played by a 60-km long *fietssnelweg*: a fast, comfortable and non-stop bicycle highway from Nijverdal to Gronau – a red carpet, at least 4 metres wide. The route of this bicycle highway F35 has been determined by now. Overall costs of approximately 45 million Euro, according to the latest estimates, will be borne by the eight towns involved, the province of Overijssel and Regio Twente. Most important for Enschede are the direct and perfect routes to the neighbouring towns of Hengelo, Oldenzaal and Gronau, which also mean great improvements for short, local bicycle trips. The realisation of Fietsnetwerk was started in 2008 (stretch between Hengelo and Enschede).

### ***Bicycle network Enschede***



### *Fietsbalans-2: Loss of ground confirmed*

In 2007 the second series of Fietsbalans was conducted in several towns, including Enschede, as a sequel to that of 2000. The Enschede data have changed considerably over those seven years. An increase in comfort on the bicycle routes, and a slight increase in competitiveness of cycling. But a deterioration in directness, traffic safety and bicycle use. Overall no positive development, while Enschede also clearly trails in comparison to other towns.



## 8. Amsterdam: the blessings of bicycles

**Amsterdam: the capital and in many respects also the exception of the Netherlands. Certainly as regards bicycle use and all that this entails (theft included). Leading in problems but most certainly also leading in solutions.**



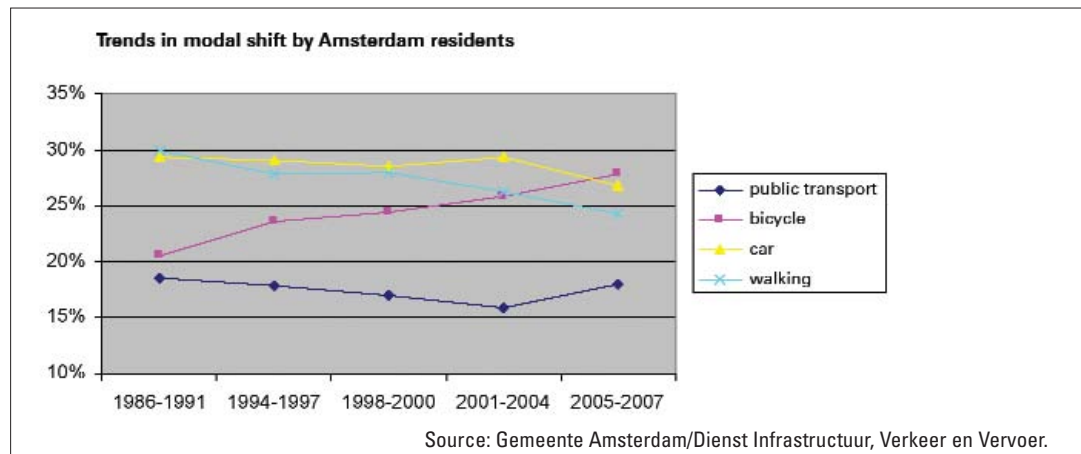
‘Count your blessings’. In **Ria Hilhorst**’s conversations on Amsterdam bicycle policy, the emphasis is on what needs to be done yet, what can be improved, which problems are still unsolved. She is the coordinating cycling official at Dienst Infrastructuur Verkeer en Vervoer (DIVV) of the Amsterdam municipality. And it is by no means strange to find policy-making officials mainly involved in what is still necessary, what needs to be solved. To outsiders, however, this is remarkable. Particularly since cycling in Amsterdam has been an enormous success story over the past decades. In ultimate effect (bicycle traffic versus car traffic), but most certainly in obvious policy results as well, in bicycle routes and bicycle parking.





### *Modal split of Amsterdam residents, 1988-2007*

What has occurred in Amsterdam streets since 1988; which choices did travellers make – partly due to the implementation of traffic policy? Local authorities regularly and meticulously investigate this. It is clear that bicycle use is increasing at an amazing pace:



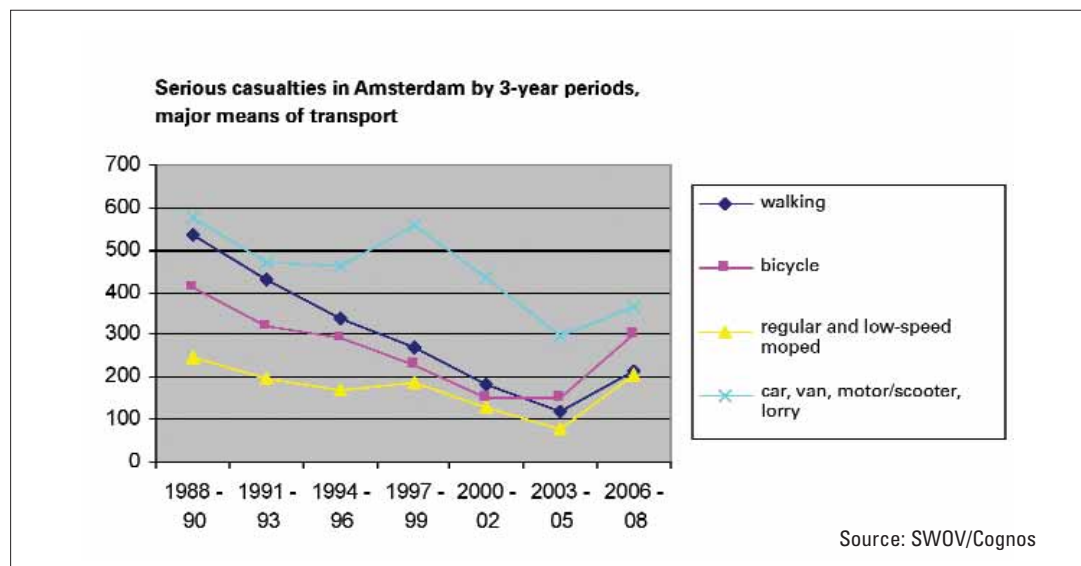
Taken all residents into account, the picture is extremely positive. Since 1990 bicycle use has increased from 21% of all trips to 28%. These types of shift in modal split do not occur frequently. For the first time Amsterdam residents now use their bicycles more often than their cars (27%).

There are considerable differences among districts. Residents of the district Centrum use their bicycles most often – no surprise there – (41% versus an average of 28%) and their cars least often (18% versus an average of 27%). Local authorities are well aware of the main reason: ‘This can be attributed to the restrictive parking policies introduced since the 1990s.’ At present parking charges are in effect in almost the entire area within the A-10 ring road.

At the Singelgracht cordon the trend is clearly demonstrated by counts. In 1990 235,000 cars were registered entering and leaving the area a day. By 2006 that number had fallen to 172,000. Over the same period the numbers of bicycles passing that location grew from 86,000 to 140,000. Roughly 55,000 fewer cars and more bicycles into and out of the town centre. That is definitely a clear trend!

### *Traffic casualties*

In such a busy central city cycling is bound to be dangerous, outsiders might think. And certainly, for inexperienced outsiders Amsterdam (bicycle) traffic may appear to be dangerous. The data however tell a different story:



The number of serious casualties (fatalities and hospitalisations) among cyclists fell steadily for a number of years, from approximately 400 a year in the late 1980s to 150 a year immediately after 2000. Since that time it has however increased considerably, to approximately 300 a year. The fall and rise demonstrate a similar pattern as the data for pedestrians and the various types of mopeds. The number of serious casualties among motorists has fallen considerably less.

It is by no means certain that the low numbers of serious casualties around 2004 in this graph actually reflect reality. Data on casualties may easily be distorted by inaccurate reporting – and there are indications that this was (more) prevalent in Amsterdam at the time. Anyway, the overall picture over the past 20 years remains for cyclists, too, one of more or less constant numbers of serious casualties. Considering the growth in inhabitants, people in the streets, bicycle use and certainly car use as well, that constancy or limited decrease is no mean result anyway. Cycling is getting safer per kilometre, that is an undisputable fact.

### *Integral at three levels*

The data demonstrate that Amsterdam traffic policy is extremely effective and that the role of the bicycle has by now become crucial to all objectives behind traffic policy. A result to be proud of, and achieved within an extremely complex organisational structure. This is another example how incomparable Amsterdam is where bicycle policy is concerned: it is the only town in the Netherlands where three levels of government are involved in traffic policy to a considerable extent. Stadsregio Amsterdam subsidises to a considerable extent the realisation of a regional bicycle network and is as such a major participant as far as bicycle facilities are concerned. Within Amsterdam local government the town districts (currently 14; from May 2010 7) are of major importance, certainly in bicycle policy, in addition to Centrale Stad (central authorities). The town districts play a major part since public space is at stake in bicycle routes and bicycle parking and details carry a great deal of weight.

#### **Fietsersbond Amsterdam**

The Amsterdam branch of Fietsersbond is special. First of all, in a way it is the cradle of Fietsersbond. Also the branch that has for years been a trendsetter in professionalism, up to and including paid employees (partly thanks to funding by local authorities). Moreover it is the largest branch, with some 4500 members. Fietsersbond has been and still is very active in reporting bottlenecks and providing possible solutions. The website is filled with 'bottlenecks solved' and the remaining unsolved ones. As such Fietsersbond is a force keeping bicycle policy focussed on concrete issues, 'aimed at the street'.

Three government institutions for local bicycle policy – that is sure to cause a lot of bureaucracy and complex procedures. Ria Hilhorst: 'Of course it takes time and sometimes it is frustrating. But over the years we have managed to divide the responsibilities quite well. And by now the entire structure is quite effective.' In the process of realising a high-grade bicycle route network experience on how best to cooperate has led to clarity – also on what is still problematical.

### *Collaborating on bicycle network*

Centrale Stad has defined the main bicycle network, Hoofdnet Fiets. The first versions date back to the early 1980s; in 2005 a final version has been defined by the town council as the 'ideal picture' – including the quality requirements that entails. The term main bicycle network may be somewhat confusing. That suggests a coarse complex of a limited number of main bicycle routes. Nothing could be further from the truth. In complete compliance with



the lessons learned in the Netherlands (bicycle route network Delft!) the Amsterdam main network has as a matter of course a mesh size of only 300 by 300 metres.

Quality requirements have been drawn up for this main bicycle network. Mentioned and explained in a few pages of the 2005 Beleidskader Hoofdnnetten; design requirements specified in five pages of *Leidraad Centrale Verkeerscommissie Amsterdam*. In part this is a repetition of general guidelines or legal requirements, for instance on when a bicycle lane has a legal status. But most design requirements are specific Amsterdam choices. The most remarkable are:

- in the main network as few intersections as possible and as much as possible priority for cyclists at intersections;
- routes of the main network may run along neighbourhood connector roads (30 km/h) when car volumes do not exceed 3000 mv/24h;
- always a preference for bicycle paths in shopping streets (due to bustle and parking), even when these are neighbourhood connectors;
- in case of district connectors bicycle paths; bicycle lanes only under strict conditions and never in combination with parking;
- one-way bicycle paths should be at least 1.80 m wide in pre-war neighbourhoods and at least 2.00 m in post-war neighbourhoods; a width of 2.50 m is desirable – in order to allow two people cycling side by side to be overtaken by another cyclist;
- restraint in construction of two-way bicycle paths, because of their relative dangers, but in principle '2\*2 for bicycle in case of 2\*2 for cars': two-way bicycle paths on either side of a road with twice two lanes for car traffic.
- average waiting time at traffic lights at most 30 seconds;
- radius of curve in bicycle paths at least 4 metres;
- gradient at most 1:10, preferably 1:20.

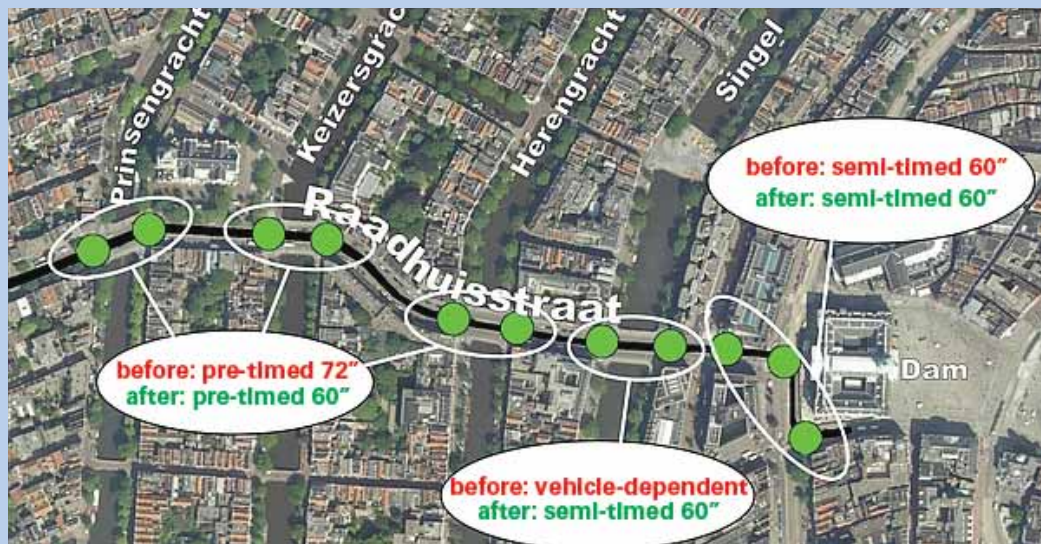


*The ferries for pedestrians and cyclists across the IJ, between Amsterdam-Noord and Centraal Station*



### Green wave

Amsterdam intends to utilise *dynamic traffic management for cyclists*: an experiment has been conducted with dynamic route information panels at the IJ ferries: departure times of the ferries in relation to the recommended bicycle route. Another striking example is a project with a wave of green traffic lights for cyclists. This has been realised on Raadhuisstraat in Amsterdam in the autumn of 2007. Between Dam and Prinsengracht cyclists are confronted by no fewer than 11 traffic lights over a distance of a little over 500 metres. At an average speed of 18 kilometres an hour the cyclists (some 10,000 per 24 h) now encounter a green light 11 times in a row. The green wave is active in both directions. The calculated reduction in cyclists' travel times is 1 minute (when cycling west) and well over 40 seconds (when cycling towards the town centre). This is not very much, but it definitely is over a distance of 500 metres!



Of course Hoofdnets Fiets meets these quality requirements by no means everywhere, and the requirements are carried out to the letter by no means in all changes/redesigns, but this is the widely accepted and formal ambition. In this respect the Centrale Verkeerscommissie (CVC) is crucial. This commission consists of officials of the various (central) municipal departments – in particular DIVV. In addition a number of outside agencies receive the agenda and may send their reactions to CVC. These outside agencies are Fietzersbond, Fire Brigade and the Amsterdam Organisation for the Handicapped. CVC assesses all projects by the town districts – the road authorities – which may affect the main networks for cars, bicycles and public transport. According to the Leidraad CVC:

'CVC is an official advisory body charged with providing to local authorities, through the alderman for Traffic, solicited or unsolicited advice on planned measures affecting these main networks or within their immediate sphere of influence.(..) The objective of Leidraad CVC is to provide third parties with information on the traffic engineering standards CVC applies. Leidraad should be considered a manual for road authorities within the town of Amsterdam in order to obtain information into this assessment, prior to consideration in CVC.'

Of course, as Ria Hilhorst acknowledges, everyday practice is much more complicated and regularly remarkable things happen. Nevertheless she is distinctly positive concerning the relationship districts /CVC: 'Smart district officials will of course visit DIVV at an early stage to find out which design has the best chance of being approved. Which is only efficient. The formal position of and assessment by CVC really does ensure a high quality for bicycles in new projects, and much more easily.'

### ***Achievements: Hoofdnet Fiets***

'Do you really find cycling in Amsterdam neighbourhoods to be relaxed?' Ria is surprised the famous/infamous whirl of Amsterdam traffic does not predominate. And of course there is a whirl. But in quite a number of locations cyclists are no longer quite as affected. A large part of the Amsterdam bicycle network consists of quiet bicycle paths at a considerable distance of main roads or – much more often – of quiet 30 km/h roads. And by no means only in the outer suburbs. Near the town centre there are already many high-quality routes. Cycling in for instance Oost, Watergraafsmeer and Oud-Zuid is chiefly pleasurable, relaxed and quite tranquil. At a distance of 2 km from Hoogstraat (the very heart of the town centre), the ancient eastern neighbourhoods are reminiscent of quiet country towns.

Not so much because there are bicycle paths everywhere. No, the ultimate Amsterdam bicycle facility is a bollard in the road. A gradually ever more refined detailed system of car circulation, that accommodates car flow to a reasonable degree on the roads best suited, but mainly minimises inconvenience to others. Enormous amounts of streets closed to cars and shortcuts specifically constructed for bicycles, including many bicycle bridges. In this light the Amsterdam bicycle climate is emphatically a successful demonstration of integral traffic policies, with its starting point in Duurzaam Veilig.



***Vrijheidslaan***



***Reguliersgracht***



***Bicycle bridge across Ringvaart***





*Bicycle bridge across Nieuwe Vaart*

#### **Various kinds of mopeds**

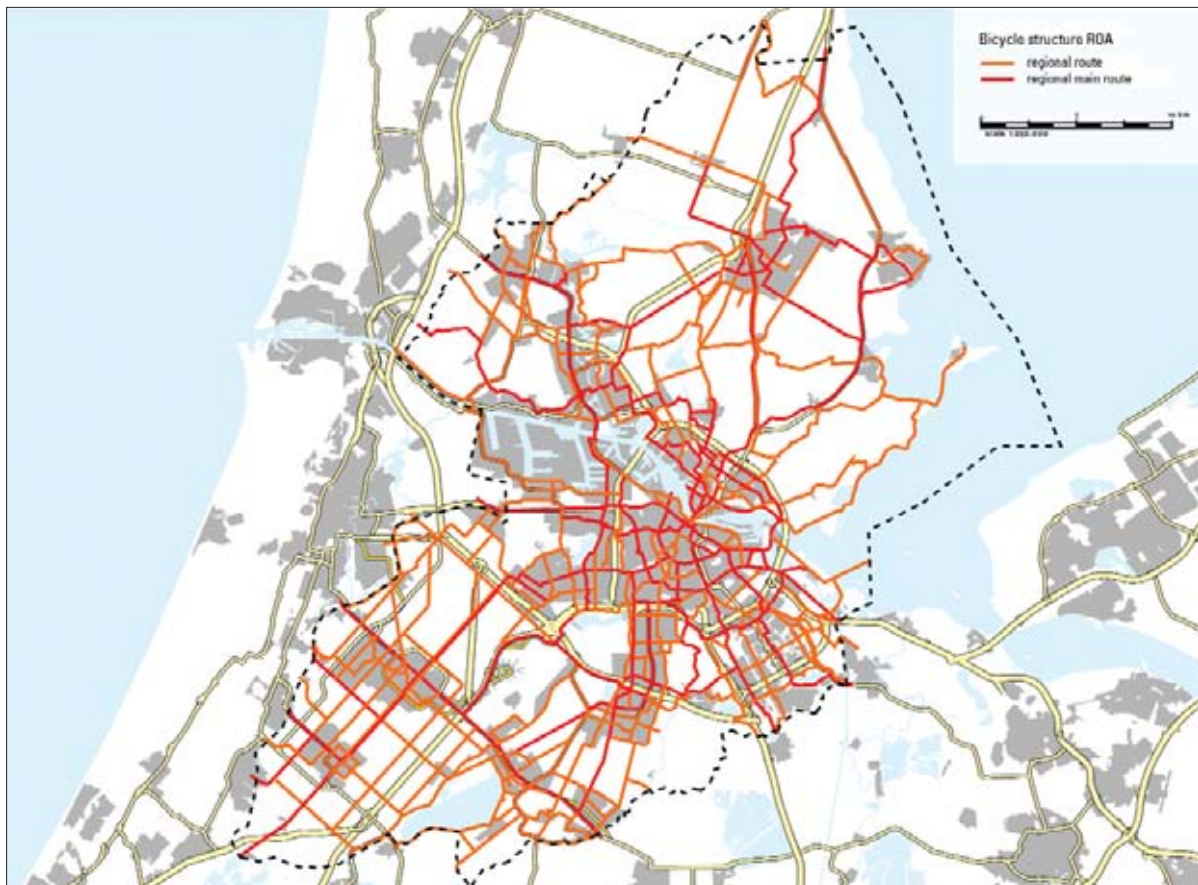
Cycling through Amsterdam is for outsiders also remarkable due to the large numbers of various kinds of mopeds. Amsterdam has no fewer than 67,000 of these: 42,000 standard mopeds and 25,000 low-speed mopeds. One out of every 11 inhabitants has one, generally the fashionable scooter type. Young and old, male and female, on a scooter. 9% of Amsterdam residents, as compared to 3% of Dutch nationwide. In recent years the low-speed 'snorfiets' moped (officially limited to 25 km/h, no obligatory helmet) has gained an unprecedented popularity. It is trendy, but also more or less a consequence of previous decisions in the Netherlands, to wit 'moped on the car lane'. BOVAG trade association confirms: 'A helmet is not necessary; it's simply get up and go. In addition many people like being allowed on the bicycle path with their snorfiets. They don't have to venture among the faster traffic in the car lanes, like a moped is obliged to, owing to its maximum speed of 45 km/h.'

In Amsterdam this is a major problem. Many citizens complain about scooters, in particular the noise and speeding on bicycle paths. Ria: 'These are simply too wide and too fast for our busy bicycle paths. This is a real problem.'

'At a rough estimate I would say that some 90% of the main bicycle network has been realised with an acceptable to good quality. And the remainder are mostly awkward and expensive projects. Little room, costly reconstructions over the entire width of the street, social debate about parking, etc.', Ria Hilhorst characterises what remains to be done. In this final stage money is the crucial element. The more so since the districts are in principle to co-fund Hoofdnet Fiets from their own budgets. Income from parking policies immediately becomes essential. As well as subsidies by Stadsregio Amsterdam. The problem with that source of money is that Stadsregio will only co-fund the regional bicycle network – which is far less compact than the municipal Hoofdnet Fiets.

For that matter: in new urban developments the bicycle facilities will have to be included directly in the estate development, 'as a matter of course' as Ria states.





### *Achievements: Bicycle parking*

The division of responsibilities between Centrale Stad and the various town districts regarding Hoofdnet Fiets has become more clear and structured over the years. Centrale Stad takes care of determination of the network and quality assessment of the projects; town districts ensure implementation and funding – as well as management and maintenance, of course. In bicycle parking, which is a new policy addition and as yet less developed, the division of responsibilities has rapidly become more clear in recent years. For instance, 10 years ago DIVV was still heavily involved in the quintessentially Amsterdam issue of neighbourhood parking; since 2007 this has been completely devolved to the various districts – assisted by a private foundation.



*The bicycle route straight across the re-developed Java island*

### **History with a future: neighbourhood parking facilities in Amsterdam**

Neighbourhood parking facilities are an ancient phenomenon in old cities. Over the past decades the number of neighbourhood parkings fell everywhere, to such an extent that apart from Amsterdam these have almost disappeared. Even Amsterdam, which still possessed several hundred of these in the 1960s, saw a steady decline for years. From the 1980s onwards attempts have been made to reverse the downward trend. And successfully, we can now say. The website [www.stallingamsterdam.nl](http://www.stallingamsterdam.nl) once again numbers some 110 neighbourhood parking facilities.

An important factor in neighbourhood parkings is the Woord bij Daad foundation, which supports parking managers. Woord bij Daad also owns the website [www.stallingamsterdam.nl](http://www.stallingamsterdam.nl), which provides a nice survey of all neighbourhood parkings and even the option to book a place on-line at some parkings. The financial support to neighbourhood parkings is considered a crucial contribution to the renewed success by all concerned, since self-supporting operation of neighbourhood parkings is not easy. Another obstacle is the constant threat by real estate owners (even housing corporations) to rent the indoor neighbourhood parking facilities at market prices as commercial or residential properties.

Realising and maintaining unguarded bicycle parking facilities in public spaces, all those stands and racks, is a matter for the districts as well. And over time quite a number of these have been placed. Ria Hilhorst provides a recent DIVV estimate: in Amsterdam streets there are no fewer than 200,000 bicycle parking places in dedicated facilities! Numbers beyond belief, demonstrating the efforts town districts have undertaken in this matter. Major efforts with visible results. Because at least in 2009 the well-known Amsterdam image of chaotically parked or dumped bicycles is false. Large parts of the town do show incredible numbers of bicycles in public space – but in a reasonably orderly way, because there is sufficient capacity at so many locations.

The bicycles are in, between or near the facilities. In such a way that pedestrians and other traffic can pass unhindered, even though the bicycles do dominate the street scene. But that is no problem, is it?

‘Yes, maybe we do have to acknowledge we have accomplished a lot and that we have been successful, even or particularly in bicycle parking.’ Ria Hilhorst needs to get used to the idea of a ‘successful Amsterdam bicycle parking policy’! That is because the (political) debate is dominated to a high degree by general pronouncements on chaos, misbehaviour and the enormous numbers of bicycles at the major destinations. ‘The problems at a mere five destinations in the Amsterdam town centre, where spatial possibilities are severely restricted and the costs of merely adequate solutions are enormous, are therefore crucial points in bicycle policy for DIVV. Rightly so, but at the same time the conclusion is warranted that elsewhere in town bicycle parking is doing quite nicely. Maybe the same conclusion goes for bicycle parking as for Hoofddnet Fiets: completed for 80 or 90%.







***Large numbers of bicycles, reasonably to extremely orderly parked, at 1e VdHelmstraat (entrance to Albert Cuypmarkt), 2e VdHelmstraat, Weteringschans and even at Amstelstation***

Bicycle parking 'in the street' is a matter for the districts, although there is a 'policy framework' provided by Centrale Stad/DIVV, describing among other things duties and responsibilities of districts and Centrale Stad. Centrale Stad (DIVV) is responsible for realisation and operation of (free!) guarded parking facilities at sites in the town centre. Currently nine municipal guarded parking facilities are in operation. However, the most important cycling destinations still require large investments in bicycle parking 'not at ground level' (Munt, Leidseplein, Rembrandtplein). A crucial point of policy, at least for the next few years.



***Hoogstraat/Burgwal: numbers of bicycles too dominant and untidy.***



### Innovations bicycle parking

Pilot projects with innovations in bicycle parking, such as automated parking, are the domain of DIVV, besides policy framework and the major crowd-pulling destinations. Successful measures may later be offered to the town districts. But districts themselves are innovative as well: recently Amsterdam Centrum started a pilot project on **bicycle parking spaces**.

For years bicycle parking policies concentrated on providing good (unguarded) bicycle parking facilities, with a sturdy position for the bicycle and fastening provisions. But bicycle parking facilities that are only needed for short stays, occupy a lot of room when empty and there are always bicycles left. Therefore bicycle parking spaces: simple markings on the street with a bicycle symbol. Highly flexible as well: when there are few bicycles, the public space is not festooned with bicycle stands. The spaces are expressly intended for short-stay parking and to accommodate peak loads. And for the time being it appears to be quite effective.



Of course that also goes for the most concentrated types of destination attracting the largest number of cyclists: railway stations. The parking facilities at the Amsterdam Centraal railway station have by now become famous. Due to large-scale construction activities the shortage of bicycle parking spaces near the station was extremely acute in 2000. To relieve the worst situations local authorities arranged for temporary parking facilities, among which a 'bicycle tower' with 2,500 spaces. Which actually houses close to 3,500 bicycles. The use of the bicycle tower is free – and it is not guarded, but supervised. In order to prevent untidiness, theft and vandalism there are at least 2 supervisors present, 24 hours a day. In addition in 2005 local authorities have furnished two floating bicycle platforms in the IJ as parking facilities for 1,500 bicycles and positioned stands all around the station. Overall, including bicycle tower and bicycle platforms, there are now some 6,400 stands near Centraal Station. Nevertheless approximately 2,500 bicycles are parked outside these. The guarded NS parking facilities provide room for 2,000 bicycles. By mid-2012 approximately 10,000 permanent bicycle parking stands will become available in three partly underground parking facilities.



### *Preventing bicycle theft*

The great amount of attention for good bicycle parking facilities, guarded parking facilities in the town centre and for supervision at the railway station, are intimately connected with bicycle theft. That is a problem that had gotten out of hand in the late 1990s all over the Netherlands and particularly in Amsterdam: in 2001 a resident of Amsterdam had a 16% chance of having at least 1 bicycle stolen over the course of a single year. That led, among other things, to the use of old, low-quality and dangerous bicycles. The approach has clearly been successful. The risk of bicycle theft has decreased considerably in Amsterdam, actually been halved, to 8% in 2007. One of the most important tools is *Fietsdepot* (previously called *AFAC*, Amsterdamse Fiets Afhandel Centrale). At *Fietsdepot* all bicycles that have been forcibly removed or found are gathered, registered and checked for theft. In addition the engraving team is employed all over Amsterdam to supply a unique code to bicycles at no charge. That greatly increases the chance of recovering a bicycle after it has been stolen. To date some 135,000 bicycles have been fitted with a unique code – after having been checked for theft first. Inspectors also check the books of the numerous shops selling second-hand bicycles: are these legitimate or stolen?

#### **White bicycles and rental bikes**

Amsterdam sowed the seeds of victory, albeit that a number of defeats occurred meanwhile as well. The Amsterdam *white bicycles* received and continued to receive a lot of attention, but were not a success in actual practice. Now, over 40 years later, there are successful *public bikes* projects all over the world; projects that clearly derive from the Amsterdam white bicycles. Bicycles to be used by anyone; (almost) free of charge. Particularly in Paris and Barcelona these have become special features. And Amsterdam? In line with bicycle use in Amsterdam and a long history of bicycle use and bicycle facilities, the capital of the Netherlands is remarkable for a related issue: completely commercial bicycle rental. With over 20 rental companies and several thousand rental bikes on the street Amsterdam demonstrates a unique and illustrative bicycle climate.

### *Measures in Meerjarenbeleidsplan Fiets 2007-2010*

Amsterdam records the intended bicycle policies, as outlined above, in *Meerjarenplan Fiets* which is periodically updated. The current long-range plan 2007-2010 succinctly describes the bottlenecks in the Amsterdam bicycle climate – and what the measures should be aimed at. The enumeration of these bottlenecks matches the satisfaction scores of residents – and provide a new, remarkable ranking to bicycle policy:

1. great shortage of bicycle parking facilities;
2. bicycle theft;
3. Hoofdnet Fiets not yet finished;
4. traffic safety for cyclists.



That parking and theft were considered equal to network and safety in 2007 and even mentioned first, is indicative of the developmental stage of Amsterdam bicycle policy. All attention need no longer be focused solely on the quality of the network (although maintenance will always require attention), as so much has already been realised and problems elsewhere (parking, theft) may be even greater by now. Budgets demonstrate this as well. Meerjarenbeleidsplan Fiets is estimated at almost € 70 million over the four years 2007-2010:

	Overall estimated costs 2007-2010 (in 1000 EUR)	of which subsidised by Stadsregio Amsterdam
<b>bicycle parking:</b> unguarded and guarded parking facilities; neighbourhood parkings; marketing	18.811	4.661
<b>prevention of bicycle theft</b>	4.135	-
improvements to <b>Hoofdnnet Fiets</b>	43.214	20.723
improvements <b>traffic safety</b>	pm	-
positive <b>image</b> , communication, education	525	-
research and organisation	225	-
<b>total</b>	69.358	25.384

Source: beoogde maatregelkosten en subsidies in het Meerjarenbeleidsplan Fiets 2007-2010

Expenditure on traffic safety measures is not allocated to bicycle policy, but to safety. Overall some € 10 million is annually spent on traffic safety, a major part of which benefits cyclists directly or indirectly as well.

In addition some € 17 million is spent annually on specific bicycle policy. Disregarding the subsidies by Stadsregio, almost as much money is spent in Amsterdam on bicycle parking as on bicycle routes!



### *Objectives in Meerjarenbeleidsplan Fiets 2007-2010: monitoring*

The Meerjarenbeleidsplan also earmarks considerable budgets for non-infrastructure issues, image/communication and research/organisation.

Together with the long-range plan the town council has accepted important quantified objectives for 2010. Two main objectives:

1. In 2010 at least 37% of Amsterdam residents will prefer the bicycle.
2. At the same time Amsterdam should score at least 7,5 out of 10 in the satisfaction survey of cyclists.

The first target has already been reached in 2008 (38%); now it is 'merely' a matter of maintaining it. As far as cyclists' satisfaction is concerned: the focus on citizens' opinions is a new issue in Dutch bicycle policy. Copenhagen provided an example in this.



Cyclists' satisfaction has really only been measured annually by identical questions since 2006. Many questions in the annual survey concern bicycle use and reasons to cycle or not to cycle; the crucial question concerns the scores for various aspects of bicycle policy – clearly inspired by the Copenhagen *Bicycle Account*:

	2006	2007	2008
Amsterdam as a bicycle city	7,0	7,2	7,2
feeling safe on bicycle	6,3	6,6	6,6
number of bike paths	6,8	6,9	6,8
width of bike paths	6,7	6,7	6,7
maintenance bike paths	6,5	6,5	6,3
waiting times at traffic lights	?	6,4	6,3
ease of finding routes	7,0	7,1	7,3
bicycle parking possibilities in own neighbourhood	6,3	5,9	6,2
bicycle parking possibilities in town centre	5,1	4,9	5,0
bicycle parking possibilities at railway stations	5,7	5,8	5,6
bicycle parking possibilities at metro stations	5,3	5,8	5,5
bicycle parking possibilities at bus and tram stops	?	4,9	4,6
bicycle theft prevention	5,6	5,2	4,7

The multitude of questions, down-to-a-decimal accuracy and the limited amount of publicity make this rather less attractive to the outside world than the nicely designed Copenhagen *Bicycle Account*. But no one knows what the future holds in store.

As far as the contents are concerned, a phenomenon visible to an extreme degree in the Copenhagen monitor may also be discerned in Amsterdam: the answers to the most general question, the overall question, are more positive than those to particular issues. Moreover, bicycle parking and prevention of bicycle theft, also related, score lower than aspects of the bicycle network. As yet little can be said about trends in the judgements.

### *Promotion and general bicycle use*

Amsterdam emphatically wants to promote bicycle use as well, even though this is already widespread. Not only widespread in numbers of people, but also in the sense that nearly all groups of Amsterdam residents cycle a lot, on average. Regardless of age, income, neighbourhood or ethnicity. All of them cycle a lot, but at the same time some groups considerably more than others.

Of all Amsterdam residents aged twelve and over 77% own at least one usable bicycle. Subdivided by groups this average may vary somewhat, but it is rarely really low:

- relatively most bicycle owners live in Amsterdam-centrum (85%), in Zuidooost the least (70%).
- ownership of a bicycle is highest among native residents of Amsterdam (85%), lowest among residents of Moroccan (54%), Surinamese (57%), Turkish (64%) and Antillean origin (64%).
- bicycle ownership among the young (up to 24 years) is lower than among those aged 24-65: 65% versus 83%.
- a bicycle is owned by 68% of people from households with an income lower than € 700 a month. In households with a monthly income exceeding ? 3.200 that percentage is 89%.

Approximately 23% of Amsterdam residents does not possess a bicycle. Some of these state they are unable to cycle. The approximately 16% who are able to, were asked why they do not possess a bicycle. The responses of many residents of foreign descent give (a combination of) three reasons: 'do not need a bicycle', mainly because a large city like Amsterdam provides good public transport as an alternative. Public transport is used more often, particularly if you 'do not like cycling' and feel that 'a bicycle provides no comfort'.

*Source: Amsterdam op de fiets!, O+S, het Amsterdams Bureau voor Onderzoek en Statistiek, september 2003.*

### *Children in elementary school walk more, but why?*

Although the general picture is that ‘everyone cycles’, the data presented above also demonstrate that particularly the combination of lower bicycle ownership among people of foreign descent and among the young should be considered a threat to future bicycle use. This ‘threat’ is confirmed by other studies as well – although non-cultural reasons for lower bicycle use among people of foreign descent should not be ignored, either. A 2001 study into transport behaviour of Amsterdam children in the higher years of elementary schools revealed that these walk to school far more often than they cycle. Being transported by car or public transport occurs only rarely. The latter phenomenon is in accordance with average behaviour in the Netherlands; the former – much more walking than cycling – is more unique.

#### *Transport home-school of pupils from 14 elementary schools in Amsterdam, groups 6, 7 and 8 (n=937) (in %)*

	often	sometimes	never	total
walking	60	18	22	100
independent cycling	22	22	56	100
passenger on bicycle or moped	4	22	74	100
by car	9	36	56	100
by bus, tram or metro	6	8	86	100

Source: Regioplan, Kind en fiets: een onderzoek naar het gebruik van de fiets door Amsterdamse basisscholen, Amsterdam maart 2001.

However, the fact that pupils walk to school much more often than they cycle, is mainly caused by the distance to school: on average 700 m; over a quarter of all children even live within 300 m. In those circumstances it is simply not necessary to use a bicycle. Nearly all children do possess one. And those living at a greater distance to the school, do use these sooner.

It is therefore by no means simply a cultural issue. In Amsterdam children of native or foreign descent possess a bicycle almost as often and they can cycle almost as often as well. At least in a technical sense, but at the same time there are strong signals that among children of foreign descent the ability to cycle safely is on average somewhat less developed, as they practice/cycle not enough – and are also not escorted by their parents.

### *Secondary schools: children of foreign descent cycle much less*

The considerable differences between children of native and foreign descent are revealed in a recent study among 2400 Amsterdam students in the first class of secondary school. In Amsterdam 53% cycles to school versus 89% nationwide. However, of the native students 84% cycles (more or less comparable to the national average), against 29% of the students of foreign descent. This is not the result of distance. Most live at a nice cycleable distance, between 1 and 5 km from the school. Amsterdam children, and more in particular children of foreign descent prefer public transport much more often over these distances (40%). Naturally since public transport exists and provides a good level of quality – which is not the case for all routes between home and school in the Netherlands. Yet there also appears to be a clear cultural component: the fact that students of foreign descent cycle less often is to a large extent due to the example set in their immediate environment. Students of foreign descent who do cycle to school often come from households where members cycle a lot and their friends cycle more often as well.

Students in pre-university education cycle, irrespective of distance (91%); students in lower professional education far less often (merely 29%). The difference cannot be explained by ethnicity alone. Travel behaviour in the school environment, of friends and class members, plays an important role as well.

*Source: O&S Amsterdam, Voorbeeld doet volgen: onderzoek naar vervoerskeuze van Amsterdamse brugklasleerlingen, 2007.*

### *Promotion – alignment and means*

The non-infrastructure issues remain awkward', Ria Hilhorst acknowledges. She means that it is hard to structurally allocate sufficient time and funds to information and promotion, amongst all hard and expensive issues at hand. And the more so in a classic traffic engineering environment like Dienst IVV. Certainly, attention to promotion in Amsterdam is clearly growing. Partly as an element in city marketing: 'selling' Amsterdam as a bicycle capital internationally as well. Partly as a necessary part of policies aimed at local residents: ensure that as many people as possible cycle at least to some extent, that as many people as possible belong to 'the cycling'.

Amsterdam has started by presenting all communications concerning bicycle traffic in a similar style, at least. The slogan is *Amsterdam loves bicycles* – in words and images:



Various publications are made and distributed, like simple, fun brochures on cycling in Amsterdam – in Dutch and English.



Amsterdam has also initiated simple reward campaigns: distributing gifts to cyclists at the IJ ferries during the Week of Progress. But Ria acknowledges this is still little and limited – and insufficiently structural. Although official capacity for bicycle policy has considerably increased in recent years, as a consequence of increased political awareness for the role of the bicycle (currently some 2.5 FTE in bicycle policy at DIVV), time is always in short supply and *soft measures* tend to come off worst.

#### **Action plan Bicycle promotion**

In Amsterdam awareness is growing that something fundamental has to change in cycling propensities, particularly among the young. At the initiative of the local branch of Fietzersbond and at the request of the town council non-infrastructure measures for bicycle promotion are being prepared. Initially these will concentrate on teaching cycling skills; being able to cycle is a prior condition. There are numerous initiatives in this field all over town and local authorities intend to coordinate these more emphatically.



## 9. Odense: promotion, experiments and... bike paths

**Bike town Odense, with 187.000 inhabitants Denmark's third-largest town, has a high percentage of bicycle use: 26% of all trips. A percentage that has clearly grown over the last decades. Odense has come to be known as a town of revolutionary and innovative bicycle policies. The European benchmarking programme BYPAD reveals Odense to be the town with the best European bicycle policies. That is mainly due to a four-year pilot programme implemented in Odense from 1999, with financial assistance by the Ministry of Transport. How innovative, interesting and effective has the approach been in Odense, and is it still so today?**



foto: Mette Johnsen

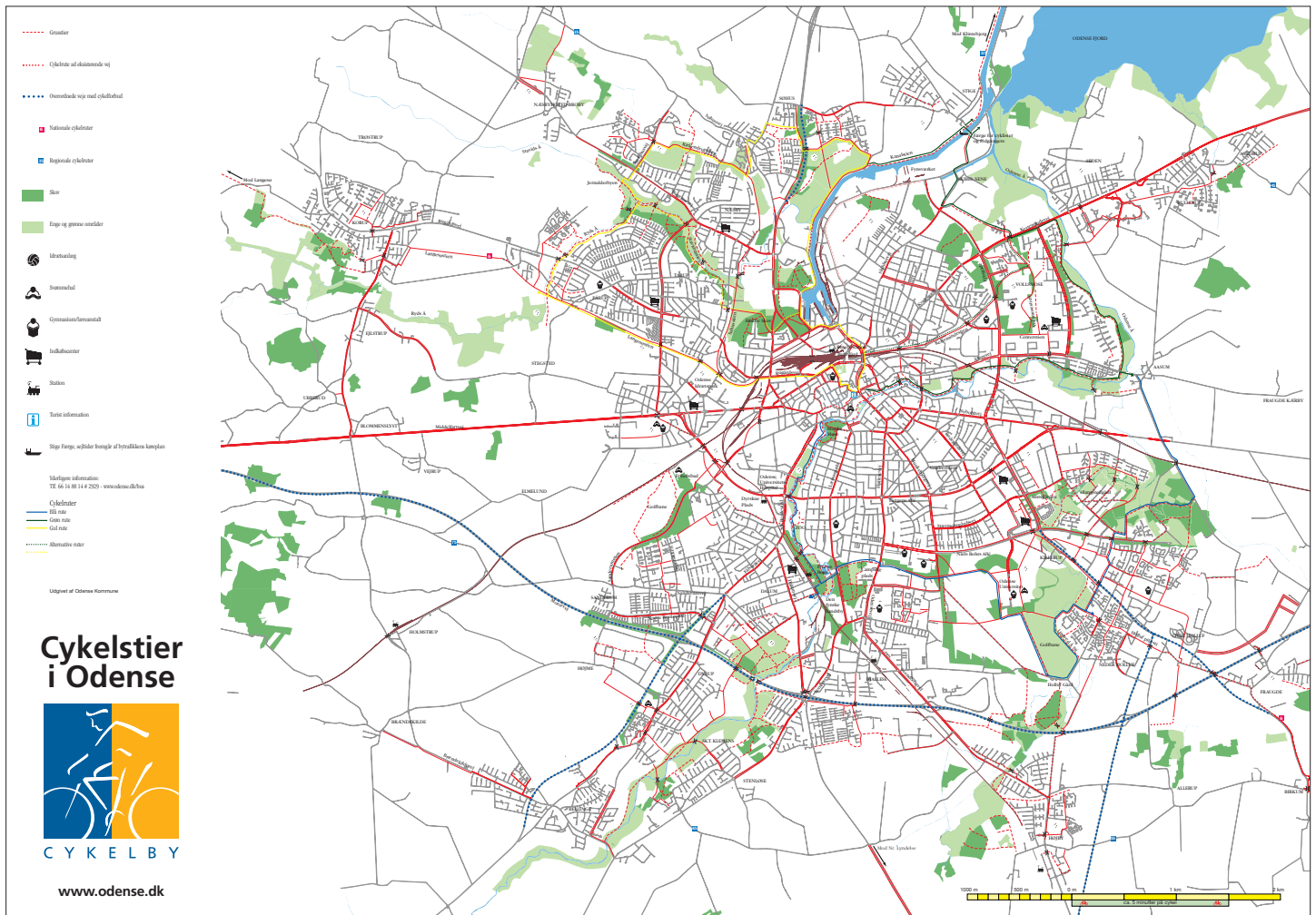
There can be no doubt that cycling in Odense in the year 2009 is perfect. The bicycle network is on average of remarkable quality – even by Dutch standards. Few signs of ageing in bicycle infrastructure; few bottlenecks remaining. The overall experience is positive: comfortable, relaxed, safe. How did this come about?

### *Four years of experiments and promotion*

Odense most certainly did not start from scratch in 1999. For a number of years the town had had both a high percentage of bicycle use and a good network of bike paths. Since the nineteen eighties the bicycle network had consisted of over 350 km of bike paths and bike lanes. From then on the network was barely expanded; most attention was paid to improving traffic safety, comfort and promoting bicycle use. Since 1999 the network of bike paths has been expanded with no more than a few kilometres.

In the four-year programme the Ministry designated Odense National Bicycle Town, with the objective of implementing and testing a large number of projects aimed at increasing bicycle use by innovative infrastructural measures and promotional activities. The target was stated as 20% more bicycle use in four years, purely by making cycling more attractive and visible. The programme which would eventually encompass some sixty projects, had a budget of approximately € 2.5 million. Local authorities and Ministry of Transport each paid half.

## The Odense bicycle network



### No new routes, but infrastructural measures

Although the bicycle network was finished as regards routes, there was still a lot to be gained in infrastructure, as measures were taken over these four years: quality improvements in existing routes – particularly with respect to safety.



In addition several striking innovative measures have been taken that may or may not be considered 'infrastructural':

- Green wave for cyclists**  
 Along a bicycle route 45 low poles have been placed between two intersections, over a distance of some 350 metres, each provided with a light. The lights turn green one after the other, at an interval of some seconds. Following the timing of the lights, you have the right speed for a green wave. Cyclists are moderately satisfied. The problem is, however, that cyclists have widely varying cruising speeds.
- Barometer counts cyclists for no real reason**  
 The bicycle barometer is an Odense invention as well (2002). It has no real functionality, it is more of a publicity focal point drawing everyone's attention to the numbers of cyclists. Each day 5 to 10,000 cyclists pass by the barometer. Annual numbers are counted as well.

### **Pilot project in town centre, 1984**

Odense also participated in a previous promotional programme of the Danish Ministry of Transport. In 1984 four towns, including Odense, were provided funds to develop a good bicycle route. In Odense that occurred in the town centre. Motorised through traffic had been barred in the nineteen seventies, but bike paths were still largely absent – though it was the destination of over 12,000 cyclists daily. Beside real pedestrian streets, where cyclists were exempt from the one-way traffic instituted for cars, attention focused on a new lay-out in several shopping streets: a 3,5 metre wide two-way bike path, almost at ground level (3 cm lower), with wide pedestrian zones (4 to 5 metres) on both sides. This pilot project was favourably evaluated as well. The principal result: mixing cyclists with large numbers of pedestrians turned out much more positive than expected. There were only a very limited number of (slight) accidents. At the same time the advantages to cyclists were great: destinations in but also beyond the town centre became much better accessible.

### ***Bicycle parking: limited numbers and attractive execution***



In the four-year pilot programme bicycle parking received a lot of attention as well. In a central square in the town centre parking spaces for cars were converted into a bicycle parking facility with room for 800 bikes. Near the shopping streets another 400 covered spaces have been created on *Kinopladsen*. Distributed over the town centre another 200 extra cycle racks have been located. Bicycle parking capacity was also increased near the main railway station.

The actual number of bicycle parking places is not very high, at least by Dutch standards. The most striking feature of the new bicycle parking facilities was therefore not the quantity, but rather the quality (even though that is of course easier to obtain with low numbers!).



***Parking in front of the new train station***



***Parking at the edge of the shopping district  
(corner Vestergade/Kongensgade)***

### ***Promotion of bicycle use***

The most striking feature of Odense bicycle policy is the relatively strong and wide focus on promotion of bicycle use. In the four-year pilot programme, but also (and even a lot more remarkable) since that time – and according to plans, also in the future.

In the past a lot of information has been supplied, as is being done today, by way of the internet (website [www.cykelby.dk](http://www.cykelby.dk)), television, radio, newspapers, magazines (the local media published a total of 806 articles about Odense Bicycle Town in those 4 years) and lectures. For local residents a special bike magazine was made and distributed twice. The general public, as well as the press and traffic experts were continuously provided with new stories



and information. And with regular promotional activities that were not in themselves world-shattering, but whose strength lay in the regularity:

- The annual bicycle day in June, with an exhibition of normal and highly unusual bicycles, a trial show, a competition and lotteries. Number of visitors: over 450.
- In October in a week's time 5,000 cyclists in all received chocolate and apples, to thank them for using their bikes. The cyclists also received a postcard with data on bicycle use in Odense.

The general theme in these activities is the aim to depict cycling as a modern lifestyle, among others by way of a large campaign with high-quality billboards.

### ***More promotional activities: businesses***

Each year a – national – *Cycle to work* campaign is mounted with increasing numbers of participants: some 8,000 in Odense and almost 100,000 in Denmark overall. The campaign is almost identical to the Dutch *Fiets naar je werk* campaign: participants state a targeted number of cycling kilometres and keep score of their results.

In Dutch traffic management the company bikes crucial to another Odense project are also well known: bikes to make healthy, environmentally-friendly business trips over short distances during the day. Overall 67 company bikes were used by 29 businesses in a *Who cycles most?* contest. The university five bikes won: 4,600 kilometres over six months, On average each of the 67 bikes travelled approximately 5 kilometres each day.

The kilometre contest had an extra twist for the businesses involved: bikes that were ridden for less than 500 kilometres would cost 4.000 DKK; if the mileage was more, the price fell to a mere 1.500 DKK.

### ***Promotional campaigns in school traffic***

Some 43% of children in Odense travel to their (primary) school by bike. This percentage has grown over the last few decades, particularly due to the large amount of specific measures by local authorities. In particular, a lot of attention was paid to speed reduction of motor vehicles on school routes and near school entrances.

### ***Transport choices of public school pupils in Odense in 2000 (in %)***

car	21
public transport	14
walking	23,2
cycling	43,1
source: municipality Odense	

Whereas local authorities used to emphasize infrastructure in the past, this has now changed to communication. There are in particular a number of tailor-made low-budget experiments to encourage bicycle use by preschoolers and children in public schools. Tailor-made campaigns are a crucial part of Odense bicycle policy. No expensive flyers and billboards, but campaigns to secure active and permanent participation. Different campaigns by age group, but essentially based on bicycle-use contests. The major target groups are preschoolers, children and teenagers. The idea is that once children have positive experiences cycling, they will continue to cycle as adults.



photo: Mette Johnsen

### ***Evaluation***

The four-year promotional campaign in Odense has been extensively evaluated (*Evaluating af Odense – Danmarks Nationale Cykelby, 2004*). A comprehensive survey among local residents revealed that almost half were familiar with the initiatives undertaken in the four years of 'National Bicycle Town'. The measures best remembered were infrastructural improvements: shortcuts, green wave, safer parking facilities. Campaigns were much less recalled. These were also considerably less appreciated - particularly by the cyclists questioned. These results are in agreement with the answers provided by cyclists now and in the past in an ongoing annual survey into what measures they deem most important in increasing bicycle use. Subjects mentioned most often are: adjustments to traffic lights, comfort of the road surface and facilities for parking bicycles. For that matter, Odense residents were highly satisfied about those physical facilities: 82% feels Odense to provide 'excellent' bicycle facilities. The evaluation furthermore demonstrates that traffic safety trends were positive over the four years the programme lasted, albeit as positive as the preceding years: 20% fewer cycling victims over four years.

In order to clarify the trends in bicycle use, the evaluation compared the period 1999-2002 with 1994-1997. The percentage of cycling in all trips of Odense residents aged between 16 and 74 grew from 22.5 to 24.6%. At the same time a marked decrease in public transport could be discerned (from 8.2 to 6.6%). The increase in bicycle use fell within the fluctuations visible over time from 1993 onwards. In general the bicycle share fluctuated around 25%. That was the 1993 level, later (1996) it fell to a little over 20%, since when it has ranged between 23% and 27% – with a peak in 2000.

### **Odense, Copenhagen, the Netherlands: similarities and differences**

To non-Danes it seems simple: people cycle a lot in Denmark, particularly in Odense and Copenhagen – and cycling policies there are different as well. Upon closer inspection it proves to be incorrect to simply lump together Odense and Copenhagen.

Copenhagen cycling officials are amazed at the assumption they are much more occupied with promotions and campaigns. That is not the case at all. On the other hand Odense is truly the bicycle promotion town, with a perfect bicycle infrastructure to go with it. By and large maybe even better than in Copenhagen. The capital where promotional campaigns are as absent as in the Netherlands, but where bicycle use is nevertheless a unique and perplexing cultural phenomenon and where bicycle policies are important political issues (much more so than usual in the Netherlands).

The similarities between Odense and Copenhagen, as compared to the Netherlands: the high speed at which people cycle; everything is so serious, so 'utilitarian'. Nowhere groups of schoolgirls, cycling three abreast, wobbling along, chatting and texting and listening to their I-Pods at the same time. Mostly staid commuters, cycling at speed with a (to Dutch standards) extreme compliance to traffic regulations.

After the pilot period Odense continued its bicycle policies. Maybe a little less intense for a while, but just like bicycle policies did not start in 1999, they most certainly did not end in 2004. Policy on infrastructure was continued, with a.o. high-profile projects on environmental zones in residential neighbourhoods: more safety and better use of public space by reducing accessibility of residential neighbourhoods for motor vehicles and strong reductions in speed. Promotional campaigns and innovative projects were continued as well. To give but one example: Odense experimented with permanent bicycle lights, where 2,000 cyclists were provided with a special light, free of charge (2006). The cyclists with permanent lights suffered on average 32% fewer accidents than those without.

### ***Cycling in Odense, 2009***

Currently Odense appears to be an almost perfect town for cyclists. For starters, where size and distances are concerned. The outer edges of Odense are at most 4-6 kilometres from the town centre. Local trips will therefore only rarely exceed 5 kilometres.



***Ansgargade (part of the central ring road): no bicycle facilities; many cars narrowly overtaking cyclists at high speeds on lanes that are slightly too wide or too narrow.***





***Cityring/Klosterbakken at Munkemoellestraede: no bicycle facilities and even closed to cyclists – quite an unrealistic decision as various cycling destinations have officially become inaccessible including the bicycle stands just beyond this sign...***

Moreover it is not only cycling that appears relaxed in Odense. In general, all road users seem to be quite 'well-adjusted'. Exceeding the speed limit does not seem standard behaviour for motorists. And it is not only the bicycle infrastructure that is perfect in quality and degree of maintenance; this really goes for all public spaces (or even more grandly, for 'everything' in Odense). That provides a small-town atmosphere – perfect conditions for relaxed cycling.

Of course, even in Odense cycling infrastructure is not complete. There are certainly sites where cyclists should be better protected from motor vehicles. And not everywhere is the cyclist 'king of the road'.

The large numbers of intersections with traffic lights are remarkable. Quite small and compact intersections, with often extremely few motor vehicles - and yet old-fashioned traffic lights with very long waiting times for all traffic.

### ***Perfect bicycle facilities: photo impression***



***A very direct route from to south to the Odense town centre. By way of Allegade, a magnificent bike and pedestrian path through the Munk Mose park and across the bicycle bridge, whereas cars have to detour along the east or west sides.***



*A nice and comfortable new bicycle route to the south and east of the town centre, blending in well thanks to the materials used. At left the route near the reconstructed Knuds Plads. In the middle the striking design and smart connection between a two-way bike path and the one-way paths along Overgade. At right the same route in a northerly direction (Thriges Gade).*



*Just one example of an everyday sight in Odense: comfortable, wide bike lanes and paths – here along Nonnebakken/Absalonsgade.*



*At Nonnebakken as well: towards the town centre cyclists made a shortcut along the – descending – (foot)path through the park. The solution? Asphalt in front of the kerb to facilitate the turn...!*

### ***New policies for bicycles and traffic***

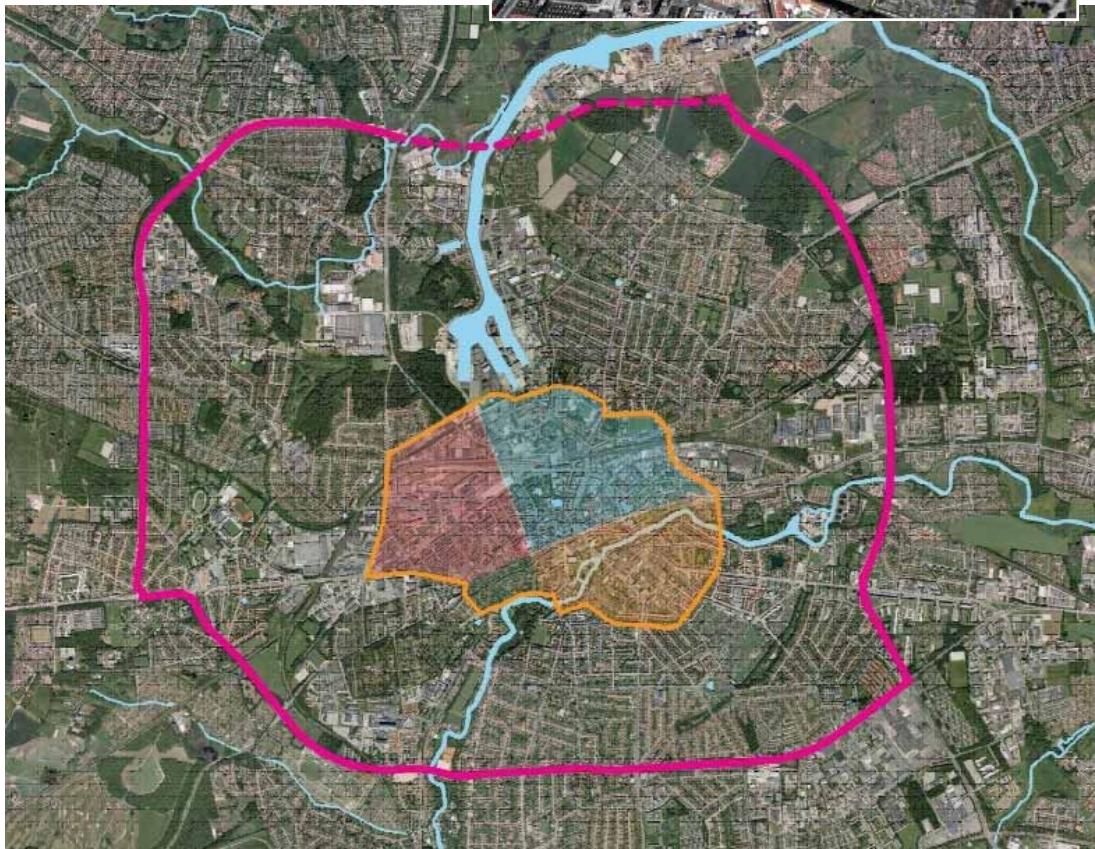
Odense is ready for the next stage – to be reached shortly. In 2009 new plans have been drawn up, in particular for bicycle policies but more general also for all Odense traffic. The most important change, and probably ‘improvement’, is that bicycle policy is now emphatically integrated into traffic policies. The bike as a means, not a final goal. The traffic policies centre, after all, on reducing car traffic around the town centre. For the first time in Odense history, by the way. After construction of a bridge across the canal to the north of Odense, Thriges Grade is to be heavily downgraded. At present it is a central car axis right across town, besides being the east side of the city ring road. Emphatically the domain of cars, at a very short distance from the town centre.





*The busy north-south motor vehicle axis, Thriges Gade/Torvegade/Albanigade. At the same time a major bicycle route with good bicycle facilities, Certainly to the north, at the Oerstre Stationsvej intersection, Thriges Gade is now still a real car domain, which cyclists come second.*

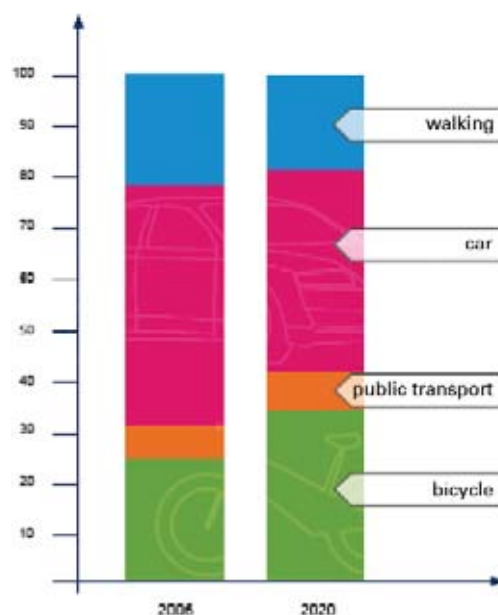
Upon completion of the outer ring road (purple in the picture below) and the resultant possible downgrading of Thriges Gade a sector model should be feasible within the (orange) town centre/parking ring. And there will be room for numerous spatial developments around the re-designed Thriges Gade.



Odense sets itself considerable quantitative targets with this plan. The share of motor vehicle is to fall from 46% to 39%. And the percentage of cycling is to grow from 25% to 34% in 2020.



That is quite a tall order for bicycle policies. But at the same time bicycle use should be able to capitalize on the aimed-for reduction in the role of motor vehicles in and around the town centre in future. In addition the infrastructural policies are to be continued: annually approximately 1% increase in the bicycle network. Rather than on expansion of the network, the emphasis in infrastructure will be more on quality improvements: more safety but certainly also more speed (shorter waiting times) at intersections. Bicycle parking policy will be continued as well: some 1500 extra spaces at the train stations; nearly 1000 spaces in the town centre. And the large amount of attention for innovation, promotion and campaigns that has made Odense bicycle policies famous, will be continued as well: half of the bicycle funds of on average a little over one million Euro a year.



#### National bicycle policies in Denmark (5.5 million inhabitants)

In 2009 a new mobility plan has been decided where cycling once again has a clear role, much more than over the past 10 years. This is to stem the decreasing trend in Danish bicycle use.

The government intends to spend some 22 million Euro annually over the next 6 years on bicycle policies. Several million Euro a year for bike paths along national roads and in particular more subsidies (in principle 30%) for local bicycle projects.

By way of comparison: the Netherlands (3 times as many inhabitants, over 16 million) had a bicycle policy grant scheme with an annual budget of some 25 million Euro around 2000, before traffic policies were decentralised. After decentralisation provincial and regional authorities were to determine what subsidies were to be spent on. Various studies indicate that since 2000 annually certainly more than 50 million Euro was spent in subsidies of bicycle projects.

Another comparison: in the Flemish part of Belgium (6.2 million inhabitants) bicycle policies have been intensified in the last few years. The planned expenditure of Vlaams Gewest in this field amounts to no less than 60 million Euro annually – and although this will have decreased in actual practice, it is still in the same ballpark!



photo: Mette Johnsen

## 10. Freiburg: stable policy and increasing bicycle use

In the mid-1990s the Dutch Ministry of Transport and Water Management portrayed a number of cycling cities inside and outside the Netherlands, including Freiburg. This South German town demonstrated at the time how strikingly positive the image of the bicycle within the local community was – not just an essential element of its urban traffic system. Time for another look at the development of bicycle traffic and bicycle policy in Freiburg since those days.



*The blue bridge across the railway tracks, to the right the station bicycle parking mobile*

That environmentally friendly modes of transport play a central role in Freiburg is immediately obvious when arriving by train. The railway tracks of the Central Station are crossed by the tram bridge giving direct access to the platforms. Next to it there is the bicycle bridge with *mobile* in between, the new bicycle parking facility for one thousand bicycles, providing all kinds of services to cyclists and public transport users. When approaching Freiburg on the internet the central role of public transport and bicycles is readily apparent as well: the site displays pictures of cyclists and trams and information is plentiful and readily available on what Freiburg has to offer to cyclists and public transport users. Citizens are invited to join the discussions on the future development of their town. This extensive probing of public opinion was important for the new *Verkehrsentwicklungsplan 2020* and *Flächennutzungsplan 2020* (comparable to a structure plan), which were both published in a final version in 2008. Traffic and urban planning are contained in two contemporaneous policy documents, but are also closely entwined in actual Freiburg policy. And that may actually be the crucial element for the success of Freiburg bicycle policy: it really does start in urban planning, aimed at the shortest possible distances. In the words of *Verkehrsentwicklungsplan*: 'Die beste Strategie der Verkehrsplanung ist es, Verkehr zu vermeiden. Das kann nur gelingen, wenn man die Ziele näherrückt, die jeder täglich erreichen will oder muss.'

### *Pleasant conditions*

Freiburg is a captivating town with pleasant living conditions in attractive surroundings: Black Forest, Vosges, the vineyards and orchards of hilly Markgräflerland, Alsace and Switzerland are close by. With its 1,800 hours of sun per year, South Baden is the region with the most pleasant climate in Germany. Cycling contributes its mite to these living conditions. Freiburg (218,000 inhabitants) is the economic, scientific, cultural and administrative centre of South Baden in the Upper Rhine Plain. The town provides employment to approximately 120,000 people, slightly more than half of them commuters, most from within the region. The service sector and especially many small technological companies are the backbone of the economy. The 30,000 students at the university and the various polytechnics make Freiburg a city of knowledge. Since 1950 its population has grown by over 80% and this growth still continues. Freiburg is the urban region with the largest growth percentage in Baden-Württemberg as far as employment is concerned. Yet it remains a compact town, and distances are short. 90% of the inhabitants live within a 7.5 km radius of the market with its gothic cathedral. This is where most jobs are found as well. In addition the terrain is flat, so excellent conditions for bicycle use.



### *Bicycle network*

Since 1976 Freiburg has conducted an active bicycle policy at an annual average investment of € 836,000. Over the past fifteen years considerable efforts have been made to further expand the bicycle network. A few missing links excepted, this has resulted in a coherent, fine-mesh bicycle network, connecting all neighbourhoods with the town centre and each other. This bicycle network now has an overall length of 420 km, of which 170 km are bicycle paths, 130 km through 30 km/h areas (of which 90 km are bicycle lanes) and 120 km on country roads. It is now possible to traverse the city by bicycle uninterrupted from east to west, along the car-free *Dreisam* bicycle route, a wide road along the river bank. Nevertheless Freiburg local authorities have to spend more effort on their bicycle network, as many bicycle facilities no longer meet current quality requirements. Due to intensive bicycle use certain stretches suffer from capacity problems as bicycle paths are simply far too narrow. That goes in particular for those dating from the 1960s. On the west side of the busy ring road - lots of cars as well as bicycles - around the car-free town centre the situation is soon to be greatly improved. The town council has decided on a city boulevard providing ample room for cyclists and pedestrians. 'The standard bicycle paths on pavements cause many conflicts between cyclists and pedestrians,' Hendrik Schmitt, Freiburg bicycle coordinator, explains. 'To prevent this we construct bicycle lanes along main roads instead of bicycle paths on pavements, wherever we can.'

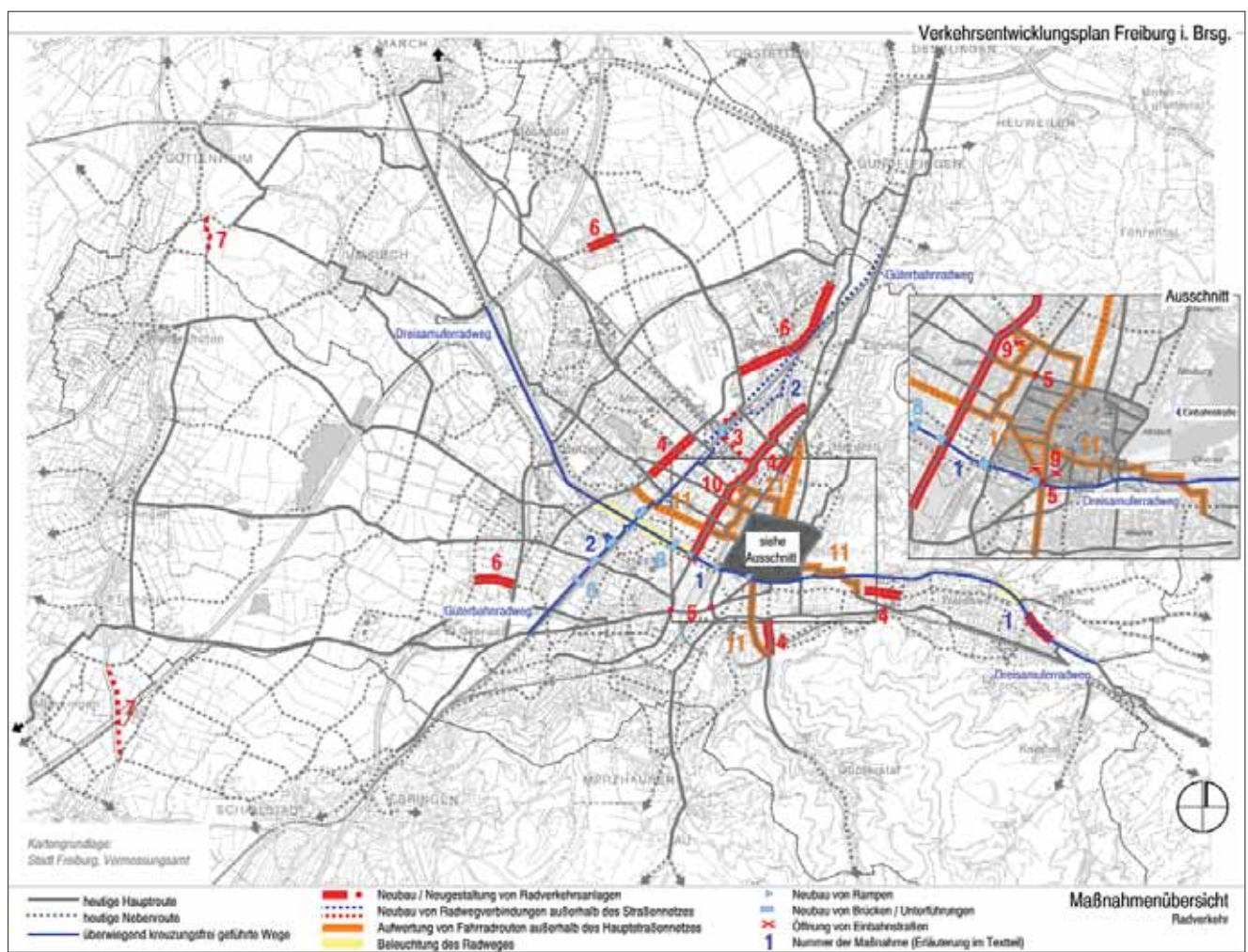


### Cyclists in one-way streets

Something that has been common in the Netherlands for a long time still needs to be gained in many other European countries: allowing cyclists to ride in the opposite direction in one-way streets. Freiburg has come relatively far. Of the 120 one-way streets in town approximately half may also be used by cyclists in the opposite direction. And there will be more in future.



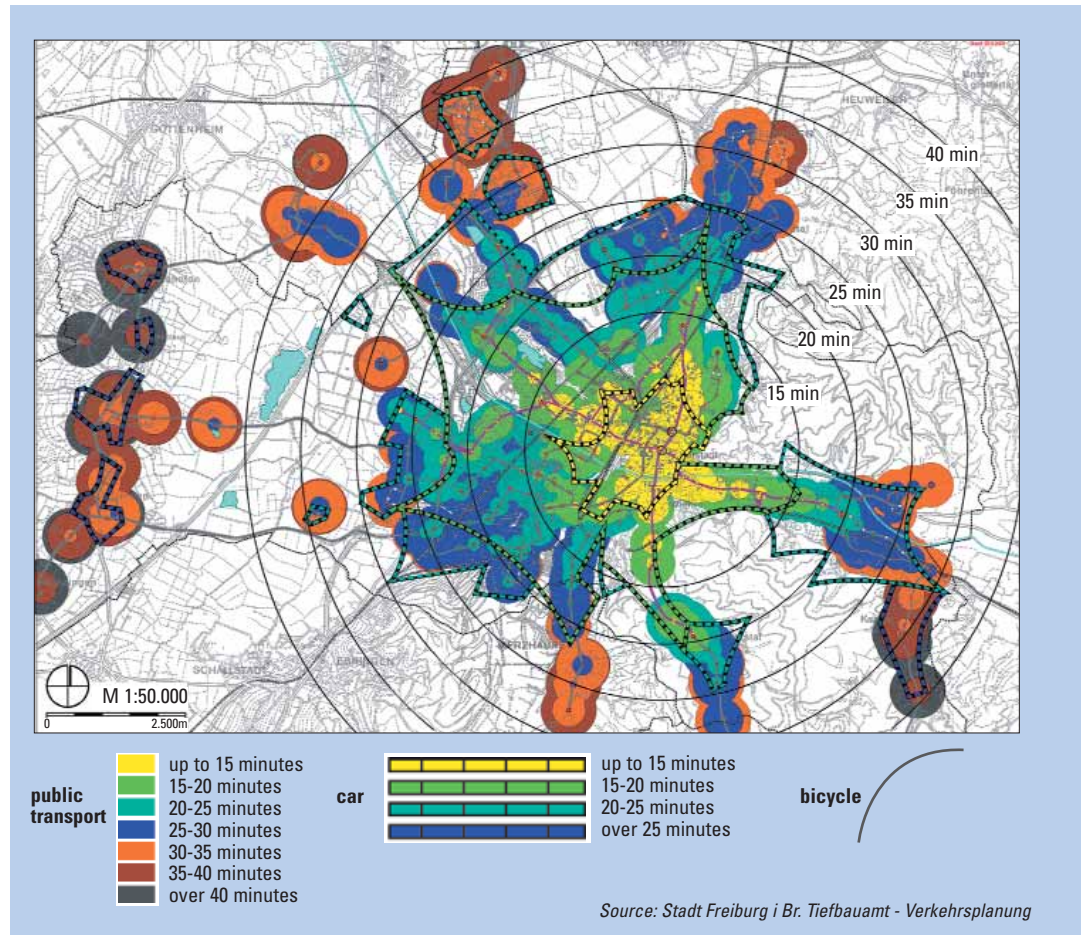
Over the past years numerous measures have been implemented and proven to be effective – particularly in their interaction. Not only bicycle measures, but many other measures of the well-attuned traffic policy. The main points of traffic policy today as in the past are: extending the public transport network, finishing the bicycle network, realising 30-km areas in residential areas, decrease the number of lanes on several arterial roads or narrow these, and a directive car parking policy. With the revision of *Verkehrsentwicklungsplan* the old objectives and measures have been brought up to date, but at the same time little has changed intrinsically. The *Verkehrsentwicklungsplan 2020* contains a concrete list of priority measures and their costs. Overall the investment in bicycle facilities comes to € 8.9 million. The map makes it clear that measures are envisaged particularly near the town centre. The most expensive project is the construction of a bicycle route along the (goods) railway line to the west of the town (€ 2,6 million). Work on Dreisamuferradweg, running east to west through the town, has been carried out to a large extent over the past few years. Final touches – particularly lighting – are estimated at € 0,6 million. The package also contains the first steps towards the expensive project of overcoming barriers: bridges over the river Dreisam and the railway (8 on the map: € 1,4 million).



### *Survey of travel times*

The implementation of this coherent, fine-mesh urban cycling network with direct bicycle connections as well as the measures taken for the other modes of transport have clearly improved the competitive position of the bicycle. In 2002, when drawing up a survey needed for the revision of *Verkehrsentwicklungsplan* a detailed study was conducted into the time required for the various modes of transport to travel from certain city locations to *Bertoldsbrunnen*, a tram-and-bus junction in the heart of town, see the map.

### *Comparison of travel times by public transport, bicycle and car in Freiburg*



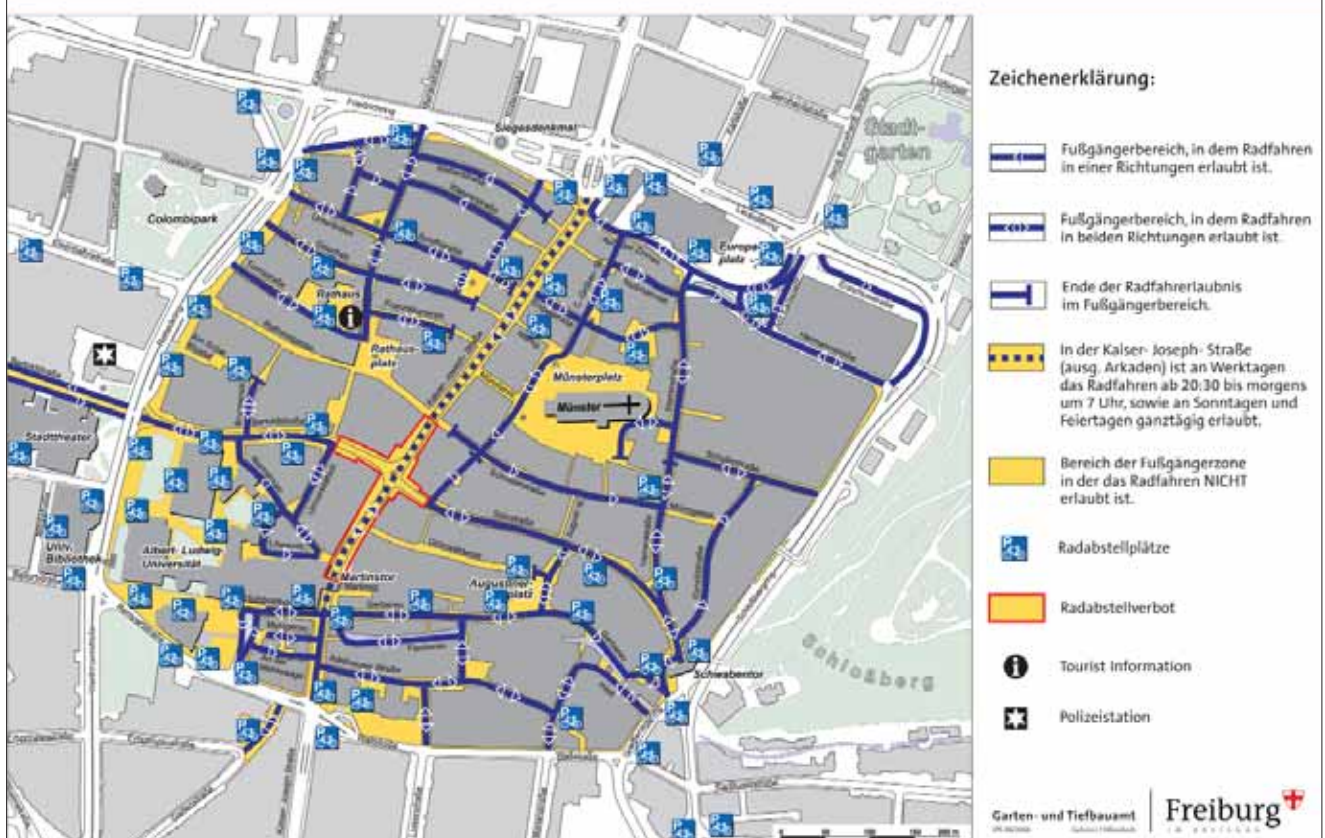
The map demonstrates that cycling is the quickest mode of transport for distances up to approximately 3 km. From the first layer encircling the town centre *Bertoldsbrunnen* is reached by bicycle within fifteen minutes. The junction can be reached by bicycle within thirty minutes from almost anywhere in the town proper, just as fast as by public transport. Thanks to a few fast arterial roads this takes a car only twenty minutes in many cases. Public transport is only faster than the bicycle from a few direct station areas in the outlying western neighbourhoods. It is not likely that there will be many towns that would even realise the value of knowledge about the competitiveness of different modes of transport. And most certainly the number of local authorities that possess and chart details as accurate as these on travel times must be smaller still. An example worth following!

### *Bicycle parking*

Ten years ago bicycle parking was one of the weak spots of Freiburg's bicycle policy. There was a great shortage of bicycle parking facilities, and the existing stands often were wheel rim killers. This has changed for the better. Since 1987 the number of bicycle parking spaces in the town centre has grown from 2,200 to 6,000. Overall there are some 9,000 bicycle parking spaces, most of these in the neighbourhood centres and near tram stops. In the town centre bicycle parking facilities have been concentrated in groups of – at most – several dozen (see map on page 102).

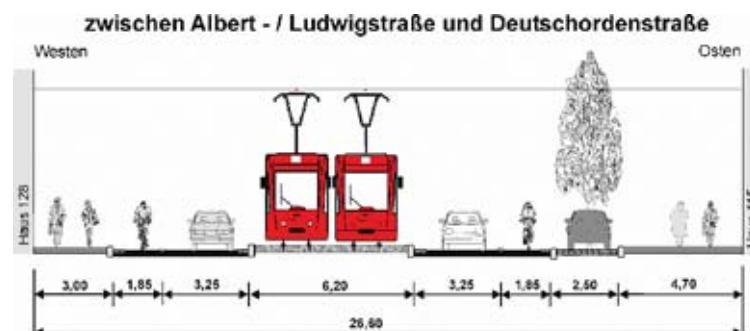


## Cycling in the Freiburg pedestrian area



In the busiest and narrowest shopping street, Kaiser Joseph Straße, parking bicycles is prohibited, as well as riding a bicycle during shopping hours. Another striking feature in Freiburg is that the numerous pedestrian streets in the town centre are accessible to bicycles, but in one direction only.

The main shopping street, Kaiser Joseph Straße, becomes Habsburgerstraße towards the north, outside the Ring. This important radial is being re-designed. A major operation, as the 1600-metre long road will be overhauled for two years. The transverse section below testifies to the choices made in Freiburg traffic policy. Plenty of room for the tram, a mere two lanes for cars plus a single parking lane. Cyclists will have a 1.85-metre wide adjoining bicycle path on either side.

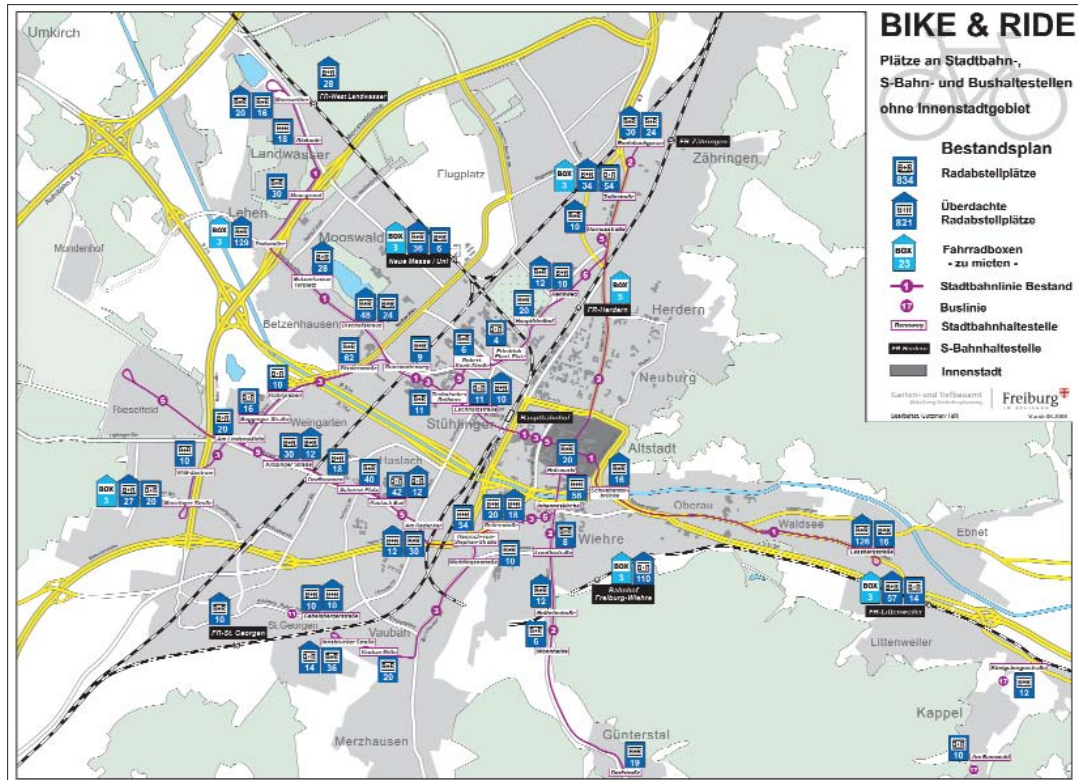


The idea is clear: a serious position for cyclists, but certainly not plenty of room or most room in Freiburg.



### *Bike & Ride: considerable size*

It is also remarkable that there is a strong emphasis on cycling in combination with public transport for the intermediate, rather regional distances in Freiburg. And contrary to the situation in the Netherlands this is not a combination with trains, but rather bus and tram (Stadtbahn). The map shows a large number of stops with several dozen bicycle parking facilities.



The combination bicycle and train is heavily promoted as well. In 1999 a *mobile* was opened at the railway station on each side of the tracks, a mobility centre for cyclists and public transport users. This houses a bicycle parking facility with room for 1,000 bicycles, rental bicycles, a bicycle repair shop and a bicycle shop all under one roof. It also accommodates the offices of the local departments of the ADFC cyclists' union and Verkehrsclub Deutschland, a mobility centre advising travellers and selling tickets. As well as a café overlooking the railway and the town. Cyclists arriving from the town side reach the bicycle parking by way of the blue bridge, made car-free at the time of the opening of the *mobile*. Direct access to all platforms is provided by the public transport bridge.



Bicycles are not allowed in trams and buses. There is no room for the large demand expected. Regional trains do allow bicycles, at night even without charge. And the most important railway line, Rheintalbahn (Offenburg – Freiburg – Basel) bicycles are welcome after morning peak hours, free of charge.

### *Bicycle use*

The active bicycle policy of Freiburg most certainly contributed to the fact that bicycle use, where local trips are concerned, has almost doubled in size since the early 1980s. In 1999 Freiburg residents took their bicycles for 28% of their local trips. This comes down to approx. 22% of all trips. At the same time, car use for local trips dropped heavily: from 38% to 29%. Taken together, the environmentally friendly modes of transport (public transport, bicycle, walking) account for 70% of all local trips, ensuring Freiburg a top position in Germany, see table.

### *Trends in modal split of Freiburg residents, 1982-1999, internal/local traffic*

transport choices	share internal trips (in %)		
	1982	1989	1999
car – driver	29	29	23
car – passenger	9	7	6
public transport	11	18	18
bicycle	15	21	28
walking	35	24	24
other	1	1	1
<b>total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Stadt freiburg, Verkehrsentwicklungsplan Freiburg, Teil A: Problemanalyse, p.21

In Freiburg cycling is the thing to do for almost everybody, all year round, for all distance categories and reasons. The most frequent cyclists are found among those aged 18-29: 41%. But even the 70-plus use their bicycles for a good 14% of their trips, see table.

### *Modal split of Freiburg residents by reason, local trips, 1999*

traffic motive	share trips (in %)						
	commuter	business	school	shopping	bringing and taking	recreational	othercar
car	37	47	10	26	53	25	23
public transport	15	10	27	17	11	15	14
bicycle	34	27	36	25	17	29	28
walking	13	14	26	31	19	30	33
<b>total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Stadt Freiburg, Verkehrsentwicklungsplan Freiburg, Teil A: Problemanalyse, p.27

### *Integral policy*

The success of this bicycle policy lies mainly in the coherence of overall traffic policy. Bicycle policy is an integral component of a traffic policy consistently promoting ecomobility, discouraging car use at the same time. This is coupled with the urban planning mentioned before, intended to keep distances short and thereby avoid unnecessary traffic. A crucial element is the construction of new, partly car-free residential neighbourhoods like Rieselfeld and Vauban, within cycling distance of the town centre, and an active location policy for large companies and supermarkets. Verena Breidt, president of the Freiburg branch of ADFC summarises the Freiburg situation as follows: 'Bicycle policy in Freiburg has never been an issue of a single political party. Independent of political affiliation there has always been someone over the past 35 years to pay attention to the promotion of bicycle traffic. Everyone realises how important quality of life is in Freiburg and its surroundings. Everyone knows some winegrower or ecological farm nearby and visits there by bicycle. It is probably a unique combination of a certain degree of conservatism intent on preserving values, and critical, environmentally aware citizens that makes Freiburg so special.'



## II. Ghent: promoting and sensitising

**Relatively compact, flat, and scores of students: Ghent has good conditions for intensive bicycle use. Since 1993 local authorities have pursued an active bicycle policy to make the most of this situation. And successfully so: Ghent residents grab their bikes. And because politicians and officials have been 'thinking bike' Ghent traffic policy has gained momentum. The bicycle policy has resulted in a local mobility policy considered to be Flanders' most dynamic.**

Ghent (237,000 inhabitants) lies at the confluence of the Leie and Scheldt rivers, at a junction of waterways, railways and motorways in East Flanders. Its harbour, metal and motor industries and service sector, including many hospitals, are the pillars of its economy. Sixty thousand students at the university and three polytechnics and 60,000 pupils mostly from the region make Ghent a city of knowledge and many young people. Cooperation between educational institutions and the business sector results in many start-up, innovative enterprises. A shopping and entertainment centre, Ghent attracts many regional visitors and has a national standing due to its conferences and trade fairs. Bicycles are awarded a place of their own in this lively city. Currently Ghent residents use their bicycles for 15% of their trips (walking 18%, public transport 8% and car 59%). That used to be quite different. Right up to the 1970s little attention was paid to walking and cycling, or for that matter to the town's rich cultural- historical heritage. Economic expansion and smooth car traffic flows topped the agenda. Only in the late 1980s, when the city was choked by cars, did a new awareness grow of public space, leading to the first urban renovations and car-free streets. Public space began to be considered as a whole, and urban planning and traffic plans began to be geared to one another.







### ***Bicycle plan Ghent***

In 1993 Frank Beke, alderman for traffic and public works, took the initiative for an active bicycle policy. A daily cyclist himself, he knew the problems cyclists faced. He realised the beneficial effects that increased walking and cycling have on quality of life, accessibility and safety. His initiative not only provided him with the nickname 'Frank Bike', but also made him mayor of Ghent (until 2007).

Late 1993 the town council approved *Fietsplan Gent*. Its main objectives: a safe bicycle infrastructure, a positive image surrounding the bicycle and car traffic management. The leading rule in implementing this plan is that each infrastructural change should benefit cyclists. For the period between 1994-2000 an annual budget was earmarked, amounting to € 1.24 million for infrastructure and € 170,000 for communication. This budget was intended to (co-)finance the realisation of a safe bicycle route network, a car-free town centre, 30 km/h areas all over town, safe school environments and good bicycle parking facilities, increased attention to bicycle theft prevention and re-design of the ring roads and major access roads. It was also to pay for better coordination between public transport and cycling and the creation of a bicycle culture, particularly among pupils, students and employees. Its broad approach demonstrated from the very first that bicycle policy was not to be limited to purely 'bicycle measures'.

### ***Mobility plans***

The bicycle plan constituted a break in Ghent traffic policy. Local authorities changed course dramatically, with a different approach to motorised traffic as well. First a mobility plan for the town centre was agreed upon (1997), followed by one for the entire town (1998). In 1999 a 'referendum for better and more public transport' was held and the first traffic quality-of-life plans for residential areas were drawn up. To ensure an integral approach of all measures a

committee was appointed, consisting of employees of all relevant municipal departments, public transport companies, district, province, and so on. This committee is to approve all measures before they can be implemented.

By now all streets in the 35-hectare ancient town centre are either car-free or car-restricted, car parking spaces have been converted into attractive residential areas and the town centre is now surrounded by a parking route for car traffic destined for the town centre. Approaching the town centre from the ring and access roads, car drivers are met by a decreasing traffic function, an increasing residential function, a stricter parking regime and higher parking fees.

In the 2002-2007 traffic plan (*Beleidsplan voor een anders-mobiel denken & doen*) of the new alderman Karin Temmerman clear political choices were made and formulated. The unusual phenomenon was acknowledged, too: 'There is a clear apprehension to call a spade a spade.' In the plan six objectives were stated:

- Ghent and pedestrians: better and brisk, please. More attention to sufficiently wide pavements.
- Ghent and cyclists: more and safer, please. An increase of 20% in cyclists.
- Ghent and public transport: double, please.
- Ghent and cars: a little less, please.
- Ghent and residents: improved quality of life, please
- Ghent and parking: more orderly, please?

In the latest traffic plan (*Beleidsnota Mobiliteit 2007-2012*) of alderman Temmerman a rapid improvement in bicycle infrastructure is planned first of all. By 2012 important and major results must be booked: bicycle paths, intersections, bridges. In addition much attention is paid to bicycle parking (near residences, at destinations and railway stations) and bicycle rental. The emphasis on promotion has decreased somewhat compared to the preceding years. The entire bicycle chapter is (much) more businesslike anyway: make cycling safe, fast and comfortable, without more ado. On the ground important improvements have indeed been made. By the end of 2009 Gaardeniersbrug across Verbindingskanaal and the busy roads on either side will be finished (to the north of the town centre). Once primarily intended for public transport, but made into a major asset for cyclists as well: a car-free/car-restricted route from the north to the town centre. And a bridge that is an emphatic and beautiful symbol of bicycle-friendly policy.



## Means

photo: Ursula Lehner-Lierz



The appointment by local authorities of a civil servant for cycling, **Erwin Stubbe**, was a first for Belgium in 1993. In 1995 an administrative assistant was added, as well as a bicycle plan promoter in 1996. This was the start of a real 'bicycle service', which was expanded into a Mobility Service when in 1997 the town centre mobility plan called for inclusion of the other modes of transport. In 2003 the annual budget of this Service was € 5 million, of which 29% (approx. € 1,4 million) was earmarked for bicycle traffic, 35% for traffic quality of life and 25% for public transport.

## Bicycle facilities

Of the four main bicycle routes originally planned, three were almost finished by the end of 2003 and one completely. Planning and partial realisation of four additional main routes have started. Major construction works like bicycle tunnels and bridges are time-consuming, due in part to (financial) cooperation with other authorities. On some stretches of the ring and main access roads the number of lanes for car traffic has been reduced from three to two, in order to allow construction of wider bicycle paths. Other measures include reconstruction of intersections, and less far-reaching steps, like constructing bicycle (suggestion) lanes and placing road markings and signs.

The bicycle network as envisaged and in existence in 2007 is proof that quite a number of bicycle routes have been realised, as demonstrated by the red (main bicycle route), purple (other functional routes) and green (recreational routes) on the map. There is however quite a lot that needs to be implemented or improved: the dotted lines and the red circle of dangerous intersections.

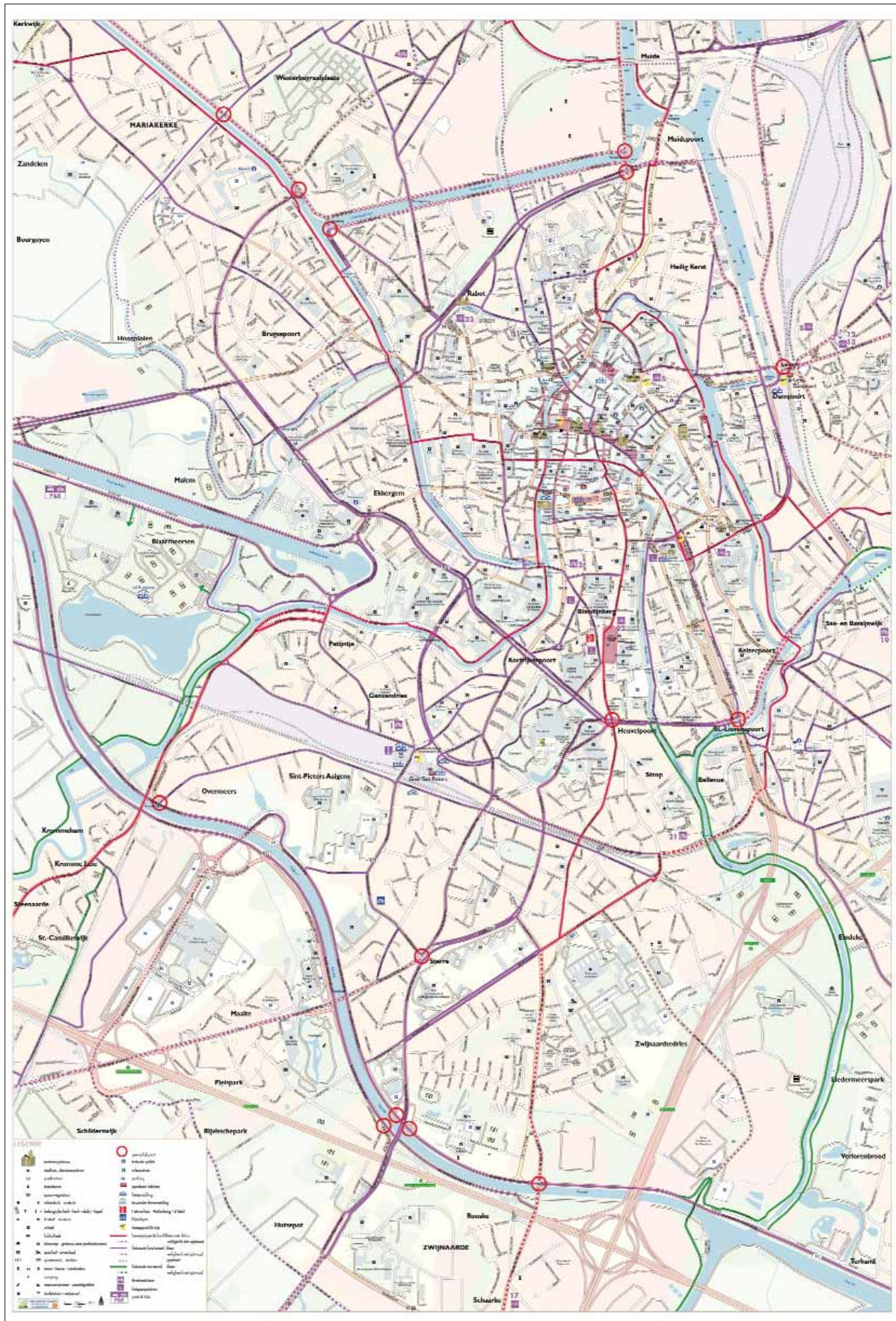
This picture of big achievements but by no means all done, may be a completely accurate and characteristic representation of bicycle facilities and (as such) bicycle traffic in Ghent. Much done, much achieved, much growth. And at the same time by no means a perfect infrastructure, still much subordination and a still relatively low percentage of cycling.

A major advance was the permission to cycle in two directions in one-way streets. These streets had long been a serious impediment to cyclists, so in 1997 Ghent and Antwerp took the initiative to revise their traffic regulations. By now, one-way traffic for cyclists in Ghent occurs in exceptional cases only, for good reasons. 'As we had been well-prepared, we were able to allow cycling in two directions in over 500 of our 700 one-way streets within a short time; truly a success story', says **Yves de Baets**, communication assistant with the Mobility Service. Like other cities Ghent had always been wary of allowing cyclists in pedestrian areas. In 1997 cycling was allowed here as an experiment between six o'clock in the evening and eleven o'clock in the morning, against fierce opposition by the pedestrian movement. Six months later an assessment proved that that there had hardly been any problems. From that moment cycling has been allowed at all hours, all over the entire 35-hectare pedestrian area.



photo: Stad Gent







### ***Bicycle parking***

From the very first local authorities and police have cooperated in realising a well-structured approach to bicycle parking and prevention and fight of bicycle theft.

The approach includes providing bicycle parking facilities and permanent and mobile parking facilities, gathering abandoned bicycles and bicycle wrecks, returning retrieved, stolen bicycles to their owners by means of bicycle registration and promoting the use of good bicycle locks. In 2004 over 6,500 bicycle parking spaces had been realised in more than 200 locations as well as another 4,000 at Sint Pieters railway station, 600 of which are guarded. By no means, however, sufficient for the numbers of parked bicycles, increasing in Ghent as elsewhere. Ghent therefore continues to add thousands of stands all over the town. Each year another 500 to 1000 new/extra bicycle parking spaces are added. Residents may request extra stands at Fietswacht. The situation is dramatic at the railway station: over the years capacity decreased again, down to approximately 3000. In January, 2007 lobbyists counted no fewer than 5983 parked bicycles at Sint Pieters station.

Since 1998 both permanent and mobile guarded bicycle parking facilities have been installed on locations attracting many cyclists, or during events. This is highly appreciated by cyclists. During the Ghent festivities, a ten-day street theatre and music festival, some 4,500 cyclists used these free facilities in the past two years.

Ghent possesses a Fietswacht, consisting of six employees. They label bicycles abandoned in the street and bicycle wrecks (almost 5,300 in 2002). Labelled bicycles discovered two weeks later are transferred to a depot (over 2,300 in 2002). Anyone reporting a stolen bicycle to the police and able to provide an accurate description may visit the depot to see if it is there. Of the 400 Ghent citizens who took this trouble in 2002, 154 could return home with their own bicycles.



***Bicycle path along the water's edge***

### ***Sensitising***

Communication has been an important feature of Ghent bicycle and mobility policy from the early 1990s. It has certainly not decreased over time, but (of course) it has changed. Initially the emphasis was on informing the population about *Fietsplan* and its objectives via newspapers and leaflets. In the next phase people's minds were sensitised to a number of issues. A series of events were organised for this purpose, like the Week of the Bicycle, the Week of the Soft Road User, the Week of Transport, Car-restricted School Days, a school rally, a bicycle bell concert for school pupils, bicycle tours and a cycle party for the disabled. Contributions were and are made to events organised by other organisations, a bicycle of your own project has been set up and fluorescent, reflective clothing with *Fietsplan Gent* logo was distributed. Encouraging people to use their bicycles more often on a daily basis was delayed until a

sufficient amount of safe bicycle facilities could be provided. This proved to be the correct approach, witness a survey conducted among cyclists. The average Ghent cyclist is not really interested in information; what matters to him much more is that safe and comfortable bicycle routes are realised. What he does like is the chance of venting his opinion, irritation or suggestions. An e-mail address specially reserved for this purpose receives 800 messages each month concerning bicycle and mobility policy. The bicycle policy of Ghent has effects in other towns as well. In a 1997 two-day bicycle forum organised in collaboration with Antwerp, various problems were discussed that cannot be solved at a local level due to legal impediments: tax incentives, one-way roads, 30 km/h areas and so on. The bicycle forum generated a lot of media attention and led to the institution of an association of Belgian cycling cities. Currently 26 towns participate in this association. Most of the 'demands' of that time have been met by now.



### *Wild about cycling*

The objective of 'promoting a cycling culture' has been upheld over time. The enormous growth in attention paid to bicycle parking (witness the mobile guarded parking facilities at events) and activities surrounding bicycle rental (see above) are particularly suited to come into contact with residents and communicate the message. In addition the sensitising activities have increasingly become focused on particular events: a bicycle tour on the Day of the Park, a rally on Open Monuments Day, bicycle activities during the Week of the Soft Road User, etc. Most important of all is the campaign 'Ghent wild about cycling', which has been conducted on an unprecedented scale in recent years. Numerous manifestations, continuously, on many locations. Very few people in Ghent will have failed to get the message.







As demonstrated above, there are also messages to the cyclists themselves: use your lights and lock your bicycle!

### Stylish cycling

For the latest campaign and slogan 'A bicycle suitable for all occasions' Ghent authorities brought together several boutiques, bicycle shops and professional models, resulting in pictures that might have come from any fashion catalogue. The campaign is to demonstrate that cycling is suitable for any occasion, whether a night at the opera or a dinner party with friends.



### Targeting specific groups

The 60,000 Ghent students would love to cycle, but the availability of a bicycle is somewhat of a problem for the numerous students living in digs. A cooperative project between Ghent local authorities, polytechnics and university, studentEnmobiliteit, has started a bicycle rental project in 2002. Its objectives were to provide a sufficient number of bicycles, reduce bicycle theft and improve overall cycling safety. Not all rental bicycles are new, there are also bicycles that have not been retrieved from the depot and been fixed up. By now 3000 bicycles are provided to students, at 43 Euro a year. Few students make use of the opportunity to park bicycles in the bicycle depot during college-free periods. The yellow rental bicycles are highly visible all over town and represent an excellent means of promoting cycling in Ghent.

The 2002 project *Veilige schoolomgevingen* is a structural approach by Ghent authorities of school commuter traffic: schools are assisted by consultants in assessing traffic safety in their environment and in preparing a school transport plan. School routes are analysed, choices in modes of transport are studied and recommendations and suggestions for changing mobility behaviour are provided to school and parents. In additions suggestions are made on how to integrate 'traffic' into the curriculum. The school transport plan may also be used to apply to provincial authorities for grants for implementation. The objective is to reach most schools within a couple of years.

### **BYPAD town**

In 2002 and 2004 Ghent scored high marks in the European benchmark method for municipal bicycle policy, BYPAD. Those high marks did not so much reflect the high degree of bicycle use or perfect condition of the infrastructural bicycle facilities, but rather the all-encompassing size and range of Ghent bicycle policy. Both bicycle routes and parking received the required attention; both infrastructure and *soft measures*/promotion; both political direction and civil support as well as actual implementation of measures.

### ***Bicycle rental***

The indoor bicycle parking facility at the Ghent Sint-Pieters railway station is managed by *Max Mobiel*, within the NMBS format of 'bicycle points'. Bicycles may be repaired or serviced there. Max Mobiel also runs a bicycle courier service. But most of all bicycles are rented: 'commuter cycling' - regular transport from the railway station to the destination/job location. At present an average of 100 commuter bicycles are rented a day.

In line with this a decision was made early in 2009 for Ghent to enter the booming world of white bicycles/rental bicycles/public bicycles, with a grant by a European CIVITAS project.

### ***Effect***

Although since 1977 the number of inhabitants in Ghent had been falling, it has picked up slightly since 1999. The number of vacant shops is clearly less than elsewhere in Belgium. Shopping and hotel stays show a very strong increase and cafés and restaurants attract growing numbers of visitors, too. These trends indicate that this town has become more attractive to residents, visitors and companies. To Ghent local authorities bicycle policy is just one of many ways to make the town more appealing. There is little or no doubt about the effectiveness of bicycle policy or the advisability of its continuation. To quote Yves de Baets: 'It is one of Ghent's strongest points that everybody thinks 'bike' now. This accelerates and reinforces the process.' Although bicycle use in Ghent has by no means reached the levels of the best European cities, the increase is both clear and substantial: certainly 10% more cyclists since the early 1990s, even among students, even in trips to and from the railway station.



## 12. Comparison

In chapter 1 it has been stated that a ‘continuous, good bicycle policy’ in combination with an ‘integral traffic policy with room for bicycle traffic’ had in 2006 more or less proved to be the explanation for high municipal bicycle percentages. The ten case studies contained in this publication should therefore demonstrate this general trend. On the other hand there are, of course, upon closer inspection, differences to be discerned among these ten ‘unique’ cities. This concluding chapter attempts to summarise similarities and differences. But it is a comparison that requires great prudence. After all, these ten city reports, compact as they are, do not provide a complete picture. The comparison is therefore necessarily merely qualitative and far from accurate.

### *Long-standing interaction?*

Bicycle use is high in all ten cities – even though the differences are considerable, ranging from a bicycle percentage for all trips slightly over 15% in Ghent to over 35% in Groningen, Zwolle and Münster. A high percentage of bicycle use and a highly developed bicycle policy go together, almost inevitably. Certainly in the long run: an intensive (and expensive) bicycle policy will not persist when it does not result in cycling and a high degree of bicycle use will not persist when facilities are not upgraded or maintained to a certain extent. There is also a third factor: the underlying culture/tradition, the general attitude of citizens, officials and politicians towards bicycle traffic. In the long run this culture/tradition will also relate to actual bicycle policy and bicycle use in one way or another.

The actual issue is thoughts-words-actions in policy: generally-shared valuations leading to concrete measures by means of political choices. The table below displays a comparison in these three aspects for the ten towns involved.

### *Comparison of the ten cities with regard to culture/tradition, political choices and facilities*

	analogy	exceptions
culture & tradition: Bicycle use ample for decades and general accepted / appreciated	Yes, 8 out of 10 show a history of use and acceptance of bicycles	Freiburg and Ghent
political choices: For decades, traffic policy with attention for bicycle use?	Yes, 8 out of 10 to a certain extent always payed attention to cycling in the past	Freiburg and especially Ghent
facilities: Good cycling network nearly completed	Yes, 8 out of 10 nearly finished with construction	Freiburg and especially Ghent lags: Odense, Zwolle and Veenendaal near perfection



**Ghent**



This comparison displays the same picture in all three aspects – which in turn demonstrates to which degree culture/tradition, policy and use are linked.

Freiburg and Ghent show a manifest rise in bicycle use over the last decades rather than a traditionally high level. It would appear that bicycle use had disappeared from view in these cities more than in the other cities. Not only in numbers of cyclists in the streets or in political terms, but also in facilities for cyclists. As a result, the efforts required for bicycle facilities were far greater when bicycle policy was re-launched in the 1980s and 1990s.

On the one hand it is obvious that the majority of the European cycling cities discussed here demonstrate a long-standing history of bicycle use, bicycle policy and cycling culture. On the other hand it is also right to conclude that this does not apply to all to the same extent. It is remarkable in this respect is that cities that do not fit this picture to the same extent (Freiburg and Ghent) are also the cities that currently have the lowest degree of bicycle use. They launched or re-launched their bicycle policies later than the others, and have not (yet?) reached the level of the other cities.

### *Quality of bicycle facilities*

There is a great deal more to be said about facilities for cyclists and a great deal more to compare. Completeness of a network does not equal a high network quality. Quality can be expressed in terms of engineering (width of lanes and bicycle paths, types of intersection provisions and so on), but this comparison cannot be drawn on the basis of the rough data contained in this publication. A comparison is possible in another way, to wit by estimating the degree to which cyclists can participate in traffic safely and without obstructions: the degree to which the routes of the bicycle network are conducted along 'separate facilities'. A second element in this comparison of cyclists' facilities is the issue of bicycle parking: what is the available capacity and how much attention does parking receive in policy documents.

### *Comparison of the ten cities in quality of bicycle network and bicycle parking facilities*

	<b>analogy</b>	<b>exceptions</b>
quality of the cycling network: Specific, separated facilities for the bike?	Limited; 8 out of 10 have separated facilities for cyclists as a standard	less 'seperated': Freiburg and especially Ghent; 'seperated' to a higher level: Veenendal, Münster and especially Zwolle
facilities for bicycle parking: Massive numbers and strong attention in policy?	Yes, 9 out of 10 have bicycle parking as an important theme of cycling policy	less weight: Odense; stronger accent: Groningen and especially Amsterdam

When comparing bicycle facilities in more detail, the prevailing picture is one of similarity, although some additional differences are revealed. The lower scores of Freiburg and Ghent on network quality are a direct result of the comparison drawn earlier on completeness of the network. More relevant here is the exceptionally positive score of Zwolle in particular. There it is apparent that the issue of 'separate facilities' has by now been interpreted at a higher level, no longer simply constructing bicycle paths and bicycle lanes, but striving for a situation where cyclists no longer meet busy and/or fast car traffic anywhere. Therefore much attention and money are spent on intersections – currently mainly in the form of flyovers and tunnels.

The issue of bicycle parking demonstrates a new stage in policy, best visible in Amsterdam. In its latest bicycle plan, parking is now defined as the highest priority. The two Danish towns, too, demonstrate something special: bicycle parking appears to involve considerably lower numbers, at least as regards capacity at top locations. Odense for instance realised a 250-place bicycle parking facility near the railway station in the past ten years, as well as 400 extra racks. And a parking facility in the town centre for 800 bicycles. Copenhagen, too, has no heavy concentrations (apart from the railway stations), but does possess some 35,000 bicycle parking spaces all over the town in public space.

In Dutch towns bicycle parking is much more of a major policy issue. The numbers at the most important locations are of an entirely different magnitude: Groningen a parking facility near the railway station for 4650 bicycles and one in the town centre for 1800. Numbers in Amsterdam are even higher. In Münster, Freiburg and Ghent matters are quite different from the Danish situation, particularly at railway stations: in Münster a parking facility for 3300 bicycles, Freiburg one for 1000 bicycles and Ghent has an overall need for at least 5000 bicycle parking spaces at the railway station.

The lower numbers in Denmark are hard to explain. Most likely the combination of bicycle and train is much less important in the Danish cities than it is elsewhere. In addition bicycle theft appears to be much less of a problem. And for some reason there appears to be a more even distribution of parked bicycles over the entire town.



*Freiburg*

### *Integral policy*

In addition to 'continuous', 'integral' was the second key word used in the introduction to explain high degrees of bicycle use. This, admittedly, is a rather ambiguous word. It may be given substance in three ways:

- integral as a thematic concept in bicycle policy: in addition to gradual realisation and improvement of the 'usual' infrastructural facilities (including bicycle parking), projects concerning technical innovations, services and promotion are relevant as well;
- integral as a concept referring to the overall policy cycle: from political commitment to planned implementation and assessment;
- integral as a concept within overall traffic policy, with particular reference as a complement of pull policy (the carrot): the push-policy (the stick) of restricting car use, or, phrased in more neutral terms, regulation of the conditions surrounding car use.

These aspects of 'integral policy' display fewer strong similarities, particularly within bicycle policy issues. As generally known by now, certainly thanks to the BYPAD-programme, the Danish, German and Belgian cities score considerably better on non-infrastructural issues than Dutch cities.

It is remarkable – see for instance the chapter on Odense – that upon closer inspection the promotional campaigns as such are not dissimilar in nature or size to those conducted in the Netherlands. After all, campaigns concentrating on school traffic, commuters and company bicycles have all to one extent or another been conducted in the Netherlands as well. But far less often with emphatic support by local authorities and certainly also not as continuously as occurred in Odense and Ghent. A case in point is that essentially all other cities display a much better cycling page on the municipal website as do the Dutch cities: more informative and much more exciting.

### Comparison of the ten cities in integral policy

	analogy	exceptions
integral bicycle policy: includes innovations, services and promotion?	limited, 6 out of 10 cities have extremely infrastructural policies	Freiburg, Münster and particularly Odense and Ghent
firm, systematic and enthusiastic bicycle policy: from political commitment to monitoring?	reasonable, but often either the systematic planning or political enthusiasm are absent	highly systematic: Zwolle, Groningen, Münster and particularly Amsterdam and Copenhagen; more driven by political and general enthusiasm: Odense and Ghent
integral traffic policy: restrictions to car traffic near and in the town centre (parking, flow)?	reasonable, all cities have some degree of regulation of car traffic in and near the town centre as a complement	probably fewer restrictions in Zwolle and Copenhagen, and in particular Odense and Veenendaal; rather more restrictions in Groningen and Amsterdam

Where the more process-based quality of municipal bicycle policy is concerned (strong political *drive* and support, knowledge and enthusiasm on the part of civil servants, good planning procedure cycle), the differences seem to outweigh the similarities. In the two largest cities, Amsterdam and Copenhagen, the weight of the planning procedure is remarkable. This may very well be a necessity in large municipal departments. The people themselves no longer suffice: a formal planning procedure is required to maintain the standards of bicycle policy. As remarkable is the approach in Odense and Ghent, where the word 'enthusiasm' indeed seems to be the essence, in addition to clear political support. In between these two extremes are the German and Dutch medium-sized cities, where bicycle policy is based more strongly on the 'bit of everything' principle.

Finally the push side of traffic policy: the degree to which the competitiveness of the car versus the bicycle is at any rate not increasing. It is clear that in all cities this issue relates to the town centres only, if at all. In this respect the similarities are strong. At the same time, however, it is clear that in various cities, both inside and outside the Netherlands, bicycle policy stands on its own (and successfully so!). Car restrictions are very limited.



**Amsterdam**



### *Mainly similarities*

Among the Dutch cities there are in general mostly similarities. There truly is something like 'Dutch municipal bicycle policy'. Copenhagen and Münster resemble Dutch cities as regards bicycle policy, whereas both Danish cities and Ghent in Belgium are more different.

Despite all similarities the crux in the differences appears to be a fairly strong cycling tradition, expressing itself in an early, high degree of bicycle use and an early start of the realisation of a good bicycle route network. In particular Ghent and Freiburg, and to a lesser degree Odense, are clearly divergent in this respect. There appears to be a relation with the more integral, more 'man'-focused nature of Odense and Ghent bicycle policies.



*Ghent*

# Acknowledgements

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## Colophon

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