Benchmarking by the Dutch Cyclists' Union:
the Cycle Balance

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1.   Introduction

In the summer of 1999 a long-term benchmarking project started at the Dutch Cyclists'
Union. This project is funded by the Ministry of Transport, Public Works and Water
Management. The project will run for at least three years. Primary objective of the project is
to stimulate local authorities to adopt a (still) better cycling policy. The specially formed
Benchmarking Team uses benchmarking techniques as a means to achieve this. The
secondary objective of the project is to enhance the position and strength of the local Cyclists'
Union branches.

This paper wishes to discuss:
- The possibilities and limitations of the concept of benchmarking.
- The strategic choices the Cyclists' Union had to make to deal with these.
- The project that was the result of all of this: the Cycle Balance.
- The surveys that are used to collect data to draw up the Cycle Balance

One of these surveys, the Quick Scan Indicator for Cycling Infrastructure, is discussed more
elaboratebecause of its innovative qualities. The paper finishes with some expectations as to
the forthcoming results of the project.

2.   From benchmarking to Cycle Balance

Benchmarking and cycling policy: a brief survey

The project is based on a survey exploring the popular concept 'benchmarking'. Many
benchmarking techniques have their origin in business/industrial settings. It is clear from the
literature that benchmarking in this project deviates from this application to businesses for a
number of reasons. The most important are stated below:

- In the 'original' form of benchmarking a company takes the initiative itself. If so
  desired, an outside expert may assist the company. However, the internal driving force
  is assumed necessary in order to successfully generate and implement the results. In
  this project an outsider, an interest group, takes the benchmarking initiative.
- The 'original' benchmarking dealt with industrially processed goods, for witch
  production methods and processes are described using company data that are already
  present. In this project, however, the 'goods' are forthcoming from policy in which
  administrative or political choices are made by taking the different interests into

consideration.. It is more-or-less uncharted territory: experience with the benchmarking of policy is little and the number of established reference markers and units of measurement available are few.

- 'Originally' benchmarking is most often concerned with the processes within one section of a company. This project considers the total decision-making process, with many actors involved (politicians, council members, civil servants, local Cyclists' Union branches, consultancy firms and the cycling public).

These deviations from the 'original' benchmarking have far-reaching consequences for this project. It was clear that the Cyclists' Union had to give its own meaning to the concept of benchmarking. In certain cases the deviations found are advantageous to the project. Full advantage has to be taken from these. Other deviations are disadvantageous to the project These have been carefully considered when strategic choices within the project were made.

**Strategic choices of an interest organisation**
On the basis of this survey, a number of strategic choices have been made for the complete project period. First of all, we made a clear choice to present the project as a project by the Cyclists' Union, which is and remains an interest group. The advantages of this position are put to their best possible use. Some of these are:

- An independent position: the Cyclists' Union has no direct interest to make one municipality 'score' better then an other. The cyclist's interests have top priority.
- Not bound to a local or regional commissioning body. the Cyclists' Union can, in principle, approach all actors able to contribute to the primary objective.
- The freedom to involve the media/public opinion in ways seen fit.
- The possibility to work on issues so that use can be made of the momentum generated by current affairs.
- The possibility that comes from joining a strong decentralised organisational structure with local branches: the Cyclists' Union has local branches with volunteers in 130 municipalities.

Being an outsider and an interest group also involves a number of limitations, which may require compensation:

- Special attention is needed for acquisition and commitment from the municipalities to participae in the project. Profits of participating have to be clear to them.
- An interest group is not a research institute. Research activities arising from the benchmarking project are instrumental in exerting influence on policy. The research results, however, will only be taken in consideration in the decision-making process if the actors involved find them important and meaningful. This means special focus on the reliability of the information..
- An interest group should not play consultant. Consultants present solutions to problems while members of an interest group strive for more attention and priority for (the solution of) certain problems. The project for that matter would like to offer indications for solutions, e.g. good- and best practices.

In our opinion, research and communication are inseparable entities in this project. Roughly, three types of activities are distinguished which cannot function independently: research communications via local branches and direct communication with local and regional government authorities (see figure below).
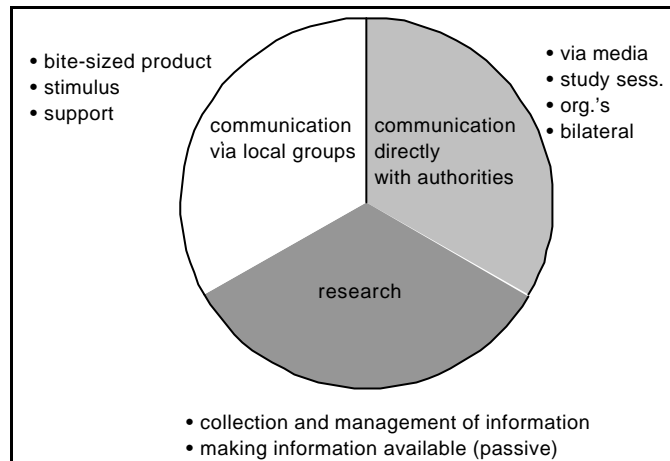
Research activities are at the heart of communication: these include the collection, management and analysis of data that can be used to compare local authorities. In principle, data can be quantitative or qualitative. However the first year will be devoted to sketching a broad picture of policy in practice at as many local authorities as possible. Quantitative data are more suitable for this than qualitative aspects. In the second and third years there will be more attention paid to qualitative aspects e.g. good and best practice.

At this stage of the project no choice has been made about the type of policy information that is included in the project. In general, the following levels can be distinguished:

- Policy process (aims, anchoring the cycling policy, budgets, plans, etc.):
- Policy results (cycling network, parking, sign posting, etc..)
- Policy effect (cycle use, car use, victims, theft, quality of life, etc.)

In principle, all three levels can be investigated in the framework of the project, but policy results will receive special focus. This level is the most important to cyclists: information on policy results describes the daily experiences of cyclists.

The communication activities within the project are partly aimed at the local branches of the Cyclists' Union, so they can act as intermediaries towards local civil servants, administrators and politicians. Bite-sized products should be created to enable the Cyclists' Union branches to provoke debate at the local level. The use of these products is promoted and supported within the framework of this project.

Other communication activities are targeted directly towards local and regional authorities. These activities are organised in a way to reach several government authorities with one activity. Therefore involving the media will play a prominent role. Other activities include organising and participating in study sessions and conferences and writing in professional journals. so as to reach more government authorities.

The Cycle Balance
The Cycle Balance forms the theme chosen for the benchmarking project strategy for the year 2000. All the aspects of ' benchmarking cycling policy by an interest group' have come together in this central project. It is a logical continuation of the strategic choices in the previous section and provides substance to the targets for the year 2000.

The Cyclists' Union has seized its 25th anniversary celebrations and the Cycle Balance project to invite all the large municipalities in the Netherlands to draw up a balance on cycling policy. As objectively as possible, using measurable data. The Cycle Balance offers the participating municipalities clear insight into the strong and weak points of their cycling policy. Furthermore, it also gives municipalities the chance to compare their achievements for cyclists with the achievements of other municipalities and with standards and national policy targets. This should ultimately lead to provoking a debate on the position of the cyclist in local authority policy in many municipalities.

The Cycle Balance was launched at the national headquarters of the Cyclists' Union on March 8 of this year. Media coverage was extensive and included national and regional radio and television teams and daily newspapers. Municipalities of 20,000 or more inhabitants received an attractive pamphlet. The response was enormous: 45% of the municipalities approached for participation replied, most of them asking to participate. These are municipalities where more than 50% of the Dutch cyclists live. Although we won't manage to assess all the participants this year, next year there will probably be a follow-up.

This year the Cycle Balance will be brought to a close with a symposium. One of the most important outcomes will be the placing of benchmarks in the different fields of focus (see Appendix 1). Besides this, on this occasion one municipality will be named as Bike City 2000. This selection should provide a positive stimulus for municipalities to do their best.

3.   The surveys

The research that makes up the Cycle Balance is done within four different surveys.
- Questionnaire for the municipality
- Questionnaire for the public
- Analysis of national data
- Quick Scan Indicator for cycling infrastructure (QSIF)

Appendix 1 contains an overview of all the assessment criteria to be investigated through these surveys. The column 'sub-investigation' shows in which survey the criteria are considered further. Below, the first three surveys will be discussed. The fourth survey, the Quick Scan Indicator for Cycling Infrastructure (QSIF), is the most innovative and appealing of the four surveys. This survey will be discussed in a separate chapter.

Questionnaire for the municipality
The questionnaire for the municipality is used to assess the local authorities cycling policy on paper. A good cycling policy focuses on the cyclist. The CROW, the Centre of Expertise for Traffic, Transport and Infrastructure set down quality requirements for the creation and design of the cycling policy in its design manual *Sign up for the bike.* A good cycling policy meets with these requirements. They form the basis of the municipal questionnaire. Also relevant for the assessment of the local situation are the current ambitions and policy-efforts. These are addressed in the questionnaire as well.

The results of the municipal questionnaire are important in the Cycle Balance on three levels:
- First, the outcomes of the questionnaire make the assessment of the local cycling policy on paper possible.
- Besides this, it may provide possible explanations for the outcomes in the other surveys. The quality of cycling infrastructure, as measured by the QSIF, for example, is consequential to the policy carried out in the course of the years.
- Finally, the analysis of cycling policy offers the local authorities leads for improvements This might be in answer to possible weak points in the current cycling policy. The results of other surveys that make up the Cycle Balance may also lead to change or intensification of the current policy,

Cyclist satisfaction
Up to now there has been little research done - with the exception of a few municipalities - on the day-to-day cyclist's opinion about current cycling policy. This is an obvious omission in current cycling policy. After all, the cyclist is the customer! Stimulating bicycle use is more likely to be successful if it meets the needs of the cyclist. This is the reason for asking the opinion of the everyday cycling public by way of a short questionnaire. This questionnaire consists of simple questions on bicycle parking, comfort road safety for cyclists, social safety, the approach to bicycle theft and the municipality's cycling ambitions.

The questionnaire is distributed through various channels:
- Via the Cyclists' Union magazine.
- Via de Cyclists' Union Internet site.
- Via special printed questionnaire cards to be distributed during 2 big cycling events.
- Via activities and events organised by the Cyclists' Union local branches.
- The participating local authorities are asked to publish the questionnaire on the city page in the local and free door-to-door newspapers

These methods will ensure a good national overview focusing on cyclists who live in the municipalities participating in the Cycle Balance project.

Analysis of national data
Some data important for assessing (the results of) cycling policy in a municipality are available via national databases of organisations like Statistics Netherlands. Founded on these national data, analyses are carried out so as to be able to calculate relevant units of measure

for as many municipalities as possible. Innovative analysis methods are applied as much as possible.

Aspects for which values are calculated on the basis of nationally available data:
- cycle use
- safety risks
- destinations within cycling distance
- bicycle parking at stations
- bicycle theft

The participating municipalities and cyclists' union chapters will receive the information relevant to municipalities as soon as they become available. The information will also be nationally available on the Cyclists' Union's website. The outcome of the analyses will also be used to place benchmarks that will be presented during the symposium on the 10th of November.

4 The Quick Scan Indicator for Cycling Infrastructure

Why it was developed
There are actually hardly any data on the quality of cycling infrastructure in municipalities. These data are necessary for a good assessment of the cycling policy in a municipality. For this reason the Cyclists' Union has designed a tool to measure and assess cycling infrastructure in a simple and reliable manner. The Quick Scan Indicator for Cycling Infrastructure (QSIF) was designed by the Cyclists' Union in collaboration with Goudappel Coffeng bv., traffic and transport consultants and M+ P Consulting Engineers bv.

De Quick Scan Indicator for Cycling Infrastructure (QSIF) works under the direction of local actors, including the local branches of the Cyclists' Union along with the municipality and with support of the Cyclists' Union's head office. The QSIF provides useful information for assessing, adapting or influencing cycling policy. In order to do so, it meets the following conditions:
- general acceptance of measured criteria;
- easy to use (as far as possible by local actors);
- measurements are univocal (so that the results are comparative to those from other municipalities);
- results are reliable and plausible;
- results provide valuable links to measures applicable to the whole network.

Assessment using clear criteria
QSIF is a tool to measure the quality of the infrastructure that cyclists use. The CROW design manual, *Sign up for the bike,* forms the basis for choosing the assessment criteria used in the QSIF. The design manual identifies 5 main requirements for designing a cyclist-friendly infrastructure. Because the QSIF has to be easy to use, only relevant and simple objective measurable criteria are used in the investigation.. In using the QSIF, data on these criteria are collected in an objective way to arrive at reliable and plausible results.

Main requirement	Assessment criteria in QSIF
Coherence	consistency in quality
Directness	average speed delays detour factor travel time factor cycle vs. Car
Attractiveness	noise nuisance to cyclists
Safety	traffic disturbance
Comfort	vibration disturbance traffic disturbance noise nuisance stopping frequency

Measuring with a simple and univocal method: random sampling

The Quick Scan Indicator for Cycling Infrastructure measures and assesses in a simple and reliable way the quality of the infrastructure in a municipality from a cyclist's perspective. To keep the instrument simple, inexpensive and quick, it was decided to investigate only part of the infrastructure in the municipality. The part of the infrastructure to be investigated is determined according to random sampling, giving a representative picture of how cyclists move around in the municipality.

Random sampling assumes therefore actual cycling movements from arbitrarily chosen residences to frequently visited destinations and visa versa. Going from here (and *not* from the municipality's <u>main</u> cycle routes), we can determine the infrastructure to be investigated. The local branch of the Cyclists' Union, preferably in consultation with the local authorities, sets out this random sampling using a standard protocol. In this way the random sampling is guaranteed as a reliable approach to the quality of infrastructure offered to cyclists in a municipality.
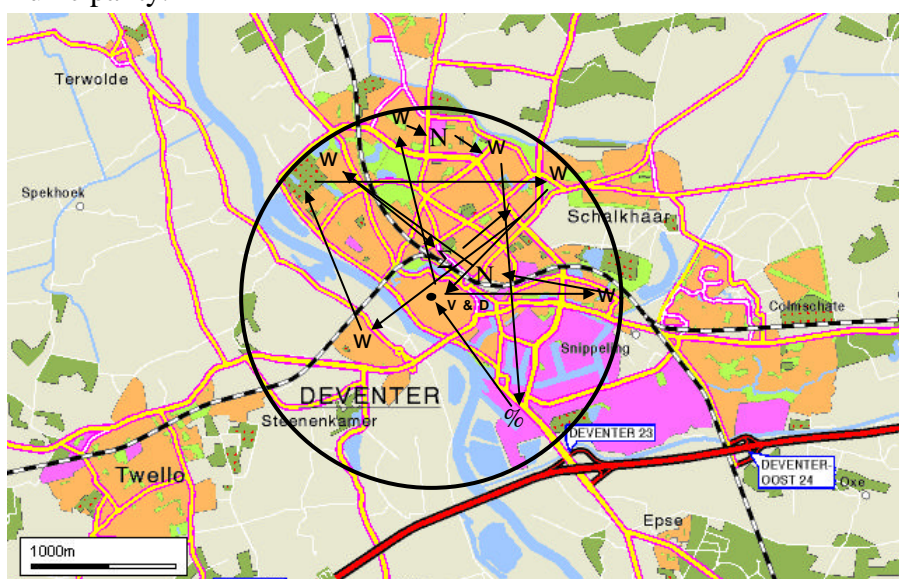
Example of a possible random sampling method for the Dutch city of Deventer

The first step in setting out the random sampling is to determine places of origin and destinations. One of these is found in the city/town centre and forms the middle of a fictitious circle defining the total area to be investigated. The other locations are found on or within this circle. Half of these are destinations that generate many cycling movements and the other half are arbitrarily chosen residences. The direct distances between all the locations come to a total of about 30 km, a distance which can be measured in an afternoon.

Finally, the routes connecting the start and finish of each movement are chosen. In short, we determine the actual infrastructure that will be investigated. Routes will be set out for both the cycle and the car. Sometimes they will be parallel, but they could also be completely different. The standard rule in determining both routes is formed by the preference of 'the average cyclist' and 'the average motorist'. In many cases this will be the fastest route.

Measuring with a simple and univocal method: the measuring technique
During the measuring period the chosen routes will be both cycled and driven. At the same time information will be collected for assessing the infrastructure using a standard measuring protocol. For the collection of data three actual measuring instruments are used:

- The measuring bike
  This bike is especially designed and build by an expert engineering company for the Cyclists' Union. The bike registers time, distance, speed, sound and vibrations (and thus indirectly also stops, waiting time et cetera). The bike is equipped with measuring equipment, including a sound meter and a vibration meter. The data are stored in a computer mounted on the back of the bike.
- The video bike
  The video bike is any men's cycle (=city bike) on which a video camera is fixed onto the crossbar. The cyclist is equipped with a tiny microphone for the video camera. The cyclist, a Cyclists' Union expert, records the type of road (mixed profile, biking strip, bike path, separate bike path), the road surface (asphalt, road tiles, bricks, other type), construction of intersections (equal access, intersection with a main road, side street, traffic lights, roundabout) the manoeuvre and obstacles. The camera automatically registers the time and date.
- The car
  A volunteer of the Cyclists' Union or someone from the municipality staff drives the car. The passenger notes the driving time and distance, including the time needed to find a parking space and the time needed to walk to the final destination.

The routes are from 'door to door'. Pre- and post-transport are included in the route, meaning for cyclists walking the cycle from/to a specific location. The motorist will have to park at each location and then walk to get to the front door, entrance, etc.

Reliable results with an eye to solutions
After taking the measurements, the data on the video are put into a computer program, dividing the routes into different route components. A route component is a section of the route in which the characteristics do not change. The following characteristics are registered for each route component:
- starting time and finishing time
- type of road or intersection (bike path, bike strip, mixed profile).
- the cyclists' movements (cycling behind each other or side by side, walking)

The type of road surface is also registered in road sections and the manoeuvre at intersections. Finally, comments may also be added, depending on the situation.

The data from the route components are then coupled with the help of a computer to the measurements registered by the measuring bike. Because both measurements are provided with an exact time registration, this coupling will have a very high level of reliability. The results give an indication of quality of the <u>whole</u> network, and where possible, that of certain provisions (intersections, bike paths, etc.). In this way, not only is the number of kilometres covered over bike paths registered, but also, for example, the average vibration disturbance on these bike paths is made known. The average waiting time at traffic lights can be determined in this way too.

However, because random sampling is used, <u>no</u> results are generated for one specific intersection or road section. Results do lead, in general terms, to identifying strong and weak

components in the cycling infrastructure and cycling policy. These provide clear links for improving the cycling policy in a municipality.

Furthermore, the results of the measurements in different municipalities are intercomparative, making it obvious how one municipality 'scores' in relation to another. This gives insight into the aspects for which a municipality has possibilities for improvement and creates a base for information exchange and mutual learning. The Quick Scan Indicator for Cycling Infrastructure is in this way able to provide an extra stimulus to the local debate on a (better) cycling policy.

5   Concluding remarks

At the moment the local research is carried out. Many volunteers of the local Cyclists' Union branches and local civil servants and politicians are involved. The reactions are mostly enthusiastic and people are very eager to know the results. Especially the aldermen for traffic and transport would like to know if their municipality is doing better or worse then others.

For us, members of the Dutch Cyclists' Union benchmarkingsteam, these are signs that we have designed a project that meets the needs of both cyclists as politicians. The research is going well and we expect to get good and interesting results when we present them in November. Judging on the response and requests for participation both civil servants and politicians are interested to take the results seriously. And that is what we are aiming at: good local discussions on the position and policies for cyclists and for local governments to adopt a (still) better cycling policy. Ultimately, the cyclist itself has to benefit from it. This, however, could take several years.

Appendix I Benchmarking 2000

Aspect	Sub-investigation	Comment
Cycle use		
• Contribution to modal split up to 7.5 km	Analysis of national data	
• Trends in contribution to modal split	Analysis of national data	
Road infrastructure		
Coherence		
• Part of the traffic movements on the main road network	Visitation process	Depending on available time ad money
• Consistency of quality	QSIF	
Directness		
• Detour factor	QSIF	
• Travel time bicycle/car	QSIF	
• Average speed	QSIF	
• Delays	QSIF	
Attractiveness		
• Noise disturbance to the cyclists	QSIF	
Safety		
• Risk per cycled kilometre	Analysis of national data	
• 'Sustainable safety' level	Visitation process	Depending on available time ad money
Comfort		
• Stopping frequency	QSIF	
• Traffic disturbance	QSIF	
• Smoothness of road surface	QSIF	
Bicycle parking and theft		
• Risk of theft	Analysis of national data	
• Facilities at stations	Analysis of national data	(municipalities with a station)
• Parking prohibited	Municipal questionnaire	
Destinations within cycling distance		
• Destination density	National data	
• More specifically focused on activities	?	?
Municipal ambitions and innovation		
• Budget	Municipal questionnaire	
• Personnel	Municipal questionnaire	
• Special achievements	Municipal questionnaire	
Cyclist satisfaction		
• Bicycle parking facilities (locked	Public	

and unlocked)	questionnaire
• Cycling comfort (stopping frequency, road surface, traffic nuisance)	Public questionnaire
• Traffic safety	Public questionnaire
• Social safety	Public questionnaire
• Coping with bicycle thefts	Public questionnaire
• Ambitions the municipality has for cycling	Public questionnaire
• Marks for the municipal cycling policy	Public questionnaire