

# Bicycle traffic is more than cycle tracks

The promotion of more and safer cycling involves a large number of problems and interested parties. These often interact in complex ways, so that we are facing a holistic challenge that calls for cross-disciplinary collaboration.

The present chapter has been conceived as a process handbook for the promotion of safe cycling, and it describes the stages in the formulation of a plan, from preparation to realisation. It is hoped that this handbook will make a contribution towards giving a broad overview of road safety for cyclists and people's choice of transport mode.



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## Plan & Process

The Danish government's action plan *Trafik 2005* [Traffic 2005] from 1993 calls for 4% of private car passenger kilometres to be transferred to walking and cycling by the year 2005<sup>106</sup>. This corresponds to a 30% increase in bicycle traffic or to an additional 200 kilometres to be cycled annually by every single Dane. The target of the Danish Road Safety Commission is a 40% reduction in the number of fatalities and severe injuries over the period 1998 to 2012<sup>35</sup>. To pursue these targets will often mean a major new orientation of local traffic policy.

A possibility on a local level for the promotion of safe cycling is a politically adopted plan. The plan can create local anchoring and acceptance of the traffic policy. Whether the plan is a cycle action plan or promotion of safe cycling is part of other traffic plans is of course a local decision. Too many plans can result in contradictions between targets and projects, while a separate cycle action plan can lead to intensify local efforts, as it has been the case for several local road safety plans.

It is a good idea to build bridges to other policies, eg the work for better towns, public health and the like. In this way more co-operation between different administrations will arise, and maybe several projects become cheaper and more effective.

# THE PROCESS



## Preparation

The bicycle is individual and represents freedom. At the same time cycling is good for the town, the environment and public health. More cars and traffic growth is not necessary to maintain high economic growth rates on a national level<sup>48</sup>. If citizens use less money on transportation, eg by cycling, then they have more money for other consumption.

An important starting-point for planning is an overview of the present state regarding accidents and

travel patterns and the possibilities of more and safer cycling. If there is not sufficient internal competence for the drawing up of a cycle action plan, it may be necessary to make use of consultant assistance. It is a good idea to develop competence within the administration by procuring know-how or hiring new staff, as the promotion of more and safer cycling is a long-term project. Another possibility is to co-operate with other administrations and draw on their competence, or to have a consultant coming regularly.

Due to many projects in different administration and organisations it is a good idea to hire a cycle co-ordinator, especially in larger municipalities. Cycle co-ordinators

## POSSIBLE INTERESTED PARTIES

*for the promotion of more and safer cycling*

- Municipality and county councils
- Road administrations
- Bicycle user groups
- Business managers
- Personnel managers
- Shop stewards
- Health and welfare departments
- Hospitals
- GPs
- Politicians and civil servants from other municipalities and counties
- Chambers of commerce and trade promotion boards
- Local newspapers
- Public transport operators
- Police
- Nature conservation society
- Tourist office
- Schools, teachers
- Bicycle dealers and manufacturers
- Education and cultural departments
- Green guides



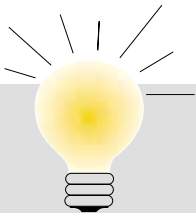
PHOTO: Road Directorate

*Bike and bus can be combined, if there is space for bicycle parking.*

are seen in eg USA, Belgium and Great Britain.

Citizens should be involved from the start of the process. The admixture of the citizens' worries, visions, general views and everyday experience with the insights and overview of professional traffic planners makes a good combination for the achievement of the defined targets. Public participation can often give rise to new, creative and better projects.

It is important that the project should be locally rooted from the beginning, as this will increase the



To a large extent cyclists and motorists use the same roads in urban areas – where there are many cars, there are also many bicycles<sup>38</sup>.

possibilities of co-operation and success. There is less danger that the project will end up on the rocks, if the local population and politicians is involved from the start. It is essential that ambitions, targets and funds are a coherent narrative from the start - both financially and in the process.

It could be a good idea to establish a local transport board, where im-

portant interested parties are represented, such as citizens, politicians, business, police etc.

## Problem identification

In order to establish a strategy and choose measures that will work it is important to identify and analyse local problems. Many administrations are surprised by how little they know about local conditions for cyclists. There should be harmony between the extent of problem identification and the ambitions, targets and funds. Below follows a list of areas that it can be useful to look into.

### PROBLEM IDENTIFICATION *of local problems*

#### Satisfaction, perceived risk and needs

- Review of complaints and debate in the press
- Questionnaire survey concerning trouble spots, prioritisation of measures and local attitudes to restrictions on car use
- List of problems
- Questionnaire survey as a follow-up to service targets – satisfaction and the importance of eg perceived risk, comfort, accessibility etc

#### Traffic structure

- Registration of cyclists' traffic areas, eg cycle tracks, access barriers etc
- Inspection and cycle tours
- Identification of main and local routes
- Congestion on roads and parking facilities

#### Traffic volumes

- Travel surveys to establish the level of cycle trips and km
- Questionnaires on travel patterns and chosen cycle routes
- Permanent traffic counters on cycle tracks, traffic roads, at traffic lights
- Manual counts
- Weather conditions have a great impact on the volume of bicycle traffic
- Maps with volumes of bicycle traffic

#### Operations and maintenance status

- Information from the most recent main inspection

#### Accident analysis

- Accident maps – pins on notice boards or digitally on a computer
- 5-year police records of accidents – and hospital records
- "Black bicycle spots"
- Speed measurements of cars and identification of hills with fast cyclists
- Thematic analysis of bicycle accidents with a view to campaigns and cheap physical measures

#### Bicycle parking

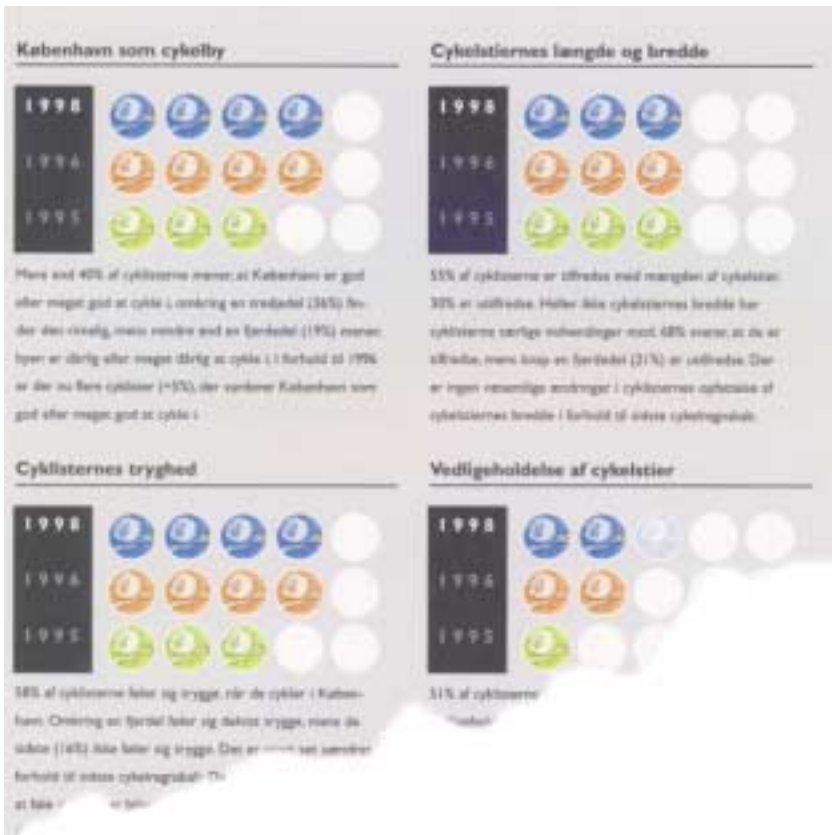
- Map of existing bicycle parking facilities with quality descriptions
- Map of peak loads for parked bicycles
- Map of lacks in facilities in relation to current guidelines
- Map of bicycle thefts

#### Analysis of local firms

- List of large firms
- List of firms participating in a "Cycle to Work" campaign

#### General

- Booklet containing maps, lists and ideas
- Get, eg the police, citizens associations, citizens groups, chambers of commerce etc, to comment on the booklet, perhaps in connection with on-site inspections
- Remember photos, many photos, as details are important for cyclists



Satisfaction surveys are part of the bicycle account in the Municipality of Copenhagen <sup>64</sup>.

that block footways and hamper shoppers.

The Danish Ministry of Transport has pointed out target groups and measures in their strategy *Promotion of safe cycling* <sup>126</sup>.

When establishing a local strategy for the promotion of more and safer cycling, it is necessary to make a number of choices. How should campaigns, police enforcement, and physical and economic instruments be prioritised in relation to one another? Will planned traffic investments inhibit the achievement of the defined targets? Are certain groups, eg children and commuters, more important than others?

### Targets and strategy

Take your starting-point in national targets – eg in Denmark, 30% more bicycle traffic to be transferred from car by 2005 and 40% fewer deaths

and severe injuries by the end of 2012. Supplement with targets related to local problems, eg public health, carelessly parked bicycles

Promoting cycling solely through improvements in the physical conditions for cyclists is an expensive strategy, which moves relatively few motorists to bicycles, but reduces the number of bus and train

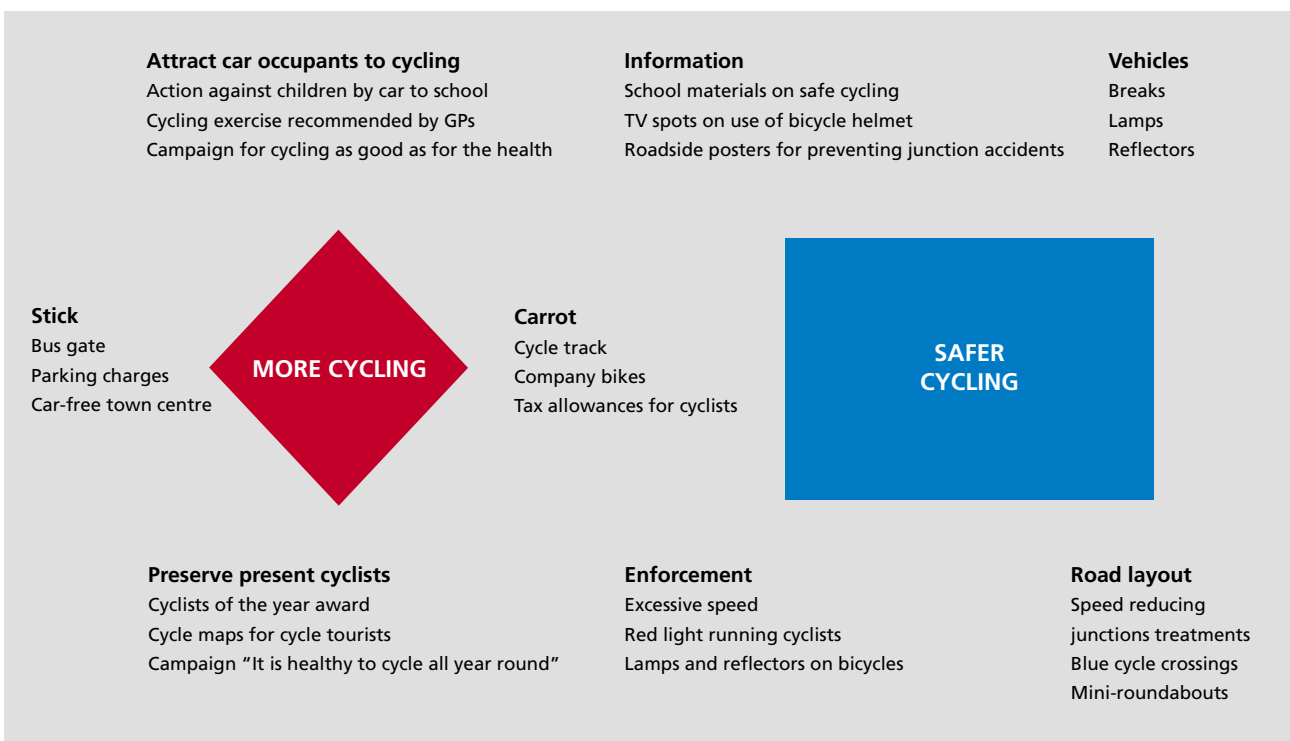


PHOTO: Linda Hansen



*Bicycles are carelessly parked at the supermarket.*

PHOTO: Lars Bahl



*Safe routes to school is a fine measure.*

passengers in the larger towns. If motorists' conditions at same time are improved, the result is more cars and the same number of cyclists. In the long term focusing exclusively on physical improvements for cyclists will be subject to pressure on the grounds that this leads to too few traffic changes in relation to the investment.

The optimal strategy combines campaigns with physical improvements for cyclists and restrictions on car use. This will lead to many

people changing from car to bicycle. At the same time it is possible to put together measures that link short-term and long-term projects, which may be both time-demanding and costly in terms of construction. The strategy can be devised so that the number of bus and train passengers increases or remains at the previous level.

Physical and economic instruments can be divided into *Sticks* and *Carrots*. In order to increase the effect of the carrots it is important to

inform the public, eg by distributing leaflets about new cycle tracks.

It is easier to get present passengers in public transport to ride more by bus or train than it is to attract new passengers. The market for more bus and train passengers is to be found among those who travel by public transport at least once a month<sup>128</sup>. This market mechanism is probably the same regarding cycling. So the task is to promote cycling among those who cycle sometimes or once in a while.

*Have an ice cream and participate in the campaign "We cycle to work".*



PHOTO: Nils Mogenssen

Greater road safety can be achieved in a number of ways. At places with many bicycle accidents, “black bicycle spots”, better road layout can help to prevent accidents. However, accidents occur rather scattered, though they chiefly occur on main roads. Enforcement and campaigns aimed at specific forms of hazardous behaviour, such as cycling in the dark without lamps, can help to improve cyclist safety.

Accident prevention must be seen in relation to the results from the problem identification phase – and also in the context of other accidents than bicycle accidents. If cyclists are to obtain the same safety benefit

as other road users, it is not sufficient to enforce and reduce speed limits, as cyclists benefit far less from this measure than other road users<sup>54</sup>.

More and safer cyclists are two tasks that can be integrated. There are not many single measures that promote bicycle traffic, inhibit car use and at the same time improve road safety. The achievement of more bicycle traffic and better safety requires a large number of measures to be combined in a holistic approach.

## Measures

Many types of measures are needed to improve road safety. Besides the measures shown on page 25 it can be a good idea to concentrate motor traffic on fewer roads and thus reduce the number of conflicts between motorists and cyclists, and then introduce safe road layout at the spots where many conflicts still occur. Teaching children safe cycling is an important measure.

Many single accidents among cyclists are primarily due to momentary inattention and a subsequent loss of control over the bicycle. This may be difficult to change without inhibiting the cyclist’s

*Choose the right measures – do plenty shopping – many measures.*



# Examples of measures

## PLANNING FOR CYCLISTS

- Direct cycle routes
- Coherent cycle networks
- Revival of local communities through bicycle use
- Cycle audits of local, municipal and regional plans
- Cycle action plans
- Bathing and changing facilities at workplaces
- Green transport plans for workplaces and schools
- More and smaller shops, schools and leisure centres
- Fewer access barriers
- Contra-flow cycling permitted in one-way streets

## INFORMATION, CAMPAIGNS AND EVENTS

- Campaigns for increased use of bicycle helmets
- Enforce requirements of reflectors, lamps and brakes
- Promotion of new cycle routes
- Arranged cycle tours - with gimmicks
- Cyclist of the year awards
- Cycle to work campaigns
- Influencing attitudes and intentions
- Teaching the health benefits from cycling
- Teaching the effect of cars on urban environments
- Mobility centres with cyclist information
- Campaigns against drunk cycling
- GPs recommendations of cycling
- Workplace visits from the Heart Foundation
- Campaigns to promote the slimming effects of cycling
- Children to motivate parents
- Bicycle escorts of school pupils
- Bicycle days
- Bike-to-the-baker's campaigns

## RESTRICTIONS ON CAR USE

- Removal of car parking spaces
- Road closures
- Stopping and parking prohibitions for cars
- More and larger areas with parking charges
- Reduction of local speed limits
- One-way streets

## ROAD SAFETY

- Black spot treatments
- Road safety audits
- Integrated safety management

## COMPETENCE DEVELOPMENT

- Cycle co-ordinator
- Networks, seminars and conferences
- Systematised information for specialists
- Research & Development
- Further training and education
- Demonstration projects

## BICYCLE SCHEMES

- City bikes
- Company bikes
- Employee bikes
- Commuter bikes
- Hotel bikes
- Beach and harbour bikes
- Bicycle hire schemes
- Cycle trailer and basket deposit schemes in shops
- Bicycle couriers
- VIP service for commuter cyclists

## OTHER SCHEMES

- Car-sharing
- Bicycle delivery services
- Loan of bicycle lamps, rain clothes etc

## SAFER ROAD LAYOUT

- Traffic calming of major roads
- Area-wide traffic calming
- Fewer fixed roadside objects
- Bridges and tunnels at major barriers
- Cycle crossings
- Staggered stop lines
- Advanced stop lines
- Pre-green for cyclists
- Stop signs
- Speed reducing junction treatments
- Humps
- Mini-roundabouts
- Roundabouts
- Cycle tracks on rural roads

## INTERMODALITY

- Bikes-on-trains/buses schemes

## BETTER ROAD MAINTENANCE

- Smoother road and path surfaces
- Better sweeping, weed control and winter maintenance

## BETTER BICYCLE PARKING

- Bicycle parking funds
- More bicycle racks, some covered, some locked
- Cycle centres with service at major stations
- Temporary bicycle parking, possibly with surveillance

## ECONOMIC SUPPORT

- Tax deductions for cyclists



PHOTO: Linda Hansen

*Parking charges is a possible measure.*

enjoyment from physical activity and without reducing the attention paid to other road users.

In order to increase the number of cyclists it is continually necessary to introduce new measures. Economic growth lead to more and

more cars and traffic growth. To counteract this development it is continually necessary to introduce new measures every year.

At present there are many indications that campaigns, bicycle schemes and restrictions on car use produce the greatest impact on mode choice for the money spent. But to achieve a large total effect it is necessary to apply a wide range of measures <sup>129</sup>.

This *Collection of Cycle Concepts* reviews a number of measures relating, and discusses their areas of use and effects. Inspiration with regard to the promotion of more and safer cycling can also be found in a number of other publications.

### Priorities

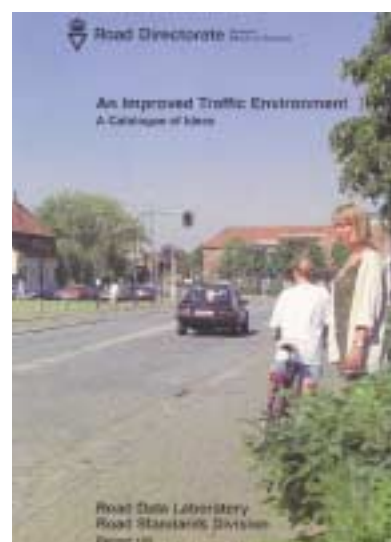
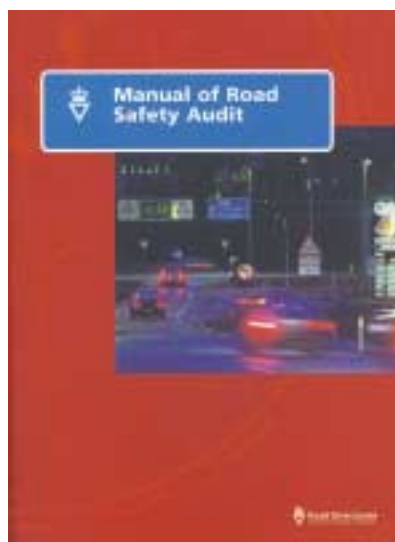
A description should be given of each individual measure that fits into the local strategy. It is a good idea to formulate alternatives with different effects and costs. Try to assess each measure in terms of modal transfer and safety effects. How many new cycle trips will the measure bring about? And how many bicycle accidents will it prevent?

It is difficult to measure effects on modal transfer – directly. A step-by-step assessment can be achieved by answering the following questions: How many road users will be affected by the proposed measure? What will the measure mean for the road user in terms of comfort, enjoyment, perceived risk, image etc? What percentage of road users can be expected to change their behaviour?

Fictitious example: A 4 week cycle-to-school competition among children. Number of children in the school: 400, 20% of whom are driven to school. This corresponds to 80 pupils or 32,000 car trips per year. Expected effect: 50% of the parents do not drive their children to school in the first 4 weeks and 20% leave the car in the garage for 6 months, corresponding to 4,000 trips being transferred from car to bicycle.

In order to draw up a budget it is necessary to estimate costs. This provides the opportunity to compare costs and effects.

It is important to review the proposed measures to identify events, key issues and possibilities of attracting attention from the outside





world to the local area and its politicians. Here are some possible priorities that can help to obtain and retain the interest:

- Projects that improve conditions at the most problematic spots first.
- Projects that produce greatest effect for the least money.
- Solid successes that are important for the public's feeling that it is worth it.
- Distribute the carrots equally, so most people benefit from the measures.

Deciding between road safety and modal transfer is a political matter. There are so many considerations to be taken into account – public health, air pollution, noise, freedom etc. A possible way forward is to ask citizens for their priorities.

### Finance

The municipality, county or state normally pays the entire expense in connection with the promotion of more and safer cycling. Other forms of financing do occur, but only to a modest extent.

Danes think that the five following measures are most likely to get them to use bicycles:

1. Better maintenance of traffic areas for cyclists
2. Campaigns
3. More cycle tracks and paths
4. Safe road layouts for cyclists
5. Restrictions on car use <sup>63</sup>

Cycle routes may be entirely or partially financed in connection with major rehabilitation of pavements and mains and cables. By drawing attention to the tourism aspect it may be possible to get co-financing from various funds, large hotels and the like.

Companies sometime show interest for road safety and traffic management projects. However, it is not known to which extent companies are willing to co-finance these projects.

Advertising-financed city bikes have already been introduced in cer-

PHOTO: Municipality of Copenhagen



The city bike – a different gift for president Bill Clinton and the people.

### A factitious local assessment of verious measures

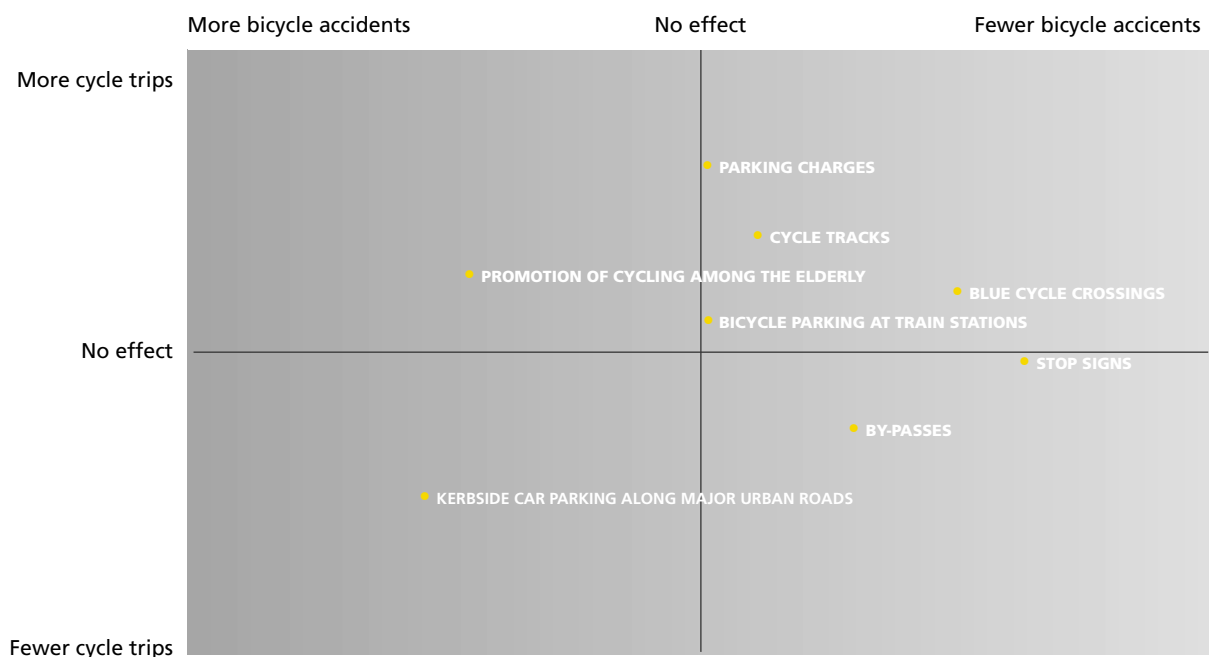




PHOTO: Linda Hansen

*Traffic calming can increase house prices.*

tain cities. Other types of measures are also to a certain extent financed by advertising, eg events and campaigns.

Traffic calming on residential streets is often exclusively an advantage for the residents. It is they who benefit from improved road safety, and their houses that increase in value. There are many examples of residential associations etc, paying for traffic calming on public roads.

User payment for bicycle parking can to a certain extent finance part or all of the expenses in connection with a bicycle parking facility. There are numerous examples of private paths and bicycle parking facilities. Sometimes chambers of commerce are willing to contribute to the financing of physical improvements to shopping streets. Campaigns for more cycling can to a large extent be financed in co-operation with other bodies, for example, organisations in the health sector. It is a good idea to create partnerships, as otherwise it may be too expensive to get the message across.



PHOTO: Linda Hansen

*Good opportunity to improve physical conditions for cyclists.*



PHOTO: Linda Hansen

*A working day for the cycle co-ordinator.*

**Realisation**

It is important to secure backing from important parties. Make sure to consider everyone. A cycle co-ordinator can ensure a good process.

Things develop quickly in society, and the plan and process must be adjusted, so that targets can be achieved. A plan is important to form basis and overview, but the budget and time schedule should

leave room for new measures to be initiated and other measures to be given higher or lower priority.

A certain issue may suddenly be taken up by the media, eg children's motor skills – seize the opportunity and create some new cycle trips for children. Or petrol prices go up – use this opportunity to make people consider their travel and requirements for cars – see new perspectives.