



**Promoting Cycling for Everyone  
as a Daily Transport Mode**

Cycling: a daily transport  
mode for everyone

**GIVE CYCLING  
A PUSH**

**PRESTO Cycling Policy Guide**  
General Framework



## The Project

PRESTO (Promoting Cycling for Everyone as a Daily Transport Mode) is a project of the EU's Intelligent Energy – Europe Programme granted by the Executive Agency for Competitiveness and Innovation (EACI).

## The Partners

Rupprecht Consult GmbH, Germany  
European Cyclists' Federation, Belgium  
European Twowheel Retailers' Association, Belgium  
Ligtermoet & Partners, the Netherlands  
Promotion of Operational Links with Integrated Services, Belgium  
Pomeranian Association Common Europe, Poland  
German Cyclists' Federation Bremen, Germany  
Free Hanseatic City of Bremen, Germany  
Grenoble Alpes Métropole, France  
City of Tczew, Poland  
City of Venice, Italy  
City of Zagreb, Croatia

## Project Coordinator

Siegfried Rupprecht, Rafael Urbanczyk, Michael Laubenheimer  
Rupprecht Consult GmbH, Cologne, info@rupprecht-consult.eu

## Project Dissemination Manager

Florinda Boschetti, European Cyclists' Federation, Brussels, f.boschetti@ecf.com

## Author

Dirk Dufour, Ligtermoet & Partners, the Netherlands

February 2010

## Linguistic Versions

Original: English

Translation (not yet available): German, French, Polish, Italian, Croatian

This English version is available at [www.presto-cycling.eu](http://www.presto-cycling.eu)

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## Other PRESTO publications (available at [www.presto-cycling.eu](http://www.presto-cycling.eu))

PRESTO Cycling Policy Guide: **Cycling Infrastructure**

PRESTO Cycling Policy Guide: **Promotion of Cycling**

PRESTO Cycling Policy Guide: **Pedelects**

25 PRESTO Implementation Fact Sheets on **Cycling Infrastructure**, **Promotion of Cycling** and **Legislation on Pedelects**





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# 1 Give Cycling a Push: PRESTO policy guides and fact sheets

Cycling policy is on the agenda in European cities. In recent years and decades, many local authorities have been undertaking a range of activities to stimulate cycling as a daily transport mode, because they are increasingly convinced that cycling is good for cities (also see the next chapter).

But decisions makers and those involved in implementation are faced with a lot of questions. How to develop an effective cycling policy? What will be the best approach in my city? How to provide high-quality infrastructure? How to promote cycling use and foster a cycling culture? The increasing success of the Velocity conference series testifies to the need for cycling policy knowledge and exchange of experiences. Success stories have become well-known as inspirational good practice. National and local design guides and cycling research and documentation centers are proliferating. BYPAD has become a key tool to assess and monitor cycling policy. Knowledge is becoming more abundant, but remains largely scattered and adapting it in a specific urban context is still quite a challenge for local authorities.

The PRESTO guidelines and fact sheets are the first effort to bundle **state-of-the-art European knowledge and experience on urban cycling policy** in an easily accessible format. They were developed not only to support the PRESTO cities in their cycling policy activities, but also to serve as **European reference guides**.

*The PRESTO project: promoting cycling for everyone as a daily transport mode:*

*Five cities and a range of experts unite in developing strategies to tap the potential of cycling in cities. The cities represent a range of diverse size, location, culture and cycling tradition. All will deploy actions in three fields: cycling infrastructure, cycling promotion and pedelecs. In the course of the project, they will benefit from training sessions and expert advice. The trainings will further be developed into a set of e-learning virtual classes on cycling policy that will later be open to any interested participants.*

[www.presto-cycling.eu](http://www.presto-cycling.eu)

The **4 Policy Guides** offer a clear and systematic framework to help decision makers develop a **cycling policy strategy**.

One policy guide presents a **general framework**, outlining the fundamentals of an integrated cycling policy. There are of course no one-size-fits-all answers. This is why the guide proposes to distinguish cities according their level of cycling development as **Starter, Climber and Champion cities**, and suggests approaches and packages of measures that are likely to be most effective at each stage.

Three further policy guides develop one policy area each: cycling **infrastructure**, cycling **promotion** and **pedelecs**. The first two of these outline overall principles, critical issues and decision making factors, without going into technical details. The third on focuses on the role pedelecs can play in urban transport and how their use can be promoted by local authorities and bicycle retailers.

The policy guides are accompanied by **25 implementation Fact Sheets** giving more detailed and practical (technical) information on how to implement a selection of cycling policy measures. They are meant as a working instrument for those involved in **implementing cycling policy**.



The policy guidance offered here is meant to be of real practical use to local authorities in defining their own cycling policy strategy. At the same time, it should be considered as a work in progress and will hopefully stimulate debate, feedback and further revisions and refinement over the coming years.

<b>PRESTO CYCLING POLICY GUIDE: GENERAL FRAMEWORK</b>	
<b>PRESTO CYCLING POLICY GUIDE: INFRASTRUCTURE</b>	<b>PRESTO CYCLING POLICY GUIDE: PROMOTION</b>
<b>IMPLEMENTATION FACT SHEETS: INFRASTRUCTURE</b>	<b>IMPLEMENTATION FACT SHEETS: PROMOTION</b>
<i>Network links</i> <ul style="list-style-type: none"> <li>• <b>Traffic calming and cycling</b></li> <li>• <b>Cycle tracks</b></li> <li>• <b>Cycle lanes</b></li> <li>• <b>Cycle streets</b></li> <li>• <b>Contra-flow cycling</b></li> <li>• <b>Bicycles and buses</b></li> <li>• <b>Cycling and walking</b></li> </ul> <i>Intersections and crossings</i> <ul style="list-style-type: none"> <li>• <b>Right-of-way intersections</b></li> <li>• <b>Roundabouts intersections</b></li> <li>• <b>Traffic-light intersections</b></li> <li>• <b>Grade separation</b></li> </ul> <i>Parking</i> <ul style="list-style-type: none"> <li>• <b>Bicycle parking and storage solutions</b></li> <li>• <b>Bicycle parking in the city centre</b></li> <li>• <b>Bicycle parking in residential areas</b></li> </ul> <i>Public transport</i> <ul style="list-style-type: none"> <li>• <b>Cycling facilities at interchanges</b></li> </ul>	<i>Awareness raising</i> <ul style="list-style-type: none"> <li>• <b>Broad promotional campaigns</b></li> <li>• <b>Bike events and festivals</b></li> <li>• <b>Bicycle/ bike counters</b></li> <li>• <b>Targeted cycling programmes – schools</b></li> <li>• <b>Safe cycling campaigns</b></li> </ul> <i>Information</i> <ul style="list-style-type: none"> <li>• <b>Bicycle maps</b></li> <li>• <b>Cycling information centres / mobility centres</b></li> </ul> <i>Training and programmes</i> <ul style="list-style-type: none"> <li>• <b>Targeted adult cycling training programmes</b></li> <li>• <b>Bike testing events</b></li> </ul>
	<b>PRESTO CYCLING POLICY GUIDE: PEDELECS</b>
	<b>IMPLEMENTATION FACT SHEET: PEDELECS</b>
	<ul style="list-style-type: none"> <li>• <b>Legislation on pedelecs</b></li> </ul>

Figure 1 – PRESTO Fact Sheets and Policy Guides

*This is the PRESTO Cycling Policy Guide on General Framework.*

## 2 Cycling is good for cities

Cycling in cities is on the rise. Local authorities are increasingly developing ambitious cycling policies. This is because we are coming to realise that cycling is good for cities. What champion cities in the Netherlands or Denmark understood decades ago is becoming increasingly clear to all: taking cycling seriously as a daily transport mode is part of a long-term urban development strategy.

Let us look at what cycling can contribute to urban transport systems and sustainable city development<sup>1</sup>.

**Cities need more than private cars and public transport.** Walking is a major transport mode in cities, and improving walkability must be a priority objective. But if we look at distances beyond walking, most cities rely to a large extent on private cars and public transport. Both have great qualities, but also important drawbacks and limitations.

- The private car is a seductive transport tool: it is flexible, convenient and can cover any area and distance. It will continue to play a major role in the foreseeable future. But in dense urban areas and over relatively short distances, cars are neither efficient, nor sustainable. City dwellers increasingly resent cars' negative side-effects: congestion, pollution, noise, space consumption (parking), safety hazards and expenses for the individual. **Too many cars are bad for cities**, in two ways. Cities become less attractive because of cars' environmental, social and public space impact. Even worse, cities tend to become less accessible. In streets clogged-up with traffic jams and cars looking for a parking space, a car is no longer an efficient way of getting around. In addition, relying mainly on cars encourages longer and dispersed trips, which encourages urban sprawl, which in turn increases car dependency. Cities are aware that alternatives must be promoted to break this vicious circle. And we should also remember that owning and driving a car is increasingly expensive and not affordable to all.
- Traditional public transport is clearly a major alternative. It is very effective as 'mass transit': transporting large groups of people at the same time to the same destination. It uses less space and fewer resources and is cleaner and more affordable than private cars. Many cities are convinced that the significant public investment needed is justified. But **public transport cannot satisfy all mobility needs**. Fixed routes and rigid timetables are not suitable for an increasing number of trips. People tend to go to more varied destinations at less regular times and for other purposes than work or school. They also tend to become more multimodal, alternating between transport modes to fit their needs. New or rediscovered services are growing: carpooling, carsharing, demand-responsive transport, taxis and shared taxis. There is clearly a need for flexible, convenient, clean and affordable solutions for trips inside urban areas.

Enter cycling. **Cycling is a highly efficient urban transport mode.** There have always been cycling enthusiasts and cycling haters. But, emotions set aside, cycling is a perfectly functional and rational mobility tool in cities. It has its place as a key component of urban transport systems. Ambitious cycle-friendly cities demonstrate how cycling can be a major answer to mobility needs. In Dutch cities, cycling represents up to 40% of all urban trips.

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<sup>1</sup> For further background and inspiration we recommend ICE 2009: *Cycling-inclusive Policy Development: A Handbook*

- Bicycles are well-suited for **trips up to 7 km**, pedelecs even for trips up to 15 km. This means that a cyclist can cover a major part of the urban area, about 150 km<sup>2</sup> around his residence. Generally, half of all urban car trips are less than 5 km. Up to 80% of Paris dwellers never travel more than 20 km from their residence in an average week<sup>2</sup>. In Bogota<sup>3</sup>, a more than 1500 km<sup>2</sup> city with seven million inhabitants, it was discovered that more than 50% of all trips were less than 7 km<sup>2</sup>. This means that cycling can cover a significant part of daily trips in all cities.
- Cycling is highly **autonomous**. The bicycle is available at all times of day, for all sorts of purposes and any kind of destination. In this sense it is just as convenient as a car, and less rigid than public transport.
- Cycling is a **flexible door-to-door** mode. It is easy to hop on and hop off, make stops, change a route, make a U-turn, and it takes up little space to park.
- Cycling has the most **predictable trip duration** in an urban environment, more than cars and public transport (except for systems on dedicated and fully segregated tracks, such as metro). Cyclists can be more punctual and waste less time.
- Cycling speed is **competitive with public transport on short distances**. Public transport is attractive on slightly longer distances. For a trip of say 5 km, the walking-waiting-bus-walking chain will often take longer than cycling door-to-door.
- For long-distance trips, cycling is a convenient **feeder for public transport**. Cycling to major public transport hubs is a win-win situation for cycling and public transport.
- Bicycles are **small, light, clean and silent vehicles**. They are easy to ride, handle, and park as well as relatively easy to maintain, lacking high-tech parts. They use up little space: a 2 m wide cycle lane can handle at least 2000 cyclists per hour, which is the number of cars a 3.5 m traffic lane can handle<sup>4</sup>. At traffic speeds of 30 km/h or less, they can be mixed with motorized traffic, without the need for extra space and simply increasing transport capacity.
- Cycling is an **affordable** complement to public transport, much more so than owning a private car. It is a very cost-effective way of widening the choice of time and destination.
- Cycling is **accessible** to anyone with a normal health condition. No need to be an athlete: men, women, children, elderly people can all cycle.
- Cycling has **manageable drawbacks**. Weather conditions, strong gradients, limited possibilities for transporting children and goods, risk of theft: these are the factors that keep many people from cycling. In fact, success stories in cities with rainy climates and hilly terrain show that these are not fundamental obstacles. At a reasonable extra cost, accessories or adapted bicycles are available to mitigate disadvantages: gears, rainproof clothing, baskets, tandems, cargo bikes or pedelecs. Of course, good parking and storage provision is crucial in preventing theft.

**Cycling contributes to urban development.** Apart from being a useful means of transport, developing cycling is sound policy in other fields: ecology, quality of life, economic development and social inclusion.

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<sup>2</sup> Marie-Hélène Massot e.a. – *Automobile et transport public*, RATP 1997, quoted in Jean-Pierre Orfeuil – *Mobilités urbaines*, Les carnets de l'info, 2008

<sup>3</sup> ICE 2009: *Cycling-inclusive Policy Development: A Handbook*

<sup>4</sup> BYPAD 2008 – *Literature search bicycle use and influencing factors in Europe*

- Cycling makes cities **cleaner and healthier**. Cycling is the cleanest mechanical transport mode. Shifting trips from cars to bicycles has immediate effects on the local urban level. Cycling does not pollute the air and is silent, to the benefit of all city users. Because of the physical activity, daily cyclists are healthier. A study found that a regular cyclist (three trips of 6 km a week) is as healthy as someone ten years younger who does not cycle<sup>5</sup>. Any sustainable city will also care about the wider ecological benefits to society, such as reduced resource consumption and greenhouse gas emissions. Shifting short trips from car to bicycle can reduce CO<sub>2</sub> emissions by 3 to 4%.<sup>6</sup>
- Facilitating cycling makes cities **safer and more livable**. Copenhagen considers cycling as essential in building a city for people. Cars may still be a status symbol for many, but local residents increasingly demand quality of life in their neighbourhoods, meaning fewer and slower car traffic. Most European citizens find the consequences of traffic unbearable (22%) or hardly bearable (54%)<sup>7</sup>. In addition, home owners will appreciate rising property values in traffic calmed areas. Whether traffic is calmed to 30km/h to allow safe cycling, or whether space is shifted from cars to bicycles (lanes or tracks) motor traffic is effectively reduced or slowed down. Research has found a safety in numbers effect: the risk of accidents is lower in cities where more people walk and cycle.<sup>8</sup>
- Cycling supports **economic development**. On a basic level, investment in cycling must be balanced against savings in car infrastructure. Also taking into account savings on health and external costs of car use, the benefits of cycling infrastructure are estimated to be at least 4 to 5 times the cost<sup>9</sup>, even up to 7 times for Bogota's bikeway scheme over a 10 year period<sup>10</sup>. A bicycle parking space can be constructed at 5% of the cost of one for a car<sup>11</sup>. Also, cycling strengthens the commercial viability of shopping areas in the city centre and neighbourhoods. This is because cyclists are more frequent and regular customers of shops nearby, as opposed to motorists driving to out-of-city shopping malls. Cycling is also an increasingly strong argument in city marketing. Richard Florida claims that urban cycling belongs to the lifestyle of the creative class<sup>12</sup>. This would mean that a cycle-friendly city is more attractive to today's knowledge workers that make up today's thriving urban economies. The emergence of 'cycle chic' and trendy accessories by fashion designers confirms this trend. Paris has got a lot of publicity mileage out of its cycle lane network and public bike system. Similarly, cycling is increasingly attractive for visitors and tourists. It is an agreeable and convenient way to explore a city, faster than walking but slow enough to take in the sights, with a high degree of flexibility and autonomy. Guided cycling tours as well as public bikes are increasingly popular.
- Facilitating cycling is a boost to **personal mobility for all**. Due to rising energy prices, driving a car will become more expensive and less affordable to many citizens. Already now, at any given moment, a majority of urban dwellers do not have access to a private car: they cannot afford one, they cannot drive one or are too young, or the car is used by another household member. For them, the bicycle is a low-cost complement to public transport that significantly widens their access to the city and all its

<sup>5</sup> Dutch Ministry of Transport, 1998 – *Eindrapport Masterplan Fiets*

<sup>6</sup> BYPAD 2008 – *Literature search bicycle use and influencing factors in Europe*

<sup>7</sup> Brög, W, 2003 – *Reducing car use? Just do it*. Lecture at the Nottingham Transport Conference.

<sup>8</sup> ICE 2009 – *Cycling-inclusive Policy Development: A Handbook*

<sup>9</sup> BYPAD 2008 – *Literature search bicycle use and influencing factors in Europe*

<sup>10</sup> ICE 2009 – *Cycling-inclusive Policy Development: A Handbook*

<sup>11</sup> BYPAD 2008 – *Literature search bicycle use and influencing factors in Europe*

<sup>12</sup> Richard Florida 2002 – *The Rise of the Creative Class*



opportunities for employment, education, culture and leisure. Especially children, students, elderly people and low-income groups can benefit from increased mobility. Cycling fits in with social inclusion policy as an equitable mode of transport.

For too long many cities have neglected cycling or tried to protect those crazy cyclists from the dangers they chose to expose themselves too. The new way of thinking is to take cycling seriously as a key mode of urban mobility, and to rethink urban transport systems in order to provide the facilities and the encouragement cycling needs.

If a city is serious about cycling policy, then **cycling must be integrated into overall transport planning** and even into **overall city development policy**. On the European level, the BYPAD audit method has been developed as an assessment tool for the quality of a city's cycling policy, ranging from the ad hoc stage to the stage of full integration. A **BYPAD audit** is an excellent way to start a constructive collaboration between stakeholders and to define policy needs. A widely recommended first step is to appoint a **cycling manager**: an official full-time in charge of developing cycling and liaising with other departments and stakeholders will give cycling policy a recognizable face. Ideally, this manager should dispose of **structural funding resources**, such as a dedicated annual budget<sup>13</sup>.

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<sup>13</sup> Full information is available through [www.bypad.org](http://www.bypad.org), including a list of certified BYPAD auditors all over Europe.

### 3 Champions, climbers, starters

Once a city has committed itself to developing cycling as a mainstream daily transport mode, the challenge begins: how to go about it? The three policy guidelines and the 25 fact sheets provide guidance on key measures and tools to implement.

Of course, no two cities are the same. There is no one-size-fits-all model for making cities cycle-friendly. Not all tools and measures will have the same potential or priority everywhere. In the end, cycling policy needs to start from a thorough local analysis of cycling conditions, destinations, needs and desires, cultures and attitudes. Each city will have to strike its own balance between infrastructure and promotion efforts on cycling policy, set out a vision and a strategy and monitor results along the way.

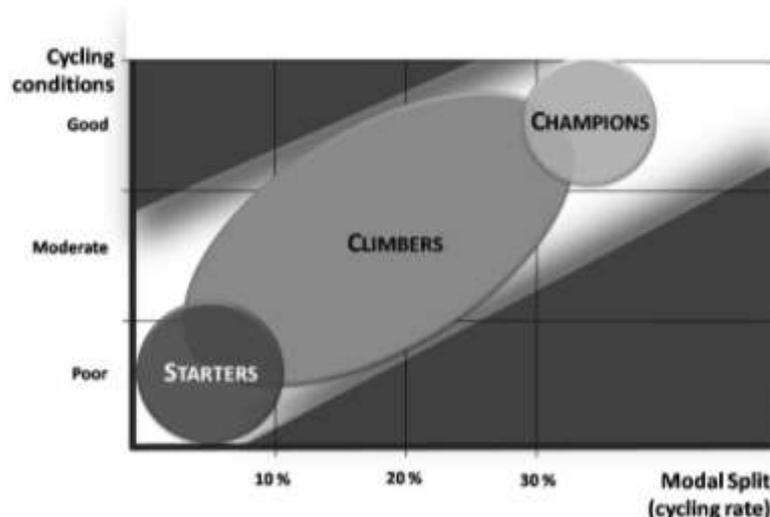
Nevertheless, it is possible to give some general guidance. One of the conclusions of BYPAD was that the package of necessary and justified cycling measures differs according to a city's stage of cycling development.

#### 3.1 Cycling development levels

The level of cycling development of a given city depends on two indicators: cycling conditions and cycling rate.

- **Assess cycling conditions:** how safe, easy, convenient and attractive is cycling today? This is a matter of cycling infrastructure, but not just that. It also depends on traffic intensities and speed levels, as well as on traffic policies such as traffic calming or car-free areas. And urban lay-out counts as well: is the city fairly compact, mixed and dense, with short distances between destinations, or is it more sprawling and car-dependent? Conditions may vary between areas within the same city.
- **Measure the cycling rate:** which share of daily trips is done by bicycle? This is a clear-cut quantifiable indicator, to be defined by on-street counting or surveys.

Figure 2 – Starter, climber, champion cycling cities



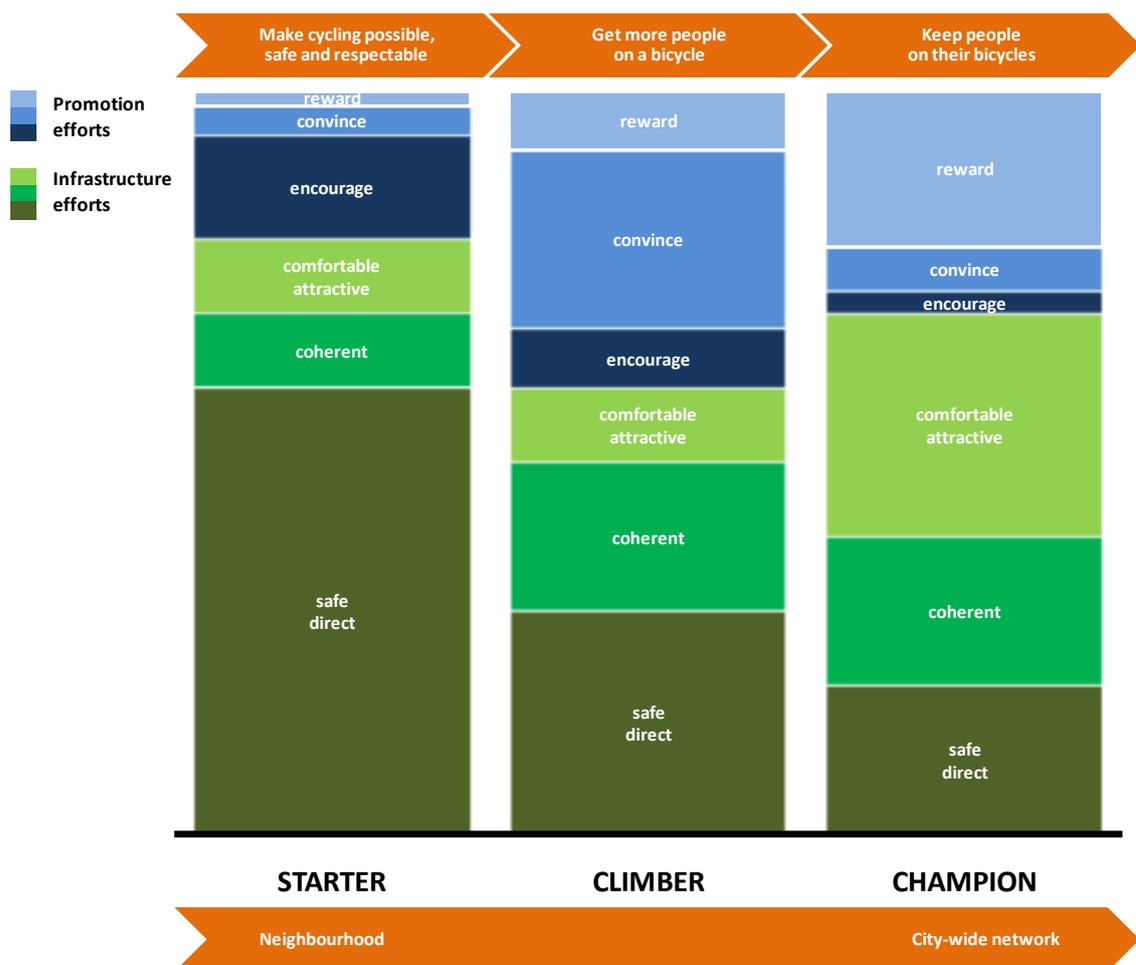
Broadly speaking, **the cycling rate rises as cycling conditions improve**. This also works the other way round: as more people cycle they will demand ever better conditions. Starters

have a low score on both, champions a high one. There will be no cities with top-notch infrastructure and no cyclists, and none with impressive cycling rates and awful conditions.

But a large and diffuse group of **climber cities faces very diverse challenges**. There are cities with mid-range cycling rates (roughly between 10% and 30%), although cycling conditions are really quite poor. Then again, some other cities have made efforts to improve cycling conditions, but cycling still remains at disappointingly low levels.

The following diagram suggests a **sequence of cycling development efforts across the three cycling stages**<sup>14</sup>. There is no direct correlation between a single specific measure and the effects on cycle use and safety. But it is possible to define broad aims and packages of measures more suited to each level of cycling city. Taken together, these can guide cities in developing a step-by-step strategy to take them from starter to climber and to champion level and beyond. To our knowledge, such guidance is not available so far. Many excellent manuals and guidelines have been produced in countries and cities at the top end of the cycling scale, but they are intimidating and hard to transfer for starter and even climber cities.

Figure 3 – Sequence of cycling strategy efforts



The diagram illustrates a number of ideas. Cycling policy at each level has **different aims**, from making cycling possible, safe and respectable to getting people on a bicycle and keeping people on their bicycles. This requires a **different policy mix** of infrastructure and

<sup>14</sup> These recommendations are consistent with the BYPAD quality levels in cycling policy.

promotion efforts, with greater efforts on infrastructure in the starter and champion stages, and more on promotion in the climber stage. And within infrastructure and promotion efforts, the focus will also vary. Finally, the diagram suggests **different scales** for cycling policy, starting on a neighbourhood level and progressing to a city-wide cycling network.

These ideas are further developed in the following points.

Please note that the proportions in the diagrams are **indications of relative effort**. They cannot be read as quantified indications of cost or investment. Overall costs are likely to be lowest at the start and to keep rising, as infrastructure is extended to a city-wide network and as it moves to more costly high-profile efforts, such as large-scale bicycle stations or long-span cycle bridges. Promotion costs are overall much lower than infrastructure costs.

The diagram also suggests that all sorts of measures may be relevant at all levels, but that the focus may need to shift. This reflects **the levels at which specific efforts are likely to be most effective**. Cities should of course adapt this to their local situation and move measures forward or back as they see fit.

### 3.2 Cycling levels and policy mixes

Let us first consider the aims at each stage of development, and the shifting balance between infrastructure and promotion efforts.

**STARTER CYCLING CITIES** are faced with the hardest challenge. There are few cyclists, there is little infrastructure and there is no cycling culture. Facilitating cycling is like going against the stream. Since there is little apparent demand, political support and funding are hard to come by. How to get momentum going?

First of all, we should realize that there is always an important **latent demand** for daily cycling. Most people love cycling, at all ages. And in most cities quite a few people do cycle, but only for leisure, at weekends and outside the city.

But then why are there not more daily urban cyclists? Basically, because they feel **cycling is unsafe and not respected**. Let us consider the worst case scenario. On most roads and streets, **traffic** is simply too heavy and too fast to cycle safely. There are probably some quiet and safe areas, but not enough to get cyclists safely from their homes to their destinations. At the same time, **road design** is car-oriented and does not take into account cycling. There is little or no **cycling provision**: no tracks or lanes, no signage or markings, no parking stands or storage. Often nothing in public space suggests that cycling is even possible.

In such conditions, most people will, very reasonably, feel unsafe, uncomfortable and uncertain on a bicycle. Only diehard cyclists are willing to face the challenges: they need to navigate through dangerous traffic or find safe routes that are often long and complicated. Motorists' attitudes make things worse: understandably, motorists are unaware of cyclists and unfamiliar with their behavior and possibly hostile when they meet them, treating them as irresponsible intruders.

How to turn things around and make people cycle more? Obviously, **significantly improving cycling conditions** is an indispensable first step. In this sense, infrastructure is the best promotion. Essentially and crucially, infrastructure efforts must **make cycling safe**. Additionally, by giving cyclists room in urban space, infrastructure sends the message to all that **cycling is possible and respectable** and a normal way of moving about. Finally, it **signals commitment** from the authorities.

This does not mean, however, that a full city-wide high-quality cycling infrastructure must be built in one go, as is explained below. But only when people see significant improvements in the field, will they be ready to change their behaviour. If cycling is dangerous, it is not realistic to try and influence mentalities by means of promotion only: few people will be convinced, and many will feel such a policy to be irresponsible.

Still, promotion will be needed to **publicize the infrastructure improvements** and stimulate people to start using them. Communication can start as soon as there is clear commitment to an improvement program. In car-oriented cultures, this will provide the opportunity to put cycling on the map and devise marketing strategies to rebrand cycling.

Once a city has reached the **CLIMBER CYCLING CITY** level, cycling is safe and convenient in many areas of the city. At the same time, the cycling rate is such that cyclists are a visible presence in the urban landscape. There is no doubt about cycling demand, although the potential level is not clear yet, and cyclists are respected as a partner or pressure group.

At this stage, efforts must continue to **expand and diversify cycling infrastructure**. But at the same time, there is still a large potential for shifting from car trips to bicycle trips. That is why promotion efforts are important to **attract new cyclists**.

At the **CHAMPION CYCLING CITY** level most short distance trips are made on foot or by bicycle and a city-wide fine-meshed cycle network is in place. It is not necessary any more to convince people of the advantages of bicycle use, but the challenge is to keep people on their bicycles. Cyclists will demand and expect ever higher levels of quality. At this stage, important infrastructure efforts will again be needed, but now to **upgrade infrastructure** to offer higher degrees of quality and comfort. At the same time, promotion efforts must be kept up to **keep daily cyclists satisfied**, by offering them state-of-the art information and benefits as a reward for their cycling efforts.

### 3.3 Infrastructure: from cycle neighbourhood to cycle city

Let us have a closer look at the varying infrastructure needs at the various cycling levels. Of course, champion cities are a source of inspiration and knowledge. But, obviously, starter and climber cities cannot be expected to reach the same total quality in one giant leap.

First, we need to clear up a still widespread misunderstanding: **cycling infrastructure does not mean a grand city-wide master plan of wide cycle tracks separated from traffic**. This is often well-intentioned, but it is really a misguided effort to keep cyclists away from traffic, for their own safety and without reducing traffic volumes and speed. It is now well-known that cycle tracks strongly increase risk at intersections. Moreover, cycle tracks may not be what cyclists need or want most: tracks restrict their freedom, especially if they are mandatory. Moreover, implementing such a master plan is costly and time-consuming, and finding support and funding will most often be impossible. If this is seen as the only possible approach, then chances are that nothing will be done until everything can be done, which is most likely never. Or it may be built in scattered bits and pieces over a long period, piggybacking on other infrastructure projects, taking very long to have any impact at all on cycling use.

A more useful starting point is the Dutch quality requirements for cycling infrastructure, which have been widely accepted and taken up in many manuals. The ideal cycle network should consist of routes that are **safe** (mixed with quiet traffic or on well-designed specific provision), **direct** (taking cyclists to their destinations via the shortest and quickest routes),

**coherent** (connected into a city-wide network), **comfortable** (smooth surfaces and kerbs, well-lit etc.) and **attractive** (taking cyclists through agreeable environments).

If all criteria are important at any stage, the priorities may differ. What are the key infrastructure requirements for **STARTER CYCLING CITIES**? Their basic requirements are **safety** and **directness**: people will start cycling if they can cycle safely and easily from their homes to other destinations nearby. This implies that a city-wide network (cohesion) is not essential at first for the individual cyclist and that a local area approach is likely to be an effective way to start.

Cities should start by **making selected high-potential neighbourhoods cycle-friendly**. By systematically improving cycling conditions across an entire area, local people can start cycling for local trips. This is likely to attract more cyclists faster than introducing piecemeal infrastructure scattered over the city or starting with long-distance routes.

- **Neighbourhood opportunities** can be identified by taking stock of streets and areas where it is already largely safe to cycle, away from heavy traffic. Especially residential areas outside the city center should offer opportunities to set up a local network of safe cycle routes on local streets that service neighbourhood centres, local schools and shops as well as transport nodes.
- Any existing cycling provision in the neighbourhood should be preserved and upgraded. But in most parts of residential areas cyclists can mix with traffic, if traffic is mainly local, limited and at slow speeds. Where cycling conditions need to be improved, **invisible infrastructure** is the key: traffic reduction and traffic calming instead of cycling specific provision, such as lanes or tracks. **Traffic reduction** means deviating through traffic to main roads. The most effective cycling measure may be a bollard in the middle of a road, blocking access to cars but allowing cyclists and pedestrians to pass. Relatively simple **traffic calming** measures can reduce speed, making streets and intersections safer for all, including cyclists: narrowing streets, speed humps and speed tables, small roundabouts, pedestrianising, shortcuts through parks, home zones. Residents will generally welcome such measures, because there are wider **community benefits**: a quieter and safer living environment and higher-quality public space.
- In addition, a basic level of on-street **parking** should be provided, especially in busy areas and at major public transport hubs. Neighbourhood parking storage can be useful where residents do not have sufficient private space to store bicycles overnight.

Once a neighbourhood is well equipped for cycling, limited promotion efforts should suffice to attract cyclists. Because the benefits are so immediately visible, adjacent or similar neighbourhoods are likely to claim similar measures. As more neighbourhoods are made cycle-friendly, connections between areas will be created and the network will start expanding.

- In **CLIMBER CYCLING CITIES** a basic provision of cycling infrastructure already exists in varying degrees in different areas. Safety and directness are still important, but a new major challenge is **improving network cohesion**: linking up safe cycling areas into an expanding network, so that cyclists can easily move about between areas, across the city over longer distances. This will also mean tackling more difficult, busy areas, major road links and barriers. Options to consider at this stage:
- Creating **high-quality and high-profile links** on separate tracks to form a backbone of major routes, for faster cycling over longer distances, connecting city areas and

serving major urban destinations. This may well include links to peripheral areas, for commuting and recreation.

- Tackling key **obstacles**. Black spots in the road network need to be made safe for cyclists, for instance by providing cycle-friendly roundabouts or traffic lights. Spatial barriers such as waterways, motorways and tracks, need to be considered: providing strategically located safe crossings, cycle bridges and cycle tunnels can open up high-potential cycling routes away from traffic.
- Making the network more **fine-meshed** with extra links to avoid detours. Much can be done with low-cost measures such as regulation, signage and markings: cycle lanes (marked on the carriageway), contra-flow cycling, advanced stop lanes, shared bus/cycle lanes, advisory lanes, and shortcuts through parks. For all of these measures, quality design is essential.
- Creating a cycle friendly **city center** using pedestrian areas and serving shopping zones, public transport hubs and employment.
- Providing **public bikes**, a more important effort, to boost cycling with low bicycle-ownership rates and for visitors.
- Providing **safe storage facilities** at transport hubs, such as lockers, supervised or automated storage.

Developing a city-wide network requires a fine balance between advance planning and progressive use of ad-hoc opportunities. An initial analysis of major opportunities, key urban destinations and desirable essential network links is useful to provide guidance for local interventions. This should be refined locally and progressively area by area as implementation progresses. The overall network development should be constantly monitored, evaluated and updated.

In **CHAMPION CITIES**, a sizeable network of safe and direct routes is in place, and cycling is common most everywhere and most of the time. Cyclists will feel bold enough to demand **ever higher quality**. To keep people on their bicycles, the priority will now be to make the network more **comfortable** and **attractive**.

- **Maintenance** is crucial. Cycling infrastructure must be kept in good condition and usable in all weather conditions. The comfort standards of the road surface, borders, radii etc. should be evaluated and improved where needed.
- **Upgrading infrastructure** may be needed to adapt to rising intensity of use. Lanes may need to be converted to tracks or tracks may need to be widened: the demand then justifies further shifting space from cars to bicycles, for instance by taking out traffic lanes or parking lanes.
- **Improving cycling flow and speed** to accommodate larger numbers on main links: cycle-friendly traffic light regulation and green waves, conflict-free cycle highways, right-of-way for cycle crossings.
- There will now be support and justification for **high-profile dedicated infrastructure**. Long-span cycle bridges can create new links and become landmark architecture. Transport hubs can become large-scale bicycle stations, combining parking and services. On the city edge, bike-and-ride facilities can offer car commuters easy cycling access for their last lap into the city.

Infrastructure policy is developed in more detail in the PRESTO CYCLING POLICY GUIDE: INFRASTRUCTURE and the accompanying fact sheets. The PRESTO CYCLING POLICY GUIDE: PEDELECS discusses specific infrastructure issues related to electrically assisted bicycles.

### 3.4 Promotion: encourage, convince, reward

Cycling promotion has become quite sophisticated. Knowledge, experience and good practices are available on segmentation and focusing on various target groups, and when and how to use a range of tools towards various aims, from awareness raising and information to training and education<sup>15</sup>.

For cycling promotion as well, the focus and the priorities are likely to shift according to the level of cycling development in a city.

In **STARTER CYCLING CITIES** promotion will be most effective if it tries to **encourage those who just need a slight push to start cycling or to cycle more**. They are the easiest to convince by basic but visible improvements in cycling conditions.

- **Advertising efforts for improved cycling conditions** and their visible results is crucial to highlight the city's commitment, to wake people up to the possibility of cycling and to give them the opportunity to discover the developing network. This will encourage existing daily cyclists to keep going, occasional cyclists to cycle more, recreational cyclists to try it for daily utilitarian purposes, and bike-owners who gave up on cycling to give it another try.
- **Awareness raising and information tools** should be developed. Publicity campaigns, a bicycle guide, a regularly updated cycling map and inaugurations for new infrastructure are just some of the options.
- **Cycling activities and events** allow people to try out cycling and be personally involved. Local residents can be invited to participate in field visits to define cycling needs and opportunities. Bicycle festivals and guided tours allow people to discover cycling and develop a positive cycling mood. Car-free days are an excellent occasion for large-scale bicycle events. Bike testing events with retail partners are an excellent way to allow people to discover the quality and range of today's bicycles and accessories.

In **CLIMBER CYCLING CITIES** the new challenge is to reach more people and get them on their bicycles. The main aim is now to **convince and activate those who still hesitate**, from school children to the elderly, from commuters to leisure cyclists, from women to immigrants. Promotion should create **positive associations for cycling**, stressing the benefits appealing to various target groups: cycling is fun, cool, healthy, fast, and convenient and makes me more independent.

- Partners can be motivated to participate in **targeted campaigns**. Schools, employers and shop owners can be sensitized to cycling and support such schemes as bikepooling, bike-to-work campaigns or competitions or vouchers for cycling shop customers.
- Uncertain cyclists and schoolchildren can benefit from **test rides, training and education**. They can be taught how to cope with traffic safely and how to use existing infrastructure most efficiently.

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<sup>15</sup> Probably the most comprehensive English language overview is offered in Marketing Cycling Handbook 2004: Bike for all. National Cycling Strategy Board.

- **Safety campaigns** are in order, to alert both cyclists and motorists to potential risks and incite mutual respect and safe behavior. Visibility and the roadworthiness of the vehicle are also to be stressed.
- **Financial and tax incentives** should be considered, for instance by inciting or obliging companies to pay an allowance for cycling to work, or by subsidizing starting cyclists or specific accessories or types of bicycles, such as cargo bikes or pedelecs.

In **CHAMPION CYCLING CITIES** large numbers of people already cycle on an extensive cycling network. The additional challenge is to keep people on their bicycle. Promotion must **continuously reward and support cyclists**.

- More **extensive and sophisticated information** should be considered. Route signaling, cycling maps and websites must be continuously updated. The network is now extensive enough to develop cycle route planners and GPS services, catering to different users: the fastest, easiest, quietest or safest route.
- **Bicycle centres** can serve as central contact points for information and services, such as repairs and rental of bicycles and accessories. Visitors, tourists and newly arrived inhabitants and workers can be issued cycle information packs, ideally part of sustainable mobility packs.
- Partnerships can be set up to offer new **cycling benefits**, such as an integrated ticket for public transport and supervised bicycle storage. Cycling events, festivals and conferences can become large-scale urban parties.
- **Individualised marketing** can be considered to approach individuals from the most reluctant target groups.
- The city can market its **trendy cycle-friendly city image**. Public bicycle counters display for all the important numbers of cyclists. City marketing can create a sense of pride, just like hosting major cycling events, such as Velocity. Cycle chic, for instance designer clothing or accessories, can make cycling trendy.

Promotion policy is developed in more detail in the PRESTO CYCLING POLICY GUIDE: PROMOTION and the accompanying fact sheets. The PRESTO CYCLING POLICY GUIDE: PEDELECS discusses how electrically assisted bicycles can be integrated in a promotion strategy.

### 3.5 Towards a cycling policy culture

A recent study of ten champion cycling cities all over Europe has identified the key success factors: a **long-term commitment to an integrated cycling policy**<sup>16</sup>. Strategies can differ and need to be adjusted repeatedly, but the key is the willingness to maintain the effort on all aspects of cycling.

Throughout the three stages it is crucial to keep strengthening and consolidating cycling policy. The BYPAD audit method is a way of assessing and monitoring the quality of an integrated cycling policy. Let us just highlight three recommendations to support an effective cycling policy culture.

- Cycling policy should progressively become **institutionally integrated in urban management and planning**. The role and resources of the cycling manager should be

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<sup>16</sup> Dirk LIGTERMOET, **Fietsberaad Publicatie n° 7: Het fietsbeleid van de Europese toppers: langdurig en integraal**, 2009; An earlier version is available in English: **Publication n°7: Continuous and integral: The cycling policies of Groningen and other European cycling cities**, 2006

consolidated. Cycling needs should be taken into account in all relevant public departments at all levels, especially transport infrastructure, traffic management, land use planning and urban design. Regulation tools can be developed, such as mandatory cycle parking in new housing, a mandatory cycle audit for new road infrastructure or inclusion of cycling in school and corporate transport plans. The city should network with other cities on cycling policy. In town and land-use planning, new development should favor compact and mixed city development, including cycling provision.

- As cycling progresses, **monitoring and research** become increasingly important, to foster knowledge and innovation. Cyclists should be actively encouraged to give feedback, through a telephone number or an online reporting platform, with fast response and follow-up action. Bicycle counters can monitor the use of the network, and provide valuable input. User surveys should shed lights on the needs of cyclists and potential cyclists. Cycling safety must be constantly evaluated and accidents analysed in detail. Finally, the city can participate in networking with other cities and joint projects and research.
- Authorities should build a constructive **alliance with local cyclists and retailers** and cycling associations. Their experience in the field is invaluable. They can help to create and support a cycling vision, to map out a cycling network and to aid in its implementation and promotion.