Efficient Planning and Use of Infrastructure and Interchanges

niches

GUIDELINES FOR IMPLEMENTERS OF

Innovative Cycling Facilities for Interchanges

NICHES+ is a Coordination Action funded by the European Commission under the Seventh Framework Programme for R&D, Sustainable Surface Transport

What is it about?

Characteristics

Depletion of cheap and easily available fossil fuels will bring non-motorised transport modes to the fore, especially for short distances in local areas. Bicycles are a promising alternative to the car as feeder transport to interchanges, if they can be parked safely and securely. Combined use of cycling and public transport (PT) is one of the best alternative solutions to the car.

Innovative cycling facilities at interchanges:

- add a sustainable mode of transport to the interchanges;
- make the travel chain more flexible;
- offer comprehensive services like secure (guarded) bicycle storage (easy to use parking system) and maintenance services;
- function as entry points for easy access to the station;
- achieve door-to-door travelling.

Underground bike parking in Zutphen
Photo: www.fietsberaad.nl

Key Benefits

Innovative cycling facilities at interchanges:

- reduce the necessity for car ownership and use;
- increase the combined usage of PT and bike;
- help shift towards sustainable modes.

Combining cycling and public transport in the Netherlands

In the Netherlands, the public transport stations and stops (metro, tram, bus) are very well equipped with bicycle storage facilities.

88% of all Dutch households own at least one bike, but the majority have two or more. Public bikes play a complementary role for the last mile of the journey, from the rail, metro station, or bus and tram stops to the destination.

In October 2006, the town of Zutphen opened the first free guarded NS (national Dutch railway company) parking facility in the Netherlands. Underneath the station square, a high quality parking facility for 3,000 bicycles was constructed with a beautiful pedestrian area at ground level.

Is this something for us?

The concept definitely generates an increase in multimodal travel in the form of combined public transport and cycling use. This should facilitate mode shift from cars towards more sustainable travel choices. Further important impacts include:

- easier and more flexible access to interchanges;
- a community-building effect, which enables people to become familiar with soft transport modes.

"With two-storey parking systems for bicycles, we can offer comfortable bike+ride facilities at highly frequented stations. Many cyclists in Munich use bike+ride the whole year round."

Hep Monatzeder, Deputy Major, Munich

"Cycling is a healthy way to travel, and it delivers environmental benefits for the entire community ... We want to support the increasing number of cyclists by providing them with the facilities and programs that they need ... Our aim is to make cycling as safe and easy as possible, so that it's not only seen as transport for a small number of people, but an everyday part of getting to shops, schools and work."

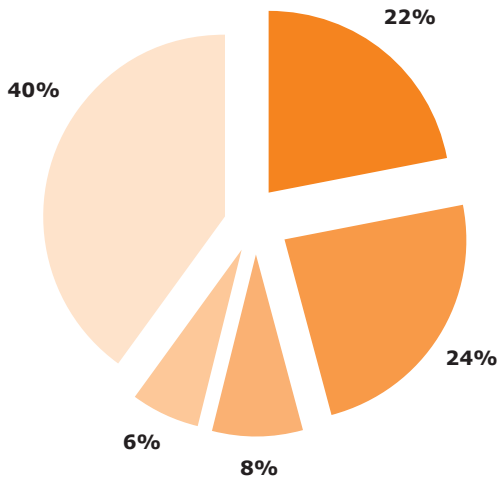
David Campbell, Minister for Transport and Minister for the Illawarra, Sydney, Australia

Check list

City size	Not relevant. Any kind of interchange could be equipped.
Costs	One of the cheapest available transport investments. See next page for details
Implementation time	Short term (1-2 years)
Stakeholders involved	• Local authority; • PT operator; • Interchange owner/manager; • Cyclist associations; • Cycling service providers.

If the price of gas continues to rise, is there a point at which you would consider switching from car commuting to:

- Cycling (22%)
- Public Transit (22%)
- Car Pooling (22%)
- Other (22%)
- Not relevant to me (22%)



Cycling and public transport together take 46%

Cycling and Bike Lane Survey June 2009, as mentioned by Peter Milczyn, Councillor, Toronto

Benefits & Costs

Benefits

The key economic benefit comes from the generalised **travel cost saving**. An interchange equipped with cycling facilities provides flexible choice of transport modes and reduces passengers' waiting times.

The higher the number of bikes, the larger the decrease in the number of cars: each bike at an interchange means one car less. This in turn produces less saturated car parks, lower congestion levels on roads, decreasing emissions, accidents and noise. These effects can also be calculated as cost savings.

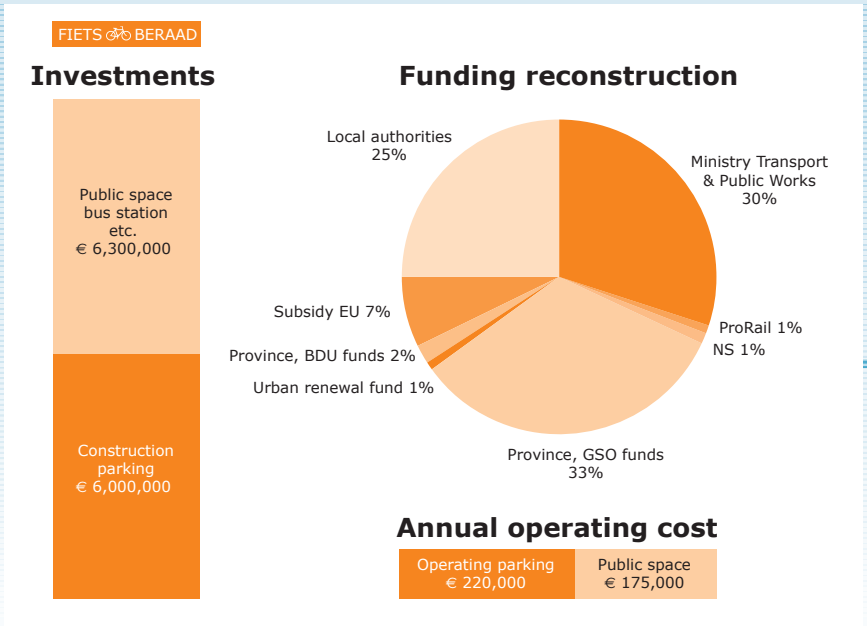
The interchange can benefit from attracting bike users as new customers by providing targeted services for them, like bike maintenance, washing facilities, guarded bike storage, and so on.

European transport policy supports sustainable and non-motorised modes as the constraints of private car usage across Europe are increasingly evident and widely known. The benefits of this concept satisfy mainstream European policies towards sustainable transport.

Costs

In general, it can be said that the costs of this concept are low. Of course, very much depends on the context or the scale of construction works required. An underground bike parking facility, like the one in Zutphen (NL) costs around € 6 million, but a simple docking facility for a small station only costs a few thousand Euro (see below). Operation costs are relatively high where staff and surveillance exists, but can be practically zero in simpler cases.

Simple bike facility at a bus stop in Drenthe
Photo: www.fietsberaad.nl



Zutphen underground bike parking
Source: www.fietsberaad.nl

Users & Stakeholders

Users and target groups

Key target group is the **general public**. Although cyclists are the main target group, it should be considered that the success of a project implies that even those who have never cycled may become bike users, whether they are PT users, car drivers or pedestrians.

Cyclists
One of the most important issues for cyclists is to create a mass of cyclists on the street. Accessibility and spatial coverage of infrastructure and cycle parking should also be available.

Secure parking for cycles, and safe, convenient access to stations is crucial.

PT users/daily commuters
They require a flexible combination of bicycle and public transport, complemented by public bikes.

Tourists/pedestrians
These groups need to be provided with a simple and cheap opportunity to try out and get accustomed to cycling.

Key stakeholders for implementation

Most cities tend to implement green and sustainable modes of transport, and reduce car ownership and usage. Innovative cycling facilities at interchanges help to combine bicycles and public transport, and offer a competitive solution to the car. An effective project team should involve a small number of professionals, and a competent and highly interested local politician.

Local authority/PT authority
Their role is to co-ordinate with the mayor and the decision makers. Some funding may come from the local authority, so they have some influence in the planning process as well.

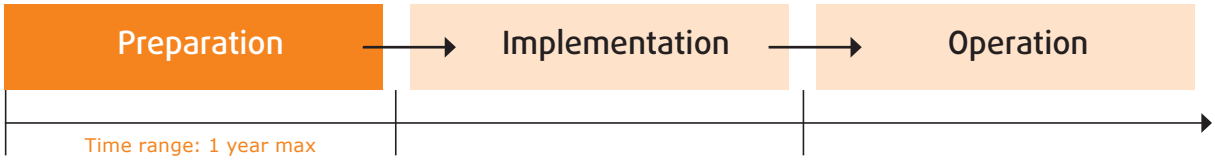
System provider
Their involvement is important because of their practical knowledge in the field of cycle parking. They are responsible for implementing the system.

Market analyst
Responsible for promotion, mapping user needs and identifying suitable locations for bicycle parkings, facilities or public bikes.

Urban planners and **financial advisors** should also be involved in the implementation of the concept.

Lift up bike parking in Zagreb, Croatia
Photo: R. Marin, www.bikepark.auto-mart.hr

From concept to reality
Preparation



Measures which should be planned at this stage are bike parking and docking stations at interchanges, stations and stops, and, as an added function, public bikes in the most common rail and metro stations, tram and bus stops (dependent on the context conditions). The whole process should be supported by promotion of bike usage (environmentally friendly, sustainable, comfortable, healthy, quiet, etc.) by the press, local and national authority, PT operator, and advertising by the public bike operator.

Key aspects at this stage

An important issue is to put cyclists on the street, even if there is a lack of infrastructure (bike routes). The sense of being part of a group, a mass of cyclists provides safety in numbers. More cyclists on the street inspire others to switch to the non-motorised, environmentally friendly mode of transport, starting a process of empowerment, which will result in an increasing demand for infrastructure, service and legislation.

In order to achieve this, a key element is the promotion of bike use, which should not only be a task of the press/media, but also of transport operators and the local authority.

Equally essential elements are the accessibility and spatial coverage of bike parking and docking stations. If both are perfectly or almost perfectly addressed, the daily transport mode decision becomes much more flexible. That means people feel free to use public transport in the morning, and bikes in the afternoon (dependent for example on the weather, or the type of work to be done). Plenty of variations are conceivable. Thus, bike usage (especially if a public bike system is also included in order to reach a higher level of flexibility) becomes a new segment of public transport.

It is useful to include public bikes in this concept, because they provide the opportunity for beginners to try out cycling as a cheap and simple mode of transport. The second step is that they use their own bikes and want to leave them in safe locations at interchanges when switching to public transport.

Creating political support

Balance should be found between car users, pedestrians, and bike users as these groups are in competition for roadspace. The low costs associated with promoting cycling infrastructure are seen as an important success factor, particularly in countries where economic conditions do not support large-scale investment in public transport infrastructure and services.

In many countries with limited motorised mobility, cycling has a poor reputation. In these contexts, political commitment to the promotion of the benefits of cycling and the provision of complementary services at interchanges (e.g. cycle hire, maintenance and secure storage) are key success factors. An unsympathetic policy environment can be a barrier – such as the case in Budapest, where cycle parking was not allowed inside a park & ride car park Budapest. It is also important that interchanges take full account of the need to promote the use of cycling and integrate the needs of cyclists into the facilities and services provided at interchanges.

When space is not enough
Photo: Ruud Albers

Topology and climate must be taken into consideration. A flat environment and sunny, mediterranean weather helps to make the concept popular, but there are examples where such measures succeed under more extreme conditions e.g. Scandinavia (see the example below).

It is important to note that low public transport network density (mainly in city peripheries) encourages the spread of the concept, as it satisfies the requirements of using the bike as a connector to the public transport services.

Stakeholder network
Cyclist associations need to be involved, as they have practical knowledge and know-how, and have the ability to join forces with other NGOs in order to achieve success.

In some ways, times of economic crisis are ideal to encourage uptake of this concept as it is low cost, easy to implement and popular.

Ready for implementation?	✓
Political commitment	
Public expectations (market research)	
High bike ownership	
Safe environment for cyclists	
Free space for bike parking	

Multi-modal transport interchange, Lund, Sweden

Lund, 60 000 inhabitants, is the major city of the Skane county, in the western part of Sweden. In order to re-structure transport services and to improve mobility, the transformation of the central railway station into a multi-modal interchange located in the middle of the city was completed in 1997.

One general objective was to favour PT usage and non-motorized trips, as in many European cities. The Lund municipality particularly wanted to favour bicycle usage. An agreement was signed between the municipality of Lund , Swedish Rail and the Public Transport Authority of the region (PTA). The big reconstruction of the railway station offered transfer opportunities between all the public and private transport modes. It included provision of increased Park and Ride capacity, connection of two sides of the citythrough the construction of a bicycle bridge, increased Bike and Ride capacity, etc. All categories of population are using the interchange facility, which substantiates its role as a means of social inclusion. Cyclists are authorised to use lifts within the interchange, which reduces their travel distances and efforts.

From concept to reality
Implementation

The degree to which a cycling culture exists in a city is a crucial determinant of the nature and magnitude of issues faced when coming to the implementation phase. Preliminary attitudinal surveys and the analysis of trip statistics should enable an assessment of the level of cycling culture which prevails in a city.

Similarly, an assessment of local conditions for cycling is important, e.g. topology, local related legislation, existing provision of facilities. Potential impacts (both positive and negative) from implementation upon other modes should be considered.

Key aspects at this stage

Safety and security issues are very important for cyclists and should be accounted for in implementation.

Promotion, such as advertisement campaigns, should be well targeted to potential users.

Overall, the prospects for feasibility are strong due to the low cost and ease of implementation.

Creating political support
A great advantage of the concept comes to the fore at the implementation phase, namely the low investment costs. Also the existing environment does not have to be heavily encroached. These aspects are crucial to encourage political support.

Stakeholder network
The concept should be promoted to get make people familiar with the idea of using their bike as a mode of transport. The promotion should emphasise advantages of the project, introducing it as a cheap, healthy, sustainable, and flexible way of transport. Local media and press are useful partners for this task.

The system provider needs to be selected carefully, preventing minor failures which can become a strong constraint later. Public consultations are important during the planning phase to help the system provider avoid these minor mistakes. Public experiences can provide useful practical suggestions.

Lessons learned from Bicibur system (Burgos)

After launching the (public bike) system, the first problem that occured in Burgos was the vandalism of the bikes. This was solved by changing the operation interval (closing earlier) and by better positioning the cycle parks.

The cycling facilities at stations are operating non-stop, so the positioning must be carefully selected.

None of the systems works perfectly at the beginning, so in the implementation phase – in the short term at least - the focus should be on the barriers.

A crucial situation is the first use of a system: it must be easily accessible, easy to use and attractively designed. The completion of the network and improvement of quality is a priority in the long term.

Cycle parking at West Railway Station
Photo: András Székely

Cycle parking at West Railway Station, Budapest, Hungary

NGOs with cycling interests are getting stronger and stronger in Hungary. After the successful co-operation between Hungarian Railways and the Hungarian Cyclist Club (HCC) on 'Cycle to work' campaigns, the Club decided to implement a cycle parking facility at one of the main railway stations in Budapest. The excellent relationship between the Railways and the Club allowed to manage the preparation works as fast as possible.

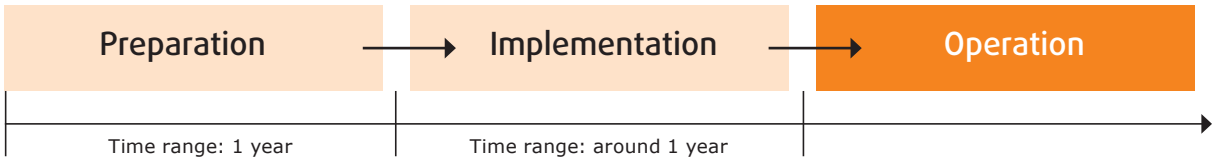
Suburban rail is one of the main transport modes for daily commuters. Most of the suburban lines end at West Raliway Station, so for these practical reasons, the facilities were designed here, close to the tracks.

Construction works were carried out by the railway company for a budget of no more than €1500. The success was proven by the dozens of bikes which filled almost 100% of the parking places a few days after the opening.

The Club and the Railways are now planning to implement similar cycling parking facilities at 40 stations across the country in strong co-operation with the local authorities.

As this example demonstrates, such measures rely on willingness and partnership rather than money!

From concept to reality
Operation



Surveys should be carried out on an ongoing basis to confirm whether the capacity is adequate and the facility is located optimally.

Conflicts can still arise between pedestrians, bike and car users. These can be addressed through promotional campaigns.

Key aspects at this stage

The importance of integrated ticketing becomes apparent during the operation phase, as it influences the acceptance of the concept.
It is a challenge to engage a car-based society with the idea of using the bike, which is why continuous promotion is needed.

Creating political support
Political support is required to engage the media for promotional purposes. See example below.

Stakeholder network
At this stage of the project, safety and security are of major importance. Co-operation of the interchange staff and the police is required to minimise theft and other crimes.

Effective promotion of sustainable travel options
Photo: Worcestershire County Council

Choose how you move

Choose How You Move Campaign in Worcestershire

The project, started in 2004, aimed to explore smarter choices to reduce congestion through marketing campaigns, travel information, training and confidence building, etc. The results were surprising: modal split increased for walking by 19%, cycling by 31% and public transport by 24%, while car traffic decreased with 13%.

Further information & contacts

Further information

www.fietsberaad.nl

www.bikepark.auto-mart.hr

www.smoove.fr

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The mission of NICHES+ is

to build on the success of the first NICHES project by stimulating a wide debate on innovative urban transport and mobility between relevant stakeholders from different sectors and disciplines across the EU and accession countries, in order to promote the most promising new urban transport concepts, initiatives and projects and transfer them from their current "niche" position to a mainstream urban transport application.
This publication is part of a series of 13 publications presenting the NICHES+ outcomes.

NICHES+ Champion City: Skopje (FYROM)

Innovation for cycling
Skopje, the capital of (FYRO)Macedonia is 24 km long and 12 km wide at its longest sections. It is situated in a plane surrounded by mountains. The territory is 1 818 km² and the number of inhabitants is 506 926.
The transport system of Skopje is shaped by the East-West extension along the Vardar River. The capital has 3 entries (national highways) and a transportation centre including the railway station and the bus stations for interurban (+international) and local bus transport.
The bike infrastructure is well developed along the main road network and a unique facility is the 10 km-long, wide bikeway on both sides of the Vardar River. The latter is used mostly for recreational cycling. The network is not completed yet in the centre, but the first part was built. The total length of bike paths in the city was 48.5 km in 2004 and the share of biking was 1.9% in 2003. In the year 2004, Skopje developed a bicycle master plan. The city's activities for implementing the plan are focused on the improvement of the infrastructure and on the promotion of cycling.

Picture on front page:

Finsbury Cycle Park, UK
Photo: Gazi Bugoz

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