niches

# Guide to Innovative Urban Transport **Strategies**

Strategies

15

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SIXTH FRAMEWORK PROGRAMME

# Index

# Innovative Concepts: the Challenge of Integration

Public bicycles, locker boxes, clean vehicles or awareness raising campaigns are Innovative Concepts that can help to improve the transport system in your city. Within NICHES we want to go further and highlight the need for integration of measures in order to ensure their success.

NICHES (New and Innovative Concepts for Helping European Transport Sustainability) is a project supported by the Directorate General for Research of the European Commission. Its overall aim is to facilitate the coordination of research activities of academic institutions, industry, transport operators and authorities regarding key urban transport innovations that lack broad deployment. More specifically, NICHES promotes the most promising new urban transport concepts, initiatives and projects (NICHES Concepts) to move them from their current "niche" position to a "mainstream" urban transport policy application. The project thus wants to contribute to a more efficient and competitive transport system, a healthier environment and improved quality of life in urban areas.

This guide wants to help urban transport decision makers and practitioners to find innovations that could be applied in their cities, by providing a description of the combinations of NICHES Concepts[1] to develop integrated urban transport strategies (NICHES Strategies). As such, it is illustrated how the integration of Innovative Concepts can contribute to the success of their implementation, as it allows addressing different aspects (e.g. technological, financial, public acceptance…) of the transport system, or combining measures that contribute to the same policy objectives.

The NICHES Innovative Concepts, selected by European urban transport experts, relate to four themes which are considered to be a priority for a sustainable and innovative urban transport system. The twelve NICHES Concepts are summarised in Table 1.

*1 – The NICHES Concepts are described in detail in the NICHES brochure Innovative Urban Transport Concepts, available on www.niches-transport.org. A Policy note for each Concept is also available.*

**Table 1: NICHES thematic areas and Concepts**

| Thematic areas | New seamless mobility services | Innovative approaches in city logistics | New non-polluting and energy efficient vehicles | Innovative demand management strategies |
|---|---|---|---|---|
| **NICHES Innovative Urban Transport Concepts** | Urban Lift-sharing Services | Space Management for Urban Delivery | Policy Strategy for Clean Vehicles | Transportation Management Associations (TMA) |
| | Public Bicycles | Inner-city Night Delivery | Biogas in Captive Fleets | Local Taxes or Charges, Ring-fenced for Transport |
| | Call-a-bus Services | Alternative Solutions for Home Delivery | Joint Procurement of Clean Vehicles | City-wide Campaigns |

This brochure describes combinations of NICHES Concepts with each other as well as with more mainstream measures in order to build integrated innovative urban transport strategies (NICHES Strategies). The proposed combinations are based on the synergy effects of these measures, and their added value over conventional single measures is explained. A large group of urban transport experts was consulted to this end.

Table 2 includes the 12 NICHES Concepts and shows how they are combined within the 8 NICHES Strategies[2].

**Table 2: NICHES Concepts and Strategies**

| NICHES Concepts \ NICHES Strategies | Integrated package to enhance the uptake of Urban Lift-sharing Services | Public Bicycles within an integrated cycling strategy | Managing time and space to improve urban freight transport | Campaign to stimulate home delivery with locker boxes for mobile users | Policy strategy to deploy clean vehicles in the private sector | Local biogas production fuels the local economy | A coordinating body for a more integrated approach to urban transport | A pricing scheme to finance alternatives and foster efficient delivery services |
|---|---|---|---|---|---|---|---|---|
| Urban Lift-sharing Services | ✓ | | | | | ✓ | | |
| Public Bycicles | | ✓ | | | | | | ✓ |
| Call-a-bus Services | | | | | | ✓ | | ✓ |
| Space Management for Urban Delivery | | | ✓ | | | | | ✓ |
| Inner-city Night Delivery | | | ✓ | | | | | ✓ |
| Alternative Solutions for Home Delivery | | | | ✓ | | | | |
| Policy Strategy for Clean Vehicles | | | ✓ | | ✓ | ✓ | ✓ | |
| Biogas in Captive Fleets | | | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Joint Procurement of Clean Vehicles | | | ✓ | | ✓ | ✓ | ✓ | |
| Transportation Management Associations (TMA) | | | | | | | ✓ | |
| Local Taxes or Changes, Ring-fenced for Transport | ✓ | ✓ | ✓ | | ✓ | | | ✓ |
| City-wide Campaigns | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |

*2 – This brochure compiles the description of the 8 most promising NICHES Strategies, but in all 11 Strategies were defined within the NICHES focus groups. These additional Strategies are described in the report Integrated Urban Transport Strategies, available on www.niches-transport.org*

# Innovative Urban Transport Strategies

Within NICHES, several innovative urban transport strategies have been identified, which combine NICHES Concepts with other supporting (mainstream) measures. NICHES Concepts are key elements of these Strategies and provide an added value over traditional measures in urban transport planning. The proposed combinations are based on the synergy effects of different measures, e.g. push and pull measures, contributing to the same policy objective or complementing each other.

It needs to be highlighted that the sole and isolated implementation of NICHES Concepts would limit their potential. It is therefore important to combine NICHES Concepts with each other and/or with other (mainstream) measures in Integrated Strategies to achieve a maximum impact.

## Practical strategies and forward thinking exercises

The NICHES Strategies have been defined taking into account the views and input of urban transport practitioners, but they have not (all) been implemented in practice so far. It becomes obvious that some of the strategies have a stronger practical focus and can be realised within a short period of time, while others are rather theoretical constructs, which have the character of forward thinking exercises. Both types however are equally valuable in enhancing and stimulating the implementation and development of urban transport innovation.

## NICHES Strategies in a wider planning approach

It also needs to be stressed that NICHES Concepts and Strategies should be embedded in a wider approach to urban transport planning. NICHES therefore highlights the need for Sustainable Urban Transport Planning (SUTP) in major European cities. The process of transport planning is at least as important as the measures that are finally chosen to tackle urban transport problems.

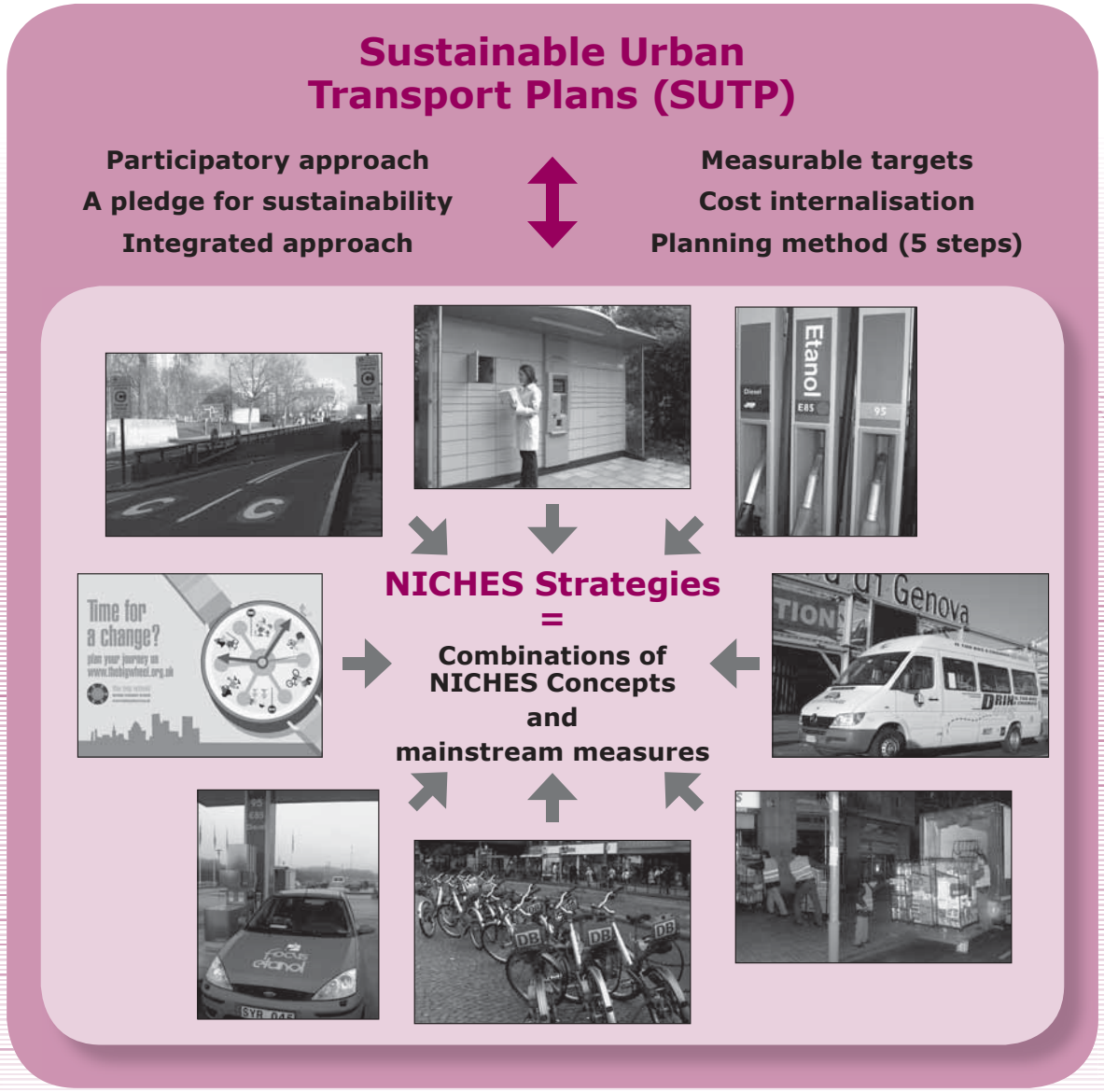
**Sustainable Urban Transport Planning helps local authorities to cope with their current and future mobility problems:**

- SUTP encourages new efficient ways of working in local transport planning. It uses existing resources - budgets, workforce, knowledge, technology or infrastructure. It seeks to enhance partnerships and public participation.
- SUTP resolves transport problems more effectively, addressing mobility in the urban conurbation through integrated packages of transport measures, creating win-win solutions.
- SUTP is a strategic approach, helping to improve the legitimacy and coordination of transport related policies. It has a long term perspective, while focusing on immediate progress.
- SUTP receives strong support from the EU as a common response to similar problems in cities and regions across Europe, and is fully in line with national or regional regulations.[3]

## Increasing the impact of NICHES Concepts through integration

NICHES Concepts are promising solutions, which can achieve a greater impact if implemented as part of an Integrated Strategy through a Sustainable Urban Transport Planning approach.

**Figure 1: NICHES Concepts as elements within Integrated Strategies and SUTP**



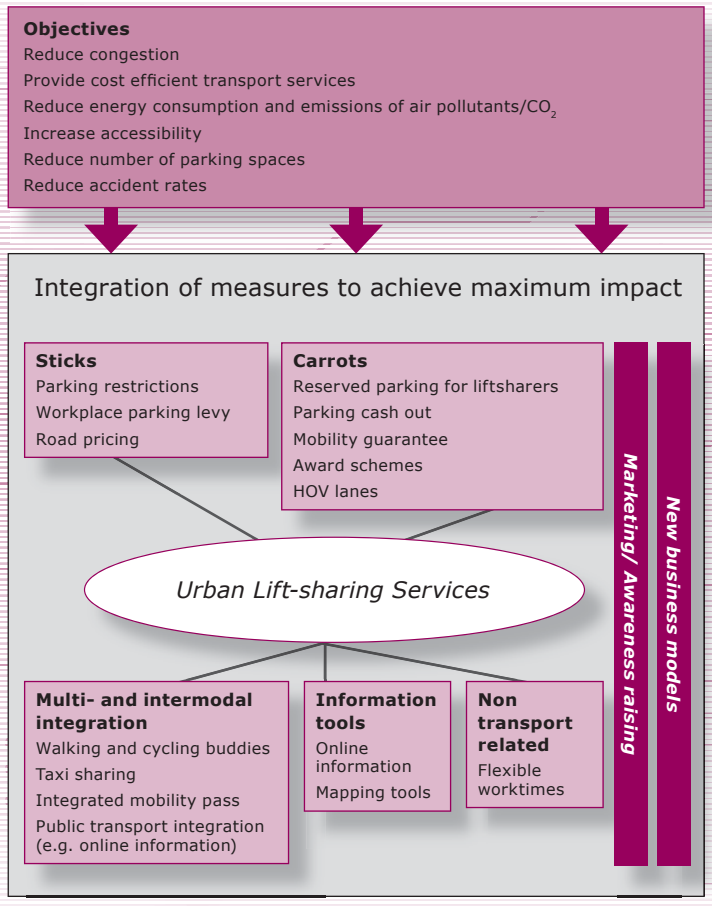

*3 – For further information on the SUTP approach see:*
*Thematic Strategy on the Urban Environment: http://ec.europa.eu/environment/urban/thematic_strategy.htm*
*SUTP expert working group 2004: http://ec.europa.eu/environment/urban/experts_working_groups.htm*
*SUTP efficiency study 2005: http://ec.europa.eu/environment/urban/urban_transport.htm*
*PILOT project – Demonstration of the preparation of sustainable urban transport plans (SUTP) in four European cities: www.pilot-transport.org*

# New Seamless Mobility Services

## Strategy 1: Integrated package to enhance the uptake of Urban Lift-sharing Services

Based on the key objectives to reduce congestion and to provide a cost efficient way of improving accessibility, this Strategy is built around the core element of Urban Lift-sharing Services. The Strategy is targeted at stakeholders that want to focus especially on this Innovative Concept and are looking for information on how to enhance the introduction and operation of Urban Lift-sharing Services through combination with other measures. Similar types of strategies built around Lift-sharing Services have been implemented in the UK through cooperation between the company Liftshare.com and different local municipalities and businesses (e.g. LONDONliftshare).

**Figure 2: Integrated package to enhance the uptake of Urban Lift-sharing Services**




### Measures included

This Strategy includes the integration of the following measures:

- "Carrots" – measures to promote the use of alternatives to the (individual use of the) private car
  - *Urban Lift-sharing Services (NICHES Concept)*
  - *Parking management: incentives by providing special parking spaces for lift-sharers at the workplace; financial incentives such as parking cash out;*
  - *Mobility guarantee: taxi provision when lift-sharing arrangement fails;*
  - *Award schemes: bonus points for sustainable travel behaviour in companies;*
  - *HOV lanes: exclusive access to HOV (High Occupancy Vehicle) lanes in congested areas for cars with more than one passenger.*
- "Sticks" – discourage use of single occupancy vehicles
  - *Parking restrictions: general parking management and restrictions at sites attracting traffic (e.g. city centre, big companies);*
  - *Workplace parking levy: provide license charge to employers providing workplace parking (NICHES Concept);*
  - *Road pricing schemes (NICHES Concept): charging car users in urban areas (e.g. city centre – congestion charging zone), encourages users to share a car in order to save costs.*

***Sharing a ride***
Photo: Liftshare.com

- Multi- and intermodal integration
  - *Walking and cycling buddies and taxi sharing (already realised as additional service of Liftshare.com);*
  - *Built and organisational integration with different transport modes, e.g. public transport interchanges, provision of integrated mobility pass; integration of Urban Lift-sharing in public transport information services.*
- Information tools
  - *Online information: well accessible and designed information sources on Urban Lift-sharing options; integration with public transport information;*
  - *Mapping tools: online mapping tools that help to visualise potential lift-share arrangements to the user.*
- Non-transport related measures
  - *Flexible working times: arrangement of work times enabling commuters to make flexible travel arrangements.*
- Horizontal elements
  - *Marketing and awareness raising: targeting potential users with information about lift-sharing (e.g. at road signs); publicity and awareness raising campaigns (NICHES Concept). Mobility management measures at the level of companies and organisations;*
  - *New business models: finding new ways of financing Urban Lift-sharing schemes (e.g. sponsoring by companies) and other measures within the strategies as well as reducing dependency on money from local authorities.*

## Synergy effects

The potential of Urban Lift-sharing Services can only be fully exploited in combination with other measures. First of all it is crucial to apply awareness raising and marketing campaigns in a targeted way to reach a critical mass of users.

"Carrots and sticks" measures can be efficiently used to discourage single occupancy driving and to make lift sharing more attractive. Carrots should however be introduced in parallel or shortly before the sticks, to enhance the acceptance of measures.

In a systems' approach, it is also important to work on the multi- and intermodal integration of lift sharing with other transport modes to guarantee that the users of lift-share arrangements have access to the full range of transport options. This includes the provision of high quality traveller information on lift-sharing services, integrated in the information services of public transport providers.

Also non-transport related measures such as the provision of flexible work times that allow better coordination among potential lift sharers can enhance the acceptance of the concept.

Finally, new business models (e.g. the sponsoring of a Lift-sharing Service through large companies) are needed to help finance the expansion of Urban Lift-sharing Services in the long run and to reduce dependency on public money.

## Strategic impact and added value

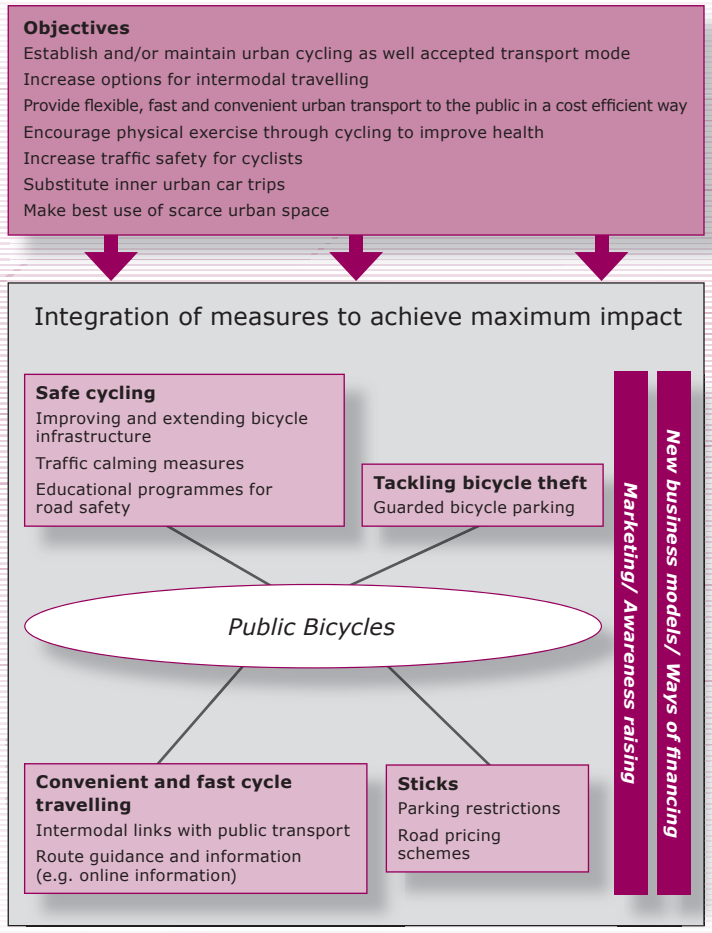
The implementation of a strategy to enhance Urban Lift sharing helps to fill a gap between public transport and single occupancy use of the private vehicle. It has significant potential to enhance the transport system as it improves accessibility at a lower cost than would be possible with additional public transport investments. Urban Lift-sharing Services are complementary to other transport services and extend the range of transport options while offering users the opportunity to save considerable costs on commuting. It also allows the use of private cars to those that cannot drive or cannot own a car. As part of an Integrated Strategy, the potential of lift sharing to reach a critical mass of users and to reduce congestion is greater than if it is introduced as a single measure.

# New Seamless Mobility Services

## Strategy 2: Public Bicycles within an integrated cycling strategy

Based on the key objectives of promoting cycling as an additional and more sustainable urban mode of transport and of providing a new service within the public transport system, this Strategy is built around the core element of Public Bicycles. The Strategy has a high practical component and stresses the need to combine a comprehensive package of measures to ensure that cycling is a safe and convenient urban transport mode. Examples of implementation of similar types of strategies or elements of this Strategy including Public Bicycles can be found in Germany (Call a Bike), France (vélo'v), The Netherlands (OV-fiets), Scandinavia and other European countries.

**Figure 3: Public Bicycles within an integrated cycling strategy**




### Measures included

This Strategy includes the integration of the following NICHES Innovative Concepts and other supporting measures:

- Safe cycling:
  - *Improving and extending bicycle infrastructure: e.g. network of bicycle paths, parking facilities, prioritisation of cyclists at traffic lights…;*
  - *Traffic calming measures: speed limitations for motorised vehicles in areas frequently used by cyclists;*
  - *Educational programmes: training on safe cycling (e.g. in companies, schools…), awareness raising measures to promote respect between the users of the different modes.*
- Convenient and fast cycle travelling:
  - *Public Bicycles (NICHES Concept);*
  - *Intermodal links with public transport: allowing bicycles to board on trains, bike and ride facilities; mobility pass that allows the use of different public transport services (including bikes);*
  - *Route guidance and information: roadside traffic signs and maps with information on bicycle routes, online bicycle route planners.*

***Call a Bike in Cologne, Germany***
Photo: Rupprecht Consult

- Preventing theft:
  - *Secure bicycle parking at sites attracting traffic and interchanges (e.g. stations).*
- Discouraging car use:
  - *Parking management and restrictions to encourage the use of bicycles as a cheaper and more convenient mobility option;*
  - *Urban road pricing schemes (NICHES Concept) providing a safer space (with less cars), where bicycles can access free of charge.*
- Horizontal elements:
  - *Marketing and awareness raising: City-wide Campaigns (NICHES Concept), including cycling events as well as flyers and posters highlighting the benefits of cycling for the user;*
  - *New business models for Public Bicycle schemes: financing of public bikes by advertisements or PPPs; modest user charging in cities with high bicycle acceptance;*
  - *New ways of funding bicycle related measures: Local Taxes or Charges, Ring-fenced for Transport (NICHES Concept).*

## Synergy effects

To facilitate the acceptance of Public Bicycle schemes it is necessary to provide the right framework conditions for safe and convenient cycling.

It is also crucial to change peoples' minds through marketing and campaigns and to make them aware of the potential of the bicycle as an urban transport mode. Educational programmes help to communicate the benefits of urban cycling and to create respect between the transport modes to improve road safety.

As a new element of the public transport system, the Public Bicycle is complementary to other transport services and can facilitate convenient intermodal travel.

New ways of financing Public Bicycles and other cycling related measures (e.g. local taxes or charging schemes or PPPs) are needed in a long term perspective to make the Strategy financially sustainable.

Road pricing schemes are possible push measures that make car use less attractive and can have a positive impact on the use of the bicycle (in London, the Congestion Charging scheme led to a 28% surge in cycling in the first year following implementation of the charge).

## Strategic impact and added value

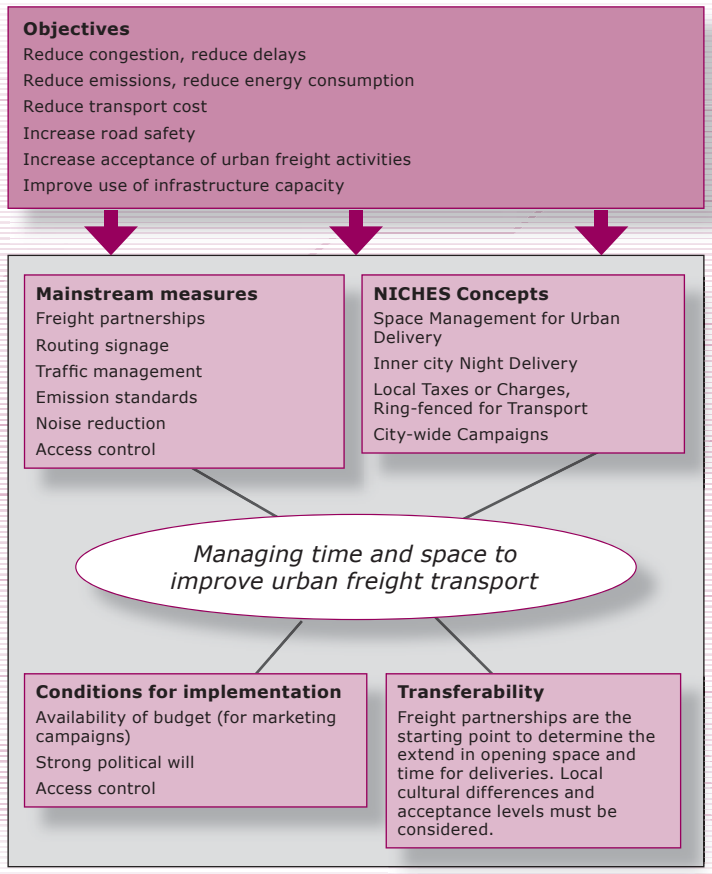
Public Bicycles can be an effective measure to promote urban cycling as a "normal" daily transport mode, if introduced as part of an Integrated Strategy as described above. In cities without an existing "bicycle culture", public bikes have the potential to act as "door opener" to introduce cycling. In cities where cycling is already well accepted, they can be an additional valuable element for the promotion and use of the bicycle.
The integration of the bicycle with the public transport services strengthens the whole system and makes it more attractive by providing more transport options.
Furthermore the Strategy can help to improve road safety through better cycling infrastructure, educational campaigns and by achieving a critical mass of bicycle users on the road, which increases awareness among car drivers.
Positive contributions to public health, the environment and the local identity (with Public Bicycles as part of the urban landscape) are additional benefits of the Strategy.

# Innovative Approaches in City Logistics

## Strategy 3: Managing time and space to improve urban freight transport

Freight transport is an elementary function of every city. However its acceptance by citizens needs to be improved, the space provided to load and unload should be more reliable and the permitted operation times need to be better harmonised with all road infrastructure users. A Strategy focusing on these aspects and which includes the requirements to reduce congestion and energy consumption is described in this chapter. This Strategy has not been implemented in practice, but described at theoretical level by urban transport professionals within NICHES.

**Figure 4: Managing time and space to improve urban freight transport**




### Measures included

This Strategy on *Managing time and space to improve urban freight transport* includes the integration of the following NICHES Innovative Concepts and other supporting measures:

- NICHES Concepts:
  - *Space Management for Urban Delivery;*
  - *Inner-city Night Delivery;*
  - *Use and promotion of Alternatively Fuelled Vehicles (AFVs);*
  - *Local Taxes or Charges, Ring-fenced for Transport;*
  - *City-wide Campaigns using Marketing & Branding.*
- Supporting (mainstream) measures:
  - *Freight partnerships: partnerships between operators, retailers, chambers of commerce and city administrations. Regular meetings are organised and the group implements concrete measures;*
  - *Lorry routing, route signaling: lorries shall not drive on any road to reach a destination but rather follow a preferred network dedicated for heavy vehicles;*
  - *Traffic management systems that give priorities to certain transport infrastructure users and control the access to the city, a single street or a district. They also operate variable message signs, as used for example in the multi-use lane in Barcelona, and they can enable exceptional access, such as driving against a one-way street at night time;*
  - *Noise reduction: more quiet vehicles and transport equipments;*
  - *Access control, regulating access to (parts of the) city for different vehicle types, user groups and time windows.*

## Synergy effects

The commercial transport activities of a city and especially freight transport should have a determined and reliable share of the available urban transportation and parking capacities. Knowing the transport volumes over time, the modal split and the mobility constraints of the different user groups it is possible to optimise infrastructure use in terms of space and time. The scenario described here integrates four NICHES Concepts and other measures.

Space Management for Urban Delivery and Inner-city Night Delivery are two NICHES Concepts which are both closely related to access regulation measures; the rules to follow should be part of a more general plan addressing access to the city. An Inner-city Night Delivery scheme must also address the issue of delivery space as conflicting interest with residential parking. The Concept Local Taxes or Charges, Ring-fenced for Transport can be seen as a regulatory instrument to influence access to the city and it is therefore a very constructive element in this Strategy. For instance, transport could be shifted to the night or off-peak hours by applying access charges at day time and by providing free access at night.

The main problem for night time deliveries is the associated increase in noise levels for residents close to the delivery location. Consequently, research and funding for low noise and low emission vehicles and delivery equipment should be fostered. The combination with noise reduction measures is therefore recommended to improve the acceptance of night time deliveries. Access control measures as well as the Concepts Space Management for Urban Delivery and Inner-city Night Delivery link in very well with clean vehicle promotion measures. Clean vehicles often gain access advantages compared to more polluting ones.

When it comes to the question of how to improve the public acceptance of new delivery concepts, the inclusion of the Concept City-wide Campaigns is key. This is a suitable instrument to raise awareness on the role and importance of sustainable urban delivery solutions and to increase their acceptance. The size and the amount to be spent for a marketing campaign depend on the political interest.

The Strategy includes also traffic management measures as it is closely related to access control and to the routes and priorities of delivery vehicles. An integrated planning approach is needed for the routing of delivery vehicles and for deciding the roads they should use and its implementation by road signs.

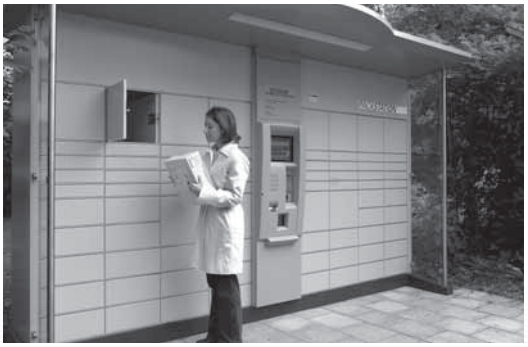
The measures of this Strategy should be planned and implemented with a freight partnership. This ensures that the interests of the involved parties are known and discussed and that any solution taken is supported by the group as a whole.

## Strategic impact and added value

The NICHES Concept Space Management for Urban Delivery can contribute to reduce congestion, emissions and transport costs and to improve road safety, as well as increase the acceptance of freight activities and improve the use of the existing infrastructure. The integration of this NICHES Concept in an overall Strategy to *Manage time and space to improve urban freight transport* including other measures strengthens the whole system and supports the achievement of the defined policy objectives.
The Strategy can result in the reduction of congestion by improving traffic efficiency.
In addition, emissions and energy consumption will decrease as a result of the implementation of local taxes for transport, traffic management, emission standards and access control measures.
This Strategy enhances road safety as it ensures a more efficient use of available road space, due to the taxes, charges and traffic management and control measures that it includes.

# Innovative Approaches in City Logistics

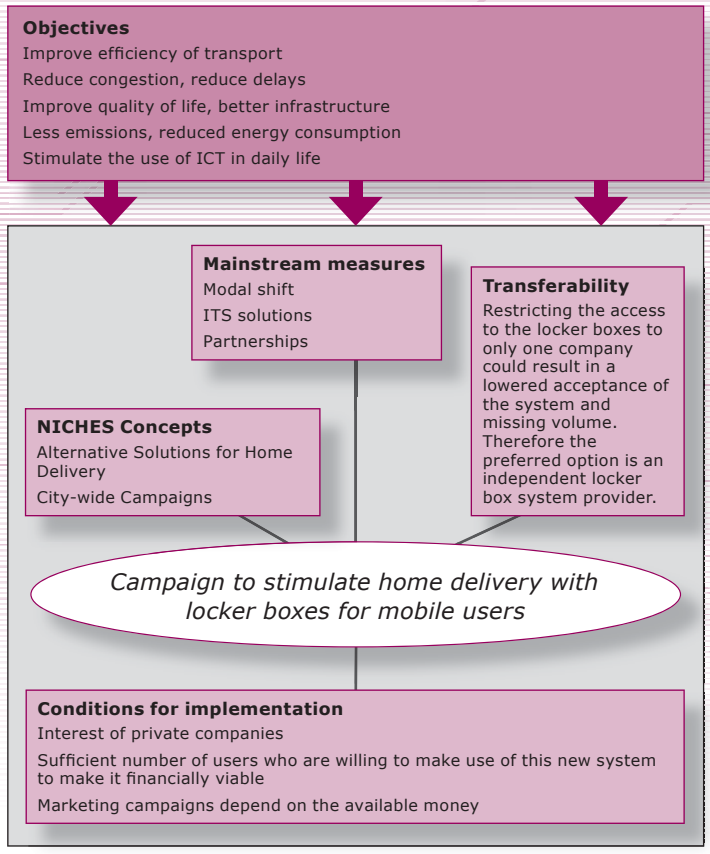
## Strategy 4: Campaign to stimulate home delivery with locker boxes for mobile users



***DHL PackStation (locker box)***
Photo : Deutsche Post

In order to contribute to the policy objectives of improving transport efficiency, reducing congestions and delays in deliveries, and improving the quality of life, this Strategy is conceived at a theoretical level as it has not yet been practically implemented. It aims at introducing the Concept of Alternative Solutions for Home Delivery by supporting it with a City-wide Campaign.

**Figure 5: Campaign to stimulate home delivery with locker boxes for mobile users**




### Measures included

The Strategy *Campaign to stimulate home delivery with locker boxes for mobile users* includes the integration of the following NICHES Innovative Concepts and other supporting measures:

- NICHES Concepts:
  - *Alternative Solutions for Home Delivery;*
  - *City-wide Campaigns.*
- Supporting (mainstream) measures:
  - *Public transport can be made more attractive by locating locker boxes at terminals, in order to induce a modal shift;*
  - *ITS (Intelligent Transport Systems) tools to improve the communication between delivery vehicles and consignees;*
  - *Partnerships between several operators or companies to share the locker boxes and possibly also the vehicles.*

## Synergy effects

The Strategy *Campaign to stimulate home delivery with locker boxes for mobile users* addresses the combination of the following two NICHES Concepts: Alternative Solutions for Home Delivery and City-wide Campaigns. The number of users of the locker boxes can be increased by running City-wide Campaigns. It is essential to inform potential users about the benefits and the comfort the locker box system can provide, as well as to give clear and simple instructions on how the system works. The installation of a locker box solution can only be successful if there is a sufficient number of users who are willing to use the new system. Financial issues are very important when considering the implementation of a locker box system and a minimum number of users is needed to justify the investment. This critical mass can be easier reached when competing transport companies agree to share the same locker boxes for their deliveries. An option is to cooperate with an independent "locker box operator" and to come to an open solution where all transport companies are invited to participate.

The locations of the locker boxes are a compromise between the favoured locations of the transport operators based on their customer addresses and the preferred locations of public planners based on city planning constraints. Locker boxes are attracting customers and they can therefore be used as a management instrument, e.g. to contribute to modal shift or to make public places more attractive by placing them at public transport terminals.

Delivery to locker boxes avoids the very constraining hand-over between a delivery person and a consignee. Both parties are winners: the transport operator can deliver to the box at a time which best matches its operations and route schedule, while the consignee is free to choose the timing to pick up the goods.

Synergy effects can be achieved when addressing this NICHES Concept together with ITS measures or with a policy to stimulate ICT use within the society. The ICT integration of e-shopping, order status monitoring within the supply chain, fleet monitoring, traffic management centre, locker box status and consignee mobile devices creates interesting and more convenient applications.

## Strategic impact and added value

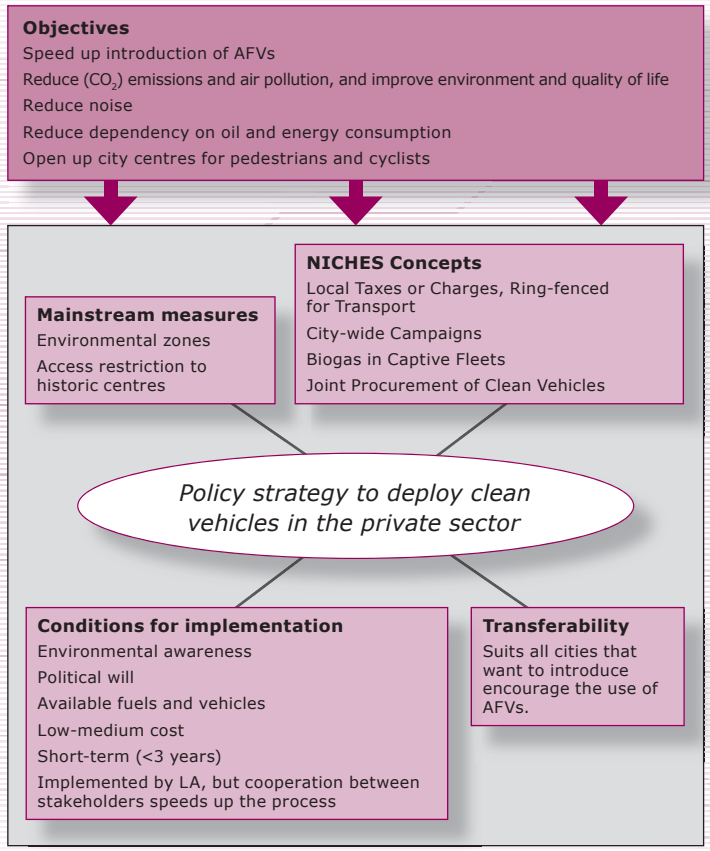
Locker boxes are an innovative solution to improve the efficiency of (freight) transport by reducing the number of trips and therefore their negative impacts. This Strategy also includes measures to encourage modal shift (e.g. by locating the locker boxes next to public transport stops) and to reduce the number of trips (and the negative impacts) not only for the freight vehicles but also for the private passenger. This Strategy can also stimulate the use of ICT in daily life through the locker boxes system and the accompanying ITS solutions and public campaigns.

# New Non-polluting and Energy Efficient Vehicles

## Strategy 5: Policy strategy to deploy clean vehicles in the private sector

This Strategy aims at introducing Alternatively Fuelled Vehicles (AFVs) in order to reduce noise and emissions, to improve the urban environment and to reduce dependency on oil and energy consumption. The *Policy strategy to deploy clean vehicles in the private sector* was initially defined as a NICHES Concept. Similar strategies have been implemented in Stockholm, Bremen and in the UK.

**Figure 6: Policy strategy to deploy clean vehicles in the private sector**




### Measures included

The *Policy strategy to deploy clean vehicles in the private sector* includes the integration of the following NICHES Innovative Concepts and other supporting measures:

- NICHES Concepts:
  - *Use and promotion of Alternatively Fuelled Vehicles (AFVs);*
  - *Local Taxes or Charges, Ring-fenced for Transport;*
  - *City-wide Campaigns.*
- Supporting (mainstream) measures:
  - *Environmental zones;*
  - *Access restrictions to (historic) city centres.*

## Synergy effects

This Strategy aims at introducing clean vehicles in the private sector, for both passenger and freight transport. One of the greatest difficulties of introducing Alternatively Fuelled Vehicles (AFV) is the fact that in order to buy an AFV, the user needs fuelling stations, but while these vehicles are not widespread, no fuel company is prepared to invest in a station offering alternative fuels. This "chicken and egg" dilemma can partially be solved by starting with big (public transport) fleets, and therefore this Strategy includes the NICHES Concept Biogas in Captive Fleets. Once a minimum number of fuelling stations for alternative fuels is ensured, the process of introducing AFVs to the private sector can start.

As the introduction of new fuels is a costly process in terms of both money and time, measures supporting their introduction are needed to speed up the process. The definition of environmental zones and access restrictions to city centres should be implemented; these zones should allow access to AFVs only (including freight) as well as to other special vehicles like emergency vehicles. AFVs would therefore be exempted of charges related to these access restrictions and to other Local Taxes or Charges, Ring-fenced for Transport (NICHES Concept). In addition, in order to lower the price of AFVs, Joint Procurement of Clean Vehicles (NICHES Concept) should be carried out with other cities or countries, in order to create economies of scale.

Finally the incentives for the users of AFVs, as well as the benefits of using AFVs for the environment and the community should be well communicated to the citizens through a City-wide Campaign (NICHES Concept).

## Strategic impact and added value

The added value of combining and integrating the measures indicated in this Strategy relies on the speeding up of AFVs introduction on a wider scale.

This Strategy does not only provide for a more rapid take up of AFVs but it also significantly improves the urban environment, the urban quality of life and the environmental awareness of citizens.


***FFV ethanol car***
Photo: Kristina Birath, Inregia

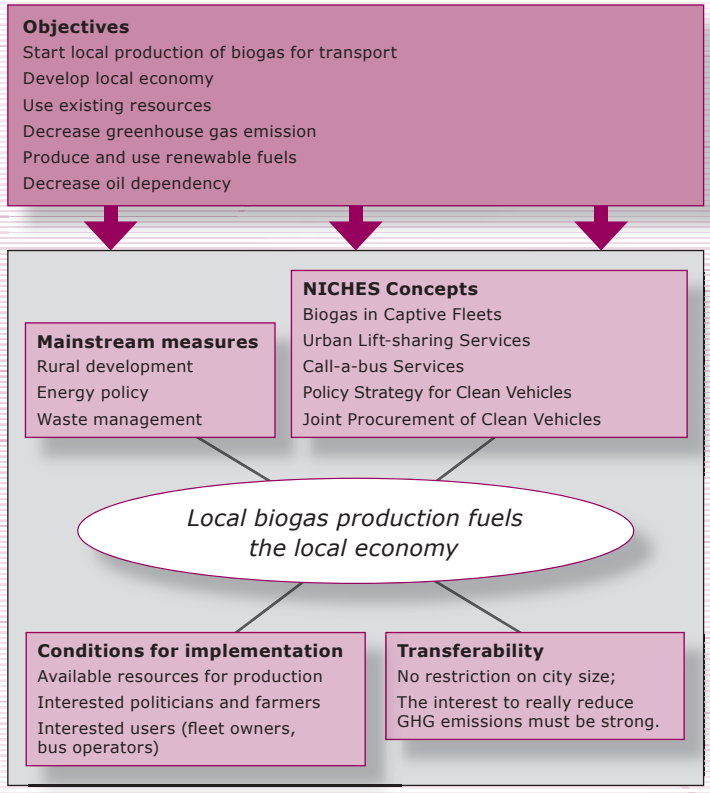
# New Non-polluting and Energy Efficient Vehicles

## Strategy 6: Local biogas production fuels the local economy

***Biogas bus at Arlanda airport, Stockholm***
Photo: Jan Sundström

This Strategy builds on local production of biogas for transport from waste or sewage. This can combine the objectives of reducing oil dependency and developping the local economy. Using waste and sewage for fuel production also reduces the waste volume. This Strategy is built around the NICHES Concept Biogas in Captive Fleets and can be combined with other concepts and mainstream measures. Stockholm is one of the cities where a similar strategy to foster the use of biogas has been implemented.

**Figure 7: Local biogas production fuels the local economy**




### Measures included

This Strategy on *Local biogas production fuels the local economy* includes the integration of the following NICHES Innovative Concepts and other supporting measures:

- NICHES Concepts:
  - *Biogas in Captive Fleets;*
  - *Urban Lift-sharing Services;*
  - *Call-a-bus Services ;*
  - *Policy Strategy for Clean Vehicles;*
  - *Joint Procurement of Clean Vehicles.*
- Supporting (mainstream) measures:
  - *Energy policy: local production of fuel in order to reduce oil dependency;*
  - *Rural development: use agriculture to produce feedstock for fuel production;*
  - *Waste management: use waste to produce feedstock for fuel production.*

## Synergy effects

Biogas can be produced from waste, crop residuals and sewage. An increased local production of biogas and use of biogas in captive fleets can be positive for the local economy as well as the local environment. It can lead to a reduced dependency on imported energy (oil). The local farmers can find a market for material that has been seen as waste (offal, used vegetable oils etc), and this can also solve problems with waste management. An increased use of industrial crops means that fallow land can be used to a greater extent, which is in line with the EU agricultural policy.

The Strategy focuses on the potential for the rural and local economic development that comes with the production of biogas. Biogas can be produced from waste material from farmers, slaughterhouses and biological waste from households, restaurants etc. It can solve local waste problems and it can also enable farmers to get offset for the production of new products to produce biogas. This Strategy requires a broad cooperation of the biogas producers, suppliers of the raw material, distributors of the biogas and the users. In the first phase it is often important to have one fleet owner that buys the biogas as the investment in fuel stations etc is heavy. Public transport has shown to be an excellent end user of the biogas in this first phase.

Most of the measures used today to curb increasing emissions from traffic can be combined with incentives for clean vehicles. Other supporting measures can be drivers for a broader introduction of clean vehicles in all categories: light vehicles, delivery vehicles and heavy vehicles such as buses.

## Strategic impact and added value

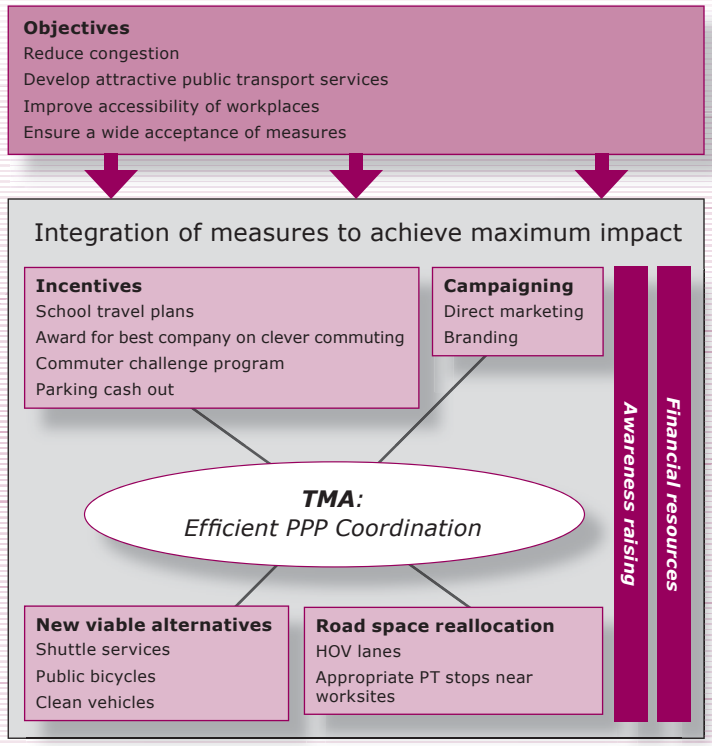
The Innovative Concept Biogas in Captive Fleets was chosen to be explored within NICHES and deals with the use of the waste management to produce biogas. This locally produced biogas is sufficient to feed the captive/city fleets. The use of biogas for transport combined with other NICHES Concepts and supporting measures in an Integrated Strategy where the different measures complement (e.g. incentives for the use of clean modes of transport) and reinforce (e.g. promote the production of biogas from crop residuals) each other, can help to achieve the objectives of boosting local economy while reducing the oil dependency and improving the environmental impact of transport.

# Innovative Demand Management Strategies

## Strategy 7: A coordinating body for a more integrated approach to urban transport

This Strategy, defined at theoretical level, is based on the elaboration of a Transportation Management Association (TMA) that would act as a coordinating body that brings together the main actors of the transport system, elaborates a strategy for all to implement and thereby ensures an integrated and coherent approach to the transport system.

**Figure 8: A coordinating body for a more integrated approach to urban transport**




### Measures included

This Strategy on *A coordinating body for a more integrated approach to urban transport* includes the integration of the following NICHES Innovative Concepts:

- *Transportation Management Associations (TMAs);*
- *Individualised services such as Lift-sharing or Public Bicycles;*
- *Promotion of Alternatively Fuelled Vehicles (AFVs);*
- *City-wide Campaigns.*

*This Strategy can contribute to:*

- *Foster elaboration of company and school travel plans;*
- *Reallocate road space;*
- *Elaborate traffic calming measures;*
- *Improve and expand cycling network;*
- *Contribute to improving accessibility and social inclusion;*
- *Organise an Award for best company in terms of clever commuting;*
- *Strengthen the use of communication technologies.*

## Synergy effects

This Strategy responds to the criteria of a holistic approach as it takes into consideration many aspects of the society: land use planning, social inclusion aspects, environmental concerns and economic wealth. It is a long-term process that will put in place integrated solutions. The integrated packages can be divided into different parts dealing with specific measures and benefiting from a separate funding scheme. In this case, three main aims could be considered: the elaboration of travel plans, of new viable transport alternatives and of a comprehensive marketing campaign. It is important that the packages of measures implemented include both supply and demand approaches in order for the packages to be complete. The different stakeholders should be in line with the Strategy to ensure that financing can be provided by each partner for a specific task.

The Transportation Management Association would be used as a coordination body. The Integrated Strategy involving the different stakeholders (transport operators, public government, businesses & citizens- see figure below) would be managed by the TMA. The TMA would serve as a platform for discussion during the whole process to enable all concerns to be taken into consideration while building up and implementing the strategy. The overall strategy would aim at reducing congestion, developing attractive public transport services, improving accessibility of workplaces and fostering wide acceptance of all interested actors. The measures implemented can range from the creation of alternative transport modes such as shuttles, public bicycles etc or the organisation of commuter challenges to raise awareness of the citizens. These could be implemented by the transport operators themselves or by the TMA depending on available funding and market opportunities. Businesses gathered within the TMA would receive individual travel plans that would also imply changes in the public transport network. The TMA could put pressure on the transport operators to put in new bus stops according to travel plans or to use a fleet of clean vehicles provided by the businesses within the TMA. Local government could give incentives to put in place these clean vehicles.

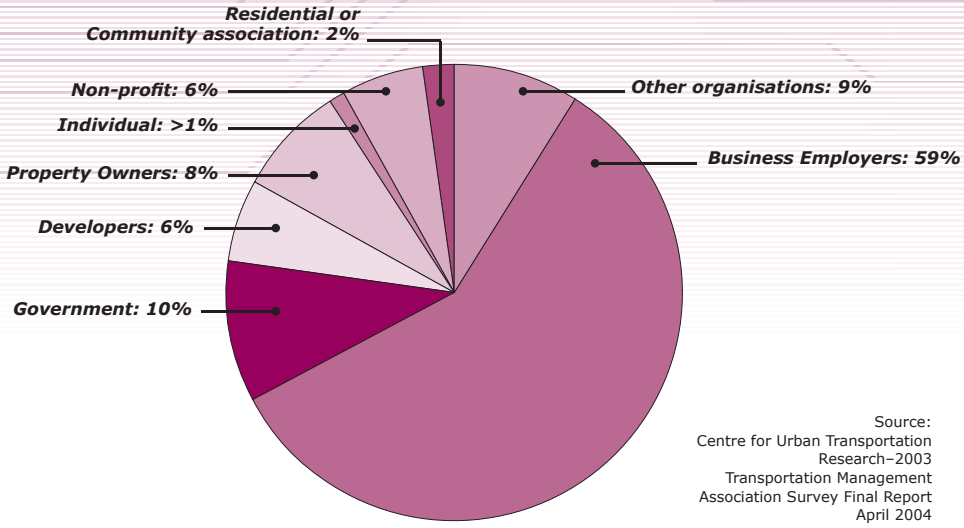
The Integrated Strategy should be made visible to all citizens and advertised on buses, within the companies' members, etc. Direct marketing within companies and City-wide Campaigning to advertise the Strategy that will have an impact on the whole transport network for the benefits of all, could be foreseen.

As regards funding mechanisms, they should be available up front and in this particular case the TMA might provide a source of financing thanks to membership fees paid by the different partners and to the services provided. Other members might finance a part of the Strategy by themselves. This Strategy will require large up-front investments both in terms of hard and soft measures. For the Strategy to work, the TMA will need to have a clear mandate from all its members.

## Strategic impact and added value

The big advantage of this Strategy over the implementation of measures in isolation is the stakeholder involvement that allows a coordinated action. This will foster coherence of the initiatives and better acceptance by all stakeholders.

### *Composition of a TMA membership*



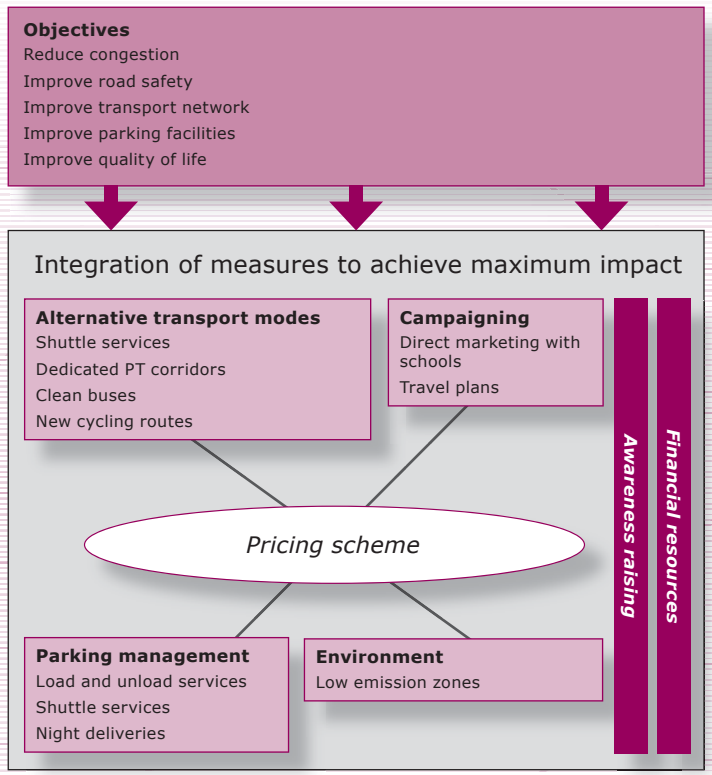

Source:
Centre for Urban Transportation Research–2003
Transportation Management Association Survey Final Report
April 2004

# Innovative Demand Management Strategies

## Strategy 8: A pricing scheme to finance alternatives and foster efficient delivery services

This Strategy is based on the introduction of a pricing scheme such as a congestion charge. The objectives would be to reduce congestion and to improve road safety, the transport network, the parking facilities and the quality of life. This Strategy is proposed within NICHES as a package of measures that could contribute to these objectives, but it has not been implemented at a practical level.

**Figure 9: A pricing scheme to finance alternatives and foster efficient delivery services**




### Measures included

This Strategy on *A pricing scheme to finance alternatives and foster efficient delivery services* includes the integration of the following NICHES Innovative Concepts and other supporting measures:

- NICHES Concepts:
  - *City-wide Campaign;*
  - *Clean Vehicles in public transport fleets;*
  - *Call-a-bus Services;*
  - *Public Bicycles;*
  - *Space Management for Urban Delivery;*
  - *Inner-city Night Delivery;*
  - *Local Charges or Taxes, Ring-fenced for Transport.*
- Supporting (mainstream) measures:
  - *Build or improve cycling infrastructure;*
  - *Introduce traffic calming measures;*
  - *Plan low emission zones;*
  - *Promote alternative modes of transport;*
  - *Strengthen the use of communication technologies;*
  - *Set up an overall parking management system and Park & Ride facilities;*
  - *Provide dedicated public transport corridors;*
  - *Foster Road Safety.*

## Synergy effects

This Strategy is based on the introduction of a pricing scheme such as a congestion charge. The aims would be to reduce congestion and to improve road safety, the transport network, the parking facilities and the quality of life. The congestion charge would be implemented simultaneously with Park & Ride (P&R) facilities where shuttle services are organised. These could be owned by companies, driving employees to and from the workplace and would benefit from an exemption or discount in the congestion charge. Call-a-bus Services and public transport could be foreseen from these P&R facilities. These parking facilities could also be used for loading and unloading trucks. Smaller buses would then deliver the goods inside the centre outside peak hours or at night and avoid the congestion charge. A City-wide Campaign could present the congestion charge as the best solution for the citizens and advertise the alternatives and improvements made in the transport system. Low emission zones would be included within the congestion charge area and would prohibit access to the most polluting vehicles.

The Strategy combines "carrots and sticks" measures that can have a positive impact on car ownership and single occupancy driving. A pricing scheme combined with efficient public transport services, other transport alternatives and parking facilities can have a beneficial impact on congestion within the city centre as well as on air quality and quality of life in general. "Carrots" measures should ideally be in place before the "stick" measures are introduced.

Campaigning would foster public acceptance and could be financed through the pricing scheme. The message delivered should focus on real and personal benefits that can be achieved thanks to the pricing scheme and the complementary measures.

## Strategic impact and added value

This Strategy is built around the NICHES Concept Local Taxes or Charges, Ring-fenced for Transport. The development of this Concept within a Strategy that includes other measures to improve the environment reinforces the impact of the Concept. In addition, providing alternatives to the private cars within the Strategy helps to minimise the negative social impacts related to mobility options for the citizens and may reduce the possible increase of traffic around a congestion charging area (when the charge is area-based).
It also helps to introduce new mobility solutions, whose acceptance can be promoted through targeted campaigns.

***Congestion Charging scheme in London***
Photo: Dan Firth

# Concluding Remarks: Integrating Innovation

The Innovative Concepts selected within NICHES are initiatives that have proven to work in a number of European cities, in terms of improving the transport system, by providing additional mobility services to customers and/or contributing to a better environment. These initiatives, due to their innovative character, often need to be accompanied by supporting measures in order to be successful. Thus, a new mobility service (e.g. a public bikes system) requires an effective promotional campaign in order to take off and be perceived and accepted as one more way of moving around the city.

In order to ensure that these innovations can make a real difference to the transport system of a city and their potential is fully exploited, we should go beyond simple combinations and aim at integrate them into long term urban transport strategies. In this report, an attempt as been made to illustrate how different Strategies could be built around the NICHES Innovative Concepts, depending on the policy objectives that the Strategy should contribute to. However it is clear that NICHES Innovative Concepts allow for imagination and flexibility, as within different combinations (with each other and with other measures) they can contribute to achieve different urban transport policy objectives.

Finally it also needs to be stressed that the NICHES Concepts and Strategies should be embedded in a wider approach to urban transport planning. NICHES therefore highlights the need for Sustainable Urban Transport Planning (SUTP) in major European cities. The process of transport planning is at least as important as the measures that are finally chosen to tackle urban transport problems, at least if we aim at urban transport systems that are socially, economically and environmentally sound.

# Further Information

This report has been prepared by gathering information from urban transport practitioners working in areas related to the NICHES Innovative Concepts. Through their participation in the NICHES Working Group meetings or through personal interviews carried out by NICHES Consortium members, these experts have contributed not only to the information gathering exercise on the NICHES Innovative Concepts but also to the definition of the NICHES Strategies.

In the table below you can find the contact details of the NICHES Consortium partners, whom you can contact for general information concerning the project, the thematic areas and the Innovative Concepts.

For more detailed information on the NICHES Concepts and for practical examples of their implementation, you can find the **contact details of the external experts** involved in the project on OSMOSE, **www.osmose-os.org**, the portal on urban transport innovation developed in the framework of NICHES.

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## The mission of NICHES is:

*to stimulate a wide debate on innovative urban transport and mobility between relevant stakeholders from different sectors and disciplines across Europe.*
*NICHES promotes the most promising new concepts, initiatives and projects, to move them from their current 'niche' position to a 'mainstream' urban transport policy application.*

## NICHES team

The NICHES consortium is composed of a variety of experts in the field of urban transport, ensuring the knowledge of the academic sector (Warsaw University of Technology), the experience of cities (Stockholm), the expertise of consultants (Rupprecht Consult, PTV Planung Transport Verkehr AG) and the multiplyer effect of the networks (POLIS, EUROCITIES, CEMR).

*For more information contact the NICHES consortium partners (contact details available on the last page) or visit:*

www.niches-transport.org
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Cover photo: Joël Dozzi

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