



## **STUDY OF THE INSTRUMENTS INFLUENCING MOBILITY ENGENDERED BY TRAFFIC GENERATORS**

*Summary report – January 2001*

*Study under the authority of the Federal Services responsible for Scientific, Technical and Cultural Affairs within  
the framework of the Programme 'Sustainable Mobility'*

### **Authors :**

- *Véronique ANDRE and Carole DURAND  
From the Walloon Institute, Boulevard Frère Orban, 4, 5000 Namur  
(research contract MD/B6/049)*
- *Els HEYLEN and Katrien TRATSAERT  
From Langzaam Verkeer, J. P. Minckelersstraat, 43A, Leuven (research contract MD/B8/048)*
- *Véronique BONIVER, Stéphanie FRISSCHEN and Julien JUPRELLE  
From the University of Liège, Boulevard du rectorat, bat. B33, boîte 6, 4000 Liège (research  
contract MD/12/047)*

### **Coordinators :**

- *Bernard THIRY and Henry-Jean GATHON from the University of Liège*

## TABLE OF CONTENTS

1. INTRODUCTION.....	3
2. METHODOLOGY.....	4
2.1. Constitution of a User Group.....	4
2.2. Constitution of a database.....	4
2.3. Selection of 10 measures.....	5
2.4. Evaluation of the ten selected measures.....	5
2.5. Dissemination of the results.....	5
3. RESULTS.....	6
3.1. Measures applied per country.....	6
3.2. Case studies.....	6
3.3. Measures listed in the database.....	6
3.4. Selection of 10 measures most likely to influence home to work travels.....	6
3.5. Evaluation of the 10 selected measures.....	7
3.6. Publication and dissemination of an awareness-raising brochure.....	7
4. CONCLUSIONS AND RECOMMENDATIONS.....	8
Appendix : Measures listed in the database.....	10

## 1. INTRODUCTION

The main objective of this 'study of the instruments influencing mobility engendered by traffic generators' is to improve mobility management practices with regard to home to work travel.

To obtain this, the study identified mobility management measures that appear acceptable, feasible and efficient from the point of view of sustainable mobility. In other words, the measures proposed must be applicable in Belgium and should result in a modal shift towards a more sustainable means of transport, in particular one that leads to the reduction of adverse effects on the environment.

The main objective is to provide recommendations concerning measures that can be implemented in our country to influence the mobility of individuals, especially with regard to the problem of home to work travel.

## 2. METHODOLOGY

The research was carried out in different phases:

### **2.1. Constitution of a User Group**

At the start of the project a User Group was set up, composed of about 40 people. During different meetings organised by the research team, the members of the User Group were invited to contribute to the research by sharing their experience, advice and wishes. Four meetings were held on the following dates: 1 July 1998, 4 February 1999, 16 May 2000 and 6 October 2000.

### **2.2. Constitution of a database**

An inventory of the existing and potential measures likely to influence travel behaviour was drawn up on the basis of questionnaires sent to national and international experts and on the basis of a review of the European literature and projects.

While the national questionnaire was designed to collect suggestions and comments on potential measures, the questionnaire for the foreign experts was aimed first and foremost at gathering information on the measures implemented in the countries concerned, while at the same time inviting the experts to comment on these measures.

To make the analysis of the state of the art complete, a number of case studies were analysed in depth. Several draft transport plans, focused on home to work traffic, were evaluated from various angles (objectives, financial means and results).

Based on this information, a database with 145 measures was set up in Access2 and the different measures were classified into 9 categories.

Category 1:	Land use planning
Category 2:	Benefits offered by the employer
Category 3:	Taxation
Category 4:	Information and awareness raising
Category 5:	Infrastructure
Category 6:	Labour legislation and regulations
Category 7:	Services
Category 8:	Pricing
Category 9:	Telematics

### **2.3. Selection of 10 measures**

Ten measures in the database were selected as being most likely to influence the home to work travel. This selection was based not only on the information gathered from the inventory of measures, but also on the experience of the research team and on the advice of the experts (including the members of the User Group).

The measures were selected in different phases and on the basis of different criteria:

1. **Type:** The type of measure refers to the intended target, i.e. home to work trips (type 1), trips by employees (type 2) including business trips, and finally, trips in general (type 3). It is clear that type 1 measures specifically relating to home to work travels were given a higher priority than type 3 measures (trips in general).
2. **Category:** Having classified the measures into different categories (taxation, pricing, information, telematics, legislation, etc.), the selection process ensured that none of these categories were over-represented.
3. **Source:** The different sources that referred to this project were listed for each measure. This includes documents, case studies and experts who cited the measures.
4. **Application:** The fact that the measure had already been applied successfully in different sites was taken into account.

### **2.4. Evaluation of the ten selected measures**

The 10 selected measures were evaluated in terms of their acceptability, feasibility and efficiency. In order to achieve this, 45 face-to-face interviews were conducted with the main actors concerned, in particular the representatives of employers and employees, public transport companies, municipalities, administrations, political parties and experts. The interviewee was asked to give the selected measures a score according to the three criteria. The interview was aimed at identifying the underlying reasons for giving certain scores and analysing in detail specific points from the individual perspective of the interviewee.

### **2.5. Dissemination of the results**

It is essential to disseminate the results of the research in order to raise awareness at all policy levels. The main aim is to introduce to all decision-makers the tools they can use to optimise the home to work travels in view of a sustainable mobility. To this end, the research group made a practical brochure outlining the key results of the project.

### **3. RESULTS**

During the different phases of the research and following the proposed methodology, several results were obtained.

#### **3.1. Measures applied per country**

From the questionnaire send to the foreign experts, information was collected on the measures implemented in the following countries: France, the Netherlands, United Kingdom and the United States (California). A summary of the measures per country was made.

#### **3.2. Case studies**

Nine draft transport plans focussing on the home to work traffic were evaluated from different angles. The assessed transport plans are from the University of Dublin in Ireland, from Nestlé (Noisiel) in France, from the Hogeschool in Heerlen and the airport in Schiphol in the Netherlands, from Agfa Gevaerts (Mortsel, Edegem, Wilrijk), from the Walloon Ministry of Transport (Namur) and from SABENA (Brussels) in Belgium, from Kraft (Bremen) in Germany and from Boots (Beeston) in the United Kingdom. The research team made a summary of these different case studies.

#### **3.3. Measures listed in the database**

On the basis of the information gathered, 145 measures were given a code in an Access 2 database. These measures are classified in 9 categories (see appendix).

#### **3.4. Selection of 10 measures most likely to influence home to work travels**

In cooperation with the User Group the 10 following measures were selected for evaluation in terms of acceptability, feasibility and efficiency.

Measure 1 : Stimulating companies to set up company transport plans

Measure 2 : Flexibility of working hours in companies

Measure 3 : Obligation for employers to have their employees pay parking fees or to give a bonus to the employees who do not make use of parking places

Measure 4 : Restriction of the number of parking places in the company

Measure 5 : Setting up parking facilities for cyclists, showers and changing rooms in companies

Measure 6 : Setting up, within the collective agreements on terms of employment, a system for the refund of the costs from home to work travel, giving priority to sustainable modes of transport

Measure 7 : Tax exemption for employers for bonuses given to employees for their home to work trips with a sustainable mode of transport, and tax exemption for the employee on the total amount of such bonuses

Measure 8 : Cooperation between the public transport company and the company, aimed at improving services to business parks

Measure 9 : Organisation of carpooling

Measure 10 : Development of teleworking

### **3.5. Evaluation of the 10 selected measures**

Each selected measure has been evaluated in two ways :

- first of all, an evaluation in terms of acceptability, feasibility and efficiency based on the interviews : the research team made a summary of this evaluation, distinguishing on the one hand the opinions gathered from the Brussels and Walloon region and, on the other hand the opinions from the Flemish region.
- second, a complementary evaluation based on the results of existing projects, case studies and information from literature review.

### **3.6. Publication and dissemination of an awareness-raising brochure**

To conclude the project, the research team made a brochure to raise awareness among the target groups. This brochure includes for every distinct category, the measures that can be applied for a sustainable mobility policy and the ten measures selected and evaluated within the framework of this project.

On 16 January 2001 the brochures (available in French and in Dutch) were distributed among the different socio-economic actors dealing with the mobility issue at a round table conference organised by the research team. Until the end of January the research team continued to distribute the brochure upon request.

The existence of the brochure was also made known through articles in specialised press. This resulted in several request of people/organisations ordering the brochure.

## 4. CONCLUSIONS AND RECOMMENDATIONS

It is becoming increasingly apparent that a rational policy with regard to mobility can no longer be centred solely on the creation of new infrastructure, as in the past, but must also be geared towards active management of the demand for transport. A change in people's behaviour in relation to journeys and choice of transport mode today is one of the goals that have to be attained to guarantee optimum and reliable mobility for everyone.

Through various channels (questionnaires, case studies, interviews, bibliographical research etc.), the present study has allowed a large quantity of information directly or indirectly related to home to work journeys to be gathered. This information has led, first to the preparation of a database containing 145 measures capable of influencing home to work journeys, second to the evaluation of ten of these measures, and third, to the production and distribution of an awareness-raising brochure aimed at decision-makers in the field of mobility.

The research team has formulated specific recommendations for each of the ten measures evaluated, which are described in the final report. The study has also allowed more general considerations to be demonstrated, which represent the conclusions of this study.

The importance of land use planning has been emphasised repeatedly. Ahead of any other measure, this represents a basic tool for developing a coherent and effective mobility management policy. As the aim of most journeys is to gain access to goods, services and so on, the location of activity areas (companies, schools, shops etc.) and residential areas will determine mobility needs and influence the choice of transport modes that will be favoured. In addition, land use planning can play a part, in the same way as town planning, in a more balanced redistribution of space between the different transport modes, which is essential for the development of a sustainable transport policy.

Still with a view to reducing needs for mobility, measures must be taken to encourage employees to move closer to their place of work. This aim will necessitate the implementation of an adapted housing policy, revitalisation of city centres and a reduction in registration rights.

A review of current taxation, which is regarded as favouring car use, has also been put forward as a way that should not be overlooked for supporting other measures aimed at changing behaviour. This review obviously relates to the reimbursement and deductibility of travel expenses, but it must also be aimed at company cars, the number of which is continuing to rise inexorably. Only a more deterrent taxation policy would enable the process to be halted. For privately owned cars, it is recommended that taxes linked to vehicle use should be increased while those related to vehicle acquisition are reduced. The latter are fixed costs which force the person who has incurred the costs to offset them by driving a high mileage. In view of the fact that the motorist often has little awareness of the real cost of his journeys, this strategy would enable him to be given a clear signal, with regard to the price per kilometre driven. This would lead him to choose the mode of transport he judges to be most efficient with a full knowledge of the facts. This strategy would also allow better internalisation of the social and environmental costs of car use. Taxation would consequently allow users to be made to pay a larger share, or even the whole, of the economic, social and environmental costs they cause.

The pricing of road infrastructures, i.e. having to pay to use them, forms part of this same approach to internalising costs. Special attention must be paid in this context on both public and private car-park management policy, which represents an important mobility management tool. This policy must ensure that parking for residents and short-term parking is favoured so that town centres are not



overloaded, while being devoted to reducing the number of cars belonging to outsiders parked all day. One of the solutions to be considered is to set up Park and Ride (P&R) car-parks on the outskirts of towns and cities. With regard to private car parks, priority should be given to eliminating regulations which lay down a minimum number of car-park spaces. A first step from this point of view would be to repeal the De Saeger circular, still applicable in Wallonia and Brussels, which stipulates a minimum number of parking spaces when a new apartment block is built.

Whether taxation, land use planning or any other field directly or indirectly related to mobility is concerned, a measure taken in isolation will have very little impact. Persuading people to change their behaviour with regard to choice of transport mode is a long-term process that requires a set of measures to be implemented along the same lines. This implementation necessitates both vertical coordination, between the various levels of authority (national, regional and local) and horizontal coordination, between the various powers within each level. The vital role played by companies in setting up a whole range of measures should also be noted. The latter must therefore be involved in the thought process and encouraged to play an active role in the implementation of a sustainable mobility policy.

In addition, it will only be possible to achieve a significant change through a judicious balance between incentives and deterrents (carrot and stick). In order to create the former, there will be a need for adequate financing which would allow the costs related to their implementation to be covered, while the latter will require political will and courage in proportion to their degree of unpopularity. There is an apparent difference here between the north and south of the country. It appears that in Flanders there is a tendency towards greater acceptance of certain deterrent measures. It also appears that measures considered to be "soft", such as the installation of showers, cycle parks, organisation of car-sharing etc. could easily be subject to legal constraints. Despite being easy to implement and not involving great financial resources, these measures are often disregarded. Making them compulsory would prevent them being routinely forgotten.

Whatever the measures implemented, it is evident that their success in terms of modal shift will be closely linked to the existence of reliable alternatives to car use. Special attention will therefore have to be given to improving the public transport service (network, frequency, commercial speed etc.) but also to setting up innovative services capable of guaranteeing mobility for everyone. The Flemish draft decree on the concept of "minimum service levels for mobility" is along these lines in defining the precise objectives to be attained in terms of public transport service and by recommending innovative solutions suited to the specific characteristics of the rural areas.

---

**APPENDIX : MEASURES LISTED IN THE DATABASE**

---

### **Category 1 : LAND USE PLANNING**

- Décentralisation des administrations et de certaines industries
- Installation d'une entreprise sous condition de l'existence ou de la réalisation d'une desserte transport public
- Prime aux entreprises qui s'installent près des noeuds de transport ou pénalité aux entreprises qui ne tiennent pas compte de cette donnée
- Obligation pour les candidats bâtisseurs de réaliser une étude d'impact de mobilité
- Obligation pour les candidats bâtisseurs de prévoir des douches, des vestiaires, des parkings pour handicapés, covoitureurs, vélos
- Aval du Ministre compétent en matière de transport pour la délivrance d'un permis de bâtir avec incidence sur la mobilité
- Réglementation qui attribue à chaque municipalité un nombre maximum de places de parkings
- Obligation pour les candidats bâtisseurs de se soumettre à certaines obligations si situés dans un périmètre critique
- Obligation pour les communes ou les villes de réaliser des plans de mobilité
- Limitation du nombre de places de parking de nouveaux bâtiments en fonction de certains critères
- Choix de localisation des entreprises suivant la politique des zones ABC définie aux Pays-Bas
- Obligation de concertation entre les gestionnaires investisseurs et les responsables locaux de l'aménagement du territoire
- Limiter l'extension des villes et promouvoir la concentration
- Réduction de l'espace parking
- Geler la construction de nouvelles routes
- Réduction de l'espace routier disponible pour les voitures
- Obligation pour les promoteurs immobiliers de participer au financement de la politique de mobilité
- Les compétences de l'aménagement du territoire, des travaux et des transports sous la tutelle d'un seul Ministre
- Restriction du nombre de parkings des entreprises
- Réalisation d'un « plan piéton » ou « plan vélo »

### **Category 2 : BENEFITS OFFERED BY THE EMPLOYER**

- Participation de l'entreprise à l'achat d'équipement pour cyclistes
- Primes accordées aux covoitureurs
- Augmentation de la part de l'employeur dans les abonnements aux transports publics
- Suppression ou réduction de l'intervention de l'employeur dans les frais de déplacement domicile-travail en voiture
- Prime spéciale ou jours de congé aux employés qui viennent travailler à vélo ou à pied
- Système de troc de droits de stationnement, possibilité d'échanger sa place de parking contre un autre avantage
- Primes aux employés qui déménagent et se rapprochent de leur lieu de travail
- Prime aux employés qui n'utilisent pas de places de parking

### **Category 3 : TAXATION**

- Suppression de la déductibilité fiscale des coûts liés à la construction de places de parking
- Déductibilité fiscale pour l'employeur des frais occasionnés dans le cadre de la mise en œuvre d'un plan de transport
- Taux de TVA à l'achat d'un véhicule variable suivant des critères écologiques
- Taxe de circulation fonction du rapport nombre de véhicules/nombre de personnes du ménage
- Taxation des places de parking privées non résidentielles
- Taxe à l'utilisation d'un véhicule qui intègre les coûts du transport
- Suppression ou réduction de la déductibilité des frais de déplacements pour les employés qui pratiquent l'autosolisme
- Exonération de cotisations à l'ONSS pour les primes accordées par l'employeur à ses employés pour l'utilisation des modes de transport durables
- Suppression ou diminution de la déductibilité fiscale des frais liés aux voitures de société et supportés par l'employeur

- Taxe de circulation liée aux kilomètres parcourus
- Imposition de l'employé en possession d'une voiture de société en fonction de l'utilisation réelle à des fins privées
- Taxes de mise en circulation et de circulation fonction de critères environnementaux du véhicule
- Déductibilité fiscale des déplacements domicile-travail identique quelque soit le mode de transport ou plus importante pour les modes de transport durables
- Réduction ou suppression des taxes de mise en circulation et de circulation
- Fiscalité favorable à la restauration des logements anciens aux centres villes
- Incitants fiscaux permettant de développer le télétravail et les téléconférences
- Incitants fiscaux à l'utilisation d'un véhicule électrique
- Augmentation du prix du carburant (taxe)
- Taxation plus avantageuse des carburants plus écologiques
- Exonération d'impôt pour l'employé du total de la prime éventuellement accordée par l'employeur pour l'utilisation de modes de transport durable
- Réduction progressive du différentiel actuel en faveur du diesel
- Taxation, sous forme de cotisations sociales, du remboursement par l'employeur des déplacements en voiture
- Déductibilité fiscale des frais de déplacement domicile-travail plus importante pour les employés habitant à proximité de leur lieu de travail
- Suppression totale de la déductibilité fiscale des déplacements domicile-travail
- Diminuer davantage les droits d'accises sur le diesel utilisé par les transports publics et par les transports collectifs organisés par les employeurs pour leurs employés (actuellement exonération de 2 BEF)
- Diminution de la TVA à l'achat d'un véhicule
- Taxe sur l'énergie
- Exonération fiscale pour l'employé du total du remboursement par l'employeur des abonnements en transport public
- Suppression de la déductibilité des frais inhérents aux parkings payants
- Encourager les employés à habiter plus près de leur lieu de travail par l'adaptation des frais d'enregistrement
- Déductibilité des frais de parking de dissuasion (Park and Ride) pour les employés
- Déductibilité de 6 BEF/km maintenue pour les chauffeurs qui pratiquent le covoiturage et reçoivent une rémunération des passagers
- Taxe de circulation liée aux résultats du contrôle technique
- Dispositions fiscales (en termes d'amortissement) favorables aux véhicules électriques de sociétés
- Taxation en tant qu'avantage en nature des places de parking mises gratuitement à disposition des employés
- Déductibilité des frais de déménagement pour l'employé dans le cas d'une nouvelle adresse de travail
- Exonération fiscale pour l'employé du remboursement par l'employeur des frais de déménagement de l'employé qui se rapproche de son travail

#### **Category 4 : INFORMATION AND AWARENESS RAISING**

- Mise en place de cellules d'information sur les modes de transport de transport durable
- Promotion des différents produits proposés par les transports publics
- Promotion de la gestion de la mobilité auprès des entreprises - rassemblement et diffusion d'information pour aider les entreprises à réaliser leur plan de transport
- Organisation de la concertation et de la coopération entre les employeurs, les employés et les autorités en vue de réaliser une meilleure gestion de la mobilité
- Nomination et formation de conseillers en mobilité
- Documentation informative et sensibilisation à la mobilité durable à l'intention des nouveaux employés
- Organisation d'une loterie ne pouvant être gagnée que par les personnes ayant utilisé un mode de transport durable
- Organisation de journées de promotion des modes de transport durables
- Attribution d'une distinction/récompense aux personnes/entreprises qui se sont le plus impliquées en faveur des modes de déplacements durables

## **Category 5 : INFRASTRUCTURE**

- Création d'un ring autour de Bruxelles réservé au trafic de transit
- Système prioritaire pour les bus et les trams
- Park and bike, parking agrémenté de la possibilité de louer un vélo
- Mise en place de parkings vélos, de douches et de vestiaires au sein des entreprises
- Parkings vélos près des gares et arrêts de transports en commun
- Mise en place de nouveaux parkings vélos plus sécurisants
- Amélioration des plateformes d'accès aux transports en commun (arrêts, abris, ...)
- Création de parkings destinés aux covoitureurs sur les autoroutes par exemple
- Création/amélioration des espaces réservés aux piétons
- Développement de nœuds de transport public
- Création de sites propres pour les bus et les trams
- Création et/ou amélioration des pistes cyclables
- Restriction sélective en matière de parking
- Création de parkings de dissuasion
- Création d'espaces réservés aux véhicules comprenant un nombre élevé de passagers (HOV)
- Parkings réservés aux covoitureurs sur le site de destination
- Construction d'un RER
- Création de parkings aux abords des gares et aux extrémités des lignes de métro

## **Category 6 : LABOUR LEGISLATION AND REGULATIONS**

- Permettre aux véhicules moins polluants de bénéficier d'une plus grande liberté de circulation
- Acquisition de véhicules propres par les collectivités publiques
- Frais de déplacements domicile-travail remboursés à 9 BEF au lieu de 6 BEF pour covoiturage prouvé
- Flexibilité des horaires de travail en entreprises
- Subsidés octroyés aux entreprises dont les résultats du plan de transport sont sensibles
- Accord sectoriel pour la mise en place d'une cotisation ristournée aux employés qui choisissent des modes de transport durables
- Obligation ou incitation pour les entreprises à réaliser des plans de transport
- Obligation pour l'employeur de participer à tous les frais de déplacements en mode de transport durable, même si la distance domicile-travail est inférieure à 5 km
- Accord sectoriel pour un système de cotisations pour cyclistes (domicile-travail)
- Remboursement des déplacements domicile-travail identique quel que soit le mode de transport utilisé
- Mise en place, dans le cadre des conventions collectives de travail, de systèmes de remboursements des déplacements domicile-travail qui privilégient les modes de transport durables
- Réorienter le budget public alloué au transport vers les transports alternatifs
- Participation des entreprises au financement des transports publics
- Obligation pour les employeurs de diriger au moins 50% des dépenses réalisées pour les déplacements de leurs employés vers les modes de transport durables
- Obligation pour les communes ou les villes de réaliser des plans de mobilité
- Restriction routière sélective : contrôle de l'accès à certains points du réseau suivant le jour, l'heure, le type de véhicule, l'usage du véhicule, la durée du séjour

### **Category 7 : SERVICES**

- Amélioration des correspondances TEC et réseau ferroviaire
- Crèche d'entreprise
- Dial-a-ride, système de bus à la demande
- Possibilité pour les entreprises de fournir directement à leurs employés des tickets de transport public
- Plus grande flexibilité des transports en commun pour meilleure adaptation aux besoins des entreprises
- Organisation du covoiturage
- Possibilité pour les employés de recourir à un service de taxi pour leurs déplacements professionnels
- Service de réparation pour vélo organisé par l'entreprise
- Mise à disposition par l'entreprise de vélos ou/et de voitures pour les déplacements réalisés par le personnel en service
- Retour à la maison garanti en cas d'urgence pour les covoitureurs
- Concierge collectif dans l'entreprise qui peut réaliser des courses simples pour les employés
- Meilleure desserte des zonings industriels par les transports en commun
- Possibilité de prendre son vélo dans les transports en commun
- Collaboration société de transport public et entreprise pour améliorer la desserte des zonings
- Augmentation de la fréquence des transports en commun
- Mesures préventives pour lutter contre le vol des vélos
- Vanpool, covoiturage en minibus mis à disposition par l'entreprise
- Eliminer les grèves sauvages dans les transports publics
- Définition de normes de qualité de service pour le transport public et le respect de ces normes
- Service minimum assuré par les transports publics, même en cas de grève
- Système de tarification intégrée pour les transports en commun
- Organisation par l'employeur de navettes spéciales pour les employés

### **Category 8 : PRICING**

- Elimination du parking de longue durée en centre ville via une tarification progressive
- Système de tarification des parkings
- Période de tarifs promotionnels des abonnements aux transports publics
- Tarif minimum pour parkings, y compris les parkings des centres commerciaux, aux bords des villes
- Tarifs préférentiels de transport public pour les entreprises réalisant un plan de transport
- Gratuité des parkings à l'abord des gares, des stations de métro
- Obligation pour les employeurs de faire payer le prix des parkings à leurs employés
- Système de tarification des routes
- Réduction du prix des transports en commun
- Obligation pour les villes de mettre en place une tarification des parkings dont le seuil minimal est fixé

### **Category 9 : TELEMATICS**

- Réservation et achat à distance de titres de transport
- Information des voyageurs dynamique et intégrée
- Développement du télétravail
- Développement du télé-shopping, télébanking
- Signalisation à messages variables