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International Transport Forum

TRANSPORT RESEARCH CENTRE

# EFFECTIVE TRANSPORT POLICIES FOR CORPORATE MOBILITY MANAGEMENT

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# FOREWORD

## Scope and Methodology

Quite a significant number of companies and other large employers have put in place initiatives to address the traffic generated by their activities and, in particular, the traffic generated by their workers and customers. Such *Corporate Mobility Management* (CMM) initiatives are the focus of this report which provides guidance to governments on effective strategies for addressing and mitigating the traffic generated by commuter and customer travel. The dual focus of the project was *to uncover what potential roles*, if any, public authorities can play in facilitating the uptake of CMM (see Chapter 3) and to investigate *success factors in individual best practice cases at the company level* (see Chapter 4). This review was carried out by a consultant (a recognised expert in the field) under the guidance of the JTRC Secretariat and an Advisory Group comprised of 7 countries[1]. The project builds on the ECMT Round Table "*Managing Commuters Behaviour: A New Role for Companies*" (Round table 121, 2001) and was partially funded through a grant by Japan.

The project methodology centred on a case-study approach focusing on a few selected CMM initiatives rather than on an exhaustive review of a broad set of corporate mobility management plans. The reasons for this are threefold:

1. This project sought to provide guidance on *effective* policies – and in order to assess the effectiveness of policies, some *quantitative* (or, barring that, a *reasoned qualitative*) analysis of the outcome of the initiatives must be available. Unfortunately, relatively few CMM initiatives publish, or otherwise provide, quantitative ex-post assessments. This report covers some of the more important initiatives that do so.

2. In order to overcome the challenge posed by the relative paucity of rigorous quantitative assessments of CMM initiatives, a decision was made to leverage existing expertise in the field. An expert-based review was put into place in order to identify those projects that published quantitative results or otherwise provided a well-founded qualitative assessment. The selected initiatives were also chosen because they were felt to be broadly representative of a wider range of initiatives.

3. Finally, the case study approach and the detailed interviews that comprised it allowed the report to investigate in much more detail some of the success factors and barriers than would otherwise have been possible with a wider, but less rich, review of initiatives.

The report itself is based on a desktop survey of Corporate Mobility Management initiatives and responses to an in-depth questionnaire and extensive phone interviews with 6 companies, 4 CMM support facilities and 7 National, regional, or local governments with CMM policies in place.

## NOTE

[1] *Belgium, Germany, Japan, the Netherlands, Spain, the United Kingdom and the United States.*

# ABSTRACT

## ITRD[1] NUMBER E145017

Faced with growing negative impacts of traffic growth, many public authorities have sought to examine what can realistically and reasonably be accomplished by focusing not only on supply (*e.g.* roads and vehicles) but on managing the *demand* for transport. Increasingly, public authorities have enlarged their focus from demand management policies that target individuals and households to demand management policies that target large traffic generators – including private and public sector workplaces. Such *Corporate Mobility Management* (or Company Mobility Management - CMM) strategies seek to promote sustainable commuter, business and customer travel. This report examines the scope for such actions noting that CMM initiatives have the potential to save money for both employers and employees. Based on a survey of projects that have reported quantified results, the report finds that the dominant factors in the uptake of CMM policies are pressure from *external regulations* (either those connected to transport policies or connected to site development or zoning approval/permitting processes) or pressures companies face with regard to *transport-related costs* – and in particular, the costs related to the provision of *employee and customer parking*. It also finds that there is scope for action on the part of authorities to facilitate the uptake of these programmes – though there is no single model for government intervention in this arena. Crucially, however, governments have certain *instruments* and specific *windows of opportunities* for leveraging Corporate Mobility Management measures into place. The most important of these are linked to the *land development permitting process* and to *zoning requirements with respect to the provision of parking spaces*.

**Fields:** Traffic and transport planning (72); Economics and administration (10).

**Keywords:** Demand (econ), local authority, industry, journey to work, planning, transport mode, selection, parking place (one veh only), land use, policy, parking, cost, evaluation (assessment), sustainability.

## NOTE

[1] The International Transport Research Documentation (ITRD) database of published information on transport and transport research is administered by TRL on behalf of the Joint OECD/ECMT Transport Research Centre. ITRD contains over 350 000 bibliographical references, and about 10 000 are added each year. Input to the ITRD database is provided by more than 30 renowned institutes and organisations from around the world. For more details about ITRD, please contact itrd@trl.co.uk or see the ITRD website at www.itrd.org.

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# EXECUTIVE SUMMARY

## Public Authorities and Mobility Management

One of the core challenges for public authorities is to ensure that transport activity continues to support overall societal objectives, such as the generation of wealth and the provision of high quality access to people, jobs, services and activities while, at the same time, managing the sometimes negative impacts of mobility – including extreme congestion, pollution, noise and climate impacts and other dis-benefits such as reduced liveability in urban areas.

Historically, the role of transport (and environmental) authorities has been to ensure that sufficient capacity exists to meet rising demand for travel and to prescribe specific technical standards that vehicles must meet in order to meet safety and environmental objectives. Much good has come of this combined approach, but there is an increasing awareness that the combination of "predict-and-provide" and "*command-and-control*" policies is reaching its limits – especially within crowded urban areas.

Consequently, many public authorities have sought to broaden the scope of their action by examining what can realistically and reasonably be accomplished by focusing not only on supply (*e.g.* roads and vehicles) but on managing the demand for transport.

Demand-side management, also known as *Travel Demand Management or Mobility Management*, is defined as:

> *…a demand-oriented approach to promote and enhance sustainable mobility. Its aim is to support and encourage a change of attitude and behaviour towards sustainable modes of transport. It involves new partnerships and a set of tools, which are usually based on information, communication, motivation, organisation and coordination, and require promotion*[1].

Demand-side strategies generally seek to influence the volume, timing, mode choice and frequency of travel and have traditionally focused on individual or household travel. This approach has many advantages in that individuals and households represent the loci where most transport decisions are made. However, a key disadvantage has been that individuals and households are, by definition, a widely heterogeneous and disaggregate policy target rendering cost-effective government action more difficult. Furthermore, the implementation of policies such as road pricing that have the potential to be universally applicable across the broad spectrum of individuals and households has been, with only a very few exceptions, notoriously difficult to implement.

## Corporate Mobility Management

For very practical reasons, some public authorities have enlarged their focus from demand management policies that target individuals and households, to demand management policies that target large traffic generators – including private and public sector workplaces. Such ***Corporate Mobility Management*** (or Company Mobility Management) strategies seek to promote sustainable commuter, business and customer travel. Specific target groups of Corporate Mobility Management (CMM) initiatives are employees and

visitors. Employers are directly involved in Corporate Mobility Management strategies as they represents the main "channel" to reach the specific target groups.

The main instrument used for the planning and implementation of Corporate Mobility Management measures – and for ex-post assessment – is the mobility plan[2]. In general a Mobility Plan includes:

An *analysis of the current situation and existing framework conditions* (*e.g.* existing trip-patterns, quality of accessibility of the site with different means of transport, legislative and regulatory context).

- The *setting of targets* (in terms of modal shift change or reduction of single vehicle occupancy rate).
- The definition of the *range of measures* to implement.
- The *definition of the responsibilities* for the implementation of each selected measure.
- The workplan for implementation.
- The methods and work plan for evaluation and controlling of the impact of the adopted measures.

## The JTRC Advisory Group Project on Effective Policies in the Field of Corporate Mobility Management for Employee and Customer Travel

This project has sought to elucidate lessons and guidance that can be drawn from an in-depth investigation of *best-practice* in the field of Corporate Mobility Management. The dual focus of the project has been to investigate success factors in individual best practice cases at the company level and to uncover what potential roles, if any, can be played by public authorities in facilitating the uptake of CMM. The project builds on the previous ECMT Round Table "*Managing Commuters Behaviour: A New Role for Companies*" (Round table 121, 2001). This report is based on a desktop survey of Corporate Mobility Management initiatives, responses to an in-depth questionnaire and extensive interviews. The report was reviewed and vetted by an Advisory Group consisting of representatives nominated from 7 countries[3].

## Conclusions

### *Impact of Corporate Mobility Management*

The magnitude of change brought about by Corporate Mobility Management initiatives can be quite large (15-20% reduction in drive-alone travel) and cost-effective. Indeed, CMM initiatives have the potential to save money for both employers and employees. For example, despite a mobility management cost of €220 000 per year, one company still realised an outright savings of approximately €80 000 per annum as a result of avoided parking costs. Avoided parking costs was a recurrent major cost saving highlighted by the scan of best practice cases.

### *Company-level Motivations for Corporate Mobility Management*

While companies implement Corporate Mobility Management according to a number of different reasons, two stand out as being particularly important. In fact, they may be the *only* motivations that matter in most cases. These are the pressures companies face because of *external regulations* (either those connected to transport policies or connected to site development or zoning approval/permitting processes)

or the pressures companies face with regard to *transport-related costs* – and in particular, the costs related to the provision of *employee and customer parking*. Other motivations such as improving staff travel options, environmental motivations, image, etc, play much less of a role.

Clearly, except in the two previously cited situations (external regulations and/or cost pressures), companies should not be expected to see Corporate Mobility Management as linked to their core missions – it is most often not. Even in those cases where companies face CMM-linked cost pressures, internal accounting mechanisms sophisticated enough to identify CMM-related cost savings may not exist. Many companies may have an *a priori* (and oftentimes, erroneous) view that site management activities cannot be operated as a revenue/profit centre and that, even if they were, they could ever generate significant savings and/or revenue. Instruments that aid companies in carrying out such accounting – such as promoting mobility management support facilities – may help in these instances.

Companies may be willing to implement Corporate Mobility Management plans in return for greater flexibility and freedom from specific rules that entail costs. For instance, minimum parking provisions in areas with high land values entail significant costs for companies. These requirements are typically set out in land development, zoning and/or permit-related regulations. Corporate Mobility Management plans may represent an alternative manner in which employee mobility can be guaranteed without facing the full costs of parking provision as stipulated in local zoning ordinances. Permitting processes that allow for such *quid pro quo* exchanges (CMM plans in return for greater parking rules flexibility) can play an important role in support of Corporate Mobility Management. This was the case with several case studies in the report, *e.g.* as in Zurich, where the city granted land developers greater control and flexibility over parking management within urban redevelopment zones in return for a guarantee (backed by sanctions) that traffic into and out of the zones would not surpass a set "quota" of generated trips.

Finally, it is important to note both the interest and the roles that can be played by land developers and Chambers of Commerce in supporting and spreading the use of Corporate Mobility Management. In both cases (potential cost reductions and greater regulatory flexibility) are equally strong motivators.

***Government Roles in Corporate Mobility Management***

There is a strong argument to be made for the necessity of government action in support of CMM in those instances where companies may not face all of the negative externalities that their employees' and customers' travel generates. In particular governments have a strong role to play in facilitating CMM measures and ensuring an even playing field with respect to their implementation within urban areas and their periphery. To do the former allows governments to flexibly address the external impacts caused by workplace/commercial traffic generation; and to do the latter allows governments to prevent regressive competitive bidding among municipalities seeking to attract commercial development by offering more lax regulations with respect to traffic generating sites.

However, there is no single model for effective Corporate Mobility Management initiatives nor is there a justification for universal CMM requirements extending to all companies irrespective of size, location and activity.

Equally clear is that governments have certain *instruments* and specific *windows of opportunities* for leveraging Corporate Mobility Management measures into place. The most important of these are linked to the *land development permitting process* and to *zoning requirements with respect to the provision of parking spaces*. Simply requiring Corporate Mobility Management plans without linking them to these two levers will likely require levels of control and sanctioning authority that are as rare as they are difficult to implement.

The scope for government action can be relatively wide, ranging from the provision of support facilities to assist company-level Corporate Mobility Management initiatives, to setting an appropriate national regulatory framework that allows for local governments to put in place their own CMM requirements. However, at both the national and regional levels, existing policies may block the uptake and implementation of Corporate Mobility Management and it is important that governments seeking to facilitate the spread of CMM address these blockages. For instance, the uneven and oftentimes unfair fiscal treatment of employer-provided parking, employer-provided public transport subsidies for employees, employee out-of-pocket parking and public transport costs and company cars can be a powerful deterrent for implementing CMM initiatives.

Finally, it should be noted that while there is considerable scope for action on the part of regional/local governments, the latter are not the only nor, in some cases, even the most important agents for ensuring a uniform framework for Corporate Mobility Management. As noted above, in some cases, developers and/or industry associations such as Chambers of Commerce (as in the case of Grenoble) can be effective surrogates for governments in promoting and co-ordinating Corporate Mobility Management efforts.

## NOTES

[1] *According to EPOMM (European Platform of Mobility Management), see www.epomm.org.*
[2] *Also known as* Green Commuter Plan, Travel Plan or Trip Reduction Plan.
[3] *Belgium, Germany, Japan, the Netherlands, Spain, the United Kingdom and the United States.*

# 1. INTRODUCTION

## Public Authorities and Mobility Management

One of the core challenges for public authorities is to ensure that transport activity continues to support overall societal objectives, such as the generation of wealth and the provision of high quality access to people, jobs, services and activities while, at the same time, managing the sometimes negative impacts of mobility – including extreme congestion, pollution, noise and climate impacts and other disbenefits such as reduced liveability in urban areas.

Historically, the role of transport (and environmental) authorities has been to ensure that sufficient capacity exists to meet rising demand for travel and to prescribe specific technical standards that vehicles must meet in order to meet safety and environmental objectives. Much good has come of this combined approach, but there is an increasing awareness that the combination of "*predict-and-provide*" and "*command-and-control*" policies is reaching its limits – especially within urban areas.

Consequently, many public authorities have sought to broaden the scope of their action and have examined what can realistically and reasonably be accomplished by focusing not only on *supply* (*e.g.* roads and vehicles) but on managing the *demand* for transport.

Demand-side management, also known as *Travel Demand Management or Mobility Management*, is defined as:

> *…a demand-oriented approach to promote and enhance sustainable mobility. Its aim is to support and encourage a change of attitude and behaviour towards sustainable modes of transport. It involves new partnerships and a set of tools, which are usually based on information, communication, motivation, organisation and coordination, and require promotion*[1].

Demand-side strategies generally seek to influence the volume, timing, mode choice and frequency of travel and have traditionally focused on individual or household travel. This approach has many advantages in that individuals and households represent the loci where most transport decisions are made. However, a key disadvantage has been that individuals and households are, by definition, a widely heterogeneous and disaggregate policy target rendering cost-effective government action more difficult. Furthermore, the implementation of policies such as road pricing that have the potential to be universally applicable across the broad spectrum of individuals and households has been, with only a very few exceptions, notoriously difficult to implement.

## Brief introduction to Corporate Mobility Management

For very practical reasons, some public authorities have enlarged their focus from demand management policies that target individuals and households with demand management policies that target large traffic generators – including workplaces in the private and public (including intermediate associations like

NGO's, agencies, associations, etc.) sector. Such *Corporate Mobility Management* (or Company Mobility management - CMM)[2] strategies seek to promote sustainable commuter, business and customer travel by seeking to reduce the impacts of travel by employees and visitors. Because of their central role in facilitating and/or modifying alternative travel patterns by employees and, to a lesser extent, by customers, employers play a central role in the implementation of CMM.

***Motivation for employers to implement CMM***

Companies may have several reasons to put in place CMM initiatives depending on their particular circumstances. Nevertheless a cross-sectional review of CMM initiatives reveals a core set of common principle motivations (Cairns *et al.*, 2002, Müller, 2001 or Synergo, 2003). These are:

- External regulations (required by law; basic condition to obtain planning or building permission, respond to government transport policies).
- On-site parking space problems.
- Site accessibility problems due to congestion.
- Cost saving (*e.g.* by giving up free parking allowances).
- Improve travel options for staff and reduce commuting stress.
- Environmental consciousness or integration of transport issues in environmental management systems (like EMAS or ISO 14001).
- Lead by example (especially at sites of local, regional or national governments).
- Image.

As the report will investigate in the detailed case studies, not all companies share all of these motivations to the same degree and some of these – in particular, the first two – are consistently rated by companies as being more important than the others.

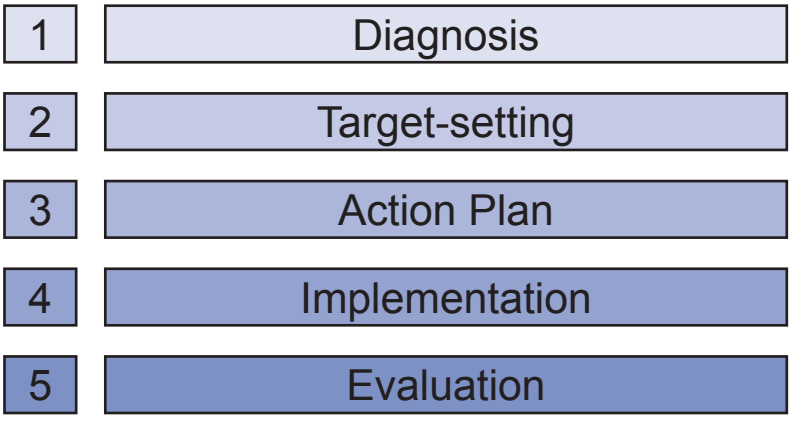
***The Mobility Plan: at the core of CMM***

The main instrument used for the planning and implementation of Corporate Mobility Management - and for ex-post assessment - is the mobility plan[3]. In general a mobility plan includes five components (see Figure 1.1.):

- An *analysis of the current situation and existing framework conditions* (*e.g.* existing trip-patterns, quality of accessibility of the site with different means of transport, legislative and regulatory context).
- The *setting of targets to achieve* (in terms of modal shift or reduction of single vehicle occupancy rate).
- The definition of the *range of measures* to implement, and the *definition of the responsibilities* for the implementation of each selected measure.

- The *work plan for implementation*.
- The *methods and work plan* for evaluation and controlling of the impact of the adopted measures.

Figure1.1. **CMM Mobility Plan in 5 steps**




***CMM Measures***

At the core of the CMM strategy are the measures for implementation. These are multiple and can be adapted to the specific needs of employers granting them a large range of flexibility. The measures (see Table 1.1) available to employers can broadly be broken down into measures targeting specific modes, specific types of trips and/or by the field of intervention – *e.g.* measures that act on:

- The *infrastructure* related to different means of transport.
- The company or organisation itself, especially insofar as the latter provide *incentives* or *disincentives* to use different means of transport.
- Providing *information* regarding different means of transport or have the aim to *raise awareness*.

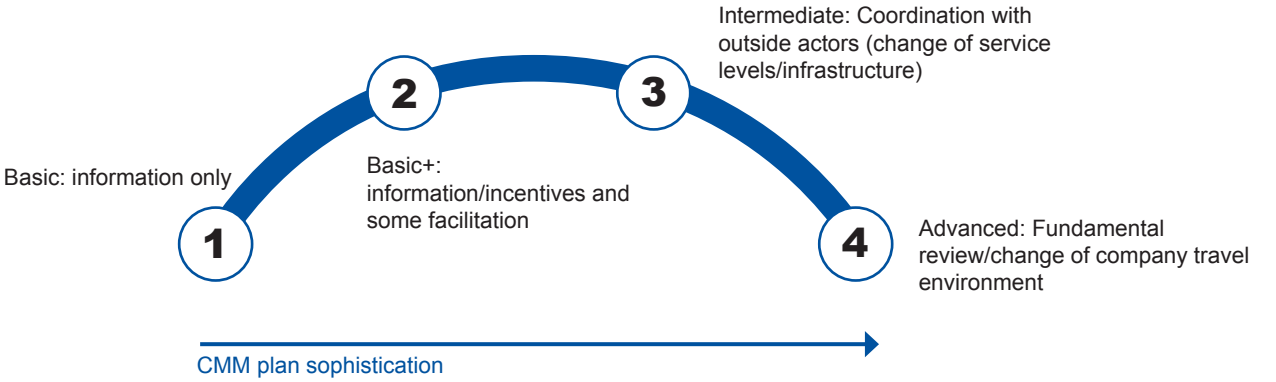
***Range of Sophistication of CMM Programmes***

Given the range of available options and the differences in local contexts and motivations, it is clear that not all companies will adopt the same CMM approach … nor should they. However, a quick scan of CMM plans reveals a large variety of CMM strategies that can be roughly distributed along a continuum according to both the plan's sophistication and the level of interaction with actors outside of the company proper (see Figure 1.2).

Table 1.1. **Examples of CMM measures**

| Travel types | Means of transport | Type of measures | | |
|---|---|---|---|---|
| | | **Infrastructure** | **Organisation, incentives, disincentives** | **Information, awareness raising** |
| Home to work travel | Public transport, company bus | Direct access and short distances from the public transport stop to the company ground; etc. | On-site ticket sale, Job-Tickets; company bus service; shuttle-bus service to main public transport stops; guarantee ride home; etc. | Information about services, tariffs and time-tables (printed, Intranet, etc.); action days; campaigns, free test rides; etc. |
| | Bicycle | Protected bike stands; lockers; showers; etc. | Cycling subsides on expenses associated with cycling to work; subsidies on bicycle purchase; on-site bike repair service; provision of rain gear; etc. | Information about cycling routes; bikers breakfast; action days; campaigns, safety and health recommendations; competitions; etc. |
| | Parking management | Rationing of parking spaces (or at least not extend the actual offer); etc. | Parking charges; parking allowances management adopting accessibility criteria; parking cash out | Information on parking allowances and parking charges; action days, campaigns; etc. |
| | Car-Pooling | Dedicated parking space for car-poolers; etc. | Reduced parking charges for car-poolers; on-site matching service; etc. | Information on car-pooling facilities; action days; campaigns; etc. |
| | General | | Teleworking; compressed work week; etc. | |
| Business travel | Public transport | Same measures as for home to work travel | Business travel regulations in favour of public transport use, etc. | |
| | Bicycle | Same measures as for home to work travel | On-site bicycle pool for short distance business travels; etc. | Reservation facilities and information on offer; etc. |
| | Car-Sharing | | Participation on Business Car-Sharing schemes of Car-Sharing provider | Information on offer; etc. |
| | General | | Teleconferences | Information on offer; etc. |
| Energy efficient car use | Energy efficient driving | | Participation in courses for Eco-driving | Information on offer; on-site action days with course provider |
| | Energy efficient Fleet management | | Rationing vehicle fleet (or at least not extending the fleet); energy efficient company cars | |
| Customer travel | Public transport | Same measures as for home to work travel | | Information on accessibility of the site with public transport; etc. |
| | Parking management | Same measures as for home to work travel | Parking charges | Information on parking management at the site; etc. |

Figure 1.2. **Range of CMM Mobility Plan Sophistication**




At the most basic level, a company mobility plan may simply seek to inform employees of alternative travel options available to them without providing any further support for employees to adopt these. At a more sophisticated level, a company might additionally provide some internal incentives to adopt different travel patterns and may provide specific infrastructure and/or modify facilities to encourage changes in travel behaviour by its employees. At yet a further level of sophistication, the company might, in addition to the measures described above, go outside of the company and actively negotiate with public transport operators and local governments to seek to bring about changes in service schedules and/or provide new infrastructure. Finally, at the extreme, a company might undertake a fundamental re-think of its operations, how these generate and influence travel and seek to re-organise itself by changing non-transport aspects of its business (location, schedules, procurement, etc) and by actively negotiating with outside forces (transport operators, sub-contractors, governments, clients, etc) to minimise transport/logistics-related environmental and social impacts.

Generally speaking, many CMM travel plans fall somewhere between points 1 and 2 in Figure 1.2, many current best case plans are situated around point 3, while very few cases can be seen to reach point 4.

Before investigating specific success factors in individual best practice cases at the company level in Section 3, the next section will examine what potential roles, if any, public authorities might play in facilitating the uptake of CMM by looking at national and regional CMM support initiatives.

## NOTES

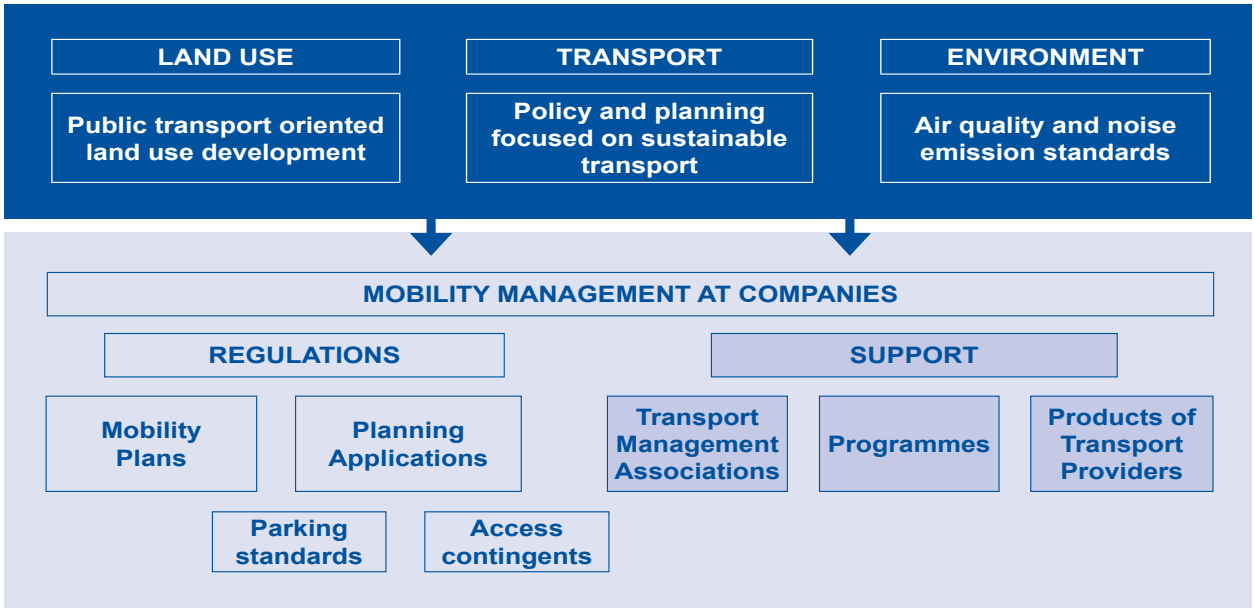
[1] *According to the definition of EPOMM (European Platform of Mobility Management) www.epomm.org*
[2] *In the US, the Netherlands and the UK CMM is known as Transport Demand Management (TDM).*
[3] *Also known as* Green Commuter Plan, Travel Plan or Trip Reduction Plan.

## 2. ROLE OF PUBLIC AUTHORITIES

Public authorities seeking to facilitate company-level CMM policies have a wide spectrum of measures from which to select. These measures fall into one of two broad fields: governments can either work to create the right framework conditions for CMM or can work to directly facilitate or mandate the uptake of CMM (see Figure 2.1).

An important pre-condition for successful CMM initiatives is that employees have adequate alternatives to single car use within the greater travel-to-work area. Public authorities can help to set supportive framework conditions through appropriate policies in the fields of ***land use*** (*e.g.* through public transport oriented land use development), ***transport*** (offering a greater choice of high-quality modes) and ***environment*** (through the setting of transport-related air quality and noise emission standards). These are important policy and planning instruments, which are used to promote sustainable transport more generally, and which have an important impact on the set-up of CMM at companies in the sense of making alternative mode choices possible.

Figure 2.1. **Policy framework**




Public authorities can also encourage companies to implement CMM initiatives on their own through:

- Enforcement through *regulation*.
- Encouragement through *support*.

These strategies will be examined in the pages that follow through analysis of a representative selection of existing policies and initiatives.

## 2.1. Regulations

Under this heading, the report will examine a range of policies where government rules either mandate the implementation of CMM or render it quasi-mandatory by conditioning the implementation of CMM to some other government rule-making. The mandatory character of these rules varies across the sample studied. In some cases public authorities directly mandate CMM initiatives through their rule-making (targeting public and/or private sector employers). In other cases, the regulations relate only to mobility-related targets (*e.g.* trip generation quotas) whose achievement requires some form of CMM on the part of the company.

This report's review of government CMM-related regulations was based on interviews relating to the initiatives outlined in Table 2.1 on the basis of a prepared semi-standardised questionnaire.

Table 2.1. **Cases with in-depth investigation - overview**

| Case | Remarks | Shown case applied in | Country | Name of the interviewed person | Represented Institution |
|---|---|---|---|---|---|
| Access contingent model ("Fahrtenmodell") | Development areas with multifunctional mix of use have a limited trip contingent per year | Zurich | Switzerland | A. Fellmann | Department for Transport Planning, city of Zurich |
| Law on urban solidarity and renewal | Public authorities have to promote the set-up of CMM within the elaboration of the PDU (urban development plan | Agglomerations with more than 100 000 inhabitants have to elaborate a PDU | France | M. Jean | Senior Researcher at CERTU, Lyon |
| Environmental Management Act | Instrument for reducing the adverse impacts of economic activity, including transport | Amsterdam | The Netherlands | E. van den Braak | Department for Environment and Building inspection, city of Amsterdam |
| Decree on "Sustainable Mobility in Urban Areas" | Decree which foresees the introduction of mobility plans at companies | Municipalities denominated by the law as "municipalities with high risk on atmospheric pollution" | Italy | G. Rossi | Ministry for Environment and Protection of the Territory |
| Commuter Trip Reduction Law | States the reducing of the number of commute trips to work made by single-occupant cars and light trucks | Washington State | U.S. | B. Lagerberg | Washington State Department of Transportation |
| Town and country planning act 1990, Sections 106 and 278 | Includes the possibility to require a travel plan as a planning obligation into the process to obtain a building permit | Municipalities within England and Wales | England and Wales | P. Martin | Office of the Deputy Prime Minister |
| Planning Policy Guidance 13 | Allows municipalities to include transport requirements in the planning application processes at new sites. Sets maximum national parking standards for new development | Municipalities within England and Wales | England and Wales | L. Townsend | Office of the Deputy Prime Minister |

### *2.1.1. Access Contingent Model (Trip Generation Quota), Zurich, Switzerland*

*Content and aim*

The access contingent model was initiated by the city of Zurich. It defines the maximum number of car trips that are to be made to and from certain areas for a given time period. The city of Zurich's main motivation for this approach was to better control the traffic generated by new urban developments and allow landowners the opportunity to organise parking policy in these new developments themselves. The latter represents a significant "carrot" for landowners, who are otherwise under strict (and expensive) parking control restrictions as defined in the city's parking regulations.

As with many other urban parking rules, Zurich's requires a minimum quota of parking spaces for each type of land use. This requirement, in turn, requires developers to provide expensive parking capacity and/or to divert valuable real-estate to parking. The access contingent model eases these rules and, in return for agreeing to respect a strict quota of generated trips from the designated zone, the city grants the developer exemptions from the minimum parking requirements and the flexibility to manage the total stock of parking within the affected zone themselves.

The policy itself is not mandatory but the law leaves some space for interpretation, saying that new development areas must take into consideration sustainable development. The policy as applied in Zurich to-date has taken on a mandatory character and has been integrated into the approval process for proposed urban development plans and/or building permits.

The principle aims of the policy are to:

- Allow new development in dense urban areas, already saturated with traffic.
- Control the environmental effects of large buildings/real estate developments.
- Allow flexible use of parking spaces.
- Manage the volume of traffic volume by defining the maximum number of trips which can be generated from the targeted zones.

The number of authorised trips per year, the monitoring scheme and the penalties in case of non-compliance are defined in an agreement between the city and the land-owners, and are linked to the approval of urban development plans or building permits. Landowners must establish, or contract the services of, an independent body mandated with the management and operation of the trip generation quota and parking management policy. This body typically takes on the following functions for the affected development zone:

- Distribution of parking permits to the different landowners.
- Distribution of trip quotas and management of non-compliance penalties.
- Provision of additional services such as public transport passes (Job-Tickets), on-site car sharing, bicycle rentals, etc.
- Monitoring the number of trips per day, week, month, year.

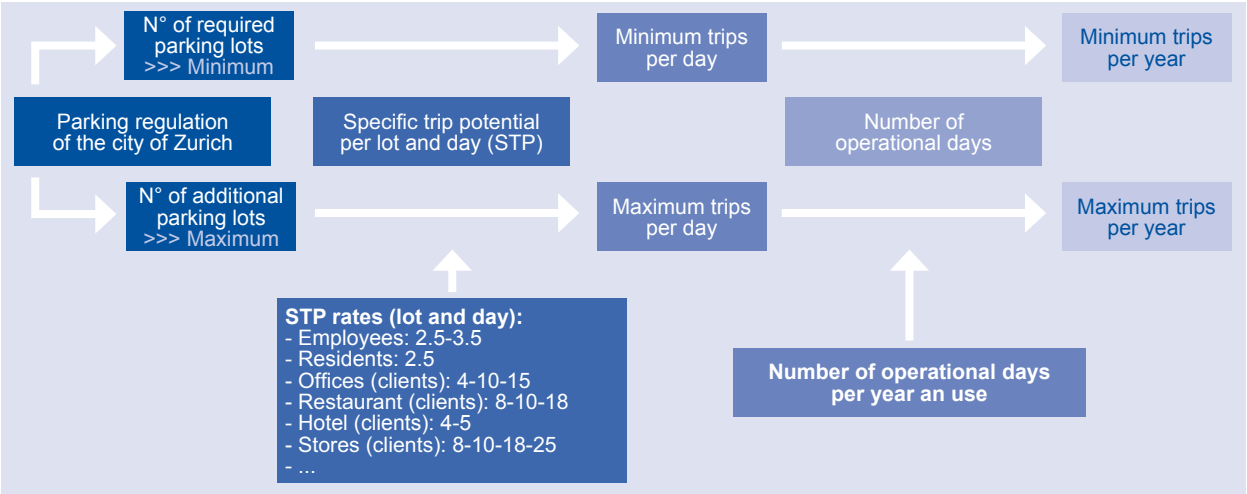
The monitoring results have to be delivered to the municipality within a time period defined within the agreement, normally every 6 months, and are used to determine compliance with the negotiated agreement between the developer and the city.

Before selecting a zone for the application of the access contingent model, several pre-conditions must be fulfilled, including the following:

- There must be pre-existing guidelines on the amount of manageable traffic volume in the surroundings of the site.
- Road access to the zone must be controllable (*e.g.* through a limited number of access and egress points) such that generated trips can be counted and assigned to the site.
- The site should be well connected to public transport services.
- There should be clear information about the future mix of uses within the area (for the calculation of the number of trips, see Figure 2.2.).

The actual calculation of the trip generation quota follows an algorithm developed by the city of Zurich. The baseline number of trips is calculated by looking at the types of commercial/residential uses zoned for the area and calculating the total number of parking spots required by the Zurich parking ordinance. The trip generation potential of the zone is then derived by multiplying the number of required spots by the number of trips each spot is estimated to generate, according to the type of commercial/residential use. These trips are then multiplied by the number of operational days in the year, with additional trips factored in for week-ends and holidays. The final result is the yearly car-trip generating potential of the site witch serves as the starting point for the negotiations between the city and the developer. During these negotiations, a developer who can show how this number of trips will be reduced by alternatives to single car-driver trips (*e.g.* through the implementation of CMM plans) can benefit from a reduced number of mandatory parking spaces. This reduced investment in parking, in turn, allows the developer to provide more "sellable" real estate or otherwise reduce their development costs (*e.g.* by not having to provide as many underground parking).

Figure 2.2. **Calculation of access contingents**



*Results, effects*

The access contingent model was first applied in 1999 in the framework of an urban renewal project called *Zentrum Zurich North* (ZZN). ZZN is a disaffected industrial area in the northern part of the city of Zurich which includes different uses on a total ground floor space of 1.4 million square meters. 1 750 parking spaces are distributed in 9 different parking lots and/or structures. The agreement between the 12 landowners and the city of Zurich foresees a maximum number of 8 000 car trips per day, once the overall ground floor space is in use.

As of early 2006, the access contingent model has been put into practice in two areas of the city: Zentrum Zurich North (ZZN) and at one campus of the University of Technology of Zurich. The model works in both areas and the trip limits have not been exceeded so far. The mode share of ZZN has been in favour of public transport beyond all initial expectations. The reasons are the application of the model itself, excellent public transport coverage and the high prices of parking places (€200/month).

On the strength of these experiences, the access contingent model is now required for all large urban development areas within Zurich (with five underway in early 2006).

### *2.1.2. Law on Urban Solidarity and Renewal, France*

*Content and Aim*

France has had a long experience with laws relating to mobility management and travel. Already in 1982, France introduced the law on internal transport organisation (LOTI[1]) witch pre-figured the concept of the urban mobility plan. The law on air quality and rational use of energy (LAURE[2]) introduced in 1996, and the law on urban solidarity and renewal (SRU[3]) introduced in 2000 further reinforced the requirements relating to the implementation of comprehensive urban mobility plans. Based on these successive texts, French urban agglomerations with more than 100 000 inhabitants must develop and implement a so-called Urban Mobility Master Plan (PDU[4]). Already in 1996, the LAURE law sought to encourage public and private companies – and all other establishments that generate a large quantity of trips – to promote the use of public transport and car-pooling for their employees.

The SRU law improved this aspect because the first analysis of the PDUs set up between 1996 and 2000 showed that CMM actions were relatively poorly developed. Consequently, the SRU law mandated the existence of a mobility counselling service dedicated to companies and all establishments that generate large quantities of trips, like universities, hospitals etc., for cities required to put in place PDU's. Furthermore, the law states that public authorities should encourage private companies to set up a mobility plan. The law also introduced the opportunity for public and/or private-sector employers to take charge of part, or all, of the public transport costs for employees for their home-to-work trips. This clause built on the already existing requirement that employers in the Île de France (Paris) region reimburse one half of their employees public transport costs in the form of the monthly "carte orange" subscription.

The CMM-related content of the SRU law is mandatory for public authorities in the sense that they must provide supporting facilities for companies. But the SRU law does not *require* that companies themselves set-up a mobility plan. In its present form, the SRU (and its accompanying enacting legislation) doesn't state what incentives or sanctions should accompany the implementation of CMM plans, nor does the law state what monitoring actions are required to gauge the effectiveness of the plans.

At present, the only firm objective relating to CMM in France is contained within the National French Climate Plan, where it is stated that 500 company mobility plans should be established in France by the end of 2006.

*Results, effects*

By early 2006, a dozen French cities have introduced mobility counselling services or actions dedicated to companies: Grenoble (see chapter 2.2.3), Nantes, La Rochelle, Chambéry, Paris, Toulouse, Lille, Orléans, Besançon, Strasbourg, Bordeaux, Rennes. Up to July 2005, 150 mobility plans have been implemented in companies all over France. As stated before, the target to reach by the end of 2006 was to have 500 implemented mobility plans.

The SRU law concerning the improvement of CMM has had a mitigated impact. The positive effect is that the notion of CMM and Mobility Management (MM) as a whole was not known and did not exist as an "official" construct before the implementation of PDUs under the LAURE law. The SRU has reinforced this approach for reducing traffic, especially through the introduction of the concept of mobility plans and binding nature of these for public authorities.

On the other hand, there is a lack of financial incentives and oversight in the framework of the PDU with regard to the CMM initiatives.

### *2.1.3. Environmental Management Act, Netherlands*

As a consequence of the slightly discouraging experiences of top-down promotion of CMM in the 1990's, the Dutch national government decentralised mobility management policy to the provinces and the so-called *Cadre Law Areas* in 2000, providing them with financial support to undertake these initiatives. Under the new arrangements, these areas were given the freedom to design their own CMM policies.

At the national level, the inclusion of transport issues in the mandatory Environmental Management Act of 1993 is a promising initiative to ensure that companies address their traffic generation and put in place CMM initiatives in response. In this context the city of Amsterdam is undertaking pioneering CMM work.

*Content and Aim*

The Environmental Management Act ("Wet Milieubeheer" or EMA) of 1993 is meant to "protect the environment". This broad interpretation includes:

- Improvement of the environment.
- Promoting the suitable removal of waste materials.
- Promoting efficient use of energy and raw materials.
- Reducing the harmful effects on the environment of individual and goods transport within cities.

Under the terms of this act, approximately one quarter of Dutch companies must receive an environmental permit in order to operate. To receive the permit, they must fulfil the requirements of the EMA. The act states that within the framework determined by the competent authorities, the companies themselves are responsible for the reduction of their environmental impact. Companies can take responsibility for the reduction of their environmental impact by, for example, measuring the impact of their operations and drawing up a plan to reduce it (much in the same way CMM plans comprise both diagnostic and action phases). Such diagnoses and action plans may also focus on specific environmental aspects, such as energy-saving and transport management.

The Environmental Department of the city of Amsterdam has developed a transport management system to be used in the framework of the EMA certification procedure, which is based on the principle of enterprises managing their own affairs. The system is composed of the following elements:

- Companies that have a transport energy-saving potential are selected on the basis of uniform criteria (employers with over 100 active employers and/or over 500 visitors per day and/or over 2 million transport kilometres per year) and enterprise-specific aspects.

- These companies are asked to examine all company-specific transport management options.

- Based on this inquiry, these companies are asked to develop a plan for review and possible modification by the authorities. The plan, at a minimum, includes measures to be taken, the period within which these will taken, the expected impacts, the forecast environmental effects and a review of the the cost and benefits.

- The delivery of EMA permits is conditioned to the implementation of the plan for those companies that must obtain EMA certification for operation.

*Effects, Results*

In early 2006, 3 000 of around 70 000 companies located in Amsterdam were subject to the mandatory aspects (including those aspects relating to transport impacts) of the EMA permitting process. Of those, 700 were under special control by the Environmental Department of the city of Amsterdam and 100 of them were evaluated. Ex-post evaluation of the company plans is carried out periodically; the frequency with which these evaluations are made is related to company's environmental impact.

If the enterprise does not fulfil the requirements of the act, the designated competent authority first issues a "warning letter" followed, in the case of continued non-compliance, by an order for the company to post a performance bond. In the latter case the company must pay a fine for every day (up to a defined maximum) that they don't meet the law's requirements.

### *2.1.4. Decree on Sustainable Mobility in Urban Areas, Italy*

*Content and Aim*

The decree on "sustainable mobility in urban areas" ("Decreto Ronchi") was introduced in 1998 by the Ministry for Environment and Protection of the Territory, together with the Ministries for Transport and Logistics and for Public Health and Work. The principle motivation for passing this legislation was to ensure that transport policies in urban areas contributed to meeting the national GHG reduction targets agreed in the context of the Kyoto protocol. The specific aim of the law was to reduce atmospheric pollution and promote citizens' health.

The decree calls for the introduction of a *Company Mobility Manager* for all companies and institutions with more than 300 employees or more than 800 freelancers within cities denominated by law as "*municipalities with high risk of atmospheric pollution*". Normally, these are cities with more than 150 000 inhabitants. The *Company Mobility Manager* is responsible for co-ordinating the efforts of employees in reducing single-driver car commuting trips through the development of a site-specific mobility plan (MP). Furthermore the decree requires companies to submit each year for review by local authorities both their

mobility plans as well as a list of measures foreseen for implementation, or implemented so far, and the results obtained.

In order to assist the company in developing a mobility plan, the local municipality must establish a support structure (the so-called "*Area Mobility Manager*"), which helps and coordinates the actions of individual company Mobility Managers and maintains contact with the local or regional public transport providers. To help put in place these facilitating structures, the Italian Government launched a programme to provide approximately 9 million Euros of financial aid to qualifying initiatives. This aid was given in the form of direct grants to qualifying municipalities in order to create appropriate structures and for training courses for the designated *Area Mobility Managers*.

In 2000 a follow-up decree, "Incentives for programmes suggested by company's mobility manager", was introduced by the Minister of Environment. The decree provided approximately 15 million Euros in financial support for municipalities, provinces, private companies and institutions. Set-up costs for supporting structures are subsidised to a maximum of 80% of overall costs in the first year and 40% of the costs in the second year. Companies and institutions receive a maximum of 50% of the implementation costs within a time frame of 3 years. The subsidies to companies and institutions were distributed through the municipalities by the means of a somewhat complex evaluation procedure. Funds were distributed on a first-come, first-served basis until the funds were exhausted. (MOST, 2003a)

*Effects, Results*

In early 2006, 54 Area Mobility Managers and 640 Company Mobility Managers (out of a pool of 1 200 required by decree) have been nominated throughout Italy.

The decree is mandatory in the sense that qualifying companies must establish a mobility plan and implement appropriate measures. However, the law has had little real leverage as no sanctions/consequences are defined for companies who fail to put in place mobility plans. It is supportive in the sense that companies have been offered financial incentives for the implementation and free assistance from *Area Mobility Managers*.

The most noted difficulties in implementing CMM initiatives through legal means are that companies are not very willing to define a responsible company mobility manager and are often reticent to finance the implementation of the plan.

The law sets no specific targets for the plans themselves, but only an undefined objective of enlarging the number of area- and company-mobility managers, as well as the number of measures promoting sustainable commuter traffic.

The Ministry of Environment and Protection of the Territory is responsible for monitoring the effects of the decree. Those entities receiving financial benefits from the Ministry are requested to send quantitative data on the initiatives and the result of the measures implemented. Information on the effectiveness of the plans based on this data is not yet available from the Ministry.

### *2.1.5. Commuter Trip Reduction Law, Washington State, U.S.*

One of the better known approaches to promote CMM in the United States are the Trip Reduction Ordinances, or Commute Trip Reduction Laws (CTR), initiated by local or state governments based on the

US Clean Air Act Amendments (OECD, 2002). The CTR of Washington State is often cited as one of the most forward-looking examples of its kind.

*Content and Aim*

The Commute Trip Reduction (CTR) law, implemented as part of the 1992 Washington Clean Air Act, calls for reductions in the number of commute trips to work made via single-occupant vehicles and light trucks as an effective way of reducing automobile-related air pollution, traffic congestion and energy use. The law defines content, procedure and rules for the promotion of traffic demand management within the RCW (Revised Code of Washington) 70.94.521-551. The principle regulations in this law relating to CMM are the following (CTR Task Force, 2005):

*Regulations Concerning Public Authorities (RCW 70.94.527)*

- Each county with a population over 150 000 and each city or town within those counties containing a major employer (with more than 100 full-time employees reporting to work between 6 and 9 am on weekdays for at least twelve continuous months during a year) shall, by October 1, 1992, adopt by ordinance and implement a commute trip reduction plan for all major employers. The plan has to be developed in cooperation with local transit (public transport) agencies, regional transportation planning organization, major employers, and the owners of major worksites. The plan shall be designed to achieve reductions in the proportion of single-occupant vehicle commute trips and the commute trips, vehicle miles travelled (per employee) by employees of major public and private sector employers in the jurisdiction.

- The commute trip reduction (CTR) plan shall be consistent with the guidelines established under RCW 70.94.537 and shall include but is not limited to:

  - Goals for reduction in the proportion of single-occupant vehicle (SOV) commute trips and the commute trip vehicle miles travelled (VMT) per employee.

  - Designation of commute trip reduction zones.

  - Requirements for major public and private sector employers to implement commute trip reduction programmes.

  - A commute trip reduction programme for employees of the county, city or town.

  - A review of local parking policies and ordinances, as they relate to employers and major worksites, and any revisions necessary to comply with commute trip reduction goals and guidelines.

  - An appeals process by which major employers, as a result of special characteristics of their business or its locations, would be unable to meet the requirements of a commute trip reduction plan, may obtain waiver or modification of those requirements.

  - Means for determining base year values of the proportion of Single Occupancy Vehicle (SOV) commute trips and the commute trip Vehicle Miles Travelled (VMT) per employee and progress toward meeting commute trip reduction plan goals on an annual basis.

- The goals for miles travelled per employee for all major employers shall not be less than:
  - 15% reduction of SOV commute trips or commute trips VMT per employee after two years (with baseline January 1, 1995).
  - 25% reduction after 4 years (with baseline January 1, 1995).
  - 35% reduction after 10 years (with baseline January 1, 1995).

*Regulations Concerning Employers (RCW 70.94.531)*

- Within 6 months of the adoption of the CTR plan by a jurisdiction, each major employer in that jurisdiction shall *develop a commute trip reduction programme* and shall submit a description of that programme to the jurisdiction for review. The programme shall be implemented not more than six months after submission to the jurisdiction.
- The commute trip reduction programme shall consists of, at a minimum, the designation of a transportation coordinator.
- Regular distribution of information to employees regarding alternatives to single-occupant vehicle commuting:
  - An annual review of employee commuting and reporting of progress toward meeting the SOV reduction goals to the jurisdiction consistent with the method established in the commute trip reduction plan.
  - Implementation of a set of measures designed to achieve the applicable commute trip reduction goals adopted by the jurisdiction. Such measures may include but are not limited to:
    - Provision of preferential parking or reduced parking charges, or both, for high occupancy vehicles.
    - Instituting or increasing parking charges for SOV.
    - Provision of commuter ride matching services.
    - Provision of subsidies for transit fares.
    - Provision of vans for van pools, etc.

*Commute Trip Reduction Task Force (RCW 70.94.537)*

The law requires the naming of a Commute Trip Reduction Task Force consisting of 28 members appointed by the Governor to represent citizens, businesses, state agencies, transit agencies and local jurisdictions. The Task Force must establish guidelines for the state's Commute Trip Reduction programme and ensures state-wide consistency among county and local ordinances. Furthermore, the Task Force provides a forum to resolve divisive issues in a consensual manner. The Task Force reports to the Legislature every two years, reviewing the performance of the programme and recommending whether the programme should be continued, modified, or terminated.

*Technical Assistance Team (RCW 70.94.541)*

The law states that a technical assistance team shall be established under the direction of the Department for Transportation, including representatives of the Department of Ecology. The team has to provide staff support to the Commute Trip Reduction Task Force in carrying out the requirements of RCW 70.94.537. Furthermore, it calls on the team to provide technical assistance to the jurisdictions and affected employers in developing a commuter trip reduction plan or programme (*e.g.* help in establishing base and subsequent year values in order to achieve the goals set by the law, model plans and programmes, consistent training and information materials).

*Use of Funds (RCW 70.94.544)*

The funds made available from the State are to be used to fund the Task Force in carrying out their responsibilities, to the technical assistance team and to assist the jurisdictions implementing the commute trip reduction plans.

*Effects, Results*

The results of the program are monitored closely on the basis of two annual surveys of employees at designated worksites. The results are reported to the State legislature every two years. The impact of the program on vehicle trips to the affected worksites have been measured (Through this monitoring). Thus, based on the most recent data (summer 2005), employees at these worksites are taking 20 000 fewer vehicle trips each morning. There are currently 1 100 worksites involved in the program, distributed across 10 jurisdictions, which are under the control of the law.

Table 2.2. **Overview of costs**

| CTR INVESMENTS BY EMPLOYERS, LOCAL JURIDICTIONS, AND THE STATE | | | | | | |
|---|---|---|---|---|---|---|
| | Employers Spending | | Juridiction Spending | | State Spending | |
| Reporting year | In current year $ (one year preceding reporting year | In constant 2005 $ | In current year $ | In constant 2005 $ | In current year $ | In constant 2005 $ |
| 1993 | N/A | N/A | N/A | N/A | 3 145 000 | 4 465 900 |
| 1995 | 6 100 000 | 8 174 000 | N/A | N/A | 3 145 000 | 4 214 300 |
| 1997 | 21 200 000 | 26 924 000 | N/A | N/A | 3 145 000 | 9 994 150 |
| 1999 | 26 100 000 | 31 842 000 | 3 202 000 | 3 906 440 | 3 089 980 | 3 769 776 |
| 2001 | 35 000 000 | 40 600 000 | 1 821 000 | 2 112 360 | 2 627 000 | 3 047 320 |
| 2003 | 36 300 000 | 40 293 000 | 2 234 000 | 2 479 740 | 2 631 350 | 2 920 799 |
| 2005 | 49 400 000 | 51 870 000 | 940 879 | 987 923 | 2 705 000 | 2 840 250 |

*Source: CTR Task Force, 2005*

The performance of the programme is shown in the following Table.

Table 2.3. **Performance of the programme**

| CTR PROGRAM PERFORMANCE: EMISSIONS AND ENERGY REDUCTIONS | | | | | |
|---|---|---|---|---|---|
| Survey year | Number of surveyed sites | Annual VMT reduction (miles) | Annual fuel saving (gallons) | Annual reduction of emissions of criteria polluant (tons) | Annual reduction in grenhouse gas emissions (tons of $CO_2$ equivalent) * |
| 1995 | 866 | 49 200 000 | 2 200 000 | 2 540 | 27 000 |
| 1997 | 949 | 77 500 000 | 3 500 000 | 3 690 | 45 000 |
| 1999 | 1 008 | 100 000 000 | 4 400 000 | 4 090 | 59 000 |
| 2001 | 1 051 | 127 900 000 | 5 600 000 | 5 600 | 79 000 |
| 2003 | 1 051 | 118 200 000 | 5 200 000 | 4 740 | 70 000 |
| 2005 | 886 | 125 700 000 | 5 800 000 | 3 730 | 74 000 |

** $CO_2$ equivalent is combined effect of $CO_2$ and the 100-year equivalents of $CH_4$ and $N_2O$*

While the programme is supportive in nature, employers are still required to implement a basic mobility management programme. However, most employers have implemented a significantly greater programme than is required. In 2004, employers invested nearly $50 million in the programme. The state invests about $2.7 million per year and local governments approximately $1 million (in 2004).

### *2.1.6. Town and Country Planning Act, Section 106 Agreement and Planning Policy Guidance 13, United Kingdom*

*Content and Aim*

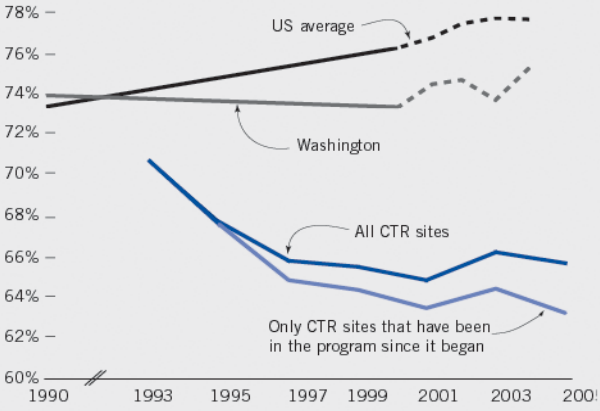
Section 106 of the UK Town and Country Planning Act of 1990 allows for the possibility of negotiated agreements regarding the responsibilities of parties seeking to expand or modify existing urban developments. *Section 106 agreements* (also known as planning obligations) in the United Kingdom are negotiated agreements between developers, local planning authorities (LPA) and other parties to address issues relating to new development. The purpose of these agreements is to ensure that proposed developments do not generate more impacts than are acceptable to local communities. As such, planning permission is often made conditional to the existence of these negotiated arrangements. Typical cases include new real estate developments (*e.g.* office, housing) which generate new demand for transport, education, open space etc. It is often the practice that LPA's will seek contributions from developers in order to address the issues raised in the agreements, *e.g.* by providing/paying for new bus service, road widening, new school building, additional open space etc.

Figure 2.3. **CTR Performance Assessment**

**DRIVE ALONE COMPARISON**

CTR Worksites, Washington state, and the United States, 1990 to 2005

*percentage of commute trips taken by driving alone*

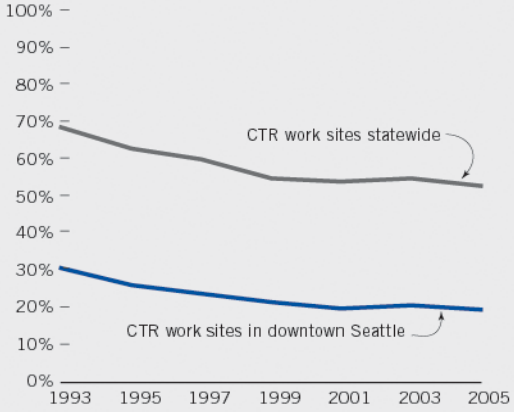



The percentage of commuters who drive alone to all CTR worksites declined more than seven percent from 1993 to 2005, and the drive-alone rate for the program remains below the state and national drive-alone rate. The drive-alone rate for those employers with complete data that began the program in 1993 declined more than 14 percent from 1993 to 2005.

Sources: U.S. Census Bureau for Washington and U.S. averages, WSDOT CTR Survey Database for CTR sites. Census data for 1990 and 2000 is from the decennial census; data for 2001 through 2004 (the dotted lines) are from the American Community Survey.

**SHRINKING PERCENTAGE OF EMPLOYEES THAT ALWAYS DRIVE ALONE**

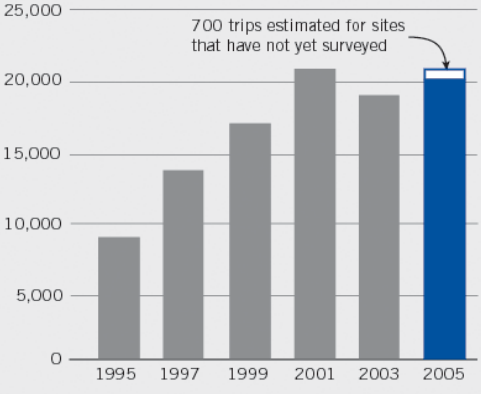
*percent of employees at CTR sites*




The percentage of employees that always drove alone to work at CTR worksites statewide declined 23 percent from 1993 to 2005. Worksites in downtown Seattle saw a decline of 35 percent over the same period.

Source: WSDOT CTR Survey Database.

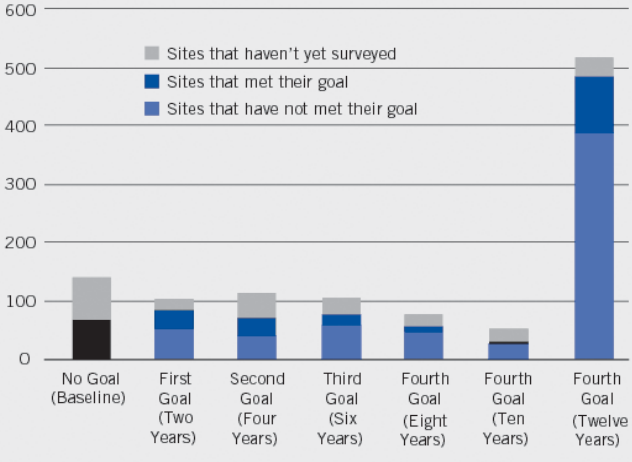
**NUMBER OF VEHICLE TRIPS REDUCED AT CTR SITES**




Surveys completed for 2005 show a reduction of 20,000 vehicle trips measured by the CTR program. Because not all worksites have completed surveys for 2005, WSDOT has estimated the reduction in trips for these sites based on worksite history.

Source: WSDOT CTR Survey Database.

**WORKSITES THAT SURVEYED DURING THE 2005 CYCLE**




Some individual employers met the statutory goals in 2005, but the program as a whole did not. The largest group of employers in the CTR program, represented by the Fourth Goal (Twelve Years) bar at far right, has participated in the program since it began.

Source: WSDOT CTR Survey Database.

*Source: CTR Task Force, 2005*

On a similar but separate front, the legislation outlined in the *Planning Policy Guidance 13 (PPG13)* seeks to integrate planning and transport at the national, regional, strategic and local level in order to:

- Promote more sustainable transport choices for freight and passenger transport.
- Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling.
- Reduce the need to travel, especially by car.

With regard to the encouragement of traffic generators, PPG 13 states that local authorities are expected to consider setting local targets for the adoption of mobility plans by local businesses and other organisations. Local authorities are also encouraged to set an example by adopting their own plans. Furthermore PPG 13 states that the Government considers that travel plans should be submitted alongside planning applications for those land development projects which are likely to have significant transport implications. Thus PPG13 can be seen as having strong links to the negotiation of Section 106 agreements.

Another important aspect of PPG13 is that, since 2001, it has set national maximum parking standards for new developments over a certain size, to which local authorities are supposed to adhere. They have the status of guidance, not law, so local authorities are not obliged to use them but, if they do not, they risk the possibility that national government will exercise its power to take a planning decision out of the hands of local government and make the decision at national level. These standards provide significantly less parking than would be required to meet un-restrained demand at employment, leisure and retail destinations[5]. Recent work (Young, 2006) has found, in a survey of 62 English and Welsh planning authorities, that parking shortages and problems have stimulated the adoption of a majority of travel plans that were not required through the planning process. Cairns *et al.* (2002) also noted that "parking management is the hallmark of high achieving travel plans" – and parking management is more likely to be required in a new or expanding development if maximum parking standards are in place. Current (2006) work is ongoing on behalf of the Office of the Deputy Prime Minister to assess the uptake and impacts of maximum parking standards. An assessment of their uptake and impacts in Scotland is available at Rye (2006).

*Effects, Results*

Cairns *et al.* (2004) gives an overview of planning and implementation of mobility plans between 2001 and 2006 (see Table 2.4). Whilst encouraging, these figures should be regarded cautiously because they are a quantitative reporting of the number of different organisations with a mobility plan in place by local authorities. These reports do not typically assess the quality nor the impacts of these plans. Young (2006) finds that less than half of English municipalities that require mobility plans as a condition of planning consent (as recommended in PPG13) have any system in place for monitoring these plans – let alone for monitoring any plans that are delivered voluntarily. Therefore, data on the actual impacts of the mobility plans in place in the UK is extremely difficult to obtain, and anecdotal evidence suggests that it is likely that a proportion of the plans that are set out in Cairns *et al.* exist only on paper.

Table 2.4. **Number of travel plans local authorities expected to implement between 2001 and 2006**

| Period Institutions | 01/02 | 02/03 | 03/04 | 04/05 | 05/06 | 06/07 | Total with mobility plan | Number of organisations | % with mobility plan by 2006-07 |
|---|---|---|---|---|---|---|---|---|---|
| Local highway authority site | 28 | 53 | 65 | 48 | 45 | 16 | 255* | 150 | |
| Shire district | 18 | 36 | 34 | 27 | 20 | 12 | 147 | 238 | 62% |
| Further/higher education | 28 | 43 | 75 | 51 | 47 | 23 | 267 | 519 | 51% |
| Hospitals | 52 | 68 | 55 | 35 | 33 | 16 | 259 | 1 200 | 22%** |
| Employers | 401 | 688 | 656 | 695 | 708 | 421 | 3 569 | 31.3*** | 11%*** |
| Total | 527 | 888 | 885 | 856 | 853 | 488 | 4 497 | | |

Figures are based on Department for Transport analysis of local authority progress reports.

* Figures for local highway authority mobility plans are reported per site rather than per authority, so it is not possible to estimate the proportion of highway authorities with mobility plans.

** Figures for hospitals may underestimate the proportion covered by a mobility plan (because local authorities sometimes report one mobility plan for a hospital with several sites). Data supplied by NHS Estates suggests 126 Trusts had implemented mobility plans by 2002/03, at 322 hospital sites out of 1 200, or 27% of hospitals.

*** Figure is for the number of workplace sites with 100 or more staff, based on the assumption that almost all mobility plans are likely to be implemented at larger sites. Hence figure of 11% is the number of work sites of over 100 staff with mobility plans by 2006-2007.

Addison and Fraser (2002) examined the factors surrounding the implementation of mobility plans in the UK with a questionnaire survey to 174 local authorities[6]. Local authorities were asked which factors had supported or blocked the development and implementation of mobility plans. The top four factors (of 15 pre-identified factors) were:

- Existence of PPG 13 (76 % of all responses).
- Existence of section 106 agreements (65%).
- Attitude of local authority officers (60%) and with members (38%).
- Attitude of applicants (48%).

The extent to which the planning system requirements were used to secure travel plans was also investigated in the case-study analysis conducted by Cairns *et al.* (see Table 2.5).

Table 2.5. **Use of the planning process (summer 2003)**

| Location | |
|---|---|
| Birmingham | 53% of organisations have been involved due to planning requirement.<br>Planning conditions are used to require all new developments that will have 50+ employees to join Company Travel Wise.<br>If a company is already a member, the planning condition will require them to remain active in Company Travel Wise.<br>Company are also asked to produce reports on activity. |
| Bristol | Travel planning conditions are increasingly being included in section 106 agreements. |
| Buckinghamshire | Planning applications that are expected to generate significant traffic are generally required to include a commitment to a travel plan.<br>However, this is sometimes difficult to achieve because the county is not the planning authority, and not all district councils are as proactive as they might be in ensuring a travel plan is made a planning condition. |
| Cambridgeshire | Planning process is used to require travel plans and developer contributions to travel measures.<br>Different levels of commitment to travel planning are required, depending on the nature of the development.<br>However, there is a little link between development control and the Travel for Work Partnership at present - organisations required to implement travel plans as a planning condition are left to undertake the implementation themselves. |
| Merseyside | There have been a few occasions when S106 agreements have been used to require travel plans, although the system is not well developed.<br>There have also been concerns about mismatching between the aims of travel planning and attracting inward investment.<br>Supplementary Planning Guidance is being drawn up to address this. |
| Nottingham | The city council prefers travel plans to be entered into voluntarily.<br>Seven of 25 large employers have been subjected to planning requirements (largely relating to parking allocations), although they were already engaged in travel plan work.<br>Planning applications for new developments with more than 50 parking spaces are referred to the Transport Partnership Officer for comment. |
| City of York | The travel plan officer scrutinises all planning applications and advises on inclusion of travel plan issues in planning conditions. |

### *2.1.7. Decree on Mobility Management in the Brussels Region, Belgium*

*Content and Aim*

Since July 2004, companies and public institutions in Brussels, with more than 200 employees located at one site[7] have been obliged to elaborate and implement a mobility plan in the Brussels in accordance with enacting legislation relating to the 1999 Ordinance on the evaluation and the improvement of air quality.

Implementation of the decree was in two phases. In the first phase, lasting from July 2004 to January 2005, companies were required to submit the following information to the "Institut Bruxellois pour la Gestion de l'Environnement" and to the "Administration de l'Equipement et des Déplacements" (the two bodies are responsible for managing the program):

- A survey and analysis of employee travel (home to work and business trips), supplier's and client's travel, as well as goods movements generated by the company.
- An analysis of the accessibility of the site by different means of transport.
- A description of the current measures taken on-site to facilitate alternative travel patterns.
- A list of companies which are located nearby and with whom a common mobility plan could be elaborated.
- An action plan for facilitating non single car driver travel to the site along with a description of the measures to be implemented.

This information was then submitted to a three mouth review cycle seeking comments from a number of different actors, including local authorities and the local public transport operator. After this period, the comments are re-submitted to the company.

The second phase, lasting 9 months, is dedicated to the final design of the mobility plan and to the start of its implementation. Companies must submit a report on progress every year thereafter, covering not only progress on implementation but also the results achieved so far.

Throughout this process, participating firms are provided with assistance in the form of information, material, instruments, etc, by the "Institut Bruxellois pour la Gestion de l'Environnement" and to the "Administration de l'Equipement et des Déplacements".

*Results, Effects*

In December 2005, 223 companies covering more than 200 000 employees had submitted the required information for the first phase.

Analysis of this information has revealed the following (see Moniteur de la mobilité, 2006):

- More than 80% of the companies are already, partially or totally, covering the costs of their staff's public transport passes.
- 75% have bike parking facilities.
- 65% give incentives to staff commuting with bicycles.
- The principle measures that companies plan to implement include:
    - The realisation of an information brochure regarding the accessibility of the site with alternative modes to the car.

- The promotion of car pooling.

- The improvement of bike facilities.

The principle objective stated by the companies is to reduce the share of commuters coming by car by 5%, which corresponds to an 11% reduction in the number of car users in favour of other modes. For public transport the objective is to raise the share by 1%, which translates into a 10% increase in passengers. This level of change would require an important improvement in the service and capacity of public transport in the region.

Effective results on the effects of implementation will be available in 2008-2009.

### *2.1.8. CMM-related Legislation in Japan*

*Background*

With the Kyoto Protocol coming into force in February 2005, Japan had the obligation of reducing $CO_2$ emissions by 6% from its 1990 level by 2010. In the transport sector, which has a share of about 20% of Japan total $CO_2$ emissions, a greater effort will be necessary to meet this objective.

$CO_2$ emissions from the Japanese transport sector decreased through the arrival and uptake of higher fuel mileage vehicles or low emission vehicles within the vehicle fleet. However, an even greater effort is still required from the Japanese transport sector in order to reduce $CO_2$ emissions from the automobile transport sector, which has a share of about 50% of total $CO_2$ emissions.

*Policies and Regulations*

To achieve the Kyoto objective, the government of Japan has decided to implement various policy measures – notably those which will facilitate reduced dependence on the use of cars and shift travellers to public transport.

In the Kyoto Protocol Target Achievement Plan (Cabinet Decision on April. 28, 2005), the national government stated that it *"will promote independent measures such as commuter transit management by corporations ……and car sharing using low-emission vehicles, etc. and will use enlightenment activities for citizens to promote a move away from passenger cars for personal use in passenger transport and a switch to public transport systems such as railways, buses, etc."*

In line with this plan, Section 70 of the recently amended Effective Use of Energy Act now states that "employers should make effective use of energy regarding transport by encouraging their employees to use public transport for commuting and other measures." This amendment came into force on April 1 2006.

### *2.1.9. CMM Policy strategy in Catalonia, Spain*

*Background*

The Catalan region is one of the industrial and economic hubs of Spain. Within this region, the majority of industrial companies are concentrated in the greater metropolitan area of Barcelona, where they are consolidated in large industrial parks. Other kinds of companies and large employerss have also been zoned into these areas on the outskirts of the main cities within the region.

Importantly from a CMM perspective, the Catalan industrial sector shows some unique characteristics that differentiate it from the rest of the country. For instance, in spite of its importance, the Catalan industrial sector is characterised by a multitude of small and medium enterprises (SME) rather than single large industrial "champions". As a result, there is a tendency for businesses to group themselves in industrial parks in order to take advantage of common facilities, infrastructure, competitive rents, industrial land supply, or even transport services. However, industrial parks do not have any defined legal standing, nor were they the focus of CMM approaches in the past despite their being the "natural" geographical and organisational echelon for the implementation of mobility plans for employees.

In view of the above, trade unions have played an important role in order to overcome this barrier. These unions have convinced companies and regional and local governments to develop common strategies for promoting CMM in industrial parks. Small and medium enterprises that make up these parks typically do not have enough critical mass to develop CMM or to promote new transport services on their own. Thus, CMM initiatives have largely centred on providing shared CMM services to all tenants in the industrial parks under the aegis of *mobility committees*. Still, however, and despite the existence of Mobility committees, the lack of a single designated managing authority has proven to be a challenge.

In order to tackle these difficulties, the regional government of Catalonia and other agents that play a significant role in CMM have instituted a set of studies, laws or legal recommendations.

*Regulations*

Mobility Law (Llei de Mobilitat, 2003)

The aim is to establish the principles and objectives that will rule the management of passenger and freight mobility in the region. It also identifies the instruments to act upon these objectives such as:

- National Mobility Directives.
- General Mobility Plans.
- Specific Mobility Plans.
- Urban Mobility Plans.

Furthermore, the law has created four *Mobility Regional* Authorities that will plan, control and evaluate the development of initiatives and actions considered in the *General Mobility* Plans. Additionally, there is a *National Mobility Board* that is responsible for supporting and advising the regional authorities and other actors involved in the mobility plans.

Strategic Agreement for enhancing the internationalization, the quality of occupation and competitiveness of Catalan economy.[8]

This agreement promotes the realisation of several studies to manage employees' mobility in industrial parks. These studies have strongly recommended the creation of a Mobility Manager in industrial parks.

Decree on regulation of the mobility effects of urban design and mobility appraisal (2005)

This decree obliges all businesses, shopping malls or work centres with more than 5 000 trips per day (generated or attracted) to carry out a mobility study. This study may encompass different actions, management options and evaluations in order to achieve targeted mobility goals fixed by law. Furthermore, the decree requires developers of future commercial or industrial areas to finance, for 10 years, the cost of those public transport services that will cover the zone.

## 2.2. Support Facilities

As noted in the opening of this report, governments have several options available to them to promote CMM initiatives. These options range from the provision of guidelines, handbooks and check-lists, to the provision of active support in the form of training-courses, programmes or institutionalised consulting services by transport management associations, mobility-centres, etc.

In the following sections, the report will examine a few examples of such active support measures based on a number of interviews according to a semi-standardised questionnaire (see Table 2.6).

Table 2.6. **Cases with in-depth investigation - overview**

| Case | Remarks | Shown case applied in | Country | Name of the interviewed person | Represented Institution |
|---|---|---|---|---|---|
| MOBIDESK | Mobility cell of the province of Limburg with supporting facilities for companies | Province of Limburg | Belgium | R. Schreurs, Head of the Mobility Cell | Mobidesk |
| Lloyd District Transport Management Association | Transport Management Association of the Lloyd Business District | City of Portland | U.S. | R. Williams, Executive Director | Lloyd District Transport Management Association |
| Chamber of Commerce of Grenoble | Gives support to companies which are members of the Chamber of Commerce | City of Grenoble | France | N. Lecouturier, Project Manager | Chamber of Commerce |
| Travel Smart Work Programme | One pillar within the state wide Travel Smart Programme | Victoria State | Australia | D. Meiklejohn | Victoria State Government |

### *2.2.1. MOBIDESK, Limburg, Belgium*

*Content and Aim*

Faced with increasing pressures from road traffic starting in the early 1990's, the government of the Belgian province of Limburg has undertaken a series of initiatives in order to promote sustainable home-to-work traffic. These experiences revealed the need for a co-ordinated organisation of commuter traffic within the province. Thus, in 2001, the regional government established a provincial commuter transport co-ordination centre, called MOBIDESK Limburg.

MOBIDESK has been operational since May 2003. It is currently slated to run as a 4-year pilot project. The staff of MOBIDESK is composed of two persons, and the programme's annual costs are approximately €300 000. During the 4-year pilot phase, financing is guaranteed by the European Union, in the framework of

European Fund for Regional Development, and provincial funding sources. The Flemish government plans to add financial support to MOBIDESK Limburg at the end of the pilot phase and wishes to install similar active support facilities in each Flemish province. The Centre is also currently investigating the market potential for fee-based mobility services. Ultimately, the aim is for the centre to be supported through mixed revenue streams (public authority and private companies) after the initial pilot phase of the project.

MOBIDESK's mandate includes:

- Supporting the efforts of local authorities to control car-mobility in Limburg.
- Supporting employment and social integration by ensuring that people have access to jobs through high quality transport services:
  - By improving accessibility of industrial sites.
  - By facilitating specific mobility solutions for groups of people having difficulties to afford car-mobility.

In carrying out its mandate, MOBIDESK undertakes the following main tasks (see Schreurs and Backs, 2004):

- Developing a platform for mobility management in Limburg:
  - Organising awareness-raising campaigns targeting traffic generators (mailings and visits to companies with over 50 employees).
  - Supporting the Flemish Employment Office VDAB (accessibility profiles for the VDAB's training centres, etc.).
- Supporting employers that want to set-up CMM activities by providing:
  - Assistance in the elaboration, processing and interpretation of user surveys.
  - Standardised framework of analysis (the standardised product called Mobiscan is a low cost tool for quickly developing the mobility and accessibility profile of a company).
  - Assistance in the selection and preparation of specific measures (MOBIDESK has developed information brochures about specific measures in support of this task).
  - Assistance in the specific implementation of measures (*e.g.* set-up of a car pooling campaign with selected companies).
- Distributing of information and promotion of car-alternatives, including:
  - Accessibility guides for industrial sites in the province of Limburg.
  - Individual advice by phone and e-mail to the employees (*e.g.* requests of employees in search of a car pooling partner).

- Information stands and campaigns in companies.

- Developing new transport products and services, such as:
  - Enhancing existing services, *e.g.* by setting up an extra bus service to a specific industrial site.
  - In the field of bicycle lease, the centre has developed a "package" product with bike manufacturers and bike repair shops.
- Following-up of CMM-related actions that have resulted from other initiatives.
- Coordinating actions across different companies.
- Serving as an intermediary between companies and authorities.

The services of MOBIDESK are targeted at companies and public institutions in the province of Limburg. Specifically, employers with more than 50 employees are targeted by MOBIDESK and are actively pursued in order to get them to participate.

*Results, effects*

MOBIDESK has had a positive impact in terms of awareness-raising for staff and management of targeted companies. Since May 2003, MOBIDESK has assisted 83 companies representing 25 000 employees, which is about 20% of the existing workforce in the province. The impact of the services in terms of quantitative changes in commuting patterns will be evaluated at the end of the pilot.

### *2.2.2. Lloyd District Transport Management Association, Portland, U.S.*

*Content and Aim*

The Lloyd District Transport Management Association (LDTMA) was initiated in 1994 as a joint partnership by the Lloyd District business community, the city of Portland and Tri-Met (the regional public transport authority). Its aim was to specifically address the growth and access challenges that were emerging in the Lloyd District. Up until 1990, the construction of parking spaces had not been subject to any regulation in the 275 acre-district located near the heart of the city of Portland. Commercial real-estate development space was bountiful and parking was free of charge. In addition the area was not well served by public transport, which led to a less than 10% modal share for public transport.

The forecasts for employment growth undertaken in the mid-1990s predicted a doubling in the coming years and, consequently, a severe increase in the levels of traffic congestion. Furthermore, the amount of parking space necessary to accommodate the projected growth would have displaced high value commercial real-estate space, thus decreasing the overall returns on the future real estate investments within the district.

These factors led to a growing conviction amongst district landowners that the district's mobility patterns would have to be more effectively managed in the future if they were to remain commercially viable. In 1994 the *Lloyd District Partnership Plan* amongst the city, the landowners and the Tri-met was established. The key points of the plan were:

- Landowners within the Lloyd District:
  - Commitment to fund public transport passes.
  - Commitment to achieve a public transport mode-split goal of 42% by 2015.
  - Support a maximum cap on parking spaces and the installation of parking meters in the area.
  - Establish a Transport Management Association and (TMA).
  - Establish a *Business Improvement District* (BID) (by the year 2000) to provide equitable funding match.
- City of Portland (PDOT):
  - Commitment to invest 51% of the net revenue of parking meters in the partnership.
  - Commitment to adopt new parking regulations.
- Tri-Met:
  - Commitment to install a new direct public transport service if sales of publc transport passes reach a certain threshold (2 000 new passes triggers a new bus line).
  - Commitment to deliver 3% commission on sales of public transport passes in the district to the TMA.

The mission of the *Lloyd District Transportation Management Association* (LDTMA) is to support and promote the economic vitality and liveability of the Lloyd District through cooperative, business-supported programs promoting efficient, balanced transportation systems and land use patterns. Nowadays the LDTMA provides employer transit pass programs, bicycle programs and infrastructure, rideshare, *Flexcar* car-sharing and pedestrian programs. The LDTMA also maintains a transportation store – *The Commuter Connection* – in the district to serve as a one-stop shopping location for transportation services to businesses and their employees. LDTMA also hosts 10 – 12 events each year, related to commute trip reduction.

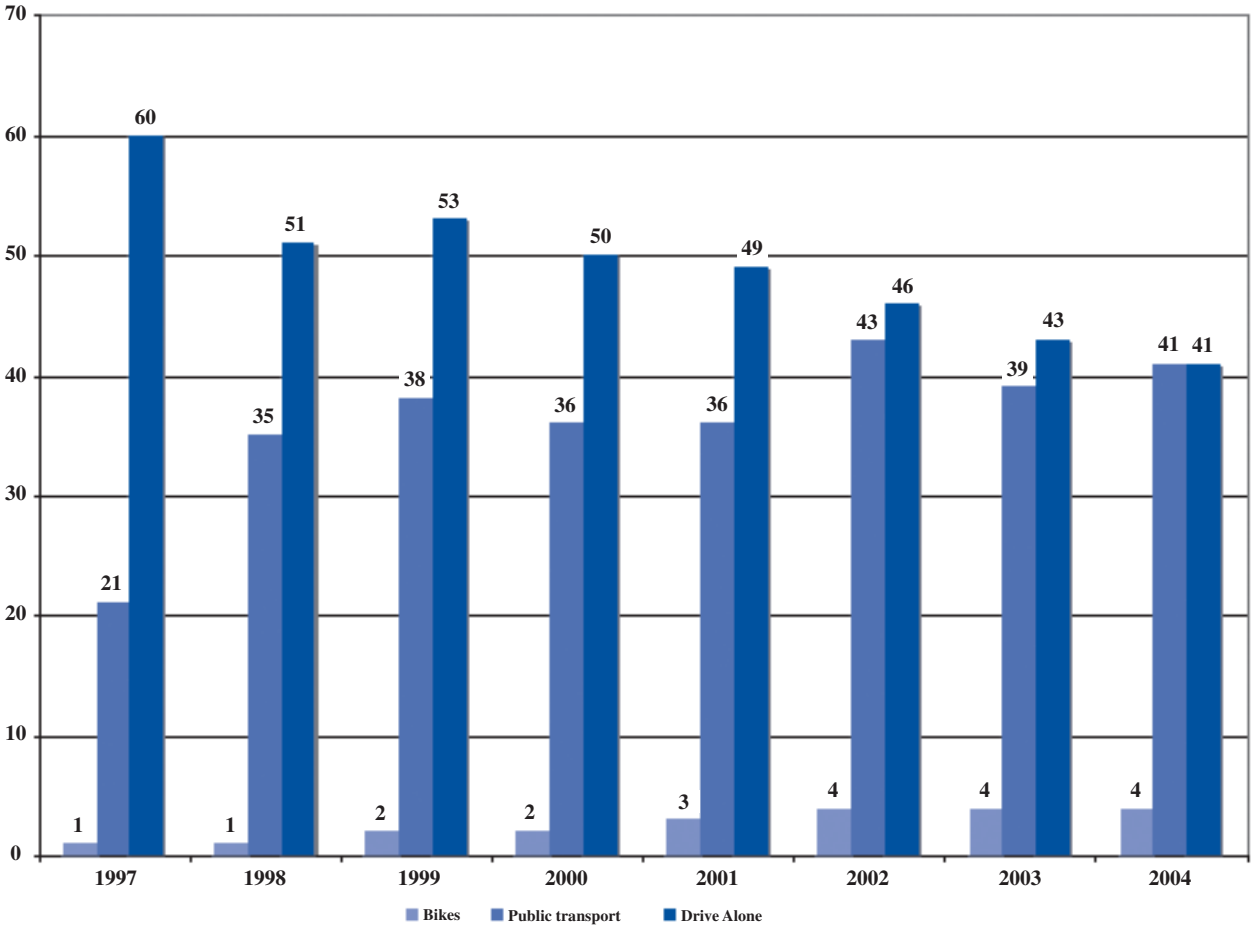
The TMA staff is composed of 3.5 persons and assisted by a network of volunteers from member businesses. The volunteers are organized in different committees, which are supporting the TMA in developing new measures tailor-made to the needs of the businesses.

*Results, Effects*

Up to 2006, the LDTMA represented approximately 60 businesses that employed about 10 000 employees in the Lloyd District. There are a total of 400 businesses in the district and with employment of about 20 000.

The following figure 2.4 shows the mode changes in commuter trips between 1997 and 2004.

Figure 2.4. **Changes in commuter choice**




*Source: LDTMA*

- *Drive alone* – trips decreased from 60% in 1997 to 41% in 2004, a 32% decrease over eight years.
- *Public transport* – trips increased from 21% of all commute trips in 1997 to 41% of employee commute trips in 2004.
- *Bicycle* – use remains more or less stable.
- *Carpool/Vanpool* – trips have dropped slightly since 1997. In 1997, 16% of all employee commute trips were made by this travel mode. In 2004, roughly 11% of employees chose car/vanpooling as a commute option, a 31% reduction. Between 2003 and 2004, the level of carpooling remained relatively constant with little fluctuation.
- *Walk, Telecommute, Compressed workweek* – Share of these modes have all remained the same, measured both by total trips and mode split.

The budget is approximately $250 000/yr covering operating costs (not infrastructure). Funding was received from:

- *Business Improvement District* (BID)[9] – an assessment against the value of every commercial building in the district. In a way, this represents a property tax that is specifically targeted to the Lloyd District (40% of the overall budget).

- *Parking meter revenue* – The TMA receives a percentage (51% of the whole district amount) of all revenue generated from parking meters located in the business district (30% of the overall budget).

- *Commissions* – The TMA receives a 3% commission on all transit passes sold through the LDTMA and its Commuter Connection transportation store (20% of the overall budget).

- *Grants* from METRO, the regional government. (10% of the overall budget).

Infrastructure (such as bicycle racks, public-transport-related facilities, etc) is financed through a separate fund, based on the receipts of the *Business Energy Tax Credits* (BETC)[10] which members turn over to the LDTMA. This source of funding accounts for approximately $ 200 000 annually.

### *2.2.3. Programme PDE Pro® of the Chamber of Commerce, Grenoble, France*

*Content and Aim*

The Grenoble Chamber of Commerce (CCI) developed the PDE PRO® CMM programme, based on its own experience in setting up an internal mobility plan from 2002-2003. The PDE PRO® programme started operation in 2004 and provides a template for other companies to follow in setting up their own CMM initiatives. It is a pilot programme which was slated to end in 2006. Although initiated by the CCI, several other partners joined the initiative, including: "*Grenoble Alpes Metropole*" (municipalities in the agglomeration of Grenoble), the "*Conseil Générale de l'Isère*" (Regional Government) and the "*Syndicat Mixte des Transports en Commun*" (municipalities/operators which provide the offer of public transport).

The CCI launched the activity because of the negative impact of increasing traffic on local businesses. Specifically, companies felt that the worsening traffic conditions placed an excessive burden on employees commuting or travelling for work, thus reducing their productivity.

The aim of PDE PRO® is to motivate and support member companies of the CCI to develop and implement mobility plans. One person at the CCI manages this programme by carrying out the following tasks:

- Initially, the CCI seeks to persuade companies of their vested interest in participation. It does so by stressing the economic merits of participation in letters, phone calls and through meetings and seminars.

- Once a company is interested in developing a mobility plan, the CCI assists with a site-specific mobility diagnosis. This includes an assessment of the potential for company employees to switch to public transport, or other modes, for their commuting and/or work trips. At this stage, the CCI helps the company to undertake an assessment of the costs and the benefits of the CMM initiative.

- Once the company has decided to act, the programme supplies the PDE PROTM methodological handbook which guides the mobility plan process. The guidebook provides decision-tree questionnaires as well as monitoring and evaluation tools. If the company decides to seek external assistance in setting up the CMM initiative, PDE PRO® will offer to refer the company to several specialist agencies and/or consultants.

- In order to facilitate networking amongst the companies in the PDE PRO® programme, an internet-based mobility manager's club called "*Ecobiz Mobilité & Déplacements*" was launched in November 2005 under the management of PDE PRO®.

*Results, Effects*

PDE PRO® services are dedicated to the member companies of the CCI located in the southern part of the Department de l'Isère. The PDE PRO® programme actively targets about 2 000 companies of 20 employees or more out of a potential pool of 24 000 firms.

Up to the early part of 2006:

- 2 000 companies were actively contacted.

- 85 companies initiated some level of involvement (*e.g.* through regular contacts and undertaking an initial diagnosis).

- 12 to 15 companies developed mobility plans.

- 3 companies implemented their plans.

The targets for the programme stipulated in the contractual agreement among the partner agencies were:

- 3 collective meetings per year (target reached).

- 25 individual meetings per year (the target was surpassed).

- 8 pre-diagnosis per year (the target was surpassed).

- 3 mobility plans with actions per year (target reached).

The services offered by PDE PRO® have been relatively effective, especially insofar as using economic arguments to motivate action among company managers. The main barrier, however, is for employees to change their travel patterns and habits. Given that the programme targets its messages to managers and not to employees, this means that the former must take on the role of convincing individuals to change their commute habits. A further barrier is the cost of measures since companies are hesitant to spend money in support of CMM measures.

The running costs of the programme are around € 120 000 per year and are completely financed by the partners. The only generated revenues are sales of handbooks (small revenues).

### *2.2.4. TravelSmart Programme for workplaces, Victoria State, Australia*

*Content and Aim*

TravelSmart is a large mobility management programme in Australia seeking to change transport behaviour through voluntary measures. It is coordinated on a national level and operates in the states of Victoria, Queensland, South and Western Australia.

In Victoria State the programme was initiated in 2001 by three State Government Departments (Sustainable Energy Authority of Victoria, Department of Infrastructure and the Department of Human Services). The programme, as in the other states, comprises three pillars: households, schools and workplaces.

TravelSmart works with employers to help them develop and implement mobility plans in their workplaces. These are designed to either reduce the number of people driving to work alone or, in some circumstances, increase the proportion of staff walking and cycling even if at the expense of public transport.

The TravelSmart staff conduct a baseline travel survey at the workplace, prepare a report on the outcome of the survey and, from that, prepare a draft mobility plan for the workplace. This plan is then amended and approved by the workplace before being implemented. A plan is typically set for a three-year period and includes targets for proposed changes in staff commute modes. Progress towards these targets is measured through an annual staff travel survey, conducted by TravelSmart.

TravelSmart staff also work with the employers to develop programs supporting particular modes (such as walking, cycling and carpooling) to achieve the targets set out in the mobility plan. These are set specifically for each employer.

The service is dedicated to all interested employers in the state of Victoria, with a particular emphasis on larger employers in Melbourne. The consultancy service is free of charge for the employer.

*Results, Effects*

The following table shows achieved results at selected worksites.

Table 2.7. **Results of workplace cases coached by TravelSmart Victoria**

| Worksite, city | Implemented measures | Target Population (Staff) | Reduction in single occupant car driver trips | Measurement period since project completion (years) |
|---|---|---|---|---|
| Northcote High School, Northcote | Ran alternative Get to Work Days on non-teaching days;<br>Installed new cycling parking for staff and students | 120 | –18.4% | 3 |
| The Alfred Hospital, Prahan | Heavy promotion of cycling on Ride to Work day;<br>Bicycle User Group installed;<br>Individualised marketing program to selected staff | 4 500 | –6.7% | 3 |
| City of Darebin, Darebin | Installed a promoted carpooling software;<br>Promotional events for cycling and walking;<br>Gree pedometer program;<br>Points system for staff travelling by sustainable means | 270 | –18.6% | 3 |
| Darebin Enterprise Centre, Darebin | Information provided to staff on alternatives to solo driving | 100 | –19.2% | 2 |
| La Trobe University, Melbourne | Promotional events for carpooling and public transport | 4 000 | –5.1% | 2 |
| RACV (Royal Automobile Club Victoria), Melbourne | Installed and promoted carpooling program | 900 | –10.6% | 2 |

*Source:* TravelSmart Victoria

TravelSmart has been effective in terms of raising CMM as an issue for employers and in helping employees to move away from single occupancy vehicle commuting. The services offered by the programme might be even more effective if targeted at, and adopted by, large scale traffic generators such as new office developments. This is starting to happen.

The greatest barrier in Australia with regard to the promotion of CMM identified by the interviewees is the federal fiscal rules, which encourages driving by allowing staff to write-off cars and parking expenses from their income tax in a way that they cannot do with public transport and other alternatives.

### *2.2.5. Company Support Activity of EMIF, Paris*

*Content and Aim*

The EMIF (*Entreprises et Mobilité en Ile-de-France*) was founded in 2000 by the RATP (*Régie Autonome des Transports Parisiens* – the public transport organisation of the region) and the CCIP (*Chambre de Commerce et d'Industrie de Paris*) in the framework of the PDU (Regional Mobility Plan) of the greater Paris region.

EMIF offers a range of services tailored to specific requests by either new companies who are locating to – or by firms already present within – the region. The principle services offered are the development of mobility plans, assisting with the planning and implementation of company-, or area-specific bus services,

delivering tailor-made and personalised public transport information and assisting with the decision-making process of companies which are looking for a new site by analysing various sites in terms of accessibility.

EMIF works together with the ADEME (*Agence de l'Environment et de la Maitrise de l'Energie*), which is the national energy and environment agency with several offices all over the country. ADEME furnishes among other things company based mobility consulting services. The costs for the company are partially subsidised by the French government. For specific public transport issues, EMIF works together with the RATP and/or local authorities involved. Services are delivered on the basis of contracts between the interested company and EMIF (see www.emif.fr).

*Effects, Results*

EMIF ran 38 contracts in its first year of operation, covering over 38 000 employees.

### *2.2.6. Commuters Planner Club Nottingham*

*Content and Aim*

The Commuter Planners Club (CCP) was founded by the City Council in 1996 in collaboration with the two universities located in Nottingham and certain major employers. Today the CCP is a network of 50 of the city's largest employers accounting for 50 000 employees. The CCP is administrated by the local public authority, which organises regular meetings with the members and sends out newsletters at regular intervals. Meetings are held for sharing experiences between the companies, presenting best practice examples of successful CMM implementation and discussing specific problems. The local authority sees its role as a catalyst.

The CPP is also an effective tool for informing businesses and employees of available transport-related subsidies. One example is the TransACT scheme, which allocates money from the Department for Transport's congestion charging fund to help companies of between 20 and 50 employees to set up mobility plan measures. The city has also offered support to 5 major companies to set up company-specific travel intranets.

The city uses the regulatory possibilities of Section 106 planning agreements to ensure that newly located companies adopt mobility plans (see synergo, 2003, Müller, 2001 and Enoch, Zhang and Morris, 2005).

### *2.2.7. Amsterdam Schiphol Airport Transport Management Association (TMA)*

*Content and Aim*

The Schiphol Airport Transport Management Association (TMA) was founded in 1990 as a partnership between the Dutch government, the airport operator, the companies located at the airport and the public transport companies operating in the zone. The TMA's goal is to ensure a high-level of multi-modal accessibility to the airport – especially for the employees working within the area. This is accomplished by offering a wide range of services including:

- Tailor-made consultancy services to improve accessibility.
- Car pooling matching services.
- Negotiating bulk-rate contracts with public transport companies.

- Information provision and communication directly to employees and to participating companies.
- Development and promotion of specific products like scooter use and van pooling.
- Complaint handling.

*Effects, Results*

Companies need to register with the TMA and pay an annual fee of €2.50 per employee. In 2001, 67 companies (accounting for more than 40 000 employees) were members of the TMA scheme, representing 80% of the overall workforce. Modal split changed in the same time-period around 2% towards public transport use (see synergo, 2003 and Enoch, Zhang and Morris, 2005).

### *2.2.8. Allégo – CMM Programme in the Montreal Region*

*Content and Aim*

*Allégo* is a mobility management programme operated by the *Agence Métropolitaine de Transport* of the greater Montreal region (AMT), which includes a CMM component. The CMM offer was put in place in order to accompany the realisation of several infrastructure projects which were planned by the AMT. The overall objective of CMM at the AMT is to increase public transport use and to increase the car occupation rate in commuter traffic by promoting car pooling.

With *allégo*, the AMT follows two strands. The first is targeted at companies and universities. AMT assists every company or institution interested in setting up CMM strategies. Every company which has entered into an agreement with the AMT is given the opportunity to obtain financial subsidies from the Ministry of Transport of Quebec (MTQ). These grants cover 50% of the development, evaluation and promotion costs up to a maximum of € 17 000.

The second strand is comprised of a mobility management centre whose mission is to promote and to develop alternatives to solo car driving for commuting trips. Centred around a shared company car-pooling service, the centre is funded by the MTQ up to a maximum of €67 000 per year (not to exceed 75% of the overall budget) for a period of two year (see Couillard, 2002).

### *2.2.9. CMM Facilitation in Japan*

The Japanese Ministry of Land, Infrastructure and Transport and its Policy Research Institute have supported Corporate Mobility Management efforts by promoting discussions among stakeholders, establishing funding sources and holding seminars. The Policy Research Institute is now conducting research to help stakeholders conduct Corporate Mobility Management efforts.

In order to promote collaboration between public transport operators and companies who use their transport services, the Ministry of Land, Infrastructure and Transport has established a "Conference on Promotion of Public Transportation" which is composed of government (municipal and national), scholars, carriers, and industries in their Tokyo headquarters and 10 other cities in Japan.

In order to promote Corporate Mobility Management efforts, the Ministry of Land, Infrastructure and Transport has established a subsidy scheme. This scheme aims to encourage and support demand-side approaches and seeks to better manage the use of private vehicles while, at the same time, encouraging

company initiatives to shift from private vehicle to public transportation for business-related travel. This scheme began in the Japanese fiscal year 2006. The ministry expected to receive requests for funding of about 1.1 billion Japanese yen.

In collaboration with New Nippon Steel Co., the Policy Research Institute conducted a TFP (Travel Feed-Back Program) demonstration project. The TFP programme is a communication tool which helps employees to switch travel modes and change their commuting choices in favour of public transport and cycling/walking. It does so through a process of face-to-face communication efforts and before- and after-impact studies.

The Policy Research Institute has established a study group consisting of scholars and representatives of government (municipal and national), carriers, and industries. The study group made policy recommendations for promotion of Corporate Mobility Management at the end of the 2006 Japanese fiscal year based on the result of the TFP experiment. In addition, the Policy Research Institute provided information to municipal governments and industries on how to conduct efforts for Corporate Mobility Management.

In Tokyo, in November 2005, in collaborating with JTRC, the Policy Research Institute successfully held "The International Seminar on Corporate Mobility Management" which included a training session, attended by over 200 participants. The seminar and the training session served as a good starting point towards the uptake of Mobility Management in Japan.

## NOTES

1 *LOTI is the French abbreviation for "loi d'orientation des transport interieurs".*
2 *LAURE is the French abbreviation for "loi sur l'air et l'utilisation rationelle de l'énergie".*
3 *SRU is the French abbreviation for "loi relative à la solidarité et au renouvellement urbain".*
4 *PDU is the French abbreviation for "plan de déplacement urbain".*
5 *See http://www.communities.gov.uk/index.asp?id=1144023#P347_97683 for the standards.*
6 *Response rate of 47%.*
7 *The site is defined as an entity of different offices, where the main entrances are located in a distance of maximum 500m between each other.*
8 *Acord estratègic per a la internacionalització, la qualitat de l'ocupació i la competitivitat de l'economia catalana, 2005.*
9 *BID: A tax rate on the value of the house if it would be sold.*
10 *BETC: The Business Energy Tax Credits is a tax credit which the State of Oregon gives to those businesses which are investing in sustainable mobility (purchase of transit passes, etc.).*

# 3. BEST-PRACTICE EXAMPLES OF ADOPTED CMM

## 3.1. Findings in Literature on Effects of CMM

Over the past 10 years, several studies undertaken in the United Kingdom, the Netherlands and the United States. have sought to investigate the quantitative and qualitative impact of CMM initiatives. The main findings of these studies are summarised below:

- The British Study (Cairns *et al.* 2002) commissioned by the UK Department for Transport, analysed the outcome of CMM initiatives undertaken by 20 "best-practice" cases in both the private and public sectors. The effects of the CMM initiatives were found to vary from case to case. For instance, in one company, the share of staff driving to work was reduced from 79% to 27%, in part due to the re-location of the company from a business park to a site close to the rail station. Overall, however, the 20 organisations experienced an average reduction of the share of staff driving to work in the order of 18%. The study stated that no clear findings emerged on the reasons of the relative success of some initiatives versus others, but it did find that:

  *"parking restraint is a hallmark of high achieving travel plans… In our study, the travel plans with the lowest car use used either parking restrictions, parking charges, or a combination of the two".*

  The authors are of the opinion that, whatever their starting point, companies can achieve reductions in staff car use. They also stated that the potential for modal shift is likely to be greater than the average of 18%.

- In the study of Napier University, Open University and W.S. Atkins (2001), mobility plans of governmental departments in the UK were reviewed. In the development of the assessment framework the authors undertook a wide literature analysis on travel impacts of CMM strategies. The findings led them to conclude that (Cairns *et al.*, 2002):

  - A mobility plan containing only marketing and promotion is unlikely to achieve any modal shift.

  - A plan with car pooling and cycle measures may achieve 3-5% reduction in drive alone commuting.

  - A plan with car pooling, cycling and large discounts (30% plus) on public transport plus works buses will achieve around a 10% reduction.

  - The combination of all the above measures, together with disincentives to drive, can achieve 15-30% reduction in drive alone commuting.

- In a review of Dutch studies and surveys of more than 40 Dutch organisations, Ligtermoet (1998) stated that mobility plans with "basic" measures" (*e.g.* car pooling) could reduce vehicle-kilometres by 6-8%, whereas plans with "luxury" measures (*e.g.* dedicated public transport solutions) and/or

"push" measures (*e.g.* parking management) achieved reductions of 15 to 20% (Sloman, 2003). The study of Touwen (1999), also looking at Dutch mobility plans, came to the same conclusion about the impact of CMM strategies.

- A U.S. study made in 1994 analysed the effects of mobility plans implemented by 49 employers. The average vehicle trip reduction achieved was around 15% and the key findings on the most powerful strategies were that (Cairns *et al*., 2002 based on TCRP, 1994):

  - Employers charging market rates for parking had four times the vehicle trip reduction of those offering free parking.

  - Employers providing only information did not realise any trip reduction results.

  - Employers providing commute alternatives (such as van pools) realised an average reduction of 8.5%.

  - Employers providing financial incentives (such as public transport subsidies) realised an average 16.4% reduction.

  - Employers providing both financial incentives and services (such as van pool / car pool matching) realised an average of 24% reduction.

- Furthermore, the study stated on-site conditions as important factors (Cairns *et al*., 2002 based on TCRP, 1994):

  - Sites with a limited offer of parking space had four times the vehicle trip reduction rate of sites with a large offer.

  - Vehicle trip reduction and public transport accessibility are positively correlated.

  - Employers with significant on-site services, such as food or banking, had four times the vehicle trip reduction of isolated sites without on-site services.

  - Most effective programmes were located in suburban central business districts or the regional central business district fringe, not in more isolated suburban settings.

- A U.S. Study (Shoup, 1997) focussed on the role of financial incentives in changing mobility behaviour. Shoup analysed the effect of parking cash-out schemes at 8 Californian employers[1] and stated an average reduction of people driving alone to work of 13% (at a range between 3 and 22%).

- Schreffler (2002) came to the following important conclusions on the effectiveness of CMM programmes in the U.S. on the basis of a literature and project review:

  - There is no single, definitive, "recipe for success". The same set of strategies implemented at two different sites will likely produce different results due to site characteristics, employee demographics, and the intangibles, such as management support and the market effort of the companies' mobility coordinator.

- CMM strategies including financial aspects (incentives and/or disincentives) achieve effects several orders of magnitude greater than strategies that do not incorporate these aspects.

- There is no correlation between the number of implemented measures and the effectiveness of the whole CMM strategy. In fact, some of the most effective programs are the simplest.

- The most cost effective CMM strategies in the US include:

  - Financial incentives (*e.g.* van pool and public transport subsidies).

  - Financial disincentives (*e.g.* parking charges).

  - Bicycle and walk programmes / subsidies.

  - Parking supply management (*e.g.* limited parking spaces).

- Strategies that are less cost-effective, but can produce positive results, are:

  - Compressed work weeks (*e.g.* 4 days/40 hours schedules).

  - Telecommuting programmes and telework centres.

  - Car pool and van pool matching programmes.

- Strategies that are largely cost-ineffective are:

  - CMM marketing without incentives.

  - Public transport service improvements without incentives.

  - Mid-day shuttles.

- Voluntary versus mandatory CMM strategies:

  - Employers engaging in CMM under a legal/regulatory mandate produce trip reductions that are 3½ times as great as those performing voluntary programmes.

## 3.2. Best-Case Examples of Implemented CMM

The following sections will investigate a selected number of "best case" implementations of company CMM policies. Although single cases are examined here, in reality, many companies around the OECD/ECMT area have implemented similar strategies and thus many of these can be viewed as "representative" of other CMM efforts. An important selection criterion for these was the existence of quantitative results relating to the impact and costs of the plans. A further criterion was that selected cases should ensure a broad geographical representation.

Table 3.1. summarises the principle case-studies and the interviewees who participated in the study on the basis of a semi-standardised questionnaire which was completed between autumn 2005 and spring 2006.

Table 3.1. **Cases with in-depth investigation**

| Name | Branch | Located in | Country | Name of the contact person | Role within the company |
|---|---|---|---|---|---|
| INFICON AG | Technology, Vacuum industry | Balzers | Fürstentum Liechtenstein | Mr. G. Seele | Member of the management board |
| Vodafone Limited | Telecommunication | Newbury | United Kingdom | Mr. Ch. Hopkins | Travel Project Manager |
| Voralberger Medienhaus | Publishing company | Schwarzach | Austria | Mrs. M. Mathis | Project Manager for mobility issues |
| Lufthansa Technik | Aircraft Maintenance, Repair, Overhaul | Hamburg, near Hamburg airport | Germany | Mr. H. Herrmann | Head transport issues within the Facility Management Department |
| Parque Tecnologico de Andalusia | Technology Parc | Malaga | Spain | Mrs. Sonja Palomo das Neves | Head of the Department for Technology transfer |
| ABB, Utility Automation | Technologies | Baden | Switzerland | Mr. M. Kopp | Mobility Manager at ABB Switzerland |

These cases are summarised in the following sections.

Also included at the end of this chapter are a number of examples of other CMM programmes that were not selected for in-depth interviews, but provide valuable information and insight nonetheless. These are:

- ST Microelectronics, Grenoble, France.
- Rijnstate Hospital, Arnhem, The Netherlands.
- BP, Sunbury on Thames, Middlesex, UK.
- Infineon, Dresden, Germany.
- CH2M Hill Denver, Colorado, US.
- Colruyt, Hal, Belgium.

### *3.2.1. INFICON AG, Balzers, Liechtenstein*

*General Information*

| | |
|---|---|
| Branch: | Technology, vacuum industry |
| Number of employees: | 225 |
| Localisation of the site: | Outside of the city of Balzers, suburban area, partially rural looking |
| CMM implemented since: | 1999 |
| Web-Site: | www.inficon.com |
| Other Remarks: | INFICON AG Balzers is part of the internationally active INFICON Holding |

*Motivation for Implementing CMM*

In the framework of the ISO 14001 certification process (which relates to the environmental impact of an organisation's operations), commuting travel was included in calculating company-specific energy inputs. The analysis showed that about 50% of a company's energy consumption was attributable to those journeys. At the time of the ISO certification process, almost 65% of the yearly commuting trips were made by car. The reduction of the energy consumption in this for commuting, therefore, was identified as the most important environmental goal during the certification process.

*Organisation of the Process and Activities During the Planning and the Implementation Phase*

From the very start, mobility management was completely integrated into the Total Quality Management (TQM) system of the company, and the company management board member in charge of TQM was given responsibility for overseeing the CMM initiative.

An interdisciplinary work group, "Environment and Mobility", was put into place in order to ensure input from, and gain the acceptance of, all parts of the company. The board was composed of 7 members, representing every region where employees lived and all forms of commute mode.

This group implemented a number of initial measures during the planning phase in 1999, including:

- A survey and analysis of the journey to work (70% live in Switzerland, 20% in Liechtenstein, 10% in Austria) for all employees considering all means of transportation.
- The definition of a set of criteria whereby commuting trips by non-car modes should be seen as both possible and preferable – and conversely, a set of criteria whereby commuting by car would be seen as less preferable.
- Target-setting for commute trip mode split: 40% motorized individual transport (mainly car), 40% collective transport (public transport, car pooling, Unaxis company bus), 20% by foot and bicycle.
- Setting of yearly parking fees, to be subtracted from monthly salaries. In order to qualify for a parking space, a request must be submitted. The request must include a justification for using the car for commuting purposes, as well as a justification for not using other means – if these are available.
- Establishment of a set of incentives (*e.g.* club membership), which has been refined over the years.

*Implemented Measures*

Since 1999, some of the original measures have been modified and several new ones added, especially after the company moved into a new facility in 2002:

*Criteria for non-car commuting; applicable to all employees (if these criteria hold for an employee, a parking space will not be granted except in certain exceptional and justified cases):*

- Less than 600m between home and the closest useable public transport stop and for bus rides of less than 11 minutes, no more than 900m total walking distance (origin+destination).

- Travel time by public transport is equal to, or less than, 3 times the travel time by car, with a maximum home-work travel time of 60 minutes.

- The distance between home and work is equal to, or less than, 3 km by bicycle and the vertical elevation gain is less than 50 m.

- The travel time for walking from home to work is less than 8 – 15 minutes, according to specific circumstances.

*Parking Space Management*

- Most of the available parking is nominative and dedicated for those who need the car to get to work as per the criteria above.

- €240 per year for a parking space if home to work trip requires a car according to the above criteria.

- If the trip can be made by other means (as per the above criteria) but a car is still used, the cost of the parking space rises to €480 per year.

- Non-dedicated parking spaces (as well as those freed-up by absent employees) are available for use by Mobility Club (see below) free of charge for those days that they use a car to get to work.

*Mobility Club, categories Top and Plus*

- Voluntary membership and free of charge.

- "Top" members make a commitment not to use their car for solo commuting more than twice a month, or 24 times a year.

- "Regular" members make a commitment not to use their car for solo commuting more than 8 times a month, or 96 times a year.

*Club Membership Benefits*

- Reservation of "day parking space" free of charge.

- Public transport pass at reduced price.

- Free membership at Swiss CarSharing organisation Mobility.

- Free use of Mobility cars (one placed at the main entrance) during working days.

- Yearly mobility reimbursement of €220 (cash paid out or deducted from public transport pass, or deducted from costs of using the Unaxis company bus).

- "Top" club members who have used their car less than 4 times a year can participate in a special cash lottery (5 times €60).

*Bike Use*

- Covered bike stands at the main entrance.
- Dressing room with cabinets, showers, towels, hair dryers, mirrors.
- Yearly bike repairing day; costs carried by company.
- Yearly €20 contribution to bike helmet against receipt.
- The company also works with authorities to improve bicycle infrastructure.

*Miscellaneous Activities*

- Company canteen with own kitchen offering quality food in attractive meeting and eating place; meals are heavily subsidised.
- Yearly mobility jackpot lasting 4 weeks; €30 are put into the jackpot every day (participating at the raffle are all employees present, who have not travelled to work alone by car nor alone by motorbike on a specific day).
- Courses by the Swiss Council for Accident Prevention (bfu) concerning safety on the way to work and when doing sports.

*Costs and Financing of the Measures*

The yearly cost for corporate mobility management (all activities, minus parking fees, including 20% of one staff's time needed to manage the programme, is approximately €220 000. The employees partially finance these expenditures with the parking fees.

The alternative to the Mobility management programme would have been to construct two underground parking levels to account for all of the staff's car commutes. This option would have cost approximately €300 000 annually.

*Effects Achieved So Far*

Economic effects

The CMM programme has resulted in an annual saving of about €80 000 (which is the difference between annual CMM expenditures and the amortised annual costs of having two underground parking levels). Among the intangible benefits cited during the interview are the value to the company of the lower number of sick days registered after the implementation of the programme, which may be attributable to more employees using healthier means of transportation.

Social effects

Despite many of the management's worries, the high satisfaction index of employees was not negatively impacted by the programme. The interviewee cited the importance of treating all employees and all modes equally as being very important in this respect.

| Means of transport for journeys to work | 1999 (former location) (% of staff) | June 2002 (new location) (% of staff) | November 2003 (new location) (% of staff) |
|---|---|---|---|
| Motorised individual transport (mainly car) | 63 | 50 | 46 |
| Collective transport (mainly public transport, less car pooling and company bus) | 24 | 38 | 43 |
| By foot and bicycle | 13 | 12 | 11 |

Environmental effects or in terms of behaviour or mode-split change

The CMM programme also resulted in a reduction in the share of energy use for journeys to work from 65% to 35% of the total energy consumption of the firm from 1998 to 2002.

*Role of Public Authorities and/or Transport Providers During the Planning and the Implementation of CMM*

As a result of the planning and implementation of the CMM programme, bus connections to the company's site were improved. Together with other companies in the surroundings, INFICON partially finance a new bus service (Unaxis) which runs once in the morning to the site – and four times in the evening from the site – to the main Swiss municipality at the border (which is an important residential zone for the staff as well as a regional rail hub). This bus service operates as a normal commercial service, but is subsidised by INFICON and its neighbouring firms on a pro-rata basis according to the number of staff employed. The local government has also made some minor improvements to facilitate pedestrian and bicycle access to the company.

*Obstacles, Barriers*

No specific barriers with regard to the case where mentioned, but the interviewee did note the general difficulty in implementing CMM, linked to the fact that today's transport structure is still highly biased in favour of car use. To promote more sustainable alternatives, the interviewee said that this bias must be addressed and reversed.

*Most Important or Success Factors*

At INFICON

- Mobility management is an integral part of the environmental quality system.
- As part of the quality management process, mobility management is a top management issue.
- An interdisciplinary work group secures broad input and acceptance.
- All employees are treated equal.
- Parking fees are based on clear and transparent criteria that are measurable and equally applicable to all staff members (including senior management).

### *3.2.2. Vodafone Limited, Newbury, UK*

*General Information*

| | |
|---|---|
| Branch: | Telecommunication |
| Number of employees: | 3 000 |
| Localisation of the site: | At the northern edge of the town |
| CMM implemented since: | Since 1998 |
| Web-Site: | www.vodafone.uk |
| Other Remarks: | |

*Motivation for Implement CMM*

The CMM programme established by Vodafone in Newbury was both triggered – and facilitated – by the company's relocation to a new site. Up until 2002, the headquarters of Vodafone was distributed over several locations within Newbury and in the surrounding neighbourhoods. Some of these locations faced a shortage of parking spaces. In 2002, the company constructed a new building in Newbury itself where 3 000 of the 5 500 employees were to be consolidated. However, in order to receive planning permission for the new development, the firm had to meet the requirements of the Section 106 agreement negotiated with the city – including the requirement that the new site offer a maximum of only 1 500 parking spaces.

Vodaphone was also interested in implementing CMM independently of the planning process requirements in order to raise staff efficiency by helping employees to avoid travel in congested rush-hour traffic.

*Organisation of the Process and Activities During the Planning and the Implementation Phase*

Different staff working groups where established in 1998 in order to discuss the measures proposed by an external consultant as a part of a mobility plan. The implementation and the operation of the CMM programme has since then been taken over by a travel project manager at Vodafone itself. Consultation and involvement of the general workforce still occasionally takes place, but the travel project manager is the driving force behind the implementation and further development of the CMM programme. The programme itself must be approved by the firm's management board and a 3-year renewal of the programme was underway in 2006.

*Implemented Measures*

Since 1999, different measures have been put into place which not only target the new site but are also being applied at the remainder of the Vodafone sites in and around Newbury:

- Parking permit regulation:
  - Permits are given according to certain criteria establishing priority (disabled people, directors, car-poolers, etc.).
  - Parking permits are free of charge.

- Parking Cash Out:
  - By renouncing on a parking permit, car-poolers receive a travel subsidy of €62 per month.
  - By renouncing a parking permit, pedestrians, bikers and public transport users receive a payment of €125 per month.
- Public transport use:
  - Vodafone's shuttle-bus service, connecting all offices and the railway station, is free of charge for employees (the service runs every 20 minutes between 07.00 am and 07.00 pm)
  - Vodafone's company bus services, connecting the sites with the main neighbourhoods where employees live, are also free of charge for staff.
  - The use of local public transport within Newbury itself is free of charge for the staff (travel pass offered).
  - Public transport users receive a monthly payment of €125 (when they opt out of a parking permit).
- Pedestrians and bikers:
  - Pedestrians and cyclists receive a monthly payment of €125 (when they opt out of a parking permit).
  - Vodafone pays grants to the public authorities in order to enhance bike infrastructure in the town.
- Car pooling:
  - Company's own ride matching service through its Intranet.
  - Payments of €62 are given to car-poolers who renounce their parking permit and car-pool drivers receive privileged access to parking permits.
- Miscellaneous activities:
  - On demand information about regulations, time-table information, etc., through Intranet

*Costs and Financing of the Measures*

The local bus company operates Vodafone's bus service. The annual costs for Vodafone are less than €1.5 million. The overall running costs of all measures per employee are around €630.

*Effects Achieved so Far*

Economic effects:

No cost savings for the firm under current accounting models.

Social effects:

In general, the rate of satisfaction at the staff in Newbury is high. The scheme adopted in Newbury is also applied in other sites in the U.K. where parking restraints exist.

Environmental effects, or in terms of behaviour or mode-split change:

The quantitative objective at the beginning of the implementation of CMM, namely to reduce the amount of solo car drivers from 83% to 60%, has been achieved.

*Role of public authorities and/or transport providers during the planning and the implementation of CMM*

The local public authority did not play an active role in the planning and the implementation of the CMM at the site.

*Obstacles, Barriers*

Insofar as differential application of Section 106 agreements exist between municipalities – and thus leading to a situation where municipalities can "compete" for firms by offering less stringent agreements – Vodaphone views Section 106 as possibly leading to "unfair" competition and increased costs for firms located in areas with strong agreements, as compared to firms located in areas with weak agreements. Furthermore, whereas firms are expected to conform to these agreements, local authorities have been less prone to imposing conformity upon themselves. The Vodaphone representative felt that public authorities should lead by example by implementing CMM at their own buildings[2].

*Most Important or Success Factors*

From the point of view of the travel project manager, the most important success factor is to offer a wide range of options from which the employee can choose. In addition to the Section 106-based measures, the interviewee noted the importance of offering flexible working policies in order to reduce commute-relate car traffic at *all* Vodafone sites (and not just those facing Section 106 requirements). In early 2006, Vodafone had 600 registered home workers at all sites in the U.K.

### *3.2.3. Vorarlberger Medienhaus, Schwarzach, Austria*

*General Information*

| | |
|---|---|
| Branch: | Publishing company |
| Number of employees: | 400 |
| Localisation of the site: | Rural area outside the small municipality of Schwarzach, 10 km to the city of Bregenz and 4 km to the city of Dornbirn |
| CMM implemented since: | Since 2002 |
| Web-Site: | www.medienhaus.at |
| Other Remarks: | |

*Motivation for Implementing CMM*

Up to the mid-1990s, Medienhaus was situated in the city of Bregenz, where limited parking space availability was not considered a great constraint, given that many of the employees lived within the city and came to work by foot, public transport or by bicycle. In 1996, however, the company relocated to a new site just outside of the small municipality of Schwarzach. This led to different accessibility conditions, characterised by longer travel distances, poor public transport connections and greater availability of parking spaces.

Since its inception, Medienhaus has displayed a high sensitivity regarding ecological issues and, in particular – through their newspapers – they had often been critical of the region's transport policy. The company, therefore, faced some pressure to "lead by example" and implement a CMM programme following their relocation. Furthermore, the firm could tap into a considerable source of local expertise in CMM initiatives, given that several firms in the Region of Vorarlberg had already implemented their own CMM programmes. In fact, in comparison to other regions in Austria, Vorarlberg is seen as a pioneer in terms of CMM. Given these factors, the firm qualified for participation as a pilot project of the national "Sanfte Mobilitätspartnerschaft" programme initiated by the Federal Ministry for Agriculture and Forestry, Environment and Water management (see BMLUFW, 2000 and OECD, 2002).

*Organisation of the Process and Activities During the Planning and the Implementation Phase*

The Technical University of Vienna served as a consultant to Voralberger Medienhaus during the set-up and implementation of the CMM initiative. The TU elaborated a mobility plan on the basis of an analysis of company-related travel patterns and helped the firm to establish targets and CMM measures. During the process, an internal working group at Medienhaus composed of a member of the staff association, the manager responsible for finance and different staff members representing different means of transport, was established. This group started the project but is no longer active.

*Implemented Measures*

Between 1997 and 1999, the following measures where implemented at the new site:

- Improvement of infrastructure for pedestrians:
  - Resurfacing of the footpath leading to the train station (financed by the municipality) and installation of lights (financed by the Medienhaus itself and through sponsoring).
  - Signposting of the footpath leading to the company from the train station.
- Bike use:
  - Small bike fleet at the company for short-distance business trips.
  - Services for cyclists (showers, dressing rooms, pump facilities, company's own raincoats, tools for minor repairs).
  - The company covers the cost of an extra pass needed to take the bicycle on trains.

- Public transport use:
  - The company covers the costs of the annual public transport pass if the employee makes more than half of his/her journeys to work by train or bus.
  - The terminus of one local public transport line was extended up to the entrance of Medienhaus. This extension was later replaced by a call-a-bus system.
  - Eight annual and transferable public transport passes are available at the company for business trips.
  - Long-distance travelling costs for business journeys are reimbursed only for train travel.
- Car pooling:
  - Dedicated parking spaces for car-poolers near the entrance.
  - Internal, computer based, ride-matching services.
- Fleet management:
  - Two energy-efficient company cars are available for business trips; costs for own car use are only reimbursed if the company cars are not available.
- Miscellaneous activities:
  - The company provides an information system on computer terminal in the entrance hall, with information on the CMM activities of Medienhaus, time-table information, etc.
  - The company undertakes several awareness-raising activities, *e.g.* a "cyclists' breakfast" and participation in the yearly "car free day".

*Costs and Financing of the Measures*

No information about the overall costs is available. The consulting services of TU were paid by the Government.

*Effects Achieved So Far*

Economic effects:

The company saves an annual amount of €22 000 by having employees use the fuel-efficient company cars for most business trips, as opposed to reimbursing staff for using their own vehicles for business-related travel. Staff members also save about €280 if they choose public transport as the main mode instead of their own car.

Social effects:

An ex-post evaluation survey showed that 77% of the employees targeted by the CMM programme viewed the initiative positively, with 56% of the employees considering the programme as "good" and 21% viewing it as "very good".

Environmental effects or in terms of behaviour or mode-split change:

| Means of transport for journeys to work | Means of transport for journeys to work | 1999 (after implementation) (% of staff) |
|---|---|---|
| Car users (drivers) | 75 | 60 |
| Car (passengers) | 6 | 12 |
| Public transport (regular users) | 12 | 20 |
| Bicycle | 7 | 8 |

Based on the modal change incurred by the CMM initiative, the programme delivered a 17% reduction in $CO_2$ emissions and 15% reduction of energy use for employees' travel to work (see BMLUFW, 2000).

*Role of public authorities and/or transport providers during the planning and the implementation of CMM*

Public authorities largely limited their role to financing the CMM initiative, at the national level, to improving the footpath to the train station and, at the local level, to improving the bus accessibility to the site. The costs incurred by the latter initiative were covered by the local government.

*Obstacles, Barriers*

The interviewee noted that, at the outset, it was difficult to convince the company's management board to act.

*Most Important or Success Factors*

- External assistance by the TU.
- Mix of measures.
- Internal working group, which was important to motivate and inform the staff.

### *3.2.4. Lufthansa Technik, Hamburg, Germany*

*General Information*

| | |
|---|---|
| Branch: | Aircraft maintenance |
| Number of employees: | 8 700 at the entire airport and therefore 5 700 at Lufthansa Technik |
| Localisation of the site: | Near Hamburg airport, about 11 km away from the city centre of Hamburg |
| CMM implemented since: | Since 1991 |
| Web-Site: | www.lufthansa-technik.com |
| Other Remarks: | |

*Motivation for Implementing CMM*

The staff association initiated the CMM initiative and presented its case to the company's management board, and to the staff body, based on the following four points:

- *Environmental reasons*: employee commuting trips were covered in Lufthansa's yearly environmental report as well as in the firm's internal Eco-Audit, but no action had been taken to reduce the impact of this travel.

- *Economic reasons*: in order to provide sufficient parking availability for staff, Lufthansa had to rent additional parking capacity at a cost of €15 per space. Lufthansa Technik also lost potential revenue from renting out its own parking capacity back to the airport,which faces a shortage of parking at certain times of the year.

- *Prevention reasons*: it was necessary to take a pro-active stance vis-à-vis parking demand, so that mounting pressure on the existing capacity could be managed to avoid future shortages.

- *Social reasons*: each staff member should have the possibility to choose between different modes equally. At the time, only car drivers received certain perks.

*Organisation of the Process and Activities During the Planning and the Implementation Phase*

The staff association is subdivided in several working groups. One of these groups is dedicated to mobility issues. During the planning phase, a CMM programme concept was elaborated by the "mobility group" and ratified, first by the staff association and then by the management board. Now, however, the Facility Management department, assisted by the Plant Security department, have taken over the operational management responsibilities for the CMM programme from the mobility group of the staff association.

*Implemented Measures*

The following CMM measures have been implemented at Lufthansa Technik since 1991:

- Bike:
  - 30 decentralised bike stands, partially protected against bad weather.
  - Showers.
  - One automatic bike entrance to avoid a large detour by bike.
- Car Pooling:
  - Dedicated and reserved parking spaces for car-poolers.
  - Internal, computer-based matching system.
- Car Sharing:
  - In the beginning, the company put in place its own Car Sharing Service.

- Now, Lufthansa participates in the Business Car Sharing Scheme of the Deutsche Bahn (depending on the season, 70 to 150 cars are rented for business trips).

- Public transport:

  - Contract with the Hamburg public transport company for preferential Job-Ticket terms: the company pays around 30% of the monthly cost of a public transport pass (€52 per month).

- Miscellaneous activities:

  - Mobility advice through Intranet.

  - Newsletters on transport issues.

  - Participation at the yearly car free day.

- Costs and financing of the measures:

  - Yearly expenses for public transport tickets: around €25 000.

  - Costs for automatic bike-entrance: around €65 000.

*Effects Achieved So Far*

Economic effects:

- No exact figures available, but the CMM measures have substantially reduced the number of external parking space rentals during peak airport travel periods.

Social effects:

- All staff have the possibility to purchase reduced-cost public transport passes.

Environmental effects, or in terms of behaviour or mode-split change:

- Use of public transport: An increase in the number public transport pass owners from 520 (in 1995) to 1 600 (in 2005).

- Bike users: increase from 450 (in 1991) to 700-900 (in 2005).

- Car Sharing users: an increase from 70 to 120 during the year.

- Car-Pooling: 900 registered members.

*Role of Public Authorities and/or Transport Providers During the Planning and the Implementation of CMM*

During the implementation phase, the city's authority improved the accessibility of the site by bicycle by constructing a new bike lane. The public transport company was, and is, the contract partner for the Job-Ticket arrangement.

*Obstacles, Barriers*

The management board had often to be convinced of the merits of the CMM programme. However, the fact that the firm could avoid the costs of renting additional car parking spaces during peak periods was a strong motivator.

*Most Important or Success Factors*

- Integration of commuter transport into the internal EMAS – Eco-Audit process.
- Engaged staff association with a main driving person behind the initiative.

### *3.2.5. Parque Technologico de Andalusia, Malaga, Spain*

*General Information*

| | |
|---|---|
| Branch: | Technology park |
| Number of employees: | 8 500 employees working in 150 companies (2006) |
| Localisation of the site: | about 14 km away from the city centre of Malaga |
| CMM implemented since: | Since 2000 |
| Web-Site: | www.pta.es |
| Other Remarks: | |

*Motivation for CMM Programme*

The Parque Technologico de Andalusia is situated near a large university campus on the outskirts of the city of Malaga. The unexpected and rapid development of the office park had led to congested access roads and parking problems within the site. The site was also characterised by poor public transport access (the one bus stop at the entrance of the park had an infrequent bus service). In response to worsening traffic conditions and their potential impact on the office park's competitive position, the Parque Technologico de Andalusia management (PTA) decided to implement a CMM programme.

*Organisation of the Process and Activities During the Planning and Implementation Phase*

The CMM programme of the PTA was selected as one of the pilot projects of the EU-project MOST (see MOST 2003b). The planning and implementation was piloted by a PTA internal working group, comprising the director, the head of department for technology transfer, and a staff member of the department for operation. This internal working group established the mobility plan that served as the basis for the CMM programme.

*Implemented Measures*

In the context of the MOST pilot phase of the programme (running from 2000 to 2002), a number of measures were put into place, including the following:

- Public Transport
  - Creation of two new bus services within the PTA, with a service frequency of every 15 minutes during the day.

- Parking Management
  - Construction of a central parking facility with 2 000 parking places.
  - Conversion of "free" parking spaces along the main road (50 to 60 spaces) to paying spaces with maximum stay of 30 to 120 minutes, depending on circumstances.
- Car Pooling
  - Intranet based car pool matching service.
- Miscellaneous Activities
  - Information campaign during the pilot phase.
  - Set-up of a mobility office during the pilot phase, with an appointed mobility coordinator (no longer in activity).
- Costs and Financing of the Measures
  - No information available.

*Effects Achieved So Far*

Economic effects:

No direct economic gains recorded with existing accounting methods.

Social effects:

High satisfaction rate of employees with regard to the new bus service.

Environmental effects or in terms of behaviour or mode-split change:

| Means of transport for journeys to work | 2000 (before implementation) (% of staff) | 2002 (after implementation) (% of staff) |
|---|---|---|
| Car users (solo drivers) | 76 | 63 |
| Car poolers | 10 | 17 |
| Public transport (regular users) | 5 | 12 |
| Motor bike users | 9 | 5 |
| Bike users | 1 | 1 |

*Role of Public Authorities and/or Transport Providers During the Planning and the Implementation of CMM*

The city's municipality and the regional government were the main driving forces, given that they are the main shareholders of the PTA and are thus concerned about the Park's competitive position vis-a-vis other office sites. The public transport company undertook the feasibility study relating to the extension of their bus services into the PTA.

*Obstacles, Barriers*

The main obstacle faced at the beginning of the project was convincing the public transport company to extend their bus service into the PTA; despite the fact that, in doing so, the new ridership was projected to (and did) cover the operator's costs.

*Most Important or Success Factors*

Lobbying of the shareholders at the public transport company was crucial.

### *3.2.6. Asea Brown Boveri, Utility Automation, Baden, Switzerland*

*General Information*

| | |
|---|---|
| Branch: | Technologies |
| Number of employees: | 2 300 at the headquarters in Baden and another 850-900 at the business unit "Utility Automation" (out of 5 000 ABB staff in Switzerland) |
| Localisation of the site: | Near the city centre of Baden, 5 minutes from the train station |
| CMM implemented since: | Since 2002 |
| Web-Site: | www.abb.ch |
| Other Remarks: | |

*Motivation for Implementing CMM*

The former industrial area where ABB production activities took place – *Baden-North* – was re-organised in the 1990s as a new development zone. However, as a condition to receiving a zoning permit for the re-qualification of the site from its former industrial use, the city required ABB to reduce the offer of parking (in order to reduce the number of generated car-trips) and implement a CMM programme. As a consequence, the business unit "Utility Automation", which had moved to a new location within Baden-North, had only 370 parking permits available (for over 900 staff). Employees who were located formerly in two older sites (one in Baden and one in Turgi, the neighbouring town) had to change their commuter habits which previously had been characterised by a relatively high rate of car use.

An additional factor at play was ABB's desire to project the image of an environmentally-friendly company, in line with its corporate policy.

*Organisation of the Process and Activities During the Planning and Implementation Phase*

An internal work group was created, composed of 6 members (3 staff representatives and 3 members of the infrastructure department). The group was assisted by an external consultant whose principle task was to help draft the firm's new mobility plan. One half of the consultant's costs were borne by the city of Baden.

*Implemented Measures*

The following three guidelines were established by the internal working group and served to frame the CMM programme:

- The corporate mobility management scheme should guarantee reasonable access to the new location by all modes.
- The scheme had to be transferable to other business units of ABB outside of Baden, and thus should be as simple as possible.
- The scheme and the measures within it should treat all employees equally in terms of benefits.

The plan implemented the following measures:

*Mobility Model*

- Employees commuting by public transport, walking or cycling receive a yearly "eco-bonus" in the form of public transport cheques (€460/year/employee).
- Parking place fee of Monthly €50 for all employees, no dedicated parking spaces.
- Parking space allowances/permits are only given to employees whose travel time by public transport exceeds 30 minutes each way.

*Further Services*

- Use of two Mobility CarSharing cars placed at the site for business travel.
- Intranet with public transport information.
- Showers and weather-protected bike stands at the main entrances of the new building.

*Costs and Financing of the Measures*

No additional costs for the new measures. Public transport subsidies are cross-financed with the parking entry fees.

*Effects Achieved So Far*

Economic effects:

No direct gains, but no additional costs, since the totality of the parking fees cover the pay-out for public transport benefits and other aspects of the CMM programme.

Social effects:

The staff is satisfied, largely due to the equal treatment of all employees, including the management board.

Environmental effects, or in terms of behaviour or mode-split change:

Up to 2006, only 200 of 370 available parking permits were used, as 80% of the staff used public transport, walk, or cycle to work.

*Role of Public Authorities and/or Transport Providers During the Planning and the Implementation of CMM*

No special role, besides the co-financing of the external consultant.

*Obstacles, Barriers*

There has been some difficulty get the management board of ABB Switzerland to extend the CMM scheme of Utility Automation, Baden, to all business units in Switzerland facing parking restrictions.

*Most Important or Success Factors*

- Mix of measures.
- Financial incentives.
- Clear and transparent communication during the whole planning and implementation process.

### *3.2.7. ST Microelectronics, Grenoble, France*

*General Information*

| | |
|---|---|
| Branch: | Hospital |
| Number of employees: | 2 000 (only at the site of Grenoble) |
| Location | Within the city of Grenoble (150 000 inhabitants) |
| Starting situation (problems): | • 40% of the overall site energy consumption is attributed to commuter traffic of the employees<br>• Company is ISO 14001 certified<br>• 60% of the employees live within the conurbation of Grenoble<br>• Modal split before introduction of the mobility plan (2000)<br>• 80% car users (drivers)<br>• 20% public transport users<br>• Parking spaces saturated |
| Objectives: | Share of public transport/pedestrian/bicycle travel mode users up to 50% in 2005 |
| Measures: | The following main measures were introduced between 2000 and 2002:<br>• New infrastructure at the site<br>• Double the number of bike stands (200, weather-proof and secure)<br>• New shelter at bus stop near the entrance<br>• Protected bicycle paths and itineraries around the site<br>• Services for bicycle users<br>• Showers and dressing rooms<br>• Internal bike repair service<br>• Cyclists safety kits<br>• Payment of taxi or bus for cyclists in case of unexpected need<br>• Free shuttle-bus to the rail station at rush hours<br>• Company covers 80% of the costs of the regional annual public transport pass<br>• On-site snack service<br>• Increase in the amount of energy efficient and non-polluting vehicles within the company's fleet<br>• Coordination of professional trips with encouragement of car-pooling<br>• Action days for awareness-raising |

| | |
|---|---|
| Organisation: | Internal working group responsible for implementation and development of the mobility plan |
| Effects achieved:<br>*Transport* | Change in modal split in commuter traffic between 2000 and 2002:<br>• 20% less car users (drivers)<br>• 11% more public transport users<br>• 9% more bicycle users |
| *Environment* | No figures available |
| *Economic* | 10% of the annual costs located to transport are dedicated to CMM strategies (around €100 000 per year) |
| *Social* | No information |
| References: | www.emma-day.info, internal document of STM |

### *3.2.8. Rijnstate Hospital, Arnhem, The Netherlands*

*General Information*

| | |
|---|---|
| Branch: | Hospital |
| Number of employees: | 2 350 |
| Location | Situated within the city of Arnhem, urban setting with good accessibility by bus and bicycle |
| Starting situation (problems): | Saturated parking space (450 parking spaces) at new site<br>Modal split before implementation of the mobility plan (1994):<br>• 56% car users (drivers)<br>• 8% car-poolers<br>• 10% public transport user<br>• 26% bicycle users and pedestrians |
| Objectives: | Promotion of public transport, bicycle and pedestrian travel due to scarcity of parking spaces |
| Measures: | On the base of a mobility plan, the following measures have been implemented since 1994/95:<br>• Modified parking allowance to restrict driving alone among employees that have an alternative available to them<br>• Contract with bus company for additional services and weekend transportation (outside regular schedule)<br>• Guaranteed ride home service for public transport users<br>• Employer financing of bicycle purchase<br>• On site bike repair service<br>• Dedicated parking space for car-poolers<br>• Parking space management (parking charges on all parking spaces)<br>• Subsidies for annual public transport passes |
| Organisation: | • Internal mobility coordinator responsible for development and implementation of the mobility plan<br>• External support of the Transport Coordination Centre VCC Arnhem - Nijmegen<br>• Commitment and support of executive board |
| Effects achieved:<br>*Transport* | Modal split change between 1994/95 on home to work trips of employees:<br>• 23% less car use (drivers)<br>• 30% more public transport users<br>• 1.5% more car poolers<br>• 5% more bicycle users |
| *Environment* | No information |
| *Economic* | Cost neutral (entrance on parking fees are covering public transport pass subsidies) |
| *Social* | Image of Hospital raised |
| References: | Müller (2001), Schreffler / Organizational Coaching (1996) |

### *3.2.9. BP, Sunbury on Thames, Middlesex, UK*

*General Information*

| | |
|---|---|
| Branch: | Oil company |
| Number of employees: | 2 500 |
| Location | Near London, in a suburban development zone. |
| Starting situation (problems): | • Reorganisation of the site and construction of an additional building (relocation of employees from other sites)<br>• Mobility plan required to obtain planning permission (section 106 agreement)<br>• Modal split of home to work trips before implementation of the mobility plan (1998):<br>- 84% car users (drivers)<br>- 2% car users (passengers)<br>- 5% public transport users<br>- 3% bike users<br>- 5% by foot<br>- 1% motorcycle users |
| Objectives: | Improvement of public transport/bicycle/pedestrian travel |
| Measures: | The following measures have been implemented since 1998:<br>• Improved accessibility to the site with local public transport (3 bus lines now serve the site)<br>• Free shuttle-bus service from the site to the closest railway station during peak hours<br>• 20% reimbursement of annual public transport pass costs<br>• Improvement of bike and footpaths to the site<br>• Services for cyclists (showers, dressing rooms, bike maps)<br>• Computer based matching service for car-poolers<br>• Introduction of telework<br>• Information and advice activities |
| Organisation: | • Implementation through company's own Real Estate company<br>• Mobility plan made by external consultant |
| Effects achieved:<br>*Transport* | Modal split changes achieved on home to work trips between 1998 and 2001:<br>• 12% fewer car users (drivers)<br>• 1% fewer car users (passengers)<br>• 11% more public transport users<br>• 2% more bike users<br>No parking space problems at the new sites |
| *Environment* | No information |
| *Economic* | Costs for implementation of the mobility plan: about 430 000 € (due to payment required by section 106 agreement)<br>Annual running cost per employee is about 330 € (estimated by BP) |
| *Social* | No information |
| References: | Cairns *et al*. (2002) |

### *3.2.10. Infineon, Dresden, Germany*

*General Information*

| | |
|---|---|
| Branch: | Production of semi-conductors, research and development |
| Number of employees: | More than 5 000 overall, in shifts of approximately 2 800 |
| Location | At the edge of the city of Dresden |
| Starting situation (problems): | • Poor accessibility to the site by public transport<br>• Only 60% of employees lives in Dresden, the rest have long commuting distances of up to 100 km<br>• Transport impact on the surroundings caused by Infineon-related commuter car traffic |
| Objectives: | The most important objectives of the mobility team within the company were to:<br>• Guarantee accessibility for all employees, with the focus on shifting towards less environmentally harmful means of transport<br>• Create employee awareness regarding sustainable means of transport<br>• Reduce the transport impact generated by the company on the surroundings<br>• Systematically avoid individual motorised traffic when possible |
| Measures: | The following important measures have been implemented since 1996:<br>• Job-Ticket (as a one year pilot project and with planned regular implementation), regular job-ticket since 2005<br>• Coordination of the public transport time-table with the shifts of the company<br>• Re-location of a bus-stop (nearer to main entrance) and construction of a new main entrance nearer to the tram station to shorten pedestrian distances)<br>• Weather protected bike stands<br>• Showers and dressing rooms for bikers<br>• Mobility Action-Day with mobility counselling service<br>• Counselling services for new staff with regard to selection of a new residence<br>• Intranet Matching Service for car-poolers<br>• Transport information through the Web |
| Organisation: | A mobility team has existed since 1996; it receives support from the management board |
| Effects achieved:<br>*Transport* | • 400 new regular PT customers within a few months as an impact of the regular Job-Ticket in 2005<br>• Modal split change between 1996 and 2003 on home to work trips of all employees:<br>- Reduction in share of solo drivers from 68% to 59%<br>- Increase of car-poolers from 5 to 9%<br>- Increase of public transport users from 13 to 15%<br>- Increase of pedestrians and cyclists from 13 to 16% |
| *Environment* | The annual mean rate of $CO_2$ emissions per employee has been reduced by about 18% between 1996 and 2003 |
| *Economic* | Saving expenses for constructing of 250 parking places |
| *Social* | High satisfaction rate of staff |
| References: | See http://www.wirtschaftinbewegung.com, last accessed 04.April.2006; ongoing project Mobility Management for Companies – Status and Development in Germany, co-ordinated by ILS NRW and funded by the Federal Ministry of Transport, Building and Urban Affairs. |

### *3.2.11. CH2M Hill Denver, Colorado, US*

*General Information*

| | |
|---|---|
| Branch: | Engineering, construction and operations company |
| Number of employees: | No information |
| Location | New campus is less than 20 miles south of Denver and 30 miles north of Colorado Springs |
| Starting situation (problems): | • Prior to 2002, employees where located at 4 sites throughout Denver<br>• Relocation of all employees to a new campus site<br>• New campus site was chosen on the basis of best accessibility for all employees, and because campus should be served by a light rail (planned) |
| Objectives: | Improvement of telework and car pooling |
| Measures: | The following measures have been implemented:<br>• Internal telework program (participation allowance is based on job suitability, suitability of the employee's skill set, job performance and suitability of home work site)<br>• Implementation of the TDM programme "look before you leave": transportation Intranet featuring current traffic updates, planned closures, links to Denver International Airport, subscription to a traffic alert service, information of public transport companies, car pool and van pool information<br>• No information about car pooling |
| Organisation: | The TDM programme is carried out by an internal team called T-REX Tamers Transportation |
| Effects achieved:<br>*Transport* | Following results have been achieved so far:<br>• 17% fewer car users (drivers)<br>• 5 % car poolers<br>• 8% of employees take advantages of teleworking<br>• 3 % public transport users<br>• 5% bike users |
| *Environment* | No information |
| *Economic* | No information |
| *Social* | No information |
| References: | FHA/ACT (2004 ) |

### *3.2.12. Colruyt, Halle, Belgium*

*General Information*

| | |
|---|---|
| Branch: | Distribution |
| Number of employees: | About 10 000 (head offices in Halle with 2 500 persons as well as all branches (supermarkets) |
| Location | Head office in Halle, branches all over the country |
| Starting situation (problems): | The company's mission is to "deliver good quality products at a low price", but also to work in all respect for the environment and society. In the middle of the 90s the company introduced a mobility plan and in 2003 awarded a prize "Mobile Private Enterprise Flanders" as a means to realise this mission. |
| Objectives: | The specific aims of the plan were to:<br>• increase access possibilities to the peripheral areas of Halle,<br>• increase traffic safety. |
| Measures: | The following measures have been implemented for home-to-work trips:<br>• Car-pooling: Colruyt was one of the first companies to join the Flemish car-pool database. The company has regularly promoted car-pooling as an alternative to single car driver use with some success – employees' car occupation rate for commute journeys is 2.6 persons per vehicle.<br>• Staff commuting to work by bicycle receive a tax free €0.15 for each kilometre from home-work travelled.<br>• The company provides bicycles at the train station in Halle for train commuters to ride to the company's site.<br>• Staff receive some financial assistance for the purchase of a scooter.<br>• Colruyt also implemented a number of measures seeking to reduce the impact of work trips made by the company's fleet of goods delivery trucks (see Decock *et al*., 2005):<br>- Load factors of single truck trips were optimized.<br>- Empty return trips were minimised through the back-haul of packaging and other waste.<br>- Drivers must sign a charter requiring them to respect traffic law and posted speeds, thus saving fuel.<br>• Colruyt seeks to employ only experienced drivers.<br>• Distribution fleet is composed of recent truck models characterised by relatively low emissions and energy use.<br>• An effort is made to service the distribution centre as much as possible by rail. |
| Organisation: | The project is followed up by a steering group (within the management board) and a working group (representatives from the management board, the environmental department and the department of "sports"). |
| Effects achieved: | Colyrut has calculated that the CMM programme has resulted in a reduction in car travel of 4.8 millions km/year for passenger/commuter travel, and 5.2 million km/year for freight travel. |
| *Environment* | According to Colruyt's calculations, the reduction in car travel has resulted in a decrease of 905 tonnes of $CO_2$ emissions/year. The impact of the reduction of freight travel was not calculated. |
| *Economic* | No information |
| *Social* | No information |
| References: | Decock *et al*., 2005; Toolbox mobiliteitsmanagement in ondermeningen, Vlamse Stichting Verkeerskunde (www.mobiliteitsmanagement.be) and Traject / Institut Wallon (2002) |

## NOTES

1 *Californian Law requires employers with more than 100 employees to offer the option of cash allowance as an alternative to a free parking space at work.*

2 *Section 106 agreements are not required on a consistent basis by local authorities or even by the same authority, and a S106 agreement for one development may be more or less onerous than for another one right next door. In addition, they apply only to new development, not existing. Furthermore, many developers claim to feel aggrieved that they are required to implement mobility management through a S106 applying to their development, whilst the local authority that is requiring them to do so appears not to be applying the same rigour to managing its own staff travel (Cairns (2004) work notwithstanding).*

# 4. FINDINGS AND CONCLUSIONS

This report has focussed on a selected number of case studies of government and private-sector initiatives in support of CMM. These few cases, while not exhaustive, certainly provide valuable insights into – and are representative of – the larger universe of CMM initiatives across the OECD/ECMT region. As such, their analysis can provide important lessons for public authorities seeking to facilitate, or large employers' efforts to implement, corporate mobility management plans.

This chapter summarises the main findings and conclusions of the survey.

At the outset, it is important to reiterate that this report has treated several broad vectors for promoting and implementing CMM – and has done so with an eye to distilling key lessons for *public authorities interested in promoting CMM*. Thus, the report has examined specific government initiatives and has sought to draw out how firms and other CMM-related organisations are directly and indirectly impacted by government action, rules and regulations.

## 4.1. Framework Conditions – Ease of Alternative Travel and Work Arrangements

*The success of CMM policies is largely conditional on employees not just wanting to, but being able to, change some aspects of their trip-making behaviour. When promoting CMM, governments should ensure that a broad set of mode/work arrangement alternatives are available to commuters.*

It is important to note that irrespective of the promulgation of rules relating to the uptake of CMM, it is unlikely that employees' commute travel patterns will change in any significant manner unless the context – and in particular, the offer of alternative travel options and/or working arrangements – is conducive to that change.

Public authorities seeking to encourage less environmentally harmful modes of transport for commuter travel, should, at a minimum, ensure that their CMM policies are firmly embedded into a wider and coherent transport (and land-use) planning framework. In order for employees to act on CMM initiatives, they must have the possibility to reasonably and practically substitute single-driver car trips with car-pooling, public transport, cycling or walking (or by not travelling at all via telework). Insofar as governments have a role in setting transport and land use policies, their role should be to ensure that a broad range of alternatives exist for employee travel and work arrangements. Equally important, as will be discussed further under the rubric of fiscal policy, is that governments not unduly favour one mode over another through their rules and regulations … or at least, do not do so without explicitly stating why and what policy purpose is served by such treatment.

## 4.2. CMM-related Regulations, Fiscal Policies and Support Facilities

Generally speaking, the survey reveals two principal roles adopted by public authorities in support of CMM; one characterised by regulation and the constraints that this entails for employers and the other characterised by the facilitation and promotion of CMM. The former approach can relate to *regulations*

*specifically relating to CMM initiatives* (*e.g.* such as requirements for CMM in return for site development approval) or to a number of other government rules that indirectly impact the uptake of CMM – and in particular, to those *rules relating to the fiscal treatment of travel-related benefits* (*e.g.* tax treatment of commute travel, company cars, and parking). Finally, this report has also examined cases where governments have sought to facilitate the uptake of CMM through support facilities. These three roles will be examined in the following sections.

### *4.2.1. CMM-related Regulations*

The survey revealed a number of different regulatory approaches targeting either companies or other large trip-generating facilities.

- The Italian "Decree on Sustainable Mobility in Urban Areas" and the Decree in the Region of Brussels require that companies of a certain size and/or located in certain areas have to submit and implement a mobility plan.

  - The positive aspect of this kind of regulation is that it serves to "jump-start" the CMM process – companies are required to submit a mobility plan, and therefore must reflect upon their travel impacts and to seek to mitigate these. In many instances, interviewees noted that getting management staff to understand the importance of putting in place CMM initiatives from both an environmental or, even more surprisingly, an economic perspective, was difficult. These types of regulations can catalyse this type of analysis. It seems clear that companies should, in their own best interest, seek to reduce their own travel-and parking-related costs but, in reality, these aspects are often neglected since they are not seen as part of the "core mission" of firms, nor are transport and parking seen as potential profit centres for companies.

  - The negative side, on the basis of existing information, is that those particular regulations (Italy, Brussels Region) do not set any quantitative objectives in terms of modal-split change, reduction of vehicle-km/passenger-km or reduction of $CO_2$ emissions which companies should achieve. Consequently, there is little real control on whether or not the mobility plans are having a real impact on firm-generated travel.

- The Dutch "Environmental Management Act" as applied in Amsterdam requires companies to address company-generated travel as one of several criteria necessary for receiving the mandatory environmental operating permit. Although no specific CMM-related targets to achieve are set, firms must demonstrate that they are acting to reduce their impacts and face sanctions if they do not convince the responsible authorities.

- In contrast to the examples cited above, the Washington State's "Commute Trip Reduction Law" is more concrete in setting targets and time-tables that companies must achieve. This approach requires that companies put in place demonstrable effective measures since they are held to set quantitative targets. However, the lack of defined sanctions undermines the usefulness of articulating specific targets.

- The French "Law on Urban Solidarity and Renewal" only indirectly impacts companies. It is mandatory for the local public authorities in areas with over 100 000 inhabitants in the sense that they have to provide mobility counselling services for companies. Although the set-up of mobility plans is not mandatory for the companies the law generates awareness raising and action at the municipality level.

- The U.K. Planning Policy Guidance (PPG13) treats how transport aspects should be integrated in local planning policy. PPG 13 states that local authorities are expected to consider CMM measures during the planning application process for new development areas, which are likely to have significant transport impacts. In this sense PPG13 gives to local authorities the possibility to require implementation of CMM by land developers. In practice this can be done by setting planning conditions or by planning obligations which must be met in order to gain development permit approval. PPG13's maximum parking standards are also significant in setting parking levels that are such as to encourage organisations with new or expanding sites to develop MM strategies to resolve parking pressures.

  - This approach – linking permit approval to CMM – is a strong one, given that if developers fail to meet the planning conditions imposed by the local authority, they may not proceed with their development.

  - Section 106 is a planning obligation and its content is negotiated between the local public authority and the developer. It is used to secure co-financing from the developer to improve on or off-site infrastructure and services (like a good connection of the area with public transport services; see the case of Vodafone in Newbury mentioned in the previous section). It also can define a maximum number of parking spaces to be included in the development, which may indirectly trigger a CMM process in those cases where the maximum allowable number of parking spaces is below the number needed if employees were to commute principally by car. Theoretically, a developer can refuse the requirements of Section 106 and go to court, but this action may delay the planning permission process (see also Optimum2, 2005).

  - PPG 13 and, as a consequence, Section 106 are strong instruments, which give public authorities the possibility to require that companies reduce the transport impact of new development areas. However, as different local governments might set different permit approval conditions, a condition might arise where local authorities will seek to avoid "losing" developers because of strict rules. To date (early 2006) it seems that there have been no cases where PPG 13 and Section 106 obligations have been subject to enforcement action and sanctions (see Optimum2, 2005).

- The Zurich "trip quota model" is a fairly new approach applied in the case of new multifunctional urban developments that are likely to generate large numbers of trips and/or otherwise have important local traffic impacts. It is built upon the existing parking regulations where parking requirements are inversely proportional to quality of public transport accessibility. The model allows the developer flexibility in meeting – and a partial exemption from – the expensive parking requirements as long as a set quota of generated trips (into and out of the area) is not exceeded. The agreement results from a negotiation between the public authorities and the developer and it defines specific monitoring and reporting procedures as well as sanctions triggered by non-compliance.

  - The "trip quota model" is a strong instrument which is based on a quid-quo-pro exchange between the developer and the city. The former gains flexibility in meeting parking requirements (and thus the potential to save money), whereas the latter ensures that new developments will have minimal traffic impacts. It is also an indirect way for the city to encourage the uptake of CMM, as this represents the most effective strategy for developers to ensure high quality site access in view of the reduced offer of parking. At present, the approach is actively applied in two existing development zones and is in the process of being implemented in three areas under construction. So far (early 1996) the results have been very promising and the targets have been respected. As with the case of the UK laws, there has not yet been a case where sanctions have had to be applied.

**Using Parking Management in Conjunction with CMM: Experience of Public Authorities in Germany**

As noted within the report, parking control and management is an important lever for local authorities seeking to facilitate the uptake of CMM initiatives. In this respect, the experience of local authorities in Germany in this context is informative.

The topic of parking in Germany has been heavily and controversially discussed in research and practice, especially during the 1980s and the 1990s. On the one hand, the regulation of parking is often understood as a central tool to manage and optimize traffic flows and its composition (*e.g.* by keeping single occupancy car use from dominating the traffic mix). On the other hand, parking plays a key role in ensuring the accessibility of residential areas and the competitiveness and, as such, is an important factor in location decisions.

Within Germany, as elsewhere, there is a distinction between public and private parking spaces, in particular in connection to the ability with which public authorities may intervene on parking supply.

Basically, the possibility for public authorities to influence parking private sector parking (private car parks in commercial or residential areas) is limited to permit delivery for construction and important modifications of the use of buildings. The legislation concerned (Building Law) is enacted by the different German federal states (Länder). However, municipalities can also influence parking supply on roads or in public places. The law concerned here is the Federal Road Traffic Act (Straßenverkehrsordnung StVO) enacted at the Federal level. Public parking lots usually account for approximately 50% of the parking space – depending on the city's structure and the area of the considered cities. The general trend has been for public parking to decrease while private parking has increased.

*Public parking space*

The Road Traffic Act (Straßenverkehrsordnung StVO) and corresponding regulations enacted at the Federal German level regulates the management of parking space in public areas.

Municipalities can restrict the volume of on-street parking space by prohibiting parking in the streets, or by installing adequate parking places elsewhere (private or municipal car parks). In addition, they can limit parking time (places reserved for short-time parking) and define parking fees. Other regulations affect the temporal and spatial exclusion of different groups of users. New pedestrian zones are rarely created today. More relevant is the parking of residents in this context. With the amendment of the Road Traffic Act in 2002, the opportunity for offering residential parking in the public space of urban areas has been reduced. Nevertheless, residential parking is still a key factor in establishing city-wide parking management schemes in Germany, especially in large cities.

The implementation of public parking management strongly differs from city to city. Smaller municipalities tend to offer more parking places on roads where the only limitation imposed is on duration of occupation (*e.g.* via parking discs). Larger, regionally important, cities usually put in place relatively high parking fees in their centres and concentrate parking space for visitors on car parks in or around their city centres. This has an impact on the availability and cost of private parking space for employees and residents parking in the city centre.

The design of respective concepts is influenced not only by city structure but also by local policy and the involvement of important stakeholders (like the retail industry or other business establishments). Although municipal parking policy is still a main theme in transport planning and policy, its importance has somewhat receded in recent years. This is – amongst other aspects – based on the results of several German research projects which have tended to show that impact of parking policy on the competitive position of

cities has been frequently overrated, especially with respect to shopping traffic. In addition, various studies have indicated that overly restrictive parking policies have had a limited effect on the volume of traffic volume and modal choice.

*Private parking space*

The Building Law (of the federal states) mandates the provision of parking spaces, either on the building site itself or in close vicinity, in order to qualify for permit approval. These parking spaces must conform to established standards and benchmarks as laid out in the various administrative rules. There have been discussions over a long period regarding the manner in which these mandatory parking requirements may be made more flexible. In the Nineties, this topic became important again with the spread of car-free housing initiatives. Most building laws of the federal states today contain language that grant building permit applicants some flexibility in opting out of the rules requiring a minimum number of parking spaces via municipal regulations. For example, the Building Law of North Rhine-Westphalia offers a variety of possibilities to reduce the number of parking places, particularly for companies, and in residential areas where high quality public transport is available or where low car use is expected. Another example is Berlin, where the mandatory minimum parking space provision was completely scrapped in 1997 – except for handicapped parking places. Experiences shows that constructors, owners and investors build enough parking places in their own interest. Removing mandatory minimums makes it possible to draw up different concepts, based on local conditions. In addition, the construction licensing procedure has been simplified significantly.

Despite its acceptance by many experts, the "Berlin solution" has not yet been taken up or imitated by other German federal states. The main reason is that, with the given general duty to construct parking lots, municipalities can reduce the number of parking lots and demand a fee for not built parking lots. Nonetheless, projects promoting CMM show that voluntary regulations and assistance, or encouragement, of public authorities offers the high potential of reducing the volume of urban traffic.

*The opinion of German experts*

A current assessment by experts, organised by the ILS NRW has concluded that the existing ability of public authorities to manage parking space is sufficient, althrough more flexibility would be preferable. In this regard they point out that it is still necessary to focus on the topic of parking with respect to the competitive position of companies and to promote appropriate local solutions. CMM for business parks or residential areas could be helpful. These concepts should be initiated and supported by the municipalities, in cooperation with housing and other companies.

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*Effects and Results of CMM Regulations*

There have been varied practical outcomes from the regulations examined in this report.

- One positive factor is that the implementation of CMM-linked legislation signals willingness by governments to ensure that large traffic generators somehow account for their impacts. CMM initiatives, alone, are not the sole solution for transport policy challenges linked to commuter traffic, but are promising tools that can be effectively applied in areas where adequate alternatives to single driver car use exist.

- The principal aim of most of these regulations has been to facilitate the uptake of CMM by employers by providing a regulatory framework that either mandates or renders necessary and/or desirable such programmes and plans. The number of companies impacted by these rules depends both on the scope of the rules (case-by-case as with UK section 106 agreements and the Zurich model, or universal for a given size firm as with the Italian and Brussels approaches) and their longevity. Other fundamentally important factors include the willingness of authorities to apply the regulations (and impose sanctions) and the possibility authorities have to track and monitor the outcome of the programmes.

- The effectiveness of CMM regulations, naturally enough, seems linked to the formulation of specific performance targets and objectives and the articulation of processes and sanctions to address programme non-compliance and under-performance. Setting concrete targets, *e.g.* in terms of reduction of car trips, which a company must achieve (as in the Washington State example) or a number of generated trips which a development cannot exceed (as in the Zurich example), ensures that firms put in place strong and effective CMM measures.

- Effective and periodic monitoring of the impact of CMM rules is necessary. Rules that have no measurable impact, or even a counter-productive impact, should be re-visited while rules that have a demonstrable and important impact should be publicised and possibly adopted elsewhere. Monitoring of the costs versus the benefits of the CMM rules is also necessary since these rules may be seen as either more or less costly alternatives to other forms of transport policies seeking to reduce the impact of commute travel.

- Based on the review of policies, it seems clear that the most effective policies somehow act on two related "levers" that serve to leverage company participation in CMM initiatives and compliance with CMM rules. Ultimately, firms are most responsive to their "bottom-line" and CMM-conditioned rules that allow firms to avoid costs (*e.g.* by exempting them from expensive planning requirements linked to parking provision) or earn income (by allowing them development permits or planning approval for new sites) can be seen as the most effective, and possibly the only truly effective, strategies for government action in support of CMM. Based on this report's interviews, it seems clear that rules acting on parking (an important cost factor for many firms) or conditioned to existing permitting processes (*e.g.* building permits and development permits as in the UK and Zurich or other necessary permits, such as environmental operating permits in the case of the Netherlands), represent the "gold standard" approach for ensuring the uptake of CMM … *for new developments and new sites*.

- Such strong levers are not necessarily relevant for existing sites, where it may make more sense to put in place "universal" rules for CMM and mobility plans as in the case of Italy, Brussels and, indirectly, France.

- Public authorities should also be aware of the impact their rules might have on the competitive position of firms falling under the regulations. Companies may feel that there is a "first adopter" penalty for implementing CMM, since they incur costs associated with CMM while their competitors do not (issues relating to accounting and cost perception within firms will be addressed in Section 4.2). Likewise, local authorities might hesitate to put in place strong CMM-related rules fearing that other jurisdictions might then become more attractive to firms. Rules with a broader, rather than narrower, geographic scope can address these concerns and serve to level the playing field such that all companies and large employers within a job basin are treated equally (*e.g.* national maximum parking standards in PPG13 in England).

*Regulations Greatly Facilitate Widespread and Effective CMM Uptake*

*In general, CMM-related rule-making greatly facilitates the broad and effective uptake of CMM. These rules can set targets and define monitoring procedures and sanction regimes. The most effective rules relating to new developments make CMM implementation conditional to existing permitting process and should act on economic levers, such as parking costs to firms. Ideally, rule-setting in this context should lessen costs and burdens on firms who implement CMM initiatives. Broad and non-discriminatory CMM rules will otherwise support CMM uptake for existing firms. The key role in both these approaches is to trigger the CMM process at the firm level while addressing fears that these might incur costs greater than their competitors.*

### *4.2.2. Fiscal Treatment of Commuting Costs and Parking*

Although not treated explicitly in this study, the costs of commuting – and in particular, the incentives favouring single driver car travel – repeatedly came up as an important factor in the success or failure of CMM initiatives. One principal set of incentives that fall directly under the control of governments, and often serve to undermine CMM initiatives, is the fiscal treatment of commuting costs and parking. Indeed, even the best CMM programme will be undermined if employees still correctly perceive that it is in their best fiscal and economic interest to drive their car to work, or that using other modes would entail an economic loss or loss of fiscal benefits. Thus, if public authorities wish to facilitate the uptake of CMM, they must ensure that fiscal policies either support these aims, or, at a minimum, do not work counter to this objective. This calls for arbitration between local and regional authorities who might wish to promote CMM, and national fiscal authorities who work on another set of objectives centred on the collection of revenue.

The principal concern, when addressing the fiscal treatment of commuting costs and parking, is that CMM initiatives will be undermined if modes are treated unfairly or if rules result in a bias towards one mode versus another. For instance, fiscal regimes that do not include the market value of "free" parking spaces in the taxable remuneration given to employees indirectly favour car use over other modes – either because employer contributions to public transport costs are included in the employees taxable remuneration, or because the employees themselves must pay for their travel outwith their taxed income. Differential fiscal treatment of "company cars" versus public transport and/or cycling costs also can favour the former over the latter. Finally, it should be noted that benefits such as "free" parking or use of company cars are often several orders of magnitude greater than "equivalent" benefits for public transport use, cycling or walking. Thus, even an equal fiscal treatment of all modes might still end up favouring car travel where the benefits are proportionally larger. If this is the case, public authorities seeking to promote CMM might feel justified in over-compensating non-car modes. It should also be noted that uniform per-kilometre deductions for commuting costs will favour car travel, since these distances are often longer than public transport, cycling and/or pedestrian travel.

*Review of National Cases*

The fiscal treatment of commuting and parking benefits differ greatly from country to country and can either support, or work against, CMM initiatives.

**Germany[1]**

Commuters can claim a lump sum per distance from home to work (end of 2006, €0.30 per km and, from 2007 on, beginning with the 21st km) to reduce their taxable income, independent of the mode used. This sum was limited to €4 500 a year, except for car drivers. Until the end of 2006, Public transport users could claim this lump sum or the actual ticket costs (2007 on they could claim only the lump sum.). Each commuter who uses car pooling can claim the lump sum. Commuters have, in principle, to pay tax on employers' subsidies for "Job Tickets", but not for free parking on the employers' ground. Under these rules, from 2007 on only long distance commuting car-drivers and car-poolers take advantage of these regulations.

**Norway[2]**

Norway allows commuters to deduct the same NOK 1.40/km irrespective of transport mode. Car users can also deduct ferry and road tolls. However, these costs are only deductible if they exceed NOK 7000, which works out to a daily commute of 15kilometres or more – obviously favouring car travel.

**The Netherlands[3]**

Since 2002, the fiscal treatment of commuting travel in the Netherlands has been simplified and has sought to favour, or at least not penalise, alternatives to car travel. There exists two main categories of benefits; the fiscal treatment of the reimbursement by employers of employees' commuting costs (principally for travel of 10 kilometres or more one way and at a rate of €0.18/km, irrespective of mode) and the fiscal treatment of the allowance given by employers to employees which the latter can use to offset tax. The degree to which either of these benefits is taxable relates to the mode used, with favourable treatment given for non-car modes.

In the case of company car use for non-business travel (which in the Netherlands does not include commute travel) of over 500 kilometres per year, the employees' taxable income is raised by 22% of the catalogue value of the car. However, company-provided parking remains untaxed, even though employer provided payments made to compensate employees' parking costs do count as taxable income.

The fiscal treatment of employer-provided public transport passes varies. If the pass is of a "job-ticket" type – that is it is only valid for home to work-home trips – then the cash value of the pass is not considered taxable income. If, however, a general area pass is provided, then only a part of the whole cash value of the pass is considered exempt of tax. Finally, if the employer offers neither of these two benefits and the employee travels more than 10 kilometres one-way, then the latter can deduct from their taxes a sum derived from a distance, and not a real-costs, based formula.

On top of the tax-free €0.18/km reimbursement that employers can offer for bicycle travel, employers are also allowed to provide employees with bicycles once every 3 years. The value of the bicycle is treated as income, but if the employee uses the bicycle for commuting, the bicycle's fiscal value is capped at €68 whilst its market value can go to €749. Employers may also provide up to €250 in tax-free cycling accessories, equipment and clothes.

One of the key features of the Dutch commuter tax reform is that the process has been centred on an overall "green" reform of the fiscal code rather than through piecemeal changes to the previous tax-code. However, despite these changes, it is interesting to note that the provision of workplace parking is still considered a non-tax benefit which is likely to have an impact on the uptake of CMM.

**United Kingdom[4]**

As with the United States and Ireland, commuting costs are, in principal, not considered tax-deductible. However, the fiscal code allows for a number of targeted exemptions. As from April 1999, the cash value of the following benefits is not considered part of the employees' taxable income:

- Works buses with 12 or more passenger seats which are used to bring employees to and from work (from 6 April 2002 this was reduced to 9 passenger seats).
- General subsidies to public bus services used by employees to travel to work, provided the employees pay the same fare as other members of the public.
- Bicycles and cycling safety equipment made available for employees to get between home and work.
- Workplace parking for bicycles.
- Employers are able to pay their employees up to 12p per mile (since 6 April 2002, 20p per business mile) tax free for using their own cycles on business travel; and employees will be able to claim tax relief on 12p per business mile if their employer pays less than 12p or provides no payment (from 6 April 2002, 20p per business mile).

The market value of employer-provided car parking, however, is not considered part of the employees' taxable income and, even though this exemption has been extended to free parking for bicycles, motorcycles, etc. since 1999, this provision might run counter to the efforts of some CMM initiatives. Potter *et al.* also note that many of the most effective direct incentives that feature prominently in government supported Travel Plans are somewhat countered by the current tax code – in particular, cash subsidies for staff use of public transport or incentive payments for participating in Travel Plans are considered part of the employees' taxable remuneration. Furthermore, the authors also point out that many of the fiscal concessions target employees and not employers – if the employer does not offer the benefit, then the employee must forgo its tax advantage.

**Switzerland[5]**

As in the case of Germany and the Netherlands, commuting travel costs are a tax-deductible expense and, as in the case of the Netherlands, the fiscal treatment of non-car commuting is designed to provide an incentive for public transport and bicycle commuting. In the case of travel by public transport, the actual costs incurred by employees can be offset from their taxes. Car users, on the other hand, only have a set of standard deductions that they may apply and the use of these is restricted. The default stance in the tax code is that only travellers who use public transport can deduct their commuting costs from their taxes, with car-users having to provide justification for receiving the limited set of deductions available to them.

**The United States[6]**

In the United States, commuting costs are not considered an allowable deduction from federal income taxes – any employer contribution to cover these is considered to be taxable income. However, specific and targeted exemptions to this rule have been made – principally in support of TDM initiatives. Deductions, therefore, are allowed for a share of the costs incurred by employees for van pooling and use of public transport under certain circumstances. The US system has balanced the tax deductibility of benefits offered by employers and the tax exemptibility of benefits received by employees. Thus, employers contributing to employees' use of public transport can deduct their contribution from their taxes, and employees receiving the contribution do not have to report the cash value as taxable income. This favourable fiscal treatment of public transport payments covers contributions up to maximum value of USD 105 per month per employee (in 2005 – the amount is adjusted yearly for inflation). Furthermore, employers can offer tax-free cash payments in lieu of "free" parking (*e.g.* "cash-out") of up to USD 65 per month and per employee. In cases where employers do not offer parking "cash-out" options or employer contributions towards their public transport costs, employees can deduct the real costs of these up to the stipulated maximum from their pre-tax income, thus reducing their tax burden.

*Governments may wish to facilitate the uptake of CMM and reduce the use of single-occupancy vehicle use for urban commuting – however, existing fiscal policies may work counter to these desires. In these instances, governments should address the conflict between transport policy aims relating to CMM and fiscal policies.*

It is clear that government policies, and in particular fiscal policies, relating to the tax treatment of commuter travel and employer-provided parking can counter the very CMM policies that governments may be keen to put into place. This may be especially true when it is local authorities seeking to promote CMM under a set of fiscal rules established by national tax authorities. Equal tax treatment of all modes is an important first step in removing the barriers to CMM. However, it may be that some countries may seek to offer preferential tax treatment to non-car modes when this supports their CMM-policy aims. It is also important to note that the size of the tax benefit offered car drivers via un-taxed free parking or company cars is often larger than the cash value of "equivalent" public transport/cycling benefits. Left unaddressed, this may serve to bias commute travel in favour of single driver car use and counter the intent of CMM policies.

### *4.2.3. Support Facilities*

Governments don't just set rules, they also seek to motivate and facilitate change through incentives and information. The previous section examined the set of fiscal incentives that are often deployed in support of CMM. Here, however, the report will review the findings of the survey as they relate to the role of the mainly public support facilities investigated. As noted previously, this report's survey of support facilities targeted those initiatives that provided "active" support extending beyond the simple delivery of passive information, like tool-kits, check-list and guide lines.

*The Levels of Active Support Differ from Case to Case*

The provision of pro-active assistance in support of CMM improves the chances for effective uptake. However, the survey revealed a broad range of active support offered to firms.

- The Programme PDE Pro® of the Chamber of Commerce (CCI) in Grenoble, offers company-specific assessments of the measures which would increase staff use of alternatives to the car. Once the company decides to elaborate and implement a mobility plan PDE PRO® supplies a methodological handbook. In case of need of an external consultant, CCI refers to competent mobility management experts in the area.

- The TravelSmart Programme in Melbourne offers active support in the sense that staff prepares a baseline workplace travel survey. On this basis, TravelSmart staff will elaborate a proposal for a mobility plan with tailor-made measures for the company. Once the measures are implemented, the Programme offers monitoring services by conducting follow-up surveys with workers.

- MOBIDESK in Limburg offers support staff in the planning as well as during the implementation phase of the mobility plan. Furthermore, they offer standardised products (like accessibility guidelines) or organise information campaigns for the companies in order to raise awareness. They also co-operate with transport operators in developing new custom-made products for companies.

- Unlike the previous examples, the Transport Demand Management Association of the Lloyd District (LDTMA) in Portland acts at the "micro scale" of the specific business district. It is managed by both the landowners and the city and has responsibility for all transport management aspects for member companies within the district. Thus, the LDTMA is responsible for planning, implementing and monitoring CMM within the district.

*Active Support for CMM Can be Provided by Different Types of Actors*

Not only does the scope and extent of the support facilities change from case-to-case, but so, too, does the type of actor responsible for CMM support.

- MOBIDESK is run by a private consultant company and its staff of mobility management experts under the mandate of the regional government.

- PDE Pro® is operated by the staff of the Grenoble Chamber of Commerce and thus is financed by the business sector itself, although it receives co-financing from the public authorities.

- The staff of the TravelSmart Programme in Melbourne are employees of the Department of Infrastructure of Victoria State.

- Staff of the LDTMA are mobility management experts hired by the LDTMA using its own funds.

- EMIF (Enterprises et Mobilité en Ile de France) is an independent company founded by the public transport company RATP and provides mobility counselling services to companies.

*There is no Single Best Model for Financing Support Facilities*

- A common CMM support centre financing arrangement is one where public authorities finance the programme which delivers its services free of charge to the participating companies, as in the case of TravelSmart or MOBIDESK.

- A public-private partnership serves to finance the activities of the Chamber of Commerce in Grenoble. Consulting services are free of charge for the members of the Chamber, but they finance the activities indirectly through their Chamber of Commerce membership fees.

- An interesting approach is undertaken by LDTMA in Portland, where funding stems from the following sources:

  - A special property tax assessment for district landowners.

  - Revenues from parking meters (51% of all revenue generated from parking meters located in the business district).

  - Commissions on the sale of transit passes (3% commission on all transit passes sold through the LDTMA's transit store).

  - Grants from the regional government.

*Effects and Results of CMM Initiatives*

Clearly CMM is often not seen as, nor should it necessarily form, part of the core mission for companies – especially for small and/or medium sized ones, whose ability to cost-effectively gather information in support of CMM and negotiate favourably with public transport operators is limited by their size and budget. Support facilities, therefore, represent an attractive vector through which information and know-how can flow to companies interested in CMM. They also represent a potential negotiating platform for groups of companies interested in leveraging more advantageous treatment by public transport operators or public authorities, as in the case of the LDTMA.

One potential sticking point remains in the variable financing mechanisms for these support facilities. Free services are, of course, attractive to companies but require contributions from, and justification by, public authorities. More self-sustaining and long-lasting financing schemes might rest on public-private financing such as the PDE Pro® or LDTMA cases.

*Support facilities do not replace the effectiveness of CMM-related rule-making, but they can serve to increase their impact – especially in cases where they service a number of smaller and medium firms.*

Support facilities can be usefully offered in conjunction with the establishment of CMM-related regulations – especially in cases where they service small and medium sized enterprises who face larger information acquisition costs, or lack the scale necessary to negotiate favourably with public transport operators. Support facilities are not an alternative to, but rather a supportive tool for, CMM-related regulations.

## 4.3. Company-level Best–Case Examples: Main findings

Different examples of CMM implementation at the company level were presented in section 3 of this report. This section summarises the main findings of these initiatives as recounted in the company interviews.

*Companies Have Different Reasons and Motivations for Implementing CMM*

The survey revealed that companies differed in their motivations for implementing CMM. This confirms the findings already found in the literature (see chapter 1.2). For instance:

- At Inficon in Balzers, the initial motivation was to reduce energy consumption linked to commuting. This because transport was integrated in the ISO 14001 certification process and it was included as a main element of the firm's overall energy use. This same motivation was shared by ST Microelectronics in Grenoble and also, partially, Lufthansa Technik in Hamburg.

- At Vodafone in Newbury, parking problems at the former sites and the requirements (section 106 agreement) to get planning permission at the new site were the main factors. This type of regulatory pressure also served to motivate BP in Sunbury on Thames and ABB Utility Automation in Baden.

- Company image was at the centre of Vorarlberger Medienhaus in Schwarzach motivations for implementing CMM.

- At Lufthansa Technik in Hamburg, the main driving force was the cost-saving that could be derived from CMM implementation. Cost savings were also a principal factor in the Inficon programme.

- The Lufthansa case, and others as well, also highlighted the need for equal treatment of staff vis-à-vis the benefits extended to commuting travel.

- Limited availability of parking, and congestion on the main access road to the area, were the prime motivations for the CMM programme of the Parque Tecnologico de Andalusia (PTA). Lack of parking availability was also mentioned as a problem in the case of Rijnstate Hospital in Arnhem.

While, in some cases, companies may implement CMM programmes in order to conform to the image they wish to project (*e.g.* of an environmentally friendly firm), in many instances, companies do not necessarily view CMM as part of their core mission and often must be convinced to act. In other instances, companies may view the implementation of CMM as a way of offering a competitive benefits package for staff – especially in dense urban areas or situations where parking is limited and/or expensive. It seems more rare, however, that companies implement CMM based on cost-benefit criteria, although those who do engage in this type of analysis often put in place robust CMM programmes if the costs of alternatives to CMM are high (*e.g.* in situations where providing for additional parking is expensive).

The reasons for the relative paucity of cost-benefit led CMM programmes may have their source in the internal accounting mechanisms of the firm itself and its internal structures. Site/facility management is often seen as a cost centre for many companies and therefore is not given the same importance as other more "essential" business centres. Unless CMM initiatives are sponsored at the very highest levels of management, it seems that many companies have difficulty in fundamentally changing the way in which facility management, and parking management in particular, is handled internally. However, it seems clear that in certain circumstances facility management departments can be operated as real business units with the potential to deliver revenue and/or avoid costs (as in the case of the Inficon and Lufthansa examples). This is especially true in situations where parking capacity is short and in great demand.

It should also be noted that regulations that stipulate the implementation of CMM, when coupled with clearly identifiable sanction regimes (either through penalties or non-deliverance of required permits) are very strong motivators to act. However, these require that alternatives exist for employees to choose from and may require some form of supporting role to assist small and medium-sized companies who have neither the expertise nor the budget to adequately deploy CMM initiatives.

*Clearly identified and sufficiently mandated internal coordination groups or programme coordinators are major success factors for effective CMM initiatives.*

The active involvement of staff in the planning and implementation of CMM is important to gain acceptance from both management and staff at large. Staff involvement also ensures participation and uptake of CMM activities, since the needs of staff are better identified and accounted for. For instance:

- Inficon in Balzers put in place a still-active programme management group, composed of management and staff and ensuring representation from different zones of employee residence and travel modes. In the case of Medienhaus, a group representing staff members and different travel modes were involved in the planning and implementation phase of the CMM programme. Employees were also represented on the working group at ABB Utility Automation, Infineon in Dresden and at ST Microelectronics in Grenoble.

As an alternative to a staff committee, some cases chose to name a project manager to be in charge of the programme.

At Vodafone, a working group was initially active, but was later replaced by a travel manager who still involves staff on a needs basis, *e.g.* when he has to elaborate the yearly programme of activities. The CMM programme of Lufthansa Technik followed a similar evolution, where the driving person behind the programme acted first as a member of the staff association before being named programme coordinator within the Department for Facility Management. Rijnstate Hospital also used a mobility coordinator during the planning and implementation phase of its CMM initiative.

Some programmes are managed by stand-alone entities, as in the case of the CMM initiative of the Parque Tecnologico de Andalusia, where members of the PTA itself, and not of the firms located within the park, formed a steering committee. Similarly, in the case of BP, the company's own Real Estate department organised the programme.

In many instances, companies had to have recourse to external mobility consultants during various stages of their programmes – especially during the elaboration of the mobility plan.

*The mix of CMM measures adopted by each company is strongly linked to its context.*

The mix of measures selected and implemented by each company's CMM programme is largely dependent on the company's specific context, and differs from case to case. This would tend to argue against the imposition of a prescriptive set of measures and more in support of performance- and outcome-based targets. A scan of the survey examples reveals this variety:

- The most important measure at Inficon was the implementation of a new parking regulation where all employees are treated equally. The calculation of the parking fee depends on employees' ability to commute by non-car modes. The ABB Utility Automation approach is more drastic, in that only those persons whose journey to work is longer than 30 minutes are eligible for a parking permit,

which itself, is not free. Parking regulation also exists at Vodafone, where priority for permits is given first to disabled people, directors and car-poolers. In these cases parking is free. Rijnstate Hospital has also a combination of restriction on parking permits and charges.

- In many instances where strict parking regulations exist and/or parking is paying, financial incentives are given for use of public transport as a balancing mechanism. This can be done by giving public transport cheques, as in the case of ABB, by paying employees a lump sum like at Vodafone or, most commonly, by subsidising the annual public transport pass as in the cases of Inficon, Medienhaus, Lufthansa Technik, ST Microelectronics, Rijnstate Hospital, BP and Infineon.

- Sometimes financial incentives are also given to cyclists and pedestrians (*e.g.* as in the case of Vodaphone, where cyclists/pedestrians receive €125 per month). Similarly, the ABB eco-bonus payment is made to all those not commuting by car. Financial incentives to cyclists can also take the form of helping with the purchase of bicycles (Rijnstate) or the accessories, like helmets (Inficon).

- An important measure often evoked in the interviews was the creation of new, or extension/modification of existing, public transport services. This is often accomplished through negotiations with public transport operators and, in some cases (*e.g.* Vodaphone) with funding assistance from the company. Other examples include Medienhaus, where the bus route was extended to the site; the PTA, where the public transport operator was persuaded to increase the reach and frequency of its bus service within the park; and Vodafone, where employee bus services were put into place.

- The companies surveyed promoted ride-sharing and car-pooling by providing computer based matching services (*e.g.* Infineon, PTA, Lufthansa Technik, Medienhaus, Vodafone), by reserving dedicated parking spaces (*e.g.* Medienhaus, Lufthansa Technik, Vodafone), and/or by providing relevant information (*e.g.* CM2Hill in Denver).

- Bike use was also promoted by improving bicycle parking (*e.g.* at Lufthansa Technik) or providing showers, dressing rooms and other facilities (*e.g.* Microelectronix, BP or Infineon).

- Firms also sought to reduce the impact of daily business travel by, for example, providing bicycles, by offering employees use of a fleet of low emission and low energy consumption vehicles (*e.g.* Medienhaus) for workday business travel or by taking part in CarSharing schemes (Lufthansa Technik).

- Awareness-raising through action days, lotteries, special actions (*e.g.* "bikers breakfast") and/or car-free days is a common and popular strategy in support of CMM initiatives. The case of Inficon provides an interesting example, where employees can join a mobility club that confers additional benefits and services for those who choose to travel less by car.

*Scanning the results of the selected CMM initiatives reveals the potential positive impact that these approaches can have – however, success is often leveraged with investments by the companies itself.*

Mixed packages of measures have the potential to result in important changes in commute travel behaviour.

- For instance, in the case of Inficon, the mix of parking regulation, parking fees and incentives for public transport combined with awareness-raising led to a reduction in car commuting from 63% of trips (in 1999) to 46% of trips (in 2003) – and this in a "car-dependent" rural area.

- In the case of ABB Utility Automation, a combination of parking restriction and financial incentives for the use of public transport, cycling and walking kept car travel down despite a move to a new facility. In 2006, approximately 80% of employees got to work by other means than single driver car use. In fact, of the 370 available parking spaces – initially thought to be a very limited number, given the number of workers travelling to the site – only 200 were used in early 2006. Having excellent access to public transport at the heart of Baden certainly helps ABB reach its CMM objectives.

- Vodafone also reached its objective to reduce the amount of solo car drivers, from 83% to 60%, with a mix of parking restraints, subsidy payments to non-car commuting staff and improved access to public transport.

- A similarly mixed package was introduced at Rijnstate Hospital, resulting in a reduction of 23% in solo car users and an increase of 30% in public transport users. Again, being in an urban area with good public transport connections seemed to have facilitated the uptake of CMM.

- In the case of PTA in Spain, the simple measures of implementing parking management and increasing the quality and frequency of the bus service led to a reduction of solo car drivers by 13% and the number of public transport users increased by 7%.

- At Medienhaus in Austria, the extension of bus services and the provision of financial incentives reduced the share of single driver car commuting from 75% of all employees (1997) to 60% (1999). In the meantime, the share of public transport users rose from 12 to 20%.

- Microelectronics in Grenoble undertook a similar approach by implementing a free bus-shuttle service to the closest rail station during rush hours, and contributing to employees' costs for their public transport passes. The company also provided special services for bicycle commuters. Together, these measures led to a decrease of 20% in single car commuters and an 11% increase in the number of public transport and bicycle commuters.

- BP, by combining improved bus services and financial incentives, reduced the share of solo car users by 12% while at the same time raising the share of public transport users by 11%.

- Infineon, located at the edge of the city of Dresden, reduced the share of solo car drivers by 11% by providing employees with financial incentives and information on the availability of public transport and by installing services for bikers and offering services to car-poolers.

- Lufthansa Technik similarly increased the use of public transport and bicycle commuting by offering financial incentives and targeted services for cyclists.

Surprisingly, the economic impacts of many CMM measures were not thoroughly studied – perhaps indicating a greater need for robust ex-post assessment of programme costs and benefits delivered. Generally, however, those having tracked the programme cost-benefits arrived at different valuations, based on the particular circumstances faced by each firm and the extent to which it could creatively address the total cost impact of CMM.

- For instance, Vodafone and BP had high implementation costs due to the requirements of Section 106 agreement and their straightforward interpretation of these.

- Inficon, in its cost analysis, realised that had CMM not been implemented the company would have spent considerable money providing for employee parking. Thus the saved costs of the provision of underground parking facilities represent a tangible gain (or at least an avoided cost) made possible by the CMM programme. Likewise, Lufthansa Technik also avoided important parking costs via its CMM programme.

- The measures installed at Rijnstate Hospital and ABB Utility Automation have been cost-neutral, in the sense that the gains from parking revenues cover the expenses of the financial incentives given to public transport users, cyclists and pedestrians.

*Success Factors are Different in Many Cases*

Several important CMM success factors were identified by the interviewees during the survey:

- Respondents in the Vodafone, Medienhaus and ABB Utility Automation cases highlighted the importance of implementing a package of measures and allowing employees several CMM participation options.

- The ISO 14001 environmental management process in the Lufthansa case and, at least indirectly, the Dutch environmental permitting process were cited as examples of environmentally-motivated factors that helped to start CMM programmes.

- The interviewees from Medienhaus and Lufthansa Technik stressed the importance of the internal working group as a driving force in support of CMM.

- The interviewee from the PTA in Spain noted the importance of being able to negotiate with, and lobby to, public transport operators from a position of strength – in this case in the form of the PTA's public shareholders.

- The interview with ABB Utility Automation ended with the respondent highlighting the importance of the continuous and completely transparent communication with staff during both the planning and implementation of the CMM programme.

*Companies and other large employers are rarely focused on the mobility impacts of their employees and, when they are, their internal structure and accounting mechanisms seem rarely to be adequately poised to implement the highest standard of CMM identified in figure 1.2. However, this survey has revealed that with sufficient awareness, a supporting context, and with strong internal leadership, CMM programmes can not only reduce the mobility impacts of firms and other large employers, they can do so in some cases by saving the company money or avoiding important costs. Nonetheless, because of the difficulty that some firms may face in mustering the initial motivation to implement CMM, it is important to note that in many cases, the examples in this survey highlighted the role of external regulations that either directly, or indirectly, facilitated the uptake of CMM. While prescriptive rules may not represent the best way forward, given the diversity of local contexts and specific firms, regulatory frameworks that identify outcome- or performance-based targets may provide the necessary impetus for wide-spread adoption of CMM.*

## 4.4. Linking CMM to Travel Behaviour Change

At the outset of this report, it was noted that CMM fits into a larger range of Mobility Management or Travel Demand Management measures that seek to alter existing patterns of travel behaviour and trip-taking such that their environmental and traffic impacts are reduced. CMM, while implemented at the level of the firm and/or facilitated by rules and regulations put in place at the level of governments, ultimately seeks to modify the manner in which individual commuters travel to work. While this report has not explicitly sought to cover the broader and well-researched issue of how transport demand/mobility management impacts individual or household travel behaviour, it is important to highlight a few important issues in relation to CMM initiatives and their relevance to shifts in individual travel behaviour. These relate to:

- Employee heterogeneity in their ability to respond to CMM initiatives.
- Targeting specific "windows of opportunity" to break commute travel habits.
- Providing individualised and targeted travel information to support alternatives to car use.

The first point is to reiterate that not all employees are equally susceptible to change their commute travel patterns. Some may find it physically impossible to commute in any other way than by car, some may simply be unaware of alternatives available to them, some may be engaged in habitual travel patterns and are not even looking to switch, and some may be daunted by very real disadvantages (or at least loss of advantages) that giving up the car for commute and related travel would entail. Effective CMM programmes should recognise these differences and ensure that whatever approach is adopted, these are catered to (*e.g.* as in the case of Inficon).

Seeking to trigger changes in the context of "habitual" behaviour has been an important focus of travel behaviour research. The relevance of these research findings to CMM is heightened by the fact that there are few more habitual trips than the work commute, whose repetitive yet stressful nature has even been seen to trigger "commuter amnesia"[7] where travellers are incapable of remembering key parts of their daily work trip. In this context, lessons from travel behaviour research may be helpful in crafting effective CMM programmes.

The research has highlighted that while most "habitual travellers" do not look for, and therefore are largely not receptive to, information about changing their travel patterns, this is not the case in certain specific instances. These "windows of opportunity", where individuals are more amenable to changing their habitual patterns of travel, involve points in the individuals' lives when new patterns of behaviour must be learned – for instance, when changing jobs, when changing work locations, when changing residences, etc. In each case, the individual actively seeks new information relating to their work trip (*e.g.* route information and possibly travel alternatives and their costs). CMM programmes that are poised to act at these windows of opportunity can increase the effectiveness of the behaviour change they are trying to bring about. It should also be noted that, by their very nature, CMM initiatives can open up such windows of opportunity by forcing a change in the status quo (*e.g.* by reducing the amount of available parking or changing its cost, thus making it necessary for individuals to make a decision regarding car-use).

While many employees may be engaged in habitual commuting patterns and, as such, are not actively seeking to change their behaviour, there are many others who might be receptive to changing their behaviour but are not aware of the alternatives, or are fearful of the potential disadvantages this switch might entail. There is a large body of research relating to the use of "social" or "individualised" marketing" – especially

in the field of public transport – that is of relevance to CMM initiatives. An important finding emerging from this research is that for those employees receptive to changing their behaviour, simply making them aware of their current patterns of travel and the existing alternatives can be sufficient to trigger change. The importance of one-on-one marketing in leading to behaviour change has repeatedly been highlighted (Brog, UK DfT, Fuji) and can, when implemented in a targeted manner, lead to important shifts of travel behaviour. Furthermore, in the context of other congestion relief policies, these approaches have been found to demonstrate significant cost benefits (DfT 2005).

Another important finding is that such a one-on-one approach can also lead to the development of new, better suited, alternative transport services. In many of the cases outlined in this report, employees were able to voice their concerns regarding the possible disadvantages of using alternatives to car travel (*e.g.* a need for a guaranteed ride home, use of a car for unplanned trips, need for adequate cycling and bicycle storage facilities, need for showers, need for better suited public transport timetables, etc.) and were able to ensure that the final CMM scheme incorporated these concerns.

The popular dictum states "build it and they will come", however, in the case of some travellers, an equivalent dictum might read "tell them about their options and they will change their choices". The importance for successful CMM outcomes of interactive travel surveys and needs diagnosis should not be underestimated.

*CMM is not just about setting the right context for change. It is also about ensuring that individual employees act on the context and modify their travel patterns. Targeting employees individually, with relevant information, at times when they are receptive to change are all key aspects of successful CMM initiatives.*

Overall, this report has treated the manner in which governments have effectively sought to promote CMM and how firms have successfully implemented CMM. It has focused on how best to set the context for allowing individual employees to change their commuting behaviour. It goes without saying that setting the right context for these changes is a necessary but insufficient condition for employees to change their behaviour. Employees must act upon the new setting brought about by CMM and make choices to reduce their single driver car use – if they can. However, it is equally clear that only acting upon individuals' desire to change their commuting choices, without ensuring adequate alternatives and a supporting environment, is equally unlikely to bring about the full potential of CMM programmes. Effective CMM initiatives must situate themselves at the cusp of the two roles: they must provide a supporting context for behaviour change while at the same time seek to set off "triggers" that enable employees to switch their travel behaviour.

At the same time, there is a veritable lack of information on the specific costs and benefits of such programmes. It can be seen that in some cases these initiatives can result in large savings for companies – however, cost data is not sufficiently available, nor is it likely collected on a consistent basis, such that an evaluation may be made as to the relative costs of CMM versus other policy interventions seeking to reduce traffic impacts. Anecdotally, the balance seems favourable, but confirmation of this hypothesis would require more information than is available or that companies wish to share.

## 4.5. Important Factors for Implementation of CMM

The success of CMM initiatives within companies and other large employers is determined both by the strategies adopted by public authorities that serve to set the context for action and by several factors internal to each company/employer.

Figure 4.1. **Success factors**

Beside the 5 stages identified in Figure 4.1, CMM policies should account for the following elements which, when successfully addressed and incorporated into the CMM "process", can ensure its success.

- At a fundamental level, the success of CMM will often depend on the **context** in which it is introduced. Supportive rules, adequate travel alternatives, targeted assistance, reinforcing fiscal signals, etc. will all go far to ensure the uptake of CMM. The lack of these may render the success of any CMM initiative uncertain. Governments have an important role to play in ensuring the context for action supports their goals for broad implementation of CMM initiatives.

- The **willingness** to tackle "the mobility issue" is of key importance and should be articulated at the highest levels of the firm's management and supported by staff. This support may not come naturally at first, and is something that can be developed over time with grounded argumentation and continued support from a pilot committee.

- Successful CMM initiatives require both external and internal **cooperation** within and among a number of important actors. Within firms, coordination between management and staff is pivotally important, as is coordination between employers and public authorities and public transport providers.

- There needs to be a transparent **organisation** of the process. The responsibilities of individual tasks should be clearly defined. The implementation process seems best to be served by an internal working group composed of different business units, staff categories (management board included), and users of different means of transport to assure broad acceptance from the beginning.

- Corporate mobility management benefits from creativity, but is not a process that can be wholly improvised – it is important to ensure that the persons involved with setting up the mobility management scheme within the company meet proper **qualification** standards. This can be achieved through external training or by hiring qualified external consultants.

- **Communication** is an important issue to address during the whole process. To minimise conflicts and raise acceptance, the staff should be informed clearly about every step of the process.

- The right **mix of measures** depends on the framework situation at the company and on the specific objectives that are identified. The survey reveals the effectiveness of mixing incentives for use of public transport, bicycling and walking and disincentives for single-driver car commuting in terms of traffic impacts.

- **Evaluation** the outcome of CMM programmes and tracking their progress are crucially important factors, since this allows the programmes to be assessed on their merits and allows for changes to increase their effectiveness. This argues for a consistent manner of following and reporting on these initiatives.

## NOTES

[1] *www.finanztip.de/recht/steuerrecht/entfernungspauschale.htm*
[2] *See Potter et al., 2006.*
[3] *See MOST, 2003b and Potter et al., 2006.*
[4] *See MOST 2003b and Potter et al., 2006.*
[5] *See Potter et al., 2006.*
[6] *See Potter et al., 2006.*
[7] *http://news.bbc.co.uk/2/hi/uk_news/4052861.stm*

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# EFFECTIVE TRANSPORT POLICIES FOR CORPORATE MOBILITY MANAGEMENT

Many companies and other large employers have put in place initiatives to address the traffic-related nuisances generated by their activities and, in particular, the traffic generated by their workers and customers.

Such Corporate Mobility Management (CMM) initiatives are the focus of this report which investigates the success factors in individual best practice cases at the company level as well as the roles, if any, public authorities can play in facilitating the uptake of CMM.

The report provides guidance to governments on effective strategies for addressing and mitigating the traffic generated by commuter and customer travel.

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