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MOSES

Work Package 5

Integration of Car-sharing (City Car Clubs) into Urban Planning and Management

Report prepared by UK MOSES consortium (London Borough of Southwark, London Borough of Sutton and Sustainable Energy Action).

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www.southwark.gov.uk



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<http://www.sustainable-energy.org.uk/>

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1. Introduction

1.1 Outline of the MOSES Project

1.1.1 The objectives of the [MOSES Programme \(2001-2004\)](#) have been to:

- research and develop innovative mobility services based on existing car-sharing (city car club) experience;
- research and demonstrate ways of optimising car-sharing (city car club) schemes by integration into urban spatial planning and through city transport planning and urban management; and
- research and exploit the potential of car-sharing (city car clubs) to achieve a sizeable market breakthrough at a European scale.

1.1.2 In brief, the overall aim has been to research and promote the efficiency and attractiveness of European cities by exploiting one key initiative (car-sharing). The project partners have viewed car-sharing systems as uniquely placed to help city authorities fulfil political targets for sustainable development without restricting individual mobility.

Scope and Aims of the Work Package

1.1.3 This work package, the fifth under the MOSES project, specifically develops the concept of the 'City of Tomorrow' as a city designed to be more land-efficient ('the compact city'); one that can offer spatial arrangements, urban design, and systems of transport that would tend to discourage unnecessary trip generation by private cars.

1.1.4 One approach to such a vision – an approach that is still under-developed and under utilised by urban planners and managers - is the idea of car-sharing (city car clubs). This work-package examines ways in which this 'alternative mode' of transport can be dovetailed into urban planning and management to help realise its potential.

1.1.5 This work package draws on experience gained by the project's partner cities whilst influencing new car-free and low-car developments during the project period. The prime emphasis is on spatial planning and the potential that exists in city authorities to accommodate and promote car-sharing through the process of encouraging and approving new development. In addition to the spatial planning dimension, other planning and management mechanisms available to typical European city authorities are examined. Many other mechanisms can also have a bearing on the success or failure of car-sharing as a means of achieving modal change, particularly transport planning and environmental policy. As regards transport planning, the planning and management of on-street parking and parking standards for new developments is a key mechanism, as is a strong link with a public transport operator to develop car-sharing are examined as a complementary measure to public transport. (e.g. through PT fare discount schemes for members). This work-package has looked mainly at the former; the latter is already recognised

as a key mechanism that materially affects success or failure of car-sharing schemes.

1.1.6 An important aspect of the MOSES Project at the London sites, which led the work package, was to integrate facilities for car clubs into new car-free and low-car housing schemes. This was achieved following national policy changes that removed the old 'predict-and-provide' assumption that a certain minimum off-street parking supply should be required for new developments, and replaced this with encouragement for 'restraint-based' standards based on permitted maxima rather than minima. Use of maxima rather than minima standards for parking supply in a new development is still unusual throughout European city planning. Combined with the flexibility of UK town planning procedures, it has proved possible to encourage and approve new developments that incorporated lower parking provision than hitherto, some with car club spaces and a membership fund. Such measures are designed to encourage the conditions under which travel by sustainable modes of transport would become acceptable. It also allows an increase in building densities.

1.1.7 As part of the MOSES Project, the Councils of both the London Borough of Sutton and the London Borough of Southwark have also investigated the use of town planning procedures for developing car-sharing in urban and suburban areas, to find out whether car-sharing clubs increased mobility for those living, working and enjoying leisure activities in the targeted neighbourhoods.

1.1.8 This report sets out the planning influences that all of the MOSES partner cities have in relation to car-sharing, explores some common urban planning concepts, and then reports this experience of seeking to integrate car-sharing with new development.

1.1.9 A potential supplementary planning policy framework (annex 1) and a practical design issues guide (sections 2.4 & 3.1) are presented. A detailed survey of current practice for the integration of car-sharing into the planning of urban areas and their new developments was carried out amongst the partners, and the survey results are summarised in this report. It concludes with a possible 'pull-push' model (section 3.2) for integrating car-sharing into city planning mechanisms. A number of recommendations follow (section 3.3).

1.1.10 The report reflects work carried out between 2001 and 2004. Many of the planning proposals which were considered and approved during that period have of course not yet been built and therefore it is difficult to judge how successful the car-sharing services offered in the new developments will be, both in terms of the quality of the service offered and also in terms of the take up of such services by residents.

1.1.11 Amongst the project partners it noted that the integration of car-sharing into urban planning is a relatively new concept, rarely practised. Nevertheless from the responses of the project partners to the experiments carried out in Sweden, Germany and the UK it is thought that nothing substantial prevents city administrations in Europe from incorporating car-sharing into their considerations of new developments as one tool aimed to promote sustainable mobility.

Relationship to Other Packages

1.1.12 This report plays a special role in the series of Work Package (WP) reports of the MOSES project in that it links a transportation tool to the planning of urban areas – WP5 plays a special role within the framework of the City of Tomorrow and this report gives recommendations for urban planning.

1.1.13 WP5 is one of a total of several related work packages. WP 2 explored the state of the arts and user needs and we have drawn on those results in developing the methodology for this work package. WP3 and WP4 concerned themselves with the design and implementation of car-share demonstrators, which gave us an opportunity to assess costs and potential developer involvement in incorporating car-share infrastructure into new developments. WP6 finally sought to monitor and assess the results of the project as a whole, which includes the outcomes of this work package. A number of the key elements of this work package have been summarized in the Keys to Car-sharing, which is the overall guide resulting from the MOSES project – Keys to Car-sharing and other work packages of the MOSES project can be downloaded from the website <http://www.moses-euope.de>.

1.2 Tackling Urban Transport Problems

1.2.1 It is widely acknowledged across the developed world that transport systems within many of its member states are stretched to breaking point. Since the 1950s, nearly all developed countries have witnessed a ‘mobility explosion’. For instance, between 1991 and 2001, car and taxi traffic levels in billion vehicle kilometres increased by 12% in the United States, 44% in Japan, 8% in Germany, and 14% in Great Britain, while usage almost doubled in Portugal (85%) and more than doubled in Spain (107%)¹². This has resulted from an increase in road capacity, income and population. Both income and population growth are viewed as the major drivers behind increasing vehicle ownership and use³⁴. Consequently, between 1970 and 2001, vehicle ownership in the EU-15 almost tripled from 62.48 million to 184.70 million. Thus, by 2001 there were 488 cars per thousand EU-15 inhabitants⁵. A report by the Organisation for Economic Cooperation and Development predicted that this would increase by a further 50% between 1995 and 2020, resulting in vehicle ownership levels of more than 600 per 1000 people in many EU-15 countries⁶.

1.2.2 Clearly, as the number of cars grows, strong pressure is put on available urban space for movement of essential vehicles and for parking purposes, and

¹ Interestingly vehicle use appears to have dropped slightly in Ireland and Sweden.

² Department for Transport (2003) *Travel Statistics Great Britain: 2003 Edition*, Department for Transport, London, October.

³ Marshall S, Banister D and McLellan A (1997) A strategic assessment of travel trends and travel reduction strategies. *Innovation, The European Journal of Social Sciences*, **10** (3), 289-304.

⁴ Marshall S and Banister D (2000) Travel Reduction Strategies: intentions and outcomes, *Transportation Research Part A*, **34**, 321-338.

⁵ Eurostat (2003) *European Union Transport and Energy in Figures 2003*, European Commission Directorate-General for Energy and Transport in cooperation with Eurostat, Brussels. Visit <http://www.europa.eu.int>. Last accessed 31 May 2004.

⁶ OECD (1995) *Motor vehicle pollution: Reduction strategies beyond 2010*, OECD, Paris.

limitations are imposed on urban renaissance, regeneration and site redevelopment. Although environmental concerns are becoming partially mitigated through improved engine technology and new types of fuel or power, these achievements are threatened by the growth in overall passenger kilometres travelled. This means that transport now accounts for almost a quarter of carbon dioxide emissions in Europe⁷.

1.2.3 As a result there has been a gradual shift in thinking by urban planners, transport managers and policy makers towards redesigning neighbourhoods in such a way that people actually have viable travel alternatives to the car available, and are able to walk or cycle, or else use public transport, taxis, minicabs, rental cars, or even new mobility services such as car-sharing (city car clubs).

1.2.4 However, if such innovative mobility services are ever to develop beyond being a marginal mode and become more mainstream, then it is important that they are protected and supported as far as possible, and ideally that they become integrated into the transportation planning and spatial planning of our cities. It is this element that this work package aimed to explore in more depth.

Car-sharing – a Sustainable Mode of Transport

1.2.5 As noted in the previous work package reports, car-sharing is based on the premiss that access to a vehicle can be important, but ownership may not be essential. Instead, through fees and payments, it is possible to reserve a locally placed car for each individual trip - be it for shopping, work trips or leisure - and return it after use for the next user. Each car-trip becomes a 'service' in its own right, rather than purchase of the car being necessary before trips can be made.

1.2.5 From an urban planning point of view this concept has far-reaching implications for the use of urban space - especially the demand for, and allocation of, land for on-street and off-street car parking. Here is an innovation that could potentially satisfy the mobility needs of many individuals with fewer vehicles and less city land.

1.2.6 On average it seems from current data that somewhere between a fifth and a half of car-share members give up a car on joining, or join in lieu of buying one, and although it is not unusual for a high proportion of members to have not previously owned a car, research shows their travel patterns change less dramatically than the former group. This results, on average, in 2,500-4,000 km saved per member per year, with an increase in walking, cycling and PT use.⁸



1.2.7 Part of the explanation for this effect is that car-sharing requires some pre-planning by the member and is transparently priced per journey. Thus the use of car-sharing vehicles to generate trips tends to be lower than if the same individual used a privately owned car. Car-owners tend to generate many short trips that are generally more efficient on foot, by bicycle, or even a short bus trip.

1.2.8 Car-sharing therefore tackles two fundamental problems of the current car culture. First, it has potential to reduce the number of vehicles we need on our streets and the amount of urban land needed for parking, and secondly it has potential to reduce the total number of trips made by car leading to modal shift and travel blending.

⁷ See EU Energy and Transport in Figures, Statistical Pocketbook 2003, European Commission DG TREN, 2003, p.4.2 (figure for 2001 – containing Rail, Road, Air and Inland Navigation). Road Transport alone already stands for 24.0 % of the entire European CO2 emissions

⁸ "Ch8: Car Clubs", in 'Smarter Choices – Changing the Way We Travel', Report by UCL, Transport for Quality of Life final report to the Department for Transport, The Robert Gordon University and Eco-Logica London, UK, 2004.

1.2.9 However, it is a concept that fundamentally challenges the car owning paradigm and demands a fairly fundamental shift in attitude to car ownership. It can only become successful in cities where market demand for car-sharing begins to strengthen due to rising public acceptance of the concept of car trips as a service. To be seen by the public as a modern and sought-after service rather than a niche market, car-sharing will require substantial public and/or private investment in :



- parking networks (infrastructure);
- the quality of booking systems and vehicles provided by supply companies;
- successful pro-active lifestyle or travel-plan marketing to 'lift' demand; and
- legal codification under planning and transport legislation, policies and standards.

1.2.10 Subject to sufficient public demand materialising in each city (as might need to be generated through vigorous marketing campaigns as well as word-of-mouth experience), together with infrastructure networks, legal codification and high quality supply side companies, car-sharing could thus provide urban and transport planners with another tool with which they can shape a more sustainable future for urban areas. Looking at the profiles of urban 'early adopters' in the MOSES scheme and similar studies of longer established car-share users⁹ a saturated market may potentially be as high as 7-9% of the population.

1.2.11 However, where demand is too weak to support commercially viable car-sharing (city car clubs) there are opportunities in some European cities, though probably not in the UK, for the concept to become subsidised and managed in the medium-term as a mode complementary to public transport - in much the same way that non-commercial parts of rail or bus networks, can sometimes be maintained at public expense.

1.2.12 The next section explains how city authorities, including spatial planning authorities and transportation/highway authorities, might best support the emergence and development of car-sharing schemes in their plan area.

⁹ "Ch8: Car Clubs", in '*Smarter Choices – Changing the Way We Travel*', Report by UCL, Transport for Quality of Life final report to the Department for Transport, The Robert Gordon University and Eco-Logica London, UK, 2004.

2. The Role of City Authorities

2.1 The Nurturing Role

2.1.1 Any new product or service needs nurturing if it is to grow and develop, and car-sharing is no exception. As with other forms of transport provision that require land and infrastructure (and a public operating or marketing subsidy at locations where market demand is weak or immature) the key player at local level that can best provide such support is the city authority or city government.

2.1.2 Potentially, city administrations can give a wide range of support to nurture car-sharing schemes in their plan area. Most obviously city government may choose to support this form of mobility through:

Political Support for car-sharing when formulating national or regional legal frameworks that set out the duties and responsibilities that lie behind urban planning (e.g. by politicians placing a legal duty on city authorities to consider appropriate arrangements for car-sharing when preparing spatial plans and transport plans; by creating a legal definition; and by issuing legally approved signage and other aspects of a strong legal regulatory framework);

Broad Policy Support for car-sharing in urban planning (e.g. by highlighting the benefits of car-sharing to sustainable development when publishing spatial and transport planning frameworks or environmental plans, when setting out the scope or eligibility of mobility services, soft measures, or modes of transport for resource allocations, and by encouraging or facilitating others to help through partnerships);

Use of Detailed Regulatory or Other Powers to facilitate car-sharing when making regulatory, enabling or implementation decisions (e.g. by including car-sharing in actual schemes of city redevelopment, regeneration, and transport improvement; by including car-sharing as a standard component of parking provision on the public highway when plans are drawn up in the public interest; by treating car-sharing as a complementary service to PT and low-car development; by issuing incentives such as free parking permits, reimbursements for congestion charge fees, attractive signage, and well designed and located infrastructure; by securing internal or external finance and making grants or investments that encourage qualitative improvement of car-sharing supply companies through competitive tendering or other contract or performance procedures, development of key performance indicators for km saved per euro etc., requiring inter-operability, or independent accreditation; and by encouraging market-take-up by local residents or businesses through travel plans, travel awareness campaigns etc.).

2.1.3 The following sections (section 2.2 - 2.4) explain how, in more detail.

2.2 Political Support

2.2.1 If car-sharing is identified in any political jurisdiction as having the potential to contribute to sustainable development (e.g. by contributing to the social, economic and environmental aims of urban plans such as spatial, transport or environmental plans) then it becomes advantageous for national or regional political authorities to establish a legal duty on city authorities to consider appropriate arrangements to foster and support car-sharing when developing such plans and associated expenditure frameworks.

2.2.2 Car-sharing has the capacity to influence market demand as one of the new range of pro-active 'soft measures' along with travel-planning, that could help encourage a change in public attitudes towards acceptance of new ideas such as 'responsible car use'. However, if not mainstreamed car-sharing will tend to develop in a patchy and piecemeal way that to some extent will follow behind changes in public attitudes to the private car (and changes in associated market demand for alternatives) and only develop where a strong local 'champion' is found.

2.2.3 Ideally, political jurisdictions would explicitly require arrangements for car-sharing to be considered when formulating the legal framework of duties and responsibilities that lie behind urban planning e.g. by national or regional government placing a legal duty on city authorities to consider appropriate arrangements for car-sharing when preparing spatial plans, transport plans, etc. Furthermore, political jurisdictions could also explicitly create a legal definition, legally approved signage and other aspects of a legal regulatory framework.

2.2.4 Examples of this degree of political conviction that car-sharing should be encouraged are not yet common but some examples are referred to in 'wp5 Supporting Car-sharing (City car-sharing (city car clubs)) – a Worldwide Review'. One example is that of the Walloon Region where, during the MOSES project period, the regional government Minister has approved legal instruments that further the aims of car-sharing. A less successful example, though illustrative of the potential approach that could be taken, is that proposed in the UK as an amendment to the Traffic Management Bill (annex 2) in the spring of 2004 at the behest of Charlotte Morton, managing director of one of the two independently accredited UK car-share companies, 'Whizz-Go'.

2.2.5 The political advantage of mainstreaming car-sharing by providing it with legal recognition is that, unlike certain other modal shift measures, it stands out as obviously not anti-car; indeed car-sharing actually extends access to a car to certain groups, whilst having the net overall effect of reducing trip kilometres.¹⁰



¹⁰ "Ch8: Car Clubs", in '*Smarter Choices – Changing the Way We Travel*', Report by UCL, Transport for Quality of Life final report to the Department for Transport, The Robert Gordon University and Eco-Logica London, UK, 2004.

2.3 Broad Policy Support

2.3.1 As described above, political policy statements describing how car-sharing might help to achieve the primary environmental, social or economic objectives of urban planning provide the highest level of support. Below this, policy documents that seek to translate these aspirations into urban planning frameworks can be developed.

Support through Spatial Planning Policy & Transport Planning Policy

2.3.2 Policy support for car-sharing can be included in a city's spatial planning policies and in its transport planning and environmental plans or policies.

2.3.3 For the planning and management of the urban environment, these various policy frameworks would, ideally, be developed in an integrated fashion, alongside each other and to the same timetable. Such integration of plans for the urban environment can offer the most fertile ground for making the most of new mobility services such as car-sharing at this policy level. How far the two processes of spatial and transport planning are integrated at policy level in the MOSES partner cities, is summarised below. A similar exercise could also be undertaken to look at inter-linkages of these with other urban plans, such as environmental plans.



- In **Bremen (Germany)** there is an '**Integrated Urban Development Concept**' (Stadtentwicklungskonzept) and also an '**Integrated Transport Development Concept**' which, taken together, establish a policy context for linking the planning of new urban development with the planning of public transport. Under this policy framework, potential areas for new development or regeneration are surveyed to promote transport integration, including, for example, studies of the existing and planned axis and availability of PT to analyse the extent to which PT would be able to cope with the predicted levels of trip generation arising from new development so that dependency on the private car trip may be reduced. **The 'Integrated Urban Development Concept'** of Bremen as well as the '**Integrated Transport Concept**' refer specifically to car-sharing as a mode of transport that can encourage modal shift. In practice, some urban development proposals do not integrate transport planning for modal shift (such as planning for pedestrians, cyclists, PT or car-sharing) as fully as do other schemes, but the policy framework is helpful. Besides Bremen, there are a few other cities in Germany which have also included car-sharing in their policy concepts to encourage modal shift and soft measures when planning new development.



- In **Stockholm (Sweden)** the development of urban planning policies for spatial and transportation purposes can lead to integrated transport/development solutions, though through advisory processes. The city planning office draws up the spatial plans for new development, containing planning policy frameworks that are implemented by the 'Office for Real Estate and Streets' that controls new development - although the two offices are in constant contact. At the present time there is no reference to car-sharing in the planning policy frameworks that guide the work of the 'Office for Real Estate and Streets'. The city's transportation plan (**ÖP99**) is guided by the regional transportation plan (**RUFS**)



which sets out policies that influence development planning and sustainable transportation solutions, though in a non-binding and advisory way. These do not yet contain policy guidance encouraging car-sharing. Often, subject- or area- specific transportation documents are also produced and these supplementary (advisory) transport plans can also influence, or be successfully integrated into, the general planning policies of the city. To date there has been no specific reference to car-sharing in these supplementary transport policy documents either, although a raft of sustainable planning policies has been approved that establishes sustainable transportation provisions (e.g. to encourage modal shift and environmental transport programmes) for some new housing areas such as **Hammarby Sjöstad**



- In **Genoa (Italy)** the development of urban planning policies for spatial and transportation purposes tends to be developed through different processes, such that the resulting controls for development and transport largely operate separately. Therefore, while there is no policy to encourage car-sharing in urban spatial planning policy, policy support is well developed in the city's transport plan or '**Plan of Urban Traffic**' (Piano urbano del traffico). This aims to be consistent with the '**Regional Transport Plan**' (Piano regionale dei trasporti) and is a short term plan released every 2 years, setting out appropriate policies and actions to regulate urban traffic in the public interest in any municipality of over 15,000 inhabitants. The transport plan contains guidelines to develop and sustain the public transport system in the urban area, as well as the regulation of private vehicular traffic. Through this transport planning framework, Genoa aims to fully integrate car-sharing services with public transport as an extension to the public transport service. The car-sharing supply company in Genoa is planned to be part of the local public transport agency and extensive policy integration with PT and funding can therefore be expected; however integration with spatial planning policy, for example integration into car-free or car-reduced development, has not been progressed at the present time.



- **Wallonia (Belgium)** is an example of a regional rather than a city authority in the MOSES project and as such it has extensive powers and policy opportunities, both for spatial planning and for transport planning although these are controlled by separate ministers. Nonetheless, certain key aspects of transport planning belong to the higher federal (Belgian) level, including railway policy, and, in all cases, fiscal matters and regulations (traffic rules etc.) are federal decisions. However, transport policy for roads and public transport (except railways) is directed by the regional authority giving ample scope for policy development to integrate aspects of spatial planning and transport planning. This has resulted in an '**Updated Contract for Future Development of Wallonia**' (Contrat d'avenir pour la Wallonie actualisé), a kind of political programme supported by all current coalition partners. It lists a number of objectives concerning sustainable development and modal shift, which provide a general policy framework sympathetic to initiatives such as car-sharing and the closer

integration of transport and spatial planning, However car-sharing itself is not mentioned directly and is not yet given any specific policy support through regional spatial planning. At the present time the most direct support is found in transport planning policy rather than through spatial planning. In the near future, the Minister of Transport of the Walloon Region intends to generalize the conventions signed by the car-sharing operator and some local PT operators so that it applies to the whole of the consortium of PT operators (TEC). Since TEC has a regional monopoly, this will have the same practical effect as a legal provision and if adopted would provide a regional transport policy supportive of car-sharing.



- In the **London Boroughs of Southwark and Sutton**¹¹ (London) the development of urban planning policies for spatial and transportation purposes are currently in quite different states of readiness: spatial planning policy is advanced in Sutton and Southwark who prepare their own '**Unitary Development Plan**', but transport planning policy has historically been weakly developed at this local government level. Spatial planning policy to establish the policy framework for decisions on new development is prepared and issued by each of the two boroughs acting independently of each other in respect of their own separate plan areas, leading to a '**Southwark Unitary Development Plan**' and a '**Sutton Unitary Development Plan**'. However each borough's local spatial plan is based on broadly similar interpretations of higher tier regional and national spatial planning policy which emphasises sustainable development including modal change. In Sutton, local planning policy guidelines for car-sharing (city car clubs) have been developed in more detail during the MOSES project, and the council can formally issue developers with '**Supplementary Planning Guidance**' setting out how to plan and design their developments to incorporate car-sharing (see annex 1). In Southwark there is inclusion of a similar policy framework supporting car-sharing in its emerging planning framework. Local transport plans are, by contrast, weakly developed in Sutton and Southwark. The statutory duty on both borough councils to devise a local transport plan is a recent requirement, indeed the first full local transport plans '**Local Implementation Plans**' will not be complete in Sutton and Southwark until the end of 2005. These transport plans aim to be consistent with the more strategic regional strategies issued by the Mayor of London, and will provide local policy and expenditure proposals up to about 2010. Previously, local transport policies and transport schemes have been developed and implemented in Sutton and Southwark on more of a 'case by case' basis, dependent largely on local consultation and perceived changes in professional practice and government expectations. The new transport plans will include policies for all non-strategic roads (including their parking regime, changes to speed limits, allocation of space for bus lanes and cycle lanes), policies for travel plans and other educational or 'soft measures' to encourage modal shift, and policies for road safety. The plans will also set out each

¹¹ Note that the urban plans of each borough (the "Southwark UDP", and "Sutton UDP") affect, in total, less than one tenth of the whole city of Greater London since the Greater London metropolis is made up of over thirty such city authorities. The plans that affect the capital as a whole are those approved by The Mayor of London.

Council's approach towards influencing more strategic forms of transportation although these modes (e.g. rail, metro, tram and bus) are largely under regional or national control.

- As summarised above, the degree of integration of spatial and transport planning policies is varied. It appears to be most strongly developed in Bremen, much less developed in Genoa, and about to be fostered in Sutton and Southwark (London) due to requirements that come into force by the end of 2005 stemming from the relatively recent creation of London-wide regional government ('The Mayor of London'). For some cities the scope for integration at policy level between spatial and transport planning resides largely at regional level, as in the Walloon region in Belgium.
- Actual inclusion of policies that support car-sharing in published spatial plans and transport plans also varies significantly amongst MOSES partners. In some cases car-sharing is explicitly mentioned at regional level, as in London where the Mayor's spatial and transport strategies both support the concept (although the concept was not supported at regional level prior to the MOSES project). In London car-sharing is also explicitly mentioned at city authority level in new spatial planning documents issued by Southwark and Sutton Councils, but again, only since the onset of the MOSES project. In the Walloon region car-sharing is a de facto policy at regional level, rather than being explicitly formulated into policy documents, and as in the Greater London region, this has only occurred since inception of the MOSES project.
- In Genoa car-sharing is now supported through policy in the city's transport planning framework, but yet to be considered in its spatial planning policy. Inclusion in the transport planning policy framework has emerged, as in Greater London, Southwark, Sutton and the Walloon region, only since inception of the MOSES project. In Stockholm car-sharing is yet to be supported explicitly in spatial and transport planning policy although environmental policies would encourage new forms of sustainable mobility.
- By contrast with all of the other MOSES partners, Bremen demonstrates a more long-standing awareness of, and support for, car-sharing, firmly including it at policy level both in spatial and transport planning albeit there are some striking areas still to be addressed.
- One can therefore conclude that (with the exception of Bremen) the MOSES project has either happened at the same time as car-sharing has begun to be included in spatial and transport planning policies in partner cities and regions, or has directly or indirectly encouraged or helped pave the way for car-sharing policy to become formally developed in MOSES partner cities and regions.

Encouragement From Above -the European Policy Context

2.3.9 For European cities and regions that are still to consider inclusion of support for car-sharing in their spatial and transport planning policies, a wealth of contextual support is emerging at EU level. Two examples are: (i) the fostering of European spatial planning concepts under a '**European Spatial Development Perspective**' (ESDP);¹² and (ii) the fostering of new perspectives on urban planning and management under '**The Thematic Strategy for the Urban Environment**'¹³.

The Fostering of European Spatial Planning Concepts

2.3.4 The European Union does not have a competence for spatial planning in the sense that member states do. In its absence the EU has encouraged member states, through voluntary co-operation, to develop a common understanding on the future of Europe's spatial development.

2.3.5 Within this voluntary spatial planning framework, the European Union's aspiration of achieving balanced and sustainable development across Europe is set out in the European Spatial Development Perspective (ESDP, 1999). This requires not only environmentally sound economic development which preserves present resources for use by future generations, but also balanced spatial development which reconciles economic pressures for development with an area's population, ecological capacity, transport links and potential for further growth.

2.3.6 At a Regional level, the ESDP recognises that the current growth in transport, particularly road transport, has an increasingly adverse impact on the environment and the efficiency of transport systems, and that improvements to these systems can be achieved through appropriate spatial development policies, which influence the location of housing and employment and therefore the mobility requirements and choices of transport mode. Thus it provides a context for moves towards the integration of transport planning and spatial planning to promote sustainable mobility solutions.

2.3.7 The ESDP explains that such an approach to spatial and transport planning could be particularly effective in the large urban regions, where the dependence of the population on the car may be greatly reduced and the greater use of public transport developed. Within urban areas, the EU's aim of balanced and sustainable development can be best achieved, suggests the ESDP, by integrated land use/transport planning policies which:

- make more efficient use of land by encouraging more intensive, mixed-use development within and around town centres and other areas well served by public transport;
- reduce travel needs and car dependency and promote improvements to public transport and facilities for other sustainable modes of transport.

¹² europa.eu.int/comm/regional_policy/sources/docoffic/official/reports/som_en.htm

¹³ europa.eu.int/comm/environment/urban/thematic_strategy.htm

2.3.8 As city and regional planning authorities in Europe begin to develop local policy in support of this spatial -and transport- perspective, the importance of car-sharing (city car clubs) is increasingly likely to be considered, and to become explicitly mentioned.

2.3.9 How far car-sharing will contribute to European spatial planning aims of achieving balanced and sustainable development, more efficient use of land and less car dependency, will depend largely upon the success of car-sharing companies and public sector support schemes. This depends on their ability to exploit the potential market of users who live in, and use, the new patterns and forms of urban development that are planned to be less car-dependent.

2.3.10 Where this new market is weakly exploited these new patterns of urban development are more likely to foster increased trip reliance on alternatives to the private car such as conventional forms of public transport, taxis, mini-cab and car rental services, and on walking and cycling.

Fostering of New Perspectives on Urban Planning and Management

2.3.11 The preparation of a "Thematic Strategy on the Urban Environment" was one of the key actions outlined in the Sixth Community Environment Action Programme. On 11 January 2004, the Commission therefore adopted Communication COM(2004)60 "Towards a Thematic Strategy on the Urban Environment" that set out the Commission's ideas for such a strategic approach to urban planning and management. Based on this communication and subsequent consultation, the Commission adopted and published the strategy in the summer of 2005.

2.3.12 The Communication and the subsequent strategy have begun to set out the problems and challenges facing Europe's urban areas, focusing on four priority themes. These themes, selected in conjunction with stakeholders, are:

- urban environmental management,
- urban transport,
- sustainable construction, and
- urban design.

2.3.13 These themes have been chosen to offer the greatest scope in making progress in improving the quality of the urban environment, and to have a strong influence on existing environmental obligations such as on air quality.

2.3.14 For each theme, the Commission has set out the nature of the challenges, what action has been taken so far at the European level, and ideas for what further action should be undertaken to address the identified challenges. It is acknowledged that there are some gaps in knowledge, but the focus of the Strategy has been to encourage achievement of clear changes in urban areas based on currently available best practice.

2.3.15 The strategy has recognised that towns and cities themselves are best placed to develop solutions to the problems they face. It proposes that the Community's role should be to establish a framework to support them in this task. For instance, existing environmental obligations already establish targets that must be met and co-ordinated. The more integrated approach to urban planning and management proposed in the strategy aims to help Member States and local authorities meet these. For other issues, the strategy proposes that targets should be established at the local level through the adoption of 'environmental management plans' and 'sustainable urban transport plans' for urban areas.

2.3.16 The emergence of any such plans, which are proposed to be inter-related so as to plan for the four identified themes in a cross-cutting fashion, should provide further opportunity for the strengthening of the policy basis in cities for new forms of mobility and spatial planning, such as integration of car-sharing into urban planning and management.

2.4 Use of Detailed Regulatory or Other Powers

2.4.1 Whilst political support for common principles, and broad policy support for the integration of spatial and transport planning (and for sustainable approaches thereto) is clearly emerging in Europe, sometimes with specific reference to car-sharing, the content of more detailed practical and regulatory frameworks still varies greatly between cities.

2.4.2 This can be illustrated by reference to an example: the practical and regulatory framework for urban parking policy in different cities and regions.

2.4.3 The level of car parking provision is a major influence on the means of travel that people use for their journeys as well as taking up a large amount of space within development. Therefore, reducing the permitted amount of car parking space in new developments (encouragement of car-free and low car development or simply encouragement of a degree of 'parking restraint' compared to provision for unfettered levels of parking) is gradually being seen a mechanism for achieving the higher densities often desired for successful urban regeneration and efficient use of land, as well as helping to promote sustainable travel choices.

2.4.4 But how city and regional authorities go about this is highly varied.

- **Development-related parking regulations in Bremen (Germany)** operate within the framework of federal law (which sets the framework for planning regulation) and Länder Regional law (which sets the framework for building regulation). In most Länder, car parking is determined according to the old '**German Garage Code**' (Reichsgaragenordnung), and minimum standards are applied contrary to restraint-based sustainability principles. However, Länder have found that they have discretion in the application of the code, such that, **Berlin** for example, no longer requires a minimum parking provision for new development as its general rule. In Bremen, by contrast, despite its overarching strengths in terms of spatial and transport policy integration, and broad policy support for car-sharing, the old minimum requirements for car parking spaces are still generally applied. In Bremen, if due to the specific situation of the development site, the developer is unable to fulfil the minimum car parking requirement, he still has to pay a certain amount to contribute to car parking elsewhere, or to show that car parking is guaranteed at other nearby sites. Only for model projects have car parking requirements been changed or suspended, as at the car-free or car-reduced developments of **Grünenstraße** and **Beginenhof**. These have been created as model projects without any requirement to encourage, through financial payment, off-site trip-generating car parking infrastructure elsewhere. It appears that car-sharing could best be integrated into new development in German cities by a combination of reducing the requirements for parking provision as in Berlin, and a civil contract (stadtebaulicher Vertrag) to ensure

the provision of a car-sharing service, legally based on the federal **'Building Law'** (Baugesetzbuch). This combination would ensure the strongest regulatory and legal position; it has recently been demonstrated in **Münster**. It is also possible to use the building permit to encourage car-sharing provision in a new development; this has been demonstrated in Bremen. An easier approach, though legally weaker, has been to encourage a 'declaration of intent' from the developer, when submitting an application for a building permit.

- **Development-related parking regulations in Stockholm (Sweden)** operate within the framework applied by the Municipal Office for Real Estate and Streets (gatu-och fastighetskontoret). Car parking levels in new developments are determined through application to them based on recommendations for how many parking places should be provided for each apartment; ratios that vary by geographic area and housing type.
- **Development-related parking regulations in Genoa (Italy)** operate within a framework applied to each development application. The framework is periodically reviewed by the municipality and termed the **'Regulator Plan'** (Piano Regolatore). This indicates appropriate guidelines to control parking in local development. More detailed guidance is set out in regulations for private buildings (Edilizia privata) and public buildings (Edilizia pubblica). So far no legal tools have been used to allow the integration of car-sharing into new developments.
- **Development-related parking regulations in Wallonia** operate within a framework applied to each development application. Individual development applications are subject to a binding guidance, "De Saeger", dating from 17th June 1970, which is the **'Regional Strategic Land-use Development Plan'** (Schéma de Développement de l'espace Regional) and sets out parking standards. At the local level, city authorities have their own **'Municipal land-use Development Plan'** (schéma de structure), and local town planning regulations (règlement communal d'urbanisme). So far no legal tools have been used to allow the integration of car-sharing into new developments.
- **Development-related parking regulations in Southwark and Sutton (London)** are of the 'maximum' type. These are expressly designed to be 'restraint' standards that preclude unfettered levels of car parking. However, prior to 2001, minimum car parking standards were in use, so this move to a sustainable approach has been quite recent. Its introduction in Southwark and Sutton followed a change in national planning policy in 2001, whereby old minimum standards and 'commuted payments' for off-site parking provision where this could not be provided, were abolished. This move has also been endorsed by regional government for London (the Mayor) in his new spatial development strategy (SDS) **'The London Plan'**, and in his inter-linked **'Mayor's Transport Strategy'**. Thus many new developments now have lower parking levels than older ones, and a number of car-free and car-reduced developments are now also being approved, which have even lower levels of car parking, or none at all. Car-sharing parking provision can not be required but can be agreed. Since the advent of the MOSES project, new development applications have begun

to be approved with car-sharing parking provision included in underground car parks, surface level car parking areas, through payment of sufficient finance by the development company to enable the council to build parking bays on-street, and by permitting the development company to carry out the highway works to build car-sharing bays on-street at their cost. There are now approved examples of all approaches in Sutton and Southwark. In some cases, the developer has also, or instead, paid for consultancy and design studies to assist the creation of a parking infrastructure for car-sharing, including a web portal design and other aspects of on and off-street furniture/signage. However, because the development industry may take five years to implement an approved scheme, the emergence of a successful infrastructure network has not been immediate and not fully realised during the MOSES timetable.

2.4.5 As mentioned above for Southwark in particular, development-related parking infrastructure to support car-sharing, can be secured and provided on-street as well as off-street, where spatial planning and transport planning regulations allow. Allowance to create the bays on-street is far from universal, however. It is currently forbidden in certain cities. The differing experiences of MOSES partner cities and regions is summarised below.

- In **Bremen (Germany)** as in the rest of Germany, car-sharing stations are restricted to off-street locations. This is a special point, as the German traffic regulations do not (yet) incorporate the concept of car-sharing. As a pilot, Bremen is working on the idea of creating '**Public Mobility Stations**' (Mobilpunkt) which would contain a car-sharing station (five bays) along with bike racks, information points (e.g. by touch screen terminals), and be located near a PT stop and if possible near a taxi rank. Such a station could be built by special permission on public street space.
- In **Stockholm (Sweden)** there are also no on-street spaces for car-sharing vehicles, but whether there is scope in the City's regulatory framework for achieving this in an innovative or limited way as in Bremen, is not yet apparent - otherwise it will require a change in law.
- In **Genoa (Italy)**, as in the rest of Italy, car-sharing is not yet recognised as a publicly beneficial transport mode; consequently, the national laws and rules do not guide city authorities to include parking places for car-sharing vehicles on streets, as they do for buses and taxis. However, at a local level, the city authorities can decide on the use of public space and so it is possible to reserve parking bays for car-sharing vehicles.
- According to that, due to the cooperation between the local authorities and the car sharing operators belonging to the national circuit of ICS, in all the cities where is operating an ICS compliant standards car sharing service, parking bays for car sharing cars have been reserved on public roads to build up the car sharing parking areas.
- This now happens in **Bologna, Genoa, Modena, Rimini, Torino and Venezia**.

- In **Wallonia (Belgium)** a decree enables the reservation of on-street bays and signage for car-share use. Permission will be granted to operators, corresponding to the criteria defined in the legal text and car-share vehicles will be recognizable through a label.
- In **Southwark and Sutton (London)**, car-sharing is not formally recognised as a publicly beneficial transport mode in national laws on highways and parking. However, provision can be made locally if it is seen as a 'class of vehicle' for which special parking arrangements should be made. There were no on-street bays in London until the MOSES project began, whereupon Southwark laid out the first four. These were established in **Great Guildford Street** and **Zoar Street** under temporary powers. After a number of trials, improvements to signage and improved ways of meeting the legal regulations allowing car-share vehicles to park (provided they display an approved permit) have been devised, and a network of new bays is being created with a much firmer legislative basis, improved appearance, lower legal cost, and greater security in terms of longevity and allocation, which is essential to attract investment in cars by car-share operators.



Some Actual Low-car Development-related Examples...

2.4.6 During the MOSES project a number of actual examples have been planned, approved or built, demonstrating different ways in which car-sharing can be integrated into new development in cities.



- In **Bremen (Germany)**, **BeginenHof** provides reduced car parking and two spaces for car-share vehicles. The station is currently operated by a private sector service provider company, Cambio. The two cars are primarily intended for use by residents of the development, but customers of the car-share company who live outside the development can also use the cars. Reciprocally, residents of **Beginenhof** can also use all other cars owned and managed by Cambio in different parts of Bremen. The initiative was agreed with the support of the developer who sought a less car-dependent development than is the normal requirement and the financial saving to the developer was converted into a payment (Ablösungsleistung) for the car-share facilities to be installed;
- In **Stockholm Hammarby Sjöstad** was approved subject to a range of environmental, technical and traffic conditions. The City's normal minimum parking requirement was reduced to encourage modal change, and by agreement, the developer offered car-sharing to residents in return for the financial saving. The scheme hoped to encourage market-take-up of car-sharing by 10% of residents to be economically viable. By May 2004, 150 households had joined, amounting to 7% of the households.



- In **Southwark and Sutton (London)** and adjacent areas served by these boroughs' partnership arrangements, car-free or car-reduced developments, already up-and-running with a car-sharing service, include **BedZed** and **OneatSE8**. At the former, the private operating supply company is currently **SmartMoves**, and at the latter it is currently Urbigo. Urbigo has two cars stationed at **OneatSE8**; these are currently for the use of residents only. In the



Bankside district of Southwark, a car station currently operated by **Urbigo** has been laid-out at **Great Guildford Street**, an on-street location partially funded by developer contributions from nearby low-car developments. A nearby station is about to be built in the neighbouring street, **Zoar Street**, constructed by a developer and at the developer's expense, subject to a design approved by Southwark Council, to provide car-share bays for occupants of a large new mixed development, **Bankside 1,2,3**. About 250m to the west, a developer has paid for the design and construction of three on-street car-sharing bays outside of a company office development in **Rennie Street**. At London Bridge station itself a developer has covenanted with Southwark Council to design and construct one car club bay directly on the station forecourt and permit this to be used by a car club service provider approved by the Council, free of charge for the first five years, but subject to reconsideration thereafter. Financial contributions from other developers in Southwark have enabled a sufficient network of car-share bays to be designed and planned into a swathe of London's central activity zone and public transport zones 1 and 2 to permit the Council to realistically anticipate being able to offer a supply contract to appoint a private sector car-sharing company that would have sufficient parking spaces to make a 'real offer' to potentially interested customers, of over 10 cars in a neighbourhood. However, this network of bays is unlikely to be completed until some time during 2005 after the MOSES final conference. The table below gives a selection of examples from Southwark and Sutton Councils of developments they have approved during the course of the MOSES project (between 2001 and 2004) that incorporate car-sharing (city car club) provision.

New developments approved: a few examples from London

Example 1: 65 Residential and 2 Business units: Developer to establish car-sharing (city car club) before 60% of the development is occupied; default cost to developer £100,000. (Sutton Council).

Example 2: 175 flats, 602 sq m. of floor space for businesses: Provision by developer of £185,000 as a contribution towards car reduction measures and / or public transport assistance, less the costs to be agreed for the membership fees for the first year of the car-sharing (city car club) for all residents of the development. (Southwark Council)

Example 3: 224 flats, 18 live-work, business and retail: Provision of dedicated car parking spaces for use by car-sharing (car club) vehicles; first year membership for between 61-78 members. (Southwark Council)

Example 4: 124 flats, retail, restaurant, doctor's surgery: 5 dedicated car-sharing (city car club) parking spaces, first year membership for 124 flats, eligibility for on-street car parking permits withdrawn. (Southwark Council)

Example 5: Construction of a 6 & 7 storey building to provide office and telehotel: £230,000 secured for Green Travel Plan. (Southwark Council)

Example 6: Transport Interchange, Inclusion of one dedicated car-sharing (car club) parking space at proposed re-development of transport interchange, London Bridge Station (rail/metro/bus/taxi). (Southwark Council)

Example 7: Office Development: legal agreement to fund 3 dedicated on-street car sharing (car club) parking spaces £18,000. (Southwark Council)

Financial Contributions Gained via the Low-car Development Process

2.4.7 One important benefit of using the spatial planning process to encourage modal change (i.e. less dependence on the private car) through a policy of 'parking restraint' in new development approvals, is the potential it provides to the city authority to secure necessary financial investment.

2.4.8 A developer generates additional profits by including less, little, or no on-site car parking in a development scheme. The extent to which this profit can be released for car-sharing and other benefits is an important spin-off.

2.4.9 The increased development profits that arise from sustainable development approaches can sometimes be spent by the developer, or paid over to the Council, to provide parking infrastructure for car-sharing, and sometimes also for marketing, travel awareness campaigns, and service subsidy or sponsorship. During the MOSES project this has been looked into by each partner city or region, as summarised below.

2.4.10 The revenues of the compensation for not providing the full parking requirements () have to be used for public parking but also for installations which may reduce the demand for car-parking.

- In **Bremen (Germany)** the 'civil contract' (Städtebaulicher Vertrag) can, in theory, be used (following the Münster example) to finance car-sharing schemes from the increased profit associated with low parking provision in sustainable development. In Bremen the issue of financial contributions is still seen as one of 'compensation' for a developer not meeting a 'minimum' provision of parking based on 'predict-and-provide' ideas, rather than as 'profit' arising from the city insisting on a 'maximum' level of parking, or no minimum parking level (as in Berlin), so as to achieve more sustainable types of development. Because of the somewhat old framework, the language used to allocate the 'profit' in Bremen would be that it be used to provide alternatives to the foregone parking infrastructure 'needed' to meet 'minimum' standards for private cars. Traditionally the payments (Stellplatzablöse or Ablösebeträge) have been spent on Park & Ride, but because of the old language, it has also commonly gone towards increases in neighbourhood parking supply which might increasingly seem to be somewhat contrary to the principles of sustainable development. However, as the parking concepts change, the mechanism appears to be there to enable the increased profit of restraint-based parking in sustainable development to become an important source for funding car-sharing. It could be used for this as soon as the **Münster** approach, which builds on Berlin's approach, becomes accepted by Bremen as a policy.
- In **Genoa (Italy)** when new buildings have been authorized, developers are requested to make financial contributions to ensure that such urban development helps the city to implement certain urbanization actions. These will be different from case to case. They can include contributions to projects such as the implementation of parking places, bridges, underpasses, traffic lights, variable message signals, trees or landscape improvements. In theory, therefore, contributions could be made towards the provision of parking places for car-sharing stations, associated signage etc. To date, however, this has not been brought in. No developer profit from low-car schemes has yet been put towards car-sharing.

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- In **Wallonia (Belgium)** the advice for moses project participants is that there appears to be no provision for financial contributions to support car-sharing when a developer makes additional profits because a development includes little parking provision. However, further research may find a way.
 - In **Southwark and Sutton (London)** the scope to negotiate use of the additional developer profit that arises from low-car-dependent forms of sustainable development has been demonstrated on many occasions. There is a general power for the councils to seek to negotiate payments that help to offset the off-site impacts that might arise from a new development. Impacts arising from low-car forms of development may include additional demand for on or off-street parking or garaging nearby, which can be mitigated through payments towards the sharing of cars and agreement that the development address is ineligible for on-street resident's or business parking permits.

Infrastructure Planning: Location & Design

(a) Location

2.4.11 There is no single group of locational or design ideas that, if followed, will result in success. Each city or region will have a different demand from the public for car-sharing, and, as demonstrated in Southwark and Sutton (London), the level of consumer demand becomes the most significant factor in success.

2.4.12 However, the experience of MOSES partner cities and regions has been that design and location contribute to success provided that demand for car-sharing is sufficient to support the scheme at any given level of public subsidy, private investment, or sponsorship.

2.4.13 In ideal circumstances demand would be sufficient to enable a network of car-sharing stations to operate with, or fairly close to, commercial viability; but these conditions do not yet occur in some MOSES partner cities or regions, for example in Southwark or Sutton (London) and Stockholm. Design and location of infrastructure in these places must go hand in hand with public subsidy or private investment/sponsorship to contribute to the cost of operating the service and its marketing, as well as the infrastructure, if a network is to be developed.¹⁴

2.4.14 Otherwise design and location decisions rest solely with the operator, whose business will be likely to remain small as a consequence, this type of car-sharing being 'community car-sharing' involving ones or twos; the infrastructure generally consisting of little more than a parking space negotiated at little or no cost, off-street, at a community building e.g. a church hall.

2.4.15 In cities or regions where car-sharing is more likely to be operated by a public transport provider than in the UK, its operation may more readily become publicly subsidised or underwritten by guarantee to overcome the difficulties of establishing car-sharing as a new mode of transport of some network size.

2.4.16 Put simply, design and location will differ for car-sharing schemes according to whether the scheme is:

- community car-share, small-scale, looking for one or two parking spaces often at a community building;
- owned by a public transport operator, usually in the public sector, who is prepared to invest in the system to extend PT market share by buying into complementary services;
- a private enterprise that aims to be largely financed by demand, aiming to become commercially viable or close to commercial viability;
- a private enterprise (possibly not-for-profit or charitable in company structure but not necessarily so) that seeks to strongly co-

¹⁴ Within, or associated with the MOSES project, two examples of a 'network approach' to locating car-share stations have been demonstrated subject to evaluation of their success. Firstly, the work in Turin city where almost 20 stations were rolled out quickly within the city centre with public finance to provide for a trial contract with a service provider to ascertain the level of public demand that would follow, and the profitability or otherwise of creating a network approach in Italian market conditions. Secondly the roll out of stations in the Region de Bruxelles-Capitale where seven stations were put in place within four months in 2003 with financial and marketing co-operation of the local public transport operator and Taxistop. MOSES partner Southwark is also planning to launch a 'network approach' between Bankside and Bermondsey funded largely through development contributions as a way of mitigating potential off-site car parking demand that could otherwise arise from low-car development associated with regeneration in the district, but this will not be open for use and study until 2005.

operate with public purposes to promote alternative modes, possibly also soft measures, travel plans etc., and secures recognition as a complementary service to PT such that it avails itself of a significant mixture of public and private funding.

2.4.17 Besides these all-important economic factors, design and location decisions depend very firmly upon how the city or regional authority approaches:

- use of public highway space for the parking infrastructure needs of car-sharing operators; and
- use of the spatial development process to secure parking infrastructure for car-sharing operators in underground or surface level car park allocations in new developments, or on-street close by.

Finally the impact of these factors on design and location of car-sharing stations in cities seems to be both a reflection of :

- the varied legal codes or regulations in different EU member states, regions and cities; and
- whether political support and policy support for car-sharing has been translated locally into finding imaginative ways around legal codes that were designed well before new mobility services such as car-sharing were invented.

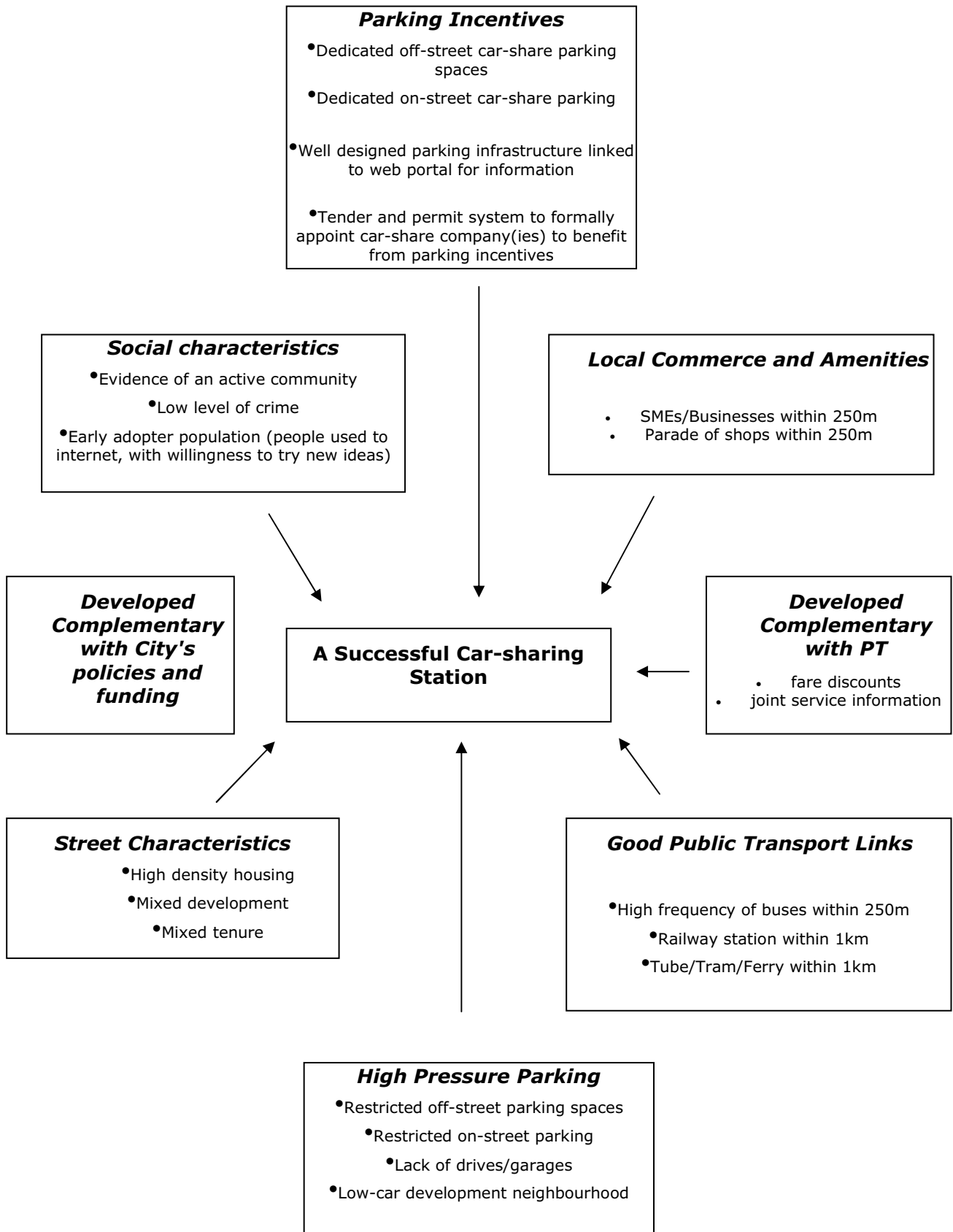
2.4.18 Generally, amongst MOSES partner cities and regions, legal codes or regulations for spatial planning and/or transport planning have been designed some time ago, well before new mobility services such as car-sharing emerged, and this has impacted adversely on the design and location of car-sharing stations in most cities and regions. Few cities or regions can show a well-balanced mixture of locations and designs that comprises both on and off street locations, some integrated with new low-car development, and others provided elsewhere.

	Co-located with Low-car Development	Located by the City Using Spatial Factors	Located to Meet Needs of the Operator or its Principal User
On-street locations	Southwark	Walloon region Genoa	
Off-street surface level locations	Sutton Southwark regional partnership area Bremen Stockholm Southwark (approved)	Walloon Bremen	Bremen Sutton
Other off-street locations	Southwark (approved)		

2.4.19 As shown in the above table, apart from proximity to low-car development, the sites chosen for car-share stations sometimes aim to meet the specific needs of operating companies or their main client, for example;

- proximity to their office premises;
- proximity to major private clients;
- proximity to corporate clients;
- where the company can obtain 'affordable prices', free concessions, or sponsorship, to park.

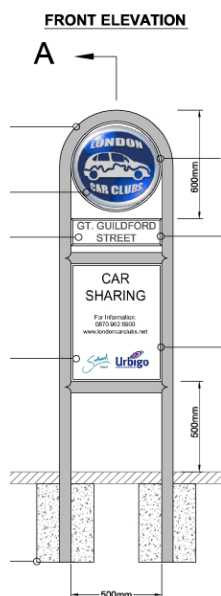
2.4.20 However, in other cases, geographical criteria have been adopted by the city authority, usually related to the city structure i.e. density, proximity to transport interchanges, proximity to local facilities, or in the town centre. The figure below gives an indication of the type of spatial factors that have sometimes been considered by cities in the MOSES partnership, in relation to the location of new car-share stations (the distances are indicative).



(b) Design

2.4.21 Off-street stations were initially considered to provide the greatest opportunities for design innovation as they are not normally hampered by the restrictions that relate to highways land. However, many off-street locations have other design constraints, and with a little ingenuity similar opportunities for imaginative designs can be found at both on-street and off-street locations, except where on-street infrastructure is not yet permitted at all.

2.4.22 Design considerations of both on-street and off-street locations may include shelter, signage, information displays or kiosks, lighting and a number of other considerations. For example:



- **Cycle parking:** This helps car-share customers to combine modes when using car-share services. Southwark has recently completed the construction of cycle parking at a three-bay station due to be fully commissioned for cars in 2005 and Bremen has put this in place at some sites that are already operational. Bremen is also developing a multi-modal car-sharing station for on-street situations to help overcome highway regulations that normally prevent on-street stations.
- **Walking/pedestrian space:** Adequate waiting and circulation space can sometimes be important. Southwark has completed a pavement 'build-out' at a station due shortly to be commissioned.
- **Storage:** Secure storage for child car seats, cycle racks etc. is available at some stations in Bremen.
- **Charging points:** These are needed where electric vehicles may become used by an existing or future operating company, and have been provided for a station in Sutton.
- **Advertising:** Space to advertise the car-share service company or a web portal or i-point that puts the visitor in touch with the currently appointed service provider, helping to market and advertise the service but not to raise general revenue, has been included in Wallonia and will be included in Southwark when the new bays are fully commissioned in 2005. In Sutton, an i-point provides on-site information about local services directly at the car-share station.
- **Lighting:** This is needed for security and safety and to increase public awareness of the station as a 24/7 facility. Improved lighting has been installed at stations in several partner cities and regions, e.g. Bremen.
- **Local amenities:** Access to nearby amenities such as toilets and an indoor waiting area can be helpful. Though not technically part of the station itself, it can form a helpful consideration and infrastructure funding can usefully be spent on upgrading any such facility close by or encouraging its provision in any new shopping development taking place on an adjacent site. One station in Southwark is located adjacent to a cafe with a toilet.



- **Public Transport Information:** This could include time-table information relating to both public transport and complementary services in the vicinity and information about discounted PT travel available to car-share members. If not included on the station itself this information may be co-located close-by in, for example, a shop or tourist information centre overlooking the station where seats and shelter are available - as demonstrated at car-sharing stations in Bremen, Wallonia, and Sutton.
- **Internet access:** As above, this can enhance a station whether on the station itself or co-located close by. Such facilities are available on one station in Sutton, and co-located in another station design at Sutton.

2.4.23 In addition to the considerations outlined above, if deemed necessary the city administration could undertake feasibility studies of lighting and surveillance at potential on-street or off-street bays. In some cases it may actually be necessary to do so due to the legal duty of care. A study by consultants for Southwark Council showed that at one on-street location, despite its central London location, there was no prospect of adequate connection to fibre optics, nor a suitably located public building to install a radio transmission system to cover the station with CCTV. In this case, a lower cost solution both in terms of capital and maintenance was to mark out a bay location that was well overlooked by residents and business premises.

2.4.24 The following safety and security considerations should be applied when judging the suitability of new bays:

- - adequate overlooking by residents and business premises
- - practicality of using existing, or installing new CCTV
- - adequacy of lighting
- - adequacy of pavement width, or need for protective build-outs
- - any other security or safety issues/features

2.4.25 There also are many as yet undeveloped opportunities for creating a bigger presence for some car-sharing stations. This could be a useful approach when, for example, designing a new bus station and integrating it with a car-sharing station. A series of designs for such a station have been commissioned by Sutton.

2.4.26 Finally, internet access is an under-developed feature that, where installed, permits car-share users to have ready access to booking or payment facilities and public transport timetables. Bremen is using internet features on site at their Mobil Punkt sites, and Sutton Council has an I+ kiosk with web access at one station to give a booking and payment facility. These may need to be carefully designed so as not to suffer from vandalism or high maintenance costs.

3. Recommendations & Conclusions for Urban Planning & Management

3.1 Design & Location

3.1.1 A number of 'Design & Location Recommendations' arise from the previous chapter. These are summarized (for the purpose of highlighting these considerations more fully) below:

- Signage is as yet an underdeveloped area with a whole range of signs existing in the various car-share cities. Currently while each must comply with legal and regulatory frameworks, there is little standardisation and this is a problem.
- Consequently, a properly approved European on-street highway sign, and a standard range of designs for more elaborate on-street and off-street furniture compliant with local development control and advertising regulations across more than one member state, would be welcome.
- It is considered that more detailed signage about the local service should accompany generic official signs, and may need to advertise a web portal about city car-sharing (car clubs) rather than incorporating the name, logo or contact details of a specific supply company. This would avoid selectively advertising private supply companies on-street.
- There is also an advantage in adoption of standard symbol or logo. There are many good examples of symbols or unifying designs which have achieved this in the past. The question is whether each city does its own symbol, or whether some national or international joint approach will be of greater benefit. An example of a generic symbol for London has been designed by Southwark and appears on its web portal; it has been designed to be readily adapted for use elsewhere and is illustrative of the approach that could be followed.
- Car Share operators have indicated that they prefer any signage to look 'official' and clearly indicate that the parking restrictions apply 24 hours a day, 7 days a week. They also expressed concern that the signage should discourage unauthorised parking by none members.

3.2 The 'Pull-Push Principle'

3.2.1 As an alternative to, or in addition to, city authorities seeking to encourage car-sharing as a complementary service to public transport, a pull-push model can be considered so as to integrate car-sharing into low car developments or districts. This is summarised thus:

- **Push Principles:** These 'push' occupiers of a new development towards less dependence on the private car and thereby help engender a 'low car development'. This generally requires a move away from old 'predict-and-provide' ideas that compel developments to provide for the car through 'minimum permissible parking standards'. The abolition of these, as in Berlin, or even adoption of restraint-based 'maximum permissible parking standards' as in Sutton and Southwark (London) becomes an important tool 'pushing' occupiers towards less dependence on the private car. To restrain car demand effectively in such low car developments, overspill parking onto the local road network also needs to be restrained. This can be achieved by scheduling the new development into city parking regulations as being ineligible for local area street parking permits, as, for example, in Southwark (London).
- **Pull Principles:** These work hand-in-hand with the 'push principles' above and encourage or offer incentives to occupiers to use modes other than the private car, and to manage their remaining mobility demand on the car (when and if they use one) responsibly. Examples of incentives and encouragement can include site-based or district travel plans, travel awareness or travel information campaigns. Incentives may also include provision of 'alternative modes' such as dedicated parking and infrastructure for car-sharing services with first year paid memberships and a degree of initial financial support, improved infrastructure and/or training for cycling, improved infrastructure for walking, improved public transport infrastructure and services or concessions, good taxi and car rental availability and services or concessions, well managed community transport services, etc.

3.2.2 Of all these factors, dedicated parking for car-sharing vehicles and shortage of parking for privately owned cars is the key to success. The former is the key 'pull' factor, and the latter the key 'push' factor. If this is ensured, with an appropriate parking regime both on-site and off-site on the public highway, low-car developments become increasingly visible, and a market for car-sharing can then emerge.

3.2.3 However, low-car development associated with the right factors, is not sufficient to guarantee success on their own. The success of this approach, as with any other, will depend ultimately upon the demand that is created for car-sharing services.

3.2.4 This human behavioural or 'soft factor' will be the key to financial success or otherwise of the car-share service at any given level of start-up investment, grant or subsidy.¹⁵

3.2.5 To this extent, car-sharing schemes in low-car developments or districts would benefit from marketing initiatives, and other 'soft measures', modal improvements and incentives as are commonly found in 'travel plans'.

3.3 There are Several Ways of Encouraging Low-car Development Using Parking Restraint, Soft Measures and Alternative Modes, these include Car-sharing

3.3.1 'Strengthening the Political-Legal Framework' by:

Adoption of key elements of a legal framework for car-sharing
example, Walloon region (Belgium)

Adoption of maximum standards for car parking – capping the amount of parking permitted at new developments
example, Southwark Council (London) based on national Government planning policy changes

Mainstreaming of car-sharing into transport planning at national government level (e.g. proposal to enshrine a legal duty on city authorities to consider arrangements for car-sharing)
example (though not passed into law) unsuccessful proposal considered by UK Parliament for Traffic Management Bill, Spring 2004 commented upon by UK MOSES team but an initiative of Whizz-Go, a new car-sharing (car club) supply company and supported by a Greater London Authority politician

¹⁵ And in due course at any given level of on-going sponsorship, in-kind support, investment, subsidy, or income from other related business activities, if profitability from market income of car-sharing alone still needs complementing by other income. For all car-sharing infrastructure schemes that become built into car-free development or in the neighbourhood thereof, a degree of up-front investment will certainly need to be found, though further costs will vary from operator to operator, as will the acceptable level of financial return they need to earn from market demand, in order to continue. A wide variety of different supply side company financial models is apparent in the MOSES partner cities and regions. Some, such as Southwark and Sutton (London) began with only one operator interested in the potential market, but within three to four years several other car-share companies have emerged, each with a different financial and investment model.

3.3.2 'Strengthening the Policy Framework' by:

- General policy encouragement for car-sharing in a city or regional spatial development plan
example, Mayor's Spatial Development Strategy: The London Plan (London) **see annex 6**
- Permit-free development - ensuring that occupiers of low-car developments are ineligible for on-street parking
example, Southwark Council (London)
- Adoption of formal spatial planning guidance in sufficient detail to accurately guide developers to design-in dedicated car-sharing bays and support start-up business costs
example, Sutton Council (London)
- Inclusion of on-street /highway permits for car-sharing vehicles (as a class of vehicle) in a statutory city parking plan
example, Southwark Council (London)
- Policy to provide 'on-street parking permit applicants' with information/encouragement for responsible parking, including car-sharing
example (draft policy, 2004) Southwark Council (London)
- Policy inclusion in a statutory city transport plan
example: Mayor's Transport Plan (London) **see annex 3**
- Policy inclusion in a statutory city air quality plan
example: Southwark Council Air Quality Strategy

3.3.3 'Strengthening Detailed Regulatory & Other Powers' by:

- Negotiating refunds, payments in lieu, or legal exemptions from central area charges or congestion charging schemes
example, Southwark Council (London) with Transport for London
- Developing an accreditation scheme for supply companies
example, Sutton Council (London) - as part of an advisory group working with UK Car Plus as a national accreditation organization

-
- Complementary arrangements with public transport (incentives such as discounts, support in kind such as joint information/marketing/smartcards, etc.)
example, Bremen (Germany)

 - Design of a web-based portal linked to all car-share supply companies operating in a city or region to overcome on-street preferential advertising of one company
example, Southwark Council (London)

 - City-wide promotion of low-car development by website
example, Southwark Council (London)

 - Inclusion of car-sharing as a funded 'alternative mode' and 'soft measure' under a travel plan paid for by low-car developers
example, Southwark Council (London)

 - First year membership of car-sharing supply company paid for by a developer for all occupiers
example, Sutton Council (London)

 - Dedicated on-street car-sharing parking bays : design and infrastructure costs paid by low-car developers
example, Southwark Council (London)

 - Dedicated off-street car-sharing parking bays : design and infrastructure costs paid by low-car developers
example, Sutton Council (London)

 - Agreement by a city authority to finance car-sharing from payments received from low-car developers to support 'alternative modes' nearby
example, Southwark Council (London)

 - Model tender agreement prepared and let by a city authority to establish an open process for choosing one or more preferred car-share service provider(s)
example, Leeds City Council (outside the UK MOSES team, co-funded by EU Target programme)

 - Division of plan area into sectors, one for each car-sharing service provider willing to operate in city boundaries
example, Sutton Council (London)

-
- Offering incentivised (free) district parking for car-sharing vehicles
example, Southwark Council (London)
 - Inclusion of a car-sharing parking bay in an approved rail/metro/bus forecourt interchange, at developer expense
example, Southwark Council (London)
 - Inclusion of car-sharing in a city's modal shift or 'soft measures' campaigns (e.g. campaigns to promote 'responsible car use' or 'rethinking car use' or 'European car-free day')
example, Southwark Council (London)
 - Implementing new stations around new developments as development/regeneration of the city progresses
example, Southwark Council (London)
 - Locating car-sharing parking bays in areas with well-researched socio-economic conditions that reflect 'early adopters' or target markets
example, Bremen (Germany)
 - Inclusion within the scope of a community transport initiative
example, Southwark Council (London)
 - Use of infrastructure and membership nos. to evaluate success of car-sharing in a city
example, Walloon region (Belgium)

3.3.4 A number of areas for integration of car-sharing into urban planning and management are still to be demonstrated, though these are making progress, e.g.

- Use of environmental key performance indicators (such as km saved, CO2 saved) to evaluate success of car-sharing in a city
- Requirement for interoperability with other memberships/operators before permitting a car-share company to be an approved company in the plan area
- Policy inclusion in a statutory city road safety plan
- Policy inclusion in a statutory city energy policy

-
- Survey of developer awareness/needs/barriers to inclusion of car-sharing in new developments
 - Issuing a City-approved design framework for car-sharing stations, incl. security, safety, access, information connections, CCTV etc.

3.3.5 In summary, the city or regional administration should establish urban management practices in support of car-sharing by a mixture of 'push' and 'pull' measures linked to low-car development e.g.:

'Push Measures'

- Adopting restraint-based parking standards for new development, whilst giving preferential parking to car-share vehicles;

'Pull Measures'

- Considering keeping control of on- and off-street parking spaces designed or set aside for car-sharing, and letting such spaces over time to approved car-share operator(s) with agreed accreditation and start-up financial support and/or incentive packages subject to tendering;
- Developing and applying a high standard of design, direction signs, street surface treatments, visual attractiveness and safety for car-sharing parking bays and associated infrastructure;
- Integrating car-share facilities in any new public transport infrastructure and encouraging it to become complementary provision;
- Including car-sharing in awareness and information events, campaigns, marketing of alternative modes and lifestyles, travel plans and other 'soft measures', to change 'hearts and minds' and encourage market take-up.

At the same time city and regional authorities should strengthen their policy frameworks and seek complementary strengthening of nationally agreed political-legal frameworks for urban transport, spatial, and environmental planning.

4. Conclusions

4.1 Mobility Management (demand management/soft Measures) - a challenge to our Mindset

4.1.1 In Summary, there is a rising interest in new ways to encourage 'modal shift' through changes in consumer demand and behaviour.

4.1.2 This approach to modal shift influences the 'demand' side of transport planning rather than the 'supply' side. Successful measures work partly, if not largely, by influencing patterns of demand.

4.1.3 Incorporating human behavioural change into transport planning is described by various 'industry' terms - such as 'soft measures', 'mobility management', and more conventionally, the term 'demand management' itself. These are measures that encourage or assume a change in mindset and are therefore challenging to deliver. However, their importance lies in whether they have the potential to help lay the foundations for, and contribute to, long-term travel-blending solutions that do enable people to diversify their mobility options whilst contributing to responsible car use. If successful such measures help us to create cities or regions where mobility is not dependent on having a private car.

Smarter Choices:

Changing the Way We Travel

"In recent years, there has been growing interest in a range of initiatives, which are now widely described as 'soft' transport policy measures. These seek to give better information and opportunities, aimed at helping people to choose to reduce their car use while enhancing the attractiveness of alternatives. They are fairly new as part of mainstream transport policy, mostly relatively uncontroversial, and often popular. They include:

- workplace and school travel plans;
- personalised travel planning;
- travel awareness campaigns, and public transport information and marketing;
- car clubs and car sharing schemes; &
- Teleworking, teleconferencing and home shopping."

[q.v. '*Smarter Choices - Changing the Way We Travel*', Report by UCL, Transport for Quality of Life final report to the Department for Transport, The Robert Gordon University and Eco-Logica London, UK, 2004]

4.2 Integration of Car-sharing into Low-car Developments or Associated Regeneration Areas

4.2.1 Within this 'mobility management', demand management, or 'soft measures' context, the aims of the **MOSES Programme (2001-2004)** have been to:

- research and develop innovative mobility services based on existing car-sharing (city car club) experience;
- research and demonstrate ways of optimising car-sharing (city car club) schemes by integration into urban spatial planning and through city transport planning and urban management; and
- research and exploit the potential of car-sharing (city car clubs) to achieve a sizeable market breakthrough at a European scale.

- 4.1.2 If we accept that the highest growth rates for car-sharing have commonly been in cities or regions where it has been developed as a complementary service to public transport, the significance of this work-package lies in looking at an alternative growth model.
- 4.1.3 This report (WP5 part 2) provides several such 'alternative' examples that demonstrates ways in which city and regional authorities appear to have the potential, through their spatial and transport planning systems, to foster car-sharing by integration into urban spatial planning for low car development. This approach may be particularly helpful where support from PT is less forthcoming, where PT-linked car-sharing schemes are to be strengthened further, and in districts that are subject to major regeneration involving a more 'compact city' approach to urban planning and low-car development is being encouraged.
- 4.1.4 The conclusion of this report (work-package 5 -WP5- part 2) is that many novel ways can already be found by city authorities to bring about integration of car-sharing into individual low-car developments and/or in the wider 'low-car regeneration-area' at city neighbourhood level through the creation of on-street car-share parking networks. Ideally, whether car-sharing becomes integrated into low-car development at the individual building level, or district level, it should be linked into urban parking policy, travel awareness campaigns and travel plans, such that it forms a component part of mobility diversification and choice. Thus car-sharing could become integrated, not just with PT, but also with other modes (such as cycling, walking, powered two-wheelers, car-hire, taxi, minicabs, and community transport), with on- and off-street parking restraint policies, and with 'soft' demand management measures such as travel plans and travel awareness information and advice.
- 4.1.5 However, this holistic approach has yet to be fully optimised. Each MOSES city or region takes a different approach to car-sharing , low car development and parking restraint - often by finding ways around unhelpful regulations, and is sometimes thwarted by them.
- 4.1.6 There is as yet very little standardisation, definition, regulation or harmonisation in terms of a supportive legal framework in EU cities and regions for low car development, restraint-based or maximum parking standards, or car-sharing.

-
- 4.1.7 More fundamentally, there appears to be no legal duty in member states, regions or cities to consider car-sharing in the normal course of developing urban policy or associated expenditure plans, and there is therefore quite some way to go before car-sharing becomes 'mainstreamed' into low car development and associated restraint-based city and site specific parking plans.
 - 4.1.8 However, many of the basic tools available to city planners (including those of spatial, environmental, and transport planners) are quite adaptable, and the cities and regions in the MOSES project have each shown, in their own way, some movement towards the development and support of car-sharing as a mobility management, demand management or soft measure where low-car development is planned.

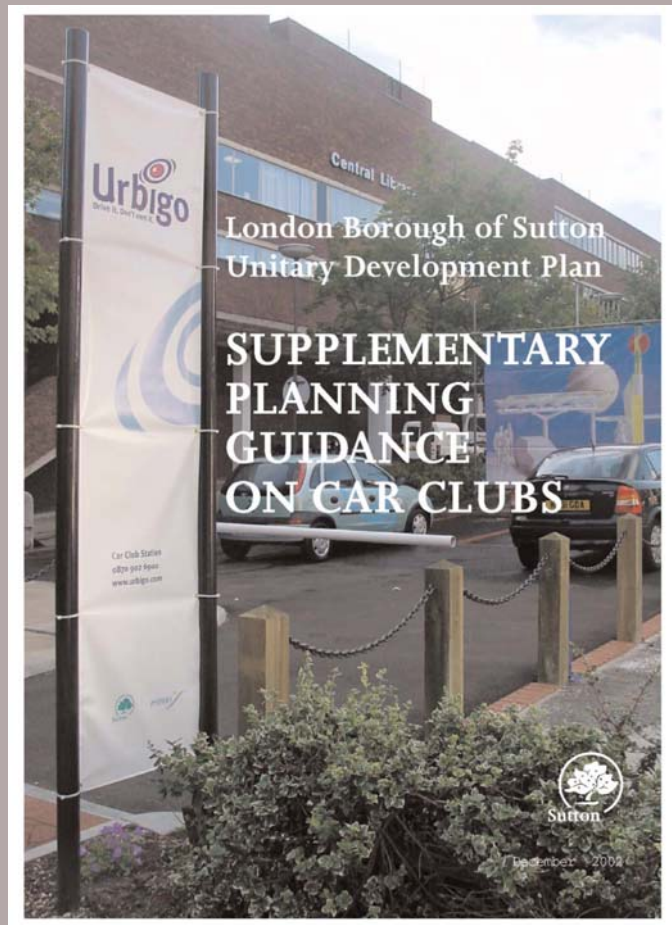
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Annex 1 – Example of Detailed Spatial Planning Guidance

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£10 from:

Environment & Leisure Group,
24 Denmark Road,
Carshalton,
SM5 2JG
0208-770-6112

Annex 2 – Draft of a Proposal for Primary Legislation, UK, Spring 04

The proposed new clause for the UK Traffic Management Bill was as follows:

Provision of Parking Spaces for Car Clubs

- (1) It is the duty of a local traffic authority to make such arrangements as they consider appropriate to facilitate the operation of car clubs in order to secure the reduction of road congestion.
- (2) A local traffic authority shall require every organisation seeking to operate as a car club to register their constitution, rules and membership numbers and may at their discretion approve such an organisation as a registered car club.
- (3) The arrangements in subsection (1) shall include the provision of parking spaces for which they do not make a charge for the sole use of registered car clubs.

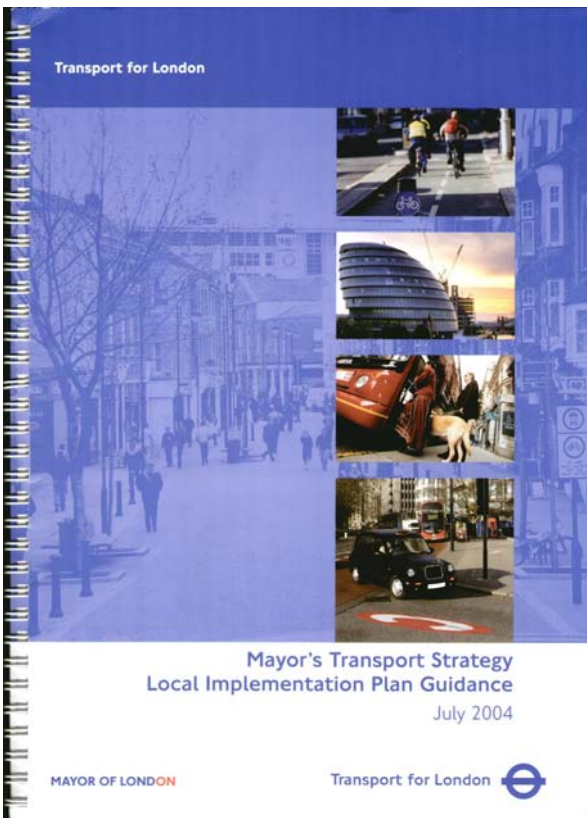
for interpretation, insert:

"car club" means an organisation whose aims include the reduction of traffic congestion, trading to provide vehicles to its members at an hourly rate for their occasional use.

Annex 3 – Example of a Policy Statement

In July 2004 The Mayor/Transport for London issued guidance to all London boroughs referring to moses, 'MOSES, an EU project, focused on car clubs in new developments, in Sutton and Southwark'. This has led to a draft SPG.

The Mayor/tfl advised 'Boroughs with such schemes and clubs must set out their program for the further establishment and development of car share and car club schemes, where justified by local conditions. Other boroughs are encouraged to set out their plans for such schemes and clubs'.



Mayor's Transport Strategy Local Implementation Plan Guidance 2004 P93 available from; <http://www.tfl.gov.uk/lips> City Hall, The Queen's Walk, London SE1 2AA

t 020 7983 4100

ISBN 1 85261 544 3

Annex 4 – Example Investment & Support Costs

Likely financial support costs needed by a supply company, derived from the MOSES London experience, are in the range of 5,000 euro –15,000 euro per car, per year during start-up. These are not dissimilar to typical support costs UK-wide which equate to about 5p per km saved. These figures represent the ‘sunk capital’ needed to establish a car-sharing business, followed by lower than economically viable market volumes sometimes associated with initial marketing drives that secure only the ‘early adopter’.

Costs elsewhere will vary significantly depending upon market income and indeed may change in the UK as new supply companies emerge or existing ones devise new marketing and financial models.

Annex 5: Examples of Low-car Developments approved during the MOSES project with provision for Car-sharing



There are a number of low-car developments being built or planned across London at the moment. Information about many of these is available at <http://www.carfreehousing.org> including projects that include car share provision.

[One SE8](#) in Deptford Lewisham is a development which features an element of car-free housing and an on-site car club provided by [Urbigo](#). The development is situated next to DLR in easy reach of Deptford Bridge Station and has a dedicated car club with reserved parking spaces on-site.



The BedZed development in Sutton is famous for its trend setting sustainability orientated design and ethos. [BioRegional Development Group](#) have used this Zero Energy and Car Free development at Beddington as a showcase for their forward looking approach, they have produced several guides and resources. Other interesting features of the BedZed site include on-site sewage treatment, charging points for electric vehicles and a car club run by [Smartmoves](#).



Other low car developments approved during the moses project with provision for car-sharing include;

- Residential development – Melbourne Road (Sutton Council)
- Castle House - Elephant and Castle (Southwark Council)
- Office development - Rennie Street (Southwark Council)
- Mixed development – Zoar Street (Southwark Council)
- Residential development – Long Lane (Southwark Council)
- Transport interchange – London Bridge Station (Southwark Council)

Annexe 6: General Policy encouragement for car-sharing in a city or regional spatial development plan.

The London Plan - Spatial Development Strategy for Greater London

Car Clubs (existing)

Car clubs provide access to private car usage, without the drawbacks of car ownership. People sign up to a club, receive an electronic key fob and can book up a car within 15 minutes of needing it. Cars are usually within a short walk. It has been estimated that a car in a car club replaces six private cars. Car clubs are particularly useful to help implement the Sustainable Residential Quality approach to housing density and parking. In more accessible locations, particularly town centres and public transport interchanges, car parking can be reduced, in some areas to nil parking. Car clubs ensure that low car parking provision can be made without denying people access to the benefits of a private car. This includes city car clubs and car pools which facilitate vehicle sharing. They assist the provision of housing development with low car parking provision.

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