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Good Practice in the Exploitation of Innovative Strategies in Sustainable Urban Transport: City Interview Synthesis

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City Interview Synthesis

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Executive Summary

The Volvo Foundation is concerned about the extent to which innovative sustainable transport policies are taken-up and spread amongst major cities in the world. It is suggested that serious gaps exist between the research and practitioner community and that barriers exist to city-to-city transfer of good practice. The Foundation is considering investing a significant proportion of its available funds on interventions which might most effectively meet the challenges to the wider exploitation of that best practice which arises from research and from innovative policies.

A literature review of policy transfer in transport and cognate fields was conducted. It shows that there is little evidence on how cities learn from each other and even less on how this process occurs in the transport sector. The review identified a series of key aspects of policy transfer which the literature suggests might be important in understanding the process of, advantages and barriers to transferring innovative transport policies. Interviews were then conducted in 11 cities to further investigate the process of policy transfer and the role of academics within this. Seven cities were studied in Northern Europe (Leeds, Edinburgh, Stockholm, Copenhagen, Bremen and Lyon, Nancy) and four in North America (Vancouver, Dallas, San Francisco and Seattle). This report presents the results of the synthesis of the city interviews. The key findings are:

1. Cities are actively looking to learn from another but this process is unsystematic and sometimes inefficient
2. The search for new policies is constrained by a lack of resources, particularly personnel
3. Informal networks and information sharing based on professional contacts is the predominant method of initial knowledge transfer
4. Local context is critical in determining whether policies will transfer well across cities and lack of fit is one reason for limited transfer
5. Institutional barriers also exist to policy transfer which seem most likely to influence what gets implemented rather than what gets considered
6. Key facilitators to overcome barriers to implementation are:
   a. A supportive political environment;
   b. Sufficient staff resources to commit to the projects;
   c. A culture of engaging with other cities and a structure that allows for staff at all levels to seek out information by contacting staff internally or at other organizations that are of a different staff/management level;
   d. An internal organisational culture to try new things; and
   e. co-funding of implementation from other government tiers or the private sector
7. Academic research is one potential source of information on innovation and implementation but one which is underutilised in many cities. This was particularly true of the European cities compared with those in North America
8. The academic and practitioner networks are not well connected and there are both practical and cultural barriers to better integration.

In the light of these findings and a more detailed consideration of the cultural and practical barriers to better integration between academics and practitioners nine

potential areas for future action are identified. Those which appear to be of highest merit are:

1. Improving cities' policy learning: The fairly unsystematic approach to policy learning suggests that there could be some benefit in training both local government staff and elected officials to undertake more effective lesson learning which will also help to reduce the staffing resource constraint.
2. Investing in policy networks: More needs to be done to integrate the 'parallel' practitioner and academic networks. Opportunities need to be created for new networks to develop, e.g. through conferences and one-day focused workshops.
3. Improved information searching: The strengths and weaknesses of existing search tools and knowledge centres should be identified to determine whether these tools can be modified, whether the tools are functional but are not being used effectively or whether new tools are required.
4. National funding for innovation: To overcome the financial and political risk of innovation at a city level, some form of external support at a national or international level is important.
5. Investment in joint research: Focused co-research between academics and practitioners should be encouraged. When funding is available to both parties this provides a stimulus but attention must be given to evaluating the true degree of interaction and knowledge transfer both promised and delivered.
6. Encouragement of joint posts: Academics and city officials both reported positive experiences of jointly funded posts. It might be beneficial to co-fund such a programme or to develop a network of placements.
7. Concise policy-focused literature: Research reports are often too technical and time consuming to read, attention should be given to how the research is presented and for whom. This can be required within existing research programmes, and possibly applied retrospectively to past research results.

The second category of medium merit includes:

8. Encouraging institutional innovation: Complex institutional structures can inhibit policy transfer. However, within different institutional settings there are cities which resolve particular constraints. Case studies that demonstrate how this has been achieved would be useful to cities in overcoming these hurdles.
9. Independent evaluation of innovations: There appears to be a strong case for some independent evaluation data of the impacts of major innovations. However, it is not clear that 'host' cities would necessarily welcome this.
10. Better dissemination: It is clear that communications strategies could be more effective for academics and cities. This may include identification of appropriate media outlets and formats, how to communicate messages, how to meta tag web resources etc.

The proposed solutions listed above could be undertaken individually or packaged together as part of an aggressive and holistic approach to improving policy transfer. With increasing public concerns about sustainability and mounting transportation issues in our cites, the opportunities are there to facilitate city innovation, strengthen the connections between research and practice, and inform broad policy debates at all levels.

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1 Introduction

The Volvo Foundation is now funding seven international centres of excellence in sustainable urban transport, covering the needs of cities in both the developed and developing world. Its interests are principally in conurbations with populations of 1m or more. While its centres' research, and the work of academics elsewhere, is identifying novel approaches to the design, implementation and management of sustainable urban transport strategies, the Foundation remains concerned that there is a serious gap between the presentation of such research findings and their wider implementation. In a similar vein it is concerned that innovative transport strategies developed by cities themselves are not being disseminated and applied more widely.

Against this background, the Foundation is considering investing a significant proportion of its available funds on interventions which might most effectively meet the challenges to the wider exploitation of that best practice which arises from research and from innovative policies. The Foundation is also concerned that issues raised by practitioners that might be resolved by academic research are for a variety of reasons not always addressed by the academic community. It has an open mind as to the types of intervention which might be appropriate, and is willing to consider a wide range of approaches, which might for example involve further research, education and training, case study development, partnerships between leader and follower cities, or partnerships between academics, consultants and cities.

In May 2008 a decision was taken to further support the investigation of these issues through a series of interviews with participants from 11 cities.[1] The set of interviews was informed by a literature review (Marsden, 2008). The findings from the interviews will then be used to inform either:

1. a further round of interviews with key actors in different cities
2. a workshop involving elected officials, practitioners and academics
3. a combination of these.

Section 2 of this report briefly introduces the cities that were interviewed and the methods. The findings in this report are a synthesis of the city interviews. A full report of the city interviews will be available shortly. Section 3 describes the policy context facing the cities. Section 4 examines why cities undertake policy transfer, the types of information cities seek and how they approach the learning task. Section 5 briefly describes how cities approach the dissemination of their own policies. Section 6 considers the limits to effective collaboration with academics. Section 7 summarises the findings on the constraints to effective policy learning. Section 8 identifies and assesses possible solutions and a offers a list of recommendations for the Foundation to consider.

[1] Note that this report is currently based on the findings from 10 cities as the interviews in Nancy are yet to be conducted.

2 Background and Methodology

2.1 Site Selection

This stage of the research allowed for interviews with 11 cities, as set out in Table 1. The research team were asked to study cities with a core population of over 250,000 and a wider metropolitan area of at least 1 Million. The focus was then on identifying cities meeting these criteria that have tried and succeeded with some leading edge transport policies. Through this, the project would be able to determine what motivated cities to look for new solutions and to study this process. The focus was not solely on success stories as these cities have also experienced some form of policy failures over time and these are equally valuable.The reasoning for the selection of these cities was two-fold. First, the literature suggests that policy innovations are most likely to be adjusted and tailored more specifically to local needs by early adopters or 'pioneer cities' (Kern et al., 2007) who take a more pro-active role in the policy learning process. By contrast, later adopters tend to adopt policies as a response to pressure to do so and are more likely to accept the most common practices (Westphall, Gulati and Shortell, 1997). It may be more productive to study early adopters to capture in-depth thinking about policy transfer. Secondly, the literature suggests that one enabler to adopting new policies may be greater personnel and resource capacity within an organisation (Berry, 1994). Whilst we cannot confirm this hypothesis, two of the three cities that were approached, but felt unable to participate, were small with a wider metropolitan area closer to half a million than one million.

In Europe the selection of city sites was based on a review of cities involved in innovative transport implementation projects funded by the European Commission, notably the CIVITAS cleaner and better cities network (http://www.civitas-initiative.eu/) , CURACAO road pricing (http://www.curacaoproject.eu/), Citymobil Advanced Transportation Systems (www.citymobil-project.eu/) and actively engaged in the ELTIS transport information portal (http://www.eltis.org/). This was supplemented by discussions with experts. In North America the selection of city sites was based on known innovations in aspects of sustainable transport policy.

2.2 Methodology

Data were collected for each city through interviews and document review. The interviews were conducted using a semi-structured approach which allowed issues not considered by the research team to be raised. The outline interview schedule is included as Appendix A. The research is qualitative in nature and the interview process allows for rich insights of the processes involved. There are however some important limitations which need to be acknowledged.

- The cities were purposively sampled. The cities are all large, from developed countries and those within Europe are all North European. These were deliberate choices to limit the sources of variation at this stage. However, this means that extrapolations to other regions would be risky.

- The cities determined who would be interviewed to a large degree, which in turn was conditioned by the types of innovations that were proposed. Different post-holders were therefore interviewed in different cities. The responses from each city only represent the views of these individuals. The key 'gatekeepers' were interviewed however and these individuals seem to exert strong influence over implementation processes.
- The interviewees determined the innovations which were discussed. It was not part of the study to assess whether these were the most appropriate innovations for the city to have pursued, or how effective they were. Since we were primarily concerned with the innovation process, it was sufficient that the interviewees considered them important. However, the fact remains that the findings might have been different had a different set of innovations been discussed.
- The interviews, with the exception of Nancy, were conducted in English. This had only a marginal impact on the pool of interviewees within the cities selected in Europe (two being UK based and two Scandinavian). However, it seems likely that policy learning across boundaries where there is less of a tradition of English as a second or third language will be more problematic.

These limitations raise question marks over the transferability of the results for example to small cities in a developed country context and to developing countries. The literature suggests that transfer is most likely to occur between close geographic neighbours and to some extent those sharing common outlooks (Heichal et al., 2005). The selection of North America and North Europe as the main areas of study provided sufficient breadth of experience and context to examine this whilst also providing an element of comparability which would have been more difficult with a more dispersed sample. We acknowledge these limitations but the sites still have substantial breadth and by analyzing the results on a themed basis interesting contrasts emerge. The consideration of transferability is one potential element of future work.

Table 1: Case Study Cities

Site	Population		Innovations known about at time of site selection
	City (000)	Met Area (M)	
Lyon France	415	1.78	Highly integrated public transport system with bus, trolley bus, Metro and rail. Advanced information systems and ticketing. Early adopter of driverless Metro system. Rent-a-bike system and school travel initiatives. Home of research institute CERTU
Nancy, France	260	0.5	Rubber tyred tram
Edinburgh Scotland	450	0.78	Held a referendum on congestion charging, early adopter of high priority bus corridors, planning a tram implementation project and UK's leading car club city.
Leeds England	443	1.5	Early adopter of HOV lane, home zones and safe routes to school. A major hub for commercial car share. Involved in several road pricing studies. Recent failed tram proposal with trolley bus system now under consideration.
Bremen Germany	546	2.37	Participant in CIVITAS Vivaldi project with car sharing, introduction of some CNG stations, environmentally friendly delivery vehicles, tram-bus integration and environmental residential zones.
Stockholm Sweden	744	1.95	Active adopted of sustainable travel measures such as cleaner bus fleet (Ethanol buses), smartcards, car sharing, safe routes to school. One of the few cities adopting congestion charging. Linked to sensitive urban area there are environmental restrictions and a freight consolidation centre.
Copenhagen Denmark	656	1.6	High levels of cycle use, public cycle rental and evidence of policy transfer to other cities (Copenhagenize). Urban rail, bus and Metro system. Famous 'finger plan' land use approach. Host of Walk 21 conference and major pedestrianisation. Adoption of high quality bus corridors.
Seattle USA	582	3.9	High quality transit service and transit information, early visioning process for multiple dense centers (1970's and 1980's), creative use of density bonuses for transit & highway shoulders for bus lanes
Dallas USA	1230	6.15	healthy core downtown with high rise buildings, free market transit-oriented development sites along light rail, also TOD-like sites along highway but without transit
San Francisco USA	765	7.3	Congestion pricing proposals, multimodal transit and pedestrian/bicycle planning and issues, parking management, carsharing. Complex institutional dynamics due to numerous cities and transportation agencies.
Vancouver Canada	600	2.5	Significant transit service, high quality design for buildings and overall sites, long term strategies for high density urban development/infill coordinated with transit and to build markets for transit, traffic calming, busways

3 Policy Context

3.1 Policy objectives, problems and strategies

Interviewees were asked what their principal policy objectives were and hence, implicitly, what the underlying problems were which they faced. Underlying all of the key challenges faced by the cities is strong projected growth in housing, population and employment over the next two to three decades. This growth agenda was shared although the impacts on policy objectives of accommodating this growth were expressed in different ways by the interviewees as shown in Table 2. It is important to note that this Table reflects the issues reflected in the interviews and therefore is only partial in its coverage of overall objectives as expressed in written plans. For example, Edinburgh has an air quality management area but this did not emerge as a motivation for the innovations studied. Efficient energy use was sometimes raised as a separate objective (Nancy) but more often as part of the climate change objective.

Table 2: Key Policy Objectives

	Lee	Bre	Cop	Sto	Edi	Lyo	Nan	SFra	Dal	Sea	Van
Growth/Economy	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓	✓
Congestion	✓✓		✓	✓	✓✓	✓	✓✓	✓✓	✓✓		✓✓
Air Quality	✓	✓✓		✓✓		✓	✓✓	✓✓	✓✓	✓✓	✓✓
Climate Change	✓	✓		✓		✓	✓✓	✓✓		✓✓	✓✓
Safety	✓		✓	✓	✓		✓	✓	✓	✓	✓
Accessibility	✓	✓	✓	✓	✓	✓	✓✓	✓	✓	✓	✓
Built Environment	✓	✓	✓✓	✓	✓✓		✓✓				✓✓
Bus/Tram Subsidy Reduction		✓	✓		✓	✓					

✓✓ A strong recurrent theme
✓ Discussed

The cities share a strong degree of commonality of overarching key strategy elements:

- Reducing the need to travel
- Reducing the growth in car use
- Improving public transport supply
- Improving public transport operations
- Reducing vehicle emissions
- Improving walking and cycling
- Improving freight travel
- Improving vehicle technology

Whilst the overarching strategy elements are generally present, the degree of emphasis varies from city to city. So, for example, those cities such as Stockholm and Bremen which face the most extreme air quality problems are leading in terms of clean vehicle procurement. Clean vehicle procurement is a part of strategies

elsewhere (e.g. Leeds) but not at the same rate. Similarly Bremen and Stockholm have important freight flows through their ports which, combined with air quality problems, make freight management strategies more important. Cities with historic cores are more focussed on minimising the impact of deliveries to the core area.

The current modal mix is also an important determinant of emphasis. So, for example, Copenhagen has a very high cycle and walk mode share (33% within the city) and is seeking to maintain this. Bremen, whilst not at the level of Copenhagen has a high cycle mode share (22%) and is strongly promoting policies in this area. Other cities have cycling strategies but the levels of investment and innovation are not as high.

Even where cities share a common 'strategy' this can manifest itself in quite different decisions about the preferred policy option to achieve a strategy. So, for example, Copenhagen and Stockholm have adopted radically different new public transport services to improve their supply.

3.2 Institutional Structure

Institutional structures have an influence over the types of policies that can be brought forward, the barriers faced when projects are brought forward and the ways in which they are implemented (e.g. Rietveld and Stough, 2005). The case study cities all exist within different institutional frameworks. Some key differences and similarities are highlighted in brief below as they provide an important context to interpret the findings in. However, it is important to note that the study was not designed to isolate the role of specific institutional factors in explaining the uptake of innovations or the interactions of cities with academia.

Within Europe, Copenhagen is the most 'independent' of the cities. The governance structure in Denmark is such that, with the exception of collaboration on the Metro project and mega projects such as the Oresund crossing, the city is responsible for developing and funding its own transport policies. Cities in France are also significantly devolved from national government, particularly with regards funding of their activities. However, unlike Copenhagen Lyon has access to a specific local tax on businesses (Versement Transport) which can be used to support public transport investments. The state is still involved in larger projects as a funder.

Bremen exists within the strong regional structures (Lander) present in Germany. Due to the dominance of the city of Bremen in the small Lander of Bremerhaven, it has a very strong connection to the regional government. Whilst Bremen has a strong degree of control over policy and spending locally, it still needs to work within legal and regulatory frameworks defined by the national government which, as with all cities, can act as a constraint.

Stockholm, Edinburgh and Leeds all have slightly different structures but are joined by a strong connection between the budget setting process at the national level and the actions of the city. In the case of Stockholm the process is for periodic

agreements for funding for new infrastructure. Whilst the city is clearly a powerful negotiator it is also the case that the state dictates to the city, for example mandating the trial of a congestion charge. In Edinburgh and Leeds, the cities are largely dependent on individual bids to the respective national governments for major new schemes. The national government then decides on whether the proposal is of sufficient priority to fund (although there is a move to increased regionalisation of infrastructure funding allocation in Leeds).

In the United States, cities work to varying degrees with their regional transportation planning agencies, called metropolitan planning organizations and their state departments of transportation. In most cases, the cities have local land use authority; whereas federal transportation funds fall under the purview of state departments of transportation and regional transportation planning agencies, called metropolitan planning organizations (MPOs). . Thus, in the Dallas, San Francisco and Seattle cases, the cities have control of their own local transportation funds and set their own policies; however, they also must coordinate with their respective MPOs and state departments of transportation for state and federal transportation funds. In the case of Vancouver, Canada, it is fairly independent in setting its own policies and uses of funds; however, it must defer to the Province of British Columbia for intercity projects in the province. The national government has been less involved in local transport policy setting and funding, but has recently increased funding to regions for transport and created new programs to coordinate urban redevelopment and infrastructure projects.

A major difference in formal institutional structures in the European case studies surrounds the ownership and planning of public transport. In the UK, outside of London, the bus services are provided in a deregulated environment whilst in all of the other cities there is a local and/or regional agency responsible for specifying and planning service delivery and setting fares. In all cities the provision is by the private sector. One example of the importance of this emerged where an interviewee in Leeds noted that some operational integration innovations in Europe were not possible or likely to emerge in a deregulated environment so the need to learn was diminished. By contrast, the similar institutional environment in other cities led to searches for similar solutions. For example, the pressures for subsidy reduction outside of the UK seemed to influence policy choices and innovations. Lyon opted for a driverless Metro system as did Copenhagen despite the very high capital costs and Bremen favours tram expansion over bus based options in general partly due to the lower operational costs. Vancouver's main public transit is provided by Translink, a separate public agency, that contracts out for bus, rail and ferry services and it is therefore similar to the non-UK European model of provision.

In contrast, US public transit agencies typically have full control over planning service and setting fares, similar to other non-UK cities in Europe. In some cases these agencies are part of city government and in others, they are independent public agencies. They also typically provide their primary services and do not contract them out as is the case in Dallas, San Francisco and Seattle.

One common institutional issue which was prevalent across all of the sites was that of limited resources. This was both in terms of the availability of funds to try new ideas and in terms of personnel. As noted above, cities differ considerably in the types of financial resource available to them, and the extent to which they are reliant on higher tiers of government for funding. The interviews did not attempt to explore the full implications of financial structures, but did discuss the sources used for financing innovations, which are summarised below in Table 3 (Section 4.1.5). It appears that staffing levels in local authorities have fallen in recent years relative to the range of tasks which the authorities are now responsible for.

The regulatory environment also is important, particularly in relation to what cities have control over doing and the extent to which approaches from other cities can be implemented. For example, congestion charging normally involves modifying national laws in the EU to allow a new charge or tax to be levied. In the San Francisco case, state legislation is needed to institute congestion pricing and thus no single agency in both the US and EU typically has the authority to institute this innovation without a higher level of government's approval.

4 Policy Transfer

4.1 Why Undertake Policy Transfer?

This section summarises the main motivations for looking outside of an organisation's own experience for new policy ideas. Six main classes of motivation were identified which are broadly consistent with the literature review (Marsden, 2008). The findings here relate to the motivations reported by interviewees for the particular innovations discussed.

4.1.1 Strategic Need

The literature (e.g. Rose, 2003) identifies 'policy failure' as a key motivator for looking for new policies. Policy failure occurs where it is apparent that continuing with current policies will not lead to the achievement of the organisation's objectives. The term should not be seen as implying a failure on the part of the city concerned, but more positively a demonstration that there is a strategic need for new policies. In transport planning, there is a tradition of forecasting ahead and considering different policy futures, and this practice offers a means of testing new ideas. Projections in the absence of new policies can highlight the problems to be faced, and these in turn can be used to initiate a search for new policy options. From this process comes the identification of "strategic need", that is, an acknowledgment that a particular course of action is needed to achieve desired goals.

This notion of "need" for a new intervention was a common theme across all of the case study cities and is the primary driver for looking at solutions (both internally and externally). The futures posited were based in part on legal mandates (e.g., attain air quality standards) and in part on political mandates (offer transit service to low income households, cut congestion, improve the built environment). Within this process there is still a requirement for options to be included in the future scenario planning to be developed and it is here where the influence of staff members, politicians and other agents can influence what innovations are looked at (Section 4.2).

4.1.2 Project or Policy Collapse

Section 4.1.1 highlights the periodic planning cycle approach to considering which policies and projects should be pursued. There were examples however of more pressing cases where a search for new projects or policies was instigated due to the failure of a planned project. In these cases it appears that the search for alternative ideas can be more urgent, due to the political difficulty generated by the failure of a previous plan (where the politicians have ownership of the idea). Examples of this were seen in Leeds (where funding for a tram scheme was withdrawn), Bremen (where clean vehicle technologies for vans were not delivered) and Edinburgh (when a planned Metro scheme failed to get backing and where a congestion charge proposal was rejected in a referendum). In the case of both Leeds and Bremen money was committed to the project (in principle in Leeds and in practice in

Bremen) so alternatives were quickly sought. In Edinburgh no funding had been committed to the Metro project so this fed back into a more strategic review of options and the congestion charge rejection led to a recasting of ambitions (Section 4.1.1).

4.1.3 Curiosity

Whilst the interviewees reported only considering the implementation of ideas which fitted the strategic needs of the city, a process of curiosity about the policies put in place elsewhere or seen on a visit (work or holiday!) often led organisations to consider new policies which might not currently be in their plans. The ideas could be identified by officials, elected officials or other agents such as suppliers and non-governmental organisations. This was seen to be part of a natural cycle of continuous self-improvement. For example, Vancouver and Copenhagen are continuously trying to improve their cycle and walk networks even though they would already be the envy of many cities. The staff still actively look elsewhere for lessons and this seems to be an important source of personal motivation.

Some of the policies were identified and tested as 'experiments' with the potential for much broader city-wide adoption. Examples include guided busways and high occupancy vehicle lanes in Leeds, cleaner vehicle fleets in Bremen and Stockholm, city car clubs in Edinburgh, and transit-oriented development projects in Seattle. Each of these interventions had already been implemented successfully in other cities, sometimes in many instances. The 'experiment', then, was to test local feasibility and acceptance.

The ability of authorities to take on these kinds of initiatives seems to be conditioned by:

- A supportive political environment (for example, a mayor or council member or faction that publicly endorsed trials of the initiative, providing both leadership and direction and political cover for staff action)
- Sufficient staff resources to commit to the projects
- A culture of engaging with other cities and a structure that allows for staff at all levels to seek out information by contacting staff internally or at other organizations that are of a different staff/management level
- An internal organisational culture to try new things

It is interesting to note that this varied quite substantially across the cities studied. For example, Copenhagen was, for example, much less likely to be involved in broad (outside of its closest geographical neighbours) searches of what is happening elsewhere than was Stockholm.

It is also interesting to observe that these factors vary over time within a city. Both Leeds and Edinburgh, for example, brought forward a series of policy innovations in the late 1990s but have done less of this over recent years. The interviewees in Edinburgh felt that this was largely a result of more conservative attitudes amongst senior managers and a slightly less bold political lead (the former being more important than the latter). In Leeds the tightening of personnel resources, relative to

the tasks to be achieved, meant that looking for and taking on new ideas was that much more difficult. This was also reflected on to some degree by interviewees in other cities such as Stockholm, Edinburgh, Dallas and a city in the San Francisco Bay Area. These observations are important because an environment in which a search for new ideas is seen positively will influence the extent to which ideas are brought forward. Support from senior management or political leaders can accelerate the introduction of new ideas; if such support is lacking, change most likely will be slowed or not even considered.

4.1.4 Political intervention

Local agency officials determine the majority of proposals for new policies but ideas are also brought to the table by directly elected officials. The mandate which elected officials has provides these ideas with an initial momentum which official-led suggestions sometimes lack. The highest profile example is the Stockholm Congestion Charge where the six month trial was decided as part of negotiations to form a national coalition government and the solution essentially imposed on the city. Elsewhere, in Edinburgh, a local elected official had tried the 'VéloV' bike rental scheme whilst visiting in Lyon and, through the Council's transport committee instigated a feasibility study. In San Francisco, the chair to the county board of supervisors was a key supporter of congestion pricing and council representatives in Dallas were influential in steering the planning process to successful adoption of its new transportation/land use plan. We note that elected officials, although engaged with the local electorate, do not necessarily have the same perception of problems and solutions as the local population (Bonsall et al., 2005).

4.1.5 Enhanced support

Undoubtedly, the availability of funding for at least part of any new innovation, has acted as a catalyst for policy transfer. In the European cities for example, the availability of EU project funds has supported policy transfer in all of the sites. Whilst for some initiatives this has accelerated developments which were already planned and added greater potential to learn from partner sites, for others it has provided the spark for investments which might not otherwise have been made. Similar findings were also seen in Leeds and Edinburgh where national government funding is more important (relative to other sources) and where national initiatives brought forward schemes which may not have otherwise happened. Interestingly the US state level appears less important than EU member state level. Although the levels of funding are not sufficient to pay for complete implementation, they were seen by interviewees as being a significant bargaining tool to then confirm local matching (or better) funding commitments with. In San Francisco, federal funding for congestion pricing was successfully won through competitive processes, and provided the incentive to pursue pricing. Table 3 provides a qualitative assessment of how important the interviewees in the cities viewed the different funding sources in facilitating the innovations discussed.

Working with other cities through co-funded projects has other benefits. In particular, in the field of clean technologies and procurement of new vehicle fleets, collaboration with other cities was seen as important in terms of reducing the risk and the unit purchase costs but also as valuable in generating a larger data set of comparative performance than would be possible within any one city site. This was particularly true of Stockholm and Bremen where both national and pan-European procurement had been undertaken. Nancy also identified the risks of acting as a lead innovator in the absence of central government support both in terms of financial and political risks.

Table 3: Funding Streams Accessed

	Lee	Bre	Cop	Sto	Edi	Lyon	Nan	SFra	Dal	Sea	Van
EU or National US/Canada level	✓	✓✓		✓✓	✓			✓✓			
EU Member State, US State, Canadian Province	✓✓✓	✓	✓	✓✓✓	✓✓✓						
Regional		✓✓✓	✓	✓			✓				
Local	✓	✓	✓✓✓	✓✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
Fares and User charges				✓✓		✓	✓✓			✓✓	
Charges on third parties (e.g., employers, developers)	✓		✓			✓✓✓	✓✓✓				✓✓

4.1.6 Legitimization & Influence

Whilst none of the cities looked at implementing policies which did not fit their strategic need, some of the motivations for engaging in policy transfer (both in seeking and providing information) were to build support and recognition for ideas and to influence future funding and policy decisions to further support developments in these areas.

Whilst for interviewees in some cities (Bremen, San Francisco and Dallas) drawing on policy experiences from elsewhere helped to demonstrate that ideas were rational and could work, in other cities (Copenhagen and Edinburgh) the fact that a policy worked elsewhere was sometimes seen as antagonism to elected officials rather than proof that it would work in their own city.

Bremen and Stockholm were both actively engaged in trying to influence EU policies on policies and funding programmes in areas of interest to them. They both felt that

concerted action by several cities was key to breaking through the reluctance of vehicle manufacturers to push innovation at the rate they required. The interviewees in other cities in the EU and North America were not motivated in this way.

4.1.7 Summary

It is clear that many motivations to undertake policy transfer exist (see Table 4 for the summary of the innovations studied in our cities). Most commonly, this is an identified strategic need and part of a natural cycle of cities looking for new ideas to meet new challenges or ways to do things they already do better. Cities vary as to the extent to which they look outside for lessons and this also varies over time within a city. The organisational culture and resourcing appears to be particularly important in determining how pro-active a city is at any given time.

Table 4: Why Undertake Policy Transfer

	Lee	Bre	Cop	Sto	Edi	Lyo	Nan	SFra	Dal	Sea	Van
Strategic Need	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Project or policy failure	✓	✓			✓		✓				
Curiosity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Political Intervention		✓	✓	✓	✓	✓	✓	✓			
Enhanced Support	✓	✓		✓	✓			✓	✓		
Legitimization & Influence		✓		✓		✓		✓	✓		

As resources, both personnel and financial, are limited it appears that the presence of special funding streams for new activities are a major facilitator in converting potential interest in new policies into action and the funds can help to overcome organisational inertia.

Whilst these findings hold for most of our cities the final motivation was specific to a sub-set of cities. Legitimization of proposed activities through comparison with important peer cities and through influencing top level policy making was an important part of the rationale for participating in policy learning activities for some cities. We return to this issue later.

4.2 Who is involved in policy transfer?

As described in Section 4.1.3, local officials and elected officials are the main determinants of what policies are looked at in more detail. However, there was evidence of a number of other players feeding into the determination of which ideas to consider and, where the city was minded to pursue a new idea, how knowledge about other applications was obtained.

4.2.1 Other agents in raising awareness

Residents, lobby or advocacy groups, system suppliers, non-profit organizations and academics were all identified as having influenced the consideration of different innovations. In Leeds, for example, a resident's group campaigned for the city to implement a Home Zone scheme. In Edinburgh, Copenhagen and Bremen, the very active local cycle groups were all identified as contributing suggestions for improvement and ideas from other places which their members had visited. System suppliers were very aware of which cities were potentially considering new public transport systems and were noted as bringing forward new innovations to the cities which they had not been aware of (e.g. Leeds and Copenhagen). Academics were identified as agents in raising awareness in 6 cities:

- Edinburgh – through a joint post with a member of staff at Napier University
- Leeds – through the presence of academic staff on a steering group
- Stockholm – where an academic led the evaluation work for the Stockholm Congestion Charge and where lessons were taken from the London scheme
- Dallas—studies on transit-oriented development
- Vancouver—assistance with major street design plan
- San Francisco—informal consultation

Not all cities reported that they engaged with academics and the level of engagement tended to vary over time. The role of academics in the case study cities, when used was generally acting as a sounding board, pointing people to available evidence. (Interactions between academics and practitioners are discussed further in section 6).

Table 5 summarises the role played by different groups in initiating policy transfer in the innovations we discussed.

Table 5: Who was involved in initiating policy transfer

	Lee	Brem	Cop	Stoc	Edi	Lyon	Nan	SFra	Dal	Sea	Van
Elected officials	✓	✓✓	✓	✓✓	✓	✓✓	✓✓	✓	✓		✓
Local Officials	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
Private Suppliers	✓					✓	✓			✓✓	
Consultant firms							✓				
Residents	✓										
Interest Groups		✓		✓	✓						✓
Academics					✓			✓			

The Table shows a dominance of local agency officials. Whilst many people have a role in discussing policy transfer it is rare for agents other than politicians to initiate policy transfer. Aside from politicians, the impact of proposals for new policies or

projects will be dependent on the receptiveness of the local officials to the idea as these are the gatekeepers of implementation for most types of actions.[2]

4.2.2 Other agents in transferring experiences

Interviewees generally highlighted the benefits of going to see potential new policies and systems for themselves. This was because:

- It is difficult to know what questions need to be asked in advance
- Issues can emerge during trips (including other innovations being seen) which were not initially part of the visit
- Officials and elected officials understand their own delivery environment better than a third party and can relate better to other officials/elected officials in asking about this.

Nonetheless, there were examples provided where consultants and suppliers had been involved in facilitating the transfer of experiences. Consultants had been used to prepare benchmarking reports, system descriptions but also, in the case of the Edinburgh Greenways bus routes, to prepare a training programme for staff on how to implement the new scheme. System manufacturers often provided tours as part of visits to see public transport systems and this was also true of the London and Stockholm Congestion Charging schemes. Officials were interested in seeing both of these parties to fully understand the implementation, operation and procurement processes.

Table 6 summarises the role of different actors in transferring experience.

Table 6: Who was involved in transferring experience

	Lee	Brem	Cop	Stoc	Edi	Lyon	Nan	SFra	Dal	Sea	Van
Elected officials						✓					
Local Officials	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
Private Suppliers	✓✓	✓✓	✓	✓✓	✓✓	✓✓	✓✓			✓	
Consultant firms	✓✓		✓		✓✓	✓	✓✓		✓	✓	
Residents											
Interest Groups		✓	✓								
Academics	✓			✓	✓			✓	✓		

In nearly all cases, local officials played the largest role in transferring information. This was suggested by interviewees to be crucial as their role encompasses the political and institutional setting, the policy or project goals and implementation process. Some of this task could not be effectively outsourced. Private suppliers are more important in transferring experience as they have system implementation and

[2] The private sector can and does innovate in public transport supply provision but this will vary with institutional context.

operational knowledge from elsewhere which the city will be dependent on. In a similar manner, consultants are important agents in this process as they may have been involved in similar implementations in other cities. It was acknowledged in two cities where this topic was explored that this was one of the reasons for an increasing reliance on consultants, allied to cutbacks in staff in the public sector. Other agents appear less important in the transfer of implementation detail although academic researchers have played a role, particularly in advising staff and elected officials on project details and key contacts.

4.3 What was learnt?

The scale of information that is sought and learning which results is highly context specific. This can range from very specific issues (such as how to implement secure cycle parking around a rail station) to more general (such as how do different mass transit systems perform and how are they designed). The post-hoc reflections of the interviewees about learning from other cities and sources suggest that there are two main types of lessons that cities are looking to learn.

4.3.1 Concepts

There appears to be a high degree of interest in new policies both within a country and in other countries. The extent to the search is discussed further in Section 4.4. Many more visits are received by cities that can demonstrate new concepts than are evidenced by subsequent implementations. This suggests that many people are coming to visit to look at the concept and consider whether it can work for them. Some examples from the case study cities include:

- Edinburgh was studying the potential to develop a 'Vélib' type bike hire scheme such as those implemented in Paris, Lyon and Barcelona.
- In the 1990s Bremen had introduced ride sharing as part of business travel plans on the basis of experience in the US.
- San Francisco officials and senior managers have visited London to examine the congestion pricing scheme and are interested in the Stockholm implementation.
- Dallas hired a consultant based in Portland, Oregon and experienced with the Denver plan to draw on knowledge with land use and transportation planning in these cities.
- The Home Zones project in Leeds was directly motivated by the Dutch 'Woonerf' developments.
- Leeds has looked to various European cities (Strasbourg, Lyon, Gothenburg) and taken elected officials there to consider which public transport concepts might work for Leeds instead of a tram.
- Copenhagen can receive as many as 100 visitor requests per month to look at its cycling infrastructure

4.3.2 Design and Operation

A decision to proceed with a policy might be based on in-depth learning about a concept from another city or a more general awareness of the potential of a policy and its strategic fit with the cities' transport strategy. In both cases however, there are opportunities for policy lessons to be learnt on the detailed design and operation of the policies in other places. It was stressed by participants that it is seldom possible to transfer these lessons directly as the institutional and operational environments are quite different. Nonetheless, many examples of elements of system design and operation were highlighted as having been adopted from elsewhere including:

- Approaches to enforcement (Leeds looked to Madrid for its experience with HOV lanes but not the US and Edinburgh looked to London's experience with Red Routes when adopting its Greenways bus priority)
- Back office operations and supplier relationships (Copenhagen is looking to learn from Stockholm if they introduce a charge and Edinburgh is looking to learn from Paris regarding a Vélib type scheme).
- Infrastructure and vehicle design (In Seattle the transit agencies work with the bus suppliers to identify and adopt innovative bus designs. Copenhagen and Bremen have both copied cycle storage approaches from Amsterdam. Leeds looked to the Essen guided busway scheme although ultimately developed its own standards which are now adopted across the UK).
- Operational design (Bremen adopted the notion of a guaranteed lift home for its ride share scheme on the basis of US scheme experience, Copenhagen is likely to adopt the Hamburg 'big bang' approach to bus network changes and Stockholm adopted a similar approach to clean vehicle exemptions as London in its congestion charge scheme)
- Demand forecasts (Leeds has accessed patronage data from various system operators in Europe in developing the business case for a new high quality mass rapid transit system).
- Evaluation lessons and analysis techniques (Stockholm adopted the business impacts assessment evaluation lessons from the London congestion charging scheme)

It is difficult to generalise on what cities learn as every policy has its own special set of issues and contextual transfer constraints which impact on exactly what is transferred. It is however worth noting that both in North America and Europe it was often a case of several different aspects of different systems being brought together to achieve something "new" for the city which may not in its totality be new either for the city or for others. Interviewees noted that cities were not necessarily pushing to be the first to have a particular system or policy. In fact, implemented innovations in other cities provides a comforting sense of familiarity with the concept at both the staff and elected official level in that if the innovation can be accomplished in another city, it might also be tailored to fit local conditions.

It does not appear that institutional barriers constrain the search for lessons although it is clear that they do constrain the extent to which different aspects of policies from elsewhere might be implemented in a different local context. Examples

included the inability of Leeds to develop the same degree of public transport integration as Lyon due to different regulation of operations and the inability of Bremen to use automatic number plate recognition to enforce its environmental zone (as in London) due to data protection laws in Germany.

4.4 How did they approach learning

City officials and staff learn about policy innovations in several different ways, such as through: 1) informal information gathering, 2) initial scoping activities, and 3) formal scoping efforts. These approaches may be done sequentially, but also may done in an iterative process and cities may not necessarily pursue through all three methods, as discussed below.

4.4.1 Informal Information Gathering

The interviews revealed that staff gather information about innovations informally and sometimes quite by happenstance. For example, they may read about an innovation when perusing an item "in print" (such as newspaper, newspaper, professional journal, technical press) or learn about it through interactions with others through conference attendance, word of mouth, formal strategy groups, and external contacts. E-newsletters and mailings are also growing in use although it was suggested however in one city that such sources are not locally relevant enough and that the sheer volume of information can render these sources difficult to read. Sometimes members of the public bring innovations from other cities to the attention of city officials. In other cases, these requests are from senior management to staff to look for information on the internet or in the literature.

The interviewees often look to contacts or acquaintances in their professional networks for advice. Since they are part of loose networks with overlapping interests, they then may be referred to contacts in other fields with related knowledge or expertise. These overlapping interests are called "boundary objects" (Star and Greisemer, 1989).[3]

Concepts such as congestion pricing, bus rapid transit, compact development, pedestrian and bicycle safety, context-sensitive design, and more broadly "sustainability" are examples of boundary objects that can lead into knowledge networks of a variety of disciplines and thus quickly spread knowledge across the disciplines. Interested in a particular boundary object, participants contact others in their loose networks in search of information and additional contacts who have substantive knowledge of the boundary object. A "snowball effect" then occurs in which an initial inquiry generates substantially more information across a variety of fields For example, a city staff person contacts an acquaintance or colleague in an

[3] "abstract or concrete. They have common meanings in different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation. The creation and management of boundary objects is a key process in developing and maintaining coherence across intersecting social worlds." (Star and Greisemer, 1989, p. 393)

innovative city who then recommends one or more of the following: a couple of contacts in other cities, a well-respected researcher, online sources or publications.

In addition to informal networks, formal networks[4] also provide an opportunity for learning. Although many cities are part of more formal networks (e.g in Europe EUROCITIES, C40, POLIS, CIVITAS[5], UITP) these networks often perform more of a status boosting and lobbying role than being the route through which practitioners seek information (as the informal networks which underpin them are easier to use). The UITP database was mentioned as one tool which was used by public transport operators in cities for the purposes of benchmarking. In the US and Vancouver cases, many interviewees participated in committees or reviewed publications associated with established organizations such as the Transportation Research Board (TRB), Institute of Transportation Engineers (ITE), American Public Transit Association and Women's Transportation Seminar. These associations provide opportunities for information sharing, networking (meeting), and in some cases developing research programs, and platforms for advocacy to influence policy at the national level.

4.4.2 Initial Scoping

As a result of the initial informal information gathering or because of the motivations described in Section 4.1, city officials and/or staff then may begin an initial scoping effort to gather more specific information about an innovation. Some scoping may be through requests from senior management to staff to look for information on the internet or in the literature. The internet (particularly Google) was often quoted as a resource which is used but there was a general feeling that there is so much information that it can be like looking for a needle in a haystack. In Europe no-one had accessed academic databases for information whilst in the US articles from the Transit Cooperative Research Board and conference papers published by Transportation Research Board were mentioned.

Other staff may rely on contacts they have in their professional networks as described in Section 4.4.1 but this is in the context of a search for specific information (such as ridership estimates, contractors, costs).

Practitioner conferences on themes of interest and good practice guides were also mentioned as a means of finding out more about policies but some interviewees were sceptical about what was heard. Indeed, one participant pointed out the different spin on findings that they would give in a formal conference presentation versus an informal workshop. However, conferences do provide a route in to speaking with the individuals involved in implementation.

[4] A formal network we define as typically operating with a board or steering group and will be a subscription based organisations or subsidised by central government

[5] CIVITAS in particular has made extensive efforts to act as an outreach project to other cities and has even funded a city learning project (CIVITAS-CATALIST). Awareness of this initiative amongst cities not involved in running the project was very low however.

4.4.3 Formal scoping

After some level of information gathering, a city may delve more deeply into learning about an innovation. In particular, a city may commission a consultant or researcher for assistance, devote substantial staff time to oversee development of a planning process for developing the innovation, and/or to arrange for site visits, which may include foreign travel and coordination.

Here, the learning styles of the organizations and the culture of interaction between practitioners, consultants and academics strongly determines the approach taken. Some key differences identified through the research are:

1. *Where organizations look for lessons*
   Commonality of policy context has some influence on where staff and others are prepared to look for lessons and new ideas. So, for example, Bremen saw other harbour cities with similar size populations in northern Europe as good comparators. Copenhagen saw other Nordic cities which have similar populations, similar political conditions and similar problems as key comparators. There is some support for the notion of looking to local neighbours and cities which are close 'philosophically' most strongly. Dallas was interested in learning from Denver, also a growing city looking to transit-oriented development. The experiences of the interviewees suggested that cities were prepared to and had engaged in a search for new ideas which stretched beyond their most obvious comparators, but there is a difference in the extent to which they are open to this broad search. It seems that the European Union research programme has been an important facilitator of contacts amongst cities which perhaps otherwise would have not seen themselves as obvious partners. Strong on-going working relationships at many levels through various rounds of funding has developed often thick layers of now informal policy networks to which individuals look for new ideas. This was also true in the North American case studies. Trust in the findings of other cities is critical and this helps to explain why personal networks are so important.

2. *Who is sent to look*
   In some cities, the organizational culture is such that foreign travel is seen to be a 'perk' rather than part of a necessary search for information (and this is also reflected in the extent to which foreign experiences are seen as relevant in decision-making). Other cities see the search for lessons from elsewhere as a more serious endeavour and one which is important to the development of staff within the organization (e.g Bremen, Stockholm, Dallas, San Francisco, Vancouver). It is important to note that it is generally more difficult to justify a trip outside of a country than within due to local government rules.

3. *The extent to which academics are involved*
   The EU experience suggests generally low levels of academic involvement in the more formal learning processes with inputs largely being kept to strategic level discussions, evaluation and expert workshops on specific issues. Whilst

consultants are more likely to tap into academic literature than local government officials, this is still very limited in nature. By contrast, in North America it was often the case that senior management might come across reference to an article and funnel it to their staff to review. Alternatively, a junior staff person would compile more academically focussed research-based information and summarize it for management.

4.4.4 Learning Summary

Table 7 summarises the relative importance of the various information sources across the different case study cities in the innovations studied. As discussed throughout Section 4.4, peer to peer contacts are crucial sources of information and they appear to be trusted and knowledgeable. This is true across all of the case study cities, the principal difference being the reach of the these networks which itself is a function of where cities are looking for lessons (Section 4.1.3).

Table 7: Relative importance of information sources used in policy transfer

	Lee	Bre	Cop	Sto	Edi	Lyo	Nan	SFra	Dal	Sea	Van
Peer to peer contacts	✓✓	✓✓✓	✓✓	✓✓✓	✓✓	✓✓	✓	✓✓	✓✓	✓✓	✓✓
Policy networks	✓	✓✓	✓	✓	✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓
Private Suppliers	✓	✓	✓	✓	✓	✓✓	✓✓			✓✓	
Consultants	✓		✓		✓✓		✓✓		✓✓	✓	
General Literature	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Academic literature				✓				✓	✓	✓	✓
Academics	✓			✓	✓			✓	✓	✓	✓

Policy networks are used in all cities although this appears to be slightly stronger route in North America than Europe. Private sector system suppliers are acknowledged to be important as would be expected although experiences about interacting with different suppliers and the effectiveness of systems are exchanged amongst peers alongside supplier engagement. Consultants can play an important role when they are engaged in policy transfer. They appear particularly important in overcoming personnel constraints and skills gaps. Even where they are used the interviewees saw limits to the role consultants should have (e.g. Leeds and Copenhagen suggest that implementation learning is for the cities whilst design might be for the consultants). It is interesting to observe that general literature such as government guidance or resources found on Google are more likely to be accessed than academic literature (reasons for this are discussed in Section 6) although there is more of a tradition of using academic sources in North America than Europe. There is also some further support given in France with the national government funding dissemination of research programmes through CERTU. The

reasons for this and the impact that greater access to academic resources has could usefully be explored further as it is not immediately obvious that this leads to more or more effective policy transfer in North America.

The interviewees were generally able to find out the information they needed and were more positive about their peer to peer networks and informal search processes than other routes they could have used. When asked to reflect on the effectiveness of their search process however the interviewees generally described the approach as:

- Unsystematic and ad hoc;
- Constrained (particularly by time but also by budgets); and
- Capable of improvement

The unsystematic nature of their current search processes might lead cities to come across practices which they otherwise might not seek out and may not be problematic. However, the heavy reliance on the peer to peer network suggests that the potential for policy transfer will be heavily conditioned by how engaged and networked a city is.

Even the most networked individuals in cities noted that it could take a lot of time to find the right people to talk to, that knowledge gets lost in the system when people move on and that finding the right written resources is difficult. It is also worth noting that some of the cities found managing the volume of visitors to see their policies as time and resource consuming and that there were limits to the degree of reciprocity which was possible and useful.

The issues described are problematic in that they imply a time intensive search process. Time is a commodity which all staff reported being short of and most interviewees suggested ways in which their search process could be improved (discussed further in Section 7).

4.5 Formal institutional impacts on policy transfer & implementation

As noted in Section 3.2, the institutional structures within which the cities operate vary considerably, and earlier research had suggested that institutional structure can have a significant impact on policy making (Peter et al., 2005). It is useful to distinguish here between institutional barriers to policy learning, and institutional barriers to implementation.

In the case of our interview cities, formal institutional barriers seem to have fairly limited influence on the search for policy ideas. One exception was Leeds where there are two organisations that do not always agree on the preferred solution for high quality public transport corridors. Leeds also indicated that the split between public and private sector discouraged them from studying some integration innovations in Europe, since they would not be able to be implemented. The Lyon interviewees suggested that the six year franchise contracts discouraged innovation,

since operators would not want to take the risk of introducing an innovation whose benefits would not arise during the franchise period. They noted that the next franchise round was being designed to provide greater stimulus and protection for innovations.

While Leeds, and to some extent Lyon, have found that institutional arrangements constrained policy learning, there are counter examples. In particular, both Copenhagen and San Francisco are actively promoting congestion pricing projects despite not having the formal powers to implement them. The ability to overcome institutional barriers is a part of the policy learning process.

Formal institutional relationships will principally act as barriers once policy or project ideas are brought forward beyond the informal scoping stage. Here we have examples including:

- Lack of funding from upper governmental tier (Edinburgh Metro and Leeds tram)
- Split responsibilities at a local level (Lyon's REAL project can only develop at the rate at which the many partners are able to agree; Vancouver can set its land use policies within the city but the neighbouring jurisdictions have separate land use responsibilities and can limit the policy's effectiveness)
- Regulatory barriers (Bremen environmental zones enforcement, Stockholm ethanol storage)
- Relationship with private sector (franchise-led public transport cities in EU were innovating to a much greater degree with service provision and the cleanness of their urban fleets than UK deregulated operators; in Vancouver and Dallas, innovative plans were developed but relied on the transit agencies supporting and being willing to implement the transit components).

However, all of the cities studied had implemented innovative policies. Within any given institutional setting there are cities which seem to innovate more than others and bring forward more progressive and successful transport policies. This suggests that institutional issues can be overcome, though doing so may prove difficult and time consuming. Institutional constraints may help explain why policies do not transfer as fast as would perhaps be desirable. The production of information about how to overcome these barriers could be an important part of the policy learning process.

It is also interesting and important to observe that even within a city it is not always possible to achieve broader implementation of a project or policy innovation. For example a new public transport priority approach was implemented on two corridors in Leeds but it has taken nine years for the second HOV lane to be opened. In Edinburgh it was suggested that were 'Greenways' public transport priority schemes to be proposed now that they would not be accepted. Conversely, North American interviewees commented that a key policy window has opened with the heightened public interest and awareness in climate change and sustainability. Many innovations are being positioned as a means to address these major issues. In Dallas and Vancouver, reference to sustainability and climate change were made

throughout the interviews and can be seen in the plans. Interviewees in Seattle and San Francisco also stated their policies are also being considered in part because of greater public and elected official concerns. This appears to fit with the notion of "policy windows of opportunity" (where political will, funding and scheme fit to objectives all align) being crucial to the filter of what actually gets implemented (Kingdon, 2003).

5 Dissemination of City Experiences

During the interviews, city staff mentioned the difficulty of finding detailed information on good practice from other cities in their informal search processes. Such information will only become available if cities record and disseminate their own experience. Interviewees were asked to reflect on the extent to which they reported systematically on their policy implementations. Interviewees noted that the starting point was to evaluate the performance of innovatory policies. The main focus of such evaluation work is on internal learning for future project roll out. A few interviewees noted that improvements are needed to provide in-depth evaluations to demonstrate the long-term value and outcomes of projects and policies. Time constraints limited the likelihood of this occurring for several cities. Also, local authorities rarely have the resources to conduct such evaluations. Interestingly, an interviewee in one city suggested that where projects were implemented successfully it was sometimes not in the interest of officials to spend too long raking over the detail of the outcomes as this could lead to pressures to withdraw schemes if performance was not maintained.

Several interviewees appreciated the value to other cities of disseminating the results of such evaluations, but relatively few cities did so consistently. Of note however, Vancouver widely publicizes its successful planning policies through easy-to-read documents and evaluation reports made available on the city website. In addition, in the EU cities where policies were partially funded by European or National funds, there is typically a reporting requirement which ensured that an evaluation report was produced, although these were not necessarily stored systematically. Information on the effectiveness of other policy innovations is not always recorded and the availability was at best piecemeal. In many cases, although descriptions of the innovations were available on-line, the research team experienced difficulty in accessing good information on effectiveness from the Internet in advance of visits. This may, in part be due to the evaluations being published in the native language rather than English for some of the EU case studies.

In addition to published materials, cities disseminate information through a range of channels. First, officials present findings at conferences or sometimes organize conferences in their city to promote innovations. This was seen as part of awareness raising of activities and promotion of the city. Stockholm suggested that this was essentially part of the “marketing budget” for the city of Stockholm. Bremen was also particularly active in this regard. Staff in the North American cases also saw this kind of dissemination as an excellent opportunity for two-way learning as both conference attendees and speakers both learn from each other.

Second, staff in all cases committed time to hosting site visits from other cities to see and discuss their innovations. However, interviewees in the EU also noted that there was a limit to the volume of visitors that could be accommodated and there were varying opinions on the value of the exchanges. Stockholm summarised their need to

focus on exchanges where there were mutual learning benefits. There appears to be scope for more effective exchanges and visits as part of city-city learning.

Third, several interviewees interpreted the concept of dissemination to include use of the media as an important way of "getting the word out." Press releases often are used to get information into the public domain, particularly to the local citizenry and key stakeholders. As a co-benefit, other cities and regions may read about the city's innovations, particularly if the articles are in major newspapers. In Edinburgh, it was suggested that the main transport practitioner news magazine picked up on these key messages in this way. In a US case, an interviewee noted that a media communications strategy and "messenger" are needed; however, planners and engineers are not typically trained in working with the media. A strategic communications consultant was hired to assist staff with the media through role playing, development of talking points and mock debates.

A fourth avenue for disseminating information is through participating in city award programmes that recognise best practices and innovation. Interviewees had a mixed attitude to such awards. Some cities are proactive and see the value in raising the profile of the city nationally and abroad as well as assisting locally in the continuation of innovative policies. For example, Vancouver has won many Canadian awards and Bremen has been selected as a showcase city for the Shanghai 2010 World Expo. Lyon noted its status as "beyond the best" in the awards announced by a leading professional journal. In contrast, several North American interviewees were less than impressed by awards, noting that award applications are time consuming to complete and that the acknowledgment does not meaningfully alter resources or competitiveness. To reduce costs of award competitions, once an application is developed, it may be recycled and reshaped for future submittals, thereby reducing some staff time and effort. Other cities in the sample were pleased to be acknowledged but did not actively seek recognition.

It is clear that a range of reasons exists for dissemination. It is particularly important to acknowledge the potential influence of 'place marketing' on the extent to which new policies are disseminated and on the manner in which this is done (Agnew, 2000). There is a danger that cities wishing to promote their successes may present information in a less than objective fashion. Whilst the potential thus exists for conflict between dissemination for learning and dissemination for self-promotion there is little evidence that this significantly reduces the benefits of dissemination. Cities receiving such information employ methods for policy learning, as outlined in Section 4.4, which protect them to some extent against misinformation.

Overall, the key issues surrounding city dissemination therefore appear to be:

- Commitment to detailed policy evaluation is uneven
- Only some of these policy innovation results are reported
- The results are not necessarily publicly available and/or easy to locate
- Some cities and individuals are more pro-active in actively disseminating information through conference participation and hosting site visits from other cities

- Cities are happy to share information and see a benefit to two-way learning, but limited resources constrain these activities
- The media is used in several cities to facilitate information sharing at the local and national levels.

The interviews point to the lack of a thorough project and policy evaluation evidence base. Academics could provide an important source of independent evaluation. Indeed, academics played a leading part in the evaluation of the Stockholm Congestion Charge and continue to monitor and evaluate it. The independence of the evaluation was seen to be important to public trust in the results. It is not clear however that cities will, in all cases, be motivated to conduct and publish, or even cooperate in, long-term independent evaluations if they challenge preferred policies and apparently successful implementations. Cities often do not currently see enough value in such longer-term evaluations to invest in them. The transferability of evaluation results from one context to another will still be an issue. Here, the informal networks act as important and trusted information sources which can also communicate the unwritten lessons which cities might not wish to publish (such as mistakes). Independent evaluations may therefore play a supporting role but it is not clear to what extent they would be welcome or used and this requires further consideration.

6 The Academic-Practitioner Nexus

One recurring finding, particularly in the European cities, was the limited role of academics in the innovation process. This is evident in Table 5, where only two cities report that academics contribute to initiating policy transfer, Table 6 where four occurrences were identified of academics being engaged in transfer of knowledge during the process and Table 7, where six cities learn to some extent from academics, but only four make some use of academic literature. Since the Foundation has a particular interest in enhancing the contribution of academic research to policy making, we review this evidence in more detail in this Section. We also draw on our own experience of the barriers to academic contributions and of some examples of good practice.

In understanding the academic-practitioner nexus, Boyer's (1990) work on 'scholarship reconsidered' offers a conceptual framework through which the tensions and opportunities can be considered. Boyer suggests that academic pursuit might involve four separate elements although these inevitably overlap (drawing on Hambleton, 2007):

- *The scholarship of discovery* – which is largely pure or 'blue skies' research which generates intellectual knowledge, and around which much of university culture has been built.
- *The scholarship of integration* – which brings together facts from across disciplines and generates new insights but which is largely an intellectual activity.
- *The scholarship of application* – which deals with the cross-over between research and policy in terms both of defining research problems and of conducting research in and with practice.
- *The scholarship of teaching* – both in the time at an institution and also in stimulating a longer-term culture of learning amongst practitioners throughout their careers.

6.1 Interview findings

In all of the cities it was found that decision-makers valued staff that had academic training and most interviewees had academic background in planning, engineering or public policy. Many interviewees noted that they still had ties to their former university, through their cohorts of peers or through academics still in post. This suggests an important role for the scholarship of teaching.

There was little evidence, however, of academics being involved in stimulating policy transfer. The most productive relationships that were described included joint staff placements, joint research and membership of broader steering groups.

In Europe, there was little culture of looking to academic literature. The North American case studies suggested a greater level of access to academic papers, at least amongst junior staff, than was the case in Europe. In both areas there is a

general pressure of too much information and not enough time. Even academics interviewed suggested that they do not have time to read the journal articles that they would like to.

In the light of the time pressures staff are operating under and a preference for accessing information via newspaper style summaries there was a strong feeling that the way in which academics present their information is often too far removed from the direct policy question to be of value. Even in the North American studies academic research was criticised for being overcomplicated in its presentation and for making the policy relevance difficult to extract. This was acknowledged in part by academics. Both the EU and North American case studies suggest that simply expecting the scholarship of discovery and integration to filter into practice is not an effective model.

The approach to engagement was, in general, unstructured and ad hoc which led to both sides observing inefficiencies in some of the exchanges which did happen. The following section examines the issues raised above in more detail drawing on the literature review and experience of the report authors.

6.2 Constraints on academic involvement

6.2.1 Culture

Much traditional academic research identifies research problems from unanswered questions or contested results arising from earlier research projects. This traditional approach sits within a spectrum of research motivations, with "blue skies" research (the scholarship of discovery), which may well have no immediate application, at one end, and applied research (the scholarship of application) at the other. Collaborative research with local government is likely to be applied research, and sits at the latter end of the spectrum. Not all researchers are motivated to conduct this sort of research or see it as their role to be too closely associated with implementation.

There is a longstanding tradition of applied research being conducted jointly with commerce and industry, in situations in which firms identify research needs and seek solutions from academia. Applied research for local government could potentially follow a similar model. As discussed in Section 6.3, there have been some successful examples of collaboration between academia and practice to identify relevant research issues. However, they rely critically on the continued commitment of participants from both sides, and the availability of practitioners who are able to identify their research needs.

Academics and practitioners also work under different incentive systems. Rewards in academia tend to focus on those issues most closely associated with the strong academic traditions based around the scholarship of discovery, such as research grant income, quality of publications and professional esteem. Local officials are seeking recognition for themselves and their authorities, which generally requires a

focus on more immediate delivery and achievements. Whilst this is not a mutually exclusive set of incentives there is only limited overlap. It is not certain for example, that cities would ask questions which are deemed of sufficient research value to attract research funding.

US universities differ from their European counterparts in having an additional mission to support their local community and institutions. This may help explain why the contribution of academic advice appears stronger in the North American case study cities.

6.2.2 Support for research

Unlike the private sector, local government is unlikely to have significant funds to support research in its own right, and typically it does not receive government support or encouragement for such activities. In some countries, and notably in France, local government research units conduct research on behalf of local government, but these may well operate in competition with the academic sector and hence not stimulate wide collaboration between the sectors.

As noted in Section 6.3, there are some successful examples of collaboration in obtaining research funding. The main pitfall has been the process of approving research funding. It is uncertain (success rates of around 25% on average in the UK), can often be protracted and appear to outsiders unnecessarily critical. In some cases local authority partners have lost interest in obtaining funding when the process has appeared to take too long, or when assessors have questioned the need for the research which they have identified. Given the constraints on time which local officials are operating under, this reduces the impetus for investing significant amounts of time in developing research specifications.

6.2.3 Conducting joint research

While local government may well be ready to offer practical support, and contributions in kind, to facilitate research to meet its own research needs, it can prove more difficult to sustain that support over the duration of the project.

One frequent problem with empirical research into the effectiveness of a particular policy is the failure of local government to implement the policy on time, or at all. Where policies are implemented, but found to be less effective than expected, local authority officers and elected officials may well lose interest in the research itself. For example, one recent project designed to study the synergies between awareness campaigns and physical improvements in bus services was rendered far less effective by the failure of one local authority to implement the promised schemes.

A second common problem is the lack of time among local authority staff to participate in, and comment on the outcome of, research projects. While in most examples of collaborative research projects, local authorities have committed to such input, the more immediate pressures of policy implementation often make this difficult. This problem is made worse by the rapid turnover in staff which many

authorities experience. In one recent UK project, which involved 16 local authorities over a five year period, hardly any of the staff who had been in post at the outset were still involved when the final results were discussed. In two cases, changes in senior staff had led to the virtual withdrawal of the authorities concerned. Most of the research case studies within the project faced substantial challenges in achieving what the academics considered to be a desired level of interaction, thus indicating the several constraints under which the scholarship of application can operate in the public sector.

6.2.4 Dissemination

It is clear that there is an almost complete divergence between the format and style in which academics write and that which practitioners will look to access, certainly at the informal scanning stage and, in many cases, beyond that. Academics in general place a low priority on disseminating research outcomes through popular practitioner routes. Their preferred dissemination routes are through journals and academic conferences, reflecting the reward structures under which they operate. A notable exception to this is the US Transportation Research Board Annual Conference which has a greater mix of academics and practitioners than is found in Europe. The conference also leads into a series of technical journal reports.

As noted in Section 6.3, greater attention is now being given to the encouragement of more targeted dissemination strategies in the assessment of research proposals, and some examples exist of effective alternative dissemination routes. However, the interviews suggest that awareness of these resources is low. Instead, Google is widely used to seek information, leaving academics reliant on ensuring that their material is accessed by Google. Moreover, some interviewees expressed concerns over the large amounts of semi-relevant and potentially unreliable data which their Google searches generate.

The strong preference shown by practitioners for finding out about new policies through trusted personal networks raises a clear challenge to a number of traditional or assumed best routes to dissemination. The findings from the interviewees concur with the literature where a systematic review found that “one of the most important facilitators of moving research into policy is personal contact between researchers and policy makers” (Brownson et al., 2006, p 166).

6.2.5 Implementation

While policy-focused research may well lead to, or be based on, the implementation of an innovative policy, the wide application of its results will typically be dependent on the production of a product which practitioners can use. This may be in the form of guidance, or a software package. As noted in Section 6.3, there are some excellent examples of such outputs continuing to be used by cities over a period of decades. However, academics’ role in providing such outputs conflicts to some extent with the traditional role of consultants in providing context-specific advice to cities. In practice some academics bridge this gap by working in and with

consultancies, but the growing emphasis in Europe on academic excellence is to some extent discouraging such involvement. Without such links, consultants may well wish to promote the software and other products which they have developed, rather than supporting the outputs of academic endeavour. Experience suggests that ensuring take-up of new software can be difficult, unless a commercialisation route is established at an early stage.

6.3 Ways of enhancing collaboration

In this section we review, under the same headings, our own experience of ways of stimulating the scholarship of application through enhanced collaboration between academics and practitioners. This section is designed to complement the interview results, which generated few examples of such collaboration.

6.3.1 Culture

As noted in Section 6.2.1, an underlying challenge is for academics and practitioners to reach a common understanding of research needs and researchable problems.

For some time the UK Universities Transport Study Group had a joint working group with local government, which met twice a year to discuss particular subject areas, identify areas in which research might be needed, and discuss the results of research which had recently been completed. This approach worked well, and led to a number of jointly conducted research projects. However, it relied critically on the continued commitment of participants from both sides, and the availability of local government staff who were able to identify their research needs. The increasing pressures of day to day workloads made it harder to sustain this input, and the working group folded during the 1980s.

More recently, the UK Research Councils have established the Local Authorities and Research Councils Initiative, LARCI, whose aim has been to identify research needs which the Councils could support. In one programme which was monitored by LARCI, an international review of barriers to sustainable urban transport was used to seed a discussion with a group of local authorities who were interested in participating in a collaborative research programme. The local authorities identified some 40 problems with the policy formulation process. These were assessed in terms of the importance of resolving them and the ability to address them through research; this in turn led to a priority list of nine researchable problems which were submitted for funding.

In the US, the National Cooperative Highway Research Program is established within the NAS TRB offices with funding taken "off the top" from state planning and research funds in the highway portion of federal surface transport legislation. The Transit Cooperative Research Program similarly receives a portion of transit funding. The programs are administered by TRB but their content is determined largely by the agencies who are the primary beneficiaries, i.e., state DOTs and transit operators. The NCHRP only considers proposals that have a state sponsor. Both programs establish panels of stakeholders, often with one or two academic members, to

oversee the drafting of the project statement, to evaluate the proposals from bidders, and to review the work products of the successful contractor.

In a less formal way, several research groups have established jointly funded lectureships with their local transport authorities. Arrangements differ, but in one in which we were involved, the appointee spent two days a week with the local authority, participating in policy discussions and identifying areas where further information and understanding was needed. These topics were then converted into a list of research needs which, depending on their scale, were addressed through student projects or bids for external research funding. It is much more common place for academics to move in and out of the policy arena in the US although the literature also notes that this can come at a cost to the academic outputs of the individuals concerned (Eriksson and Sundelius, 2005).

In a similar vein, research needs have been identified through collaboration, and in some cases joint posts, with consultancy firms and professional institutions who advise local government. Research needs are identified by observing the consultancy process and the gaps in knowledge which are limiting the advice given. However, the contact with local government in such cases is mediated through consultancy.

6.3.2 Support for Research

The government-sponsored initiatives in the UK and the US outlined above have typically led to funding for the most successful proposals developed in response to the identified research needs. The UK Research Councils in particular have been supportive of an approach in which academics bring to them research proposals which meet practical needs and which can be conducted with practical support from local government or consultancy. However, as the interviews quite clearly demonstrate, the availability of funding *to* local authorities is a significant motivator for the uptake of innovations so this model clearly has some limitations. There are some initiatives (such as CIVITAS and US State research initiatives) where cities and academic institutions can both receive funding.

In addition, the University Research program of the USDOT in the 1970s and 80s funded a number of projects that had local impact. But during the Reagan administration the program shrank in funding and retracted from its original broad mixed portfolio of projects to a highly applied set of tasks that had little new research content. The program finally ended and the University Transportation Centers program took its place. This program, which funds centers selected in periodic competitions as well as a larger number of centers designated by legislators, requires a 50% non-federal match and a number of centers receive this match from state and local partners.

In the US, large cities such as San Francisco, New York, and San Diego sometimes sponsor research in transport with universities as part of the research team. In San Francisco, university researchers helped develop the first urban design plans for the city and more recently helped design an express bus plan for entire region. They also

have helped evaluate rail extensions and have designed transit-oriented developments, new boulevards and terminals (sometimes as consultants, sometimes as university studio practice.) In New York, university researchers helped develop the recent congestion pricing proposals and in San Diego they have helped to evaluate HOT lane projects. As these examples indicate, the work that cities sponsor is, however, very applied.

In our experience, funding opportunities where both cities and academics can receive funds will be most likely to motivate both parties to pursue new projects. The nature of the research programme will however, be critical to the degree to which it balances the need for implementation lessons for cities and intellectual value for academics. For example, one city funded under such a model in several European projects still reported a large disconnect between the city and its academic partners.

Underneath this, research programmes which support academic-practitioner links but which only fund academic activities will also stimulate partnerships, although given the time and resource constraints on cities this may see greater success in places where there are already strong interactions between the two communities.

6.3.3 Conducting the research

Joint research with local government needs to be based on a common understanding of the problem to be researched, which itself can often be illustrated by case studies. Such case studies are also helpful as a foundation for developing research-led solutions and for testing their applicability. In one recent example of a research programme designed to develop decision-support tools, some 35 case studies were made available by local authorities. The research team selected those which were likely to be of most benefit in the three stages of problem identification, solution development and solution testing. This approach enables practitioners to be directly involved in the formulation of solutions, and to appreciate at first hand their applicability. The case study focus subsequently facilitates dissemination in ways which will more directly appeal to practitioners elsewhere.

6.3.4 Dissemination

As noted in Section 6.2.4, the mismatch between journals in which academics are expected to publish and the media used by practitioners severely restricts dissemination. In the US this problem has been successfully handled by the USDOT Research Innovation and Technology Administration (RITA), whose website includes all DOT funded projects including cosponsored projects at University Research Centers. Keeping the website updated is a requirement of the federal contractors. Many states have similar reporting requirements for state-funded research. The TRIS library system in the US also provides ready access to both the literature (including research reports) and progress reports for work in progress. One issue with both the RITA and the TRIS efforts is whether practitioners actually make use of them. We were unable to locate analyses of this on either RITA or TRB websites. While European research programmes also require contractors to complete final

reports, there is little attempt to ensure that they are easy to access or readily assimilated by practitioners.

US university transportation centers are required as a condition of funding to produce at least two newsletters per year providing information on their work. These newsletters vary widely, from two to four page promotional pieces to Access magazine, produced by the UC Transportation Center, which provides summaries of research written in a style intended to be accessible to a non-specialist, and has over 40,000 readers, the majority of whom are practitioners.

More recently there has been a growing emphasis on other forms of dissemination, including good practice guides and web-based dissemination sites. For example, in the EU the ELTIS[6] (European Local Transport Information Service) web site offers a series of case study reports on transport innovations and the KonSULT[7] knowledgebase offers a synthesis of the effectiveness of different policy instruments. Other web-based communities of practice, such as the UK Local Transport Planning Network, also exist for practitioners.

Although discussion of the role of consultants was relatively limited in the interviews, they, together with think tanks and advocacy groups were all identified as ways of disseminating research findings to practitioners. This suggests that dissemination to, and involvement of, such intermediaries can be helpful.

Eriksson and Sundelius (2005) suggest that the longer term impact of academic research on teaching and therefore the 'worldview' of graduates is often neglected as a route for knowledge transmission. The city case studies here identified examples of where awareness of ideas from graduate or post-graduate studies had filtered into practice. In Leeds, for example, the awareness of one officer about the potential of Home Zones was suggested as important in making him more open to the development of a pilot for the city. In other cities, such as San Francisco, ongoing links between practitioners and faculty staff remain strong. In our observations, new ideas also enter into practice through new employees who were recently university graduate students. As students, they are exposed to the academic literature and learn cutting edge methods and engage in debates over alternative policy directions. They bring this new knowledge to the workplace and introduce it into the dialogue implicitly (by challenging convention) as well as explicitly (by citing sources etc.). This can contribute to organizational change.

6.3.5 Implementation

While effective dissemination should make local government aware of relevant research results, local authority staff may still need help in applying those results to their particular situation. This, traditionally, is the role of consultants, which suggests that academics in turn need to ensure that consultants understand and appreciate what their research has shown. In some cases this can be done by developing a method, or piece of software, which consultants then use.

[6] www.eltis.org
[7] www.konsult.leeds.ac.uk

In the UK for example, the SATURN program for traffic management design developed in the 1980s is now in use in 20 or more countries across the world. It is marketed by one firm of consultants, but used by most of the other UK consultancies, and the licence revenues are used in part to finance further developments.

In the US for example, the NSF-funded Travel Demand Forecasting Project carried out by Daniel McFadden and his team at UC Berkeley in the 1970s led to the widespread use of disaggregate behavioural travel demand models both in the US and elsewhere. Part of the effort of the TDFP was to work with the Metropolitan Transportation Commission to implement some of the models and this was done in part by Berkeley graduate students. In a similar vein the advanced model design and implementation in the Sacramento region was initially funded by UCTC and later carried out as a partnership between the Sacramento Area Council of Governments (SACOG), UC researchers, and consultants. It now is the basis for much of California's work on greenhouse gas reduction.

A characteristic of these experiences is that university research programmes carried out the first (risky) phases of the research but did so in partnership with local authorities or consultants, who provided both data and case examples of problems in need of research. Then as the products developed, the local agencies or consultants took on a larger role in testing and implementing the research results.

Transit oriented development offers a different model. University work on this topic in the US started with architects and planners who were academic-practitioners – individuals who often had a foot in practice and a foot in the university, as is common in the design fields in the US. These academic-practitioners variously conducted scans of best practices in the US and abroad, critiqued the problems of low density suburban sprawl and single use development patterns, and developed new urban designs and policy proposals for less car dependent cities and towns. In parallel, academics and practitioners worked with developers and with cities to design new developments that would be transit and pedestrian oriented. In this model, individuals who span the worlds of practice and research introduce new ideas into both realms and serve as conduits for new ideas and information flows in both directions.

More generally, the presence of effective agents who operate at the boundaries between disciplines is critical to the communication of findings across these boundaries. These can be academics, local government officials or intermediaries from consultancy and elsewhere. It seems from our case studies that these intermediaries are not always present. The bridge between the development and presentation of findings in an academic context and their application in practice also appears too wide to cross easily in some organisations at the moment.

7 Barriers to Innovation

This project was commissioned because the Volvo Foundation is concerned about the extent to which innovative sustainable transport policies are taken-up and spread amongst major cities in the world. Two key aspects were identified for investigation:

- that barriers exist to city-to-city transfer of good practice; and
- that serious gaps exist between the research and practitioner community.

7.1 Introduction

Through their descriptions of the processes adopted for the development and subsequent implementation and failure of policies and projects, the interviewees provided a list of different types of barriers which they face. For many innovations the barriers were expressed through the description of mechanisms which overcame them; these are considered in Section 8. These barriers can arise either in the process of learning policy lessons or in the implementation of selected innovative policies. The barriers have been described throughout the report. In this section we summarise them below and indicate our sources of evidence. We also attempt a rating of the severity of these barriers based on this evidence.

7.2 Barriers to learning policy lessons

The research reported here suggests that there is a significant amount of informal scanning for new ideas and good practice conducted by cities. The interviews also confirmed that there is a substantial amount of city to city visiting to study new ideas. The extent to which this occurs varies between cities and over time within a city and is dependent partly on the organizational learning culture which is strongly shaped by the attitude of key individuals in senior management who encourage new ideas and active staff learning and engagement (Section 4.4). Cities can be classified as operating on a scale of pro-active to passive information seekers. The degree of connectedness of a city with other cities appears to be another potential indicator of the extent to which innovations will be considered from elsewhere (Sections 4.1.3, 4.4.3).

Individuals from even the most pro-active cities describe the search for information as unsystematic or ad-hoc. Cities often do not consistently analyse and document their successes and it appears that staff rely quite heavily on informal networks and word of mouth (Section 4.4.4).

The search for new ideas is constrained by staff time and resources, (Sections 4.1.3, 4.1.7). This is in terms of finding the time both to scan effectively for new ideas (informal information gathering) and to investigate ideas which seem interesting (initial scoping). This confirms the notion from the literature that the degree of

'slackness' of institutional resources is important (Berry, 1997). This is potentially important when considering the implication of these findings for smaller cities where resources will be even tighter. Indeed, two smaller city sites were unable to participate in this project due to resource implications, despite the visits taking a total of one to two days of staff time.

The search for new ideas is subsequently constrained by the lack of available and accessible information on innovations elsewhere (Section 4.4.4 and Section 5). This relates in turn to the willingness of cities to evaluate and disseminate their own innovations (Section 5). An underlying lack of information is sometimes the principal barrier under this heading. But if cities do not know of the existence of available information, or cannot readily access it, then this will also impede policy learning.

Some interviewees also raised concerns over the reliability or objectivity of the information available (Section 4.4.3 and Section 5). Conclusions which cast a particular innovation in an unduly favourable light, or fail to highlight limitations to its wider application, will serve to undermine the credibility of those who use it, as well as those who conducted the study in the first place.

7.3 Barriers to implementation

There is a substantial on-going search for better policies although this is variable and could, according to the cities, be done more effectively. The European case studies in particular suggest that the number of new policies which get implemented is small relative to the numbers considered. Policy learning can and should lead to policies being rejected as unsuitable. However, it is clear that there are also substantial implementation barriers which mean that suitable policies either never make it to the drawing board or are rejected.

Where there are several organisations involved in developing and approving new investments, conflicts of objectives and preferred solutions can occur. This has been the case for example historically with the Leeds 'Supertram' scheme. These governance structure barriers are likely to be more serious in cities where transport responsibilities are spread across tiers of government (Section 4.5).

The presence of funding streams which are specific to innovations, even if they only cover a part of the innovation played a very strong role in their uptake, suggesting that funding requirements are a potential barrier where such funding streams do not exist. This appears particularly strong when the cities depend on national governments for funding settlements (Section 4.1.5).

Copenhagen has developed a congestion charging proposal but does not have the powers to introduce a new tax and will therefore require a national legislative change. This is also the case in San Francisco where state legislative authorisation is needed to implement congestion pricing. The investment in policy learning is uncertain therefore at this stage. Equally, there were examples where policies had to be amended to take account of local legal differences (enforcement of a low emissions zone in Bremen) which underlines the potentially important role of

legislation and regulations. These constraints of legislation and regulations can discourage policy learning and make any investment in such learning worthless (Section 4.1.6).

While the private sector is often a significant source of innovation, private sector involvement can in some situations limit the implementation of new policies. In particular it can influence the ease with which new systems are developed, responsibilities for funding them and the attribution of risks between different parties. In general, the de-regulated case study sites in the UK have greater implementation barriers as some co-ordination initiatives are seen as potentially anti-competitive. Where franchise systems exist, short-term franchises were seen to limit innovation as the ability to achieve a return on investment over the franchise period was constrained. By contrast, public sector owned public transport organisations are facing much greater pressures for subsidy reduction and operational efficiency gains (Section 3 and Section 4.2).

The risks associated with the introduction of innovations can be quite substantial, both financially and politically. The difficulty with the introduction of the rubber tyred tram in Nancy is a good example as was the failure to introduce cleaner delivery fleets in Bremen.

It was suggested that it has become more difficult to introduce innovations over time due to the tightening of staff resources within local government. Staff time must be focused on basic programmes and services. Some cities focused on a single innovation at a time as a result (Sections 4.1.3 and 4.1.7).

Public acceptability of certain types of innovation, or more often fear that an innovation will not be acceptable, often arises in the literature as a barrier to implementation. Perhaps surprisingly, it was seldom mentioned in our interviews. The Lyon respondents felt that the private sector was unduly wary of public reaction. In Bremen, a tram scheme had not been supported by areas that would be affected and in Edinburgh, the congestion charge proposal was rejected in a public referendum (in contrast to Stockholm) as discussed in Section 4.1.2.

The implementation process adopted can also act as a barrier to implementation itself (Section 4.5). The approach to implementing congestion charging in Stockholm and Edinburgh provide an interesting contrast on the role of implementation in facilitating innovation. In the Stockholm case a referendum occurred only after the system had operated for a trial period and was accepted, whilst for Edinburgh a referendum in advance of a proposed scheme led to its rejection.

7.4 The severity of the barriers

It is possible to assess the severity of these barriers both in terms of the frequency with which they were raised and their likely implications.

The barriers to policy learning were raised most widely, and appeared to have the most serious adverse impacts on innovation and innovation transfer. Among these, the following seem to us to be the most serious barriers:

- the lack of an institutional learning culture
- the adoption of an unsystematic search for information
- the time and resources available for such searches.

These are, of course, closely related. Those cities that we observed with stronger learning cultures appeared to make more resources available for looking elsewhere and learning. Unsystematic search processes were a feature in all cities and as these are potentially time intensive and therefore exacerbate the resource barrier this may be problematic. Those cities that had better networks of contacts appeared better equipped to find the information they needed and to exchange it with other cities.

Lack of available information appears to be a second level barrier. It will need to be addressed, but its benefits will only be fully realised if the three most serious barriers are addressed. Reliability of information is, on similar grounds, a third level barrier. It should be addressed when ensuring that information is made available and can equally be addressed through direct contact with the providers of the information as by more rigorous evaluation.

Barriers to implementation of innovations only come into play, by definition, once policy learning has occurred. Among them, time and resources once again emerges as a serious barrier. Other second level barriers, which largely depend on the city context, are:

- funding for implementation
- the institutional structure
- the implementation process adopted (or imposed).

Barriers relating to legislation, private sector involvement and acceptability arise with certain types of policy innovation, but are less widespread in their impacts.

7.2 Feedback from FUT Conference

The existing VREF Centres of Excellence were asked to reflect on the findings of the research. The discussion generally supported our findings. Of particular importance were:

1. Organisational culture – including a lack of trust in the findings of academics, an aversion to risk which, combined with a blame culture makes innovation unattractive. This was reflected in a culture of comfort with current convention.
2. Resources – the human capital costs of training were seen to be high and it was difficult for cities to act alone.
3. Many decisions are highly political and the adoption of good policies is not a rational process but one which is strongly influenced by these external factors.

The Centres suggested that the findings cannot necessarily be generalised beyond the 11 case study cities, which we also acknowledge. They further pointed to examples where academics did have further involvement in policy making, as we too have observed in Chapter 6.

8 Potential Solutions

Interviewees were invited to suggest solutions to the barriers which were identified during their interviews. Some of these arose during the course of the interview; others were highlighted in the final part of the interview. We have summarised these here and also drawn on our literature review to identify others. We have grouped them into twelve categories, and assessed the ability of each to contribute to overcoming the barriers identified in Section 7. On this basis we have produced an initial priority list of recommended actions.

8.1 The solutions suggested

We have grouped the solutions identified by the respondents into 11 clusters. We also identify some further categories which may yet be important but which were not explored fully through the research process.

8.1.1 Improve city policy learning

Interviewees in five cities suggested that learning environments should be cultivated (San Francisco, Seattle, Bremen, Edinburgh and Vancouver). They commented that it was really important for management to encourage staff to look for innovations, and then circulate & discuss information on new ideas. A further interviewee mentioned developing people with the skills to think freely.

One interviewee suggested a programme to inform the leaders of local authorities of the transport policies implemented in comparator cities. It was suggested that this would particularly help in rebuilding knowledge following electoral changes or changes in political portfolios. Another interviewee suggests that local officials need to be more skilled in understanding the transferability of policies from one context to another.

Several interviewees (Dallas, San Francisco and Vancouver) suggested "how to" case studies where detailed information on implementation processes (not just on results) is provided. Case studies were suggested on major innovations as well as on routine "not rocket science" projects, such as pedestrian/bicycle street design improvements.

8.1.2 Invest in policy networks

Conferences, workshops, committees, site visits were mentioned as key places for two-way learning & network building. This was particularly true of the North American interviewees. In Europe, one interviewee (Bremen) noted, the networks of cities and academics exist but almost entirely in parallel and this was supported elsewhere (Edinburgh). One interviewee suggested that more productive and open exchanges occurred at smaller more informal workshops.

8.1.3 Government Support for Innovation

Technological innovation brings risks. Even the larger cities such as Stockholm noted the benefits of teaming with other cities to share the procurement risk of new clean vehicle technology. Nancy noted that these risks are even greater for small cities and

that these risks should be shared by central government if the uptake of potentially valuable new technologies is to be more attractive to smaller cities. This seems to be supported by case studies such as the guided busway in Leeds where pump priming funding was critical in allowing the innovation to progress.

8.1.4 Improve Benchmarking

Given the widespread use of benchmarking among cities, particularly as stimulated by the European Commission, it was perhaps surprising that benchmarking was rarely mentioned by interviewees. However, those interviewed in Lyon were strongly supportive of the role of benchmarking, particularly in comparing the operation of public transport systems in similar cities, and hence in encouraging improvements. They also stressed the value of awards in stimulating a spirit of mutual competitive improvement.

8.1.5 Institutional innovation

Interviewees in Seattle and Lyon advocated innovations in institutional structure, or in ways of working better within existing structures. In Seattle, an interviewee expressed concern over the number of public agencies involved in funding, planning and implementation, and the frequent disconnect between them. In Lyon, interviewees noted the benefits of a franchising model involving the private sector, but felt that the short duration of the franchises could stifle innovation. Lyon also highlighted, in the REAL project, the problems of making progress when decisions had to be taken jointly by several agencies.

8.1.6 Independent evaluation of innovations

In each North American case study, an interviewee said in his/her own way “show me the numbers” (evidence) & suggested that having rigorous “unbiased“ academic research was useful. Whilst the evidence base was equally important to EU cities this was often obtained direct from the scheme implementers and there was no explicit request for academic evaluation. The concerns in the EU were for more accessible evaluation data rather than necessarily more independent evaluation. Vancouver was particularly keen on monitoring and evaluation of its policies, which was done in-house. This was motivated by the need for officials and residents to develop an understanding of the extent to which policies and strategies their city have worked. This was seen to be important for building trust and laying the foundation for future innovation.

8.1.7 Concise policy-focused literature

Given the apparent time constraints and the informal search strategies that staff deploy it was clear across almost all interviewees that information needed to be summarized into short pieces that highlight and *interpret* key findings (ex: executive summaries, five-page reports with easy to read tables/charts). It was suggested that academic writing would particularly benefit from having a clearer policy message. Several interviewees said that the writing style and amount of detail in the summaries should be tailored to the audience—staff, elected officials, other researchers or the public.

8.1.8 Better dissemination

Most cities already made use of the media to distribute information for the local area. To the extent that national media are involved, news of innovations is spread to staff, policymakers and researchers more broadly. This is something which interviewees in some cities felt could be improved. In one site a "Facebook" for innovation was suggested whilst another interviewee suggested that providing better ways to contact the people who are responsible for different policy initiatives would be an effective way of sharing achievements. Lyon advocated award schemes to encourage innovation and these also provide a mechanism for dissemination even to those that are not actively competing.

8.1.9 Improved information search

Interviewees in most cities commented on the perceived inefficiencies in their search processes for new information. This was expressed as a desire for improved information searching tools or more effective web searching tools.[8] In Stockholm it was also suggested that the news summary e-mails or collations which exist could be much more intelligent and filter the vast amount of information that is out there more effectively for their local context. This may become more important as the volume of information available from cities grows (see Section 8.1.7).

8.1.10 Joint research

Jointly funded research was seen as a facilitator of interactions. One EU interviewee who had experience of joint research with academics felt that this could be valuable but that greater efforts had to made by both sides to understand the policy questions (academics) and the research approaches (city officials). It was suggested that 'interpreters' between the two camps are important. Research funding streams which align the interests of the different actors. In North America the need for better co-production of research between local authorities and academia, including "peer review" of research by practitioners was also identified.

It was also felt that cities could make more effective use of academics. For example, it may not be productive for researchers to attend every project meeting, but instead they could attend meetings at key project milestone, have working sessions with staff & provide policy board presentations.

8.1.11 Joint appointments

Both Lyon and Edinburgh advocated the use of academic internships, even on a split-time basis. The joint appointment, rather than joint research, approach appeared to create a more effective network of contacts between the academic and practitioners and, although this requires maintenance, it remains strong over time.

8.1.12 Use of consultants

Consultants were used in all cities although only specifically mentioned in some of the innovations studied. Consultants were particularly important in transferring the

[8] It is worth noting that we did not review people's web searching practice so there may be much that could be done within the current tools.

design knowledge and aspects of implementation know-how from other contexts. Effective use of consultants was seen in a positive light and particularly helps overcome part of the time constraints of the cities. It was however also suggested that the use of consultants for some aspects of policy learning (e.g. visits) was poor value for money.

8.1.13 Other issues

Two issues remain open which, whilst not solutions proposed by interviewees, are of potential importance to the next stages of the research and we raise them here for completeness.

First, whilst the impact of taught academic programmes is remote from the implementation of the policy innovations explored in this research it is clear that taught programmes play a role in shaping the openness of individuals to new ideas (e.g. Home Zones in Leeds) and the introduction of new ideas into city discourse (San Francisco). They also appear to be important in terms of the networks that they potentially create between the academic faculty and cities (both through personnel and through joint projects with students).

Second, whilst it is clear that local officers are important gatekeepers in the policy process, we have not explored the views of politicians and they appear to play a key role in shaping the culture of the city in embracing innovation.

8.2 A focused set of potential solutions

Based on these suggestions, our own interpretation of the challenges outlined in Section 7 and our review of the literature, we have put forward below a set of 12 potential solutions which the Volvo Foundation might consider for future programmes. These map on to the solutions identified by interviewees as presented in Section 8.1.

1. Help cities to be more effective at policy learning:

The fairly unsystematic approach to policy learning suggests that there could be some benefit in training both local government staff and elected officials to be skilled in more effective lesson learning. At the highest levels this involves encouraging leadership which promotes an environment in which learning can flourish. There is a role for raising awareness and potentially providing training on promoting an organisational culture which encourages innovation and accepts and understands risk-taking. This could involve sharing good practice from cities which exhibit these characteristics. At a more detailed level, methods for purusing policy learning might include broadening understanding of where it is most productive to look for evidence, and how to assess the key lessons from that evidence. Expert workshops and taught short courses which involve policy learning (e.g. CIVITAS-CATALIST) are a potential delivery mechanism.

2. Invest in strengthening the cross over between policy networks:

Much learning is conducted between colleagues in professional networks (formal and informal). Dissemination of research through such networks is critical as it builds on existing infrastructure. This could take the form of actively working with research contributors to provide their information in an accessible way (see #4 below) or creating opportunities for new networks to develop, such as through conferences, one-day focused workshops, and even email list-serves where short and succinct research snapshots are distributed. However, more needs to be done to integrate the 'parallel' practitioner and academic networks.

3. Government Support for Innovation

Technological innovation brings risks (Section 4.1.5). Even the larger cities such as Stockholm noted the benefits of teaming with other cities to share the procurement risk of new clean vehicle technology. Nancy noted that these risks are even greater for small cities and that these risks should be shared by central government if the uptake of potentially valuable new technologies is to be more attractive to smaller cities. This seems to be supported by case studies such as the guided busway in Leeds where pump priming funding was critical in allowing the innovation to progress.

4. Improve benchmarking and the focused use of awards for innovation:

Benchmarking, if conducted effectively, can enable cities to compare their performance with cities in similar circumstances, identify areas in which they are performing less well than their peers, and seek evidence of policy interventions which might help them improve. More could be done to increase participation in such benchmarking programmes, and to extend them from the public transport arena to other aspects of urban transport policy. Where such benchmarking exercises identify particularly successful cities, these can be reinforced by preparing concise policy-focused interpretations of what has been done (see #6 below). Award schemes can also stimulate a competitive approach to policy enhancement, but run the risk of becoming bureaucratic exercises. One approach could be to link awards more closely with benchmarking, so that the benchmarked data forms the justification for the award.

5. Highlight innovations which overcome institutional barriers:

Complex institutional structures can inhibit policy transfer. However, within different institutional settings there are always cities which resolve particular constraints. Case studies that demonstrate how this has been achieved would be useful to cities to overcome these hurdles. These cases would need to explicitly draw out how the innovations could be replicated and/or tailored to other areas (linked to #1 above). This is likely to require a different type of research programme response by the Foundation than that needed to support the other issues identified here as the potential range of institutional contexts and issues is large.

6. Invest in independent evaluations of innovations:

The pioneers of innovatory policy are subject to many requests to investigate their achievements. Trust in the system outcomes is a critical element in determining

whether or not visiting cities will consider pursuing the innovations. Whilst personal contacts and access to raw data is one current preferred route to determining system success this is highly resource intensive and limited to cities which are well connected. There also therefore appears to be a strong case for some independent evaluation data of the impacts of major innovations. It is not clear that 'host' cities would necessarily welcome this however although it was a critical feature in the transparency of the Stockholm Congestion Charge.

7. Develop concise policy-focused literature and interpretation:

Given interviewee comments that research reports are often too technical and time consuming to read, attention should be given to how academic research is presented and for whom. Interpretation of research findings is also critical for staff and policymakers. Where appropriate, researchers should interpret the implications of the findings from a policy perspective, discuss how the research may be transferable to other areas, and consider more practical issues associated with project implementation (e.g., staffing needs, costs, revenues, discussion of required city processes to implement). Importantly, some researchers may not have expertise in these areas. In these cases, additional resources would be needed to involve policy-based researchers and/or practitioners. As an added benefit, when the research is case-based, it also will be useful to the subject cities because they could use this to disseminate information about their innovations to interested parties. Whilst this may suggest an additional time burden the emphasis should be placed on making current summary approaches better rather than more numerous. The effectiveness of this action is contingent on improving the dissemination and search processes (#7 and #8).

8. Improve the dissemination process:

The first stage of understanding ways in which the dissemination process can be improved would be to trace back the route from the key publications, e-lists and websites from which practitioners and researchers access information and understand how these outlets trawl for their information. Once there is a clearer understanding of that end of the process it should be possible to promote more effective communications strategies which may cover identification of appropriate media outlets and formats, how to communicate messages, how to meta tag web resources etc.

9. Create improved information-searching facilities:

There have been several efforts to generate knowledge centres for transport research. It seems that these may not be fulfilling the role for which they were designed. As Arnkill (2005) notes, information sources need to be coupled with intelligence, hence giving them a human dimension which will enhance their appeal and their applicability. The strengths and weaknesses of existing search tools and knowledge centres should be identified in consultation with cities of different types to determine whether these tools can be modified, whether the tools are functional but are not being used effectively or whether new tools are required.

10. Stimulate joint research between academics and practitioners:
Meaningful co-research between academics and practitioners should be encouraged. Research where funding is available to both parties clearly provides a stimulus for joint research but not necessarily effective collaboration. The evaluation processes for joint research initiatives should take account of the true degree of interaction, shared learning and knowledge transfer that seems likely to occur.

11. Facilitate joint posts for academics and policy makers:
Academics and city officials both reported positive experiences of jointly funded posts. These can take several models from complete secondment to one day a week. The experience in the EU is largely of academics taking placements in practitioner organisations although the US has a greater two-way flow. It might be beneficial to co-fund such a programme or to develop a network of placements. Although informally these joint posts are valued a greater understanding of the tangible benefits would also help make the case for longer-term uptake in the face of competing priorities.

12. Make more effective use of consultants:
Consultants appear to play an important role in the transfer of design and some aspects of implementation knowledge. Some may also specialise in specific innovations. Cities could potentially benefit from training in identifying where in the learning process consultants of different types could most effectively be contracted. Consultants also offer a further route to dissemination (for academics and for cities) and consideration should be given to how best to use consultants in the transfer of knowledge from research institutes to cities, and to the involvement of consultants in policy networks (see #2 above).

8.3 A priority list of solutions

We assess these 12 possible solutions against the barriers identified in Section 7 in the matrix in Table 8 below. The first column lists the barriers under the two headings of barriers to policy learning and barriers to implementation. The second assesses the severity of these barriers (*** high) based on Section 7.4. For each of the 12 possible solutions in turn we then assess the extent of its possible contribution to overcoming each of the barriers. This assessment is based on our own judgment and the experience gained from the interviews.

The case for a given solution will depend on the number of barriers to which it can contribute, the severity of those barriers, and the extent to which it is likely to contribute to overcoming each barrier. This leads to a priority for consideration in the final row of the matrix. Those which appear to be of highest merit are:

- Improving cities' policy learning
- Investing in policy networks
- Improved information searching
- National funding of innovation
- Investment in joint research
- Encouragement of joint posts

- Concise policy-focused literature*.

The second category of medium merit includes:

- Encouraging institutional innovation
- Independent evaluation of innovations
- Better dissemination.

*Based largely on the recommendations of our research, the University of California Transportation Center's Executive Committee approved in May 2009 the development of 2-page policy briefs of individual faculty research reports funded through the Center. These briefs will be a synthesis and interpretation of the research findings for policymakers, staff and the public. The intention is for the briefs to be easily and quickly read and to feature key graphics from the reports. Funds permitting, UCTC will have a non-technical writer work with the researcher to translate the findings into lay language. The briefs will be posted on the UCTC website and compiled into forthcoming featured focus areas on the site that may include climate change, transport finance and transit-oriented development.

8.3 Feedback from FUT Conference

The current Centres of Excellence debated the solutions and were supportive of the ideas raised. The following solutions were identified particularly as being of importance:

- The investment in events which bring together decision-makers with academics at a global and global region level. The use of existing networks was supported. This could be further expanded by the use of joint ventures.
- Encouraging cities to respond to blue-skies thinking, linked to the learning culture.
- Investing in developing successful relationships to build up partnerships. In particular the Centres of Excellence were supportive of the idea of 'best practices' and 'awards' as being a mechanism for doing this. However, we note that several cities interviewed doubted the effectiveness of awards as a means of disseminating good practice.
- The development of policy focussed literature such as an international magazine promoting effective transport policies.
- The development of context specific expert guides which help to translate policy learning.

It was suggested that the effectiveness of some of the proposals (e.g. on joint working) be tracked as part of future research exercises. It was also suggested that the Centres of Excellence should provide a space which facilitates the debate about the need to change with the various stakeholders. It was even suggested that the Centres of Excellence should take on a lobbying role.

The Centres also suggested that consultants may have a more prominent role than we identified. This varied significantly within our city sample but is particularly likely to be the case in smaller cities where there is less internal capacity.

Table 8: Matrix of solutions against barriers

Barrier	Severity	Solution											
		Improve city policy learning	Invest in policy networks	National Funding of Innovation	Improve benchmarking	Highlight institutional barrier innovations	Independent Evaluation	Concise policy focused literature	Improve dissemination	Improve information search	Joint Research	Joint Appointments	Effective use of consultants
Learning Culture	***	✓✓	✓✓✓			✓✓					✓✓	✓✓	
Unsystematic search	**	✓✓	✓✓	✓						✓✓✓	✓	✓	
Staff resources	***	✓✓✓		✓			✓	✓✓	✓	✓✓	✓	✓✓	✓✓
Information availability	**		✓✓	✓	✓✓		✓✓✓	✓✓✓	✓✓	✓✓		✓✓	✓✓
Information reliability	*	✓		✓			✓✓✓		✓		✓✓		
Governance structures	**	✓✓				✓✓							
Funding	**			✓✓✓			✓				✓✓✓		
Legislation	*	✓✓	✓✓	✓		✓✓			✓	✓			
Risk	**		✓✓	✓✓✓		✓							
Private Sector	*	✓✓	✓✓	✓	✓	✓✓	✓						
Acceptability	*	✓	✓		✓		✓	✓✓					✓
Implementation	**	✓✓	✓	✓		✓			✓✓				✓
	Priorities	High	High	High	Low	Medium	Medium	High	Medium	High	High	High	Low

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10 Glossary

Boundary Object – "abstract or concrete. They have common meanings in different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation. The creation and management of boundary objects is a key process in developing and maintaining coherence across intersecting social worlds." (Star and Greisemer, 1989, p. 393)

Innovation – tools and/or processes which either individually or as a combination are new for the city in question and which requires some form of policy learning from other stakeholders.

Policy instruments – "the tools which can be used to overcome problems and achieve objectives. They include conventional transport methods such as new infrastructure, traffic management and pricing policies, but increasingly they also involve attitudinal changes and use of information technology" (PROSPECTS, 2003)

Policy Learning – a process of identifying a potential need for new policies, studying potential alternative approaches, evaluating their likely effectiveness in the local context, deciding on implementation and evaluating its success. (From Rose, 2005).

Policy Transfer - "the process by which knowledge about policies, administrative arrangements, institutions and ideas in one political system (past or present) is used in the development of policies, administrative arrangements, institutions and ideas in another political system" (Dolowitz and Marsh, 2000, p5)

Technology Transfer - "the movement of technological and technology related know-how among partners (individuals, institutions, and enterprises)" (Diewald, 2001)

Appendix A: Interview Schedule

The interview protocol
These suggestions draw on the earlier proposal for workshops, and issues which have emerged in the literature review.

The workshop proposal identified five key areas of questioning:

1. what do respondents regard as best practice in sustainable urban transport?
2. how do respondents learn from others in identifying best practice?
3. what are the constraints on pursuing such best practice?
4. what are the best approaches to dissemination of best practice?
5. how could the Foundation most readily support the process?

In retrospect, question 4 is probably better combined with question 2. It has been agreed that question 5 is better pursued in a subsequent workshop, but it would still be useful to ask it at this stage.

The literature review drew a number of preliminary key findings, which are listed in the executive summary; they are not repeated here, but are included in the more detailed sub-questions below. However, it also raises the important question of motivation, which should come before 1-5 above.

Section 1: Context

The purpose of this section is to define how the city and the actors representing it see the transport strategy and its evolution. How important is the city in determining its own goals and who within the city is central to that process. This is supported by other document review.

1) What are the aims of the transport strategy for your/the city?
2) What motivates the decision to pursue sustainable transport policies?
3) How consistent has the strategy been over time?
4) Who leads the development of the strategy?
5) What are the main external influences and how do they influence strategy?

Section 2: Policy Challenges and Why Undertake Policy Transfer?

Having understood the strategy to date, looking forward what would the city like to do or to do more of? Why has this decision been made (policy entrepreneurs, diffusion of policies from other neighbouring cities or similar cities?), what processes led to the selection of the policy and why are they still on the drawing board.[9]

[9] The literature makes it clear that one can distinguish between copying of policy concepts and detailed implementation. We will pick up the extent to which implementation is copied in Section 3.

1) From where you are now, what are the key policies that will make a difference?
2) What processes made you identify those policies as necessary?[10]
3) Have you looked to other cities to identify these policies and if so, how?
4) Why have they not yet been implemented (or rolled out)?
5) What actions would most help to overcome any barriers you have identified?
6) Would these changes lead you to having an effective strategy? What else would be required?

Section 3: Policy Innovations – Who was involved in policy transfer?

This section draws on recent policy innovations (part of the criteria for selecting the cities) from which we can learn about the actual implementation process. Here we are looking to see how cities act as "seekers" and "receptors" of information and, from this, infer something about how effective the "pushers" of information are. For each innovation that is to be explored:

1) How long was the concept discussed before the decision to implement was taken and then how long before it was implemented?
2) Whose idea was the policy and who has been important in developing it?
3) Who led the policy implementation?[11]
4) Why was that policy chosen?[12] What other policies were considered?
5) Where else has adopted this policy and how relevant were those sites to you?
6) Which cities were important to you in learning and how did you approach this task?
7) What other implementation support mechanisms were used?[13]

Section 4: What was transferred and how were lessons learnt and applied?

This section continues the study of particular policy innovations but moves away from who was involved and where they sought information to how they information was used.

1) What aspects of the policy seen elsewhere have you adopted (if any)?
2) Did you know how effective the policy would be in your area?
3) How did you find out and how credible was this?[14]
4) How helpful has the information from other cities or sources been?

[10] Here we would look to use prompts on different types of actors, different information sources and networks

[11] Important to explore individuals, in what role, was it several individuals over time, a broad consensus…

[12] Again looking to the information sources, networks, politician visits…

[13] It is conceivable that no city to city learning was used but it is likely that other inputs such as consultants and academics would have been used - probe

[14] Here we are also looking to see about the role of consultants etc..

Section 5: Good Practice and Dissemination

This section looks to explore how proactive a city is in pushing out its good practice, why it does it (e.g. legitimisation, local status) and how real the transfer is (documents, conversations, visits, processes, staff…). This will need to be tailored to the individual being interviewed (for example consultants will have a slightly different view).

1) What sources do you use to find out about best practice?
2) How important are these sources?
3) How important is disseminating your successes? What motivates you to do this?
4) Where do you disseminate your success and how?
5) Can you suggest examples where your policies have been adopted elsewhere? How did this come about?

Section 6: What is missing in helping good policies get implemented?

This section tries to draw together some actions that VREF might support in order to facilitate more effective policy innovation or transfer. It should build on the issues which are developed through the course of the interview but is primarily focussed around:

1) What are the constraints on pursuing policy innovations?
2) What would improve the process of policy learning?
3) What would make sharing best practice more effective?[15]

In all cases, the interviewer must prompt for solutions to barriers and constraints and look for previous examples where something has been seen to be an effective support tool.

[15] Prompts might include institutional barriers, process or decision-making, acceptability, finance, skills and information, legislation and regulation and local context.

Appendix B: Policy Innovations Studied

Site	Primary Innovations
Leeds, England	• Tram train line planning – a proposed tram scheme which has been abandoned for a road based system which is being investigated • Home Zones – a residential redesign which redefines the balance of space between cars and pedestrians. Based on a Dutch concept from the 1970s • Guided busways – segregated bus lanes with raised concrete curbs which allow hands-free driving for the bus driver. • High-occupancy vehicle lanes – roadway set aside for vehicles with two or more occupants (known in the UK as 2+ lanes).
Bremen, Germany	• Cleaner vehicle fleets (low particulates) for bus and taxis • City car club scheme – by the hour car rental • Integration of bus and tram systems (ticketing and timings) • Cycle and pedestrian priority schemes • Urban delivery restrictions in city centres to protect the built environment
Copenhagen, Denmark	• Proposals for a central Copenhagen congestion charging scheme • The introduction of a driverless Metro • Integration of bus and Metro services • Cycling innovations including cycle parking and new river crossings.
Stockholm, Sweden	• The introduction of the Stockholm congestion charging scheme • The approach to cleaner vehicle fleets for public transport and local authorities • Innovation in traffic control • Urban delivery systems for environmentally sensitive areas
Edinburgh, Scotland	• City car club scheme – rent by the hour which failed and was then re-introduced • Greenways – bus lanes introduced alongside stopping restrictions for vehicles and an enhanced pedestrian environment • Failed congestion charging scheme proposal • The introduction of the tram scheme currently under construction • Investigations into a low cost city centre 'bike hire' scheme similar to the 'Vélib' scheme in Paris

Lyon, France	• Driverless rail line (Metro Line D) • Public transit smart card (a card with credits which is passed near a reader to debit fares – e.g. London Oyster card) • Public transit service improvements including service and infrastructure upgrades
Nancy, France	t.b.c.
Seattle, USA	• Transit-oriented development at major bus stops (where for example office jobs which are not car dependent are clustered around high quality public transport hubs) • Articulated hybrid bus design
Dallas, USA	• Long range transportation/land use plan recently adopted. The plan makes a major shift from traditional auto-oriented, low density planning to a greater focus on higher density and transit-oriented development.
San Francisco, USA	• Congestion pricing plans: 1) downtown cordon-based pricing, 2) pricing in a specific corridor leading to downtown (Doyle Drive)
Vancouver, Canada	• Long range transportation/land use plans and strategies to limit growth in auto travel, intensify development in the downtown, and emphasize pedestrian, transit and bicycle travel.

Further details on the innovations will be available in the City Interviews Report upon which this report is based.