

The design of transport systems

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Executive Summary

As a preliminary to the Main study, the Scoping study was designed to address the overarching aim 'to produce methodologies to develop and test sustainable policies and practices that will deliver effective socially inclusive design and operation from macro down to micro level'. This included a review of current literature, investigation and analysis of current policies and practices, and the engagement of key stakeholders who will participate in and benefit from the research. WP3 'Design of Transport Systems' features a critical examination of existing guidance for practitioners at the meso-level of the city-region, and assessment of the needs of end-users who will utilise the AUNT-SUE 'toolkit' of techniques and resources. Desk research was therefore complemented by study visits and interviews with key informants in Local Transport Authorities who will be partners in the Main study in order to ascertain their current and likely future requirements. These included Transport for London, London Borough of Tower Hamlets, Bristol City Council and Brighton and Hove City Council.

A review of recent academic publications highlighted a significant shift of emphasis towards needs-based analysis and concern with accessibility, as opposed to the supply of transport. Research on transport-related exclusion has tended to focus on areas or zones: methodologies have been developed for spatial identification of deprived neighbourhoods where residents are poorly served by mainstream public transport. Such techniques may help to highlight clusters of people who experience difficulty in reaching jobs and key services, but the approach needs to be refined. Some social groups that experience access and mobility problems are clearly 'scattered' throughout the population rather than clustered. By definition, some may reside in comparatively affluent areas (e.g. older people, Visually Impaired People, young adults); it may therefore be hard to justify resources for innovative solutions appropriate to their requirements, such as demand-responsive transport. Most fundamentally, little is known about the discrepancy between what people can do and what they want to do; a social construct that can only be understood from the user's perspective (see WP1).

Although there are no definitive national or international guidelines, there seems to be a consensus that those who experience transport-related exclusion include: older people, young adults, parents with young children, disabled people, black and ethnic minorities, unemployed and low paid, especially shift workers. However, there is also a rising awareness and concern for those whose needs might not be so apparent, in particular people with learning difficulties, and others who experience fear of assault and harassment, claustrophobia or anxiety in crowds. Such psychological barriers to people's confidence in using transport systems and public spaces tend to be questions of degree: a spectrum, rather than a straightforward dichotomy

of excluded/included. Simplistic categorisation of social groups is therefore problematic. Some Local Transport Authorities emphasise that their organisations are 'open to learning' about such 'hidden' forms of transport-related exclusion, and that new techniques are needed to identify and understand the problems of individuals as well as 'excluded' areas and social groups across city-regions.

Social inclusion is now firmly embedded in the rationale of local transport policy, along with reduction of congestion, improvement of the physical environment and stimulating the local economy. Proposals may be justified with reference to the anticipated benefits for socially excluded areas and people, but transport planners generally lack reliable and cost-effective tools to 'prove it' (see WP2). In particular, practitioners in the case study areas highlighted the need for cost-effective techniques to assess the ability of schemes to bring benefits to socially excluded people. These include the evaluation of interventions: to reduce fear of crime in public spaces and on public transport; to improve physical access to public transport and supporting infrastructure; and to improve transport links education and other activities, such as recreation in parks and nearby countryside. Practitioners expressed concern over the misleading use of Performance Indicators that measure outputs rather than outcomes. For example, comparing the number of drop kerbs installed in a given area against a target figure takes no account of their usefulness to the intended users in the context of their daily travel patterns. Evaluation must take account of the intended beneficiaries' perceptions, experiences and observations before and after interventions.

Hitherto, no single agency has co-ordinated action to address transport-related exclusion at the level of the city-region. The Government has made it clear that responsibility for developing an accessibility strategy will now be placed with Local Transport Authorities and enshrined in Local Transport Plans. In the case study areas, there was firm commitment from elected Members as well as officers, but elsewhere it may be a lower priority. Even where the political will is strong, much will depend upon the resources available to tackle the problems and on the co-operation of other key service providers, both transport and non-transport. Outside London, the policies and practices of commercial operators are critical to the affordability, availability, accessibility and acceptability of bus services (DETR/TRaC 2000). The third sector also plays an increasingly important role in responding to unmet social needs, but coverage may be patchy and it is sometimes unable to reach particular social groups. In some cases, other policies have unintended consequences. For example, social housing negotiated through 'planning gain' may be built in isolated locations, poorly served by public transport. Encouragement of late-night bars and clubs in city centres may exacerbate anti-social behaviour and crime in public spaces and on public transport to the detriment of low paid shift workers as well as residents.

In the context of the Third Way agenda, the concept of social inclusion requires approaches to urban governance that incorporate 'joined up thinking'. The deeper-seated processes that exclude people from urban transport and the public realm - and therefore from participation in desired activities - are

now being addressed, and at the level of city-regions transport planners play a key role. The Government expects Accessibility Planning to provide an effective structure and an important catalyst for further change (SEU 2003). As explained in the Department for Transport's guidance (DfT 2004), all Local Planning Authorities will identify and analyse accessibility problems, and establish 'strategic partnerships' around specific themes. The process will then lead to the formulation of more detailed 'action plans'. Transport planners will thus facilitate and monitor implementation of accessibility strategies and action plans. This will be done in partnership with transport providers of all modes, as well as a very wide range of key stakeholders from other sectors. The overriding aim is to improve access to the services that the Government considers will have the greatest impact on life opportunities - jobs, health care, learning and food shops. A common strategy and close co-ordination with diverse agents of change will therefore be critical to initiatives for improving access and personal mobility for the areas, groups and individuals discussed above.

For the past two decades, transport in the UK has been subjected to market forces, and is largely delivered by commercial or not-for-profit organisations. Development and implementation of solutions will therefore require a collaborative approach by transport providers as well as non-transport agencies:

- 'vertical' collaboration between designers and operators of the elements of transport systems: vehicles, ways and terminals from the macro-level of city-regions down to the design and positioning of micro-components such as street furniture (see WP 4, 5);
- 'horizontal' collaboration between diverse interests that influence and shape transport and the public realm in each locality

More challenging will be the development of structures to involve individuals and socially excluded 'communities' that may be spatially and/or identity-based. The very concept of social inclusion implies empowerment and involvement of 'socially excluded' people in interventions to reduce their isolation from desired activities. With reference to land use planning, the idea of facilitating social action and meaningful dialogue between 'expert', technocratic ways of 'knowing', and the life-worlds of people's everyday lives has been termed 'communicative' or 'collaborative planning'. As yet, however, the theory has seldom been put into practice, and its application to planning for socially inclusive transport and public spaces in city-regions is an important theme to be addressed by the AUNT-SUE consortium in the Main study.

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1. Introduction

From the user's perspective, improved access depends on the quality of the entire travel-chain environment that includes the public domain of connecting streets and open spaces (CABE 2000, 2002). In this context, roadside stops and other 'informal' interchanges play a critical role, but these have received little research attention (ILT 2000). Of equal importance is travel information and assistance, both on and off public transport systems, but its provision is rarely examined comprehensively from the perspective of social inclusion.

The need for holistic approaches to inclusive design and operation of transport systems has been highlighted by disability groups as well as by organisations representing women, ethnic minorities and others whose personal security fears may severely limit their freedom to travel (Shaw 1995, 1997). The role of urban design and transport for quality of life is increasingly recognised (Evans and Shaw 2001). As yet, however, there has been little systematic appraisal of auditing techniques and design quality indicators that could be applied to enhance social inclusion. The aims of the London Metropolitan scoping study are to:

- a) Review existing regulations and good practice guidance for socially inclusive design and operation of local transport systems in the UK;
- b) Review international academic and professional literature to identify innovative conceptual frameworks for systematic auditing socially inclusive design and operation of urban transport systems;
- c) Make a preliminary assessment of the effectiveness of a) and potential of b) to address mobility-related social exclusion in the Initial Testbed and other case study areas, with reference to disadvantaged social groups, including young adults and Visually Impaired People;
- d) Establish a methodology as a basis for the development of auditing techniques for the main project.

2. Review of literature on social inclusion and transport in city-regions

This literature review examines current debates on 'social inclusion/ exclusion' in relation to transport in city-regions and methods used for auditing accessibility and social inclusion in the UK and other countries.

2.1 Social inclusion/exclusion

The concept of *social inclusion* is closely associated with the 'Third Way' and the principles that inspired New Labour's vision of an integrated transport system that would be fairer and 'Better for Everyone' (DETR 1998). High on this agenda was the need to combat the underlying factors that may prevent or deter people from participating in activities that are considered to be 'normal' for a citizen of the 'mainstream' society in which they live. Thus, according to Giddens (1998: 104):

'Exclusion is not about graduations of inequality, but about the mechanisms that detach people from the social mainstream.'

Burchardt et al. (1999) also emphasise the relational and normative features of the concept:

'An individual is socially excluded if a) he or she is geographically resident in a society and b) he or she does not participate in the normal activities of citizens in that society.'

However, this definition does not make clear the geographical scale of 'society'. Does this refer to a nation state, a city-region or smaller area? Furthermore, spatial definitions of belonging may be of limited value; it may be more meaningful to consider the 'society' with which an individual identifies.

Exclusion is conceptualised as a *process* of detachment that may lead to increasing isolation and alienation, reinforcing disadvantage. Describing the growing divisions of British society in the 1980s and 1990s, Child Poverty Action Group (Walker and Walker 1997) highlight:

'a dynamic process of being shut out, fully or partially, from any of the social, economic, political and cultural systems which determine the social integration of a person in society'.

This implies that the processes that exclude people result from an imbalance of power: a perspective that underlines the need to identify and understand the *relational* factors between the powerful and the powerless. The 'mechanisms' of exclusion may result in social disengagement and exacerbate the problems of disadvantage experienced by the latter. It also suggests that the causes of exclusion may be identified, and causal factors identified. In the absence of explanatory theory it would, however, be misleading to generalise from particular cases. For example, it is hard to explain the reasons why residents of a particular housing area experience very high levels of unemployment, crime and anti-social behaviour, poor health and low achievement in education, while people living in another area with comparable social, economic and environmental characteristics do not. There is increasing awareness that problems with transport and the location of key services reinforce isolation and exclusion of individuals, social groups and whole neighbourhoods (SEU

2003). However, it is hard to establish the extent to which inadequacies of transport systems and urban design can be regarded as determining factors (DETR/ TRaC 2000).

Summarising workshop discussion on 'travel chances and social exclusion' at the annual conference (Geneva 2003) of the International Association of Travel Behaviour Research, Lyons (2003: 340) offers three interpretations of what might constitute social exclusion. Essentially, these are based on the experiences, needs and wants of those who may be regarded - and regard themselves - in various ways cut off from the social mainstream:

- a) "experiencing public service failure" (acknowledging the significance of structural failure in public intervention and how this may impact on individuals and communities);
- b) "the discrepancy between what you can do and what you want to do" (a social construct that is essentially the viewpoint of those who experience exclusion);
- c) "a spectrum of deprivation" (a recognition of the inadequacy of binary measures of inclusion/exclusion, and hence the need to develop benchmarks beyond which the level of deprivation is unacceptable).

The search for explanation of travel behaviour may therefore suggest a paradigm shift away from preoccupation with the supply or availability of transport towards *accessibility*-based analysis. Central to this concern is the need to comprehend people's aspirations towards and resources for social participation, and how these may govern their daily patterns of activity. As Lyons argues (*ibid.*), this raises important questions concerning what parameters should be used as proxies for exclusion, and thus what data to collect. Increasing recognition is given to quality of access, measurement of which must somehow be developed through better knowledge and understanding of people's perceptions, experiences and motivations.

As yet, however, the principles of social inclusion are difficult to put into practice. Most fundamentally, policy-makers, designers and operators lack tools to identify reliably people who experience transport-related exclusion, or to understand their life-worlds. Nor are there reliable tools to measure the impact of interventions designed to reduce transport-related exclusion. As Hine and Mitchell (2001) conclude, the difficulties of defining the fundamental concepts of mobility, access and accessibility pose problems for their operationalisation. Furthermore, transport planning in the UK has become a multi-agency, multi-sectoral, multi-modal process which must balance and engage with a wide range of interests, issues and policy arenas (Nijkamp and Blaas 1994; Booth and Richardson 2001). With reference to land use planning and urban governance, Healey (1997:285) has emphasised the importance of 'collaborative strategy-making processes' for inclusive institutional capacity building, especially for Local Authorities. This, she argues, must be based upon the "grass roots" of the real concerns of specific stakeholders as they react with each other in a particular place and time. Implementation will thus require re-engagement, participation and consensus building: informal processes as well as formal co-ordination procedures.

2.2 Addressing social exclusion and barriers to access

The Department of Transport, Local Government and Regions/ TRaC (2000) considered the shortcomings in transport and the design of streets and other public spaces, and the ramifications for communities in disadvantaged urban (as well as rural areas). This highlighted the significance of affordability, availability, accessibility

and acceptability of public transport provision for social exclusion, especially for unemployed people, families with young children, young people, older people, disabled people and those on low incomes. It was concluded that lack of travel choice can be a significant problem when it results in lack of access to essential and 'non-essential' facilities such as leisure and recreation, as well as those that are generally considered by public policy-makers to be 'essential', especially access to employment opportunities, hospitals, education, shops. However, the causal relationships were complex and it is hard to isolate transport from other factors.

The Disability Rights Commission (www.drc.gb.org) has issued responses to Cabinet Office consultations on transport and social exclusion. This includes statements that "making successful journeys is critical to the social inclusion of disabled people", and "an accessible transport system is easier for everyone to use". The government's 10-year transport plan (DETR 2000) stresses the principle of "building accessibility a condition of all public money being spent". It is also stated that current barriers to travel include: journey information, legislation, design and service levels. There were also financial barriers, and confidence barriers. Imrie (1999) discusses the impact and influence that access groups can have in allowing disabled people to influence local authorities. Such influence over access policies and practices by raising awareness and issues of importance is of great benefit to disabled people trying to increase accessibility.

Accessible transport systems are essential for equality of opportunity. Nevertheless many social groups continue to experience 'transport disadvantage' (Hine & Mitchell, 2001); their quality of life is adversely affected by limited travel options and exclusion from travel usage. Metz (2000) investigated the effect of mobility on quality of life in older people and found that increased travel options provided the possibility of travelling to desired people and places, psychological benefits of 'getting out and about', and exercise benefits. Hine and Mitchell (2001) report the findings of three surveys into: public transport users' experiences (19 women and 13 men, aged between 17 and 65 years of age, with 50 % of respondents working part-time and 22 living in households with one or more car); visually impaired users' travel (21 interviews, with 13 participants being aged over 60 years); and the role of transport in social exclusion (11 women and 7 men, all aged under 30 years and either unemployed/seeking work or on a low income). When asked about public transport accessibility the issues raised were:

- Physical design of vehicles and stations, especially if travelling with luggage, children, or having a physical impairment.
- Attitude of drivers and other transport staff
- Travel information
- Distance to bus stop/rail station
- Waiting times at stops/stations
- Security at stops/stations and on vehicles
- Cost of fares

A range of policy guidance for urban authorities, designers and operators is currently being developed to address problems of social exclusion in transport and the public realm, and most is available on-line. As well as the guidance provided by the Department for Transport on inclusive mobility (www.dft.gov.uk), the relationship between mobility and the built environment is emphasised by the Centre for Accessible Environments (www.cae.org.uk). Statements of intent have also been issued by transport providers. For example, in the capital, London Underground (www.thetube.com) has produced a policy statement entitled 'Unlocking London for

All' which aims for accessibility to all underground stations by 2020. Other organisations provide consumer information and guidance, especially with respect to disabled people. The Automobile Association has a Mobility Assistance Scheme and publishes a Disabled Traveller's Guide; Tripscope (www.tripscope.org.uk) provides information for those who are disabled or have problems getting around, and a rail card for discounted fares is available for disabled people who meet the necessary criteria (www.disabledpersons-railcard.co.uk).

2.3 Auditing accessibility and social inclusion in the UK

Imrie (2000) emphasises the immense variation between the accessibility of public transport services with geographical location within and between city-regions, and the impact of differences in policy and practice for national transport systems. Performance indicators enable simplification of complex information, and can be used to make issues obvious and communicate objectives and outcomes. PIs are tried, tested and accepted within economic realms, but equivalent tools are not yet available for sustainability (Cox, Fell, Thurstain-Goodwin, 2003) or social inclusion. For example, the 1999 Index of Local Deprivation does include "access to services", to give some indication of exclusion. However this does not assess mobility, time-based accessibility or provision of transport (Church, Frost & Sullivan, 2000).

Transport for London use an extensive list of Key Performance Indicators that are assessed for street management on either a monthly, quarterly or annual basis, and reported to either an Advisory Board or the Transport for London Board. These KPIs cover a wide range of issues from number of road accident casualties, to number of traffic lights working and bus journey speeds. Of most relevance to accessibility are four KPIs that are audited annually: perception of improved mobility access, percentage of pedestrian crossing facilities for disabled people, number of disabled parking bays, and percentage of bus stops that are low-floor bus stops. However, no details are available for how these audits are conducted, or how 'accessible' is defined or measured, which obviously could impact on the results. London Underground's strategy 'Unlocking London for All' (2.2 above) is reviewed through quarterly performance reports, with position statements on safety and security, staff helpfulness and availability, and information - all of which impact on social inclusion.

Church, Frost and Sullivan (2000) state that there is increasing pressure from policy-makers to link transport and social exclusion, and as such have proposed a conceptual framework and set of indicators for assessing the outcomes of policies designed to increase social inclusion. The indicators considered for inclusion were:

- Physical exclusion (the physical barriers to travel)
- Geographical exclusion (for example, peripherality, poor transport provision)
- Exclusion from facilities (including shops, banks, leisure, health and educational facilities)
- Economic exclusion (unable to access employment, as well as travel costs in time and/or money)
- Time-based exclusion
- Fear-based exclusion

Lyons (2003) discusses how accessibility planning aims to "record and visualise" level and quality of access to given locations. It is stated that 'levels' of accessibility are determined by parameters chosen to represent access, whereas 'quality' of accessibility is ultimately more important, concerning the individual's experiences.

Halden, McGuigan, Nisbet and McKinnon (2000) conducted a review of accessibility measuring techniques on behalf of the Scottish Executive Central Research Unit. This stated that accessibility measures aim to: define the level of opportunity and choice, taking account of the existence of opportunities, and the transport options available to reach them. It is discussed that current accessibility analysis is largely qualitative. The three principal methods of measuring accessibility are:

- Simple measures, given as the number of a particular opportunity within a defined time threshold
- Opportunity measures, that is the number of jobs, number of people, and so on, and is useful for comparison of accessibility for, for example, car/non-car available trips
- Value measures, being generalised time or cost, that provide information on the benefits of a particular scenario.

The Scottish Executive Central Research Unit has carried out a number of studies into transport usage and also a review of techniques for measuring accessibility. In 2003 the results of two telephone surveys into bus passenger satisfaction were released. These involved passengers aged 15 years and over who had travelled at least once on a bus in the preceding month. Thirty aspects of the journey were asked about, including: personal safety on the bus, ease of boarding/alighting, provision and visibility of handrails etc, safety at bus stop, accessibility of bus stop, information prior to travel, information at bus stop, destination panels, availability of seating, and ease of paying. It was found that access to bus stops scored high levels of satisfaction, with information at bus stops scoring slightly lower, but still high levels of satisfaction. Scores were actually higher amongst those aged over 60 years of age than those aged 16-59 years of age. However, the report does highlight the fact that the surveys did not include those people who had not used a bus in the preceding month, for whatever reason.

There are a number of initiatives that have been or are being developed. Public Transport Accessibility Levels (PTALs) are increasingly being used as an index for accessibility with respect to transport, especially in London Boroughs (Mackett and Titheridge, 2004). The index measures access to the public transport network as a function of the time taken to walk to a bus stop/train station and the average wait time at that stop. Wu and Hine (2003) discuss PTAL usage in bus accessibility in Northern Ireland. The technique is useful as a highly detailed measure of the accessibility of any location to the public transport network in the urban area, but may be of limited use in rural areas. Further criticisms of the index are that it does not consider issues such as speed of service, congestion, crowding, and ease of interchanges (Wu and Hine, 2003). CAPITAL (CALculating Public TrAnsport in London) is a London-based development for measuring accessibility. This system is still being developed, but includes taking into account walking access time, waiting time, in-vehicle time and interchange time.

Merseytravel (1998) detailed the indicators that are used, as part of a wider impact assessment for travel implementations, to assess accessibility. Those listed are:

- Proportion of households within 400m of a bus stop
- Proportion of households within 800m of a rail station
- Proportion of major facilities/services within 400m of a bus stop or 800m of a rail station
- Proportion of rail stations that are fully wheelchair accessible
- Proportion of buses that are fully accessible

- Proportion of concessionary passes issued and used annually by those eligible.

As discussed in WP2, the Social Exclusion Unit's (2003) influential statement "Making the Connections: Final report on transport and social exclusion" paved the way for 'Accessibility Planning' (see below), and provide an initial list of potential accessibility indicators for monitoring improvements in accessibility:

Journey times and distance to bus stops
Proportion of people within 10 minutes walk of a [5, 10, 15]-minute bus service
Proportion of people who can get to [key employment locations/appropriate hospital/affordable food shop] within [45] minutes door-to-door by public transport
Proportion of 5-11-year-olds who can get to [xx] primary schools within [1 kilometre]
Barriers to using public transport
Proportion of fully accessible buses on certain routes or in areas
Proportion of people who say they do not use public transport because of fear of crime
Trip rates
Trips per person by mode of transport or journey purpose
Customer care and satisfaction
Proportion of transport staff trained in customer care and disability awareness
Overall customer satisfaction with public transport services
Impacts
Number of child pedestrian casualties per 1,000 children in population
Level of air pollution
Driving/car access
Proportion of households with access to cars
Cost of travel
Average local bus fare per mile
Average bus fare
Access to services
Proportion of people saying they find access to specific services (for example, hospital, GP, school, college, etc) difficult
Access to food shops
Proportion of people within [500 metres] walk of a food shop

Table 1: Accessibility Indicators (Social Exclusion Unit, 2003)

With regard to auditing accessibility levels, the literature indicates that this is a growing area of concern and research, although as yet there is little agreement on precise methodologies and measures to take. The general feeling from the literature is that any indices need to consider issues such as mobility, time (to get to transport facilities, to wait for vehicles, on-board vehicles, and at interchanges), monetary cost, frequency of services available, and physical access (Lyons, 2003; Social Exclusion Unit, 2003; Church, Frost & Sullivan, 2000). Instances of checklists of issues (Social Exclusion Unit, 2003; Merseytravel, 1998) tend to concern physical aspects and distances, for example proportion of households within a set distance of a bus stop/rail station, proportion of wheelchair-accessible vehicles, proportion of drop kerbs. The findings of the interviews with local authorities corroborate the fact that these types of assessment of accessibility are currently predominate. However, those interviewed said that the results of such assessments are not necessarily useful in determining the extent of social exclusion. It was expressed by Transport for London that knowing the number of, for example, drop kerbs, does not necessarily indicate whether those drop kerbs are in the correct locations to optimise

mobility and usage, or whether they have actually impacted on social inclusion within the local area.

Tower Hamlets and other London Boroughs are currently working with Transport for London to develop the CAPITAL (CALculating Public TrAnsport in London) model. This will be used to consider aspects such as housing and accessibility, how long people are willing/able to wait at bus stops or railway/underground stations, the cost of the transport in relation to the socio-economic status of those wishing to use it, and the number of interchanges that may be required to complete a journey. This aims to be an improvement on the current Public Transport Accessibility Levels (PTALs). This index measures access to the public transport network as a function of the time taken to walk to a bus stop/train station and the average wait time at that stop. Criticisms of the index are that it does not consider issues such as speed of service, congestion, crowding, and ease of interchanges (Wu and Hine, 2003). It is anticipated that CAPITAL will address these issues.

Nevertheless, as with all the models developed hitherto, there still remains a fundamental methodological problem of how to elicit the views and opinions of those people who are socially excluded, and incorporate these into the process of auditing accessibility. Socially excluded groups may be 'hard to reach' because they mistrust the system, and either do not have access to or are not confident at using the information channels used in data collection methods (Lyons, 2003). The views of those who experience transport-related exclusion are essential to the progress of improvements and work towards a reduction of social exclusion. Furthermore, there is a need to ensure their participation through the process of decision making to implementation of facilities and services that will affect their daily lives, including the detailed design of streetscapes, vehicles, transport interchanges and support facilities (see WP5). As yet, it is unclear how auditing will be used to inform policy, design and operation. What changes will be made as a result?

2.4 Auditing accessibility and social inclusion in other countries

CEROI (Cities Environment Reports on the Internet, www.ceroi.net) includes a report on access to public transport, giving the required measure for assessing this to be percentage of people in a location having access to a public transport service within 500 meters. No mention is made, however, of whether any details of how frequent the service is, or whether it is going to a popular destination, both of which will impact on whether the service meets the needs of the potential travellers.

The Nordic Centre for Spatial Development, Sweden (www.nordregio.se) is a centre for research, education and documentation on spatial development, established by the Nordic Council of Ministers. One body of work undertaken was the Study Programme on European Spatial Planning (2002), which included consolidation of research conducted in other cities. One report included is that on accessibility indicators tested by the Department of Transportation Engineering of Naples. It is proposed that in general terms accessibility is a construct of the activities or opportunities to be reached and the effort, time, distance or cost needed to reach them. The indicators suggested were broken into two categories:

- Performance indicators: running time and speed; transport cost (direct and generalised)
- Accessibility indicators: time available at destination; user's net benefit and accessibility synthetic index.

A second report included was a study of accessibility indicators in France (Joly, 1999). In a report on peripherality indices, Schürmann and Talaat (2000) discuss accessibility. A peripheral region is defined as one with low accessibility. Basic accessibility indicators listed include travel cost (accumulated travel cost to a set of activities), daily accessibility (accumulated activities in a given travel time) and potential accessibility (accumulated activities weighted by a function of travel cost). Multimodal and intermodal accessibility are also discussed, with modal accessibility indicators being used to demonstrate accessibility between, and across, transport modes. The paper provides an overview of previous work conducted using the various types of indices.

All of these reports suggest that travel time, travel cost, and availability are all important considerations when assessing accessibility. However, none provide clear guidance as to *how* this should be measured, by what methods, or if there is any way to designate a given area as 'highly accessible' or not once assessment has been carried out. Issues of physical accessibility are also not addressed, with the emphasis instead being placed on socio-economic accessibility. However, work is being undertaken in the area of transport and accessibility, although as yet there does not appear to be a cohesive network for exchanging methods and ideas, which could prove useful for promoting any methodologies and encouraging a unified approach which would allow for comparison between areas and countries.

3. Empirical research: approach

The social and cultural perspectives that have influenced government thinking on social exclusion must now be addressed in the policies and practices of Local Transport Authorities. Over the next five years, the focus will shift from national and regional policy frameworks to the meso-level of transport serving city regions and sub-regions, especially because:

- a) Many Local Transport Authorities are now carrying out programmes that explicitly address social exclusion and the need to improve accessibility for disadvantaged groups, especially through their Local Transport Plans, The Mayor's Transport Strategy and Borough Spending Plans. This means that the practitioners responsible for implementation will require conceptual definitions of social exclusion/ inclusion to be *operationalised* according to the principal of 'fitness for purpose' (Lyons 2003: 340). Most fundamentally, there is a need *to identify the people who experience exclusion and where they are located* so that resources can be targeted and appropriate action taken.
- b) There is now an urgent need for techniques that will enable Authorities *to prove that their programmes will have a positive effect on reducing social exclusion*. This will soon become a universal imperative in the next round of Local Transport Plans, as an accessibility strategy, including an audit of needs and resources, will become a core component in the next round of Local Transport Plans for 2006/07/ 2010/11. Public expenditure on major schemes such a light rail that are justified will reference to their role in reducing exclusion will also need to 'prove it' to the Department for Transport and to the Treasury. This highlights the need for reliable measurement of the benefits to those who experience exclusion identified in a).
- c) If exclusion is the result of marginalisation of the powerless by the powerful, implementation of the inclusion agenda highlights the need for new, empowering structures of urban governance (Atkinson 2003). Implementation of programmes and schemes described in b) *will require continuing political will, and hence wide public support*, not only from those who are disadvantaged, but also from those who are transport-affluent. And, as Hodgson and Turner (2003: 271-2) conclude, *facilitation of more inclusive user participation in the processes that determine the operation and management of transport systems* will be a significant challenge; the transport profession will require 'new rules, practices and tools'.

In order to assess the significance of these issues and problems for Local Transport Authorities, interviews were conducted with senior officers in AUNT-SUE Project Partner Authorities: Transport for London (TfL), LB Tower Hamlets; Bristol City Council; Brighton and Hove City Council. Semi-structured interviews of approximately 90 minutes were conducted informally in Council offices by interviewers (Steve Shaw and Ruth Sims) to allow respondents to define the points that they considered to be of greatest importance. The discussions were taped, transcribed and summarised below. Three open-ended questions were posed:

- a) Who is socially excluded with respect to transport?
- b) How can you evaluate the impact of a scheme on social Inclusion/ exclusion?
- c) Who are the agents of change and who are the blockers?

4. Empirical research: findings

Who is socially excluded with respect to transport?

TfL

- Highlighted their widening appreciation of the range of people who may experience transport-related exclusion, including exclusion with regard to race, gender, faith, income, learning difficulties, sexual orientation
- Emphasised the process of enhancing knowledge and understanding of who might be excluded, and how to respond to their needs, e.g. people with learning difficulties
- Recognised that there may be psychological barriers to overcome, and that increasing people's confidence to get out and about, and will make a difference in reducing their sense of isolation. For example, psychological barriers may deter people, eg claustrophobia, fear of crowds, aggressive behaviour of other passengers, personal security concerns

LB Tower Hamlets:

LB Tower Hamlets:

- The particular needs of the following people were highlighted: black and ethnic minorities (especially where English is not first language), people with disabilities, unemployed, low paid (especially shift workers), older people
- Emphasised exclusion through fear, with regard both to personal security as well as danger of crossing roads, and differences in the way people with different abilities, disabilities, level of confidence might perceive the same route
- Perhaps low income groups should be regarded as excluded because they are priced off faster modes of public transport, i.e. London Underground and National Rail
- It may sometimes be hard to reconcile the accessibility needs of different groups. For example, at micro-level some new vehicle designs had reduced seating capacity to accommodate wheelchair users and parents with pushchairs; these may create difficulties for people who experience difficulty in standing.

Bristol City Council:

- Identified particular needs of people with disabilities, black and ethnic minorities, elderly, young adults, 16-19 years, unskilled (especially young), schoolchildren
- The demography of some low-income areas around the city centre has changed with younger gentrifiers moving in and purchasing houses, e.g. Southville
- However, in other areas accommodation has remained mainly in social ownership; in some cases anti-social behaviour and violence towards drivers has prompted First Bus to withdraw services, reinforcing the exclusion of some groups with low car ownership, notably elderly people e.g. Inns Court and Filwood Park
- The physical lay-out of residential areas also affected the ability of the bus operator to serve some communities and their attractiveness for revenue

generation, e.g. some low rise terraced housing less attractive than routes serving high rise estates such as Parkcliff

- Restructuring of the local economy, especially the decline of manufacturing in South Bristol and growth of service industry and distribution in Avonmouth and South Gloucestershire has isolated unskilled non-car owners from employment opportunities. The required travel is too difficult by bus as there are few orbital or cross-city routes

Brighton and Hove City Council:

- Identified particular needs of elderly, people with disabilities, shift workers, young adults, schoolchildren
- Highlighted inadequacies of area bias in identification of needs; over-reliance on ODPM indices of multiple deprivation may fail to identify scatters and pockets of transport poverty in more affluent areas, especially elderly without cars: an important aspect of need in Brighton and Hove
- The topography and urban design of some estates in East Brighton meant that buses could only run along main roads, leaving some residents in hinterland somewhat isolated, especially people with walking difficulty
- Emphasised need for social indicators to reflect degrees of exclusion/ exclusion, rather than yes/no
- Demand-responsive bus services could offer solutions in some cases, but there were still regulatory constraints, especially requirement to register 6-minute reliability window with Traffic Commissioner (no more than 1 minute early, or 5 minutes late)

How can you evaluate the impact of a scheme on social inclusion/ exclusion?

TfL:

- TfL are developing more systematic outcome monitoring of Borough Spending Plans that will take account of social inclusion effects
- Before/ after surveys that had a social impact dimension had been undertaken for major infrastructure schemes, notably JLE and Tramlink
- With regard to physical design in these major schemes, the suitability of transport infrastructure for particular groups (eg Visually Impaired People) can be assessed by representative users, e.g. by mystery shoppers
- However, the secondary effects can have unintentionally adverse consequences, eg gentrification and displacement of lower income groups due to rising rents along new tube routes, so that those who benefit most from increased accessibility are the wealthier newcomers
- At the micro-level of urban design, eg drop kerbs on crossings, it may be hard to compare the effectiveness of alternative designs, or to evaluate the benefits: assumed to have a positive effect but hard to prove and justify
- Qualitative surveys of the effects on individuals may be the only way to elicit important emotional and quality of life components, eg Camden's Scooter Loan scheme is evaluated through travel diaries
- Nevertheless, there are strong pressures for TfL and Boroughs to adopt simple quantified Key Performance Indicators that measure outputs rather than outcomes, and these may be used in 'league tables' of Borough performance, eg number of crossings that comply with DPTAC standards, regardless of how many people use them,; it is therefore hard to prioritise micro-level improvements and assess how they enhance personal mobility within the population

- It is hard to assess suppressed demand and identify with any clarity the underlying causes, i.e. why particular people are not going out.

LB Tower Hamlets:

- Schemes to improve personal security could review statistics of recorded crime and anti-social behaviour before and after implementation, e.g. street lighting improvements on routes from housing to public transport in Spitalfields
- Surveys of users of new transport services may indicate number of passengers who might be considered disadvantaged (especially non-car owners) it is more difficult to assess suppressed demand
- Acceptability of new public transport infrastructure should take account of perceptions of different groups, and this could be done through mystery shopper surveys, eg JLE mystery shopper survey highlighted different perceptions of wheelchair users and people with walking difficulties
- Ward level statistics on multiple deprivation could be misleading, may be more scattered pockets of disadvantage, and Planning Policy Guidelines PPG3 has encouraged 10-30% social housing on new housing estates built by developers; this may create isolated areas of low income housing within expensive residential areas, e.g. on Isle of Dogs

Bristol City Council:

- Social inclusion was an over-arching theme of all intervention in transport by Bristol City, along with environment and the local economy, however it was hard to monitor progress on the following key issues:
- *Improvements to personal security for vulnerable groups*: it appeared that vulnerable groups were deterred from using some public transport, but this was impossible to evaluate by on-site or on-vehicle surveys, a notable example being night buses. Conversely, the high proportion of women using park and ride schemes suggested that these were perceived to be relatively safe, but this had never been the subject of research
- *Improved access to public transport for people with disabilities*: there was a need to evaluate the effects of action to improve access to bus stops and accommodation of people with walking difficulties and people using wheelchairs, especially accessible buses as these were being introduced by First, route-by-route
- *Improved availability of passenger information*: implementation of visual and audio real-time information systems at bus stops and on-vehicle should be monitored with regard to its fitness for purpose for different groups, including visually impaired people
- *Better access to education*: an unexpected 'side effect' of a recent 'yellow bus' initiative for 11-13 year olds in Henbury has been a dramatic fall in truancy and officers will work with Education to monitor this more closely, a the pilot scheme may suggest opportunities to reduce truancy in other schools

Brighton and Hove City Council:

- The City Council is monitoring the effect of a DfES funded initiative the aim of which is to increase participation in Further Education by 16-19 year olds in East Brighton through a tendered bus service that now offers a direct route to the colleges (participation for this group was 18% compared with 56% nationally). If participation rates go up, this might suggest that poor public transport links had previously been a deterrent.

- Some on-bus surveys are carried out on tendered services to assess usage by car-owning households, versus those without regular use of a car. For example, the leisure bus service 'Breeze up the Downs' from city centre to Devil's Dyke on Sussex Downs aimed to improve access to the countryside for those without cars, as well as offer a more sustainable alternative to driving to the Area of Outstanding Natural Beauty; on-bus surveys indicated that 55% users did not have access to a car
- It was recognised that throughout the city, on-bus surveys should be complemented by surveys of residents to establish and monitor attitudes of those who used public transport less frequently or seldom, and a postcard questionnaire poll was carried out in 2003
- Large-scale investment in improvements to local transport and the public realm is sometimes justified with reference to the anticipated effects on reducing social exclusion, and there will be an increasing need to 'prove it'. Major proposals for a rapid transit bus route along Brighton and Hove seafront will have social inclusion as well as economic and environmental objectives and these should be assessed and monitored if the scheme is approved.

Who are the agents of change and who are the blockers?

TfL

- In London, the Mayor has considerable power, and Mayor Ken Livingstone has given a priority to the inclusion agenda
- Powerful officers have also made a difference, notably the Transport Commissioner for London, who was prime mover in setting up the Equality and Inclusion Unit
- The Boroughs may be influenced by TfL through guidance and especially through its approval of BSPs, but some have chosen not to engage, even some that have high % of people who may be considered excluded according to census and other statistics
- The Treasury is also a key gatekeeper, and if it is not convinced of the arguments for major schemes such as West London Tram, the exclusion problems of the area will continue
- Awareness training by transport operators' staff was highlighted; the shared understanding of issues and policies at corporate level by TfL may still not be matched by front line operating staff responsible for service delivery.

LB Tower Hamlets

- Emphasis was given to Council policies and programmes as set out in Borough Spending Plan and Unitary Development Plan; Local Area Partnerships; the catalytic role of particular Members, especially on projects that affected constituents in their respective Wards
- Boroughs acted as 'moderating' force with regard to implementation of infrastructure, especially the design constraints of the street environment
- The Cabinet structure in LBTH was helpful in obtaining a balanced and strategic overview to inform decision making, but responsibility is still fragmented with respect to transport and urban design
- With regard to micro-level infrastructure, such bus stops and other street furniture, a balanced view had to be taken, but even so there was often a need to make adjustments after implementation due to lobbying by local residents and traders, suggesting a need for improved communication and consultation in advance

- There was a need to obtain a balanced and strategic overview across the different social groups that experienced social exclusion with respect to transport and the LBTH Accessible Transport Forum was an advisory body that informed Council policy
- There are disability awareness training courses for front line staff; nevertheless need to monitor to ensure that the training has desired effect on behaviour towards particular excluded groups such as VIPs

Bristol City Council

- First Group Buses is the near-monopoly bus operator in the city and thus a key influence on provision; its commercial remit meant that its objectives may diverge from public policy on social exclusion, important aspects being: relatively high fares, areas served/ not served by commercial network, viability of night buses, design of vehicles acquired for fleet (e.g. seat configuration, accommodation of people with standing difficulties, people using wheelchairs, patents with pushchairs), awareness training of drivers, other staff
- Strategy and policies set out in Local Transport Plan place an emphasis on social inclusion; key Members have provided leadership, but the recent change in political control from Labour to hung Council had created uncertainty
- Urban Bus Challenge has a specific social inclusion remit and successful bids by Bristol funding has encouraged expansion of Community Transport, but problems with management by volunteers, especially continuity of initiatives
- Voluntary sector that operate Community Transport, e.g. Dial-a-Ride have left some excluded groups poorly served, notably ethnic minority women
- Infrastructure improvements to accessibility of buses on boarding, especially 'Showcase' routes, but physical design problems of footways and carriageways, especially available kerb space, parking at bus stops, managing arrival and departure of buses
- There are capacity constraints in some cases; demand to accommodate people in wheelchairs exceeds supply on some park and rides, even when services operate a 10 minute frequency, the constraint being two wheelchair spaces per bus
- There could be conflicts between the interests of different excluded groups on accessible buses, notably between wheelchair users and parents with pushchairs
- The most articulate and well-connected groups tend to be successful in arguing for resources

Brighton and Hove City Council

- Emphasised role of Go Ahead Group, Brighton and Hove Buses running 95% services, which has been expanding routes and frequencies in response to a strong upward trend in demand of about 5% per annum 1993-2003
- Cabinet of Councillors set strategic priorities, policies are set out in the Local Transport Plan, some Members have interest in particular initiatives, especially in the Wards they represent
- Some articulate and influential pressure groups represent particular interests in their local areas, especially traders and residents, as well as users, e.g. visually impaired people
- As in other Authorities, local people tend to raise objections *after* the installation of street furniture and other small scale infrastructure, and may argue for re-siting
- Brighton and Hove City have pioneered several initiatives to improve communication and participation, including post/e-mail consultation with 500+

people to inform of service changes, listen to ideas and seek input before tendering for small scale infrastructure

Accessible Bus Stop Working Party meets monthly as round-table that includes the Council, bus operators, Traffic Commissioners, design consultants, user groups, and other local public agencies and third sector organisations.

5. Analysis and Discussion

Who is excluded?

As Hine and Grieco (2003: 301) have emphasised, 'much of the focus on social exclusion and transport has been around the areal or zonal', especially the use of multiple deprivation indices to identify and map 'clusters' of excluded people. This implies that action will then be taken to target deprived 'neighbourhoods' and reduce their residents' 'isolation from the social mainstream'. Indeed, under the heading *Which people and places are worst affected?* SEU (2003: 33-6) highlights 'geographic variation,' and the accessibility problems of the most deprived 10% of wards in the country. In these areas, 75% of the population have no car, and as a consequence may experience greater difficulty reaching key services. Likewise, Bristol Local Transport Plan (Bristol City 2000: 21-2) under the heading *Social Exclusion*, emphasises the uneven pattern of car ownership, varying from over 80% households down to 35-50% in more deprived wards:

'This creates very different patterns of travel, and of life, for different communities in the city. The pattern of low car ownership in areas of high social exclusion and the pressures that congestion and the continuing popularity of the car is placing on the public transport network means that the transport system as it stands is exacerbating the problems of social exclusion'.

Even where higher population densities support public transport, trips to access work and some key services may not be easy to accomplish due to barriers that may be spatial, temporal, financial or personal (DETR/TRaC 2000). Peripheral location, poor local services, segregation by busy roads, topography and/or urban design reinforce the isolation of some neighbourhoods, e.g. in Moulsecoomb, East Brighton and Barton Hill, Bristol. In some areas, crime and anti-social behaviour in the street and on public transport may discourage vulnerable groups from walking and travelling, especially after dark. In Bristol's Inns Court and Filwood estates, violent intimidation of bus drivers had caused the operator to withdraw, leaving some areas unserved by public transport.

A severe drawback with area-based identification is that it will fail to recognise the geographical 'scatter' of some social groups that experience accessibility problems (Hine and Grieco op. cit.). Where people live in relatively affluent areas, it may be hard to argue for additional resources. This point was emphasised by Brighton and Hove:

"The car-less retired person living in what is now a well to do area is a significant part of the population we deem to be suffering from transport poverty."

The SEU (op. cit.: 34-7) acknowledge this shortcoming with regard to people 'experiencing social exclusion but living in relatively affluent areas,' and refer to examples of groups who might experience barriers to travel: older people, young people, black and minority ethnic people, lone mothers, and people with disabilities. The two test groups in the Scoping study - visually impaired people and young adults

- are examples of 'scattered' groups. However, *Making the Connections* does not provide a comprehensive list, and there are no definitive national or international guidelines. The senior officers of the Local Transport Authorities interviewed in the scoping study identified the following social groups that they considered to be particularly at risk of transport-related social exclusion.

Tower Hamlets	Transport for London	Bristol City	Brighton and Hove
Older people	Older people	Older people	Older people
Black and ethnic minorities, English not first language	Due to race	Ethnic minorities	
Parents with young children and pushchairs	Parents with young children and pushchairs	Parents with young children and pushchairs	
Disabled people	Physically disabled people	Disabled people	Disabled people
Low paid, especially shift workers		Low paid, shift workers/those needing access to work generally	Low paid, shift workers/those needing access to work generally
		Young people	Young people
	People with learning problems, mental disabilities		
	Due to sexual orientation		
	Due to gender		
	Due to faith		
	Due to income		

Table: People considered to be at risk of transport-related social exclusion

TfL described a learning process, where at corporate level, knowledge and understanding was gained of the range of people who might experience transport-related exclusion. For example, a wide range of psychological barriers to travel may significantly reduce people's travel horizons and thus their quality of life. These might include people with learning difficulties, those who fear violent assault and harassment in public spaces, and people who suffer from claustrophobia and anxiety in crowds. These may be hard to identify, and tend to be matters of degree along a spectrum, rather than fall into a simple dichotomy of included/excluded:

"We are beginning to get a wider understanding of who may experience exclusion. We are also open to hearing about even wider definitions of exclusion, for example with age in particular, your confidence may be impaired - an emotional issue".

It was imperative to ensure that this was followed through in service delivery, i.e. in design and operation. To increase social inclusion, it is important to identify these diverse groups and work out how to accommodate their specific needs. This might, for example, suggest awareness training for those designing and installing equipment such as passenger information systems, and for customer-contact staff.

Focusing on the needs of specific social groups in relation to operation and design should also help to identify conflicts where action to accommodate the needs of one group might make accessibility worse for e.g. wheelchair users versus parents with pushchairs on accessible buses and trams. Establishing where conflicts arise might, at least, provide a first step in the process of working out how they might be resolved. The social category approach is therefore critical to policy, design and operation. However, it is recognised that current lists are far from exhaustive; the groupings are imprecise and overlap so that an individual may be in more than one category. The approach proposed in WP1 that combines life-cycle with the spatial dimension (scale yet to be defined) therefore seems appropriate, not only because it acknowledges the differing travel-related aspirations of people of different age group, but also because it offers a more 'open-minded', synoptic view of the local population that may reveal previously unacknowledged or hidden forms of transport-related exclusion.

How to measure?

Until the late 1990s, transport planning had been criticised for underplaying the need to measure the social ramifications of transport provision (Whitelegg 1997; Hine and Mitchell 2001). Our Scoping study suggests that the inclusion agenda is now firmly embedded in the rationale for intervention by the Local Transport Authorities interviewed, e.g. Bristol:

"Social inclusion is one of the priority themes for everything we do, along with improving the environment and the local economy."

Nevertheless, all those interviewed emphasised that, in practice, very little monitoring was undertaken to evaluate the social effects of intervention. Brighton and Hove commented:

"Up until now, we've been too busy implementing initiatives, but the time is coming when we shall have to justify schemes through more systematic evaluation."

TfL have to justify their own proposals to DfT as well as evaluate the merits of schemes submitted to them in Borough Spending Plans (BSPs) where it was claimed that there were benefits to excluded groups and neighbourhoods identified above. However, there were no published guidelines for monitoring the effects with any rigour:

"I think it is generally considered that the effect will *be* good. It's just that you can't prove it very well. I do get the odd scheme that says we anticipate this will benefit say 1200 people. But I haven't found out how they measure it. "

This lack of tools and resources for systematic evaluation seems increasingly problematic for a number of high profile schemes in the two Unitary Authorities and in the LB Tower Hamlets. The following generic themes include some on-going projects, as well as some issues that are a likely to be addressed by proposals for action in next five years:

Reducing fear of crime in public spaces and on public transport

LB Tower Hamlets highlighted the need monitor perceptions of safety in order to assess the effectiveness of recent street lighting and other personal security initiatives around social housing areas, e.g. Spitalfields. Similarly, Bristol underlined the need to monitor the benefits of personal security improvements around taxi rank

and bus stops in city centre, lighting at other stops, CCTV on some buses. Brighton and Hove stressed the need to monitor perception of personal security, especially around unstaffed railway stations.

Improved access to public transport and real-time passenger information

LB Tower Hamlets introduced a 'Fish Island Hopper' bus route to provide a link for those living in a relatively isolated area of the Borough, and carry out on-vehicle surveys to monitor use by journey purpose and by car/non-car owners. Bristol is undertaking on-going improvements to bus stop design and siting on 'Showcase Routes', and recognise the need to monitor user response, especially where accessible bus fleets are being introduced. Likewise, it would be desirable to monitor the on-going Local Bus Information Strategy to improve the availability of Real Time Information at bus stops, on vehicle, and Website, and co-ordination with the Legible City initiative audio-signage on streets and other public spaces. Brighton and Hove are monitoring user responses to accessible stops and Real Time Information.

Better access to education and recreation

Bristol City cited a need to assess the (unexpected) positive effects on reduction of truancy as a result of a pilot 'yellow bus' route taking 11-13 year olds to school: a benefit that will be closely monitored. Brighton and Hove are monitoring the effects of a pilot bus service directly linking East Brighton (Pathfinder) with colleges to the west, the aim of which is to increase participation rates by 16-19 year olds in Further Education. They also monitor the use of a leisure bus service ('Breeze up the Downs' from Brighton to Devil's Dyke on the South Downs), and on-vehicle surveys indicate that 55% users do not have access to a car.

Evaluation of the social benefits of all the above schemes will require *assessment of how much difference schemes make to user perceptions and experiences of accessibility: a level of satisfaction against yet-to-be-determined benchmarks*. Although they might provide some relevant background, practitioners acknowledged the shortcomings of existing published statistics, such as level of reported crime before/ after personal security initiatives. Surveys that assess individual users' experiences and perceptions before/after interventions are somewhat unusual, but the practitioners cited two examples of techniques that are being used:

- Travel diaries by scooter users (LB Camden Scooter Hire Scheme)
- Mystery shopper survey by VIPs, wheelchair users, mobility impaired on Jubilee Line Extension (LB Tower Hamlets/ Disabled Passengers Unit)

Evaluation based only on surveys of passengers using new facilities/ services is problematic, as it gives no indication of suppressed demand among target groups. Large-scale household surveys would be desirable, but these are rarely undertaken because of the high cost. This important point was stressed by LB Tower Hamlets with reference to the new Fish Island Hopper bus, subsidised because of its anticipated benefit to those who lived in what was considered an isolated and disadvantaged area:

"There is an inherent problem with relying upon on-vehicle surveys that can only identify the characteristics of users and their journey purpose. They cannot identify who or how many are deterred from using the service, or the reasons why."

The Local Transport Authorities also expressed concern over the misleading use of Performance Indicators, especially to rank the performance of Local Authorities. TfL

stressed that in addressing transport-related exclusion, there should be much greater emphasis on the *development of indicators that measured outcomes of interventions, rather than outputs*:

“There may be strong pressure to adopt simplistic local government Key Performance Indicators to produce ‘league tables’. For example, ‘how many crossings are compliant, eg with DPTAC standards?’ Whether or not anybody ever uses them is another matter”.

This implies the need to carry out qualitative, longitudinal surveys to capture people's experiences and perceptions and how these might change over time, for example using techniques such as travel diaries, one-to-one interviews and focus groups. TfL commented, however, that some Boroughs are better resourced than others to carry out such work. More generally, elected politicians can become impatient for 'tangible results.'

Who are the agents of change?

The concept of social exclusion has highlighted the structures, agencies and complex processes that may combine to reinforce the involuntary isolation of those who already experience disadvantage, and constrain their ability to participate in activities that society considers 'normal'. The Government acknowledges the absence of any single agency to facilitate action to reverse the processes and plan for improved accessibility (SEU 2003: 61):

'At the moment no one is responsible for making sure that people can get to key services, jobs and other activities.'

In the near future, this responsibility will be firmly placed with Local Transport Authorities, as they will be required to implement Accessibility Planning (AP) in the next round of Local Transport Plans (LTPs) to be submitted to DfT in 2005. The Government expresses confidence in AP (ibid.):

'This process will enable local authorities and other agencies to assess more systematically whether people facing social exclusion can get to key activities, and to work more effectively together in implementing solutions.'

The Scoping study confirmed that Local Transport Authorities in the AUNT-SUE consortium have a strong commitment to the social inclusion agenda, and have already put into place initiatives to make transport environments and infrastructure more accessible. Such good practice can be built upon and may offer transferable solutions. However, the interviews suggested that even where the political will is strong, the powers and resources available to Local Transport Authorities are limited. They also underlined the need to ensure the necessary 'joined up thinking' espoused in AP can be put into practice. There were indications that the secondary effects of interventions with other public policy objectives, such as to stimulate the local economy or to increase low cost accommodation could have unforeseen consequences for the access and mobility of people identified in a) above. Effective co-ordination by Local Transport Authorities will require the collaboration of the 'other agencies': powerful stakeholders with diverse objectives whose support must be enlisted.

Current commitment may be strong, both at national and at local level. Nevertheless, anxieties were expressed with regard to an uncertain political and economic climate

over the next five years, with the possibility of a 'backlash' against programmes that espoused social justice objectives. With the notable exception of compliance with the Disability Discrimination Act 1995, much depends on the use of discretionary powers and public expenditure that may be cut back or re-allocated. Without robust methodologies to identify the beneficiaries and evaluate outcomes, proposals justified with reference to 'social inclusion benefits' may be more difficult to defend. TfL stressed the role of London's Mayor as a key driver of change:

“Ken Livingstone happens to be very strong on pushing the social inclusion agenda. If Londoners elected a different Mayor who had a different set of priorities, this would definitely impact on the priority and enthusiasm with which TfL - as a functional body directly reporting to the mayor - would give to social inclusion issues. While we should have to meet our legal obligations, the degree to which we went beyond that which we are doing now would be greatly constrained”.

TfL also stressed the influence of the Treasury and the Chancellor. Nationally, *Transport 2010* (DETR 2000) proposes to make available capital grants that will support up to 25 light rail schemes over the decade. In London, the example of Croydon Tramlink suggests that light rail can benefit people using wheelchairs and others with impaired mobility, providing it is integrated with other transport and the surrounding street environment is made equally accessible (Mayor of London 2001: 147-8). There is also evidence that Tramlink has helped improve access to employment and key services in areas such as New Addington. However, TfL will have to work hard to convince the Treasury of the case for other proposals such as the West London Tram (Uxbridge-Shepherd's Bush), especially if opposed by local pressure groups. TfL are themselves important gatekeepers through the annual settlement of funding through the Borough spending Plans. LB Tower Hamlets and LB Camden were examples of Boroughs that had worked closely with TfL, but others were less enthusiastic:

'We give guidance but we do not force a bid and in one or two cases Boroughs are choosing not to engage with TfL programmes because they do not see it as a priority for their Borough. The statistics for those Boroughs may suggest perhaps that this is not the right decision for them to make because of the number of people that may be considered socially excluded.'

The process of bidding for government or European Commission funding for transport projects with explicit inclusion objectives had been an important catalyst for collaboration between local stakeholders, and a notable example is Urban Bus Challenge. Bristol had successfully bid to develop projects that included remedial action addressing severance of black and ethnic minority communities by the M32 motorway in St. Paul's-Montpelier-Easton.

LB Tower Hamlets emphasised their elected Members as key promoters of social inclusion, and considered the cabinet structure helpful in facilitating more co-ordinated action, as did Brighton and Hove and Bristol. Nevertheless, there were concerns that other interventions, in some cases, might have unintended consequences. For example, as a Local Planning Authority LB Tower Hamlets had negotiated section 106 agreements that required developers to build 10-30% social housing in order to obtain planning permission for large private housing schemes in Docklands. Unless the area has good public transport, this may reinforce the social exclusion with regard to transport of these new residents creating isolated areas within the new expensive private housing. Another example of unintended consequences was in Bristol, where encouragement of the night economy of the city centre through night clubs and other entertainment was expected to stimulate a

demand for all-night buses that would also be available to shift workers such as hospital staff. In practice, however, crime and anti-social behaviour around bus stops, taxi ranks and three of the eight night bus routes is now a significant threat to nurses and other night-workers. Furthermore, the employment of 'Doorsafe' security staff is a significant public cost.

Significantly, the two Authorities outside the regulated TfL region identified bus companies as key agents of change: Go Ahead Group (Brighton and Hove) and First Group (Bristol). Both have near-monopolies of the commercial network and a high proportion of tendered services. Their co-operation was therefore essential, especially with regard to routes and schedules operated, and policies with regard to fleet purchase, fares, staffing and staff training. These affected the four critical dimensions identified in DETR/TRaC (2000: 70-2):

- *Affordability*: concessionary fares are now mandatory (Transport Act 2000), but for many people on low incomes, high fares seem a significant barrier, especially in Bristol.
- *Availability*: in Brighton and Hove services are expanding in response to upward demand (about 5% per annum), but in Bristol patronage is static or in decline and services in some areas have been withdrawn due to anti-social behaviour, as discussed above.
- *Accessibility*: the Disability Discrimination Act 1995 will be an important catalyst as older buses are phased out and replaced. Both cities had relatively new fleets with fully accessible vehicles on some routes, but barrier-free mobility requires collaboration to ensure accessible streets, bus stops and interchanges.
- *Acceptability*: the quality of services can be enhanced through micro-level improvements by designers of vehicles (specifications and fleet purchase), supporting infrastructure such as Real Time Information, as well as the availability and awareness of employees (staffing and training).

The voluntary sector also plays a significant and expanding role in complementing mainstream public transport, responding to user needs not being met by the commercial network or tendered services. Nevertheless, as Bristol emphasised:

“A problem with Community Transport is that it has not reached certain communities, especially among ethnic minority groups, notably ethnic minority women who have low access to cars. So, needs are not addressed by community transport volunteers who are often middle class and middle aged. Their organisations tend to be run by similar like-minded people. You almost need an outreach worker”.

All the Local Transport Authorities emphasised the potential blockers of change at the micro-level of streetworks to enhance access and amenity in the public realm. In particular, it was difficult to identify and communicate and consult with residents and traders who might be affected. LB Tower Hamlets commented:

“It is quite often necessary to make minor changes, as residents and traders seldom read proposals but lobby for alterations after they have been carried out.”

Faced with similar problems, Brighton and Hove have put resources into a more proactive approach to elicit responses before putting small-scale projects out to tender, and consult more systematically, initially through targeted post/ e-mail communications. The process is also informed by the monthly meetings of the Accessible Bus Stop Working Group, whose members include bus operators, traffic engineers, design consultants, users and user groups.

In the context of the Third Way agenda, the concept of social inclusion requires approaches to urban governance that incorporate 'joined up thinking'. The deeper-seated processes that exclude people from urban transport and the public realm - and therefore from participation in desired activities - are now being addressed, and at the level of city-regions transport planners play a key role. The Government expects Accessibility Planning to provide an effective structure and an important catalyst for further change (SEU 2003). As explained in the Department for Transport's guidance (DfT 2004), all Local Planning Authorities will identify and analyse accessibility problems, and establish 'strategic partnerships' around specific themes. The process will then lead to the formulation of more detailed 'action plans'. Transport planners will thus facilitate and monitor implementation of accessibility strategies and action plans in partnership with transport providers of all modes, as well as a very wide range of key stakeholders from other sectors, especially to improve access to 'the services with the greatest impact on life opportunities - jobs, health care, learning and food shops' (ibid.: 1). These agencies will be critical to initiatives for improving access and personal mobility for areas, groups and individuals that are considered 'excluded', as discussed above.

For the past two decades, transport in the UK has been subjected to market forces, and is largely delivered by commercial or not-for-profit organisations. The delivery of urban transport systems is thus beyond the direct influence of Local Transport Authorities, although exceptions include London Underground, contracted bus services, Quality Partnerships in deregulated areas. And, even in these cases, implementation of corporate policies to promote inclusion at 'street level' can be far from straightforward. As Booth and Richardson (2001: 142) emphasise, transport planning in the UK can no longer be understood as a public sector activity; rather, it has become 'a multi-agency, multi-sectoral, multi-modal process, which must balance and engage with a wide range of interests, issues and policy arenas.' Development and implementation of the inclusive solutions by the AUNT-SUE consortium will require a collaborative approach by transport providers, as well as non-transport agencies:

- 'vertical' collaboration between designers and operators of the elements of transport systems: vehicles, ways and terminals from the macro-level of city-regions down to the design and positioning of micro-components such as street furniture (see WP 4, 5);
- 'horizontal' collaboration between diverse interests that influence and shape transport and the public realm in each locality.

More challenging will be the development of structures to involve individuals and socially excluded 'communities' that may be spatially and/or identity-based. As Hodgson and Turner (2003: 265) argue, the very idea of social inclusion implies empowerment and involvement of 'socially excluded' people in interventions to reduce their isolation from desired activities. With reference to land use planning, the idea of facilitating social action and meaningful dialogue between 'expert', technocratic ways of 'knowing', and the life-worlds of people's everyday lives has been termed 'communicative' or 'collaborative planning' (Forester 1989, Healey 1997). As yet, however, the theory has seldom been put into practice (Allmendinger 2001), and its application to planning for socially inclusive transport and public spaces in city-regions is an important theme to be addressed by the AUNT-SUE consortium in the Main study.

6. Conclusions

It is clear from discussion with the practitioners in Local Transport Authorities, that current 'checklists' for auditing accessibility and exclusion in transport and the public realm of city-regions are less than satisfactory for their requirements. There is a need for new methodologies that incorporate the perceptions and experiences of the user and would-be user. Within the context of national and EC regulations, transport operators exert considerable influence, and in many cases that affect the user, commercially-led service providers decide what changes will be made and which will not, and policy makers require methods for assisting them in highlighting the case for intervention. The Local Transport Authorities and other participants in this study expressed their interest in continuing their involvement in the development of the proposed 'toolkit' of methodologies in the main study, especially by helping to pilot auditing techniques. This would include collaboration with the AUNT-SUE research team in the auditing of 'case study' schemes that had particular significance for improving access and inclusion in their respective city-regions.

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