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goal of the reduction of transport-related  
social exclusion

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SOCIAL EXCLUSION**

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## ACCESSIBILITY INDICATORS AND THE POLICY GOAL OF THE REDUCTION OF TRANSPORT- RELATED SOCIAL EXCLUSION

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### Abstract

One of the principal rationales for accessibility planning in the UK is the reduction of transport-related social exclusion. This paper is concerned with an examination of the relevance of the indicators suggested by the UK's Department for Transport (DfT) in their Guidance on Accessibility Planning in Local Transport Plans. (DfT 2005a). This paper reports on research that was undertaken as part of an EPSRC funded project - AUNT-SUE (Accessibility and User Needs in Transport for Sustainable Urban Environments). The paper starts with an in-depth analysis of the journey characteristics of those groups considered socially excluded by the Social Exclusion Unit (SEU 2003) and then considers the extent to which the indicators reflect the types and characteristics of journeys likely to be important to these groups. This analysis suggests that the DfT indicators are limited in scope and that a new approach to the definition of accessibility indicators is needed.

## 1. Introduction

Accessibility planning, in the UK, arose from the realisation that developments in transport, and particularly in private motorised transport, have had considerable impacts on accessibility – the ease with which people can reach their “needed” or desired, destinations. In 1994 the Departments of Transport and the Environment jointly published *Planning Policy Guidance Note 13 – Transport (PPG 13)* (DoE 1994). This sought to encourage more integrated land-use and transport planning both at a policy and a practical level. Understanding accessibility at that time was deemed to be central to planning decisions, but little progress was made in devising policies which would seriously address access discrepancies until the concept of “social exclusion” was added.

Social exclusion is about more than income poverty. One widely used definition refers to people who “lack the resources to obtain the type of diet, participate in the activities and have the living conditions and amenities which are customary, or at least widely acknowledge or approved, in the societies to which they belong” (Golding 1986 p31). Social exclusion happens “when people or places suffer from a series of problems such as unemployment, discrimination, poor skills, low incomes, poor housing, high crime, ill health and family breakdown. When such problems combine they can create a vicious cycle” (SEU 2006). Social exclusion can happen as a result of problems that face one person in their life. But it can also start from birth. Being born into poverty or to parents with low skills still has a major influence on future life chances. It can be exacerbated by a number of other factors, one of which is accessibility.

The Department for Transport’s approach to accessibility is principally derived from recommendations made in 'Making the Connections', the 2003 Social Exclusion Unit (SEU) report on transport and social exclusion. 'Making the Connections' emphasises that accessibility is not just about transport and can be influenced by decisions on the location, design and delivery of other services and by people's perceptions of personal safety (SEU, 2003).

Accessibility as defined by the SEU is concerned with whether people can “get to key services at reasonable cost, in reasonable time and with reasonable ease” (SEU 2003). The lower people’s accessibility levels, the lower are the chances that they will be able to participate in “normal” activities. Clearly accessibility levels vary, between both groups of people, and between different origins and destinations. Accessibility, except in some city centres, is invariably higher for those who have regular access to a car; thus those who have regular access to a car are less likely to be defined as socially excluded. According to the Social Exclusion Unit, (SEU 2003) accessibility planning is needed to make sure that the access needs of excluded groups, particularly people on low incomes, people without access to a car, the elderly, disabled, and young, are met. Accessibility planning should, among other things:

- Make it easier for people to get to work;
- Help to reduce health inequalities;
- Help to increase participation and attainment in education.

Accessibility planning is thus a process that aims to help people from disadvantaged groups or areas to access jobs and what are referred to as "essential" services. To this end, the guidance documents on the construction of Local Transport Plans include one specifically aimed at accessibility (DfT 2005a).

The Accessibility planning guidance provided for local authorities asks them and other agencies to assess systematically whether people can get to places of work, healthcare facilities, education, food shops and other destinations that are important to local residents. It appears to be assumed that difficulty in making journeys with these purposes is the major connection between transport and social exclusion - that the absence of these journeys is more excluding than the absence of other journeys.

This concept of transport social exclusion is narrow and, we believe, in need of considerable refinement. The reason is that it ignores many of the potentially excluded population – one simple example might be older people wanting to get to a bingo hall on a Sunday afternoon. If the extent of exclusion relates to the extent to which a person is unable to participate in activities deemed “normal” in his or her society, then the older people, if unable to travel, might be more excluded than someone with a long and convoluted – but feasible – journey to work.

Local transport authorities that produce Local Transport Plans are tasked with taking the lead in accessibility planning at the local level, working in partnership with other others such as local planning authorities, Primary Care Trusts, Jobcentre Plus, local education authorities, local Learning and Skills Councils and Crime and Disorder Reduction Partnerships.

Accessibility Planning is designed “to promote social inclusion by tackling the accessibility problems experienced by those in disadvantaged groups and areas. These might include the availability, affordability and accessibility of local public transport, the design, location and delivery of non-transport services, and the ability of the community to reach those services by foot or cycle” (DfT 2005a). The premise of accessibility planning is that policy development and service delivery can be improved to better meet the accessibility needs of local communities by being more evidence-led and through improved cross-sectoral working.

The Guidance contains no actual benchmarks or targets, but asks each local authority to set itself one accessibility target. The following indicators are, however, suggested for the evaluating progress.

- % of a) pupils of compulsory school age; b) pupils of compulsory school age in receipt of free school meals within 15 and 30 minutes of a primary school and 20 and 40 minutes of a secondary school by public transport
- % of 16-19 year olds within 30 and 60 minutes of a further education establishment by public transport

- % of a) people of working age (16-74); b) people in receipt of Jobseekers' allowance within 20 and 40 minutes of work by public transport
- % of a) households b) households without access to a car within 30 and 60 minutes of a hospital by public transport
- % of a) households b) households without access to a car within 15 and 30 minutes of a GP by public transport
- % of a) households; b) households without access to a car within 15 and 30 minutes of a major centre by public transport

If these indicators are to be used to evaluate reductions in social exclusion resulting from increases in accessibility, the indicators themselves need to be assessed in relation to the groups and individuals who are to be helped by accessibility planning, in terms of their appropriateness and breadth of coverage. Those groups and individuals who are particularly likely to be at risk from transport-related social exclusion have been identified in "Making the Connections" and many other documents (see DETR 2000 for further references). They include:

### **People from areas of multiple deprivation**

An area of "multiple deprivation", whose standing can be judged from the "Indices of Deprivation" (ODPM 2004a), is one in which will be found high levels of all or many of the following: unemployment, crime, poor health, low income households and families on benefit, one-parent families, teenage pregnancies, schools on special measures, poor literacy and numeracy rates and poor educational attainment, crime and vandalism, empty housing, and high proportions of ethnic minority residents. Those living in these areas (ODPM 2004b) are frequently those who cannot afford to live anywhere else, who have no access to a car, and who therefore can suffer from exclusion from certain aspects of mainstream society. Many of these areas are on the periphery of large cities where population densities, and therefore transport provision, can be less ubiquitous than in central zones and are thus those living in these areas are likely to be less than well connected to most jobs and services than either car owners or central city dwellers.

### **Older people**

Older people have been described as "recycled teenagers" (Help the Aged, 1988). They are people who want to "get out and about, shopping, visiting friends or family, going to the cinema or simply sitting in the town centre watching the world go by" (Help the Aged

1988). They need purpose and activity in their lives; mobility is crucially important to their quality of life, and to some extent, their health (Banister and Bowling 2004, Gilhooly et al 2002, Metz 2000). Public transport is important: currently only 69% of men over 70 and 27% of women have a driving licence, and as people get older and their faculties diminish, even those who can use a car have to contemplate giving it up (DETR 2001). This is not a long-term trend. The number of older licence-holders, and the difference between the numbers of men and women holding a driving licence is expected to reduce over the next decade, as around 71 per cent of 50 to 59-year-old women hold a driving licence compared to 90 per cent of men of the same age (NTS 2004). Work undertaken on behalf of the ODPM from the English Longitudinal Study of ageing has identified poor accessibility as a contributory factor to four dimensions of social exclusion among older people: social relationships, cultural activities, basic services and material goods (ODPM 2006).

### **Young people**

Children and young people are one of those groups that can suffer particularly through transport constraints from a lack of opportunities: educational, work, and social. Access to learning which takes place outside school hours is a particular problem for young people, particularly those on low-income. In some areas, the problem is simply the cost of the bus fare home. Elsewhere, there is no available public transport at the required time and parents cannot pick their children up by car (Harper 2005). Those teenagers who obtain a licence and can afford to run a car have a considerable advantage, in terms of opportunities at an important time of life, over non-drivers (Cairns 2000, SEU 2003, Solomon 1998).

### **Low income earners, the unemployed and job-seekers.**

The main problem, but not the only one, for many of those in these groups is lack of any kind of car access. In 2002, 59% of households in the lowest income quintile did not have access to a car. High proportions of households without access to a car were found among single pensioners (69%), student households (44%) and lone parents (43%) (NTS 2004). For many in these groups the problem is cost (DETR 2000, SEU 2003). Not only do low income earners find fares expensive in absolute terms, but those who are reliant on public transport have also been disadvantaged relative to car users. Since 1980, public transport fares have risen continually in real terms, overall by 37%, while there has been a slight reduction in motoring costs (NTS 2004). It should be noted that the importance of transport is emphasised by the fact that it is now, on average, the biggest single item of expenditure in the household budget, well ahead of both housing and food costs, at £59.60 per week (ONS, 2005).

### **Members of ethnic minority groups**

While the public transport system contains nothing that could be considered particularly problematic because of the actual ethnicity of users, poor public transport impacts disproportionately on these user groups because seven out of ten people living in the 88 most deprived economic wards in the country are from minority groups. They are less

likely to own cars (DfT, 2005b). They are more likely to work unsocial hours - when public transport services are sparse. And when they travel, it is less likely to be along the routes that are most serviced by public transport. Many of the problems they encounter are connected to language/information and racist behaviour (DfT 2004).

### **Single parent families**

Particularly for lone parents, who have no immediate backup, co-ordination of parental journeys and children's transport is often problematic, especially if the parent is working or has other commitments. The complexity of the arrangements increases as the distance travelled to and from work increases; journeys over 30 minutes can make life very complicated (DWP 2005). The parent's journey is not the only one under consideration; the parent's timetable is also dependent on the child's (or children's) timetable and journeys. Two key determinants of the complexity are the timing of the parent's working hours and their travel time to work. Arrangements even for one child can involve large numbers of agents – grandparents, neighbours, after-school clubs, which of course make the parent's journey pattern variable. It is not surprising that considerable attempts are made to try to create proximity between home, workplace, education and childcare" (DWP 2005).

### **People with disabilities (mental and/or physical) inhibiting travel**

OPCS Disability Surveys (Martin and Elliot, 1988) showed that 3 million people cannot walk 200 yards without stopping and without severe discomfort, 2.3 million people cannot stand for 5 minutes without severe discomfort and 0.5 million people lose control of their bladder at least daily. About 12-13% of the population are transport disabled in some way, that is they experience problems in accessing some or all modes of transport.

Disabled people travel a third less often than the general public; they drive cars less and are less likely to have one in the household, but nonetheless the most common mode of transport for disabled people is a car driven by someone else. Transport issues are the single most prominent concern at local level. Transport is essential for disabled people to access education, employment, health services, social events and leisure pursuits. The 'transport' chain is a key issue, and transport needs to be considered as an interlinked system from the origin of the journey to the final or intermediate destinations. Each element of the chain – including information, the pedestrian environment and transport interchanges - needs to be user-friendly and accessible (DETR 2000, DRC 2003, SEU 2003).

All those with physical and mental disabilities, those with poor short-term health or chronic health problems, including language, literacy and numeracy challenged, are likely to have some transport difficulties.

## **2. Accessibility planning**

In order to help the groups listed above, local authorities are required to audit accessibility levels in their areas (DfT 2005a). Each has to nominate one target of its choice to aim at

with accessibility improvements. The local authorities may use either use own indicators or the national indicators listed above to monitor progress towards these targets. The definition of any indicators at all is – or appears to be - a great leap forward in the policy arena. However there is a considerable distance still to go. This is because the reasoning behind these choices is unclear, and notably, that no cost indicators have been defined, which overlooks the fact that much of the related research to date has raised not only the question of journey times and difficulty, but of affordability (DETR 2000). Furthermore, as far as can be ascertained, none of them is based on any evidence base of what users actually consider acceptable and “inclusive”. A 30 minute journey time may be less important to those members of the “socially excluded” groups such as elderly people, as frequency of journey, the price of the journey or indeed the conditions of travel (DETR 2001). No research appears to have yet been carried out to test potential user reaction to these indicators. Finally, and crucially, the indicators are framed in terms of aggregate numbers of people within an area, and take no account of individual household-based problems, which is where many accessibility problems or the socially excluded reside (DETR 2000). Nor is there any reason to suppose that improved accessibility to the prioritised destinations is likely to affect the perceived/experienced levels of exclusion of groups such as, for example, the elderly and disabled. Although it is clear that, for example, transport is one of the contributory factors to quality of life for the elderly (Banister and Bowling 2004), there has been virtually no work done on the transport aspirations of these groups, and the extent to which the deficits in their accessibility contribute to their exclusion, or indeed whether the problem is more connected to accessibility or mobility (Metz 2000).

An exception is work commissioned by Transport for London, (TfL 2003) whose results bear out the claim that “journey time to town” may not be at all significant to some of those who might be defined as socially excluded. Their surveys found that, contrary to there being any problems with “essential” journeys, there is a markedly higher level of interest in making increased numbers of journeys for social reasons. Visiting friends and relatives, leisure, entertainment and sport accounted for about half the additional journeys that people would like to make.

It was noted in the TfL report that people tended to depress their journey-making aspirations in line with how the possibilities were perceived. But to revert to the crucial finding, while a high proportion of disabled people seem to make most of the essential types of journey they want, there is a great desire to make more “social” types of journey. In the surveys, about two thirds of the respondents cited a transport problem as the reason why a desired journey was not made. The key barrier for this group was accessibility, both of getting to the stop or station and then of getting on to the vehicle.

There is nothing in the DfT indicators to suggest that these journeys, which find themselves classified as social or leisure, need to be taken into consideration when planning accessibility. But those who cannot make them are surely unable to “participate in activities considered normal in the society to which they belong”.

It would be advantageous from the perspective of the policy-maker to be able to say categorically that, for particular groups or individuals, difficulties of various types in making specific regular journeys are contributing to social exclusion. If we define social exclusion as the inability to participate in normal social activities, then we need to establish a set of activity norms. This requires that:

- a) we have a clear picture of current journey/activity patterns;
- b) we establish who is making which “normal” journeys,
- c) we establish who is unable to make them,
- d) Finally if policies to remedy the deficits are to be devised, we need to identify what accessibility problems distinguish the included from the excluded.

Inclusiveness, in accessibility terms, might lead to the requirement that “everybody in (group a) should be able to make x journeys for w purposes at y cost on z occasions every (year, week, month)”. It is arguable that exclusion can be defined in relation to accessibility deficits for a particular purpose or function. If, for example, those in work cannot make the daily journey under reasonable conditions, or people needing social life are unable to access other people in off-duty hours, then they are being excluded by virtue of accessibility problems. But the accessibility of workplaces is of no consequence at all to pensioners or people living on disability benefits; they need to make other journeys for inclusion.

In order to be able to value w, x, y and z above for each group, as well as considering further how far the DfT indicators are applicable to the socially excluded, we have started by establishing a picture of what is currently happening by an in-depth analysis of data collected for the National Travel Surveys.

### **3. Methodology**

Data from the British National Travel Survey (NTS) for 1998-2001 has been used to explore the current travel patterns of the different groups described above. The National Travel Survey is a continuous household survey covering mainland Britain (i.e. England, Scotland and Wales). Data is collected on the journeys made by each member of the household for each consecutive day of a seven day period. Additional data is collected on household and individual characteristics. The sample is stratified by region, car ownership and other characteristics. Within each stratum sampling is done by “cluster sampling” (Kershaw et al 2001, Stratford et al 2003). Prior to 2002 approximately 5000 addresses were sampled annually; in 2002 this was increased to approximately 15000 addresses. Due to limitations of the data, it was not possible to look at all the potentially socially-excluded groups discussed above. In particular, it was not possible to look at the travel patterns of different ethnic minorities as this data was not recorded by NTS until after 2001. The following paragraphs outline which groups we were able to analyse using NTS data and how these groups were defined.

### **People with limited access to a car**

We compared three groups with different levels of car access – those who are the main driver of a company or other vehicle, those living in households with a car but who are not the main driver of that vehicle and those living in households without a car.

### **Young people and Older people**

Three different age groups were identified as potentially worse off than other age groups. These are the 11-15 year olds, 16-20 year olds and older people (defined here as those aged 65 plus). As children reach secondary school age their level of independence increases but still may be very dependent on parents to take them to places, particularly if the distances involved are too long to walk or cycle, or after dark. Sixteen to twenty year olds have yet more independence, many work, but at the same time they are more likely to be in relatively low paid jobs, perhaps working part-time and not yet have a driving licence or a car.

### **Single parent families**

We also chose to look at single parent families with at least one child under thirteen years of age. The upper age limit of the child was determined by the data available within NTS. This age group is compared to two parent families with at least one child under thirteen years of age and the average UK family.

### **Part-time workers**

After a brief analysis of the effect of employment status on travel patterns, it became clear that part-time workers were a group that needed further attention. We chose not to look specifically at the unemployed, students or the retired due to the substantial overlap between these categories and low income households, young persons and older persons respectively. The NTS categories of employment status did not allow us to investigate shift workers.

### **People in low income households**

We looked at a number of income bands to explore travel patterns within low income households and compared these with households in higher income bands and the UK average household.

### **People with travel difficulties**

Finally, we looked at the travel patterns of those who declared in the NTS that they experienced travel difficulties. Those who experience difficulties travelling on foot, those who experience difficulties travelling by bus and those who experience difficulties both on

foot and by bus were compared with those who experience no travel difficulties. It should be noted that the reasons for these travel difficulties were not available.

#### 4. Travel patterns of the socially-excluded

##### Older people

On average people over 65 make 24% fewer trips than the average UK person (Table 1). Within this group the average number of trips per person per year declines steadily with age; for example the 65-69 age group make on average 970 trips per person per year, just 6% below the UK average, the 75-79 age group make 710 trips on average, whilst those aged 85 and over make an average of just 360 trips, a noteworthy 65% less trips than the average UK person makes per year. An older person makes very few work or education trips – just 24 trips per person per annum on average, less than 3% of their total annual trips. Less than 5% of these are made for education purposes. Elderly people tend to make less social and leisure trips than the average UK person.

Interestingly this age group makes more trips for the purpose of “just walking” than any other age group. Eight percent of trips made by this group were for this purpose whilst average UK person makes just 4% of their trips just to walk. This percentage is lower still for the 11-15 and 16-20 year olds; for both these groups just 2% of all trips are for the purpose of just walking.

On average those over 65 years of age make 33% more trips than the UK average person makes in a year for shopping and personal business purposes (Table 1). Those aged 65 and over on average make substantially more trips for food shopping than the average UK person (174 compared with 119 respectively) and almost twice the number of trips for medical purposes.

**Table 1: Trips per person per year by purpose for selected age groups.**

	<b>Aged 11-15</b>	<b>Aged 16-20</b>	<b>Aged 65+</b>	<b>UK mean</b>
Work & Education	375	389	24	275
Shopping & Personal Business	167	200	412	309
Leisure & Social	326	362	297	313
Escort	45	42	44	129
Other	1	4	1	2
<i>TOTAL</i>	<i>914</i>	<i>997</i>	<i>779</i>	<i>1029</i>

**Source: NTS 1998-2001**

Those over 65 still in work travel on average 15 minutes to get to their workplace compared with a UK median trip time for commuting journeys of 20 minutes (Table 2). The median

amount of time spent travelling per food shopping trip for most age groups in the UK is 10 minutes. This starts to rise after 60. The 60-64 age group on average travel for 12 minutes to get to food shops, those aged 65+ travel on average 15 minutes. The total time spent per week travelling decreases steadily with increasing age after about age 50.

**Table 2: Median journey times by purpose for selected age groups.**

	<b>Aged 11-15</b>	<b>Aged 16-20</b>	<b>Aged 65+</b>	<b>UK Average</b>
Work & Education	17	20	15	15
Shopping & Personal Business	15	15	15	12
Leisure & Social	15	15	15	15
Escort	30	30	30	30
Other	10	15	10	10
<i>Average</i>	<i>15</i>	<i>15</i>	<i>15</i>	<i>15</i>

**Source: NTS 1998-2001**

The average trip length for commuting journeys for the elderly people is just under 3 miles; this compares with a UK average of approximately 5 miles. Those aged over 65 travel on average travel on average 3 miles to visit friends and family, similar to the UK average.

### **Young people**

Eleven to fifteen year olds make 11% fewer trips on average than the average UK person, 16-20 year olds make 3% fewer trips. The younger of the two age groups (11-15 year olds) are still in full-time education and are restricted by UK law as to the number of hours they can work. Forty-one percent of trips undertaken by this age group are for work or education purposes (Table 1) of which 92% are for education. Many 16-20 year olds are also still in full-time or part-time education, and some of these also undertake part-time work. A substantial number of this age group however are in full time employment. This is reflected in the data – 39% of trips made by this age group are for work or education purposes, of which 53% are for commutes and 40% are for education. The remainder (7%) are business and other work trips. By comparison for the average person in the UK, 27% of trips are for work or education purposes, of which 58% are commutes and 24% are for education.

Increasing levels of income and independence of youths (16-20 year olds) compared with the younger (11-15 year olds) age group affect the types and amount of social and leisure activities undertaken. The average 11-15 year old in the UK makes just under 330 trips for social and leisure purposes per annum, whilst the average 16-20 year old makes approximately 360 trips for these purposes per year. There are subtle differences between the types of activities these two groups undertake. The younger of the two groups participate in organised events, be they participating in sports or public entertainment of some sort slightly more than the older group. The older group tend to socialise with friends

and eat and drink out more than is the case for 11-15 year olds. Both groups make on average slightly more social and leisure trips than the average UK person (Table 1). When it comes to shopping and personal business trips, the 11-15 age group makes 46% fewer trips on average than the average UK person. The average 16-20 year old makes 35% fewer trips for these purposes. The average 16-20 year old makes as many comparison shopping trips per year as the average UK person, but less trips for food shopping, medical and other personal business purposes.

The median trip time for commuting journeys in the UK is 20 minutes. The median commute trip travel time for young persons is less than the UK average. 11-15 year olds travel on average only 10 minutes to get to their workplace, whilst 16-20 year olds travel on average 15 minutes to get to their workplace. 11-15 year olds on average spend 20 minutes travelling to school. For 16-20 year olds the average trip time for education purposes rises to 25 minutes per trip.

In total the average UK person spends 8 ½ hrs per week travelling. By comparison an 11-15 year old will spend on average just over 6 hrs a week travelling, a 16-20 year old just under 7 ½ hours. As well as spending less time travelling, the two groups of young persons also do not travel as far as the average UK person. 11-15 year olds travel on average 63 miles per week, 16-20 year olds 83 miles. The UK average is 115 miles per week. The shorter weekly distances covered by both age groups compared with the UK average reflect a combination few trips and slower journey speeds. Young persons are more likely to use the bus rather than a car for their journeys than the average UK person. They are also more likely to walk or use a bicycle. Notably, the 16-20 age group make considerably greater use of taxis for their trips than average person in the UK (Table 3).

**Table 3: Trips per person per year by mode for selected age groups.**

	<b>Aged 11-15</b>	<b>Aged 16-20</b>	<b>Aged 65+</b>	<b>UK mean</b>
Walk	346	299	246	271
Bike	40	25	8	15
Car etc	355	468	425	643
Bus	148	148	78	65
Rail	14	28	7	20
Taxi etc	7	27	11	12
Other	3	2	5	3
<i>Total</i>	<i>914</i>	<i>997</i>	<i>779</i>	<i>1029</i>

**Source: NTS 1998-2001**

### **People in low income households**

People living in households on low incomes make fewer trips per year on average than those living in higher income households (Table 4). Those living in low income

households tend to make fewer trips for work and educational purposes than higher income households, and slightly fewer trips for social and leisure purposes. However, members of this group do make more shopping and personal business trips than the average UK household. This may be a reflection of the structure of low income households, with a high proportion of retired couples and young persons falling into this group.

**Table 4: Trips per person per year by purpose by household income.**

	<b>under £10,000</b>	<b>£10,000 - £19,999</b>	<b>£20,000 - £29,999</b>	<b>£30,000 - £39,999</b>	<b>£40,000 - £49,999</b>	<b>£50,000 - £74,999</b>	<b>£75,000 &amp; over</b>	<b>UK Average</b>
Work & Education	112	246	329	365	387	378	380	275
Shopping & Personal Business	335	326	285	300	279	291	302	309
Leisure & Social	276	306	308	316	325	310	302	303
Escort	88	118	147	155	149	155	151	129
Other	9	10	15	16	16	13	13	12
<i>Total</i>	<i>265</i>	<i>378</i>	<i>434</i>	<i>467</i>	<i>478</i>	<i>466</i>	<i>472</i>	<i>395</i>

**Source: NTS 1998-2001**

**Table 5: Total time spent travelling per day by purpose by household income.**

	<b>under £10,000</b>	<b>£10,000 - £19,999</b>	<b>£20,000 - £29,999</b>	<b>£30,000 - £39,999</b>	<b>£40,000 - £49,999</b>	<b>£50,000 - £74,999</b>	<b>£75,000 &amp; over</b>	<b>UK Average</b>
Work & Education	15	15	15	17	20	20	20	15
Shopping & Personal Business	15	11	12	10	10	10	11	12
Leisure & Social	15	15	15	15	15	15	15	15
Escort	30	30	30	28	30	30	30	30
Other	10	10	10	10	10	10	10	10
<i>Average</i>	<i>15</i>	<i>15</i>	<i>15</i>	<i>15</i>	<i>15</i>	<i>15</i>	<i>15</i>	<i>15</i>

**Source: NTS 1998-2001**

There also seems to be a clear correlation between income level and the amount of time spent travelling to/from work (Table 5). Those in the higher income brackets spend longer on average on the daily commute journey than those in household income groups under £30,000 per annum. It should be noted that for all groups the median time is significantly lower than the mean time (Table 6), suggesting that there exists a minority of people who make significantly longer journeys than the average. The mean travel time for social and leisure trips, excluding holiday base trips, varies between 22 and 25 minutes per trip, whilst the median travel time for these trips is 15 minutes for all income groups.

**Table 6: Mean journey times by purpose by household income.**

	<b>under £10,000</b>	<b>£10,000 - £19,999</b>	<b>£20,000 - £29,999</b>	<b>£30,000 - £39,999</b>	<b>£40,000 - £49,999</b>	<b>£50,000 - £74,999</b>	<b>£75,000 &amp; over</b>	<b>UK Average</b>
Work & Education	21	23	25	27	28	31	33	26
Shopping & Personal Business	19	18	17	17	18	17	18	18
Leisure & Social	23	23	22	22	23	25	25	23
Escort	68	65	66	68	65	76	69	67
Other	16	15	13	14	14	14	15	14
<i>Average</i>	<i>21</i>	<i>20</i>	<i>21</i>	<i>22</i>	<i>23</i>	<i>24</i>	<i>25</i>	<i>22</i>

**Source: NTS 1998-2001**

In terms of the percentage of travel time used for various trip purposes, Table 7 shows that there is a positive correlation between the amount of travel time spent for “work and education” with income, and an inverse correlation for both maintenance and leisure trips, with escort trips taking roughly the same proportion of travel time.

**Table 7: Percentage of daily travel time used for different journey purposes.**

	<b>under £10,000</b>	<b>£10,000 - £19,999</b>	<b>£20,000 - £29,999</b>	<b>£30,000 - £39,999</b>	<b>£40,000 - £49,999</b>	<b>£50,000 - £74,999</b>	<b>£75,000 &amp; over</b>	<b>UK Average</b>
Work & Education	14%	27%	35%	39%	41%	42%	44%	32%
Shopping & Personal Business	37%	28%	22%	20%	19%	18%	19%	25%
Leisure & Social	37%	34%	30%	28%	29%	28%	26%	31%
Escort	3%	3%	4%	4%	4%	4%	3%	4%
Other	8%	7%	7%	7%	7%	7%	7%	7%
<i>TOTAL</i>	100%	100%	100%	100%	100%	100%	100%	100%

**Source: NTS 1998-2001**

### **Part-time workers**

Part-time workers make more trips overall per person per year than both full-time workers and the average UK person. As can be seen from Table 8, a key source of these “extra” trips is shopping and personal business trips. Part-time workers on average make 369 trips for these purposes, compared to full-time workers who make just 271 trips. Another key source is escort trips – part-time workers make on average 222 trips for escort purpose per year compared with full time workers and the average UK person who make 104 and 129 trips respectively. This probably reflects the gender composition of part-time workers – nationally 78% of all part-time workers are women (ONS, 2004). Women tend to take on greater responsibility for childcare and duties relating to the upkeep of the home (Hamilton et al, 2000). The need to undertake caring and domestic responsibilities may limit the opportunities of women to undertake full-time employment (Dobbs, 2005).

**Table 8: Median journey times by purpose for full-time and part-time workers.**

	<b>Full-time workers</b>	<b>Part-time workers</b>	<b>UK Average</b>
Work & Education	488	354	275
Shopping & Personal Business	271	369	309
Leisure & Social	290	327	303
Escort	104	222	129
Other	14	13	12
<i>TOTAL</i>	<i>1166</i>	<i>1286</i>	<i>1029</i>

**Source: NTS 1998-2001**

**Table 9: Median journey times by purpose for full-time and part-time workers.**

	<b>Full-time workers</b>	<b>Part-time workers</b>	<b>UK Average</b>
Work & Education	20	15	15
Shopping & Personal Business	10	10	12
Leisure & Social	15	15	15
Escort	30	30	30
Other	10	10	10
<i>Average</i>	<i>15</i>	<i>15</i>	<i>15</i>

**Source: NTS 1998-2001**

Full-time workers spend approximately one third of the total time they spend travelling in any week travelling to and from work. As they are less likely to work every day, commute journeys take up a smaller proportion (21%) of the total time part-time workers spend travelling per week. In addition, the median journey time for commutes by full-time workers is 20 minutes; for part-time workers the median journey time is just 15 minutes (Table 9). Part-time workers also make shorter journeys (4.1 miles) on average than full-time workers (9.5 miles), and half of part-time workers travel a maximum of two miles to get to their workplace. Part-time workers are likely to be on lower incomes than full-time workers, and as has already been discussed in section 4.3 there is a correlation between income and the length of the journey to work. The slower average journey speeds of part-time workers reflect their greater use of public transport (Table 10).

There are no significant differences in the average journey time for any other purposes apart from commuting and business-related trips between part-time and full-time workers (Table 9).

**Table 10: Trips per person per year by mode for full-time and part-time workers.**

	<b>Full-time workers</b>	<b>Part-time workers</b>	<b>UK Average</b>
Walk	195	326	271
Bike	19	21	15
Car etc	857	829	643
Bus	42	76	65
Rail	38	17	20
Taxi etc	13	15	12
Other	2	2	3
<i>Total</i>	<i>1166</i>	<i>1286</i>	<i>1029</i>

**Source: NTS 1998-2001**

## Single parent families

Those living in single parent families make fewer trips per person per year than the average UK person, whilst those living in two parent families tend to make more trips per person per year than the average UK person (Table 11). Those living in single parent families make far fewer trips for work purposes than dual parent families, but make slightly more education trips. Single parent families and dual parent families make similar numbers of food shopping trips per person per year but those living in single parent families make less non-food shopping and personal business trips than those living in two adult families. Members of single parent families make a greater number of trips visiting friends at private homes and fewer trips for other types of leisure and social purposes than two adult families. Some of these differences could be explained by the different composition of the two types of family. Children generally travel less than adults, make fewer shopping and personal business trips and spend more time visiting friends at private homes. Unless the number of children in single parent families is on average less than those in two parent families then there will be a greater proportion of children to adults in single parent families. This probably explains why on average those living in one adult families make more education trips than two adult families.

**Table 11: Median journey times by purpose by household structure.**

	<b>2 adults, youngest child 0-12</b>	<b>1 adult, youngest child 0-12</b>	<b>All other households</b>	<b>UK Average</b>
Work & Education	300	215	267	275
Shopping & Personal Business	258	220	346	309
Leisure & Social	282	288	316	303
Escort	235	207	62	129
Other	11	8	14	12
<i>Total</i>	<i>1085</i>	<i>937</i>	<i>1005</i>	<i>1029</i>

**Source: NTS 1998-2001**

Generally median trip times for those in one adult families were found to be similar to those living in two adult families and not much different from the UK average (Table 12). It should be noted that the median travel times are in some cases substantially less than the mean travel times, suggesting a long tail in terms of the distribution of trip lengths. However, due to the lower number of trips undertaken on average by those living in one parent families the total time spent travelling per year is less for these families than for two parent families and the UK average. Those living in one adult households spend on average a greater proportion of their travel time, travelling for education and food shopping purposes and a smaller proportion of their overall time spent travelling, travelling for work and non-food shopping purposes than two adult households. The comments made about the proportion of children to adults in these family types are also relevant here.

**Table 12: Median journey times by purpose by household structure.**

	<b>2 adults, youngest child 0-12</b>	<b>1 adult, youngest child 0-12</b>	<b>All other households</b>	<b>UK Average</b>
Work & Education	15	15	20	15
Shopping & Personal Business	10	15	15	12
Leisure & Social	15	15	15	15
Escort	25	30	30	30
Other	10	10	14	10
<i>Average</i>	<i>12</i>	<i>15</i>	<i>15</i>	<i>15</i>

**Source: NTS 1998-2001**

Those living in one adult households tend to travel shorter distances for commuting and shopping purposes than those living in two adult households and the UK average person.

### **People with travel difficulties**

By definition it is to be expected that people who have difficulties travelling will make less trips than the average. Clearly the extent to which they are excluded will be related to the extent to which they have to limit or curtail their trips. A large number of those who have difficulty travelling are older people (see Table 13); the ability to travel declines with age (see Jarvis et al. quoted in Metz, 2000).

**Table 13: Age by travel difficulty.**

	<b>Foot &amp; Bus</b>	<b>Foot only</b>	<b>Bus only</b>	<b>No difficultie s</b>	<b>Total</b>
16-20 years	1%	1%	0%	98%	100%
21-29 years	2%	2%	0%	96%	100%
30 - 39 years	3%	2%	0%	95%	100%
40 - 49 years	5%	3%	1%	91%	100%
50 - 59 years	7%	5%	1%	87%	100%
60 - 69 years	13%	12%	1%	74%	100%
70 - 79 years	23%	15%	2%	61%	100%
80 years or older	49%	15%	2%	33%	100%
<i>UK Average</i>	<i>9%</i>	<i>6%</i>	<i>1%</i>	<i>84%</i>	<i>100%</i>

**Source: NTS 1998-2001**

**Table 14: Trips per person per year by purpose by travel difficulty.**

	<b>Foot &amp; Bus</b>	<b>Foot only</b>	<b>Bus only</b>	<b>No difficulties</b>	<b>UK Average</b>
Work & Education	30	93	123	320	275
Shopping & Personal Business	292	424	404	344	309
Leisure & Social	193	270	342	320	303
Escort	59	76	95	133	129
Other	8	10	11	14	12
<i>TOTAL</i>	<i>583</i>	<i>873</i>	<i>975</i>	<i>1131</i>	<i>1029</i>

**Source: NTS 1998-2001**

A distinction is made in the statistics between those who have difficulties with both travelling on foot and by bus, those who have difficulties with walking only, and those who have difficulty with buses (who may be able to walk). Those who have difficulty with both, predictably, make by far the smallest number of trips of any group – 583 per year compared to 1131 for those with no difficulties and the global average of 1029 (Table 14).

In common with those on low incomes, the highest proportion of trips is for “maintenance”<sup>1</sup> purposes, followed by social and leisure trips. We would not expect that a significant proportion of trips made by people who have difficulties travelling would be for work and education, since they are either likely to be past retirement age or may have disabilities which make it difficult to work, and this is indeed the case.

The amount of travel time devoted to work and education purposes is very significantly lower for those with travel difficulties compared with those with no travel difficulties – 5% for those with foot and bus difficulties, compared with 28% for all people with no difficulties. Since a large number of this group are older than working age, this is what would be expected.

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<sup>1</sup> This includes shopping, health and personal business trips

**Table 15: Median journey times by purpose by travel difficulty.**

	<b>Foot &amp; Bus</b>	<b>Foot only</b>	<b>Bus only</b>	<b>No difficulties</b>	<b>UK Average</b>
Work & Education	15	19	15	20	15
Shopping & Personal Business	15	15	11	12	12
Leisure & Social	15	15	15	15	15
Escort	30	20	60	30	30
Other	10	10	10	10	10
<i>Average</i>	<i>15</i>	<i>15</i>	<i>15</i>	<i>15</i>	<i>15</i>

**Source: NTS 1998-2001**

On the other hand, proportionately more time is spent on “maintenance” trips, of which, as can be seen from Table 16, the number of medical trips is more than twice as high as for those with travel difficulties than for those with no travel difficulties, 33 compared with 15 respectively. The proportion of total travel time taken for this type of journey is six times that of the total travel time spent on this journey purpose by those without travel difficulties.

**Table 16: Medical trips by travel difficulty.**

	<b>Annual Trip Frequency</b>	<b>Percent of Annual Travel Time</b>
Foot & Bus	33	6%
Foot only	34	4%
Bus only	34	3%
No difficulties	15	1%

**Source: NTS 1998-2001**

### **People with limited access to a car**

There is a direct correlation between the level of car access and the number of trips made; the mean number of trips per annum for those with no car access is 911, compared to 1243 for those with good car access (Table 17). Those with limited or no car access tend to make fewer commute trips, trips for non-food shopping and social and leisure trips, but more trips for food shopping than those who are main drivers of a car.

**Table 17: Trips per person per year by purpose by level of access to a car.**

	<b>car, main driver</b>	<b>car, limited access</b>	<b>no car</b>	<b>UK Average</b>
Work & Education	345	263	257	275
Shopping & Personal Business	367	253	240	309
Leisure & Social	348	289	287	303
Escort	169	123	116	129
Other	15	13	12	12
<i>Average</i>	<i>1243</i>	<i>941</i>	<i>911</i>	<i>1029</i>

**Source: NTS 1998-2001**

Commute journey times tend to be longer for those who are the main drivers of a car than those with limited access to a car (Table 18). However, those with no access to a car tend to spend more time on the commute journey than those with limited access to a car. Those with no access to a car have longer journey times for shopping and personal business trips than those with at least some access to a car. For other purposes, there is little to distinguish between journey times for the different levels of car access.

**Table 18: Median journey times by purpose by level of access to a car.**

	<b>car, main driver</b>	<b>car, limited access</b>	<b>no car</b>	<b>UK Average</b>
Work & Education	20	15	20	15
Shopping & Personal Business	10	12	15	12
Leisure & Social	15	15	15	15
Escort	30	30	30	30
Other	10	10	10	10
<i>Average</i>	<i>15</i>	<i>15</i>	<i>15</i>	<i>15</i>

**Source: NTS 1998-2001**

Because the non-car driver is confined to slow modes, it is to be expected that trip distances are greater for those with car access, and indeed there is a direct correlation between average trip distances and level of car access for all purposes.

## **5. Relevance of indicators to specified groups**

### **Older people**

As discussed in section 3.1, this group make very few work or educational trips. They do make a large number of trips for maintenance purposes. It could be argued that these trips are captured by the indicator referring to travel time to major centres. It is possible that many shopping, and personal business trips in particular, could and would be met by a local centre rather than a major centre. Important elements of maintenance trips are those for food shopping and for medical purposes. There is no DfT indicator referring explicitly to food shopping. DfT (2005) does acknowledge this remiss and states that an indicator for food shopping will be included once a suitable source of data on the location of food shops has been identified. Medical trips are partly covered by the indicator(s) for journey time to a hospital. However, one wonders what proportion of medical trips undertaken by this group are to hospital compared with visits to the doctors, dentists, opticians, chiropodists etc. It is also worth noting that the thresholds used in the DfT hospitals indicator are based on median journey times for medical trips and not journey times to hospitals per se.

### **Young people**

Social and leisure trips are frequent amongst this group, with 11-15 year olds making on average 330 trips per year and 16-20 year olds making 360 trips per year for these purposes. For the elder of these two groups the ability to meet and socialise with friends away from home seems to be important, whilst the younger group tend to participate more in organised social events. Neither type of activity is covered by the national indicators. Young people, as discussed above, are likely to be on low incomes so cost of travel is likely to be an important factor. For the older youths the availability of transport in the evenings is also likely to be an issue – allowing travel back from pubs and clubs for example.

### **Low income earners, the unemployed and job-seekers.**

It has been pointed out previously that the main problem for members of these groups is frequently lack of any kind of car access. Thus the characteristics of this group have many overlaps with the characteristics of those in the group with no or limited access to a car. But, as previous reports have found (DETR 2000, SEU 2004), the problem of cost looms large for these groups, and some cost indicators may need to be established. For the older or pensioner members of the group, time may be less of a consideration than cost and accessibility. For the unemployed and job-seekers, time and distance may well be a problem. This is because those in occupations associated with low-level skills, which is likely to include many in this group, typically travel shorter than average times and distances to work (similar to the part-timers) (Green and Owen 2006). Thresholds of 20-40 minutes would therefore seem to be too high for work journeys for this group.

## **Part-time workers**

We have noted that part-time workers make more trips overall per person per year than both full-time workers and the average UK person, and that many of the additional trips can be accounted for by shopping and personal business. Many of those undertaking them are women or other people who will both be low earners and have many diverse responsibilities, which leads to a large number of often complex trips. Furthermore, (and in connection with these concerns) part-time workers' journey to work is significantly shorter than that of full-timers (median time 15 minutes c.f. 20 minutes for full-time workers). The indicator of being within 20 to 40 minutes from work, while it may be applicable to those in full-time jobs, is not appropriate for part-time workers (Green and Owen 2006).

## **Single parent families**

Based on current travel patterns, access to friends and family would seem to be important for this group. Access to nurseries, crèches and children's playgrounds might also be relevant. Consideration needs to be given to the home-nursery-work journey triangle, as mentioned in section 1.6, and the time constraints of complex trip chains. In light of this, the indicator thresholds for the journey to work and for access to shopping (i.e. access to a major centre) may be too long for this group.

## **People with limited access to a car**

If differences in travel time for journeys was the reason why people with limited car access make substantially less trips (833 as opposed to 1266 on average), and the lack of availability of opportunity of all kinds implied by the lower number and by being able to access a smaller number of destinations, there would seem to be a strong case for recommending time indicators for this group. However, if the indicators are derived from public transport times, it is difficult to understand how they would be any more "included" by the application of these indicators. There are also observations to be made on one or two individual indicators, e.g. shopping trips. For the group with limited car access, shopping trips are undertaken more frequently on average than the group with full car access (146 per annum compared to 113.5 trips), probably because they have more time to do so, and also because without a car they are likely to will buy less at a time. Thus the "major centre" indicator, if relevant to the shopping of this group, is probably too high. For these groups it would seem to be more relevant to have access criteria for local shops within walking distance since, for example, they will be unable to do a major "weekly shop" without a car and will need more frequent access if carrying smaller loads. On the matter of "personal business medical", the median time is currently mostly about 15 minutes. This includes, however, both trips to the local GP, trips to dentists, chiropodists etc., as well as hospitals, which will necessarily be further away and which will take rather longer to reach. It should also be noted that the average frequency of trips for people with little or no car access is greater than for those with car access, at 16/16.5 compared to 13.5/14. Thus the 15-30 minute threshold suggested for this trip type would seem to be in need of refinement, with shorter times for GP trips.

Those with limited or no car access, where of working age, are likely to have lower skills than those with cars (Green and Owen 2006) and be able to command a lower wage (see above). All available evidence suggests a direct correlation between income and acceptable travel time; this could be built into the indicators.

## **6. Conclusions**

The analysis which we have undertaken suggests that there is a somewhat limited scope for the indicators proposed by the DfT (2005a) to assist in the reduction of transport-related social exclusion (Table 18). A couple of examples illustrate this point. The first is the case of part-time workers, many of them low-income, whose work journeys are much shorter than those of full-time workers and to whom the work travel time indicators do not therefore apply. A second example of the limited scope is the prevalence of social and leisure journeys for all socially excluded groups, for which no indicators are suggested. We would venture to suggest that at the very least, considerable refinement, and possibly a completely new approach, will be needed for the meaningful evaluation of reductions in transport social exclusion.

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**Table 18: A summary of the relevance of the national accessibility indicators to socially-excluded groups**

<b>Indicator</b>	<b>Older people</b>	<b>Young people</b>	<b>Low income earners</b>	<b>Part-time workers</b>	<b>Single parent families</b>	<b>People with limited car access</b>
% of a) pupils of compulsory school age; b) pupils of compulsory school age in receipt of free school meals within 15 and 30 minutes of a primary school and 20 and 40 minutes of a secondary school by public transport	x	◆	x	x	●	◇
% of 16-19 year olds within 30 and 60 minutes of a further education establishment by public transport	x	◆	x	x	x	◇
% of a) people of working age (16-74); b) people in receipt of Jobseekers' allowance within 20 and 40 minutes of work by public transport	○	●	●	●	●	●
% of a) households b) households without access to a car within 30 and 60 minutes of a hospital by public transport	◆	◇	◇	◇	◆	◇
% of a) households b) households without access to a car within 15 and 30 minutes of a GP by public transport	●	○	○	○	●	○
% of a) households; b) households without access to a car within 15 and 30 minutes of a major centre by public transport	◆	◆	◆	◆	◆	●

Key: ◆ – Relevant, ◇ – Relevant to a limited number of people within this group, or for relatively few trips per year; ● – Relevant trip purpose but inappropriate travel times specified; ○ – Relevant to a limited number of people within this group, or for relatively few trips per year and inappropriate travel times specified; x – Not relevant.