

UNIVERSITY OF OXFORD TRANSPORT STUDIES UNIT

(A Research Unit of the School of Geography and the Environment)



IMPACTS OF ROAD USER CHARGING/WORKPLACE PARKING LEVY ON SOCIAL INCLUSION/EXCLUSION: GENDER, ETHNICITY AND LIFECYCLE ISSUES

Report on Literature Review

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EXECUTIVE SUMMARY

The literature review involves an assessment of theoretical and empirical evidence concerning the impacts of Road User Charging/Workplace Parking Levy (RUC/WPPL) on social exclusion/inclusion with specific reference to gender and ethnic minority perspectives and lifecycle issues. This work updates the literature review that was done for the Scoping Study on the same topic in 2000. From a general viewpoint, the relationship between transport and social inclusion is not well researched and the review seeks to contribute to a greater understanding of this relationship. It utilizes evidence from a wide range of sources and approaches that are not all directly focused on social inclusion and/or RUC/WPPL. This summary describes the main findings of the recent review of literature.

The literature search focused on selected publications that covered the areas of interest defined during a study team brainstorming session. More than 120 documents were reviewed, including project reports, journal articles, conference papers and web-based articles/papers. The documents that were considered to be particularly relevant to this research were evaluated in detail and the numbers examined in each thematic category are shown below:

Theme	Number of documents
Social exclusion/inclusion	14
Transport exclusion	9
RUC	16
WPPL	10
Revenue raising/congestion charging	3
Sequencing of impacts	3
Public perception	3
Urban areas	3
Transport and lifecycle	8
Ethnicity	4
Gender	3

Table E1.1 Number of documents by category

The review started by examining the availability of literature on social inclusion/exclusion. The word exclusion tends to be used because that has been the focus of the policy debate to date. Nevertheless, we are aware of a relatively recent shift in the emphasis from exclusion to inclusion, although much of the literature does not yet reflect this change. It should, however, be apparent that reducing social exclusion and promoting social inclusion are very similar, if not identical processes.

In terms of defining social exclusion, the explanations of this concept provided in the literature reviewed are shown in the following table:

Definition/Explanation	Key concepts of definition/explanation	Source
Social exclusion is a process, which causes individuals or groups, who are geographically resident in a society, not to participate in the normal activities of citizens in that society.	Process, individual/group, participation, normal activities	Hine and Mitchell (2001)
Social exclusion is a shorthand term for what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime, bad health and family breakdown.	Individual/group, social/family/personal problems	Social Exclusion Unit (2001)
The condition of living in a society but not having the opportunity to participate in the normal activities of citizens in that society.	Condition, opportunity, participation, normal activities	Sinclair (2001)
Social exclusion is more influenced by accessibility of goods and services than by mobility per se.	Accessibility rather than mobility	Commission for Integrated Transport (2001)
Social exclusion appears to have replaced 'poverty' and related concepts such as 'underclass'. However, these terms are not synonymous and 'social exclusion' has a markedly different provenance. The author says 'people excluded from society, are those who accept the goals of society in some loose sense but who either don't agree with the socially acceptable means to achieve these or find that these means are not available to them. Thus this group, and those like them, feel included within society's goals and simultaneously excluded from the means of achieving them. Thus social exclusion becomes partial in that it necessitates an element of inclusion. Perhaps another way of putting it would be that if an aggrieved individual or group thought of themselves as 'socially excluded', this classification would be meaningless if that same person or group did not feel that they ought to belong to that particular society. They would therefore feel that they belonged to that society and in that sense could be said to already be included in their own terms.'	Accept society's goals but feel excluded from achieving these goals, may be partial	Pearce (2001)
Social exclusion is a process, which causes individuals or groups not to participate in the normal activities of the society where they are residents.	Process, individual/group, participation, normal activities	Preston et al (2000)
The concept of social exclusion is understood as a multidimensional phenomenon, where exclusion is characterized conceptually as the process which prevents people from a full participation in the society ie. from being socially integrated.	Multi-dimensional, process	EU Business (2000)
Social exclusion and poverty are strongly linked. Generally there seems to be agreement that poverty can be seen as "distributional," linked to resources, and social exclusion as "relational" (Room, 1995; Spicker, 1997). "Relational" issues include " <i>inadequate social participation, lack of social integration and lack of power</i> " (Room, 1995).	Relational, without power/social interaction	TraC (2000)
Exclusion springs from the desire to belong while not being able to.	Belonging	McCluskey (1997)

Table E1.2 Definitions and explanations of the term 'social exclusion'

It should be noted that this table does not purport to provide a definitive list of all available descriptions of the term but is considered to be indicative of the range of definitions in recent literature. It can be seen that although there is not one specific

definition, it is possible to extract the salient concepts of the various authors' perspectives on social exclusion and conclude that it is a process which is understood to be multi-dimensional and prevents individuals or groups from participating in normal activities of their society. It is linked to inaccessibility of goods and services which contribute to a feeling of not belonging. It should also be pointed out that the literature recognizes that social exclusion is relative and identifies a link between exclusion and transport. Sinclair's definition is succinct and reflects the essence of the term social exclusion which is considered to be most appropriate and applicable for this research, namely that it is a condition that affects an individual/group's ability to participate in the normal activities of other citizens.

Hine and Grieco's (2002) paper further elucidates the complexity of examining social exclusion issues. The authors say that the socially excluded are not only clustered together in areas or zones where transport is particularly bad or particularly inappropriate but are also scattered as a consequence of life circumstance. They consider the importance of new information technologies accompanied by demand responsive transport in accommodating the transport needs of scatters as well as clusters of the socially excluded.

There is a relatively small body of literature related directly to transport exclusion. However, authors have found definite links between transport and exclusion with this forming a recurrent theme throughout the review literature. Nevertheless, the term transport poverty has been more frequently used in the papers reviewed with Roberts (2000) highlighting this fact, while recognizing also that

...there is no accepted definition of 'transport poverty', a term which is increasingly used in the social exclusion debate.

Root et al (1996) define the term as "inadequate access to choice of transport" and suggest that there is a danger that the travel poor might suffer disadvantages and social deprivation because of their inability to travel. In studying difficulties in accessing key services, Rushton (2002) provides a valuable insight into the types of disadvantage the transport excluded can face by examining perceptions of difficulty, actual difficulty (as measured by journey time) and mode of transport used. Lucas et al (2001) point to the link between transport and exclusion when they report that low-income groups may be experiencing travel poverty to the extent that a lack of mobility may be exacerbating their social exclusion. This view is supported by research by Urban Forum, VOSCUR and ACRE which indicates that poor transport has a fundamental impact on quality of life as it limits people's choices and opportunities.

The Commission for Integrated Transport (2002) found that the transport excluded can experience suppression of food and non-food shopping journeys in particular and can decline offers of employment due to lack of suitable transport. Of specific relevance to the current research, the Commission indicates that three-quarters of the transport excluded in their study were female and almost half were aged over 65. These findings are complemented by the investigation by Rushton (2002) which reveals that younger people and the elderly have greater difficulty accessing the services studied than the general population and that nearly twice the proportion of people who reported that they experience access difficulties came from households without a car. This implies that lifecycle and car availability issues are important dimensions of the social inclusion debate which will be further informed by the current study's outcomes. Lucas et al's (2001) concern about the negative impacts of rising car ownership on people who do not have access to a car elucidates further the causative inter-relationship between transport availability and exclusion and, by extension, the part transport can play in promoting inclusion. This view is

summarized in Gaber's (2001) article on Lucas et al's (2001) research which argues that poor access to transport increases the individual's sense of social exclusion and heightens the social isolation of older people.

RUC will increase the out-of-pocket costs of car travel (and other motorized road travel) but may reduce journey times. This will lead each individual road user (actual and latent) to consider whether behavioural responses such as change of route or time for journeys, change to other mode (public transport, bicycle) or reduced frequency of journeys are required. The key question concerning effects of RUC on social exclusion/inclusion is whether such charges can lead to individuals/groups changing their activity participation rates. In particular, this would concern the extent to which persons already suffering from low participation will change their level of participation.

Though very little appears to have been written about road user charging and social inclusion, this review seeks to give an overview of road user charging and current thinking on this policy in order to help ascertain its likely contribution to social inclusion/exclusion. Much of the literature focuses on economic and scheme design issues of RUC. Some of the articles provide a synopsis of the international position with regard to the status of various schemes in countries such as Norway, Singapore and the United States.

In relation to the impacts of RUC, the emphasis in the papers reviewed has been on describing uses of revenue in applications that imply a concern about the need for mitigation measures. Sinclair (2001) says it is important to establish the effect of RUC on the behaviour and household budget of the socially excluded and people vulnerable to exclusion. The author suggests that to benefit lower income groups, RUC revenue could be invested in public transport to make general improvements, increase/safeguard its affordability and maintain/enhance its accessibility. In her later paper, Sinclair (2002) states that, since the proposed charging rate is the same for all income groups in the case she studied, some individuals with low incomes (for whom public transport is currently not a realistic option) will be hit harder by introduction of congestion charging. Amongst those likely to be affected are shift workers and those people who have to undertake multi-purpose trips with time constraints eg. single parents. The use of revenue from RUC is also discussed in the ECOPLAN report (1997) which suggests that, among other measures, this financial resource could be used for specific projects concerned with public transport and walking/cycling.

The importance of social and political acceptance of RUC is underlined by STA (2000) which asserts that the viability of road pricing depends upon perceived benefits and justification given for the introduction of the scheme in a particular area. In addition, STA points out that it is necessary to consider whether certain groups will be marginalized through the introduction of charges for road use.

The effects of WPPL on social exclusion are more complex to analyse compared to those associated with RUC. Charges are incurred by employers, so in the first instance would not have impacts on the access to facilities and employment for individuals. Impacts on social exclusion/inclusion will therefore be determined by how employers will respond to the WPPL charges. The assessment of available literature on WPPL seeks to develop a clearer understanding of the policy and its potential effects.

While much has been written about RUC in terms of scheme design or general impacts, relatively little can be found on WPPL. The available literature suggests that employers play an important role in determining employees' travel and, in general,

WPPL is viewed as being easier to implement than RUC. However, May (1999) says that it is difficult to judge how effective WPPL charges will be since some employers will not pass the charge on to drivers or reduce their parking stock. Research by Ison and Wall (2002) looks at how acceptable and effective WPPL is likely to be compared with other policy options and indicates that ring-fencing and clear allocation of revenue raised are important. Their findings also imply a pervasive perception that WPPL is not as effective as introducing RUC in urban areas. Craig (2000) reports that investigation of a charging structure showed that WPPL could have an impact on traffic levels if set at the right level, although there was concern that the policy would not appear to encourage modal shift if employees tended to transfer to parking on surrounding streets where possible. Nevertheless, modelling carried out in California (Metropolitan Transportation Commission, 1999) indicates that a workplace parking charge would appreciably reduce vehicle hours of delay by encouraging people to car pool or switch to other forms of transport. Gerrard et al (2001) state that there is considerable interest in how the economic viability of urban areas will be influenced by policies such as WPPL but recognize that little is known about which businesses are most likely to be affected, what social benefits business leaders perceive will accrue from such schemes and how businesses are likely to respond to the introduction of such a policy. Their paper seeks to address these issues and indicates that the majority of businesses expect WPPLs to lead to a reduction of both traffic pollution and traffic congestion. In addition, Gerrard et al report that businesses expect WPPLs to reduce their own profitability and affect the economic prosperity of a city negatively.

The details of scheme design will be crucial in determining the extent to which RUC or WPPL contribute to social exclusion/inclusion processes. Several authors have highlighted the importance of how revenues from road pricing are used in order to ensure public acceptance of such schemes. In particular, Jones (1998) notes on the basis of public attitude surveys that "...road pricing will not be publicly acceptable unless the money raised is hypothecated for local transport and environmental projects". In the context of social exclusion impacts, allocation of revenue from RUC/WPPL will be a key issue in preventing adverse impacts. The issue of hypothecation was emphasized by the Government in *Breaking the Logjam* (DETR, 1998) and was supported by a majority of the responses received in the consultation exercise (DETR, 2000). It is now enshrined in Schedule 12 of the Transport Act 2000.

There could be considerable scope to reduce social exclusion and promote social inclusion by using the revenue collected from the RUC/WPPL charges to address the accessibility needs of persons experiencing a transport disadvantage in order to carry out their preferred or actual activities. In the context of gender, ethnicity and lifecycle a whole range of policies may be required to accommodate for the variation in problems across individuals. Indeed, the solution to accessibility problems may not even be transport-related, as problems can exist in the form of constraints at either of the journey ends, e.g. insufficient childcare facilities. Furthermore, transport needs for the socially excluded could be addressed through initiatives aiming at reducing the need for travel, thereby achieving two key policy objectives; sustainability and social inclusion.

The TDM Encyclopedia says that road pricing has two general objectives: revenue generation and congestion management. The paper suggests that, although tolls represent a greater financial burden on lower-income than on higher-income motorists, they are not necessarily regressive since this attribute would depend on how much lower-income drivers use roads that have tolls, the quality of travel alternatives and how revenues are used. The authors recognize that lower-income

motorists are sometimes willing to pay for time savings, indicating that pricing strategies that prioritize trips can provide a transportation choice that is valued by drivers of all income levels. In this way, congestion charging can improve basic mobility by giving priority to high value trips. Enoch (2001) says that pricing is a type of mechanism that aims to regulate traffic to 'economically efficient' levels through reduction in vehicle use. However, he perceives that one problem with pricing policies is that equity is an issue, with those who can afford to travel benefiting at the expense of the less well off. In terms of parking, Enoch suggests that pricing, as opposed to regulating, is better able to match demand with supply, contributes to reducing congestion and provides a source of revenue. Nevertheless, it is interesting to note that Day (2002) reports that business directors in the UK are sceptical about the Government's Ten Year Plan for transport being able to reduce road congestion, with over 80% feeling it was unlikely or very unlikely to do so.

The literature reviewed shows a high level of concern about congestion among the UK public. MORI (2001) says the single most important transport issue for the public reported across the country is congestion and Transport and Travel Research (2002) also found that reducing congestion was a highly rated matter in terms of perceived importance amongst respondents from the general public and businesses to a survey carried out in Nottingham. MORI's survey findings suggest further that people are prepared for both radical action and higher public investment to alleviate congestion problems. This report says that a majority of people are in favour of both congestion charging and motorway tolling when revenue is 'ploughed back into transport'. MORI states that over half the population support congestion charging if there is a commitment to spend the revenue on improving public transport. In addition, MORI's study found that 71% of people who drive into congested major town or city centres are prepared to pay something by way of a congestion charge and, of these, almost a third are willing to pay £5 or more. With reference to social exclusion, the survey found transport is perceived as critical to life as it is seen as the key to freedom, independence, access to work and social opportunity.

The European Conference of Ministers of Transport (ECMT) recognizes that how people and goods move from one place to another in cities is a major factor in whether objectives for urban sustainability are met (ECMT, 2001). It underlines this by saying that assuring that the growing numbers of urban and suburban dwellers in all socio-economic strata have access to the services and activities integral to their daily lives, while minimising the negative environmental, equity, economic and health impacts of travel, is the principal goal and challenge facing transport and land-use policy-makers at this time.

With about three quarters of the population of ECMT countries living in urban areas, the Conference of Ministers states that most transport-related environmental and health problems occur in cities and their surroundings. If this density of urban population is related to information on walking in the UK (The Pedestrians Association, 2001) which suggests that walking is more common in urban areas and areas with high population densities and amongst children, women, older people and people on low incomes and people without access to a car, it can be inferred that these groups of people are most likely to suffer the detrimental effects of the movement of goods and people in cities and their surrounding areas.

The World Bank (2001) asserts that as cities are increasingly involved in global trading patterns, the efficiency of their transport systems has become more critical. The paper suggests that urban transport can contribute to poverty reduction through its impact on the city's economy and subsequent economic growth and through its impact on the daily needs of poorer people. The World Bank observes that,

traditionally as cities grow, vehicle ownership grows resulting in increased congestion and pollution. This urban growth leads to perverse distributional effects with low income people being forced to live in less expensive areas in estates or on the periphery of cities. The paper also describes transport provision as a part of a social safety net which can affect specific categories of disadvantaged groups characterized by issues such as income, gender and age. With reference to congestion charging, the Bank says that if this policy was applied in the context of a flexible land and property market, the city would evolve towards a more compact form, with more mixed land use, less resources devoted to spread of the road network and more funds available for upgrading infrastructure in the already urbanized city.

In its report on Transport and Ageing of the Population, ECMT (ECMT, 2002) says that the number of older people in developed countries represents a growing percentage of the total population and generations of old people to come will be more and more mobile. The report makes special mention of older female drivers and suggests that women are driving much more than in the past, although their trips are normally shorter and they travel less annual kilometres than men. These findings indicate the importance of considering effects of policy changes on this section of the population and the need to look beyond actual forecast traffic figures to ascertain the nature of their composition and implications for different types of individuals. As a corollary, in its policy statement on mobility and transport for senior citizens, *Help the Aged* (2001) says that although older people travel if they are able to for a variety of reasons, for all too many, there are barriers to getting out and about. The paper states that while 91% of single pensioners and 53% of pensioner couples do not own a car, 58% of men and 16% of women aged 60 to 69 drive their own vehicles. It follows then that policies that influence car use will have both direct effects on a relatively large number of drivers in their 60s and indirect effects on non-car owners who may rely on others for lifts. It should also be noted that there can be positive effects for these groups too such as improved amenity of urban areas resulting from reduced congestion and increased public transport provision through hypothecated revenues.

Similarly, at the other end of the age spectrum, projects run by The Children's Society (Hetherington, 2001) have identified that access to transport is a major issue for children, young people and their families. The report states that

Getting out of the house - to visit friends or family, to take part in groups and leisure pursuits and in everyday activities such as shopping - is essential to achieving inclusion.

This view is taken even further by the assertion in The Pedestrian's Association's report (August 2001) that research suggests that low levels of social contact may be linked to increased mortality from all causes. Given that it is recognized that access to transport is socially-beneficial and that levels of mobility are increasing, the importance of developing a greater understanding of the relationship between transport and social exclusion/inclusion is evident.

This need for an increased understanding of the synergy between transport and inclusion is relevant for all parts of our society. However, it is particularly appropriate for young people in urban centres because research by The Prince's Trust (2000) has shown that these are the areas with higher levels of disadvantage for young people. These findings are particularly important to this study because they address the ethnic minority dimension and recognize that the minority ethnic population tends to be younger than average (Social Exclusion Unit, 2000). The Prince's Trust report

says there is mounting evidence that intervention in the lives of disadvantaged young people plays a key part in neighbourhood renewal. This strengthens the case for decision makers to take account of this group of people when targeting those in most need and framing policy. Small area analysis, described in the report's research summary, for the two case study areas in this project informs the research framework for this study which will be used as a guide for empirical work carried out in the next phase of the project.

The literature review revealed that there is a distinct lack of relevant data about ethnic minorities in the UK. This is probably due to the fact that 'in the past, collecting biodata on ethnic origin was considered unnecessary...' (The Prince's Trust, 2001). The official UK statistics website 'National Statistics' provides population estimates for 1998 which indicate that 6.5% of the population of Great Britain were from ethnic minorities. The highest proportions of people from ethnic minority backgrounds are Indian (1.7%), Pakistani (1.0%) and Black - Caribbean (0.9%). In addition, the statistics show that the ethnic minority populations are not evenly distributed around Great Britain, but tend to be highly concentrated in the more urbanized parts of the country. According to the Cabinet Office's Social Exclusion Unit (2000)

In comparison to their representation in the population, people from minority ethnic communities are more likely than others to live in deprived areas; be poor; be unemployed, compared with white people with similar qualifications; suffer ill-health and live in overcrowded and unpopular housing.

Indeed, in terms of employment, The Prince's Trust (2001) has suggested that belonging to a minority ethnic group makes an individual 2.2 times more likely to be unemployed than a white person. The differences in economic activity rates vary amongst males and females and amongst different ethnic groups. The Trust suggests that there are a multitude of explanations to account for the difference in economic activity rates, for example, for South Asian women, marriage often takes them out of the labour market. Circumstances vary between people from different ethnic backgrounds, and participation and achievement levels vary again with gender and age. It is also important to note that the discrepancy in economic activity rates is larger for women aged 16-24. In this age group, white women are almost 1.5 times more likely to be economically active than women from minority ethnic groups.

In the review of literature for the Public Transport Gender Audit (Hamilton, 1999), inaccessibility is seen as contributing to mobility deprivation. Hirst (1996) is quoted as suggesting that the most significant determinant of access difficulties is lack of car ownership and, by extension, this factor can be seen as contributing to the isolation of women in cities and towns since Hamilton asserts that women have different levels of access to cars than men which can help explain the differences in their travel behaviour. In addition, the author reminds the reader that there has been very little work carried out on social travel by women or on how women's travel habits are formed and changed. In the co-chair's summary of discussions, participants at an international conference on gender perspectives (Earth Summit 2002, 2001) are quoted as stating that women have different (ie. part-time, less paid) and fewer employment options than men. This was ascribed to the sexual division of labour at the household level which was seen to affect women's economic position and thus their access to transport. Hamilton also regards this sexual division of labour as significant to women's travel choices. The Earth Summit conference report says further that measures are necessary to reduce the transport burden and expenditure for both men and women, while creating equitable access and ensuring women's increased opportunities and participation.

1 INTRODUCTION

This report has been prepared by the Transport Studies Unit (TSU), University of Oxford, in association with the Transport and Road Assessment Centre (TRAC), University of Ulster and the Transport Research Institute (TRI), Napier University. It reports on the review of literature undertaken during Phase 1 of a study on the impacts of road user charging (RUC) and workplace parking levy (WPPL) on social inclusion/exclusion in the context of gender, ethnicity and lifecycle carried out for the Department of Transport, Local Government and the Regions.

Following this introductory section, Section 2 of this report covers the scope of the literature review and Section 3 presents the results of the literature review process. In Section 4, a brief summary and conclusions are provided.

2 SCOPE OF LITERATURE REVIEW

The literature review process started with a brainstorming meeting of all members of the research team. This allowed the group to define the main themes to be explored during the review. It was agreed that the following headings be used for the literature review; however, it was recognized that there may have needed to be some revision of the topics if more suitable/additional themes became apparent during the review process:

- Definition of social inclusion/exclusion, including measurement.
- Consideration of the concept of transport exclusion, including definition, relationship with social exclusion.
- Road user charging - definitions, basic concepts and impacts. How does RUC impact social inclusion/exclusion?
- Workplace parking levy - definitions, basic concepts and impacts. How does WPPL impact social inclusion/exclusion?
- Revenue raising/congestion charging.
- Sequencing of impacts.
- Public perception.
- Summary of database identification and URLs.

During the course of the review, it became apparent that coverage of the topics listed below would further inform the research:

- Urban areas
- Gender
- Ethnicity
- Lifecycle issues
- Dual labour markets/segmented labour markets

Selection of documents for review took account of quality, relevance and geographic coverage. The overall aim of the review was to determine and evaluate what has been written about RUC and WPPL and their relationship to social inclusion/exclusion and gender, ethnicity and lifecycle issues. In order to effectively evaluate literature on these inter-related themes, it was also important to develop an understanding of what the literature had to say about each of these topics in relation to transport in general.

More than 120 documents were reviewed, including project reports, journal articles, conference papers and web-based articles/papers. The documents that were considered to be particularly relevant to this research were evaluated in detail and the numbers in each thematic category examined are shown in Table 2.1.

Theme	Number of documents
Social exclusion/inclusion	14
Transport exclusion	9
RUC	16
WPPL	10
Revenue raising/congestion charging	3
Sequencing of impacts	3
Public perception	3
Urban areas	3
Transport and lifecycle	8
Ethnicity	4
Gender	3

Table 2.1 Number of documents by category

The review concentrates on contributing to a greater understanding of the relationship between transport policy and social exclusion and seeks to explore the area of overlap between these two themes as illustrated in the diagram below:

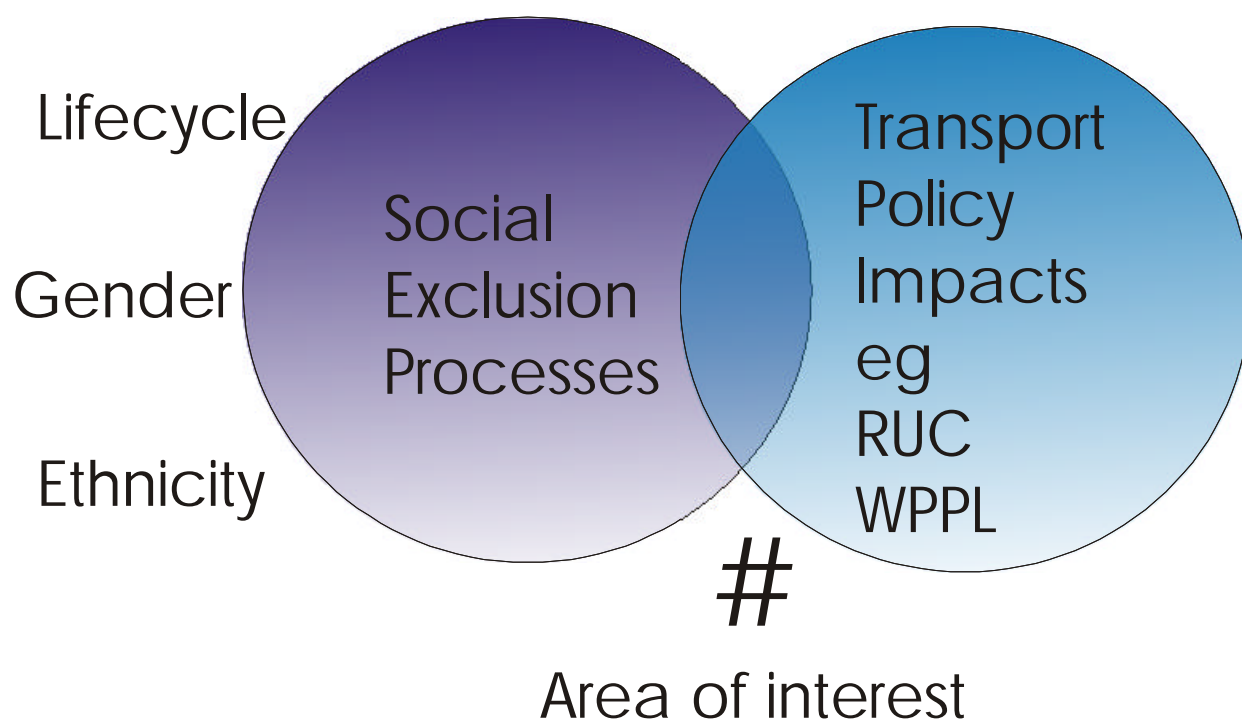


Figure 2.1 Diagram showing study's main area of focus

3 RESULTS OF LITERATURE REVIEW

3.1 Social Inclusion/Exclusion

The existing literature on social inclusion/exclusion is reviewed in this section. The word exclusion tends to be used because that has been the focus of the policy debate to date. Nevertheless, we are aware of a recent shift in the focus from exclusion to inclusion, although much of the literature does not yet reflect this change of emphasis. It should, however, be apparent that reducing social exclusion and promoting social inclusion are very similar, if not identical processes.

Preston J, Holvad T and Hine J

Impacts of Road User Charging and Work Place Parking Levy on Social Exclusion/Inclusion: A Scoping Study prepared for Department of Environment, Transport and the Regions. August 2000

Preston et al suggest that there has been a significant research effort into social exclusion from a general perspective in recent years. They provide examples of such research and also work that has been carried out on the linkage between transport and social exclusion. Nevertheless, the authors indicate that relatively little empirical evidence is available regarding the rôle of transport in social exclusion, suggesting that this can be attributed to the lack of appropriate definitions of social exclusion in combination with limited data availability. Similarly, the authors report that a significant research effort has been undertaken with regard to road pricing from implementation and economic perspectives and looking at equity aspects and impacts on the transport network. They recognize the importance of these strands of research to examination of the links between social exclusion and RUC/WPPL but indicate that there is an apparent lack of specific consideration of this linkage in existing literature.

Referring specifically to defining the term social exclusion, Preston et al conclude that there is not a single accepted definition but suggest that the following definition [from Gaffron et al (2000), developed from definition in Burchardt et al (1999)] would be appropriate for their study:

Social exclusion is a process, which causes individuals or groups not to participate in the normal activities of the society where they are residents

The authors go on to discuss possible classification of social exclusion impacts from the points of view of individuals, groups and communities. They suggest further that this approach to classification would allow for a detailed mapping of how social exclusion effects appear and highlight the need to combine this classification system with a time related one (ie. short, medium and long term).

The scoping study also looks at related themes such as transport and social exclusion, deprivation indices, mobility and accessibility and efficiency and equity. It recognizes that social exclusion can be related to many factors [Church et al (1999)] such as physical exclusion, geographical exclusion, exclusion from facilities, economic exclusion, time-based exclusion, fear-based exclusion and space exclusion and points out that

Although transport has a role with respect to these factors it is possible that the solution to some of these forms of social exclusion may not be transport

based. Rather it could be concerned with eliminating constraints at either end of the journey, e.g. improved provision of child care facilities in local areas.

The study regards mobility and accessibility as important concepts that may assist in understanding how transport contributes to the social exclusion process. It describes how indices of mobility and accessibility can be constructed by comparing the measures of individual people or zones with the best scores for each of these measures, eg. high mobility and high accessibility or low mobility but high accessibility.

Preston et al argue that much of the focus on social exclusion and transport has been at the areal or zonal level and note the need to think beyond this neighbourhood-focused perspective. They quote Grieco et al (2000) who pointed out that the socially excluded are not only clustered together in areas or zones where transport is particularly bad or particularly inappropriate but are also scattered as a consequence of life circumstance. Preston et al go on to underline the relevance of these concepts to gender, ethnicity and lifecycle.

Hine, J and Grieco, M

Scatters and Clusters in Time and Space: Implications for Delivering Integrated and Inclusive Transport. Paper presented to the American Association of Geographers, Los Angeles, March 2002

This paper calls for a refinement in the literature on social exclusion/inclusion, and an alteration in the counterpart policy practices, in order to take account of the 'scatter' and 'cluster' dimensions. Hine and Grieco say that

Disaggregating social exclusion and inclusion data to enable the identification of scatters and clusters is key to the development of appropriate transport planning strategies. The degree to which lack of mobility is scattered or clustered can have profound implications for the ways in which time and space are treated by policy.

The authors suggest that the extent to which interventions can be designed to overcome the consequences of a lack of mobility can have an impact on the ability of individuals to negotiate time and space. They highlight that, in the UK, patterns of car ownership mean that those on a low-income, elderly, children, certain ethnic minorities groups and to a lesser extent women will tend to experience systematic exclusion from facilities.

Hine and Grieco state that

Providing people with access to opportunities does not necessarily guarantee they will be able to take advantage of them: indeed, there is a need for much tighter definitions in respect of what constitutes access.

In this context, this paper considers the importance of new information technologies accompanied by demand responsive transport in accommodating the transport needs of scatters as well as clusters of the socially excluded.

Hine and Grieco say that the socially excluded are not only clustered together in areas or zones where transport is particularly bad or particularly inappropriate but are also scattered as a consequence of life circumstance. They add that life cycle stages have a consequence for mobility and accessibility:

Low levels of individual direct accessibility can be compensated for by social capital structures which provide for enhanced indirect accessibility. The mobility of those socially close to an individual requiring services equates to improved accessibility, albeit indirect. The socially isolated, whether by disability, age, marital circumstance, ethnicity, cannot easily obtain assistance in accessing resources - illness may mean that key shopping can not be done or medication obtained or escorts obtained for making journeys through dangerous spaces. The combination of poor accessibility with low levels of mobility and low levels of sociability intensifies social exclusion.

The authors go on to say that where the socially excluded are clustered a better fit between bus routes, bus times and vehicle types and measured areas of deprivation can accomplish much and where the socially excluded are scattered or dispersed, new information technologies can play an important part in lessening the negative impacts of their reduced physical accessibilities by providing on line services such as home working, home banking, shopping and the ordering of medication to be delivered and also in improving their mobility by the utilisation of information technology to provide transport on demand.

The paper also provides an overview of suppressed journey analysis. The authors say that there is no substantial body of research into suppressed journeys - and nothing in the literature which can be labelled suppressed journey analysis:

The recognition that there is suppressed demand for the car has not been matched by the recognition that there is also a suppressed demand for public transport journeys. New technical developments permit Demand Responsive Transport solutions to the current crisis in low income public transport provision: through demand responsive transport essential journeys can be made and not foregone. Through the combination of intelligent search and demand responsive transport, current journeys simply to make appointments or to engage with other aspects of social administration which are presently transacted on a face to face basis could be reduced and where journeys are essential could be made by demand responsive transport.

Grieco, M, Turner, J and Hine, J

Transport, Employment and Social Exclusion: Changing the Contours through Information Technology. Local Work, 2000.

Grieco et al say that there is a need to begin to chart the structural dimensions of the relationship between social exclusion and transport. They state that

The exclusion of the needs of low-income populations in transport policy and the exclusion of deprived localities from expenditure and service in the transport sector is structural. In much the same way that transport planners have been gender biased, they are also social exclusion-biased. They concentrate on certain work journeys to certain locations (city centres), they view some transport problems (congestion) more seriously than others (lack of access to health services and fresh food). 'Social exclusion' requires formal inclusion in transport planning strategies for transport services and operations.

The authors say that much of the focus on social exclusion and transport has been at the areal or zonal level -indeed, the indices of local deprivation are precisely an areal or zonal measure. However, they remind the reader that there is a dimension of social exclusion and transport which requires the policy maker, planner and researcher to think beyond the areal or neighbourhood perspective:

The socially excluded are not only clustered together in areas or zones where transport is particularly bad or particularly inappropriate but are also scattered as a consequence of life circumstance.

Grieco et al go on to say that, by identifying the difference between direct and indirect accessibility, it becomes clear that different categories of the socially excluded will have different transport needs. Servicing the transport needs of the socially excluded who are clustered in a particular neighbourhood, zone or area is a different prospect to servicing the transport needs of the socially excluded who are also socially isolated in terms of their immediate neighbourhood.

The authors suggest further that thinking of transport in terms of achieving a real time match between available fleets of vehicles and the travel purposes of the socially excluded through the capabilities of the new information technologies provides a very different perspective on what is possible within existing budget constraints.

Grieco et al see responsive transport as very important in the context of crisis journeys:

Crisis might be a job interview event or a sickness event or some other non routine journey which has to be made. Learning the journey path in circumstances of crisis is expensive and risky - the hospital appointment is missed or the job lost. The new information technologies open up the prospect of the integration of public, private and voluntary sector transport resources in providing assistance to citizens in crisis transport circumstances.

The paper says that new information technologies (such as networked terminals, web access through the domestic television set, web capability mobile telephones) are well suited for installation in the domestic environment:

This information capability in the domestic environment opens up new scheduling capabilities and can restore local information in the neighborhood environment (Grieco, 2000). A new relationship between accessibility, mobility and the previously socially excluded is possible.

Hine J and Mitchell F

The Role of Transport in Social Exclusion in Urban Scotland. Scottish Office Central Research Unit, 2001

This is a report on a study which was commissioned to better understand the rôle that transport plays in social exclusion in urban areas. The research involved detailed surveys in 3 urban areas in Scotland, and from information gathered from household interviews, focus groups and travel diaries, appropriate strategies were identified to improve accessibility to key destinations and to improve the quality of life for groups currently experiencing social exclusion.

Hine and Mitchell carried out an extensive literature review which looked at two strands of information: the predominant thinking on social exclusion and an exploration of the existing literature on transport-related exclusion. The review found

that despite the growing salience of the term 'social exclusion,' there was little consensus or agreement on its exact meaning or definition.

The authors suggest that rather than the absence of a commonly accepted definition of social exclusion being problematic, the thorough review of the literature suggests

in fact the opposite. The working definition (adapted from Burchardt et al, 1999) employed by Hine and Mitchell was as follows:

Social exclusion is a process, which causes individuals or groups, who are geographically resident in a society, not to participate in the normal activities of citizens in that society.

Hine and Mitchell also sought to explore the dimensions of social exclusion and found that as there was no common definition of social exclusion itself, there was also no common definition of the dimensions and factors involved in it. But in both cases, the approaches taken by various authors, though different in detail, were found to broadly overlap. The review found that in recent years, social policy research has become preoccupied with developing or defining indicators that can determine levels of social exclusion in order that they can be monitored over time and in order to assess how far the introduction of new policies impact upon these levels. These dimensional frameworks were discussed in relation to transport.

Hine and Mitchell's literature review found that although the existence of a link between transport and social exclusion had been widely recognized (eg. Barry, 1998; Pacione, 1995) an international conference on Mobility and Social Implications held in France concluded that there was a lack of clear and reliable data (Guidez, 1994). The review demonstrated that there had been little progress since that statement was made in 1994.

The authors go on to describe a recent study of transport and social exclusion in London (Church et al, 1999) which concluded that the relative paucity of data on the issue meant that the subtle relationship between transport and social exclusion could not be fully appreciated. This work identified seven sources of exclusion and proposed three types of processes that influence this relationship between exclusion and transport. They were: (1) the nature of time-space organization in households; (2) the nature of the transport system and (3) the nature of time-space organization of the facilities and opportunities individuals are seeking to access. The nature of these will differ according to gender, age, cultural background, level of ability and economic circumstances.

The seven categories of exclusion connected to transport suggested by Church et al (1999) are: physical exclusion, geographical exclusion, exclusion from facilities, economic exclusion, time-based exclusion, fear-based exclusion and space exclusion. The authors say that overlap between these categories was considered to be problematic. The review also concluded, as Church et al (1999) did, that it may also be that the effect of the transport exclusion mechanisms is peripheral when compared with non-transport factors associated with exclusion.

Hine and Mitchell provide five questions suggested by Church et al (1999) that need to be addressed by further research and the collation of appropriate data:

- is it necessary to be mobile to be socially integrated?
- how do the travel patterns of socially excluded people differ from those of others?
- to what extent does the existing public transport network meet the needs of socially excluded people?
- what are the factors that constrain the mobility of socially excluded people?

- how important is the lack of mobility as a contributor to social exclusion relative to other factors?

The authors say that these questions should be considered in any research carried out in transport and social inclusion/exclusion.

Through their review, the authors found that a set of indicators for social exclusion in general is required in order to identify groups and areas at which social inclusion policies should be targeted and to enable monitoring of any measures implemented. Also, as has been stated before, the concept of social exclusion does not merely embrace the existence, characteristics and changes in exclusion but also the processes which contribute to it (De Haan, 1999). For that reason it was argued that although the characteristics and processes of social exclusion are closely related, they might require different indicators and that a consultative approach should be adopted. The authors say that, in reality, little work has been carried out in this area.

In the review of literature providing evidence of the contribution of transport to social exclusion, Hine and Mitchell say that the studies identified were, generally, either concerned with the area of activity from which people were excluded, or discussed the transport related mechanisms which created a problem. The evidence falling into these categories was examined in turn in the literature review undertaken. The authors state that there is general agreement, despite the lack of empirical evidence, that transport disadvantage or deprivation can induce or exacerbate the conditions that lead to the exclusion of individuals or communities. They add that the literature supports the assertion that there is a clear rôle for transport to facilitate access to the areas of social activity where participation is considered to be indicative of social inclusion.

The main findings of the actual study carried out in Scotland by Hine and Mitchell are also relevant to this review of literature. They found that

- Women, the unemployed, the elderly, people with health problems and those in low income groups are more likely to experience transport related social exclusion.
- Excluded groups are heavily reliant on walking, public transport and on lifts from family, friends and neighbours.
- Lower income groups (gross household incomes below £100-£149 per week) spend more on fares for public transport than those in higher income groups.
- Regular car access is strongly associated with a higher income level (gross household incomes above £100-£149 per week), home ownership and lower levels of public transport use.
- The elderly and people with health problems were more likely to find it difficult to use buses, taxis and walk for at least 10 minutes.
- Two-thirds of respondents stated that the local bus service stop was less than 3 minutes walk away, although service frequencies were perceived to decline noticeably in the evenings and on Sundays.
- Over 90% of people stated that they like living in their neighbourhood, but those expressing a preference to move did so because of a poor local environment and a desire to improve housing circumstances. Only 5% stated they would move to improve transport links and accessibility.

- Reduced fares and budget ticketing were used by relatively low numbers of people.
- For those in employment, 15% stated that transport considerations had prevented them from looking for a job and 10% that these had prevented them from accepting a job offer.

Social Exclusion Unit

Preventing Social Exclusion Cabinet Office March 2001

This paper says that social exclusion is a relatively new term in British policy debate. It suggests that it includes poverty and low income, but is broader and addresses some of the wider causes and consequences of poverty. The paper states further that the Government has defined social exclusion as:

a shorthand term for what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime, bad health and family breakdown.

In this document, the Social Exclusion Unit suggests that social exclusion is something that can happen to anyone, but some people are significantly more at risk than others. It says that research has found that people with certain backgrounds and experiences are disproportionately likely to suffer social exclusion. The key risk factors reported include: low income; family conflict; being in care; school problems; being an ex-prisoner; being from an ethnic minority; living in a deprived neighbourhood in urban and rural areas; mental health problems, age and disability.

It goes on to note that some older people are at risk of social exclusion - many are at disproportionate risk of falling into poverty and are subject to discrimination in employment. In addition, many rely on public transport and research has shown that a lack of mobility can prevent older people from participating in social activities and lead to low morale, depression and loneliness.

Also, the paper highlights the fact that people from some minority ethnic communities are disproportionately exposed to risk of social exclusion.

The paper reports that in the 1980s and the early 1990s, social exclusion intensified in this country in a variety of different ways. High levels of exclusion also impose indirect social costs on the whole population. These costs include:

- reduced social cohesion as different areas, generations and minority ethnic communities are divided by radically different life chances,
- higher crime and fear of crime, for which social exclusion is a key driver,
- extra pressure on people working with excluded groups, and
- reduced mobility, as vulnerable people avoid certain parts of town or feel intimidated - rightly or wrongly (e.g. by groups of young people, beggars).

Saraceno, C (2001)

Social Exclusion: Cultural Roots and Diversities of a Popular Concept. Social Exclusion and Children Conference, Columbia University, New York. May 2001

This paper describes a simultaneous linguistic and conceptual move from poverty to social exclusion, both at the research level and at the policy making level, in recent years in Europe. Saraceno says

To some degree, the emergence of the concept of social exclusion has strengthened those concepts of, and approaches to, poverty which stress that it involves not only the lack of fundamental resources, but the inability to fully participate in one's own society (e.g. Townsend, 1979). In this perspective, it is strictly linked to the concept of social rights as relational rights, based on some kind of reciprocity, of mutual obligations (see e.g. Room 1995). Social exclusion emphasizes participation, involvement and the customary way of life as against average income or basic needs/baskets of goods, and a concept of well-being as primarily financial. It shares with social Catholicism the view of individuals as being socially embedded (Daly 1999). Its analytic core is constituted by the structure of social relationships and social ties (Spicker 1997: 135). Its inherently comparative nature is apparent in that it problematizes people's situations/conditions *vis-a-vis* the rest of society (Rustin and Rix 1997: 12). Focusing on relations makes it better able than poverty to reveal the mechanisms causing marginalization and the processes associated with it, while at the same time acknowledging the excluded's agency.

The author goes on to give an account of the development of the concept of social exclusion in European thought. Saraceno's account is quite detailed and makes useful background reading on the evolution of interest in social exclusion.

Commission for Integrated Transport.

European Best Practice in Delivering Integrated Transport: Key Findings November 2001

The Government invited CfIT to produce advice on European best practice to inform the development of the Ten Year Plan and, more specifically, assist the UK in better delivering the desired outcomes of integrated transport policy. This report presents the key findings of the research resulting from CfIT asking the following three questions:

- How is the UK performing against other parts of Europe in terms of delivering the desired outcomes of integrated transport?
- For those areas in Europe that have made most progress in delivering a range of desired outcomes, how has this been achieved?
- To what extent is this 'best practice' transferable to the UK and what are the barriers that need to be overcome?

A benchmarking exercise sought to compare the performance of transport policy delivery in the UK with other EU countries by assessing performance against a range of measures. Analyses were undertaken at the national and local levels for cities classified as world, large, medium and small to assess relative progress in achieving the desired outcomes of integrated transport policies.

The report says that social exclusion is more influenced by accessibility to goods and services than by mobility per se. However, most existing indicators relate to mobility (car ownership, driving licences held, distance travelled etc) and hence it has proved extremely difficult to benchmark social exclusion across the EU. In addition, CfIT says there is little common understanding of what social exclusion is and how it might be measured, although some interesting proxy indicators do exist and are described in the report. However, in order for the useful exchange of information and ideas about how to tackle the problems of transport related social exclusion (and more helpfully, to understand how transport systems can be developed to improve social inclusion), a great deal more effort needs to be directed towards agreeing common definitions and developing methods of quantifying the issues. CfIT believes this is an urgent priority and is working to develop an insight into the links between transport and social exclusion.

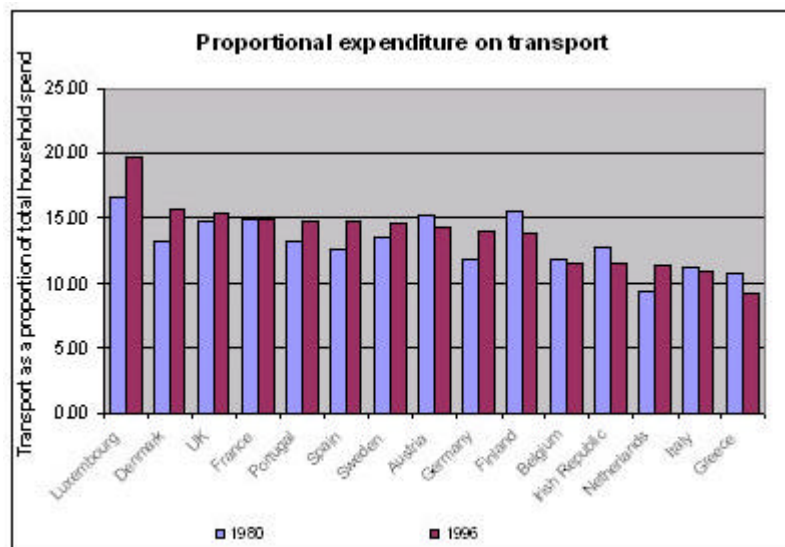


Figure 3.1 Expenditure on transport in the EU

The report states that households in the UK spend on average 15% of total expenditure on transport, the third highest in the EU. Though travel volumes and the real cost of travel have increased (disposable income has risen even faster), the proportion of expenditure on transport is little changed since the mid-eighties. There is no discernible trend across the other countries, however, to allow reliable conclusions to be drawn. It is interesting to note, though, that in Italy only 11% of household expenditure is on transport while there is a relatively high volume of travel, implying that travel costs are lower than in other countries.

In addition, the report includes a table which suggests that 10+% of households could not afford a car in 1994. DTLR figures (Transport Statistics Great Britain, 2001, table 31.14) indicate that in 1994 the proportion of households with no car was 32%, implying that just over 20% of households could afford a car but did not have one. It is interesting to note that by 2000, the number of households with no car had dropped to 27%.

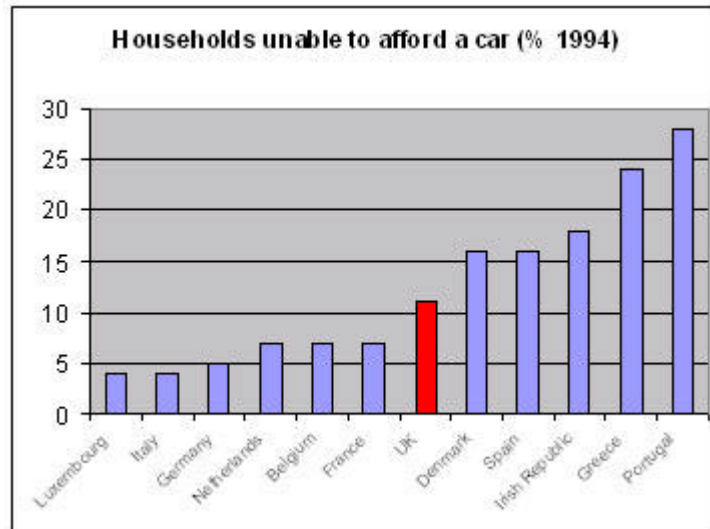


Figure 3.2 Households in EU unable to afford a car

Pearce N

An Critical Analysis of the Way that Social Exclusion is Defined in Theory and Practice. Lancaster University Working Paper, 2001

This paper seeks to analyse what Pearce calls 'two rhetorical ploys', used by writers on social exclusion, to define their topic. Pearce says that the term 'social exclusion'

...appears to have replaced 'poverty' and related concepts such as 'underclass', although for a time the two co-existed in British political discourse. Tony Blair's Fabian Speech in August 1997 used the terms 'socially excluded' and 'underclass' interchangeably, but this was the only time that this was to happen (Fairclough 2000).

Nevertheless, the author suggests that the two terms cannot be treated as synonymous and 'social exclusion' has a markedly different provenance to the others:

This can be crudely put by the dictum that 'poverty' and 'underclass' have a lengthy Anglo-Saxon intellectual heritage whilst 'social exclusion' has a more recent French origin. Some (e.g. (Spicker 1997: 134)) see the term's introduction as an EU ploy to further an integrated social policy (as set out in the Maastricht Treaty for example) whilst countering member states' political reticence over accepting the problematic terms 'poverty' and 'underclass'. The term has also become important within academic circles with the EU funding major research through projects such as the Observatory on Policies to Combat Social Exclusion (OPCSE) and the Human Dignity and Social Exclusion Project (HDSE)...

McCluskey A

Belonging and Being Excluded. Connected. St-Blaise, 14th May 1997

<http://www.connected.org/is/excluded.html>

This article looks at the concepts of belonging and exclusion in relation to technology. It suggests that exclusion springs from the desire to belong while not being able to. McCluskey says that such a description seems to place the onus for exclusion on the individual or group of individuals whereas both belonging and being excluded are not

just the attributes of an individual but are above all on-going relationships in which technology may or may not play a rôle.

He also asks whether the use of tools necessarily leads to the exclusion of those not using them, eg. How many people feel excluded because they don't have a printing press or a video recorder? Is it not rather the fact of making tools appear necessary to everybody for would-be essential activities that creates the feeling of exclusion on the part of those who are unable to use them, especially when those tools cannot completely fulfil their promise? He goes on to say that international discussions about the future of telecommunications posit universal access (to the Global Information Infrastructure) as a right. He follows this by asking 'Can we even ask this question without being suspected of elitism?' He suggests that the possession of commodities should be complemented by the development and use of knowledge.

The author says that access to the Global Information Infrastructure and (occasionally) the related knowledge are generally seen as a source of empowerment for those excluded from power. He suggests that belief in the empowerment of tools does not take account of the fact that most disempowerment springs from social systems and the lack of human, rather than technological, skills. McCluskey believes that exclusion is essentially a question of relationships:

Advocates of technological solutions systematically forget the need for "human skills". One way of approaching this problem might be to re-evaluate necessary skills and know-how in the modern world so as to include human and relational skills.

He suggests that instead of talking exclusively in terms of universal access, it might be instructive to explore the implications of guaranteeing the right to be disconnected. It might also be interesting to rehabilitate the counterpart of rights by considering the associated responsibilities.

Kenyon S, Lyons G and Rafferty J

Transport, Social Exclusion and the Internet - Could Virtual Mobility Help to Alleviate Social Exclusion? Paper presented at UTSG Edinburgh 2002

This paper reports the emerging findings from research into the possibility that mobility-related social exclusion could be affected by increasing access to virtual mobility - access to opportunities, social networks, goods and services, via the internet - amongst populations that experience exclusion. It recognizes that a number of recent studies across the academic, governmental and voluntary sectors have highlighted the link between transport and social exclusion, pointing to a lack, or denial, of access to mobility reducing the opportunity to participate in society. The authors say that following the identification of a causal link between transport and exclusion, it is suggested in the majority of the studies that an increase in access to adequate (private or public) physical mobility can provide a re-balancing of the scales to lead to a solution to mobility-related aspects of social exclusion.

This paper questions the likelihood that increased physical mobility can, by itself, provide a fully viable or sustainable solution to mobility-related aspects of social exclusion. The paper presents tentative results from both a desk study and public consultation which suggest that virtual mobility is already fulfilling an accessibility rôle, both substituting for and supplementing physical mobility, amongst diverse populations.

The Pedestrians Association/Living Streets.

Transport and Social Exclusion: Comments on Consultation by the Social Exclusion Unit, October 2001 (www.livingstreets.org.uk/socialexclusion.htm)

This is a response by The Pedestrians Association/Living Streets to the Social Exclusion Unit's consultation into transport and social exclusion. It says that improving the walking environment should be a central strand of tackling social exclusion.

The paper suggests that people on low incomes walk most and experience the worst conditions when they do so:

They suffer the worst effects of streets designed for and dominated by cars and lorries. Their children are most likely to be killed when walking or playing in the street. The quality of the street environment is a key factor in influencing people's decisions about where they live. Failure to tackle problems like crime, vandalism, litter, graffiti and dog fouling will undermine efforts to reduce social exclusion.

The Pedestrians Association's report sees the way of tackling these problems as:

- Recognition of the central importance of walking and the street environment to the transport needs and quality of life of socially excluded people,
- Making "walkability" of local communities a key criterion in planning policies and decisions and funding for transport and urban regeneration,
- A new road classification taking account of streets' social and economic role,
- Better coordination between different agencies responsible for the public realm,
- Better local data on walking and people's attitudes to the local environment,
- Increased capital and revenue funding for the street environment.

The paper goes on to say that the UK population spend a lot of time walking in their local streets. Despite the decline in walking since the 1970s, trips on foot still account for 26% of all the trips we make every year. This is over three times as many trips as all public transport modes combined. Walking accounts for the overwhelming majority of short trips, with 80% of trips under a mile made on foot. Most public transport trips involve at least one walk. 73% of rail trips, 79% of trips on the London Underground and 50% of bus trips involve at least one walk of 50 metres or more.

The Pedestrians Association says that the main influences on whether people walk are their level of access to a car and whether shops, doctor's surgeries and other services are within a reasonable distance of their front door. The organization suggests that people in non-car owning households walk much further than those in car owning households. Men who are the main drivers of company cars walk only half the average distance of all men. Children under 17 in car owning households walk a third less than children in households without a car.

The paper links access to a car to household income:

People from the poorest 20% of households make fewer journeys overall but about twice as many journeys on foot and three times as many journeys by

bus as those from the richest 20% of households. Almost eight out of every ten journeys made by low-income, non car-owning households involve walking. People on low incomes spend more time in the street and experience much more unpleasant and dangerous public environments than those from richer households. This is linked to higher traffic casualty rates amongst people from poorer households, particularly children. It is also associated with much higher levels of concern in disadvantaged communities about problems such as vandalism and crime.

In addition, it suggests that young people under 17 walk the most, with girls walking more than boys. Thirty-eight percent of the trips made by girls under 17 are made on foot, compared with 35% of boys' trips. Women walk more than men on average, with 28% of women's trips made on foot, compared to 24% of trips made by men. Women under retirement age make significantly more trips on foot than men of the same age. Women aged 21-29 make over 50% more walking trips than men in the same age bracket, with women aged 30-59 making 36% more journeys on foot. Older people also walk more than the young. Men over 70 walk for 32% of their trips, with women over 70% walking for 35% of the time. This compares with 26% of trips for the population as a whole and between 19% and 28% for people aged 17-69.

The report also argues that the more urban an area, the more likely people are to spend time walking in their local streets. People in urban areas are more likely to have shops, pubs, schools and parks within a reasonable distance of their front door. Car ownership is lower in urban than rural areas and traffic congestion is generally worse. Urban areas also have higher population densities than suburban and rural areas. The document also says that people in neighbourhoods with high population densities walk 'more' than people in low-density areas:

People living in areas with a population density of over 75 residents per hectare walk for over 40% of their trips, compared to 28% of trips for people in areas with fewer than 25 residents per hectare

The Pedestrians Association suggests that the most cost effective approach to tackling the transport problems caused by social exclusion is to improve the quality and safety of the millions of walking trips made daily by people on low incomes. Nevertheless, it recognizes that walking has three main disadvantages as a form of transport. It is not suitable for long journeys, although what counts as "long" will depend on an individual's age, physical fitness and any time constraints. It is also not good for journeys involving heavy shopping or other goods and some people prefer not to walk when it is wet or windy. The report says that a proportion of the walking trips of people on low incomes can be seen as "inappropriate". These are trips where a combination of distance, personal security issues, load or weather means that an alternative form of transport would be more appropriate. These might involve a pensioner carrying heavy shopping or a mother accompanying children over a long distance to school. It argues that for these trips, alternatives should be provided.

In terms of social inclusion, the paper draws attention to mounting evidence that the safety and accessibility of local streets plays an important rôle in generating and sustaining social capital:

Whether public spaces support social relationships is not the only factor influencing the level of crime and social disorder. But there is evidence suggesting that increasing people's willingness to spend time in the street increases informal social contact. This can in turn help create and sustain social capital in socially excluded communities.

The report highlights the importance of improving the quality and safety of the public realm to tackling problems of social exclusion, urban regeneration and neighbourhood renewal. It cites the evidence that people on low incomes and those living in urban areas are more likely to walk than people from richer households and people living in suburban or rural areas, suggesting that they therefore spend more time in the street, where they are also likely to encounter the dirtiest, most dangerous and unattractive environments.

The paper links a dirty and degraded public environment to the pressure on people to move from urban areas to the suburbs or countryside beyond. It goes on to say that this encourages economically mobile households to leave poorer communities for richer ones, arguing that moving to live in a better area is an important motivation for relocation. It cites a survey in which one in ten recent movers identified this as their main reason. People who had moved within or into a suburban or rural area more commonly cited moving to a better area as their reason for moving. The report states that this suggests that people are more likely to think that “better” neighbourhoods are to be found in these areas.

In terms of deprivation and exclusion, the paper says:

Creating clean, safe and attractive public spaces would have a huge impact on the quality of life of people on low incomes and those living in run-down urban areas. A failure to improve the public realm, on the other hand, could undermine policies aimed at regenerating urban areas and renewing deprived neighbourhoods. People will continue to leave urban areas for the suburbs and countryside. And more economically mobile households in deprived communities will move to better areas, further weakening the social and economic strength of those communities.

EUBusiness

Social Exclusion in EU Member States 31 Jan 2000

In this report, the concept of social exclusion is understood as a multidimensional phenomenon, where exclusion is characterized conceptually as the process which prevents people from a full participation in the society, i.e. from being socially integrated. Low-income is chosen as a starting point for the analysis in order to link “income poverty” with social exclusion.

Social exclusion is also considered as a relative phenomenon, meaning that the low-income population of a given country and its characteristics are always compared to the characteristics of the rest of the population of that country.

The report says that single parent households are the worst off among all types of households. Overall in the EU, the proportion of single parent households (the parent is most often a woman) among the low-income population was in 1995 three times higher than in the rest of the population. The proportion of persons living in single-parent households is notably higher in the low-income population than in the rest of the population in Ireland and the United Kingdom (respectively 6 and 5 times higher). It is only in Denmark and Italy that this proportion is lower in the low income population than in the rest of the population.

There are also relatively more elderly people living alone and large families (3 and more children) among the low-income population, and relatively less couples without children or with 1-2 child(ren). The proportion of elderly living alone in the low-income population is 4 times higher in Ireland and Portugal than in the rest of the population of these countries. In contrast, Spain and the Netherlands have a lower

proportion of elderly persons in the low-income population than in the rest of the population.

In addition, the research found that unemployment increases the risk of being in the low income population.

In terms of what the paper describes as activity status, the proportion of unemployed persons in the low-income population is nearly three times higher than in the rest of the population at EU level. This pattern for unemployed people exists in all Member States, even if it is more pronounced in the United Kingdom (relatively 4 times more unemployed among the low-income population compared to the rest of the population) and in Italy, Ireland and France. Denmark is the country where the difference between the proportion of unemployed in the low-income population and in the rest of the population is smallest (1.25 times).

Carvel J

Richest 10% Spend Seven Times More Than Poorest. Guardian - Society. Thursday January 24, 2002

This article describes key findings of the ONS family expenditure survey for 2000-01. It states that the gap between rich and poor is demonstrated by official figures showing that the 10% of households in the top income bracket spent nearly seven times as much as the 10% with the lowest incomes. Other indicators of this gap are described below:

It showed average household spending (excluding taxes, savings and purchase of capital goods) was £390 a week, of which £55 was on motoring.

In terms of transport, average weekly outgoings for the richest were: £118.30 on motoring and £28.20 on fares. Weekly outgoings for the poorest 10th were: £8.60 on motoring and £2.70 on fares.

Social Exclusion Unit

Making the Connections: Transport and Social Exclusion Cabinet Office May 2002

This interim report presents a view of the mobility and access problems facing people who are socially excluded and the difficulties linked to these problems. The final report is due in Autumn 2002.

The report says that transport problems can be a significant barrier to social inclusion and sets out initial thoughts on potential improvements. Although the report starts by presenting various statistics to highlight the poor transport experienced by those on low incomes, much of the information presented is qualitative. The Social Exclusion Unit criticizes aspects of Government policy and makes comments on the 10-year plan for transport, pointing out that most investment is being made in railways and roads which are modes used by middle and high income earners mostly. The Unit points out that "the views of people living in deprived areas are often overlooked"

3.2 Transport exclusion

TraC at the University of North London

Social Exclusion and the Provision and Availability of Public Transport. London:
Department of the Environment, Transport and the Regions 2000

This report explores the links between public transport and social exclusion in urban and rural areas across England. It demonstrates the importance of transport needs being assessed – and catered for – when health, education, employment, commercial and social service policies are being implemented. ‘Joined up’ thinking needs to result in effective joined up working and action, particularly in deprived neighbourhoods. It also highlights the fact that public transport is not simply a means of access – it has other social, health, economic and symbolic functions.

The report says there appear to be clear connections between transport and social exclusion, particularly among unemployed people, families with young children, young people, older people, and all those on low (benefit level) incomes. In addition, affordability is recognized to be a key issue with the authors suggesting that considerations should include extending, changing or standardising concessionary fares eligibility and looking at fare differentials. Availability and accessibility are also seen as key issues. The paper says that there is a need to try to define what is an acceptable basic minimum mobility/access provision. There is also a need to define how much travel an individual should be prepared to undertake, e.g. to access work.

The authors say that enhancing social mobility requires more physical mobility. Given the current distribution of opportunities, some people need both to be able to travel more and to accept the need to travel more if they are to be socially “included”. The report suggests that this may appear to lead to a short-term conflict with the DETR’s objective of reducing the need to travel.

The paper says that the term ‘social exclusion’ was originally coined in 1974 and first used by the European Commission in 1989 when the Council of Ministers requested the European Commission to study policies to combat social exclusion. In addition, the authors state that

Social exclusion and poverty are strongly linked, and discussion has developed around their respective definitions. Generally there seems to be agreement that poverty can be seen as “distributional,” linked to resources, and social exclusion as “relational” (Room, 1995; Spicker, 1997). “Relational” issues include “*inadequate social participation, lack of social integration and lack of power*” (Room, 1995).

The authors say that research into poverty as a social phenomenon has been described as an Anglo-Saxon product of the 19th Century (Rowntree 1901, Townsend 1979), associated with the liberal vision of society in which atomized individuals compete in the market place, and social policy provides people with enough money to survive. However, the authors add that

Bhalla and Lapeyre (1997) argue that the economic aspects of exclusion are just as important as the sociological and the political. They stress the importance of the precariousness of the labour market and unemployment in relation to economic and social respects, suggesting that there are three main categories of the social aspects of social exclusion: access to social services (such as health and education); access to the labour market (precariousness of employment, as distinct from low pay); and the opportunity for social participation and its effect on the social fabric (greater crime, delinquency and homelessness, as distinct from predictability and stability etc).

Oppenheim (1998) suggests that it is necessary to focus on social exclusion rather than poverty for a number of reasons. Social exclusion is multi-causal, relational, and it includes less tangible aspects than poverty such as the loss of status, power, self-esteem and expectations. Oppenheim identifies various high risk groups, such as lone parents, single pensioners, unemployed people, the economically inactive, and children. Those in Pakistani, Bangladeshi and Caribbean ethnic minority groups are also mentioned as at high risk, based on the fourth PSI study on ethnic minorities (Modood et al, 1997). We might also add here that another important aspect of exclusion is political exclusion and the inability to influence decision making, which can be affected by a lack of resources, including time, telephones, transport and articulacy (Golding, 1986).

The present Prime Minister has described social exclusion as “*a short-hand label for what can happen when individuals or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime environments, bad health and family breakdown.*”

In summary, the report says

From the existing evidence it is clear that travel poverty can be a significant problem for those already experiencing social exclusion, with a lack of real travel choice and, therefore, a lack of choice in activities and destinations. It is also, in some cases, one of the causes of social exclusion. Travel poverty is strongly associated with the inability to participate, since it can result in lack of access to both essential and ‘non-essential’ services and facilities; work, hospitals, shops and education are examples. Travel poverty is not confined to “excluded” areas; individuals within affluent areas (such as parts of Herefordshire) can also be travel poor.

Those without cars usually need more time, greater effort, and pay a higher marginal cost to reach the same destinations as people with cars. These problems apply in urban, peri-urban and rural areas, but take rather different forms and demand different solutions. Such solutions, although currently often embryonic, are being actively investigated in an encouraging number of local authorities.

Commission for Integrated Transport.

Obtaining Best Value for Public Subsidy for the Bus Industry - Appendix 7. LEK February 2002

As part of an in-depth study of public subsidy for the bus industry, the Commission for Integrated Transport placed examining the issue of social exclusion as one of its three key priorities. This study reported in early 2002 and the following data is considered to be relevant to this study and has been taken from Appendix 7 - UK Bus Priorities Transport Social Exclusion.

Of the 5268 people interviewed at random from outside London, respondents were considered to be transport excluded if they did not have access to a car for their own use all or most of the time and also fell into 1 or more of the following categories:

- those who were not able to make as many journeys as they would like at the times they would like but who did not find it just as easy to wait for a car when it was available

- those who relied on friends or relatives to drive them places for journeys that they would not be able to make otherwise
- those who made regular journey on foot which took longer than 30 minutes each way (and did not do so because they prefer walking)
- those who had used at least 3 taxis in the previous month and who felt that they couldn't really afford taxis but there was no alternative
- those who did not use the buses more frequently than twice a week for reasons other than
 - they use other modes
 - they do not need to make journeys
 - there isn't anywhere particular they would like to travel to
 - they are able to get everything they need locally
 - it was just as easy for them to wait until a car was available

Of the overall sample, 4047 were in the study's prescribed quota and, of these, 1176 (29%) were considered to be transport excluded according to the criteria set out. The proportions of the population who were transport excluded were

- 49% said there were journeys they would like to make but did not make because they were not able to travel independently
- 24% because they relied on others to drive them for journeys they would otherwise not be able to make
- 11% because they could not make bus journeys more frequently
- 10% because they were unable to travel as much as they would like
- 5% because they regularly made walking trips of over 30 minutes in length in each direction through necessity
- 5% used taxis but were not really able to afford them

The main purpose for suppressed trips amongst transport excluded respondents was for food shopping, cited by 45% of bus users and 51% of non-users. Journeys next most likely to be suppressed were shopping journeys for non-food items - 28% of bus users and 32% of non-users. These respondents were asked why they did not use bus services in order to make these journeys and the most cited reason was that there were no convenient services (48%), next most mentioned was no services available at times of day required (20%).

Other important findings were

- 12% of those who were transport excluded had declined offers of employment due to lack of suitable transport. Of these, 47% had done so in the previous 12 months
- 47% of those who were transport excluded were aged 65 years and more
- 77% were female, although it should be noted that the definition looked at access to a car.

- The proportion of transport excluded bus non users who were female was 72%.
- 28% of bus users and 34% of non users suffered some form of disability or long term illness affecting either their mobility or their sight.
- Reflecting the elderly nature of the sample, a majority of all respondents (57% of bus users and 53% of non users) were retired.
- 7% of all respondents were unemployed.

The report also indicated that

- The mean monthly personal income, after tax and deductions for bus users was £366 and for non users £527. Bus users spent a mean of 9% of their income on transport, whereas non-users spent a mean of 7%.
- 81% of males and 50% of females had access to a car all or most of the time.
- Average number of journeys per week currently made by all socially transport excluded respondents = 5.0. Average number of additional journeys per week socially transport excluded would like to undertake but currently cannot = 5.7. This suggests that these people may only be travelling half as much as they would like to.

It is interesting to note that all interviews were conducted in English which suggests that the views of certain sections of the UK's multi-ethnic society may not be reflected in the research findings and implies therefore that these statistics may not be truly representative of the experience of all ethnic minority groups.

Roberts H

Transport, Employment & Social Exclusion: On The Road To Social Inclusion, Findings of Conference 10 October 2000, Manchester

This paper records the findings of a conference on transport, employment and social exclusion. It states that although the consensus view is that transport has very clear links with social exclusion it is not yet agreed precisely what these links are or how to tackle them. Accessibility, availability, affordability, information, stability, choice, better planning and linking transport to employment were all mentioned. Consequently there is no accepted definition of "transport poverty", a term which is increasingly used in the social exclusion debate.

The paper suggests that social exclusion is not easy to define and there is no officially accepted definition. It is multifaceted and there are many ways in which transport can act as a barrier to social inclusion. Transport itself is not always the problem for the socially excluded, or at least not the primary barrier faced. It says that one view at this conference was that often social exclusion in rural areas is directly transport related; another was that it was simply a "means to an end" just as in urban areas.

The conference participants also felt that as the distance people travel to work has now increased, questions about how far people can be expected to travel should be raised. They felt that policy needs to take account of the fixed spatial nature of transport and employment opportunities, saying that there has been a lack of government attempts at mapping where people work. The paper argues that this is

important in so far as there is the need to focus transport where employment is and create jobs where there is transport. Transport investment could help to improve the competitiveness of urban areas and improve access to jobs. Furthermore, participants felt that investment in infrastructure and transport in deprived areas should aim to develop employment. The paper says that Government policy has tended to de-emphasize this kind of development and that it should not always be assumed that roads automatically equal jobs - they may also lead to a daily population exodus and less economically viable communities.

The conference findings also say

The temporal set up of service scheduling and bus routes raises the issue of a mismatch between work hours and transport services. This further highlights the control of supply and the need to bring transport operators further into the debate around social exclusion and employment. Traditional transport modes were designed for nine to five and weekday workers, not a twenty-four/seven society. Problems of mobility can arise when operators choose to curtail services or connecting routes, or simply refuse to run certain routes. This particularly affects those of older age and disability where the scope for individual action is limited in finding alternative transport. Users of public transport need to be able to plan their journeys with confidence. When services are stopped, the result is often a double whammy - as well as hitting disadvantaged groups, it may also result in an area becoming disadvantaged. The effect is social and economic isolation.

Taking the theme of exclusion further, the paper says that divisions exist in the travel and transport patterns of particular groups in disadvantaged areas, which in turn affect the life chances of these passengers. Data on the rôle of different socially excluded groups is often unreliable or does not capture the picture at micro level. It was argued by one speaker that it is wrong to assume that the socially disadvantaged are simply disorganized. Poor transport can serve to increase "time poverty" particularly for female-headed households.

The report says that there is an instability of transport provision for the disadvantaged, saying that there is nothing in the Transport Bill concerning stability of provision. Participants said that transport operators only have to give 6 weeks notice before they start up or stop a route and that it is also hard to get information to passengers about changing bus routes, which in turn can reinforce this instability. They suggest that this is often compounded by the fact that passengers do not know about the transport available to them and that:

There is the case for providing personalised travel information with personalised timetables and maps (starting from the home, to the bus stop, along the route and to the destination) for example, more timetables at bus stops, and audio signing for the visually impaired. Here the use of Information and Communications Technology (ICT) may be particularly useful, providing access to it is available.

The paper argues that transport is integral to employment but that this is not always reflected in benefit and pricing structures. It says that one word that is not mentioned in the Transport Bill is "affordability" although the TraC report for DETR does recognize that disadvantaged people must be prepared to travel away from home to a job and urged cheaper fares to tackle social exclusion. It concludes that the fiscal exclusion of the disadvantaged (i.e., lack of security and disposable income particularly for car use) in transport often coupled with other factors such as shift work, high rent, or the infrequent transport services means some individuals are unable to take up work. The participants felt that this reinforces the view that often for

socially excluded people, the experience of social exclusion is something that is done to them.

Root A, Boardman B and Fielding W

The Costs of Rural Travel. Environmental Change Unit, University of Oxford 1996

This study arose out of a desire to look at rural people's travel needs. Although it concentrates on the rural dimension of transport, it is useful in terms of its more general definitions. The report says that travel is, on the whole, a means to an end. Most people do not want to travel as such, but only wish to get to the meeting, event or place or make the communication which is the destination of their journey. The authors suggest that the need for many journeys could be removed by greater accessibility, ie. more facilities closer to the people who need to use them. The paper goes on to say that the ability to choose those with whom one spends time, choose entertainment etc, and not be forced by lack of transport into activities which are geographically nearest, is liberating. It argues that, in this sense, travel choices bring an improved quality of life.

The report states that in the context of many needs for travel, there are some who are not as mobile, and do not have as much access as they would like. This condition, which the authors call travel poverty, has been defined as 'inadequate access to choice of transport'. The authors say that there is a danger that the travel poor might suffer disadvantages in employment and other forms of social deprivation because of their inability to travel.

Rushton, D

Difficulty in Accessing Key Services. Social Analysis and Reporting Division. Office for National Statistics 2002

This article reports on the results of surveys undertaken in January and March 2000 and 2001 to examine the difficulty experienced by adults when accessing a range of services. The analysis was designed to focus on perceptions of difficulty, but it also looks at actual difficulty (as measured by journey time) and mode of transport used in accessing services. More detailed analyses are presented for four groups of people who are often considered to be disadvantaged in terms of access to good quality transport. These are: women, older people, those living in rural areas and those living in deprived areas. The services examined are those which every household is likely to need to access at some time – the hospital, GP, chemist, post office and main food shop.

Rushton says that many studies measuring deprivation now include some idea of proximity to services such as a post office or food shop. It should be noted that we recognize that there are criticisms of such straight line measures. Rushton adds that improving the accessibility of local services is an important part of the Government's strategy for tackling neighbourhood renewal. This article reports on surveys which examined actual and perceived difficulty experienced in accessing a range of services.

The main findings are:

- 20 per cent of adults experience some kind of difficulty getting to their hospital

- less than 6 per cent experience difficulty in accessing any of the other services examined (chemist, GP, post office, main food shop)
- there is a clear relationship between actual difficulty (as measured by usual journey time) and perceived difficulty
- household car availability has an impact on perceptions of difficulty
- the proportion of people who said that they experience some difficulty in households without a car is nearly twice as great (38 per cent) as those with a car (21 per cent).

Other findings are:

- women are between 5 and 8 percentage points more likely than men to report difficulty in accessing the services examined, reflecting the longer journey times they experience and lower car use
- younger people, aged 16 to 24, and the elderly, aged 75 and over, have more difficulty accessing services than the general population (these differences remain even when controlling for different levels of household car availability and other factors)
- people living in rural or deprived areas report only slightly more difficulty in accessing services than people living in urban, non-deprived areas. (This finding could be interpreted to imply that, in terms of exclusion, the scatter is more important than the cluster.)

The survey asked adults how long it normally takes to get to five key services. The paper reports, as might be expected, journey times tend to be shortest for the more local services, such as the post office or chemist, which are present on most High Streets. More than four-fifths of adults can access these services within 10 minutes. By contrast, travel times to the hospital tend to be much longer. One-quarter of people could access their local hospital within 10 minutes, but over two-fifths reported travel times in excess of twenty minutes. These findings are reflected in people's choice of mode of transport. Service-users were asked whether they travel to key services by foot, car, public transport or some other form of transport (such as taxi or bicycle). The dominant modes of travel are car and foot. Over four-fifths of adults use one or other of these modes to travel to each of the services examined. Travel by foot tends to be more common for the more local services, where journey times are shorter. This can be seen with journeys to the post office, where the majority of people travel by foot, and journeys to the chemist where a similar proportion of people travel by foot and car. Car is the main mode of travel for the other services examined. For main food shopping, travel choices are likely to be influenced by the necessity to carry heavy loads, as well as the proximity of the service. This is the service for which the car is used most often.

Gender differences were also examined in the survey. The overall pattern of transport use is broadly similar but there are some significant differences. For each service, the proportion of women travelling by car is between 5 and 8 percentage points lower than for men. Women's use of travel by foot and public transport is correspondingly higher. Women were found to make up the majority of people using public transport to access services. The paper suggests that form of transport impacts on journey times and this is clearly demonstrated in the case of men and women. For all services, women report longer journey times than men.

In addition, the researchers examined the different modes of transport that are used by people when travelling to two contrasting services - a local service (post office) and a less local service (hospital). The results showed that the usual mode of travel varies by age, but that the extent of the variation depends on the service being used. For each service, people aged 16 to 24 travel significantly more by foot than older people. This is particularly apparent for the post office, where 69 per cent of 16 to 24 year-olds travel by foot, compared with an average of 59 per cent for all age groups. Also, people aged 25 to 54 are more likely to use the car. For those above the age of 54, use of public transport and alternative forms of transport, such as taxis and community transport schemes, increases with age. This is particularly noticeable for travel to the hospital where 26 per cent of people aged 75 and over use public transport, with a further 15 per cent using transport other than car or foot.

The survey also looked at how travel choices are affected by whether people live in an urban or a rural environment. Little more than seven in ten adults in urban areas use the car for their main food shopping and for travel to the hospital. In addition, there is relatively greater use made of foot and public transport in urban than in rural areas. This is most marked for journeys to the chemist where half of people in urban areas travel by foot, compared with one-fifth in rural areas.

The paper reports that different travel choices emerge when the area of residence of people is analysed by a measure of deprivation, such as the Index of Multiple Deprivation (IMD). The study shows lower car use in the more deprived areas which are associated with lower levels of household access to cars. The pattern is apparent with all services but is most noticeable with journeys to the hospital - car use is 33 percentage points lower in the most deprived decile when compared with the least deprived.

Rushton also compares the modes of transport used to access services by people living in households in the 10 per cent most deprived wards and those in other areas. For travel to the chemist and travel to the local hospital, greater use is made of public transport and travel by foot in the most deprived areas. 59 per cent of residents in the most deprived wards walk to the chemist compared with 44 per cent in other areas. For the hospital, the corresponding figures for public transport use are 28 per cent and 12 per cent. These differences can be partly explained by varying levels of household access to a car. However, they may also reflect the greater concentration of services, and better provision of public transport alternatives in large towns and cities where most deprived wards are found. The author says that there is evidence to support this from the rankings of wards based solely on the access to services 'domain' of the IMD. An analysis of the distribution of journey times also shows no significant differences between the most deprived wards and other areas.

Lucas K, Grosvenor T and Simpson R

Transport, the Environment and Social Exclusion. Joseph Rowntree Foundation 2001

This study involved an initial review of the findings of previous and ongoing studies of transport in relation to disadvantaged groups. It also drew on data from the National Travel Survey and the Family Expenditure Survey to explore the unique travel and expenditure patterns of low-income groups. Five case studies were selected for more detailed research. The case studies, which took place in 2000, comprised a series of interviews with local policy officers and 10 focus groups with residents living on low

incomes in these areas. In recognition that travel behaviour and experiences differ with age, gender and lifestyle circumstances, separate focus groups were held with: children, young people, unemployed people, people in low-paid work, people from minority ethnic communities, disabled and mobility impaired people.

The researchers conclude that until social equity evaluation becomes a feature of central and local government transport policy and provision, it is unlikely that the problems of disadvantaged individuals, groups and communities will be understood or addressed. They also recommend that, as determinants of travel are dependent on so many other factors, evaluations will also need to include analysis of the impacts of transport and accessibility on other areas of policy decision-making, such as health, education, employment, regeneration and social inclusion.

Lucas et al say that there have also been concerns about the negative impacts of rising car ownership on the lives of some people from a social perspective. They state that social commentators stress that nearly a third of households in the UK still do not have a car and that non-car-owning households are concentrated amongst the lowest income groups, saying:

Those concerned with the problems of social exclusion argue that, in a society where car ownership is the norm, people who do not have access to a car experience both economic and social disadvantages.

The authors argue that low-income groups are more likely to live on or near a main road, and to walk and cycle, while a lack of gardens on social housing estates means that children are more likely to play on streets or near busy main roads.

The report suggests that the car accounts for the vast majority of the travel of all income groups. The authors say that high dependency on car use even amongst low-income households implies that public transport is generally inadequate to the mobility and accessibility requirements of a modern society and that even those on low income will go out of the way to own or gain access to a car.

Lucas et al argue that analysis of travel data along socio-economic lines demonstrates a huge difference in the overall distances travelled by those in the lowest income group and those in the highest. They cite a number of studies which have suggested that some low-income groups may be experiencing 'travel poverty' to the extent that a lack of mobility may be exacerbating their social exclusion. The authors say that these studies argue that an inability to access transport can lead to people missing out on jobs, education and other social opportunities.

Lucas et al see some proposed policies as having the effect of further excluding certain groups and/or communities. For example, they cite 'green' taxation measures on fuel and town center parking charges which may be detrimental to those living in rural areas where even those on low incomes must own and use cars in order to access essential services. Similarly, the authors say many shift-workers, although usually in receipt of little more than the minimum wage, may be car reliant for the journey to work, as this often falls outside of normal public transport operating hours.

They add that over 30 per cent of households in the lowest income band do own and drive cars. The authors report that disaggregate analysis of the Family Expenditure Survey to consider only those who spend on travel demonstrated that those lowest-income households who actually spend on motoring commit a far greater proportion of their household expenditure to motoring than any other income group.

Lucas et al express other concerns related to the disproportionate impact that policies aimed at reducing the need to travel may have on people with low personal mobility. They say that it has been argued that:

...for groups currently experiencing 'travel poverty', encouraging a reduction in travel cannot automatically be assumed to be a good thing and that some socially excluded groups may need to be encouraged to travel more (TraC, 2000). Therefore while from an *environmental standpoint reduced mobility* is the desired goal, from a *social perspective enhanced mobility* may be seen as contributing to social and economic vitality and thus social inclusion (Troy, 1996).

The study identified that public transport is never likely to be a viable option for some people, however low their income. In the research groups, this was identified as particularly the case for people living in isolated rural communities, those working late-night shifts and/or at isolated locations on the edge of town and many women undertaking multi-purpose trips under time constraints.

In addition, the focus groups established that some households would forego other basic amenities in order to maintain their car ownership and use. The authors assert that there is a point at which the rising cost of car ownership and use would become unaffordable for these marginal car-owning households and policy needs to consider the impact of this on their lives, should they find themselves priced out of the market. The authors' research also suggests that the car owners in many low-income groups often act as an informal community transport service for those without cars. They argue that the loss of a car in these instances would impact not only on the driver and their household but also on all those he/she takes to work, to the supermarket and to the hospital or school as a part of their routine travel.

Gaber I

Tangle Over Transport. Guardian Wednesday October 3, 2001

This article was written about the research carried out by Lucas et al and described above. It describes "evidence-based policy" as one of the mantras to be heard echoing around the corridors of Whitehall and suggests that the research by Westminster University's Transport Studies Group shows that the idea that people can be "priced out of their cars" by fuel taxes or congestion charges is, quite simply, wrong.

Gaber says that transport economists have long argued that demand for fuel is highly "elastic" - in other words, put the price up and demand will fall. He argues however that people do not always make rational economic decisions, "but do make rational uneconomic decisions". Contrary to the view expressed by Gaber, it should be noted that transport economists traditionally have said that car use is relatively inelastic with respect to fuel price (-0.1). Recent work by both Goodwin and Glaister has suggested this might be higher.

He reflects on the findings of Lucas et al that those hit hardest by rises in motoring costs are, hardly surprisingly, the poor, stating that running a car can account for between a fifth and a quarter of all expenditure in poorer households, a substantially bigger share than for other income groups. He adds that the poor can also be the people most dependent on their cars because they may live in isolated rural communities, work late/night shifts and try to juggle childcare, work and shopping commitments.

Gaber goes on to say that poor access to transport - private or public - played a major rôle in increasing people's sense of social exclusion by blighting their access to jobs, education, healthcare and leisure facilities. It also increased the social isolation of older people.

He says that the researchers found that there was widespread animosity to pricing policies designed to restrict car use, such as workplace parking charges and congestion charging. He asserts that the study concluded that even though poorer people spent a bigger proportion of their income on their cars, increasing the cost of motoring had no observable impact on their car use. The author says that this was attributed to the high cost of fares relative to the perceived cost of using cars, the inadequacy (or non-existence) of public transport alternatives and fears for personal safety. In contrast to Gaber's conclusions, it should be noted that in the short run, low income motorists are locked into using their car, while in the long run, they may change. Lucas et al do not seem to have considered this.

Urban Forum, VOSCUR (Voluntary Organisations Standing Conference on Urban Regeneration) **and ACRE** (Action with Rural Communities in England)

Transport and Social Exclusion. Report to the Social Exclusion Unit, Cabinet Office. October 2001

SEU commissioned this research on how poor transport can cut people off from key services. The study was undertaken through workshop groups held in an urban area, a market town and a rural area. The report says that transport needs cannot be divorced from other aspects of regeneration and that a holistic approach to tackling the issues raised is needed. With particular reference to Bristol, the urban case study, the report says:

There was general agreement that poor transport has a fundamental impact on quality of life by limiting people's choices and opportunities. This may result in isolation as people stop socializing and taking up opportunities eg. learning. On a day to day basis, people experience difficulty getting to places on time eg work, school, health appointments and have very limited access to dispersed services and goods such as cinemas on edge or out of town sites.

McCluskey A

Desire and Exclusion: The Never Ending Quest for Universal Access. Connected., St-Blaise, 15th May 2000 (www.connected.org/is/universal.html)

McCluskey uses this article to challenge the assumption that the drive to make networked services universally accessible is desirable or even feasible. He says that he is not arguing for elitism or programmed exclusion, rather that he will try to make the point that paradoxically, in seeking to attain universality, exclusion is the foregone outcome.

The author uses mobility as the example of the impact of the desire created by the availability of a new tool. In building his argument, he says that the extent of mobility afforded by motorized transport would have been almost unthinkable prior to its invention. He argues that the advent of the train, the car and the plane modified our perception of the world and created desires even in people not having access to those means of transport. He concludes that mobility has become a human right.

He suggests that embodied in the concept of "haves-and-have nots" is both a generalized desire to use a given tool and the judgement that that use is good for

one and all. Returning to his example, he says if there are no buses or trains to your village and you have no car - and what's more walking, cycling or horse riding are out of the question - then when the last shop closes in your village for lack of custom, you could be in a very difficult situation. He notes that it was the presence of motorized transport that enabled the development of supermarkets and subsequent hypermarkets that led to the decline of local shops. He adds that going even further back in time, industrialisation produced an ever-increasing dependence of families on shopkeepers for their everyday needs. The author feels that the advent of motorized mobility has thus brought about changes that forced its use on a great part of the population and had a considerable impact on the lives of almost everybody.

Reverting to electronic networks and related services, the author says that advocates of universality are arguing that all those who do not have access (presumably both physical access as well as the necessary know-how to use it) will be seriously penalized in the future heavily-networked society. He argues that

...rather like the shopless village requires cars or public transport, so essential services provided initially both online and offline will increasingly be provided only online because it is economically more efficient to do so, leaving those who don't have access out in the lurch.

McCluskey says that whether or not those services are really essential will not matter. He adds that many of them will become essential, like the Sunday family outing in the car or the weekly drive to the local supermarket. His view is that between the strongly desired and the absolutely necessary, exclusion comes when these new tools are the only perceived means of access.

He believes there is a paradox in the idea of universal access necessarily leading to exclusion because the concept embodies the assumption that using the network is necessary for everybody, whereas it is far from proven that everybody needs or wants access. He says that the insistence on access is more than enough to create exclusion:

The more we insist on the necessity and desirability of access, the greater the feeling of exclusion will be in those who don't have it, even if they don't want it or need it.

3.3 Road user charging

Sinclair F

Assessment of the Effects of Road User Charging and the Transport Investment Package Proposals on Social Inclusion - Recommendations for Consultation and Appraisal. PROGRESS. TRI, Napier University, July 2001

The purpose of the report is to clarify social exclusion and inclusion in relation to transport, make recommendations for consultation on the proposed road user charging scheme and related investment package in Edinburgh and examine other ways of assessing the impact of road pricing on social inclusion. The report makes recommendations to ensure that consultation with socially excluded groups is an integral part of the consultation on the road pricing and is largely based on a desk study of existing reports and studies on social exclusion, transport and social exclusion, equity issues of road user charging as well as research methodology

Sinclair says that there is no commonly agreed definition of social exclusion. However, there have been several attempts at defining social exclusion with similar results. The author states that the definition used in her research has been chosen because it acknowledges that non-participation may be voluntary, something which is overlooked in many other definitions:

The condition of living in a society but not having the opportunity to participate in the normal activities of citizens in that society.

The report recognizes a difference between 'social exclusion' and transport on the one hand, and 'transport disadvantage' on the other hand. It says that social exclusion refers to being denied the opportunity to participate in the normal activities of citizens in that society. The author says that the 'normal activities in that society' assume satisfaction of basic human needs as well as participation activities relating to social citizenship. Sinclair suggests that the socially excluded are those who are denied the opportunity to engage in or satisfy either of these rights. She goes on to describe the rôle of transport in relation to social exclusion as (i) a causal factor which explains why someone does not have the opportunity to engage in the normal activities of society; (ii) a secondary factor compounding social exclusion. The report also says that transport can act as an enabler i.e. to facilitate participation regardless of where an individual lives, for example some individuals' ability to participate in employment and labour-related activities such as job seeking and the attendance of interviews. Transport disadvantage is regarded by the author as a more wide-ranging and general concept, referring to any obstacles or barriers people encounter when using or trying to use transport.

Sinclair says that in order to examine the effects of transport policy on social inclusion the following three questions need to be addressed:

What are the activities which everyone should have the opportunity to engage in?

Who is not able to engage in these activities?

Why are the excluded not able to engage in these activities?

The author also reminds the reader that although the lack of car ownership is used as a proxy for low income in many deprivation indices, it is important to remember that many people on a low income do have a car and that it is these people who are potentially most at risk from suffering adverse effects as a result of the introduction of RUC. In looking at proposed consultation on RUC that the author was planning to undertake, she says that apart from ensuring it is comprehensive, it will be necessary to establish the effect of RUC on the behaviour and household budget of socially excluded and people vulnerable to exclusion in relation to engaging in the normal activities of society. She adds that if a switch of transport mode from the car would be inevitable, it is necessary to find out whether alternative transport is available, accessible, affordable and acceptable. If it were, then RUC would not be creating social exclusion. If such conditions are not met, it is necessary to identify what action is required to ensure alternatives are in place and mitigate the effects of road pricing. The author suggests that this is where assessment of the options of the investment package comes in.

Sinclair highlights that there are other relevant groups in relation to assessing the social inclusion impact of the investment package: all other socially excluded people who do not use a car as their primary transport mode to access services and activities.

The author suggests that one way to compensate socially excluded people, including those vulnerable to exclusion, would be through exemptions from road user charging. Nevertheless, she recognizes that for a road user charging scheme to be successful, exemptions should be kept to a minimum. Alternatively, Sinclair suggests that to benefit lower income groups the revenue of road pricing could be used to:

- make general public transport improvements - as socially excluded people rely to a greater extent on public transport they benefit disproportionately from enhancing services
- increase / safeguard the affordability of public transport - such as through ensuring that fares are affordable, greater availability of season ticket loans, or subsidising routes
- maintain and enhance the accessibility and suitability of public transport, in a way which maximizes the benefits to socially excluded groups.

Sinclair F

Assessment of the Effects of Congestion Charging on Low Income Households in Edinburgh - An Analysis of Scottish Household Survey Data. PROGRESS. TRI, Napier University January 2002

This analysis assesses the effects of congestion charging on different Edinburgh households. It examines whether the proposed city centre and outer cordons would affect people with lower incomes less than people with higher incomes. The analysis is based on the travel diaries of the Scottish Household Survey (SHS) data for Edinburgh in 1999 and 2000. The analysis does not take account of any changes in behaviour which may result from the introduction of congestion charging.

Sinclair says that previous research examining the issue of social equity in relation to congestion charging found that as a group people with lower income are less effected by road charges, mainly as a result of lower vehicle ownership and utilisation rates. The author adds that if the revenues from charging are invested in public transport, people with lower income benefit from road charging on the whole as these people use public transport more.

The results of Sinclair's analysis show that income has a significant effect on whether people from Edinburgh drive across the city centre cordon or either the city centre or outer cordon, and thereby would incur a congestion charge. Other variables that have a significant relationship with whether congestion charging would be incurred are age, economic status, whether an individual drives to and from work and journey purpose. As these findings are considered important to the current study, Sinclair's results are provided below:

Income

City or outer cordon crossed between 7am and 7pm by household income group

Income group	Cordon crossed	
	Count	Expected
low	29	79
medium	66	73
high	117	60
Total	212	212

Age

As can be expected people of retirement age are significantly less likely to be affected by the introduction of congestion charging than people below retirement age.

City or outer cordon crossed between 7am and 7pm by age group

Age band	Cordon crossed	
	Count	Expected
below retirement age	183	152
retirement age	29	60
Total	212	212

Age is also related to income with the respondents of retirement age significantly more likely to be in the low income groups and those under retirement age over-represented in the medium and high income groups.

Economic status

There is also a significant relation between the three economic groups (employed, retired, others including unemployed, disabled people and people in education) and whether a congestion charge is likely to be incurred: employed respondents are more likely to be affected by congestion charging for either cordon option than retired or other groups.

City or outer cordon crossed between 7am and 7pm by economic status

Economic status	Cordon crossed	
	Count	Expected
employed	155	107
retired	25	48
other	32	57
Total	212	212

The three economic groups also have a significant relationship with income. While the employed respondents are under-represented among the low income group, and over-represented among the medium and high income groups, the reverse is true for the retired and 'other' economic groups.

Reasons for driving - drive to and from work

As expected, people driving to and from work are significantly more likely to cross either cordon than those who do not use their car to drive to and from work.

City or outer cordon crossed between 7am and 7pm by drive to and from work

Drive to and from work	Cordon crossed	
	Count	Expected
Yes	139	92
No	72	119
Total	211	211

Again, whether people drive to and from work is related to income group with the lower income groups less likely to drive to work than the other income groups.

The study found that people with lower income are significantly less likely to cross a cordon and be charged than people with higher incomes. The author links this situation to lower car ownership levels and higher use of non-car modes of transport and particularly for journeys during working hours. She suggests that this means that as a group, lower income people and socially excluded are likely to be less affected by the proposals for introducing congestion charging. In addition, Sinclair argues that the revenue from the congestion charges will be spent on transport, most of that on public transport:

As lower income groups and socially excluded people use public transport to a much greater extent than other groups this will benefit them more. This is also true for travel to work

Sinclair says that while socially excluded people as a whole will be less affected by charging, it is also true that as the charging rate is the same for all income groups, some individuals with low incomes for whom public transport is currently not a realistic option will be hit harder by the introduction of congestion charging. These may include low income motorists who live or work in areas with poor transport links, work shifts when public transport is unavailable or less frequent and have to undertake multi-purpose trips under time constraints and with inflexible work schedules, for example, single parents.

Generally, in Scotland, the author says

...people on lower income live closer to public transport with lower walking times to the nearest bus stop and benefiting from more frequent bus service. This is also true for people living in 'disadvantaged council estates' areas compared to other areas and for people without access to a car. Therefore it is reasonable to say that people living in areas with poor transport links are more likely to be better off and have car access. Further, poor transport links are much more likely to effect rural dwellers.

Sinclair also reports on an Accessibility Analysis which was carried out for the City of Edinburgh Council's New Transport Initiative (NTI) by Derek Halden Consultancy (2001) and examined accessibility changes as a result of the introduction of congestion charging (based on two cordons and a £2 charge) and the associated public transport investment package (high spend scenario). The analysis covers Edinburgh, central Fife and the Lothians and looks at car and non-car accessibility, peak and off peak, by trip purpose and time of day. The author says that:

The analysis found that access to work - including edge of town employment/retail locations such as the Gyle, Edinburgh Park and Fort Kinnaird - and other key destinations by public transport will be improved both peak and off peak periods. Equally, it found that the non-car accessibility of unemployed, deprived and elderly people will be increased as a result of the proposals, more so than for the population as a whole. The analysis also confirmed that non-central areas would benefit disproportionately from the NTI investment package as current public transport provision in the centre is already good.

With reference to lower income workers, Sinclair suggests there is no data readily available in terms of their trip patterns including origin and destination, travel times and travel mode - and how many may be affected by the proposals. The author

reports on one of the focus groups which consisted of low income drivers who lived outside Edinburgh but worked in the city:

Recruitment took place at the Western General hospital and Edinburgh Park, both major employment centres. The results showed that participants were very concerned whether they would be able to afford paying any charges. They also wanted transport investment such as better rail links but again are concerned about the affordability of alternatives to the car. For example, one mentioned the high costs of the bus from the Park & Ride site plus another fare to their place of work. There were fears that workers on the minimum wage would be unable to afford travelling to work in Edinburgh and that therefore they should be exempt from charges.

Sinclair also discusses the needs of single parent households. According to the travel diary analysis, 30% of single parents drive every day and a quarter drive to and from work. Fewer than one in ten of all single parents (10 of 116) would cross a cordon - central or outer - between 7 am and 7 pm weekdays. However, of these 10, only 1 is in the low income band.

The author includes initial results of a survey which asked respondents about their transport investment priorities by presenting them with a list of options. Many of the transport investment options are reported to have attracted high support from respondents in the lowest income group (in order of preference):

- upgrading and reopening rail lines and stations
- much improved maintenance of the road, cycle and pedestrian networks
- high quality buses and bus shelters at the stop with 'real-time' information, across the region
- improved maintenance of the road network
- an orbital bus rapid transit system
- more reliable and more frequent bus services at all times of day within Edinburgh
- two further tram routes (not Granton/Leith)
- high quality pedestrian environment in the city centre
- park and ride sites around the city edge
- more reliable and more frequent bus services at all times of day to surrounding areas outside Edinburgh
- initial tram route.

People without a car and people in lower household income bands also showed least support for the option 'no congestion charging'.

May, A

Making the Links: Car use and Traffic Management Measures in the Policy Package. Paper presented to ECMT/OECD workshop on Managing Car Use for Sustainable Urban Travel, 1-2 Dec 1999

This paper gives an overview of the evolution of road pricing in various countries. It says:

Road pricing provides a more directed means of imposing charges on car use in congested areas. It was originally developed as a means of charging car users for the congestion costs which they imposed on others (Smeed, 1964), and has more recently been considered as a method for charging

directly for environmental and safety externalities. It has also been used primarily to raise revenue to finance infrastructure.

The author's historical synopsis states that the simplest form of road pricing, in use in Singapore since 1975 to control congestion, involves charging vehicles to enter a defined area. He adds that Singapore originally used a paper-based system, but converted it to an electronic one, with all vehicles equipped, in 1998. He goes on to describe the Scandinavian approach saying that three cities in Norway have used paper and electronic methods to raise revenue for infrastructure. May says that more recent studies have considered more complex patterns of cordons and screenlines (Richards et al, 1996) and charging based on distance, time or delay (May et al, 1998), but none of these has yet been implemented. He asserts that

The Singapore scheme was immediately effective, achieving a 45% reduction in traffic entering the centre in the morning peak (Holland and Watson, 1978). A wide range of desk studies of road pricing have predicted significant impacts on traffic, with reductions in car traffic in the affected area of up to 30%, depending on the form of control, and hence substantial improvements in congestion and the environment. It should be noted, however, that even road pricing will only achieve these benefits within and on the immediate approaches to the charged area. The Norwegian schemes have had a much smaller impact on traffic, but it is important to note that they were designed to raise revenue, rather than reduce traffic (Larsen, 1988). All road pricing schemes have the potential to generate substantial income; most studies suggest gross revenues of around \$150 per capita per year for a well designed scheme (May, 1994). It is essential that policy makers are clear as to how such revenue is to be used. The Hong Kong electronic road pricing scheme was rejected at least in part because it appeared that revenues would simply accrue to government, rather than being committed to transport improvements. More recently the Dutch Rekeningrijden scheme has suffered from similar criticism.

May suggests that any restraint measure will give rise to a range of responses by the driver, who may choose not to travel, to travel to a different destination, by a different mode, at a different time, or on a different route. He says that, in the longer term, such changes are likely to result in journey patterns which are less amenable to further restraint.

In relation to impacts on the economy, the author says that decisions not to travel, or to change to a different location, are likely to have an impact on the economy of the area affected. He goes on to say

Conversely, those dependent on public transport, walking or cycling may be encouraged into the area, and the improvement in the environment there may provide a further incentive, as has been found with traffic calming schemes in German town centres (Hass-Klau, 1993). Because such responses take some time to occur, they are difficult to identify, and there is still considerable uncertainty over the power of predictive models to assess them. Not surprisingly, therefore, the negative reactions of traders and business in the affected area will be difficult to refute. This is an area in which more evidence is needed, although a recent UK report has concluded that it should be possible to design restraint measures so that they have a positive impact on the economy (SACTRA, 1999)

In terms of equity implications, May sees these arising under three broad headings: income-related effects, locational effects and need-related effects:

The first is the most often cited, the argument being that any fiscal measure bears more heavily on lower income families. In practice the position is more complex, since lower income families are more likely to use public transport, and it is perfectly possible, as predicted in London (May et al, 1996), that the net costs are greatest for the highest income groups. Even so, the poorest car users who have no alternative to the car will be the most severely affected, and it is difficult to avoid this outcome. Location-related effects arise with all types of restraint, either because some live within the affected area while others do not, or because of the effects of rerouted traffic. They are amenable to design improvements, either by relocating the boundary or by taking action to avoid rerouting. Need-related effects can concern those with mobility handicaps who have little alternative to the car, and people for whom the nature of their journey rules out alternatives to the car. Both are capable of solution through exemptions, subject to the cost of administering and enforcing them.

He later recognizes the need for complementary measures and controls on negative impacts.

STA City of Rome's Mobility Agency

EURoPrice Technical Paper 2: Priority Policy Issues Report 2000

This document's focus is on policy issues related to social and political acceptance, financing, specific technological problems, legislative and operational issues, highlighting how these road pricing issues are prioritized differently by each city in the EURoPrice project. In addition, an overview is provided of potential ways that the EU, national government, and local government can support road pricing implementation in cities. The paper suggests that the general emphasis of the cities has been on the development of a public participation and education program which would "win the hearts and minds" of the citizens.

With reference to Bristol, one of the two case study cities of the current research project, STA describes how the city became a pioneering area in the UK for introduction of RUC. It says Bristol's Local Transport Plan (July 1999) states that road user charging is one approach that the Council is actively promoting as part of an integrated package of measures to reduce demand for travel by and use of the car. The paper goes on to say that the wide scale public consultation on the plan and the Transport Plan Commission comprising of representatives from business, road user groups, academia, health, police, public transport operators, trade unions, transport users and the voluntary sector endorsed the integrated transport strategy including road user charging.

STA says that this led to Bristol City Council applying to the then DETR research programme for fast track status to implement an electronic road user charging scheme for the city centre. Bristol was successful in this bid and is a member of the Charging Development Partnership and is a fast-track pilot site for the DTLR. The scheme is also supported by the European Commission through the Fifth Framework Programme as part of the PROGRESS major demonstration project.

The authors suggest further that social and political acceptance of road pricing is an issue which plays a central rôle in the feasibility of implementing a road pricing programme. The paper says that the viability of road pricing depends upon perceived benefits and the justification given for the development of such a programme in the selected area. Nevertheless, STA recognizes that

...regardless of how critical those factors may be for the city, a number of particularly difficult aspects generally have to be addressed:

- Social exclusion by creating charges for road use, will certain groups be marginalised?
- Economic vitality - will the road pricing help or hurt the vitality of the selected area?
- Privacy of users - will the privacy of users be sacrificed in the implementation of a road pricing system?

The paper says that these issues are generally handled by developing the following types of programmes: awareness raising (how best to inform the public of what the system entails, what sacrifices would be expected and the overall objective of the programme) and marketing strategies (how can the road charging costs be presented to the public to best highlight the direct benefits that will be accrued based upon the system).

In relation to social and political acceptance in Bristol, the paper says that as part of the CONCERT-ELGAR trial on the A4 Bath Road corridor, participants in the road pricing trial were asked for their views on the scheme and its impact:

The results showed that 49% of the participants felt the scheme was effective and 7% felt it was very effective at encouraging modal shift, one of the main objectives of the trial. Participants felt that the influencing factors included the journey time reduction, and the toll rate in relation to public transport fares and the ability to switch to public transport.

City of Edinburgh Council

EURoPrice Technical Paper 3: Priority Policy Issues Report 2000

This document looks at what types of consultation have been undertaken as part of the EURoPrice project and the effects of the consultation on the opinions and acceptability of road pricing as a policy tool. Differences in opinions between and within both the selected (transport) stakeholder sectors and the seven EURoPrice cities are also highlighted.

The paper says:

It is generally recognised that consultation is a key issue on the acceptance of road user charging. Stakeholders have a major influence on the successful delivery and operation of demand management and transportation policies. Involvement in debate helps to raise awareness and it seems that stakeholders who understand the issues are more likely to support road pricing. The views of some major stakeholders may influence the attitude of others to road pricing.

City of Edinburgh Council reports that analysis suggests that there is a relationship between the amount and type of consultation undertaken and the level of awareness and support for road pricing. One of the most striking conclusions is that cities which have consulted most – Bristol, Edinburgh and Trondheim – have received the greatest support for road pricing.

With reference to formal consultation in Bristol, the paper says the city:

... has undertaken a number of studies considering the acceptability of road pricing as a demand management measure. As part of the Traffic Restraint Study and the ELGAR European project consultation has been undertaken

with a variety of stakeholders as well as the general public. Throughout these surveys there is a constant theme that the predominant traffic problem in Bristol is congestion, which is linked to an increase in the number of cars. The Traffic Restraint Study jointly funded with the national government, which examined a multiple cordon scheme, assessed the views of over 200 businesses and 400 individuals. The responses indicated that there was majority support in principle but more information on the details was requested. The most acceptable scheme would be city centre based, with charges only in the morning peak hour and with improvements made to public transport. A third of the businesses considered that this would not have an effect on their business; a further third felt it may only have a small effect and a further third thought it would effect their business but again required further detailed information.

The ELGAR environmental road pricing trial was undertaken in 1998. This reiterated the concerns of the general public and local stakeholders regarding traffic problems in the city. However, road pricing was acknowledged as an effective measure to enable mode switch to public transport and that there needed to be more emphasis on the health and environmental impacts.

In July 1999 Bristol undertook a city-wide consultation on its integrated transport strategy, including consultation with key stakeholders. There was wide spread recognition that action was required to reduce congestion in the city. The results of the consultation indicated strong support (68%) for road pricing provided there were improvements in public transport. This view was reflected in the stakeholder groups and in the Transport Plan Commission. Two independent studies were also undertaken in 1999 by Estate Agents' Gazette and Burgess Salmon. The main points arising from the Estate Agents' Gazette survey were that 74% felt that the introduction of road pricing would help reduce traffic into the city and 21% of those who drove would not do so if a £5 a day charge were introduced. In the Burgess Salmon index 76% of business managers in Bristol would support the introduction of a road pricing scheme provided there was good quality, reliable public transport in place.

With the ongoing development of the scheme Bristol is continuing to build partnerships with our key stakeholders. A national meeting of the Charging Development Partnership was held in Bristol in June 2000 at which representatives from the public transport operator, RAC motoring organisation, Bristol Chamber of Commerce and Initiative (including the Property Agents) and the Broadmead Board manager (City shopping area) supported the policy and the work being undertaken by Bristol to develop a scheme. The Transport Plan Commission representing the business community, motor vehicle users, education, health, police, public transport operator, trade unions, transport users and the voluntary sector reconvened in June 2000 to consider and support the transport strategy including road pricing.

In terms of informal consultation, the report says that Bristol has carried out interviews:

Bristol has a wide network of informal consultation gathering through the use of discussion groups, e.g. Bristol Association of Friends. The high level of consultation carried out has also enabled Bristol to probe the views of key individuals and stakeholders in the City who have an opinion on road pricing.

The paper suggests further that local opinions are not commonly expressed through the media. Nevertheless, it says that:

National views on road pricing which are applicable to Bristol have been expressed through the media or through other publications, e.g. from the AA's "The Great British Motorist 2000" report.

In Bristol, stakeholder's views have also been obtained through consultation on the Bristol LTP:

Group meetings were held to raise awareness of the transport problems and it was agreed that action was required. However, not all agreed that road pricing should be part of the solution and others expressed doubts. A Transport Plan Commission was established and a Traffic Restraint Study undertaken. The study included the business' view and how road pricing would affect discussions on where to locate businesses as part of all the factors taken into account in such decisions. Independent studies were also undertaken, e.g. Burgess Salmon Index and The Estate Agents Gazette Survey which concluded that road pricing would help reduce traffic in Bristol, the problem is at peak times only and action is needed. A Citizen's Panel was also set up and Bristol gathered additional information from published papers, such as the AA's "The Great British Motorist 2000".

With regard to the views of interest groups, the report says that these stakeholders have provided the most detailed comments and the most varied responses amongst the cities:

Four of the cities (Bristol, Edinburgh, Rome and Trondheim) have consulted with representatives from interest groups and the response differs among these cities. In Trondheim it is felt that "mobility is a right and disabled drivers do not have the option of using alternative modes". Bristol consulted extensively as part of its Transport Plan consultation and spoke to many different interest groups. Three local groups and one national group expressed their views. The local views differed with one feeling road pricing was too harsh, one that although controversial a modest charge may be acceptable, and one felt it could support the principle of road pricing but only if the money was spent locally on transport. The national group also supported road pricing but was concerned at possible local distortions. In Edinburgh the interest group consulted responded to the national consultation on "Tackling Congestion". The group felt that road pricing would "...create greater social exclusion of disabled people ...".

In addition, the paper reports that although Bristol consulted the health sector, despite acknowledging that some form of traffic restraint is needed, the view of the health stakeholder in the city remains unknown.

However, the report says that the majority of stakeholder sectors in Bristol do have a view on road pricing. Seven are supportive, three are not supportive and ten do not have a known view. Many of those supporting road pricing recognize the need to deal with the ever increasing traffic congestion and other problems in the city. The public transport, the freight industry, retail, and the employers stakeholder are supportive with some conditions. Stakeholders not supportive include motoring organizations, road safety agencies, and leisure/tourist industry.

Transport & Travel Research

Urban Road User Charging Scheme Design Principles and Policies - Report on Literature Review. Prepared for DETR. January 2000

This report describes findings of the first stage of a study of urban road user charging scheme design principles and policies undertaken for the then DETR. It concentrates on the literature review. Twenty-nine publications were reviewed in total, comprising a mixture of project reports, journal articles and conference papers.

The report concludes that there is clearly more published information in documents on some areas of interest than on others. It says that in some areas the literature review was a rich information source eg. on measurement or prediction of potential direct traffic impacts of RUC schemes. The least useful published information available is described as:

- longer term impacts (for example, on local economies and on land use patterns)
- public-private partnerships
- public relations and publicity campaigns (when schemes are actually being implemented)
- procedures for reviewing and updating charge levels (after schemes become operational)

The report says further that although little scientific evidence has been collected on longer term impacts of RUC, the DETR had recently sponsored some academic research in this area.

Leach, G

More Roads and Road Pricing - The Way to Go? Institute of Directors Policy Paper. 2001

This paper focuses on how the road transport system in the UK might be changed in order to create what the author describes as a truly world class road system. Leach says:

Congestion on the roads is not a new phenomenon – chariots filled the streets of ancient Rome – but this does not mean that we should accept the status quo. In this paper the IoD argues for the introduction of widespread road pricing together with the construction of extra capacity on the road network.

Leach says that the IoD argues that the solution to road congestion involves both demand-side (road pricing) and supply-side (new road capacity) elements. He suggests that the road network in the UK desperately needs a pricing system which will reduce congestion, finance investment in new capacity, and internalize the marginal social cost (accidents, road damage, pollution and congestion) of road use to increase economic efficiency. In addition, the author says that the introduction of road pricing should be revenue neutral, offset by reductions in fuel duty.

The paper goes on to say that recent transport trends 'paint an interesting picture':

Between 1952 and 1999 the number of passenger kilometres travelled increased by 970% whereas total road lengths rose by just 25% over the same period. Over the past 25 years road length has increased by 0.5% per annum. If one looks at road traffic by type of vehicle, thereby measuring billion vehicle kilometres, the increase is even greater, with a 1300% increase over the past 50 years in the number of vehicle kilometres for cars and vans.

Motor kilometres rose by 691% over the same period. Even allowing for the fact that many of the new roads were motorways, the divergence between the growth in vehicle kilometres and road lengths is huge. Motorways permit greater traffic numbers per kilometre as a result of having more lanes and faster speeds.

The end result is not surprising. The proportion of road links that are congested is some two and a half times greater than in Italy, three times greater than in Germany and five times greater than in France (The Road More Travelled Needs Expanding, Martin Wolf, Financial Times, 15th November 1999).

The paper goes on to examine the main drivers of traffic growth and suggests that congestion is a good example of 'market failure'. Leach says that the textbook economic theory of road pricing is not controversial.

The author states further that estimating the cost of externalities (the social costs of road traffic) is a very difficult exercise since knowledge of the costing of many of the items is immature and often subject to huge variations caused by the context in which transport services operate – the level of traffic, time of day and route network. He quotes a literature review by The Smith Group (1999), which estimated that a central estimate for the external costs of traffic externalities in the UK was of the order of £30 billion per annum, with a range from £25 billion to £61.5 billion. He also provides figures from a DTLR literature review of the external costs of road transport (excluding the costs of road congestion) which found a range in estimated costs from £8 billion to £39 billion.

The paper includes other estimates which range from £7 billion to £19 billion per annum:

Research undertaken by NERA (National Economic Research Associates, 1997) estimated the total time cost of congestion to road users to be £7 billion, split between a cost to business of £2.5 billion and the cost to private motorists, van drivers and bus passengers of £4.5 billion (Transport chapter, in *Applied Economics*, Eighth Edition, A Griffiths & S Hall, 1999).

Newbery (*Pricing and congestion – economic principles relevant to pricing roads*, in *Readings in Microeconomics*, edited by T. Jenkinson, OUP, 2000) has estimated that the marginal time cost of congestion was around £19 billion in 1993. If additional external costs such as road damage were also included then external costs amounted to £20.7 billion.

Leach goes on to say that in 1988 the British Road Federation estimated that the cost of congestion in England was around £10 billion per annum. In 1989, the CBI estimated that the cost of congestion in England was around £15 billion per annum (in 1989 prices), around two-thirds of which related to London and the South-East. As a share of GDP the costs of congestion are almost certain to have increased subsequently. He also quotes the CBI findings that every household in England had to spend £10 per week more than it needed to on goods and services in order to meet the extra cost to business of road (and rail) congestion and the Lex Service Group, 12th Annual Report on Motoring, 2000 estimated that congestion, mainly by cars, costs the country £23 billion annually.

Leach then considers some of the problems likely to occur when introducing a system of road pricing such as political forces, inelastic demand, substitution effects and technology. He says that, in a UK context, the future for road pricing could well be determined by the success or failure of the introduction of road pricing in London.

3.4 Workplace Parking Levy

Oscar Faber

Study to Investigate the Issues Surrounding the Implementation of Workplace Parking Levy (WPPL): Final Report. October 2000

This report presents the initial findings of consultation with local authorities who had expressed an interest in possibly implementing a workplace parking levy. It includes summaries of transcripts from the meetings and a thematic overview of the outcome of the consultation. Amongst those consulted are Reading Borough Council, Milton Keynes Borough Council, West Midlands and Cambridgeshire County Council. The consultation with Nottingham City Council is of particular relevance to this study.

The report says that Nottingham City Council recognizes that employers play an important rôle in determining employees' travel. In addition, it states that the Authority views the control of parking as a valuable transport management and land use management tool. The report says that politically WPPL has been accepted as 'the right thing to do'. The Authority set up Nottingham Transport Partnership to influence policy and proposals for WPPL.

Other findings of the consultation in Nottingham are summarized below:

- There are currently at least 58,000 PNR spaces in Nottingham City and the Authority believes that the current level of work place parking in the City will not be affected by a WPPL scheme but that the scheme will curb future increases in car parking spaces.
- The Authority believes that a WPPL at the rate proposed will not have a huge impact on its own, but if joined up with commuter plans, it will have a marked effect on congestion. In terms of monitoring the impact of WPPL and the associated transport improvements, the road network is already subject to extensive monitoring. Multi-modal surveys are undertaken every year for all radial routes and a multi-modal model is being developed for the City.

The report's themed analysis of consultation outcomes suggests that WPPL has been seen as easier to implement than RUC, eg. it required less technology and associated risk/cost, and also has less implications in terms of social inclusion/exclusion.

May, A

Making the Links: Car Use and Traffic Management Measures in the Policy Package. Paper presented to ECMT/OECD workshop on Managing Car Use for Sustainable Urban Travel, 1-2 Dec 1999

May says that there are:

...few examples of comprehensive control of all parking, because of the difficulty of controlling private parking places, but a recent desk study in Bristol suggested that, while currently available measures could reduce car trips to the centre by at most 21%, and traffic levels by 8%, comprehensive parking controls could achieve reductions of 77% and 23% respectively

(Coombe et al, 1997). Partly based on this evidence, the UK government has recently proposed allowing local authorities to introduce pilot schemes to charge for ownership of employees' parking spaces, through a workplace parking levy (DETR, 1998). It is as yet very difficult to judge how effective such charges will be; there is some evidence that employers will not be prepared to reduce their parking stock or pass the charges on to drivers, in which case the levy would simply provide a means of raising revenue.

Wang T and Sharples J

Workplace Parking Levy. TRL Report 399. TRL, Crowthorne 1999

This report provides results of a study to obtain a snapshot of the opinions of businesses in Scotland on the Government's proposals to introduce a charge on workplace parking spaces. It provides an overview of a literature search carried out as part of the research. The study findings that are relevant to the current research are summarized below:

- 75% of firms are not in favour of introducing a workplace parking levy, without a firm commitment from the Government as to how the revenue raised would be used.
- Over 63% were in favour of a guarantee that the revenues would be ring fenced for both increased transport investment in Scotland and increased local transport investment, 21% were opposed to the revenues being invested in Scottish transport, 10% were against the revenues going towards enhancing local transport.
- 15% felt that the company should pay the levy, 8% felt that the employees should pay and 11% thought the cost should be split amongst company, employee and customer.
- 30% indicated that an introduction of a levy would result in an alteration to the number of parking spaces, 35% indicated that there would be no change to the number of spaces and 65% said that their company would not relocate if a WPPL was introduced.
- About half indicated there are suitable alternatives to car travel for their employees.

Ison S and Wall S

Attitudes to Traffic-related Issues in Urban Areas of the UK and the Role of Workplace Parking Charges. *Journal of Transport Geography* Vol 10, Issue 1, March 2002, pp21-28

The paper says that, in the UK, the Government currently perceives a levy on workplace parking to be a key ingredient of a package of measures designed to deal with congestion and traffic-related pollution in urban areas. The authors suggest that a number of issues will require careful consideration before such a levy can be successfully introduced. This paper presents a summary of the findings of a national survey undertaken with respect to workplace parking charges. Ison and Wall ask 'How seriously do the decision-makers and opinion formers perceive traffic-related issues (and in particular the health effects of road traffic) to be in the urban areas of the UK?' and 'How effective and acceptable is a levy on workplace parking likely to

be when compared with other policy options as a means of dealing with traffic-related pollution?’ The surveys findings suggest that ring fencing the revenue raised from workplace parking charge would appear to be an important issue, alongside the allocation of that revenue as a means of increasing acceptance. The paper considers the size of the levy to be charged in order to achieve a significant reduction in current workplace parking provision, and the case for exempting certain categories of user.

Ison and Wall assert that much has been written in terms of road user charging (see for example, Morrison, 1986; IEA, 1998; Button and Verhoef, 1998), but much less in terms of workplace parking charges. This paper presents a summary of research undertaken with respect to workplace parking charges and investigates whether they represent an effective and acceptable market-based approach for dealing with traffic-related pollution in urban areas of the UK. The research targeted decision-makers, local authority councillors and officials, as well as opinion formers such as transport academics. It sought to establish the opinions of such groups as regards a variety of traffic-related issues in urban areas and their perceptions as to how workplace parking charges compare with other alternatives as an effective measure for tackling the problem of traffic-related pollution.

Amongst the findings of the survey reported by Ison and Wall were that

...a levy on workplace parking was considered as one of the most effective options for curbing the growth of road traffic in urban Britain, with 77.1% of all respondents regarding it as fairly/totally effective with a mean ranking score of 3.78. Workplace parking charges were not, however, perceived as being as effective as the introduction of road user charging in urban areas. In contrast, teleworking and city car clubs were perceived as being among the least effective policy options for dealing with the health effects of road traffic in urban areas of the UK. In terms of the policy options for dealing with these health effects workplace parking charges are viewed as an effective policy measure, as are other market-based instruments. As for the acceptability of workplace parking charges they are viewed as one of the least acceptable along with other *pricing* options, namely road user charging and increased fuel duty. Perhaps not too surprising improved public transport and *carrots* such as safe walking and cycling routes are the most acceptable. Of course the progressive use of hypothecated revenues for public transport purposes may help to raise the acceptability of such charges. The need to ring-fence the revenue raised was a major area of concern in terms of the response to the Government's Consultation with respect to Breaking the Logjam (DETR, 2000). The research undertaken as part of this paper reveals a preference for allocating over 50% of the revenue raised from workplace parking charges to public transport in one form or another. The success of workplace parking in achieving a reduction in workplace parking provision will depend in no small measure on the level at which Local Authorities place the annual levy. The research suggests that over 60% of the respondents are of the opinion that an annual levy of over £500 would be required to reduce workplace parking provision by more than 10%. Clearly each Local Authority considering the introduction of workplace parking charges will need to give careful thought to the levy required.

Craig C

The Analysis of Workplace Parking Charges and their Effects on Business Decisions with respect to Reducing Traffic Levels. MRes in the Built Environment, Transport and Emissions Theme Group: Promoting Change of Mode in Transport, University of Leeds 2000

The objective of this research was to assess whether charging for workplace parking is a feasible policy for reducing traffic levels and encouraging modal change. Specifically, the study looked at a method for implementing this policy using a bidding system to determine the charge structure required in order to reduce the number of parking places by quantifiable amounts. The intended effect of the charging system would be that parking places would be decommissioned by firms who were unwilling to pay the associated charge and/ or there would be an increased cost of driving to work through companies passing on the charges of retained parking places. The data was collected using a questionnaire sent to 267 businesses in Leeds and achieved a 13.6% response rate.

Craig reports the results of an assessment of a method for calculating a workplace parking charging structure. This was achieved through assessing the price that the companies would be willing to pay to keep 25%, 50%, 75% and 100% of their companies parking places. This was achieved by setting charge levels of £50, £300, £500, £1000, £3000 and £5000 and calculating for each level of charge the number of car parking places each company are implicitly declaring that they would decommission. The author says that having calculated these values for each company it is then possible to sum the total number of parking places decommissioned across the sample at each charge level. Craig suggests that this was found to be the most precise method of calculating the charge levels, although the major problem is that it is necessary for company data to complete the process.

The differences in calculating the charging structure for companies from different postcode regions in Leeds (LS1 vs. LS11), and for companies of differing size, were also analysed. Craig argues that there is evidence that the charge level in the LS1 area (centre of Leeds) would have to be at a higher level than in the LS11 postcode area in order to reduce total parking places by 25%. The author also found that the charge per parking place that would cause 25% of parking places to be decommissioned for the larger companies (£300 per parking place) was found to be lower than for the smaller companies.

In addition, Craig reports that

- The results for the charging structure showed that a £1000 charge would have the greatest effect at reducing total percentage of parking places in the 'small' companies, as compared to the other areas analysed.
- Different cities may have different responses to the charges and that it is therefore important that any bidding process would be re-run to re-calculate the charging structure in each specific case.
- Decommissioning levels vary from group to group and the percentage decommissioning levels vary from firm to firm within the groups (LS1, LS11, small companies and large companies). This provides evidence for a need for a bidding system because this would allow firms with differing needs to react differently.
- The research has indicated that a policy of workplace parking charges could have an impact on the traffic levels if set at the right level. However, if as certain companies stated, workers would transfer to parking on the surrounding streets then this would reduce the effectiveness of the policy. The policy, in such cases, would not appear to be encouraging modal change.

- The results have shown that this policy would have limited success in affecting driver behaviour, as only 20% of the sample stated that they would pass the cost of the parking charge onto their employees. Only 11.5% of larger companies stated that they would pass on parking charges imposed on the company to their workforce.
- Another key issue highlighted by the research was the problem of companies potentially relocating if the policy were implemented. It is noted that this could have a detrimental effect on the local economy.
- If companies are being encouraged to decommission all of their parking places then it becomes important to consider the needs of 'priority' users of cars for workplace parking. Two solutions to retaining an appropriate number of priority spaces are firstly, to demand that the companies pay the charge for priority numbers of parking places to be used for 'priority' users. Alternatively, as part of the bidding system the local government would allow companies a set percentage of their parking places to be used for priority users (and not make them pay for them). This research has highlighted the importance of defining a 'priority' user. In the questionnaire responses definitions ranged from company director to disabled person. If the second of the proposed solutions were to be implemented then it would be important that a fixed definition of what a priority user was, be developed.

Metropolitan Transportation Commission

Transportation Blueprint for the 21st Century, Oakland California, October/November 1999 (<http://www.mtc.ca.gov/publications/transactions/ta10-1199/ta10-1199.htm>)

This Blueprint for the Bay Area of California is informed by forecasts of future travel demand and by alternative planning scenarios. It says that while population and the resulting demand for travel services (as measured by daily automobile and transit trips, and overall vehicle miles travelled) are projected

...to increase by healthy amounts, the capacity of the region's already heavily utilized transit and roadway networks will be augmented only modestly. Without investments over and above those already on the books over the next 20 years, there is little hope of reversing the patterns of increasing congestion around the region.

The paper asks what the transportation future would look like if more growth could be directed to currently built-up areas and how the imposition of workplace parking charges would affect traffic congestion and transit use. To assess the possible impacts of land-use change and transportation pricing schemes (two often-advocated policy measures for dealing with transportation demand pressures), Metropolitan Transportation Commission planners made, what the paper describes as, two "heroic assumptions"* and ran them through a computer model to assess their effects on existing forecasts for the year 2020. The results showed the two would have mirror-image impacts with respect to two key indicators. Parking fees would appreciably reduce vehicle hours of delay (by encouraging people to carpool or switch to nonmotorized forms of travel), while denser land-use patterns would lead to increased transit use (due to greater numbers of people living and working in close proximity to transit routes). The Blueprint recognizes that the computer models

render no judgment on the political plausibility of either course, but suggests that the results could help inform the policy debate over the issues.

*The pricing alternative assumed the imposition of a \$2.60 per car workplace parking fee (in addition to any fees or charges currently paid by workers, where applicable). The land-use alternative assumed all population growth projected to occur in the region by 2020 would be spread proportionally among the nine Bay Area counties according to current relative shares

Gerrard B, Still B and Jopson A

The Impact of Road Pricing and Workplace Parking Levies on the Urban Economy: Results from a Survey of Business Attitudes Environment and Planning A 2001, volume 33, pp 1985 - 2002.

This paper reports the results of a survey of business attitudes to current transport problems and their likely responses to the introduction of road user charging and workplace parking levies. A sample of 152 responses from private sector businesses in three UK historic cities (Cambridge, Norwich and York) is analyzed. Gerrard et al found that businesses perceive traffic congestion and inadequate public transport provision as key problems. They say that businesses typically expect the introduction of RUC and WPPLs to lead to some non-economic benefits to the city but negative impacts on the urban economy and their own business performance. It is also found that there is a significant threat of businesses relocating away from the urban economy as a response to traffic demand management policies.

The authors suggest that the possible impacts of transport on business performance, in particular profitability, are poorly understood. They quote reports that state that there is evidence that firms located in conurbations tend to perform more poorly than firms located in other areas and point to transport problems as one possible important cause of these location effects on business performance.

The paper recognizes that there have been a number of recent studies in the UK that have examined whether traffic-demand-management policies would impact on urban economies. Nevertheless, Gerrard et al say that there are few studies that have examined the potential impacts of WPPL policies on urban economies, although

...several consultancy studies have examined how firms may react to these charges (for example, Halcrow Ltd et al, 2000; MVA Ltd and WS Atkins Ltd, 1999). The Halcrow study was based largely on market research, and focused on the impacts of private non-residential parking charges in London. Most employers commented that they would pay the levy rather than reduce the number of spaces or pass the cost on to their employees. It was also found that 75% of employers were hostile to WP(P)Ls, although this fell to 51% when they were assured that the revenue would be spent on transport improvements. Increased support when hypothecation is assured was also reported by Wang and Sharples (1999) in a survey of 52 companies located in Scottish cities. Wang and Sharples also found that only 8% of the firms intend to pass the cost of WP(P)Ls onto their employees, although 30% did indicate that they would change the number of parking spaces available. Additionally, around 35% of firms indicated that they would relocate if WP(P)Ls were introduced.

The authors state that, in summary, there is considerable interest in how the economic vitality of urban cores may be influenced by traffic-demand-management policies. However, there is little understanding of how business performance is

currently affected by transport problems and how it could be affected by the introduction of RUC and WPPLs. In addition, Gerrard et al suggest that little is known about which types of business are most likely to be affected, what social benefits (if any) business decision-makers perceive from the schemes, and how businesses are likely to respond especially in regard to future location decisions. The authors say that their study addresses these issues.

The study found that congestion and public transport provision are perceived by businesses as the most serious city transport problems. For other transport problems, less than one third of the businesses perceive any acute problems. There are, however, marked differences reported in the perception of transport problems between the three cities.

In terms of business expectations of the impacts of RUC and WPPLs, generally Gerrard et al report that businesses expect non-economic benefits for the city as a whole from RUC through reductions in traffic noise and air pollution, traffic congestion, and parking problems. The authors say

The balance of opinion in all of these cases exceeds 50%, implying a large degree of consensus that the introduction of RUC will produce benefits in terms of pollution, congestion, and parking. The mean responses indicate that on average the largest impact is expected on air pollution (mean response < 1.040) and the smallest impact on parking (mean response < 0.832). However, the overwhelming majority of businesses expect RUC to have a negative impact on the economic prosperity of the city.

As regards the impact of RUC on their own performance, the authors say that the mean response is negative for all impacts with the largest negative impact expected for profitability. There is a relatively high degree of consensus across firms that RUC will have a detrimental effect on their business performance, particularly with respect to their ability to recruit and retain staff, and their profitability. In addition, the paper suggests that balance of opinion shows that the majority of businesses expect RUC to have a negative effect on both delivery and customer access, although the modal response in both cases is no effect.

Gerrard et al found that the general attitude of businesses to the expected impacts of WPPLs is similar to those for RUC. Again, businesses generally expect some non-economic benefits for the city as a whole, but expect negative effects on the urban economy and their own business performance. As with RUC, the majority of businesses expect WPPLs to lead to a reduction of both traffic pollution and traffic congestion. However, unlike RUC, businesses are more divided on the impact of WPPLs on the availability of parking. Some businesses may expect that WPPLs will increase parking problems through a 'displacement effect' to the extent that businesses respond to economising on the number of parking spaces available on-site.

As with RUC, the overwhelming majority of businesses expect WPPLs to affect the economic prosperity of the city negatively. Just as with RUC, businesses expect WPPLs to have a negative impact on their own business performance. Businesses have an even greater expectation that WPPLs will reduce their profitability. The authors say this is likely to reflect the stated intention of most businesses to absorb the costs of WPPLs rather than passing the charges on to their employees.

In terms of the impact of RUC and WPPLs on future location decisions, the study sought to examine the possible links between the location decision and the

introduction of RUC and WPPL schemes in more detail. The results indicate the importance of transport factors only after the initial decision to move has been made, and also the high importance given to the availability of car parking. Gerrard et al asked businesses whether or not RUC would influence their next location decision. The authors report:

Of the 152 sampled businesses, 80 businesses (52.6%) indicated that RUC would influence their next location decision (and nearly all of these businesses would consider relocating away from the city). Hence there is a significant threat of business evacuation from the urban area after the introduction of RUC.

The authors also found the threat of business relocation as a response to the introduction of WPPLs is similar in magnitude to that for RUC. Of the 152 sampled businesses, 82 businesses (53.9%) responded that their next location decision would be influenced by the introduction of WPPLs.

Oscar Faber

Workplace Parking Levy - Guidance Document for Local Authorities. March 2001

This document provides guidance on introduction of WPPL for local authorities. It includes a ready reckoner of impacts and advice on the need for consultation and improvements in advance of the levy. It recognizes that acceptance of WPPL, in terms of support for its introduction and subsequent compliance with the scheme, well in advance of implementation will be essential to the success of a scheme. It uses work undertaken in London on the RCOL Study and consultations with local authorities as the basis for its conclusions. There is also advice on procurement, monitoring and review.

Australian Government

The National Greenhouse Strategy. Australia Government website, 2001
<http://ngs.greenhouse.gov.au/index>

In its statement on efficient transport and sustainable urban planning, New South Wales (NSW) government says

NSW is working to reduce travel demand, generally, as well as commuter parking in major centres by imposing levies to discourage private car use. For example, a parking space levy of \$400 per year applies to all parking spaces in the CBD and North Sydney to discourage car use in those areas. At the same time, the revenue is funding infrastructure projects including upgrades to ferry wharves and commuter parking facilities at railway stations to promote the use of public transport to and from those districts.

This policy illustrates the link between revenue generation from WPPL and funding of infrastructure that discourages car use by making public transport more attractive.

Deni Greene Consulting Services, Australian Consumers Association and National Key Centre for Design, RMIT for the Department of the Environment, Sport and Territories

More with Less: Initiatives to promote sustainable consumption. Environmental Economics Research Paper No 3, Australia 1996
www.ea.gov.au/pcd/economics/more/detail11.html

One of the initiatives to promote sustainable consumption examined in this paper is 'Changing Transport Patterns'. The paper says that the major environmental impacts of transport are associated with the fuel used and the infrastructure required. The aims of the changing transport patterns initiative are therefore to encourage changes in the mode of travel and to reduce or change fuel use in existing modes.

Two of the initiatives described for altering mode of travel are particularly relevant to this research:

- In order to encourage public transport use in North Sydney, the North Sydney Council and NSW State Government introduced a removal of car use infrastructure initiative in 1980. Essentially designed to discourage people working in the area from commuting by car, the number of car parking spaces was cut by 50%. The two authorities increased parking meter fees to \$1.00 per hour (which is described in the report as very high for the time). In addition, planning requirements for new developments set a maximum number of car parking spaces which was one fifth of the number set as a minimum by adjoining suburbs. Short term parking for shopping was encouraged through substantial increases in retail parking spaces. Prior to these initiatives, 80% of people working in the area commuted by car, 20% used public transport. After introduction of the initiatives, 80% of employees used public transport and 20% used cars. These initiatives did not discourage economic activity in North Sydney and, after their adoption, a large amount of premium office development occurred in the area.
- In 1994, Sydney City council introduced an economic instrument to discourage car-based commuting into the Central Business District (CBD) by imposing a \$200 levy on every car park space. This was intended to fund park and ride lots at suburban rail stations and to make CBD parking more expensive for commuters, so as to encourage use of public transport. However, as a result of the initiative, this paper reports that car park operators appear to have passed on their increased cost through increases on short term parking, rather than on leases and the all day parking used by commuters. The levy does not, therefore, appear to have achieved the objective of reducing car-based commuting, although it has generated income to support park and ride lots. The paper argues that one lesson from this initiative is that economic instruments have to be carefully designed and targeted to be effective.

3.5 Revenue raising/congestion charging

TDM Encyclopedia

Road Pricing: Congestion Pricing, Value Pricing, Toll Roads and HOT Lanes, Victoria Transport Policy Institute, www.vtpi.org/tdm/tdm35.htm

This website gives an overview of various forms of road pricing and says road pricing has two general objectives: revenue generation and congestion management which are compared by the authors in the table below:

Revenue Generation	Congestion Management
<ul style="list-style-type: none"> • Generates funds. • Rates set to maximize revenues or 	<ul style="list-style-type: none"> • Reduces peak-period vehicle traffic. • Is a TDM strategy.

<p>recover specific costs.</p> <ul style="list-style-type: none"> • Revenue often dedicated to roadway projects. • Shifts to other routes and modes not desired (because this reduces revenues). 	<ul style="list-style-type: none"> • Revenue not dedicated to roadway projects. • Requires variable rates (higher during congested periods). • Travel shifts to other modes and times considered desirable.
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Table 3.3 Comparing road pricing objectives

The paper states that:

Road tolls represent a greater financial burden on lower-income motorists than on higher-income motorists, but they are not necessarily more regressive than other road funding options, such as fuel taxes or general taxes. Whether a toll is regressive overall depends on how much lower-income consumers drive on such highways, on the quality of travel alternatives, and how revenues are used (Giuliano, 1994; Litman, 1996). There is a long history of incorporating vertical equity objectives into transportation policies (i.e., insuring that lower income people have Basic Access). Adam Smith, one of the founders of modern economics, wrote that, “When the toll upon carriages of luxury coaches, post chaises, &c(sic) is made somewhat higher in proportion to their weight than upon carriages of necessary use, such as carts, wagons, and the indolence and vanity of the rich is made to contribute in a very easy manner to the relief of the poor, by rendering cheaper the transportation of heavy goods to all the different parts of the country.” (Smith, 1776, chapter 5).

The authors recognize that lower-income motorists are sometimes willing to pay for time savings, indicating that pricing strategies that prioritize trips can provide a transportation choice that is valued by motorists of all income levels. For example paying a premium rate,

maybe worthwhile to allow a working parent to avoid fines at their childcare center or to reach an urgent appointment (Giuliano, 1994). Even if a particular motorist seldom uses such an option, its existence may be highly valued, just as ship passengers value having lifeboats that they home (sic) will never actually be used (Evaluating Transportation Resilience).

The website says that road pricing can also benefit transportation disadvantaged people by reducing the subsidies they pay toward highways and by increasing their travel choices (Kain, 1994). HOT lanes in particular can provide equity benefits by improving mobility options for transit and rideshare users (Levine and Garb, 2000). Congestion pricing and HOT facilities can improve basic mobility by giving priority to high value trips. The authors suggest that the main barrier to road pricing is opposition from user groups who consider themselves worse off if they are forced to pay for access to roads they currently perceive as free.

Enoch, M

Arriving at a Transport Utopia by using an Alternative Policy Route. Paper prepared for the IRNES Workshop, Manchester Metropolitan University, Nov 2001

This paper looks at what society really wants from a transport system. With specific reference to reducing car use and congestion, the author says the most direct way to influence traffic levels, is to use regulation. This can be done by regulating the vehicles, or by regulating their use. Enoch describes ways of regulating vehicles

used in different parts of the world such as an annual ceiling on the number of vehicles that can be bought in Singapore, when buying a car in certain areas of Japan proof of having somewhere to park it is required before it can be sold and in Britain, developers have increasingly been 'persuaded' to reduce the amount of parking they provide in areas of high public transport accessibility through the use of planning agreements. He suggests further that there are two obvious ways to regulate car use – by banning them from particular roads or areas, or by rationing fuel. He cites the concept of alternative-day traffic restrictions - whereby from 05:00 to 20:00 only cars with registration numbers ending with an odd digit were allowed into the city - introduced on 1 October 1997 in Paris - as an example. Similar schemes, and schemes where vehicles with registrations ending in certain digits are prohibited on certain days, have also been tried in Lagos, Nigeria, in Athens, Greece, in Mestre, Italy, in Sao Paulo, Brazil, and in Mexico City. The author does not see this type of scheme as a long term solution as he asserts that motorists tend to purchase (often cheap and therefore older and more polluting) second cars so they can continue to drive. He goes on to describe other techniques for regulating car use such as the banning of motorized forms of transport on the Channel Island of Sark resulting in residents and visitors having to either walk, cycle, or travel by horse drawn transport.

Enoch says that controlling access to parking spaces has long been considered one of the most effective tools at the disposal of local authorities to reduce car use. He adds that

Accordingly, control measures typically limiting duration or arrival times, or else specifying designated people, for instance disabled or residents, have been widely introduced. However, introduced in isolation regulating parking tends to increase the level of traffic searching for spaces, and can result in transfer to uncontrolled spaces and types of parking. Regulations also favour early arrivals (not always those in greatest need), do not necessarily relieve congestion, and require resources to be spent on administration and enforcement (May, 1999).

He also describes the theoretical benefits of policies that ration fuel. In addition, the paper provides a perspective on pricing mechanisms to achieve reduction in vehicle use. The author says that pricing is one type of mechanism that aims to regulate traffic to 'economically efficient' levels. He suggests that one problem with pricing policies is that equity is an issue, with those that can afford to travel benefiting at the expense of the less well off.

In terms of charging for stationary vehicles, Enoch says that the TDM Encyclopedia of the Victoria Transport Policy Institute in Canada, notes that "parking pricing is one of the most effective ways to reduce motor vehicle traffic. It typically reduces automobile trips by 10%-30%, or even more if implemented as part of a comprehensive TDM program. This helps reduce congestion and environmental impacts, and increase road safety". Enoch also says that

Pricing, as opposed to regulating, parking has the advantages that it is better able to match demand with supply, can reflect the different needs of drivers, contributes to reducing congestion and emissions, and provides a source of revenue. But, demand is very sensitive to the availability of cheaper alternative parking, and parking policies fail to control through traffic, which often represents a third or more of city centre traffic (May, 1999).

The author provides more detailed insight into parking schemes such as WPPL saying

...councils have been hampered because typically over 50% of parking spaces in town and city centres are privately-owned, making it extremely difficult for any parking control policies to be implemented. Schemes to deal with so-called private-non-residential parking are already in place in Perth and Sydney in Australia, and the passing of the 2000 Transport Act should result in some UK examples of workplace parking levies over the next few years (Enoch, 2001).

He argues that it may be less politically controversial to introduce the idea of paying to persuade drivers not to use their cars for certain trips. Enoch says that in the USA, policy reflects the research conclusion that "direct financial incentives or subsidies are a key element of successful programs" to reduce single car occupancy travel to work (Potter et al, 2001; IBI Group, 1999; Litman, 1997; ACT, 1998). He describes US legislation that means employers can provide each employee commuting on transit a benefit up to an initial limit of \$60 per month (\$720 per year) which is tax deductible to the employer and tax free to the employee.

Day G

Transport Tracker. Institute of Directors. March 2002

This is the first of an intended regular series of briefings on transport matters and highlights the policy progress, hold-ups and other issues that concern directors in the UK. It gives directors' views based on a business opinion survey in Oct 2001 where transport was the topical issue. Of relevance to this study, when asked 'How likely do you think that the Government's Ten Year Plan for transport is to succeed in the following areas?', the proportion of respondents who felt that reducing road congestion was very likely was 1%, likely 8%, unlikely 51%, very unlikely 30%. The report goes on to say that 'Directors seem to feel particular scepticism about the probability of reducing road congestion'.

This paper also refers to the Cabinet Office consultation in 2001 on transport and social exclusion. It says that in response to the consultation, the IoD made brief reference to such matters as home delivery of goods by retailers and pilot schemes for individualized direct marketing in some parts of the country to encourage more use of public transport.

3.6 Sequencing of impacts

Small K A

Using the Revenues from Congestion Pricing. Transportation. Vol19 No 4 1992 pp359-381

Small says that the economic theory behind congestion pricing relies on using the revenues to help compensate highway users. The author asks 'But can practical methods of using revenues come close to achieving this compensation, and still have salient appeal to important political groups?' This paper investigates the possibilities for designing a package of revenue uses that can achieve these twin goals. The suggested approach returns two-thirds of the revenues to travellers through travel allowances, and tax reductions, and uses the rest to improve transportation throughout the area, including affected business centres. Small says that by replacing regressive sales and fuel taxes, this approach offsets the tendency of the prices alone to have a regressive distributional impact. He adds that, by lowering

taxes, funding new highways, improving transit and upgrading business centres, the package provides inducements for support from several key interest groups.

In terms of impacts of congestion pricing, Small says that adoption of the policy would produce many ancillary changes in markets such as those for labour, land and retail goods that would affect the ultimate beneficiaries of the policy. In addition, the author says that improved efficiency of travel would alter many economic activities including trucking, bus transit, deliveries and the businesses that depend on them.

Small states that

A congestion pricing program produces four main types of direct effects. Two are negative: (a) the actual fee payments, and (b) the inconvenience to those who change their behaviour in order to avoid the fees. The other two are positive: (c) the benefits to travellers who encounter less congestion, and (d) the benefits from uses of the revenues.

He suggests that the theoretically optimal congestion charge is the one that maximizes the difference between (c) and (b). However, he adds that the people who benefit from congestion relief and revenue uses do not necessarily coincide with those who pay the fees or who suffer inconvenience in order to avoid them.

Small lists specific measures to ensure benefits are widespread, can be made visible through credible publicity and reach the major categories of people who bear the burdens of congestion charges:

Reimbursements to travellers

- Fund a programme of employee commuting allowances
- Reduce road user taxes

Reduced general taxes

- Remove all or part of any dedicated sales-tax surcharge that applies in the region
- Rebate a proportion of property taxes

New transportation services

- Fund new highway capacity
- Fund improvements to public transit

Fund improved transportation-related facilities and services in business centres

Goodwin P B

The 'Rule of Three': A possible solution to the political problem of competing objectives for road pricing.' *Traffic Engineering and Control*, October 1989, pp495-497

Goodwin says it has always been argued that road pricing would increase economic and transport efficiency. He says also that there are many different types of road-user - some vehicles have higher values of time (eg. business travellers or commercial vehicles) and some have lower values of time (eg. some categories of commuting and leisure travel). As a result, Goodwin suggests that the traffic still using the road at a higher price can actually get net benefits of speed even before the revenue is spent. In addition, the author says that there are vehicles of different

efficiency in their use of road space (eg. buses compared with cars). This means that the passengers in more efficient vehicles can benefit because the charge is divided among them but the time-saving is enjoyed by all of them.

Goodwin proposes that rules to allocate the revenue and roads space should be built into scheme design from the beginning. He suggests that the 'Rule of Three' be used and that the road space which is initially released by road pricing should be used as follows:

- One-third reclaimed for environmental improvement, including pedestrian areas and non-transport uses
- One-third used for extra traffic, attracted by the speed and not deterred by the cost. It would be appropriate to make arrangements for this to favour high-efficiency and high-occupancy vehicles
- The remaining one-third for increased speed, especially at congested times, eg. peak periods to increase by 3-8 km/h. This will require the combination of pricing with other measures to reduce the tendency for traffic growth to offset any achieved speed increase.

With reference to revenue, Goodwin says it should be partitioned as follows:

- One-third considered as general tax revenue, either to reduce existing taxes or to increase social spending in accordance with the priorities of each country or locality
- One-third used for new road infrastructure and its associated maintenance, in locations again chosen in accordance with the varying national or local priorities
- One-third used to improve the effectiveness of public transport, by a suitable combination of fare and service-level improvements

Goodwin says that:

This is an approach in which the freight, public transport, motor and road industries, and the environmental, motorist, computer, pedestrian and public transport lobbies, all have something to gain. And governments have the possibility of a vote winner, instead of a vote loser.

Goodwin P B

Unintended Effects of Transport Policies in Transport Policy and the Environment. Banister D ed. Son, London 1998, pp 114-130

This chapter describes a study that seeks to improve basic understanding of the process of individual and institutional response to policies; to use this understanding to assess the direct and indirect responses of travel behaviour; to reconsider the effectiveness of these policies in the light of more complex patterns of response; and to suggest conditions under which the policies are most successful and how they might be improved.

One of the policies examined was road pricing, of which Goodwin says '...the main real world experience ...is of its continual non-implementation.' He asks what road pricing would need to become successful in the real world. He suggests that transport authorities need to have, in effect, a twin strategy: simultaneously working up a strategic approach that combines road pricing with the best package of complementary measures and another version that builds the best package but without road pricing. Then, Goodwin says that:

One can be confident in this case that the option with road pricing will nearly always give better calculated returns, on paper, than the one without. But unless road pricing is seen as part of such a package, the conclusion is that it would never reach the point of real implementation anyway.

3.7 Public perception

Transport & Travel Research

Measuring the Success of Marketing the Greater Nottingham Local Transport Plan.
Final Report to Nottingham Development Enterprise Issue 1 January 2002

This is a report by Transport & Travel Research Ltd (TTR) who have investigated awareness and acceptance of the Greater Nottingham Local Transport Plan (LTP) on behalf of Nottingham Development Enterprise (who have responsibility for marketing the plan in its area of influence). The primary objective of the work was to provide a baseline picture of both business and personal opinions prior to a significant investment in marketing of the plan. Two separate surveys were conducted in the area of influence of the LTP. One was a telephone survey involving interviews with a random sample of businesses in the Greater Nottingham area. The other survey involved face-to-face on-street interviews at selected locations in the LTP area.

Both the business and public surveys contained a question asking respondents to rate a range of issues in terms of their perceived importance. The report says that, in general terms, the respondents to the public survey were more willing to classify issues as important than respondents representing businesses. Both groups rated a reduction in accidents as most important of the issues offered and improvements in freight access as the least important. Reducing congestion was highly rated by both groups, although this was not reflected by a similar rating for the reduction of car use. The respondents to the business survey gave the issues of increased funding for transport and the need for a long term transport plan more importance than the individual respondents.

Awareness of the LTP as a whole was around 50% of each of the two sample populations.

MORI

The CfIT Report 2001 Public Attitudes to Transport in England: A Survey Carried out for the Commission for Integrated Transport. July 2001

This is the second of the Commission for Integrated Transport's annual surveys with MORI questioning more than 2,200 people. It set out to establish how important transport issues are to people locally, what matters most to them, what transport developments should be given priority and how improvements should be financed.

The report says that the survey demonstrates that transport has become the most important issue locally, ahead of crime and vandalism with those questioned demonstrating an impatience for delivery. The single most important transport issue reported across the country is congestion and people showed they were prepared for both radical action and higher public investment to solve it and improve public transport. In addition, MORI say that four in ten are now willing to pay more taxes in order to have a better public transport system. A majority of people are now in favour of both congestion charging and motorway tolling when the revenue is ploughed back into transport or used to reduce other motoring taxes.

According to Prof David Begg in his introduction to the report, overwhelmingly people are showing that more must be done to make them look at alternatives to the car for some journeys. Two thirds of people say more must be done to persuade parents not to take children to school by car, there is massive support for park and ride schemes, bus lanes and innovative measures such as priority lanes for heavy goods vehicles.

The Executive Summary describes the main findings of the research. The findings of particular relevance to the current research are:

- Congestion is seen as a serious problem both locally and nationally with town and major road/motorway congestion being nominated among the top transport issues to address.
- People want to see more spent on maintaining and enhancing the road system, though not necessarily expanding it.
- The public is particularly supportive of policies to expand and improve public transport.
- The public is in favour of developing and promoting public transport even if it impacts on their pocket – over half the population support congestion charging if there is a commitment to spend the revenue on improving public transport.
- Around half support selective tolls on congested parts of our motorways if the tolls are offset by an abolition of vehicle excise duty or a cut in the price of petrol, or if the charges are channelled back into investment in public transport and roads.
- The majority of people are prepared to pay more for services if they are made easy to use for everyone, including the disabled and elderly people.
- The issues which dominate the transport agenda emanate directly from our use of the roads – congestion in towns, pollution and the cost of car ownership.
- Public transport concerns also feature significantly – particularly punctuality and reliability, frequency of service, level of fares, overcrowding and personal security.
- Even though the issues are dominated by roads, preferred policies are weighted to public transport improvements - indicating that people see public transport as a major part of the solution to road-related problems.
- Half the population says they would travel less by car if local bus services were better and one in three would do so if local train services were better.
- Public transport improvements are not just about avoiding congestion on the roads but providing better choices and options to support individual lifestyles. One in five of the population say improvements in public transport would make it easier for them to get the jobs they really want and one in three believe such improvements would have a positive impact on their social lives, particularly the young.
- There are many things that local and national government and bus and train operators can do which would encourage greater use of public transport.

- Rail and bus services are generally not rated highly, especially compared with other private sector services.
- The main issues which need to be addressed to encourage greater use of public transport have to do with cost, frequency, punctuality and reliability.
- There are many other issues which would make a difference including route coverage (notably buses), journey times and personal security.
- There are many 'hygiene factors' such as cleanliness, access for the disabled and those with push chairs, and staff attitudes which can make a difference.
- Better integration between different transport modes is an issue.
- A third of the public would find it difficult to get information if they were planning a bus journey, and one in five if they were planning a train journey, yet 40% said they would use public transport more if it was easier to get information about the services.
- Traditional sources of information – timetables displayed or collected at bus, rail or Underground stations – are the most used sources, though telephone enquiry services are the most preferred.
- There was very strong support for a single enquiry service giving information about all methods of making a journey, including driving by car, among those who find themselves in situations where they do not know which the best means of travel are; 93% said they were likely to use it, including 34% who said they were certain to use it.
- Current use of on-line information does not reflect the potential level of demand for information through digital channels.
- The public has high expectations for public transport over the next ten years, with the balance of opinion clearly expecting improvements in the quality and performance of local bus and train services as well as rail safety and integration of different transport modes. However, half the population also believes that overcrowding on public transport will get worse.
- Although expectations for public transport are high, the public is currently not convinced that the necessary investment is being made to meet the needs of bus and rail passengers. Moreover the respondents are firmly of the view that significantly increased investment in public transport has to precede measures to reduce car usage.
- The conditions and impact of road transport are generally expected to get worse. The balance of opinion is firmly expecting deterioration rather than improvements in traffic congestion, vehicle pollution and road accidents, although pedestrian safety is expected to improve and expectations are evenly balanced with respect to the safety of cyclists.
- The public is realistic in recognising that changes will take several years to be delivered and some types of changes will take much longer than others.
- Congestion charging initially is not supported though this reverses if the funds are hypothecated for making significant improvements in local public transport (54% support, 30% oppose). Seventy-one per cent of people who drive into

congested major town or city centres are prepared to pay something by way of congestion charge. Of these, 30% are prepared to pay £5 or more.

- The public are initially against the introduction of selective tolls on congested parts of our motorways though, again, the balance of opinion swings in favour – around 52% support, around 25% oppose – if the tolls are offset by abolition of vehicle excise duty, a cut in the price of petrol or funds being used to make significant local public transport improvements.
- The introduction of park and ride schemes into more towns and cities is particularly supported, by over 80% of the population.
- Bus lanes and priority lanes for HGVs are supported, but opinion towards lanes reserved on motorways for cars with two or more occupants is more evenly balanced.
- Traffic calming measures also receive majority support. The public would like to see parents encouraged to have their children walk to school or travel by public transport rather than be driven.
- There is near-universal endorsement of ensuring that all new public transport services should be made easy-to-use for everyone, including the disabled and elderly, even if this makes the services more expensive.
- Addressing vehicle pollution is both a high priority and an issue which is predicted to worsen. Two thirds of the public support abolishing vehicle excise duty for drivers of less polluting vehicles.

In relation to policies which involve direct charges on to the motorist, MORI reports that

Opposition is initially voiced in relation to policies which involve direct charges on to the motorist. Forty-seven per cent are opposed to congestion charging and fifty-five per cent to selective tolls on congested parts of motorway. However, there is majority support if the charges are channelled back into investment in public transport. Fifty-four per cent support congestion charging on these terms and also selective motorway tolling. Similar proportions also support selective motorway tolling if at the same time there are cuts in the price of petrol or the abolition of vehicle excise duty. It is interesting to note that there is broadly equal support regardless of whether the benefit is to the motorist themselves or to the transport infrastructure in general.

In the qualitative research, the issue of social exclusion and transport was explored. The study found that transport was seen as critical to life, in that it is the key to freedom and independence, access to work and social opportunity. It was thought that everyone should have access to a decent transport system. MORI states that focus group participants considered the disabled, pensioners and people without access to a car as the most excluded groups.

The report also says that the qualitative research revealed mixed reactions towards congestion charging. In London, while some thought it was good that bold action was being taken, this was mixed with the cynicism that it would actually improve the situation - much of the traffic has to go into London and/or would be paid for by employers. There was also concern that journeys would be transferred on to already overcrowded public transport modes. In addition, several felt strongly that the motorist was already paying enough.

Schlag, B

Public Acceptability of Transport Pricing., Dresden University of Technology,
Germany 1997

<http://vplno1.vkw.tudresden.de/psycho/projekte/afford/download/IATSSRP.pdf>

This article analyses reasons for the lack of public acceptance of all kinds of road and parking pricing. Five major issues of public concern are identified and analyzed: information, perceived effectiveness and efficiency, individual claims, revenue allocation and equity. Based on the analysis, suggestions are made about ways to increase public acceptability of transport pricing measures.

Schlag says that an important precondition for successfully implementing traffic demand management systems is public and political acceptance. However, the author reports that empirical research in this field such as the EU research-project MIRO (Mobility Impacts, Reactions and Opinions sponsored by the European Commission DG XIII - a collaborative study of public opinion about a range of traffic demand management schemes) has shown that the public acceptance of such measures is low - in spite of the perception of traffic problems as serious.

The paper examines each of the following issues and its rôle in determining public acceptance: information, perceived effectiveness and efficiency, individual claims, revenue allocation and equity.

The author suggests the following to make transport pricing more acceptable:

- The objectives of the scheme have to meet main public concerns
- Transport pricing measures have to be perceived as very effective solutions.
- Revenues must be hypothecated and alternatives have to be provided.
- The full and reliable functioning of the system must be guaranteed from the start.
- Equity needs have to be considered very carefully.
- Public acceptance can only be expected if people have confidence in the measure's effectiveness, use of the revenue, fairness and anonymity of the system.
- An intelligent marketing strategy.

3.8 Urban Areas

ECMT

Implementing Sustainable Urban Transport Policies: Key Messages for Governments, 19 Jun 2001, CEMT/CM(2001)12/FINAL

This report on implementing sustainable urban transport policies says that with about three-quarters of the population of ECMT and OECD countries now living in urban areas, most transport-related environmental and health problems occur in cities and their surroundings. The structure and growth of urban regions are therefore crucial considerations in strategies for sustainable development. Although definitions of and criteria for sustainability differ among countries and cities, most have common

objectives for quality of life in urban areas that include, clean air, quiet neighbourhoods, and economic prosperity without detrimental health and environmental impacts and depletion of finite natural resources.

The report goes on to assert that:

How people and goods move from one place to another in cities is a major factor in whether objectives for urban sustainability are met. Indeed, assuring that the growing numbers of urban and suburban dwellers in all socio-economic strata have access to the services and activities integral to their daily lives, while minimising the negative environmental, equity, economic and health impacts of travel, is the principal goal and challenge facing transport and land-use policy-makers at this time.

The Pedestrians Association

Streets are for Living: The Importance of Streets and Public Spaces for Community Life. August 2001 (www.livingstreets.org.uk/Full%20report.pdf)

This report looks at the rôle of streets in community life. It says that despite the rapid growth in car use over recent decades, the UK population still spends a lot of time in the street:

Walking accounts for over a quarter of all trips and 80% of trips under a mile. People without access to a car walk most. Children walk more than any other group. Women, older people and people on low incomes walk more than the national average. Walking is also more common in urban areas and areas with high population densities.

The report states that due to the priority given to traffic movement over other activities, streets in many communities have become dirty, dangerous, unattractive places. The Pedestrians Association says that the problems of a degraded public realm affect all communities, but they are most acute and cause greatest concern in urban areas and in disadvantaged neighbourhoods. It adds that:

These anxieties are linked to the movement of people from urban to suburban and rural areas and from poorer neighbourhoods to richer ones. Dirty, dangerous and traffic-dominated streets can undermine the social, economic and cultural life of communities. This is true in all parts of the country, but particularly in urban areas and in disadvantaged communities. The historic failure to address these issues has contributed to problems of social exclusion, urban flight and neighbourhood decline.

This report examines the relationship between the street environment and community life. It looks at who spends time in the street, what they are doing there and what kind of problems they encounter. In addition, it analyses the impact of dirty and unattractive public spaces on people's quality of life and their decisions about where they live.

World Bank

Cities on the Move. A World Bank Transport Strategy Review. Draft Document October 2001. www.worldbank.org/html/fpd/transport/utsr/all_chap.pdf

This strategy paper links urban and transport sector strategies with a strong poverty focus. Its objectives are i) to develop a better common understanding of urban

transport problems in developing and transitional economies; ii) to articulate an urban transport strategy framework for national and city governments, and iii) to identify the rôle of the World Bank in supporting governments. It concentrates particularly on the problems of people who are very poor, not only in terms of income but also in terms of the broader dimensions of social exclusion associated with inaccessibility, to jobs, schools, health facilities, and social interaction.

The paper says that per capita motor vehicle ownership and use continues to grow by up to 15 to 20 per cent per year in some countries. Traffic congestion and air pollution continue to increase. Pedestrians and non-motorized transport continue to be poorly served. Increased use of private vehicles has resulted in falling public transport demand and a consequent decline in service levels. Sprawling cities are making the journey to work excessively long and costly for some of the very poor. However, it says that the context of transport has changed. Cities are increasingly involved in trading patterns on a global scale, which makes the efficiency of their transport systems more critical. At the same time, responsibility for urban transport is being decentralized to the cities, which are often strapped for cash and are institutionally ill prepared for the new challenges. Under these conditions the financial state of public transport has deteriorated drastically in many countries.

The paper goes on to say that urban transport can contribute to poverty reduction both indirectly through its impact on the city economy and hence on economic growth, and directly through its impact on the daily needs of poor people. But it says that urban transport exhibits a fundamental paradox:

How can a sector with such an obvious excess of demand over supply, and with such a heavy involvement of private suppliers of service, fail so badly to meet the aspirations of politicians and citizens alike? Why has it not been possible to mobilize commercial initiative to yield the kind of revolution in service quality and cost which has been achieved in telecommunications, water and energy sectors? And why does increasing affluence seem to have the effect of reducing the quality of travel, at least for poor people?

The paper then describes how urban growth increases transport costs saying that from the viewpoint of efficiency and growth it is not too difficult to characterize the central problem. Economies of agglomeration generate the growth of cities. As cities grow and become richer, vehicle ownership and use grow more rapidly than the available road space, resulting in increased congestion and traffic-generated air pollution.

The World Bank suggests that urban growth often has perverse distributional effects. As cities expand, the price of more accessible land increases. Poor people are forced to live on less expensive land, either in slums or on the periphery of the city. As average incomes grow and car ownership increases, the patronage, financial viability, and eventually quality and quantity of public transport diminishes. Motorization, which is permitted by the growth process, may thus also make some poor people even poorer. In particular, in the absence of efficient congestion pricing for road use piecemeal investment will be difficult to eliminate. The authors pose what they describe as an eclectic strategy which includes four main ways to address these problems, namely i) structural change; ii) improved operational efficiency of the transport modes; iii) better focusing of interventions to assist the poor, and iv) institutional reform.

With reference to targeting socially disadvantaged groups, the report argues that transport provision can be part of a social safety net. A complementary approach is

to focus on the specific categories of disadvantaged people. Given the overwhelming importance of the ability to access employment, the work journeys of poor people may be a prime target for support. The cost of ensuring that these trips are affordable may be shifted to the employer (as with the “vale -transporte” in Brazil) or the state (as with the commuter subsidy system of South Africa). Although they may be less than perfectly targeted (for example, the vale transport misses very poor informal sector workers), may distort residential location incentives, and are inferior to direct income transfers, targeted transport subsidy arrangements may be the best practicable safety net for poor workers. It goes on to remind the reader that low income is not the only form of deprivation. Gender confers some particular disadvantages in terms of diffused trip patterns and timings, as well as particular vulnerability to safety and security problems. Age and infirmity pose rather different problems, calling for sensitive “inclusive” design of physical facilities. Both locational resettlement and occupational redeployment impinge particularly harshly on poor people, also requiring adequate “safety nets”.

In addition, the report says that fare controls can do more harm than good. Experience teaches two important lessons about what not to do in this respect. First, controlling fares in the absence of realistic analysis of, and provision for, the resource needs of that social strategy, actually destroys public transport service and may seriously harm some poor people. Second, cross subsidy within public sector monopolies does not eliminate the fundamental resource problem while adding some extra burden of inefficiencies in supply.

The report dedicates a chapter to urban transport and poverty reduction. It says poor households derive their standard of living from a variety of activities, not all of which are marketed or assigned a monetary value. That standard of living, and its security, depends not only on current income but also on the stock of assets, including the social and human capital, as well as the money and physical assets at the disposal of the household. Poverty is thus a multidimensional concept involving the lack of the social and cultural, as well as economic, means necessary to procure a minimum level of nutrition, to participate in the everyday life of society, and to assure economic and social reproduction. In this general notion of poverty as “exclusion,” accessibility is important not only for its rôle in facilitating regular and stable income earning employment, but also as part of the social capital which maintains the social relations forming the safety net of poor people in many societies.

Deteriorating urban transport conditions impact particularly severely on poor people. Growing reliance on private vehicles has resulted in a substantial fall in the share, and in some cases an absolute decline in the number, of trips made by urban public transport in many cities. As a consequence there has been a decline in urban public transport service levels. Sprawling land-consuming urban structures are making the journey to work excessively long and costly, particularly for some of the very poor. Surveys of commuting in Mexico City have shown that 20 per cent of workers spend more than three hours traveling to and from work each day, and that 10 per cent spend more than five hours. Poor people also suffer disproportionately from deterioration of the environment, safety and security because they are locationally and vocationally most exposed, and less able to afford preventative or remedial action. The World Bank says that

At the individual level, the urban poor are very conscious that access to employment is critical to their fight against poverty, and that the availability of good transport infrastructure and services is a basis on which this can be achieved. “The lack of basic road, transportation and water infrastructure is seen as a defining characteristic of poverty.” But the relationship between

urban transport infrastructure and poverty reduction is complex. The “income poor” may in fact have chosen poorly served peripheral locations precisely because they are the places where their overall welfare (in terms of availability of shelter, access to activities, etc) is best served. High transport cost is then a *symptom* of their poverty rather than its fundamental cause. Hence transport policies which improve the general economic viability of the city are very important to poor people.

Chapter 10 of this document looks at urban transport pricing and finance. Roads are said to be congested when traffic volume reaches a level at which the flow of traffic is significantly impaired. In such circumstances the extra cost to society of the marginal trip is not only the cost which the extra vehicle itself incurs, but also the sum of the marginal delays that it imposes on all existing road users. Unless the cost charged to, and perceived by, each user reflects that extra cost imposed on society there will be an incentive to make road trips for which the benefit to the trip maker is less than the extra total cost to society. The authors say that in practice, in most countries, industrialized and developing,

urban roads are provided to their users without any direct charge. The only payments from the private user to the public supplier which vary with the amount of road use comes indirectly in the form of taxes (primarily on fuel). Under-pricing is endemic. Even in developing countries with relatively higher taxes on fuel, they do not reflect the costs of urban congestion. That has several adverse effects. First, it distorts the choice of mode in favor of road transport, particularly private cars. Second, it encourages excessive use of the infrastructure (which may cause “excess” congestion). Third, because there is no direct revenue it is not logically possible to use conventional commercial investment criteria in deciding how much capacity should be provided. Fourth, because the revenues do not accrue to the responsible local authority there may be inadequate money for proper maintenance of the existing infrastructure. For all these reasons it is desirable to ensure that the price charged to users at the margin covers the full social cost of their trips.

In terms of RUC, the report says the concept of congestion charging is that road users should pay a price which reflects the short run marginal social cost of road use and hence varies according to the prevailing level of congestion. It has long been advocated by economists on the grounds that, unlike the various administrative controls which are often used to manage traffic, it gives correct incentives over the whole range of dimensions involved in travel decisions, including choice of destination, time of travel, mode of transport, route, etc. Moreover, if congestion pricing was applied in the context of a flexible land and property market the city would evolve towards a more compact form, with more mixed land use, less resources devoted to spread of the road network into surrounding areas, and more funds available for upgrading infrastructure in the already urbanized area. Above all, unlike administrative restraint alternatives it yields revenue rather than being a cost to the public purse.

The report says that it is for these reasons that the World Bank strongly advocated congestion pricing in the 1976 urban transport policy paper and has subsequently examined its applicability in industrialized countries. Nevertheless, it argues that attempts to introduce it in Kuala Lumpur and Bangkok in association with Bank projects foundered, as did the initiative in Hong Kong in the early eighties. Instead, it suggests that various surrogate measures such as the use of parking restraint and pricing policies have been adopted in many countries. Even in industrialized countries the World Bank says there is growing concern that these surrogates have not worked well. Direct charges for urban roads have been introduced for revenue generating reasons in some Norwegian cities and congestion pricing is now under

serious consideration in the Netherlands and the UK. The paper includes an example of the effectiveness of congestion charging in the Namsan tunnels in Seoul, Korea.

The paper suggests that many of the objections which have been raised against congestion pricing have already been overcome:

Initial concerns about the cost and reliability of the technology have been superseded by developments in electronics. Fears about intrusion on privacy, which contributed to undermining the Hong Kong experiment, can be overcome through the choice of a technology not relying on any centralized record of vehicle movements. Fears about the effects of congestion charging on lower income groups, which have been a significant obstacle to its political acceptability in highly motorized societies, are much less justified in developing-country cities, where most people remain dependent on public transport or non-motorized modes. Even some of the rapidly motorizing major cities of Eastern Europe still offer much more extensive and frequent public transport services as an alternative to the private car than are available in many of the western countries. Specific inequities which do arise in the shift to a more direct and efficient system of charging for road use can also be compensated by provision of case-specific subsidies, such as free or reduced-price smart cards or stickers during a transition period. Congestion pricing is increasingly being viewed as a concept whose time has come.

The paper also makes a brief reference to the use of parking charges in place of direct road use charges. It says that:

while they cannot deter persons driving through an area or reflect the different distances or routes drivers take, they can be varied by time and place in such a way as to capture a significant part of the congestion externality and encourage better spatial/temporal distribution of demand for movement on the roads. They are already manipulated in quite sophisticated ways in many European cities and both UK and France are debating taxation of downtown parking spaces provided by employers for their employees. Transferable permits for a given number of available parking spaces would be a way of auctioning the right for commuters to drive to work.

3.9 Transport and Lifecycle

ECMT

Transport and Ageing of the Population Feb2002

This is a recent report on transport and the ageing population. It says that in the developed countries the number of older people represents a growing percentage of the total population:

The experience in many countries shows a trend to stay active in the labour market longer than today. Either countries are foreseeing retirement at an older age or people, who do not need to comply compulsorily with the retirement age, keep on working. So, if elders remain active for a longer time, their prolonged professional life will result in increased mobility, as we take for granted that those who work are those more likely to move.

In contrast, the paper also recognizes that some workers are leaving the labour market earlier, so that the life cycle of retired people is longer and more 'differently lived'. Furthermore, if retirement age is reduced, a hypothesis not to be excluded in

some countries, other groups of older people should emerge, much more active and mobile than the present situation.

It points out that special mention should be made of female older drivers. Data reveal that women are driving much more than in the past. However, female mobility presents very definite features. Their trips are normally shorter, and they travel less annual kilometres than men do.

The paper adds that older people often choose to live away from inner urban areas because of the higher crime rate and the higher costs of living within these areas. It states that the need for mobility is greater in low-density areas than in urban areas.

Help the Aged

Mobility and Transport for Senior Citizens - Are We Getting There? Help the Aged Policy Statement September 2001

This paper looks at the policy on mobility and transport for senior citizens. It says that although older people travel if they are able to for a variety of reasons, for all too many, there are barriers to getting out and about:

A large minority of older pensioners, especially women, is physically unable or psychologically unwilling to go out. It is estimated that approximately a third of elderly men and even more older women leave their homes during an average week on only two occasions.

The paper says that when older people do go out they travel on foot, (80% of all journeys are under a mile), by car or by means of public transport. However, it argues that there are difficulties with respect to all these three forms of transport.

Help the Aged states that 91% of single pensioners and 53% of pensioner couples do not own a car. The large majority of the poorest households are reliant on public transport or getting about on foot. Even 37% of car drivers also use public transport on a regular basis. Thus public transport is and will remain crucial to older people. Nevertheless, the paper says that at present 58% of men and 16% of women aged 60 to 69 drive their own vehicles. By 2021 it is estimated that 90% of men and 70% of women in that age group will be driving. The AA forecasts that there will be 11 million drivers aged 55+ in the near future. The paper highlights the fact that the older people who do own or have access to car travel twice as far as those who do not.

Recognizing that there will be many more older drivers, especially women, in the coming years, Help the Aged suggests that a scheme in the US is an example of good practice:

AARP in the United States organises programmes to keep senior citizens driving as long as possible. The DTLR, local councils, motoring organisations and the voluntary sector all have role to play in assisting older drivers. For this group their car is a lifeline, just as a free bus service would be to those who are reliant on public transport.

Help the Aged

Promoting Independence Help the Aged Policy Statement September 2001

This paper looks at older people's need to retain their independence and autonomy, to continue to live full and interesting lives and to remain participating members of

society. It says that until recently, however, there was little public recognition of the extent to which older people are excluded from the mainstream, and of the many barriers to continued independence that they face.

The paper states that

Preventing the need for more intensive services requires investment in easier and earlier access to information and advice and the existence of services that promote good health, encourage mobility and support people's capacity to look after themselves. Improving quality of life requires a very wide agenda of policy change, from tackling poverty and poor housing, to the provision of safe and reliable transport and better diagnosis and treatment of common conditions of older age such as sight and hearing impairment.

Help the Aged argues that there is evidence across a broad front of the relative difficulty older people experience in maintaining a decent quality of life. They have considerably lower incomes compared to younger people, and one fifth of older people suffer real poverty. In addition, a high proportion of older people are heavily dependent on public transport, yet transport plans rarely take their need for safe, accessible, reliable and affordable transport into account. Convenient access to shops and post offices is essential to older people if they are to remain independent, yet planning policies and business pressures result in the loss of such facilities. The authors add that there is increasing research evidence that good social interaction and a meaningful and purposeful rôle in society contribute to both the health and the life-span of older people.

The paper says that older people have been excluded from the mainstream of society for far too long, to the detriment of their own wellbeing and that of the rest of society. In mid 2000 older people made up 18% of the UK population, and those aged 75 and over made up just under 7.5%. These proportions are likely to rise, with a particularly steep increase in the numbers of the oldest people. Improving the quality of life of our older population and acting to prevent ill health and disability depriving older people of their independence make human and economic sense in an ageing society. Improving quality of life means tackling the exclusion of older people on a broad front.

Help the Aged

Active Ageing Help the Aged Policy Statement September 2001

This paper looks at the concept of "active ageing" - a phrase devised to capture this potential for adding life to years through opportunity and challenge.

Some of the evidence provided in the paper is relevant to the current research:

- Average life expectation for a man aged 60 is 18.8 years, for a woman 22.6 years. In 1997 at 80 average life expectation for a man was 6.7 years; for a woman 8.5 years. It is anticipated that by 2011 this will be respectively 7.7 years and 9.1 years.
- The UK has long absorbed waves of migration. The Black, Asian and minority ethnic populations who came to work in the UK during the war and post war years are now ageing, enriching the cultural diversity of older age. Among the valuable dimensions to some of these cultures is an appreciation and respect for elders, which could be educative to many longer established communities.

- A third of people between 50 and state retirement age are not in paid employment. Less than a third of the fall in older people's employment has been voluntary. There are real social costs in terms of health, retirement income and social exclusion. (Government funded research)
- Over 50s now account for 15% of new business start-ups (Third Age Entrepreneurs published by Barclays August 2001)
- A survey commissioned by the Department of Social Security on the Attitudes and Aspirations of Older People (1999) found that older people identified the main barriers to work and volunteering as: - ageism, health, lack of transport and other access problems, lack of confidence or qualifications, and limited opportunities in some areas.
- The same survey found that older people identified obstacles to taking advantage of formal learning as health, time, paying for courses and equipment, transport (particularly at night), confidence about ability to learn, perceived lack of necessary qualifications, and unavailability of relevant and interesting courses at a local level.

United Nations

United Nations Principles for Older People. General Assembly Approval 16 Dec 1991

This paper says that the UN encourages governments to incorporate the following principles into their national programmes whenever possible:

Independence

1. Older persons should have access to adequate food, water, shelter, clothing and healthcare through the provision of income, family and community shelter and self help.
2. Older persons should have the opportunity to work or to have access to other income generating opportunities.
3. Older persons should be able to participate in determining when and at what pace withdrawal from the labour force takes place.
4. Older persons should have access to appropriate educational and training programmes.
5. Older persons should be able to live in environments that are safe and adaptable to personal preferences and changing capacities.
6. Older persons should be able to reside at home for as long as possible.

Participation

7. Older persons should remain integrated in society, participate actively in the formulation and implementation of policies that directly affect their well-being and share their knowledge and skills with younger generations.
8. Older persons should be able to seek and develop opportunities for service to the community and to serve as volunteers in positions appropriate to their interests and capabilities.
9. Older persons should be able to form movements or associations of older persons.

Care

10. Older persons should benefit from family and community care and protection in accordance with each society's system of cultural values.
11. Older persons should have access to health care to help them to maintain or regain the optimum level of physical, mental and emotional well being and to prevent or delay the onset of illness.
12. Older persons should have access to social and legal services to enhance their autonomy, protection and care.
13. Older persons should be able to utilize appropriate levels of institutional care providing protection, rehabilitation and social and mental stimulation in a humane and secure environment.
14. Older persons should be able to enjoy human rights and fundamental freedoms when residing in any shelter, care or treatment facility, including full respect for their dignity, beliefs, needs and privacy and for the right to make decisions about their care and the quality of their lives.

Self-fulfillment

15. Older persons should be able to pursue opportunities for the full development of their potential.
16. Older persons should have access to the educational, cultural, spiritual and recreational resources of society.

Dignity

17. Older persons should be able to live in dignity and security and be free of exploitation and physical or mental abuse.
18. Older persons should be treated fairly regardless of age, gender, racial or ethnic background, disability or other status, and be valued independently of their economic contribution.

The Oddfellows

Public Transport Failing Older People. The Oddfellows Transport and Social Life Survey 2001. August 2001

The Oddfellows Transport & Social Life Survey 2001, commissioned by the Oddfellows and conducted by MORI, reveals that 51% of the over 60s said they would use their car less if public transport services in their area improved. The report argues that, as the Government desperately tries to get people out of their cars and onto public transport by methods such as raising costs of car ownership and road tolls, what people actually want is a viable alternative - efficient and effective public transport.

Hetherington, S

Transport and Social Exclusion. A response by The Children's Society., October 2001

This report is a response to a consultation by the Social Exclusion Unit of the Cabinet Office on Transport and Social Exclusion. It says that projects run by The Children's Society have identified that access to transport is a major issue for children, young people and their families. Hetherington argues that

Getting out of the house - to visit friends or family, to take part in groups and leisure pursuits and in everyday activities such as shopping- is essential to achieving inclusion.

The author suggests that a lack of personal transport can limit children's capacity to make choices about how they use their time. Therefore, for many young people transport needs frequently dominate their plans for work and access to training, as well as limiting their capacity to engage in extra-curricular activities.

Hetherington points out that children and young people experience very limited personal mobility and are heavily reliant on adults to supply their needs - young people, such as young carers, who do not have parents who are able to assist them in accessing transport are particularly vulnerable to social exclusion. She adds that for those who cannot afford car ownership, the public transport service is often both inflexible and limited in availability and, for low-income families, their ability to use the limited public transport that is available may be reduced still further due to the high cost of fares.

In addition, the report says that projects report that young teenage women often feel vulnerable on public transport, and that teenagers in certain towns have been badly harassed by bus drivers themselves. One project also reports that families and young people from ethnic minorities have experienced racism when travelling on local public transport through areas, which have very small ethnic minorities. Projects also report that young people choose not to use unmanned train stations due to concerns about personal safety.

Micklewright, J

Social Exclusion and Children: A European View for a US Debate. Centre for Analysis of Social Exclusion, London School of Economics.

(<http://sticerd.lse.ac.uk/dps/caspdfs/casepapers/CASEpaper51.pdf>)

This paper says that the concept of social exclusion has been widely debated in Europe but its application to children has seen relatively little discussion. Micklewright states that the first main theme of the paper is 'What could be meant by exclusion of children'. The second main theme is the use of the concept of exclusion in the USA, where in contrast to Europe it has achieved little penetration to date.

Micklewright describes the difficulties in defining social exclusion and says that:

The 1998 Eurostat Task Force on Social Exclusion and Poverty statistics (Eurostat is the EU statistical office) considered social exclusion as:

'...a dynamic process, best described as descending levels: some disadvantages lead to some exclusion, which in turn leads to more disadvantages and more social exclusion and ends up with persistent multiple (deprivation) disadvantages. Individuals, households and spatial units can be excluded from access to resources like employment, health, education, social or political life.' (Eurostat 1998: 25).

However, the Task Force declined to define social exclusion precisely, arguing that this was just not possible.

In terms of the child dimension to exclusion, the author says:

Discussion of exclusion among children needs to refer to their future prospects as well as their current living standards ('dynamics'). A decision

has to be made on the comparison group – other children or all persons – and on the geographical area for comparison ('relativity'). And the issue of who excludes children needs to be considered ('agency').

In his conclusion, Micklewright says that:

My conclusions relate both to the concept of social exclusion itself, including its application to children, and to the possible expansion of the concept in the US in the analysis of child well-being. Does social exclusion offer value-added over multi-dimensional poverty or deprivation? If it does, it is as a complement rather than as a substitute, and that is how it is used most of the time in Europe. 'Poverty' will continue to have a lot of resonance that exclusion may never have, as well as being something that is easier to define. Social exclusion's emphasis on *process* seems useful.

The Prince's Trust

Mapping Disadvantage. Research Summary. November 2000

This research is the first major attempt to find the 'hot spots' where young people are less likely to succeed and where the transition from adolescence to adulthood is most likely to be problematic. It makes a key contribution to knowledge regarding the distribution of disadvantage and is unique in its focus on young people. Unlike other indices, this work explicitly addresses the ethnic minority dimension. This is particularly important in relation to young people given that the minority ethnic population tends to be younger than average.

The research found that, generally, levels of disadvantage are higher in major urban centres than in outlying areas. In relation to the current study, the findings of the small area analysis carried out in relation to the East Midlands (for Nottingham) and the South West (for Bristol) provide useful background information for the empirical framework.

The Prince's Trust argues that there is mounting evidence that intervention in the lives of disadvantaged young people plays a key part in neighbourhood renewal and suggests that there is a disproportionately negative effect in not investing in young people. The paper says that this strengthens the case for decision makers locally and nationally to weigh this targeted research against the traditional indices of disadvantage, both when targeting those in most need and framing policy.

3.10 Ethnicity

National Statistics

Estimates of the population by ethnic group and area of residence (1998), Great Britain. www.statistics.gov.uk/themes/population/Articles/Ethnic.asp

This webpage contains text extracted from an article by Jeremy Schuman entitled 'The ethnic minority populations of Great Britain - latest estimates' published in Population Trends 96. It describes analysis of a table of population estimates for 1998 for Great Britain. The following information has been taken from that table and indicates that 6.5% of the estimated population in 1998 were from ethnic minorities:

Ethnic Group	Estimated Population (1000s)	Proportion of total population (%)
Black - Caribbean	501	0.9
Black - African	353	0.6
Black - Other	297	0.5
Indian	944	1.7
Pakistani	568	1.0
Bangladeshi	234	0.4
Chinese	166	0.3
Other - Asian (non-mixed)	195	0.3
Other - Other	406	0.7
All ethnic minority groups	3663	6.5
White	53079	93.5
All ethnic groups	56756	100

Table 3.4 Estimated population by ethnic group (1998)

National Statistics states that the ethnic minority populations are not evenly distributed around Great Britain, but tend to be highly concentrated in the more urbanized parts of the country. The article suggests further that the concentration of ethnic minority groups in particular areas has been explained in terms of 'choice' and 'constraint' theories. It says that:

The choice theory argues that ethnic minorities may prefer to live within concentrations of their own group, for reasons of social support, and shared linguistic, cultural and religious traditions. The constraint theory argues that ethnic minority groups have often been prevented from moving outside certain geographical areas by their economic position, by lack of information about housing opportunities elsewhere, and by discrimination or fear of discrimination. The different profiles of skills and experience found in different ethnic groups led early migrants to seek employment in particular industries.

Social Exclusion Unit

Minority Ethnic Issues in Social Exclusion and Neighbourhood Renewal - A guide to the work of the Social Exclusion Unit and the Policy Action Teams so far. (Published June 2000)

This paper says that there is a significant lack of data about people from minority ethnic communities, but that the available data confirms that some groups experience disproportionate disadvantage across the board and others experience it in some areas.

The authors argue that:

In comparison to their representation in the population, people from minority ethnic communities are more likely than others to live in deprived areas; be poor; be unemployed, compared with white people with similar qualifications; suffer ill-health and live in overcrowded and unpopular housing. They also experience widespread racial harassment and racist crime and are over-represented throughout the criminal justice system, from stop and search to prison. But there is much variation within and between different ethnic groups in all of these areas.

The Social Exclusion Unit says that people from minority ethnic communities are concentrated in a few urban areas. Over two-thirds live in London and the three large metropolitan areas in the West Midlands, Greater Manchester and West Yorkshire. Between them these areas account for less than a quarter of the white population.

The paper asserts that minority ethnic groups are more likely than the rest of the population to be poor. Twenty-eight per cent of people in England and Wales live in households that have incomes that are less than half the national average, but this is the case for 34 per cent of Chinese people; over 40 per cent of African-Caribbean and Indian people; and over 80 per cent of Pakistani and Bangladeshi people.

In addition, it is reported that Pakistani and Bangladeshi men have high rates of unemployment and Pakistani and Bangladeshi women have low rates of economic activity. In addition, those in employment have low wages and these have to be spread across large household sizes. The authors suggest that one consequence of this is that you are more likely to live in a poor household - with less than half the average national household income adjusted for family size - if you are Pakistani or Bangladeshi and work (50 per cent chance), than if you are white and do not work (43 per cent chance).

It is also important to note that minority ethnic groups have a younger age structure than the white population, reflecting past immigration patterns and family size differences: 48 per cent of the minority ethnic population is under 24 years old, compared to 31 per cent of the white population. The Bangladeshi population has the youngest age structure: 43 per cent were under the age of 16 in 1998/99, compared with 20 per cent of the white population. This means that the proportion of the total population that comes from a minority ethnic background will rise over time, and that today's generation of young people are more ethnically mixed than their predecessors. In 1991, 7.0 per cent of the under 25 year old population came from a minority ethnic background and 9 per cent of the population that was under 16 years old. It is estimated that these figures doubled over the 1990s. Conversely, 16 per cent of white people are over 65, compared with 3 per cent of Bangladeshi and Pakistani people.

The paper says that overall, African, Indian, African Asian and Chinese people are the best qualified groups, with white people and African-Caribbean people in the middle, and Pakistani and Bangladeshi people the least qualified.

The Prince's Trust

Young People & Ethnicity. Factsheet 10. February 2001

The Prince's Trust recognizes that, historically, race in Britain has always been a highly emotive and contentious issue:

Britain's imperial past is responsible for many of the country's long held prejudices on colour, religion and national identity. The issue of race permeates every strand of social and political debate, from education and law and order, to employment and family life.

The paper says that equal opportunity for all is a central tenet of government policy, but as a country, Britain is still struggling to make this a reality:

In the past, collecting biodata on ethnic origin was considered unnecessary, but today, it is vital in measuring the true extent of Britain's multi-ethnic environment, whether it be in employment, policing matters or education.

The report states that statistics show that young people from certain ethnic backgrounds are more likely to underachieve at school. This underachievement extends to adulthood where it manifests itself in labour market inactivity. The government has acknowledged that much is needed in policy and practice to reconcile this difference.

The Prince's Trust says that evidence shows that belonging to a minority ethnic group puts an individual at a greater likelihood of being unemployed. Overall, belonging to a minority ethnic group makes an individual 2.2 times more likely to be unemployed than a white person.

It goes on to say that inequalities between ethnic groups in educational attainment transfer to inequalities in the labour market. Ethnic groups that persistently underachieve in education are therefore more likely to face a future of low-income jobs and greater benefit-dependency. They are less likely to be house owner-occupiers.

In addition, the report says that the ethnic minority population tends to have a younger age structure than the white population. Official projections for the next decade indicate that the fastest rises in entrants to the labour market will occur among groups of people who describe themselves as Black, Bangladeshi or Pakistani (DfEE 2000). The Trust argues that it is therefore crucial to ensure young ethnic minority pupils get every opportunity to achieve the same education results as their white peers.

In terms of economic activity rates, the research found that it is apparent that the discrepancy is larger for women aged 16-24. In this age group, white women are almost 1.5 times more likely to be economically active than women from minority ethnic groups. Within ethnic groups, the percentage difference in economic activity rates between male and females are widest among Pakistani, Bangladeshi and Black men and women. They are 21%, 19% and 15% respectively. The smallest percentage difference was among Indian (6%), All other groups (1%) and white groups (8%). The Trust suggests that there are a multitude of explanations to account for the difference in economic activity rates, for South Asian women, marriage often takes them out of the labour market. Circumstances vary between people from different ethnic backgrounds, and participation and achievement levels vary again with gender and age.

In relation to ethnicity and family structure, the report says that the concept of a 'traditional' nuclear family is becoming increasingly uncommon in today's modern age. Rising divorce, co-habitation, and births outside marriage rates indicate that marriage is no longer a certain option for all couples. A recent report on family formation in multi-cultural Britain discovered that families that best fit the 'traditional' family formation are not White, but are more likely to be Bangladeshi or Pakistani. In fact, White and Caribbean relationships were more characterized by divorce, cohabitation and single parenthood. Marriage is a central characteristic of family life in South Asian communities. Roughly three-quarters of Pakistani and Bangladeshi women are in partnerships by the age of 25, almost all of which are formal marriages. Black-Caribbean relationships are characterized by low rates of partnership, high rates of single parenthood and only a quarter of Caribbean children live with 2 Black parents.

The paper found that a clear majority of Bangladeshi and Pakistani women stated that their primary activity was looking after the house and family, although the

proportion of those who do this full time decline among those with qualifications (Richard Berthoud, 2000). The Prince's Trust says

These findings have ramifications which extend beyond race to education, social security and poverty. For instance, Bangladeshi and Pakistani households tend to be larger than average. This factor combined with non-working wives (South Asian women have the lowest economic activity rates) explains why many Bangladeshi and Pakistani families have a standard of living below the national average.

The report also states that the lack of cohesive family structure means over half of Caribbean lone parents rely on income support, even though they are far more likely to work than their white counterparts.

The Runnymede Trust

Report of the Commission on the Future of Multi-Ethnic Britain. October 2000. (Online text version)

In Chapter 6, this report says there are three main approaches to combating social exclusion which must be combined: (a) improving physical infrastructure; (b) using welfare-based measures; and (c) pursuing labour market strategies to improve underlying economic potential and performance. The paper says that a single-pronged attack will not work.

The Runnymede Trust argues that within this framework, key tasks include securing long-term financial and political support for projects in specific local areas; achieving and sustaining inter-agency working; empowering local communities; maintaining local commitment and avoiding activist burn-out; redirecting main programmes and resources; providing access to credit; hitting the right balance between area-based projects and conurbation-level measures; hitting the right balance also between central government initiative and local responsibility; and engaging the private sector. It goes on to say that further, and essentially, measures should not be colour-blind or culture-blind.

In terms of tackling disadvantage, particularly amongst ethnic minorities, the report's recommendations include:

Street racism and violent racism arise and flourish in situations of economic disadvantage and inequality. This is one major reason why social exclusion must be addressed; another is the fact that it disproportionately affects some (though not all) black, Asian and Irish communities.

3.11 Gender

Earthsummit 2002

International Conference "Gender Perspectives for Earth Summit 2002 - Energy; Transport; Information for Decision-Making Berlin, 10-12 January 2001 Co-Chairs' Summary of the Discussions http://www.earthsummit2002.org/workshop/co-chairs_summary.htm)

In terms of transport, this summary of discussions indicates that participants raised a number of key issues including:

Equity vs. environmental protection: Does creating gender equity mean to create the same mobility conditions for women as there are for men? Does global equity mean to close the gaps between developing and developed countries by increasing mobility in the South through introducing 'traditional', developed countries systems? The number of cars in the developed countries is increasing at a higher rate than population in the developing countries.

Therefore, addressing problems of mobility will require not only to ask how to increase access for the under-privileged but how to decrease consumption of the over-privileged. It will also mean to significantly reduce the need to travel. Sustainable development of transport and mobility requires developing proactive policies towards reintegration of space / time / caring work. This requires policy shifts within all government departments at national and local levels, a shift away from the dominating technological paradigms of development and of mobility which corresponds to men's rationality and men's values.

Gender mainstreaming should mean not only to bring a gender perspective into the mainstream and fit women in or adjust them to the mainstream, but imply questioning of the mainstream from a gender perspective. Addressing gender dimensions within the framework of mobility is particularly important with regard to economic policy: the 'caring economy' needs to be integrated into economic analysis and policy-making as a core component, not an add-on. Women's unpaid caring activities form a crucial basis of what is currently regarded as 'economic activities proper', yet they need to be a starting point of analysis. Women have different (part-time, less paid) and fewer employment options. This is largely due to the sexual division of labour at the household level which affects their economic position and thus their access to transport.

Glienicke, J

Gender Perspectives for Earth Summit 2002: Energy, Transport, Information for Decision-making. Report on the international conference, Berlin, Germany 10-12 January 2001 http://www.earthsummit2002.org/workshop/conference_report.htm

The conference was held as one of the first steps in the preparatory process for the World Summit on Sustainable Development, 2002 (subsequently identified in this report as 'the 2002 Summit') decided by the 55th UN General Assembly, 2000. It focused on three key issues on the agenda of the 9th meeting of the UN Commission on Sustainable Development, (CSD-9) to be held in April 2001, as well as on women's participation, strategies and activities towards and at the 2002 Summit. (Annex I)

The meeting was attended by 35 participants from countries of the North, (including 20 from the host country, Germany) and 15 from the countries of the South, of 12 different nationalities. Experts present were from academic institutions, government, NGOs as well as from professional sectors.

In terms of Gender and Transport, the following statements were made:

- Environment and sustainability issues as well as gender perspectives need be fully integrated into all transport related policy-making in all departments at all levels on a regular and pro-active basis.
- The definition and understanding of mobility need to be revised aiming to reflect women's lives and responsibilities – i.e. diverse patterns of a multitude of tasks and related trips such as transporting loads for sale; accompanying

children and elderly, etc. – and enable authorities to design appropriate transport systems.

- In general, measures are necessary which reduce transport burdens and transport expenditures of women and men while creating equitable access and ensuring women's increased opportunities and participation.
- All transport system development must be informed by the lived experience of women; governments should integrate experts on gender-sensitive transport system planning and decision-making in their planning structures.
- Gender Impact Assessments (GIAs) should be integrated into EIAs which would contribute to creating Sustainability Impact Assessments. Sustainability Audits should include Gender Audits addressing the androcentric perspectives reflected in current policies (prioritising men's lives and needs) and Caring Economy Audits.
- Gender budget analyses are an important tool of engendering macro-economic analysis; they should be conducted to provide information about how much women- & men-power, institutional and financial resources, and research funding goes into furthering women's vs. men's interests regarding transport.
- Investigate changes in transport infrastructure for all countries with a gender perspective.
- Governments should introduce participatory, inclusive transport planning methodologies in order to be able to incorporate the social / gender divide of transport and travel needs.
- Governments should commit to guarantee sustainable, gender-sensitive transport systems. If privatisation is an option, governments have to define appropriate conditions.
- Governments, donor agencies and International Financial Institutions (GEF, World Bank, UNDP) should support: research on women's strategies to cope with transport needs, incl. e-commerce / virtual shopping; community taxis; etc, infra-structure for non-motorized transport and pedestrians, initiatives providing more bicycles for women, especially in developing countries and sustainable, local, small-scale transport development
- Governments and relevant agencies should conduct improved transport surveys, including gender relevant research and gender sensitive methodologies, including gender sensitive interviewing; analysing daily realities of female transport users, women's latent demands and their willingness to pay for better transport; documenting transport sharing models at local levels; gender sensitive stakeholder consultation.
- Governments, relevant agencies and research institutions should provide statistics on gender differentiated mobility, including data differentiated by length of trip rather than number of trips; by reasons to travel (men have more choice than women); car drivers vs. passengers; accounting for journeys on foot which are women's; accounting for typical times of travel (rush hours, i.e. men's travel, vs. non-rush hours, i.e. school run); providing figures on health issues, e.g. transport poverty (being marooned in rural areas links with increased use of anti-depressants).
- Governments and donor agencies should support networks addressing working on gender and sustainable to develop concrete strategies towards integrating sustainable, gender-equitable development into transport systems development, particularly as part of the preparations for the Summit in 2002.
- NGOs and women's organisations should create a formalized dialogue amongst gender & environment researchers, women's organisations and transport NGOs, Create a West/East European network on gender & transport issues, (e.g. as a component of the global NGO transport network of the CSD NGO Transport Caucus).

Hamilton, K

Public Transport Gender Audit (Research Report) University of East London, Transport Studies (July 1999) <http://www.women-and-transport.net>

The Public Transport Gender Audit was prepared by the Transport Studies at the University of East London for the Mobility Unit of the Department of the Environment, Transport and the Regions (DETR). The researchers carried out a wide-ranging literature search and used focus groups to identify and explore the factors which affect women's experience and enjoyment (or not) of public transport. These findings were then translated into a Checklist by which to measure the usefulness and acceptability to women of the public transport which might be offered or proposed.

The review of literature carried out for the gender audit recognized the need to attract to public transport women who currently use a car. The discourse that addresses issues such as women's travel and social exclusion is particularly relevant to the current study.

Much of the evidence cited by Hamilton refers to the connection between social exclusion and rural dwelling. Inaccessibility is seen in the literature reviewed as contributing to 'mobility deprivation' and deprivation. One of the authors cited is Hirst who is quoted as saying that 'Lack of car ownership was the most significant determinant of access difficulties.' Hamilton argues that:

Many of these considerations apply also to the isolation of women in big cities, and in towns and suburbs. As CILT wrote back in 1989 of the London Borough of Southwark, because of poverty, fear and problems of access, 'many women ... generally go no further than they can walk'.

The author also quotes research by Laurie Pickup which differentiates three impacts on women's travel:

1. The impact family-role playing exerts on patterns of women's car availability;
2. The impact of gender-related tasks (both home-based and non-home based) on women's access to opportunities; [and]
3. [The impact] which derives specifically from the conditions under which women travel, the problems of coping with children while travelling and women's fear of sexual assault which deters many from travelling, particularly by public transport.

In addition, Hamilton draws attention to the rôle of age and ethnicity in influencing travel behaviour. She also presents North American evidence that lone motherhood can affect travel patterns and highlights the importance of women working significantly closer to home than men.

The author suggests that:

Perhaps the best-known factor in the differences between men's and women's travel behaviour is the different access which women have to cars, especially in one-car households.

She reminds the reader that there has been very little attention paid to social travel by women and asserts that this should be a high priority for transport planners. The

report goes on to say that the authors are not aware of any work specifically about how women's travel habits are formed or changed.

In terms of a UK demographic profile, Hamilton's review says that a recent briefing draws on various sources to offer the following summary:

There are currently 29.9 million women in the UK compared with 28.8 million men. Women make up 51 per cent of the population. However, men outnumber women until they reach their mid-forties, when the numbers become more or less equal. For those aged 85 and over, there are 3 women to every man. 56 per cent of women in Britain are married; 5 per cent are cohabiting; 18 per cent are single; 14 per cent are widowed; 6 per cent are divorced and 2 per cent are separated. ...Over two fifths (43 per cent) of women of working age in the UK have dependent children. One in five (21 per cent) of these women is a lone parent.

The author also gives an overview of women's economic activity, suggesting that the dramatic increase in women in paid employment, especially women with young children, has been one of the most important changes in the labour market in the post-war era.

Hamilton regards the sexual division of labour as significant to their travel choices. The author also says that, because of changes in the age-structure of the population and the implementation of care in the community, there are now more older people in need of home-based care. She adds that the carers of these sick and elderly adults are nearly always unpaid, and are almost exclusively women. Hamilton states that:

Considerations such as these mean that part-time work opportunities are important to women, particularly local opportunities. This further means that women tend to be concentrated into lower-level jobs where there is a high proportion of part-time staff; and they are more likely to be precluded from higher-level jobs e.g. managerial and professional work which are predominantly full-time.

In addition, the review identifies the persistent economic inferiority of women as an important issue, as well as their physical differences, power and vulnerability.

Hamilton has also pointed out gender differences in travel patterns as reported in transport statistics. She says that:

In recent years there has been a very welcome and increasing trend towards gender disaggregation of travel statistics, but there is still room for improvement, and our knowledge of gender differences in travel behaviour remains incomplete.

Amongst other related issues discussed in the review, the findings on car availability are relevant to this study:

There has been particularly strong growth in licence-holding among women in the last ten years; the 1995/97 statistics indicate that 57 per cent of women compared with 81 per cent of men hold a full driving licence. However, only about two-thirds of female licence holders are the main driver of a household car compared with four-fifths of male licence holders.

Hamilton points out that the reader should note that:

...statistics based on 'the household' as a unit of analysis have done much to hide the full extent of gender inequality in car access. The availability of a car for personal use has major effects on travel patterns, and it is clear that where there is only one car and there is a male driver in the household it is overwhelmingly the male driver who has first call on it. The more cars that are available within a household, the more people travel by car than by any other means of transport: for instance, members of households in which there are no vehicles make an average of 14.4 journeys per week, compared with an average of 23.8 by households with three or more cars.

3.12 Dual labour markets/segmented labour markets

The available evidence on social exclusion suggests that there is a link between social exclusion and labour market participation. In particular, this is the result of the importance of labour market participation on income levels and distribution. The so-called dual labour market theory offers a theoretical basis for developing the understanding of the processes involved.

The dual labour market is characterized by two sectors: a high wage primary sector that is composed of firms with internal labour markets and a low wage secondary sector that is composed of firms that hire from the external or spot market. Since the workers in the two sectors have, at least initially, similar skills, the jobs in the high wage sector can be fairly classified as "good" jobs, while those in the secondary sector can be classified as "bad" jobs.

4 CONCLUSIONS

This review was undertaken in the first stage of a study on the impacts of road user charging and workplace parking levy on social inclusion and exclusion. The literature search focussed on selected publications that covered the areas of interest defined during a study team brainstorming session. This work updates the literature review done for the Scoping Study 'Impacts of Road User Charging and Work Place Parking Levy on Social Exclusion/Inclusion' in 2000. One of the main findings of the recent review is that we are better able to say who the excluded are. The evidence suggests that gender and age are particularly important factors in exclusion and that, although ethnic minorities may form a relatively small part of the general population of Great Britain (under 7%), these groups may form large proportions of the people living in areas of concern affected by the policies studied (eg. in Nottingham, 35% of the population of the ward of Lenton are from an ethnic minority and Forest ward has almost 30% from these groups). It is also evident from the review that ethnic minority populations are particularly concentrated in inner city wards and are not evenly distributed around the country.

It is felt that, while the review gives a greater understanding of who the excluded in the UK are and provides an insight into current thinking on RUC and WPPL, there is a need for more research which looks at the intersection between these two areas, ie. the inter-relationship between transport and social inclusion. The current research will offer a greater insight into this theme. The literature review establishes a sound starting point for the empirical research framework to be developed and provides a valuable reference material for the focus group meeting design. In addition, it will enhance the background against which the synthesis stage of the study will be conducted.

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ANNEX B INFORMATION ON RUC/WPPL IN OTHER COUNTRIES

The body of this report concentrates on literature that helps develop a greater understanding of the relationship between social exclusion and transport and the intersection between these two themes. This annex contains information about road pricing and congestion charging in other countries. The more general information provided in this section seeks to give an overview of the position with regard to road pricing worldwide and thereby present a backdrop for the literature reviewed in the main text.

Guller P

“Pricing Measures Acceptance” Preliminary analytical results of the Prima-Project of DG VII/EU. Paper presented to ECMT/OECD Workshop on Managing Car Use for Sustainable Urban Travel, 1-2 Dec 1999, Dublin

This paper presents preliminary results of analysis of acceptance of pricing measures in the case study cities covered by the Prima project. It provides a table of characteristics and background of road pricing in the case cities which is reproduced below:

City	Main characteristic	Road pricing experiences
Barcelona	Charges on interurban and urban highways.	Interurban toll roads have been realised since the 60's in Catalonia. Growing resistance to road pricing.
Oslo	Cordon toll, not allowing for alternative routes.	The urban cordon toll was opened in 1990 in order to finance road investment. New concession in preparation.
Marseille	Charges on a road tunnel.	An urban toll tunnel leading directly to the city centre of Marseille was opened in 1993. A private concessionaire operates this first urban toll in France. The population has accepted the scheme well.
Lyon	Charge on northern bypass, in extension to interurban road tolls.	The road toll on the northern part of the ring road was set up in 1997. Yet it was immediately rejected by the users and the public. After riots and legal problems, the tunnel was re-opened by the local authority, with a dramatically reduced price.
Stockholm	Cordon toll was planned.	An urban road toll system was designed and decided (Dennis Agreement), but politically rejected in 1998.
Rotterdam	Charged lanes and cordon toll to be experimented.	A national scheme for 4 urban cordon tolls in the Randstad is planned and actually in parliament. In addition the city of Rotterdam intends to further develop its "select system" and introduce pay lanes on highways.
Bern	Road pricing considered as instrument for traffic management.	A few years ago, experts have recommended road pricing combined with parking fees. The principle of road pricing is fixed in the urban transport master plan. Political evaluation is under way.
Zurich	No road pricing.	No road pricing has so far been considered. The city sets on the promotion of public transport, traffic management and parking policy.

Using Oslo as an example, the paper shows the need to link the use of pricing revenue to transport investment. The paper says

Oslo is the only one of the eight cities of the PRIMA project to have a full scale cordon road toll system. The toll ring was set up in 1990 aiming to finance urgently needed road investments. In the framework of Norway's regional policy, national grants for financing roads in the Oslo region have for considerable time been relatively low. Toll roads should help to implement road projects within 15 years, instead of 35 years if financed by public grants. Several modes of charging road users were evaluated: petrol tax, local toll ring around Oslo, increased parking fees, area based road tax. Criteria have been: getting the necessary financial means, limiting car traffic and avoiding evasive movements. All of these criteria were decisive for choosing cordon tolls. In addition it should be mentioned that Norway has a long past in pricing time saving on bridges that replace earlier ferry services. (Sweden, for instance, has always financed such investment out of the public budget).

With the support of toll revenues, Guller says that the area between the Town Hall and the seaside was freed of traffic by means of under-tunnelling.

In terms of public reaction, Guller reports that the authorities regularly monitor public attitudes towards the tolls system. In the year before implementation, 70% of the city's population was negative towards the toll ring. After one year, the opposition was reduced to 64%.

ECOPLAN

Combined Road Pricing- / Car Park Charging System for the city of Bern 1997

This report looks at the effects of introducing road pricing in the city of Bern. Road pricing is seen as

the most effective way to make the ones who are responsible, pay for the mileage related external costs arising from air and noise pollution, in addition to the costs of traffic congestion. Therefore, these costs should not be imposed on Car Parking Charges as well as on Road Pricing. Car Parking Charges should relate to the costs of supplying and maintaining car parking facilities, including an "availability" surcharge for car parking in the central areas at times of high demand.

The authors say that the road pricing proposals could have a significant effect on the traffic levels in the city of Bern. They add that charges require differentiation according to the purpose, the distance, and time of travelling for each journey and suggest that as charges during the morning and evening rush hours would be significantly higher, traffic would decrease most during those periods. A large proportion of leisure and shopping related traffic would shift to periods of less volume. The paper suggests that the reduction would be greatest for journeys within the city, since these journeys - in contrast to inter-city journeys - take place almost entirely within road pricing areas. In addition, the authors note that cities provide the best opportunities for switching to public transport, and walking/cycling.

The report recognizes the need to soften any adverse economic impacts and proposes that certain supporting measures could be employed, including the promotion of public transport and walking/cycling, and focusing planned economic development at public transport access points. Also, the authors point out that sensible use of revenues from road pricing would deliver a positive impetus to the economic region of Bern. They suggest that this revenue should be used

to reduce tax, increase the region's attraction, finance the Schanzentunnel, implement noise pollution countermeasures, and for specific projects concerned with public transport and walking/cycling.

Goh M

Congestion management and electronic road pricing in Singapore. *Journal of Transport Geography*. Volume 10, Issue 1, March 2002, pp29-38

This paper details the experience of Singapore and the effort made to curb vehicular increase on the roads using a state-of-the-art regulated Electronic Road Pricing (ERP) scheme. Specifically, the paper looks at the public policy effort to forge ahead with road pricing, prepare the island for extensive congestion management, and cap the on-road vehicular population to ensure a smoother flow of commercial transport and distribution.

Goh says that Singapore has always sought to make the case against congestion through economic terms as the government recognizes that driving creates social costs. As such, the government has always levied a high premium for the right to

own and drive private vehicles. Thus, as long as motorists are prepared to pay the full social cost of their driving, they can drive as much as they want.

The author provides a historical overview of the development of schemes since the 1970s implemented to manage the increase in the number and usage of vehicles on the road.

He says that when the ERP system was first tried out in Hong Kong from July 1983 to March 1985 ([Hau, 1990](#))

...the Singapore government watched the trials with great interest. Although the system proved to be technically feasible, it was not implemented due to public rejection, arising from concerns over the privacy of movements ([Hau, 1990](#); [Gomez-Ibanez and Small, 1994](#)). Likewise, when a limited-scale multiple cordon-based ERP system was tested in the Netherlands, privacy was also an important public concern ([Phang and Toh, 1997](#)).

Goh states that Singapore opted to skirt the privacy and billing problems by implementing a less intrusive active system with automatic toll collections. The author says that the approach used is similar to that mentioned by [Langmyhr \(1999\)](#) who reported on Norway's toll ring experience. Like Norway, the ERP system implemented by Singapore involved 42 fixed position electronic gantries encircling the CBD and at heavy traffic points to collect tolls from motorists during certain times of the day. At present, no tolls are levied when leaving the restricted zone.

One of the main effects of ERP introduction described by Goh is that traffic was better spread out during the day, with the expressways and arterial roads carrying close to their designed capacity while remaining relatively less congested. During peak hours, travel speeds in the CBD were smoother while on the expressways, the travel speeds improved from 45 to 65 km/h. The author says that this effort at reducing traffic congestion without providing for more road capacity is expected to shift the trip pattern of motorists in various ways, notably to redistribute trips spatially, temporarily, and modally ([Thomson, 1998](#))

Goh concludes by saying that

This paper has described the on-going attempts by an economically successful city state to manage congestion effectively, utilizing state-of-the-art and reliable technology. Building more roads in an already highly dense land transport network is not suggested as a viable sustainable solution. Rather, road pricing becomes necessary to stem the excess demand imposed by increasing commuter and commercial needs. Although such congestion management programmes can lead to a decline in overall welfare ([Phang and Toh, 1997](#)) for some road users, this can be mitigated by building more efficient alternative transport systems like the MRT and LRT, which can operate independent of road conditions. Above all, societal concerns have to be addressed and public education must be instituted to win the private users to the side of government. Thus, it is essential for governments to make it costly enough for a reduction in traffic into the area, yet provide efficient transportation to ensure the vibrancy of the city area. Any ERP system has to be planned, implemented and used in concert with other policy measures. Ultimately, however, the success of any programme depends heavily on the ability of governments to tackle the problems efficiently and effectively.

Richards B

Future Transport in Cities. Spon Press, London, 2001

This book examines the way transport in cities may develop in the future. It looks at current policies such as road pricing and says

One way of reducing the pressure on urban road space in the future is to make drivers pay for using it. For 25 years Singapore has been pricing the roads entering the Central Area, charging vehicles using it at certain times of day for the space they use and the congestion they cause to other vehicles. The idea was first carried out in the form of pilot schemes in Washington DC in 1959 and subsequently in the UK when traffic problems were less acute, but the idea was never put into practice because it was argued then that the technology was not yet available.

Richards asserts that road pricing has been shown in the case of Singapore to be effective in reducing traffic entering the city centre, particularly at peak periods, and the technology allows for variable pricing, not only at entry points, but for the distance driven along certain congested streets. The author recognizes that

...the politics of introducing road pricing into a city are considerable and acceptance by the public is doubtful unless the money realised is devoted to improvements being made to public transport and this being in place before it is implemented. Oslo, Norway, for example, has simple road pricing in its central area and has collected tolls in order to build an underground urban road as well as upgrade its public transport.

ECMT

Implementing Sustainable Urban Transport Policies 30 Apr 2001, CEMT/CM(2001)13

This paper gives an overview of the European and American position with regard to introduction of road pricing.

ECMT reports that

No European or American city has yet introduced road pricing to manage urban traffic. London is perhaps closest to adopting a scheme for a limited number of central districts, although the main congestion problems are in the inner and outer suburbs, radial access roads and circular trunk roads. The Dutch Government has been developing plans for urban/interurban road pricing for a number of years. There have been difficulties in gaining acceptance by local authorities, but progress has been made in achieving more widespread political acceptance by tying tolling or more generalised road pricing to financing local transport investments. Earmarking revenues to the funding of local transport investments also stimulated interest in road pricing in several provincial cities in the United Kingdom in 1999-2000, but subsequent allocation of National Government funds to such investments has somewhat reduced the incentive.

The paper says that Norway uses cordon charging on urban roads to raise resources for heavy road investments and that these tolls have recently been differentiated to manage peak traffic. More widespread congestion charging systems are under consideration and would replace existing cordon tolls. Italy is reported to have adopted a legal framework for introducing electronic control of access to town centres and several cities have begun to develop cordon-pricing systems. Implementation has been delayed while the outcome of legal challenges to their

introduction is resolved. Technically, systems in Rome and Bologna are ready for operation. The report recognizes that there is some experience with various forms of road pricing in the United States: time-of-day tolls for bridges and tunnels are widespread and there is some construction of new highway lanes with limited access for “high” occupancy vehicles and drivers prepared to pay a charge for single occupancy access. The authors say that these initiatives are primarily for financing, rather than congestion management purposes.

Boot J, Boot P and Verhoef E

“The Long Road Towards the Implementation of Road Pricing: the Dutch Experience”. Paper presented at ECMT/OECD workshop on Managing Car Use for Sustainable Urban Travel, 1-2 Dec 1999

This paper examines the Dutch experience of implementing road pricing (rekeningrijden). The authors include a table detailing experience of the effectiveness of various international road pricing schemes:

Effectiveness of road pricing, international experience

Instrument	Reduction in road usage
<u>Implemented</u>	
Bergen (Norway) cordon	-6 à 7 % per day
Oslo (Norway) cordon	-5 à 11 % per day
Trondheim (Norway) cordon	-5 à 10 % per day
Singapore (1992) Evening peak	-53 % in peak-hours
<u>Experiment or estimated</u>	
Hong Kong cordon	-24 % in peak-hours
Tiel bridge (Neth.) Abolition of toll	+68 % per day
Stockholm cordon	-14 % per day
Randstad (Neth.) cordon	-30 % in peak-hours

Sources: Small and Gomez-Ibañez (1998); ESI (1998)

Boot et al also examine the effect of road pricing on overall income distribution and describe it as negligible. They say

Depending on refunding, average net income increases with some 0.1 %. As The Netherlands foresee refunding by way of a small decrease of the income tax, differences in net income will increase slightly. The charge itself will decrease income differences slightly, as higher income earners live further away from their working place than lower income earners. Also this presumably favourable feature of rekeningrijden has had little impact on the broad social feasibility. Public debates often focus on the impacts for relatively small groups of disproportionately strongly affected road users. A classic example would be a low-income working mother, who has to bring her children to school and cross a cordon on her way to work. Despite the small size of such groups, they often dominate in discussions on the fairness of rekeningrijden.

TDM Encyclopedia

Road Pricing: Congestion Pricing, Value Pricing, Toll Roads and HOT Lanes. Victoria Transport Policy Institute, www.vtpi.org/tdm/tdm35.htm

The TDM Encyclopedia provides the following examples of road pricing projects:

PRIMA (www.certu.fr/internat/peuro/prima/prima.htm)

PRIMA (PRicing Measures Acceptance) is a European Project focusing on Road Pricing acceptance. It includes research in eight European cities that are at different stages in Road Pricing development, including Oslo, Stockholm, Lyon, Marseille, Rotterdam, Barcelona, Zurich and Bern.

Norwegian Cordon Tolls

Norway has Road Pricing in three of its urban centers: Trondheim, Oslo, and Bergen. In 1991, Trondheim—Norway's third largest city with a population of 140,000—implemented a "toll ring" that surrounds the city's downtown area. The toll ring has 12 toll stations and uses a total of 35 lanes. Each tollbooth operates with an electronic card system, used by 80 per cent of drivers entering the city. The other 20 percent use coin machines or magnetic strip cards, which exist at all twelve booths. Rates range from U.S. \$0.62 to \$1.56, with a peak charge between 6:00 a.m. and 10:00 a.m. As a result of this pricing, inbound traffic has declined by ten per cent during toll periods while non-toll period traffic has increased by 9 percent. Weekday bus travel has increased by 7 per cent. Revenues are being used for road infrastructure, public transit, and pedestrian and bicycle facilities.

Singapore (www.lta.gov.sg)

In 1975, Singapore implemented the Area Licence Scheme. Since then the country expanded that plan to include a toll system that charges drivers the equivalent of U.S. \$1.50 to enter the downtown area during peak period congestion. The pricing program, combined with other vehicle fees, has significantly reduced traffic and improved air pollution. In March 1998, the system was automated and tolls made variable to more closely match supply and demand. Singapore plans to implement pricing programs on all its major roadways due to the program's success.

European Pricing Research Case Studies (www.Transport-Pricing.Net)

The report *Pricing European Transport Systems (PETS)*, funded by the European Commission, describes several case studies that were modeled, including several interregional, and two urban traffic management programs to control traffic congestion, crash risk and pollution emissions.

Bristol City Council

EURoPrice Technical Paper 1: Priority Policy Issues Report 1999

This report forms the first of three technical papers developed by the EURoPrice group: Bristol, Belfast, Copenhagen, Edinburgh, Genoa, Leicester, Rome, Trondheim in order to seek a common position and inform policy debate. The paper provides a review of the current status and policy of road pricing initiatives in each of the cities, some of the problems being faced and how schemes are being progressed.

A description of each of the cities is provided giving the context in which each of the road pricing initiatives are being taken forward. The transport problems, which need to be tackled across the sites, are considered, along with a review of the existing transport infrastructure in each city. The report then goes on to look at the status of national policy and legislation, and the road pricing objectives in each of the cities.

Against this background, an audit of road pricing research, demonstration and policy

development at each site has been undertaken. This clearly shows the state of development of road pricing in each city. Finally the report considers the typical development path for the implementation of road pricing, what each of the steps are likely to consist of, and where the EURoPrice cities lie on this development path.

Since Bristol is one of the case study cities for the current research, information provided in this paper on the city is particularly relevant to this review. The following extracts seek to inform understanding of the background to RUC in Bristol:

The historical city of Bristol is the largest urban area and the regional capital of south west England, providing a centre of industry, commerce, education and culture. In recent years the economic focus has been on the service sector with major banks and financial institutions relocating to the city, maintaining Bristol's position as the regional capital.

The paper goes on to recognize that

Substantial redevelopments are occurring in the city in parallel, with growth on the northern fringes of the city. Bristol does have excellent interurban transport connections - via direct motorway links to the rest of the country, an express train service to other major cities, local rail connections, an international airport and seaport. However, the historical development of the city with a highly radial road network with limited opportunities for cross town movements, combined with the lack of river crossings has exacerbated the problems of increasing traffic levels and congestion in the city. It is widely recognised that the congestion problems in the city cannot continue both for economical and environmental reasons.

The paper says that transport policies developed for the city focus on development control and land use planning and the management and supply of transport modes. It suggests further that the Local Plan (1997) for Bristol sets a land use policy with clear linkages to the rôle of transport planning. In addition, the provisional Local Transport Plan for Bristol provides detailed aims and measures for achieving a reduction in road-based traffic and improving the economic vitality and environment of Bristol. These measures include the construction of light rapid transit and improving the bus quality partnership with the local transport provider. The aims include targets for the following:

- To reduce growth in private car traffic by 20% over the next 5 years, and thereafter to seek a 20% reduction in private car traffic over the following 10 to 15 years
- To reduce injury collisions in line with national targets
- To increase annually the number of trips made on local bus and rail services
- To more than double the level of cycle use by 2002 and double it again by 2012
- To increase the number of walking trips in line with national targets.

In relation to social and political approval, the paper argues that investigation into acceptance both at a national and local level is a necessity for the successful implementation of any scheme. It says that

Many of the EURoPrice cities are already engaged in dialogue both at a political level with national policy makers and at the local level with all sectors of the community. At a local level some of this work is being undertaken in collaboration with other transport matters, environment and sustainable development. For instance Edinburgh is engaged in focus groups with the

business community, academics, politicians and the general public to discuss the impact of a scheme.

The paper attributes the success of the Trondheim scheme in part to the clear purpose and aims of the need for road pricing together with reliable technology and public acceptance. It also underlines the need for clear policy objectives and good marketing strategies. These, the authors suggest, need to link the benefits of road pricing to policies such as congestion reduction, air quality improvements and accessibility for all. In addition, the paper says that the concerns of business communities need to be addressed at a local level by scheme design.

In terms of implementation, the paper describes studies that have been undertaken to review existing examples including economics (both of the scheme and for the urban economy), transport network performance, environmental and safety implications, technology and public acceptability. It says that in Bristol, this work was progressed in partnership with the Department of Transport (now DTLR). Consultants undertook Stage 1 of the Traffic Restraint Study in 1994 which produced a review of effectiveness of traffic restraint measures based on worldwide experience. In Stage 2, a small number of feasible schemes were progressed in sufficient detail to enable public consultation and to facilitate a decision by Council on their possible introduction, to meet traffic reduction targets. As part of this study, the paper says

the MVA consultancy produced the Traffic Restraint Analysis Model (TRAM). Various options were tested based on three cordons surrounding the city centre with different scenarios of tolls, parking and fuel charges and times of day. The impact of such measures for businesses and drivers was considered through questionnaire surveys. The study concluded that a charge of between £1.20 and £1.90 (€1.85-2.93) per cordon per day (at 1991 prices) would be necessary to contribute significantly to transport and environmental objectives. A reduction in trips of 14% to 20% was anticipated. The results from the business sector indicated that relocation would not be an issue unless just the city centre cordon was implemented. For road pricing to be acceptable very significant public transport improvements would be required as a precondition. Those excluded from car ownership would gain significantly in terms of access to employment and social facilities. This study formed the background for continued development work.

Eliasson J and Mattsson L

Transport and Location Effects of Road Pricing: A Simulation Approach. *Journal of Transport Economics and Policy*, Vol 35, part 3, September 2001, pp 417-456

In this paper a model of a generic symmetric city is developed. The model is used to investigate the effects of road pricing in the form of congestion pricing and a toll road. The results indicate that the impacts on location are small compared to the impacts on traffic volumes, modal split, and trip distances. The different effects of congestion pricing and toll rings at different positions are considered.

Eliasson and Mattsson say that although the idea of road pricing or congestion pricing is old, there is still precious little practical experience. They assert that one issue that has been much debated is what location effects road pricing might have, believing that the question is complicated, since there are many forces working in opposite directions.

The authors say that in a monocentric city, with all employment located in a central business district, it is evident that increasing travel costs by imposing the full social

cost of travel will cause households to move closer to their jobs, that is, locate more centrally. Nevertheless, in a model where the location of different activities is not fixed, as in the case described by the authors, this will not necessarily be true.

Eliasson and Mattsson suggest that

Location impacts of road pricing are ambiguous. The effects on location depend on the congestion levels in the initial situation and how fast increasing travel costs will cause travel times to fall. The effects also depend on how the many complex interactions between the location of households, workplaces, shops, and service establishments exactly work out, and, perhaps more importantly, on what options the actors have to neutralise the effects of road pricing including changing modes of transport.

Ahlstrand I

The Politics and Economics of Transport Investment and Pricing in Stockholm. *Journal of Transport Economics and Policy*, Vol 35, Part 3, September 2001, pp 473-489

This paper traces the history of attempts to introduce road pricing in Stockholm, discusses why it failed and considers future possibilities. One of its main conclusions is that the use of the revenue from road pricing is of central importance for public support. Using road pricing revenue for public transport seems to be the most acceptable alternative to the general public according to survey results in Stockholm. In addition, the author recognizes that the co-operation of the business community is crucial to success. In this city, business interests, with the Chamber of Commerce as spokesman, are still against road pricing. This business community can only accept road tolls that are used to finance new roads.

European Commission

Urban Transport Pricing in Europe. Information taken from National Reports at <http://www.transport-pricing.net/nationalreport.html>

Country Overview of EEA countries

Country	Urban road pricing	Inter urban road pricing
Austria		There are toll roads in Austria
Belgium	Road toll for tunnel connection under the river Scheldt (<i>Liefkenshoektunnel</i>). Eurovignette. Pay-Parking-areas	There are no toll roads in Belgium.
Denmark	None. There have been demonstration projects but present Government has no political commitment to introduce urban road pricing schemes	Within the last three years, however, a road tax has been introduced in the shape of Storebaeltsbroen and Oeresundsbroen, the bridges connecting Sealand with Funen and Sealand with Malmö, Sweden. The road taxes on these stretches cannot be regarded as a behaviour regulating tax, but strictly as users' fee as a financial supplement in order to achieve sufficient funds for the construction.
Finland	In Finland urban road pricing has not been applied.	None
France	When the northern part of the ring road in Lyon was put in service in 1997, a toll was implemented by the concessionaire. But the reaction of the	Until the mid eighties, only the national government was allowed to implement road tolls on motorways. Tolling has been used a lot since the end of the fifties, to develop the

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	<p>population was so negative that the mayor of Lyon decided to drop the toll.</p> <p>In the Suburb of Toulouse, an existing national road was transformed into a motorway in 1996. But the reactions of the former users and the local population was so unfavourable that the toll plaza was removed. The local authorities had to purchase back the stretch from the concessionaire</p> <p>There are 3 successful urban road pricing schemes in France :</p> <p>In the Paris region, the A14 Highway enables population living in the western part of the region to reach the city centre easily. In Marseille, the "Prado-Carénage tunnel", uses an ancient railway line, and links the centre of the city to the eastern part of the urban area. Opened in 1993.</p> <p>In Lyon, two tunnels of the new northern part of the ring road are tolled. This provides a quick link between the western and the eastern parts of the urban area.</p> <p>In the west of the Paris region, a section of the A86 outer ring road, below the famous Forêt de St Germain, is being built under the regime of concession (cofiroute) and will be tolled. Opening planned in 2008.</p>	<p>French interurban motorway network. But road pricing has not usually been implemented in urban areas. Since 1985, local authorities can implement road pricing but only for bridges and tunnels and only for infrastructure financing. New forms of road pricing such as cordon or distance pricing are not possible yet.</p>
Germany	<p>At the moment it is legally not possible to introduce urban road pricing. From the point of tax law (e.g. dimension of charges/taxes; revenue use) and also human rights (non-restriction of basic rights; privacy issues) road pricing could be implemented but the responsibility of different institutions for different categories of roads proves to be a hindrance for the introduction.</p>	<p>There are no toll roads in Germany.</p>
Greece	<p>In Greece there are no comprehensive parking policies for the Metropolitan Areas of Athens and Thessaloniki and thus there is no homogeneous or rational parking pricing in these areas. Moreover, different parking policies are set by different municipalities and respectively of parking pricing according to certain criteria. Another basic conclusion is that different rules apply for different types of parking, especially with respect to the ownership or type of operation classification criteria.</p>	<p>There are two toll motorways in Greece. One goes from Athens to the Peloponnesus and the other goes from Athens to Thessaloniki. The cost is about US\$1 - US\$3 for the tolls.</p>
Ireland	<p>Tolls are payable at two points in the Dublin area - M50 Ring Road between the N4 and N3 interchanges only and on the R131 East Link Bridge. In each case the toll is under IR£ 1.00 for cars, with higher tolls for vans and trucks.</p>	<p>There are no tolls on other motorways or national routes</p>
Italy	<p><i>Genoa</i> Within PRoGRESS Genoa will demonstrate a cordon pricing scheme aimed to protect the city central area, using video plate detection technology. The selected DA has the effect of restricting access to centre while allowing the free crossing from east and west to west, east and north. The proposed demonstration scheme discourages the use of central streets for crossing East-West (and vice versa) and also for accessing inner destinations. The presence of several parking facilities located just outside the protected area will enable people to leave their cars outside the centre. Short stay parking will be provided for shopping trips The plate number is detected and</p>	<p>The country's famous super motorways or "autostrade" have tolls.</p>

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	<p>memorised by the video-OCR device at the gates and checked against a database containing exemptions and eligibility of charging. This updates the resident plate database with the time of day of passage(s) and the cumulative amount to be paid by the registered user. The supplier has been chosen and the installation of the gates is due to begin in October once the scheme is formally approved by the Town Council.</p> <p><i>Rome</i> Access Control: Road Pricing in the Broader Context of Urban Mobility Management — The Experience in Rome. Automated access control has been in operation since 11 August 2001 and full enforcement against violations will be in place by the end of the year. Access control in Rome has experienced important developments since its inception in 1989. From manual checks, the Limited Traffic Zone (LTZ) has been equipped with an automatic access control system capable of detecting all vehicles, identifying authorised vehicles via a radio frequency link, managing lists of authorised vehicles and proceeding against infractions. It is worthwhile highlighting that the On-Board Unit (OBU) does not only allow access to the LTZ but also to parking payment and the toll road system of the Italian highway network (TELEPASS). Technical and regulatory obstacles have been solved to allow high-level performance of the system. The transition from pilot to full-scale implementation required better integration among system components, improvements to the automatic identification of plates, safety of smart card payment, visual impact of the automatic gates, flexibility of the permit management system and respect of citizens' privacy.</p>	
<p>Luxembourg</p>	<p><i>Eurovignette</i> The Eurovignette (See B2.1.1) applies to vehicles greater than 12 tonnes. The price depends on the number of axles, the emission of polluting gases, the country of registration and the period of validity. Charges for vehicles with EURO 0 engines are 323LUF/day, 62527LUF/year for 4 axles or more.</p> <p><i>Pay-Parking-areas:</i> in the city centre are run by the city council and prices from vary from 20 to 40LUF per hour. There are five free car parks surrounding the capital which are connected with the centre by bus. In the city-centre drivers have to pay at least 20LUF.</p>	<p>There are no toll roads in Luxembourg.</p>

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Netherlands	To fight congestion, there have been ideas to charge a congestion fee for driving at rush hours and/or driving in congested areas. Between October 2000 and May 2001, congestion charging became a hot political issue. The resolved method of fee collection with a small number of toll gates in selected areas in the Randstad, was confronted by a lot of opposition. This opposition was organised by several interest groups, claiming this method was not fair and that the authorities failed to supply serious alternatives for those who were obliged to travel by car at specific moments on specific roads. During this debate there seemed to be a majority in favour of the idea that road pricing could solve the objections. In the political arena, the Minister of Transport, Public Works and Water Management withdrew the idea of toll gates due to political uncertainty on the public opinion on these measures, and made a run for a "kilometre charge". A report of Roel Pieper, ITS-consultant and former boardmember of Philips and Compaq, a guru on technology, made the preparations for this move. Pieper claimed the possibility of introducing a kilometre charge ("Mobimiles") in 2003, which was about 7 year earlier than expected. The argument that toll gates were necessary, because developing the techniques to introduce a kilometre charge lasted too long, was therefore no longer valuable. The cabinet proclaimed a proposal for legislation on the kilometre charge at the end of this year and declared the intention to start with the introduction of this measure in 2004. Differentiating the charge in relation to congestion, however, is planned. A political solution was found with a compromise in the form of a non-differentiating kilometre charge now, and a decision on the possibilities of differentiating the kilometre charge later.	There are no toll roads in the Netherlands.
Norway	Trondheim was the third and latest city in Norway to introduce a toll ring in October 1991, after Bergen (1986) and Oslo (1990). The Trondheim scheme was unique in two aspects, (i) it was fully electronic with non-stop toll lanes from the start, and (ii) it had time-differentiated charges.	There are no toll roads in Norway.
Portugal	No specific laws except those relative to parking. (BUT NO INFORMATION ABOUT WHETHER THERE IS ANY SCHEME)	There is a toll motorway, the "Auto-Estrada," that goes from Lisbon to Porto.
Spain		Spain's express motorways, the "autopistas," are toll roads and are identified by the letter A.
Sweden	The National Investigation on Road Tolls in 1994 concluded that road user charging applied to existing public roads should be considered as a tax (with the argument that a fee requires an obvious service in return), a new situation arose. This was one of the reasons behind why the planned road toll schemes in Stockholm and Gothenburg were turned down. Following the closing down of the Dennis agreement in 1997, including the plans for the Stockholm Toll Collection System, it was found that the legislation prepared for the Toll Ring solution was obsolete. Thus, in 1998 the government initiated a new investigation with the specific aim of preparing a legislation that allowed for a road user charge applied for environmental purposes (i.e. demand management). The results were subject to an extensive hearing process, but no final result or proposal for legislation has been put forward by the government. This is for obvious reasons: all previously prepared legislation has become obsolete due to major changes in the fee collection solution. Thus the government has now	There are no toll roads in Sweden.

	decided to hold back propositions for legislation until it can be applied to specific cases.	
Switzerland	There are no previous examples of urban road pricing in Switzerland. There are no ongoing examples of urban road pricing. However, the discussion about the introduction of this transport policy instrument is ongoing due to different reasons. There are no concrete future commitments to the introduction of urban road pricing in Switzerland but the policy traffic management context is favourable to its introduction as illustrated by the example of Bern.	Motorways in Switzerland require a toll sticker that costs approximately US\$28.
UK	The 2000 Transport Act, gives local authorities, outside Greater London, new powers to introduce Road User Charging (RUC) or Workplace Parking Levy (WPPL) Schemes where they believe these will be effective in tackling congestion and pollution in their areas. For London such powers already exist through the Greater London Authority (GLA) Act 1999. The Bill also provides for the revenue raised from these schemes to be ring-fenced and to be used specifically for local transport improvements. Cities with advanced plans include: London, Durham, Derbyshire, Nottingham, Bristol, Leeds	There are no toll roads in the United Kingdom, except some bridges and tunnels, e.g. Dartford Bridge and the Severn bridges. The first toll motorway has been approved, Birmingham Northern Relief Road.

Other countries

Canada

Toronto Highway 407

Major construction of roads and bridges has been undertaken in Ontario, Canada by a private-public partnership that has implemented the 407 ETR (Electronic Toll Road) scheme (407 ETR website). The technology and billing aspects of this scheme are particularly interesting in that in addition to IVU to roadside equipment communication, the system can also use automatic number plate reading (ANPR) video recognition systems. Moreover, billing takes place automatically after a vehicle has used the highway.

The 407 ETR runs east-west across the north of Toronto - Canada's largest city - from Highway 403 in the west to Highway 48 in the east for a total of 69 kilometres. The system monitors the entry and exit point of all vehicles from the 29 interchanges on the highway. Fully automatic tolling is possible using windscreen transponders that provide audio and visual feedback to drivers that their account is being debited.

Additionally, vehicles without transponders are also able to use the ETR. In this case, the tolls are tallied using a state-of-the-art number plate recognition system that sends a video image to a central processing computer when the vehicle enters and exits the highway. When the transaction has been processed, an invoice is then sent to the owner of the vehicle by mail.

Failure to settle their payments within 91 days results in the details of the offending vehicle (and driver) being sent to the Canadian Ministry of Transportation for plate denial. This may result in the vehicle licence plate not being renewed until all outstanding charges are paid in full and a person's account may also be sent to a debt collection agency.

USA

There are several interesting examples of urban road pricing in the USA;

Minneapolis and St Paul.

A research study was undertaken into the options for congestion charging in the twin cities of in the mid 1990s (Wilbur Smith Associates, 1997). The study also considered a possible state-wide mileage-based tax for Minnesota.

The study developed a series of pricing strategies based upon the results of traffic modelling. A total of 25 congestion pricing alternatives were identified, thirteen of which underwent further detailed analysis (based on the scenario for the year 2015). The 13 options covered a range of different roads, charged times and conditions, and additional measures. Pricing bands included peak, off-peak and free, and varied for different categories of vehicles. Regional travel demand models maintained by the local and state departments were used to evaluate potential changes in travel behaviour.

A major part of the study was concerned with outreach, public opinion and acceptability. Outreach included 13 focus groups (12 people for each session), a 'Citizens Jury' (24 jurors), 41 opinion leaders, over 1000 computer assisted personal interviews (using interactive video interview stations), and a land-use/equity symposium. Overall conclusions from the public outreach exercises were:

- Public acceptance of congestion pricing can be increased provided a variety of public, political, and technical issues are addressed. These include: providing transport alternatives to the tolled roadways; improving and promoting more flexible work hours; reducing the impacts of pricing on lower income and disadvantaged persons; and mitigating potential traffic diversion to local roads.
- Public acceptance of congestion pricing would greatly be influenced by addressing a publicly identified congestion problem, and clearly stipulating how revenues collected from user fees will be used to alleviate that problem.
- Congestion pricing applied region-wide was deemed more geographically equitable than spot, facility or corridor pricing.
- Congestion pricing should be implemented on congested facilities during congested periods, not during uncongested periods.
- Conclusions indicated that congestion pricing was viable and cost-effective for the twin cities, with specific public acceptability recommendations, but that the mileage-based tax would not be cost-effective if implemented by a single state.

Other US studies

As part of the Intermodal Surface Transport Efficiency Act (ISTEA) in 1991, the FHWA commenced testing and evaluation of the potential of congestion pricing. A US Congestion Pricing Program was established that reports periodically to Congress (USDOT, 1998). Projects within the programme are divided into active demonstration projects and pilot program feasibility studies. The active demonstration projects include:

San Diego, California - 13km reversible HOV on the I-15 highway which is open to a limited number of solo paying drivers (limited to 1025 vehicles). Vehicles with 2 or more passengers travel for free. Since March 1998, charges vary with the levels of congestion, and an express bus service has been introduced supported with revenues generated.

Houston, Texas - In January 1998, a 21km stretch of I-10 Katy Freeway equipped with a single lane reversible HOV lane (for vehicles with 3 or more people) began permitting vehicles (currently limited to 300 vehicles) with only two occupants to purchase entrance at \$2 per trip. The facility uses fully automated windshield-mounted transponders.

Lee County, Florida - In summer 1998, variable pricing was introduced on two toll bridges. Tolls either side of peak periods were reduced to encourage journey time shifts. Electronic toll collection facilities have also been installed. The project has been in operation for almost two years. It has a discount price in the peak shoulder hours, creating an incentive to shift peak traffic. Eligible customers with an electronic prepaid account and a transponder (25% of the vehicle traffic) shifted travel times into shoulder periods. The reduction of peak hour traffic lies between a 1-1.5% and 3.5-4% reduction (percentage of the total volume of vehicles).

Orange County, California

The SR-91 "Express Lanes" (or HOT Lanes) represents a private sector congestion pricing program. Opened in December 1995, the lanes have variable pricing and automated tolling. Tolls range from \$0.60 to \$3.20 depending on the time of day and levels of congestion. Vehicles carrying 3 persons or more receive a 50% discount. Tolls are automatically deducted from customers' pre-paid accounts. Transportation Corridor Agency (TCA) operates 51 miles of toll roads in Orange County and imposes peak period pricing in the major direction of travel on the Foothill Eastern. The San Joaquin Hills Board is considering value pricing with the goal of recommending an implementation at the same time next year.

Portland (Oregon)

Metro conducted a peak period pricing study. It was a regional study looking at all types of pricing, including single spot locations, partial facilities, whole facilities on existing roads, corridor pricing, area pricing and parking pricing. ECO Northwest created a new travel model to review the actual and projected impacts. The major goal was to determine if pricing was a desirable tool to manage congestion, but also to broaden education of the concept. Metro convened a citizen task force of 15 citizens as an oversight committee to make recommendations. There was an extensive public outreach process. A broad range study generates controversy but it also created a regional discussion. Media coverage was not negative and they had some public support. In June 1999, the task force recommended peak pricing as an appropriate tool to be considered on every major new highway project, but not on existing lanes. Also recommended the region select a pilot within two years. Recommendations were incorporated into the regional transportation plan. Next steps are corridor level studies including intensive outreach, a comparison of pricing to other solutions, and to establish design and operational characteristics. Options to be studied include the I-5 Columbia River Bridge, two major new highways or 5 HOT. In addition to the active demonstration projects, there is ongoing work in seven pilot programme feasibility studies, which are supported by FHWA. The two pilot schemes that have been in operation long enough to give data on the impacts of congestion pricing are reported in section 2 of this report.

It should be noted that the demonstration projects within the US programme are largely focussed on making better use of existing HOV and toll facilities, rather than restraining traffic per se. Large highways into the centre of cities, with the opportunity for making some lanes HOV and pricing lanes without restricting capacity, are more commonplace in the USA than the UK. The majority of the pilots and feasibility studies in the program examine the potential for congestion pricing on individual roads, rather than the more common UK approach of considering area-wide schemes.

California State Route 91 HOT Lane and I-15 Variable Pricing

The State Route 91 high occupancy tolling lane (HOT) was opened in December 1995 and is America's first toll road to employ variable congestion pricing (Caltrans website). It is a privately financed, fully automated 10-mile (15 km) group of four toll lanes, located on the median of an existing eight-lane highway in Orange County, California. Tolls vary during the day according to traffic volumes, direction and other factors so as to maintain free-flow conditions at all times. Currently, tolls follow a published schedule although the technology could permit tolls to vary dynamically. Cars with one or two people pay a toll while vehicles with three or more occupants travel free. The project was developed in a partnership between Caltrans (California Department of Transportation) and the California Private Transportation Company. All tolls are collected electronically by Electronic Fee Collection (EFC). The system utilises Dedicated Short-Range Communication (DSRC) as a means of communication between vehicles and roadside subsystems. There is not, as yet, nation-wide standardisation in the US (Traffic Technology Today, June/July 1999). However, the California Department of Transport developed a compatibility specification for automated vehicle identification equipment that the California Legislature made into law in July 1992 as Title 21. The SR91 electronic toll road meets the Title 21 standard. The Route 91 Electronic Toll Collection system uses a passive RF tag which utilises back-scatter technology to respond to information from a reader by reflecting and modulating the reader's RF signal. These passive RF tags are generally small and light and relatively inexpensive and have a longer battery life as they operate mostly on power generated by the reader.

Initial indications are that the SR91 Toll lanes have successfully created a market of commuters willing to pay premium tolls in order to bypass recurrent congestion on an urban freeway. By the end of the first year, between 70,000 and 80,000 users had obtained transponders and the peak period traffic increased so dramatically that a toll increase was required to protect the toll lanes from congestion (Caltrans website).

Toll lane traffic is currently at 26,000 vehicles per day. Surveys show that 65-70% of the travellers approved the idea of adding new tolled capacity to bypass congestion. However,

approval levels for the idea of operating the Highway as a private enterprise have remained in the 35-45% range both before the construction of the lanes and 5 months after opening. The results of a final report by Cal Poly evaluating the SR91 scheme on behalf of Caltrans (Cal Poly, 1998) were that there was a strong correlation between use of the express lanes and travel time savings, thus showing the objective to offer a congestion-free service was achieved. Of more relevance to road pricing are the results of HOV use, which were given free use of the HOV lane, and therefore priority over non-paying single occupancy vehicle (SOV) using the more congested alternative lanes. Results of monitoring showed a 40% growth in number of peak period HOVs carrying 3 or more passengers (HOV3+) during the first 3 months of operation when HOV3+ paid no tolls. Van-pooling data from local employers with many employees using SR91 showed a 10-15% rise in the formation of van pools and participation levels. This rise is against a small base level of around 3.7% HOV3+ before SR91 tolling opened and the growth in SOV traffic (due to extra capacity) actually meant average occupancy declined. Surveys found in fact that a larger number of commuters switched from HOV to SOV than vice versa in the year after the express lanes opened. The net effect was a 7% decrease in the proportion of HOV users as ride sharers were attracted to using SOV even if they had to pay for a congestion free expressway. Dynamic pricing on the Interstate 15 (I-15) pilot project in began in March 1998 with charges varying by the time of day and level of congestion. The system utilises vehicle transponders and overhead readers (Federal Highway Administration, 1998). Drivers are informed (via variable message signs) about the highest toll they can expect during the hours of operation (5:30am-9:30am and 2:30pm-7:30pm), with tolls ranging from 50 cents to \$4.00, under regular conditions. The San Diego Association of Governments (SANDAG) has the authority to allow tolls to increase to \$8.00 per one-way trip under certain conditions. The charges can change every 6 minutes in 50 cent increments. In response to drivers who may wish to shift modes, a new express bus service has been introduced as part of the pricing program.

I-15 is being monitored for a wide range of impacts. Preliminary results indicate high levels of HOV travel and speed have been sustained, with solo drivers reporting time savings of 10-20 minutes. Use of the HOV lane has also increased by 20%. The experience of the SR91 and I-15 schemes could be relevant to Hampshire if similar types of scheme were considered for the M27 corridor.

Houston, TX

The Katy HOV lane. Has proved to be overly popular with 2+ requirements, but under-utilised after it changed to 3+ occupancy during peak hours, and per person throughput dropped somewhat. QuickRide allowed a 2+ buy-in scenario and has been in operation for 2 years now. It has experienced a 25% increase per year and has 500 active accounts. Users pay \$2 each way during peak hours. An AVI system uses antenna to read transponders and debit the associated account. Users with 3+ occupancy have a pocket pouch for the transponders, but this creates a problem with enforcement. Financially, it is a breakeven proposition. Daily trips range between 150-200 users, but only 1 in 4 transponders are used in a week. Houston Metro plans to market the HOV lane more aggressively and improve the number of per day users. They are also expanding to the 290 corridor.

CDOT, Denver, Colorado

The Boulder Congestion Pricing Study. Value pricing proved to be quite difficult in Boulder. The public and politicians were opposed to pricing. The Denver study focuses exclusively on HOT lanes. The study, under discussion since 1996-97, started last summer and will be completed this winter. Mr. Swisher noted Senate Bill 88 that requires CDOT to issue an RFP for private entities to convert an HOV lane to a HOT lane. Consecutive facilities I-25 and US 36 are the only viable candidates for the HOT lane concept. CDOT is examining three levels: a minimal application with minimal modifications to the facility; a moderate application does not extend the existing facility, but gives more options and increases ridership; and the maximum modification, extends the I-25 HOV/HOT facilities several miles to north/northwest. The connecting of the two facilities (I-25 to US 36) makes it difficult to predict the increased usage for the HOV lanes. This affects the ability to model the selling capacity and the interest in the facility as a HOT lane. Three rounds of focus groups have been completed. Focus groups were initially sceptical but quickly switched, with 90% supporting the idea. However, CDOT knows this is not a political reality.

Boston

An HOV lane is available for travelling from the South towards the CBD during peak hours. In particular, the HOV lane is a shared lane in the divided area of north and southbound traffic. Depending on the time of day, HOV lane access is available to either side.

New Zealand

Over the last five years, New Zealand has been examining the way in which it prices, funds and manages its transport systems. This work has focused mainly on the road network, its externalities, and the pricing tools that could be used to manage them. At the government level this work has centred on economic analysis and technical solutions such as ERP. Where the public has become aware of government's proposals, however, there has been general opposition and a strong unwillingness to pay.

Australia

Apart from the parking schemes in Perth and Sydney, toll schemes in Melbourne and Sydney have been introduced.

The Melbourne City Link project

The Melbourne City Link motorway system, opened in 1999, is notable because, although it is not an urban charging scheme, it includes free-flow multi-lane electronic tolling (DSRC-based) and the concept of a 'day-pass' for unequipped vehicles. Charging of tolls commenced on 3 January 2000. There have now been over 550,000 tags issued and average weekday transactions have grown to about 350,000. There is a daily average of approximately 1,750 alleged toll evasions. Only 12% proceed to enforcement and approximately 440 vehicles have incurred more than ten alleged offences. The Burnley Tunnel is due to open to traffic in December 2000 to complete the project. The City Link scheme has now created a 22-km expressway linking the major routes between Melbourne Airport, the port and industrial centres in the south-east (Transurban web site). It uses a fully automatic cashless toll payment system of 16 gantries in total to pay for a network of new roads and improvements in Melbourne to speed flow of general traffic. A DSRC system is used with windscreen placed tags (IVUs) and users are required to set up pre-paid accounts or buy a day pass. EFC deducts the appropriate toll (for the class of vehicle) from central account and the tag gives an audio signal when this occurs and when account levels are running low. In the Melbourne City Link project, occasional visiting vehicles to the area that do not have an IVU can register their number plate for a "day pass" into the area on payment of a fee. A "grey list" database of visiting vehicle registration numbers is maintained within the central system. Images of registered visiting vehicles are captured by the enforcement cameras but are filtered out using the grey list and discarded.

The Sydney Harbour Bridge system has been installed with the "dual protocol" in place to serve the customers of other roads and other states. The Eastern Distributor tollway is also trialling the "dual protocol" and expects to make their system available to the public at about the same time as the RTA. The systems will be interoperable. The other Sydney tollways are expecting to have new ETC systems available for the public in early 2001.

Future commitments to urban road pricing

Studies are currently looking at;

- Interoperability
- Infrequent users
- Video tolling

Privacy

A report on privacy issues is being prepared. If SmartCards are introduced to electronic tolling they will assist in addressing privacy concerns, as they do not require keeping of toll accounts.

Enforcement of tolls

Enforcement is directly in the hands of state agencies as it is based directly on legislation. Enforcement regimes are being put in place now in New South Wales and Queensland. The regime was recently put in place in Victoria. Consistency between jurisdictions is necessary for interoperation.

Technology opportunities and threats

The next change in tolling technology in Australia will not occur for about four years. These technologies are expected to be mature and viable alternatives by that time.

Interoperation

To permit the customers to roam requires the toll road facility providers to "inter-operate", involving complex jurisdictional issues and technical, operational and commercial agreements. Interoperation between the Sydney tollways and also between Sydney, Melbourne and Brisbane tollways is a key outcome.

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