

2 Transport Issues

TRAVEL PATTERNS AND LEVELS OF SERVICE

2.1 The ever increasing role of transport in our daily lives in attempting to meet our requirements for travel has led to a number of transport induced problems. This section sets out these problems explaining how transport has contributed. These are in effect the issues that the LTS must address if Edinburgh is to have an accessible, integrated and socially inclusive transport system.

2.2 Travel patterns change because new opportunities arise from technological and economic development; and because of new kinds (and the relocation) of travel destinations.



Horse drawn tram on Princes Street c.1890

2.3 Major changes in travel patterns in and around Edinburgh in recent years reflect similar changes elsewhere in the UK. New road infrastructure, especially the city bypass, has increased the potential for longer distance, and particularly orbital, travel by car. The growth of out of centre shopping and employment, together with a decline in employment in some older industries, has reduced the numbers of trips that are easily served by public transport. These factors combine so that, despite some success for policies promoting alternatives, car use continues to grow, especially to destinations outside the city centre.

2.4 Results from the 2001 Census show that:

- Car ownership has grown between 1991 and 2001, so that 60.5% of the City’s households now have a car available, up from 53.5% in 1991 and 46.4% in 1981. The fastest rate of growth in car ownership was amongst those households that already had at least one car.
- Car use for the journey to work has increased from 45.4% of total work trips in 1991 to 49.2% in 2001. Amongst the remaining trips, there has been a reduction in the use of the bus, a doubling of cycle use, and an increase of about a sixth in the numbers of people walking to work. The rate of decline in bus use was much slower however between 1991 and 2001 than between 1981 and 1991.

2.5 Current travel patterns in the city by residents for all trips are summarised in Table 2.1. However, data on travel into Edinburgh by residents of other local authorities, and vice versa, is more difficult to obtain - yet the City’s transport environment is significantly influenced by travel from elsewhere. This is particularly the case in the west of Edinburgh, which is adjacent to large concentrations of population in West Lothian and Fife.

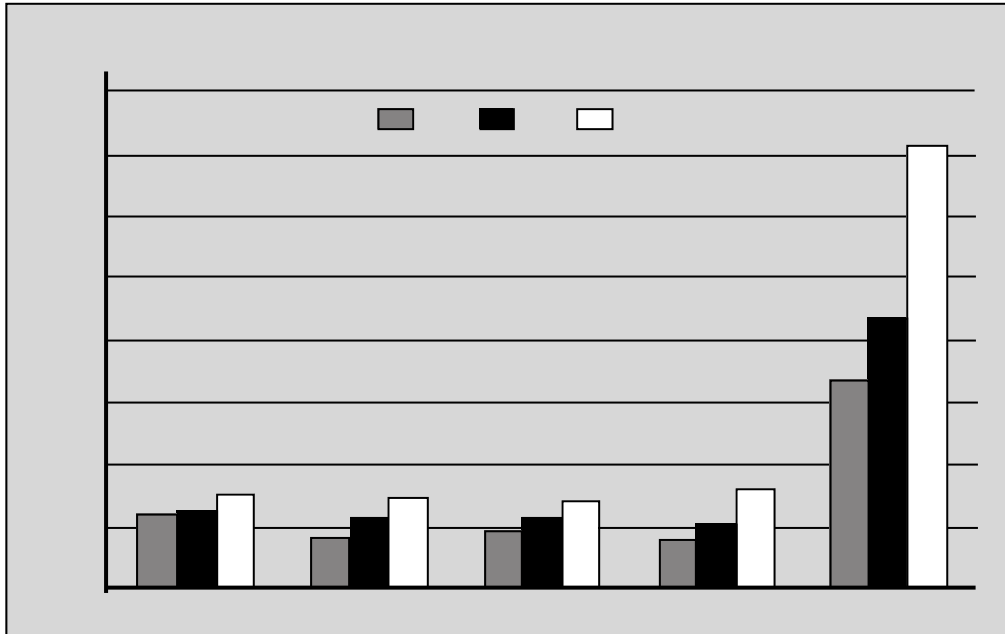
Table 2.1 - All trips by Edinburgh residents by mode, 2001

Purpose	Cycle	Walk	Public Transport	Car	Other
All Trips	1.8	25.3	17.8	52.8	2.2

NB: Sample size 2,703 with figures shown being percentages of all trips made; Data excludes trips under 1/4 mile/less than five min. on foot. Trips are to all destinations, within or outwith the City.

2.6 Increasing congestion is further illustrated by Figure 2.1 below. This graph shows expected time loss due to congestion, if traffic is allowed to grow at present rates without any congestion prevention measures being introduced.

Figure 2.1 - Time lost in congestion, City of Edinburgh, 2001-2021



TWO • TRANSPORT ISSUES

2.7 Traffic growth is further fuelled by longer journeys. Nationally, the time that people spend travelling each day has remained remarkably constant over the years. However, upgraded roads and sometimes other transport systems have allowed people to travel further during that constant time; resulting in, for example, long-distance commuting. New and upgraded roads and car oriented development mean much of this longer distance travel is by car.

2.8 So it is not surprising that traffic in Edinburgh continued to grow during the 1990s. However, the volume of peak-hour traffic coming into the city centre has actually stabilised in recent years. Instead, there has been a considerable increase in traffic outwith the centre, and during off-peak hours. To an extent this shows the success of the policy of restricting parking provision in new developments in the centre, but also reflects economic dispersal. The latest data shows that:

- City centre traffic levels (based on a 1 3/4-hour annual vehicle occupancy count) have remained approximately constant on a 1997 base;
- Traffic on main radial routes into the City has risen by somewhere between 3.4% and 9% since 1996.

2.9 Despite these changes, Table 2.1 shows that walking and public transport still account for significant proportions of travel in Edinburgh, much higher than in most other UK cities of similar size. (If very short trips are included, walking is even more important.) This may be due to a variety of factors, such as Edinburgh’s dense urban structure, its relatively cheap and comprehensive public transport network, its parking policy over many years, and the improvements to public transport, cycling and walking facilities. It indicates a very strong position from which to build a long-term sustainable transport strategy. (See also Chapter 4, Achievements and Future Targets).

2.10 Whilst most travel to and within Edinburgh is road based, the rail network is

important for travel to the city centre, and for medium/long distance travel. Edinburgh's rail infrastructure has a number of bottlenecks, principally at Waverley Station (the west end is currently at its practical capacity, according to Network Rail) and on the East Coast Main Line east of Edinburgh. There is also a separate issue of overcrowding on certain services although work is ongoing to address this.

- 2.11 The redevelopment of Waverley Station and the Waverley Valley is a unique opportunity to reshape part of central Edinburgh into a model for sustainable travel. It also, however, poses many challenges, and it is vital that the right choices are made for Edinburgh in developing this area.



Princes Street at Waverley c.1950

ROAD SAFETY

- 2.12 Road safety is a national and local priority. The long-term trend in overall accident numbers is downwards, and the number killed or seriously injured on Edinburgh's roads has fallen dramatically over the past five years. Accidents involving children, pedestrians and cyclists, although falling, remain unacceptably high.
- 2.13 While progress is clearly being made, efforts must be redoubled if existing, or future targets are to be achieved. The ultimate accident reduction aim must be that no one will be killed in road traffic accidents. This 'Vision Zero', as it is called, is the long-term basis for the Council's road safety policy.

ENVIRONMENT

- 2.14 Transport affects the environment in a number of ways:

Energy Consumption and Climate Change

- 2.15 In the UK, transport accounts for about 30% of all energy consumed, and is the sector with the fastest growth in energy consumption. At present, almost all the energy used by transport comes from fossil fuel. This has a direct impact on climate change.

Air Quality

- 2.16 Transport is the biggest single source of most urban air pollution.
- 2.17 The pollutants produced by transport which are of most concern include particulates, nitrogen oxides, sulphur oxides, carbon monoxide and hydrocarbons. But it also produces Volatile Organic Compounds, formaldehyde, lead, ozone and benzene; these tend to be pumped out as 'cocktails', the combined effect of which is not well researched. They can damage plant and animal life as well as human health, even at considerable distances from their point of origin. Nitrogen Dioxide has been shown to impair respiratory cell function, damage blood capillaries and the immune system, but not at levels currently experienced in Edinburgh. It may also increase susceptibility to infection and aggravate asthma.
- 2.18 In 1997, the government published a National Air Quality Strategy and introduced a statutory process of local air quality management under the Environment Act 1995. Local authorities are not under a legal obligation to achieve the objectives set out in the Air Quality (Scotland) Amendment Regulations 2002 which prescribe air quality

objectives and dates by when they must be achieved. However they are required to show that they are doing all they reasonably can to work towards them. The Council's Air Quality Action Plan for Area Designated 31 December 2000 sets out the means by which the Council will seek to achieve the objective for its Air Quality Management Area (AQMA).

- 2.19 Stage 1 and 2 reviews indicated that all objectives would be achieved apart from the annual objective for nitrogen dioxide (NO₂) and the standard for particulates (PM₁₀). The third stage review concluded that the particulate standard would be achieved, as set at that time, but that the annual objective for NO₂ would be unlikely to be met at eight locations. However, since that time, the Scottish Executive has revised the objective for PM₁₀ which will require the Council to undertake further detailed assessment to determine if it will meet this revised target. The locations unlikely to meet the NO₂ objective are shown on Plan 3 and constitute the AQMA designated in December 2000. A further review in the AQMA concluded that five locations were predicted to fail and two would meet the standard but only by a very small amount. Health effects do not occur at the levels of NO₂ experienced in Edinburgh, even for the typical one hour levels that reach a maximum of 80 µgm⁻³. Health effects only occur at levels in excess of 200 µgm⁻³.

Transport Infrastructure

- 2.20 Transport infrastructure uses energy and materials during construction, e.g. gravel, crushed rock, and bitumen. The vast majority of materials used are new, rather than recycled. Roads, including parking, have been estimated to occupy 19% of the total surface area of cities. In 1976 it was estimated that 20% of land in housing estates is used for roads/parking (this figure is probably higher in newer developments).
- 2.21 'Run-off', is the material that 'washes off' highways, and to a lesser extent railway tracks. It includes salt and herbicides put down to control ice and weeds respectively. It can also include spillages and leaks from cars such as oil and tyre rubber. This run off is then often washed into stormwater drains, which then runs untreated directly into open waterways.
- 2.22 Transport infrastructure also affects habitats. However, this is not always negative, since some species actually appear to thrive on transport corridors, particularly if they become less intensively used.

Noise

- 2.23 Noise has a nuisance impact, which can be serious, but there is increasing evidence that it also affects health, especially mental health. Vibration, which is closely related, can impact on the built environment, and damage buildings and people.

SOCIAL INCLUSION

- 2.24 Lack of access to facilities and services creates social exclusion, so transport policy plays a key part in tackling this issue.
- 2.25 Elderly and disabled people are most vulnerable to social exclusion. However many others experience exclusion, including poorer people, children, women, and parents with young children. They need good public transport, reduced traffic volumes and speeds, co-ordinated land use and transport planning, and accessible public transport vehicles and services to ensure that all sectors of society enjoy a high level of accessibility and quality of life.

LOCAL ECONOMY

- 2.26 The local economy of any city depends on the movement of people and goods, yet it is damaged by congestion, severance and other negative impacts of transport use, particularly by unsustainable levels of car use.
- 2.27 In Edinburgh, these issues are most clearly illustrated in the city centre, though areas on the outskirts of the city - especially around Newcraighall and the Gyle/Edinburgh Park - are now suffering the impact of high traffic levels.
- 2.28 Access to all major centres of activity by public transport, foot and cycle should, therefore, be improved. However, it is even more important that future planning policy steers major travel generating development to areas that are well served by public transport; and to support local centres, which are crucial to accessibility by sustainable modes.
- 2.29 There is also a need to address the ‘micro-economic’ issues, which impact on the vitality, variety and accessibility of the city. The transport system must also ensure that all its citizens share Edinburgh’s economic success.

THREE • CONSULTATION