Two steps forward and one back

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Abstract

The city of Edinburgh Council has published an Environment Strategy which fulfils its obligation under Agenda 21 of the Rio Earth Summit, 1992. The Council’s proposals are grouped into 10 objective of which those concerning planning, the built environment and transport are of most relevance to this conference. The Council’s proposals and Action Plan incorporate and extend the moving FORWARD transport policies inherited from Lothian Regional Council which were described at the first International Conference on Urban Transport held in 1995. This paper looks at proposals contained within the Action Plan, indicators and targets selected by which to judge progress in implementing the Action Plan, and the results to date in monitoring these indicators. The Lothian Structure Plan has a key objective of locating new development where the need for car travel can be reduced. The planning and built environment sections of the Council’s environment strategy therefore propose indicators which look at where new housing development is being located, and the economic health of local shopping centres. The transport strategy identifies three ‘headline’ topics of modal split road safety and air pollution. The paper will discuss the results of monitoring indicators for these topics on how the trends relate to the stated targets.
1 Background

After a year of gestation, which included 2 periods of public consultation, an Environment Strategy was published in Spring 1998 by the City of Edinburgh Council. This fulfils the Council’s obligations under Agenda 21 of the Rio Earth Summit convened by the United Nations. (Agenda 21 is a comprehensive action plan for the pursuit of sustainable development into the next century with detailed recommendations addressed to international agencies, non-governmental organisations, national governments and local governments such as the City of Edinburgh Council.) Actions in the Council’s strategy are expressed in a framework of 10 objectives:

- Energy
- Natural Environment
- Purchasing
- Transport
- Built Environment
- Waste
- Raise Awareness
- Planning
- Economy
- Pollution

Actions within the objectives for planning, the built environment and transport are of most relevance to a conference on Urban Transport & the Environment but there are linkages with some aspects of energy, raising awareness and pollution. It can be seen that production of an integrated strategy for urban transport and the environment therefore brings forward recommendations which affect many areas of life both for people living in urban areas and for those outside.

The Council’s strategy incorporates policies inherited from Lothian Regional Council when that was dissolved in April 1996. Policies contained within the Lothian Region Structure Plan and within the Lothian moving FORWARD transport strategy are two major statements which have been carried through into Edinburgh’s Environment Strategy.

1.1 Lothian Structure Plan

The 1994 Lothian Structure Plan contained policies and proposals for the strategic development of land and transport in an area centred on Edinburgh and extending up to 50km to the east and west and up to 30 km southwards from the shore of the Firth of Forth in SE Scotland. 2½ years after it was finalised the Secretary of State approved it with some modifications in July 1997. There is a key objective to locate new development where the need for car travel can be reduced and, if it is outside Edinburgh, to locations where use of public transport is quite feasible for journeys into Edinburgh.
The last 20+ years have seen a substantial change in Scotland’s shopping characteristics and habits. The Structure Plan wishes to support existing shopping centres and favours of out-of-town retail development only where it meets 7 criteria. The countryside around the built-up area of Edinburgh is designated as Green Belt and after considerable consultation only one segment is proposed for release for residential and other development that can easily be served by public transport. On balance, the remaining segments are judged to be countryside of better quality or to have more development constraints. Most other development within Edinburgh is expected to occur on what is designated ‘brown field’ land, which has already been developed at least once before.

The Structure Plan contains a variety of new public transport proposals some utilising land which is part of a network of rail lines closed to passenger use or to all traffic and dismantled.

1.2 moving FORWARD

As part of the review of policies which led to the 1994 Structure Plan, the local authorities and the Scottish Office commissioned a transport and environment study by MVA et al. This showed that Edinburgh’s transport problems will worsen unless action is taken requiring substantial investment. Titled “moving FORWARD”, Lothian Region launched a new strategy. Concern about the role of cars and environmental damage required a reassessment of travel habits and policies so citizens could anticipate and respond to change.

Table 1 Travel to work in Edinburgh

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</thead>
<tbody>
<tr>
<td>car, m/c</td>
<td>29.1%</td>
<td>38.2%</td>
<td>45.8%</td>
<td>47%</td>
<td>36%</td>
</tr>
<tr>
<td>pub.transport</td>
<td>46.5%</td>
<td>41.3%</td>
<td>32.1%</td>
<td>34%</td>
<td>41%</td>
</tr>
<tr>
<td>walk</td>
<td>19.9%</td>
<td>16.9%</td>
<td>14.5%</td>
<td>16%</td>
<td>18%</td>
</tr>
<tr>
<td>bicycle</td>
<td>0.7%</td>
<td>1.4%</td>
<td>1.8%</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>other</td>
<td>3.8%</td>
<td>2.2%</td>
<td>5.8%</td>
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</tbody>
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Table 1, taken from a paper presented by the author at the first International Conference on Urban Transport and the Environment, shows that journeys to work made in Edinburgh between 1971 and 1991
saw an increase of 50% in the percentage of people using a car. Using cars more often, and for longer journeys causes more:

- accidents
- traffic congestion
- noise and air pollution
- pressure on parking places
- costs for businessmen
- consumption of limited fuel

Greater reliance on cars also causes public transport problems, reduced mobility for persons without access to a car, and less pleasant and less safe conditions for pedestrians and cyclists. In addition to targets set for choice of modes for journeys 6 days a week, other targets were set for road accident casualties and nitrogen dioxide atmospheric pollution from traffic.

2 An Environment Strategy

In April 1996 the City of Edinburgh Council was formed as the unitary local authority for the 450000 people living within the capital city of Scotland. It covers an area of 262 km². The Council has statutory powers covering many aspects of everyday life. The Environment Strategy¹ is one document which shows how it is possible to bring together policies from these many aspects and express them in an integrated manner. Each of the 10 main objectives has several more detailed sub-objectives stated against which particular actions can be listed. For some parts of the Action Plan collaboration is proposed with quasi-non-governmental organisations, voluntary organisations and other bodies and agencies. Wherever possible, for each particular action timescales and resource implications have been ascertained together with possible indicators by which performance may be monitored. In this chapter each of the three objectives most clearly linked to Urban Transport and the Environment is examined in turn, the proposed actions noted, and where an indicator is proposed values are provided where known.

2.1 Planning

Sub-objectives related to planning include: develop, implement planning policies to promote sustainable development; take development decisions based on best available information and best practice as regards environmental impact; (linked with promoting awareness) promote and encourage local community participation in local environmental issues and the wider sustainability agenda; (linked with pollution) improve and reclaim contaminated land for appropriate uses;
(linked with built environment) improve the quality of existing buildings, housing and associated landscapes.

The preparation of Structure and Local Plans is a responsibility of local authorities. But the policies and plans are developed in consultation with all parts of the local community. Through community focus workshops various communities are being involved in drawing up their Local Agendas for Action in which they have stated their priorities. Later this year two trial communities will be involved in a pilot exercise to develop sustainability indicators for their areas.

Both Structure Plans and Local Plans have various aspects of their policies monitored. For instance, is derelict and vacant land being remediated so that redevelopment can occur where there is already infrastructure instead of on greenfield, undeveloped and unserviced land? In 1996 154 Ha of derelict or vacant land existed in Edinburgh, 0.59% of the city’s area. 3.7 Ha of such land was taken off the register as being remediated. A 3 year programme for dealing with 54 Ha of contaminated land has just started.

The health of shopping centres can be measured by the percentage of units vacant. Within the city centre 6.7% of units are vacant whereas in the 14 District shopping centres 10.9% are vacant. A policy of restricting out-of-town shopping is matched by policies for improving the attractiveness of existing centres. If people shop locally they are less likely to use their cars. In some centres the Council is contributing towards the cost of refurbishment, working with local traders to promote a loyalty card, and with a variety of organisations to improve the shopping environment. The Council is also working to improve the City Centre shopping environment and facilities.

In an ‘after’ survey of a popular edge-of-town shopping centre Roger Tym et al calculated that as more people were using their cars to reach it, and travelling longer distances than before, fuel consumed for shopping travel in the study area increased by 80% and CO₂ emissions doubled. This is equivalent to 5% of total emission levels for all journey purposes in the study area. The Council is working to improve public transport to that shopping centre so that its use can rise from 9% to the 15-25% seen at other district centres in Edinburgh and the operator is being encouraged to increase walk/cycle access from 6% to 15-30% as reported in a thesis by the author, R L Williams.
2.2 Built Environment

Sub-objectives related to the built environment include: improve the quality of existing buildings, housing and associated landscapes; provide a safer, more accessible built environment for our communities; protect, maintain and enhance the City’s cultural, historic and archaeological heritage; and achieve high environmental standards in refurbishing and redeveloping existing buildings, housing and surrounding areas.

In Edinburgh’s historic centre footways on the main shopping street have been widened and only buses and bikes are permitted to travel eastbound to provide a safer environment. The historic residential areas to the north and south are being refurbished and where buildings fall out of use some are reconverted/redeveloped into housing or compatible mixed uses to recreate the lively urban atmosphere of former times.

In the suburbs when factories fall out of use it is not uncommon to see housing being built on the site after any land remediation has occurred. An indicator gives the former status of land used for new housing.

Table 2 Previous status of land, for housing completed 1991-96

<table>
<thead>
<tr>
<th>Brownfield</th>
<th>Greenfield</th>
<th>Infill</th>
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<tbody>
<tr>
<td>agriculture</td>
<td>16.4%</td>
<td>cleared site</td>
</tr>
<tr>
<td>open space</td>
<td>4.1%</td>
<td>garden</td>
</tr>
<tr>
<td>other</td>
<td>3.2%</td>
<td>open space</td>
</tr>
<tr>
<td></td>
<td></td>
<td>other</td>
</tr>
<tr>
<td>Totals</td>
<td>57.9%</td>
<td>23.7%</td>
</tr>
</tbody>
</table>

To reduce continuing urban sprawl the British government has raised the target for future housing to be on brownfield land from 50% to 60%. Edinburgh would appear to be working to this target and so minimise the length of journeys people might need to make.

2.3 Transport

The three headline indicators from the former Lothian’s moving FORWARD policy have been carried on into the Environment Strategy and additional ones are being proposed to relate to some of the sub-objectives which have now been defined: encourage and promote alternative forms of transport such as walking, cycling, rail and bus, with employees and the wider community; to reduce the Council’s use of
private and Council-owned cars on Council business; to reduce the need for movement of both people and goods across the city; (linked with awareness) work in partnership with all sectors of the community to change our decisions towards sustainable activities; promote and encourage local community participation in local environmental issues and the wider sustainability agenda; (linked with energy) reduce the Council’s energy consumption in buildings and associated use in vehicles and equipment; promote energy efficiency and conservation through the Council and the wider community; explore the use of alternative fuels, recoverable energy sources for vehicles and buildings.

2.3.1 Travel modes
Table 1 provided the modal split trends and targets for Edinburgh - but the next census by which to check progress is still 3 years away. A sample household survey is programmed for early summer 1998 and some results may be available by early autumn. This survey is designed to elicit information about travel to work, as used for the census. Another time series which gives an indication of changes is a morning peak hour count of people entering central Edinburgh. Table 3 appears to show successes and failures. Whilst the overall volume of travel has fallen the percentage of cycle use has increased, but the percentage of car use has risen. The decline in public transport numbers is largely bus passengers as rail passengers have increased in number. Held up for more than 2 years by a requirement for bus priority measures to get Scottish Office approval, the first part of the ‘Greenways’ scheme was brought into effect in August 1997. Early results for its effectiveness may be evident by autumn 1998. More effective strategies will be required for walk & cycle modes to reach their targets for 2000 and 2010.

Table 3 Travel to central Edinburgh, morning peak survey results

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<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>car</td>
<td>27097</td>
<td>36.6</td>
<td>26214</td>
</tr>
<tr>
<td>bus+rail</td>
<td>30932</td>
<td>41.7</td>
<td>29212</td>
</tr>
<tr>
<td>walk</td>
<td>assume</td>
<td>15.7</td>
<td>assume</td>
</tr>
<tr>
<td>bicycle</td>
<td>684</td>
<td>0.92</td>
<td>583</td>
</tr>
<tr>
<td>other</td>
<td>3745</td>
<td>5.1</td>
<td>2792</td>
</tr>
<tr>
<td>Total</td>
<td>74090</td>
<td></td>
<td>68772</td>
</tr>
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For Council staff, indicators are being proposed of the number of business miles travelled by car by Council employees as well as numbers of Council employees who drive to work. Action taken to date to reduce business miles/mode of travel includes providing bus daycards for staff to use, encouragement for use of pool cars, requesting essential car users not to bring their car to work if no business journeys are required that day, and reducing the amount of free car parking available for staff use.

In collaboration with the Chamber of Commerce, other firms are being encouraged to prepare Green Commuter Plans for their staff wherein alternative forms of transport are to be encouraged in place of the private car. Lothian Health Board is also interested in a Travel Awareness campaign aimed at individual citizens as many people no longer take regular exercise and are more likely to fall ill as a consequence. However many regular journeys are less than 3-8 km and walking or cycling for these distances is not difficult for a person of average fitness and is sufficient to reduce the chance of certain diseases.

### 2.3.2 Road safety

The *moving FORWARD* road safety target adopted was a version of central government policy to cut casualties by a third by 2000 from the average of the years 1981-1985. Child casualties were targeted to be halved. The reduction in fatalities has now met the target as has the reduction in serious injuries. However the targets for slight injury casualties and child casualties have still to be reached. The new City of Edinburgh Council has almost concluded preparing its Road Safety Plan and this will consider further steps to achieve these targets for the year 2000 and look at possible targets for the period thereafter.

### 2.3.3 Air pollution

Since 1991, Nitrogen Dioxide levels have been measured at 4 sites in Edinburgh. Most of the sites were found to be above the European 98%ile guide value of 135 micrograms/m$^3$, one was regularly above the 98%ile maximum limit value of 200 micrograms/m$^3$. More sites are now installed so when the *moving FORWARD* strategy was adopted in 1994 it was noted that to meet the European guide value would require an average reduction of 20% in emissions recorded at 14 sites. Table 4 shows that there is no clear downward trend for the initial 4 sites, or for the larger number of sites. Following passage of the Traffic Reduction Act the Council is now applying to the government for a grant to install equipment to measure other pollutants at more sites than the few which
Table 4 98%-ile annual concentration of Nitrogen Dioxide

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<tr>
<td>Ave. 4 sites range</td>
<td>203-</td>
<td>145-</td>
<td>156-</td>
<td>125-</td>
<td>149-</td>
<td>189-</td>
</tr>
<tr>
<td>Ave.12 sites range</td>
<td>110-</td>
<td>265-</td>
<td>148-</td>
<td>185-</td>
<td>135-</td>
<td>125-</td>
</tr>
<tr>
<td></td>
<td>148-</td>
<td>220-</td>
<td>171-</td>
<td>215-</td>
<td>215-</td>
<td>160-</td>
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<td>265-</td>
<td>185-</td>
<td>190-</td>
<td>305-</td>
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<td>156-</td>
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<td>95-278</td>
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| currentl have that capability, to establish what the general base-line is. The Council has also signed up to reducing Carbon Dioxide emissions due to energy and transport by 30%. What the current emission levels are and how it will achieve this target is currently being established.

3 Conclusions

The title implies that Edinburgh’s performance against targets set for several environmental indicators has much ‘good news’ but some ‘bad’.

In the planning section it was stated that in 1996 only 2.5% of derelict or vacant land was remediated, but 35% is programmed to be treated in the next 3 years. If shopping centre health can be measured by vacancy rates, in the city centre 6.7% of units were vacant in 1996, with District Centres having an average vacancy rate of 10.9%. The Council is working to improving several of these shopping centres. An after study of a new edge-of-town shopping centre showed that fuel consumed by people shopping there was 80% more than the amount consumed in their previous shopping habits and CO₂ emissions had doubled.

In the built environment section it was reported that in the 5 years to 1996 57.9% of new housing was on ‘brownfield’ land with an extra 18.6% being infill development. This will discourage dispersal of travel.

In the transport section, for travel into the city centre the percentage of rail journeys has increased, cycle-use is also increasing but has an ambitious target for 2000. But by 1996 the percentage of people walking or using buses was still declining. The fall in number of fatal and serious casualties has passed the target set 10 years ago, but slight injuries and some of the categories of child casualties have not declined to their
targets. Measurements of atmospheric Nitrogen Dioxide have fluctuated widely but seem little nearer to meeting the European guideline.

4 Acknowledgements

The Director of City Development, City of Edinburgh Council is thanked for letting me present this paper. Any opinions made are however my own and may not be those of my Department, nor of the Council.

5 References


