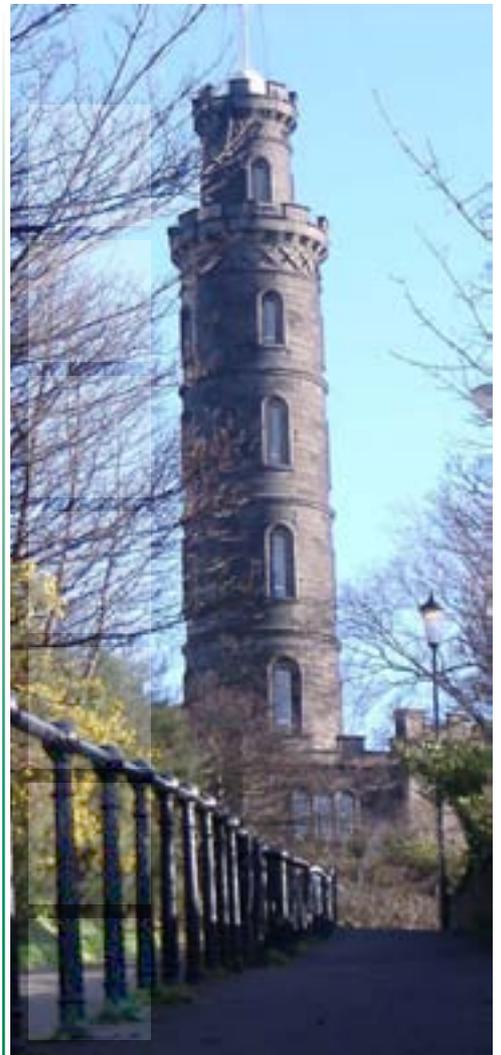
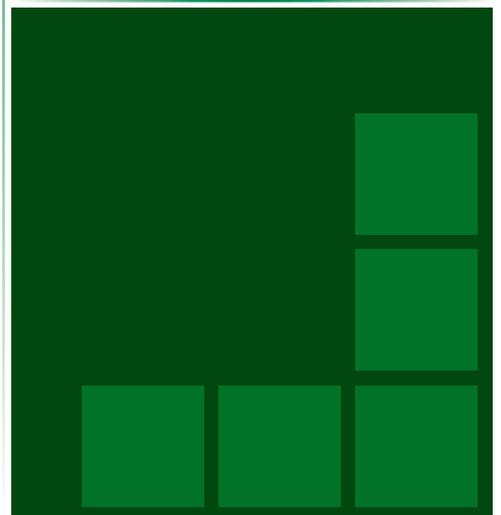
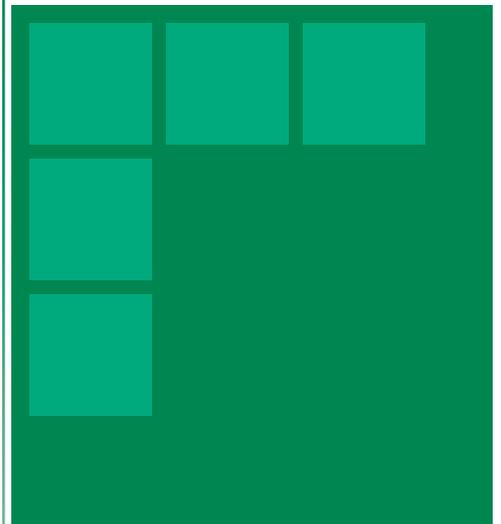
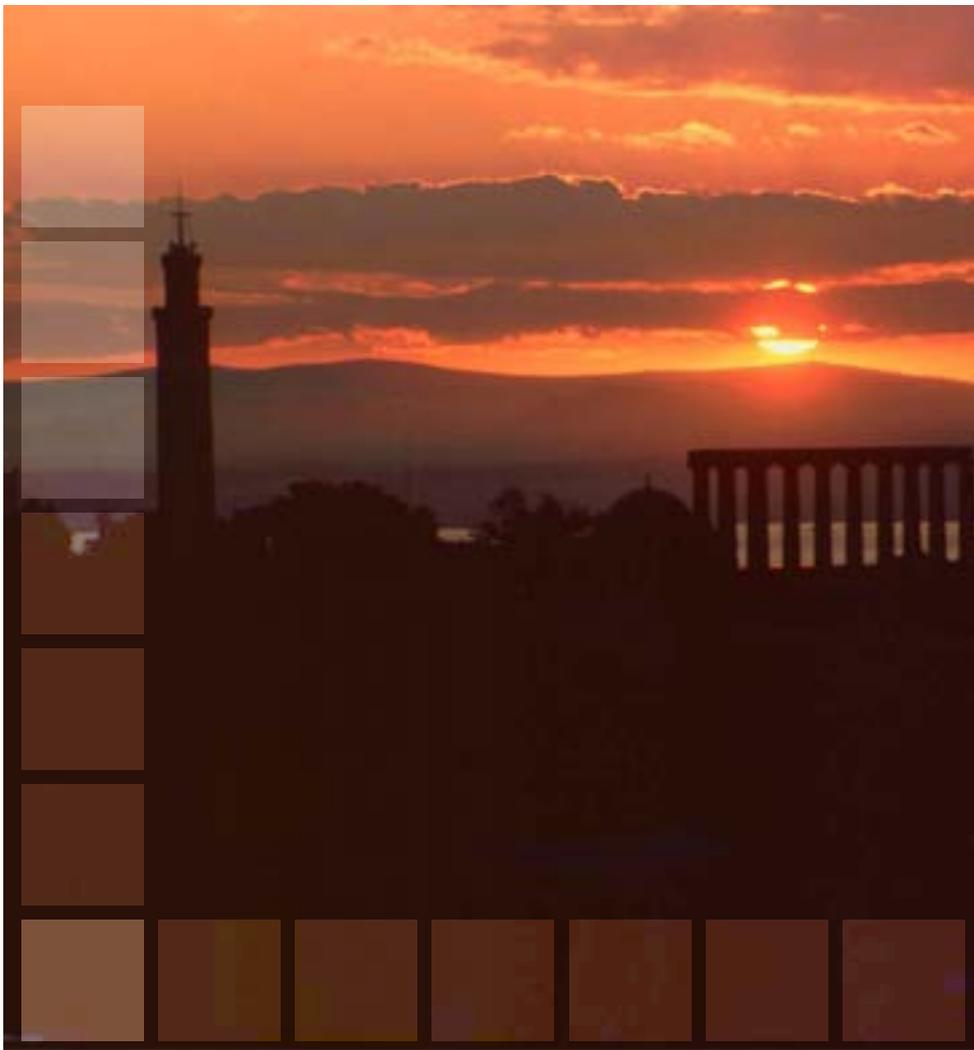
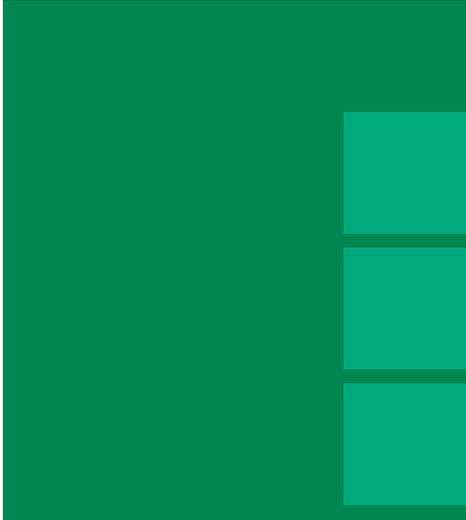


E D I N B U R G H ' S
E N V I R O N M E N T
STATE OF THE ENVIRONMENT AUDIT



Summary
conclusions
and findings



2 Summary conclusions and findings

Introduction

- 2.1 This chapter draws together key conclusions and findings from the detailed topic chapters which follow. It is organised under three headings :
- General conclusions
 - Common themes
 - Headline findings for specific topics / chapters
- 2.2 The headline findings take the form of bullet points and are presented in a series of tables, each relating to a specialist topic / chapter. The table numbers correspond to the chapter numbers used in this report. A standard layout is adopted for summarising each topic, dealing with :
- (i) why the topic is significant, in environmental terms
 - (ii) characteristics and recent trends in Edinburgh
 - (iii) significant issues, in relation to Edinburgh
 - (iv) what is being done to tackle these issues
- 2.3 In addition to these conclusions and findings, a set of provisional environmental indicators has been drafted, and these are presented as Appendix A at the end of this report. The indicators are themselves grouped in 2 tables, comprising :
1. Time series (trend) indicators
 2. Comparative Edinburgh / Scotland indicators

General conclusions

- 2.4 Despite the limitations of current information sources (described in the previous chapter), a more comprehensive picture is beginning to emerge of environmental conditions in Edinburgh, and how these are changing. The headline findings presented later in this chapter and the indicators in Appendix A point to something of a mixed score sheet.
- 2.5 Edinburgh generally lives up to its reputation as a clean, attractive, healthy and sustainable city which values its rich natural and cultural heritage. However, it is also a rapidly growing, economically successful city, which can place strains on the environment. The signs are that these strains are now being recognised and addressed, with real progress now being recorded on a number of measures (e.g. water quality, street cleanliness, recycling, public transport patronage, biodiversity). However these and other indicators also underline that there is no room for complacency (e.g. climatic trends, energy consumption, air quality, public realm investment).
- 2.6 Environmental improvements have been delivered through a combination of different approaches including legislative and policy changes, awareness raising campaigns, technological innovations and behavioural changes. These have involved the public, corporate and voluntary sectors, as well as private individuals and communities. The fact that measurable progress is now being made towards a number of environmental targets is clearly welcome news. However, it has to be appreciated that such targets are nearly always moving ones, with standards frequently revised to take account of rising public expectations and new research findings. The challenge will be for Edinburgh to remain one step ahead and strive for an environmental quality which continues to provide a benchmark for national and international comparisons.

- 2.7 The city and its inhabitants need to continue to develop a responsible attitude towards the consumption of resources and the production and disposal of waste if future generations are to enjoy the quality of environment which we have come to expect today. Keeping our environment clean is important for more than aesthetic reasons : it reduces contamination of land, air and water which can be injurious to human health; it reduces the likelihood of choked drainage systems (and hence flooding); it deters vermin; and it encourages wildlife and enhances biodiversity.
- 2.8 However, we also need to avoid creating over-maintained, sterile, monocultural environments dictated solely by requirements of short-term convenience and management efficiency. These can exclude natural processes which in the longer-term help to absorb human impacts and support and enrich our daily lives. We need to create room in our city for natural processes such as the hydrological cycle, regeneration of native vegetation, and diversification of habitats. Our long-term welfare and prosperity will depend on this.
- 2.9 In recent years Edinburgh has attracted enviable levels of new investment and development in key locations such as the Waterfront, the City Centre, the South East Wedge, Fountainbridge, Edinburgh Park and Edinburgh Airport. All the signs are that this is set to continue. Major development and regeneration proposals affecting such large swathes of the city afford a unique opportunity to design them around leading edge standards for sustainability, environmental quality, and the creation of a real 'sense of place'. This is something which the Council is very much aware of, and has been endeavouring to implement through strategic master planning and design briefs.
- 2.10 However it will be important to maintain a strong vision and constantly reflect on the importance of these areas for setting new environmental standards (whilst not neglecting the need to invest in older and more stable areas of the city). We need to continue building in environmental and sustainability considerations at the very earliest conceptual and design stages, and then to ensure that they are implemented without compromise. This needs to be considered as a long-term investment, with the potential to make a real difference to both the local and the global environment. It is absolutely vital that this opportunity is not squandered, and that we do not accept second best, despite intensive pressures to take the easiest, quickest or cheapest option. The legacy for future generations must be one of which we can be proud, just as we are now able to enjoy the fruits of far-sighted decisions which have shaped Edinburgh in the past.
- 2.11 Few of the environmental issues highlighted in this report can be regarded as 'new'. Most are already understood by those with a professional or general interest in the city's environment, and indeed many strategies and practical measures are in place (or are being developed) to tackle the key problems. However, by drawing the wide range of environmental topics together and attempting to look at them as systematically as possible, an impression begins to emerge of what might be called the priority environmental issues for the city. There is inevitably a large degree of subjectivity in this, but priorities are determined by criteria such as :
- The degree of threat to human life, health and wellbeing at the local level;
 - The potential for damage to residential and commercial property;
 - Environmental changes which would compromise the productive capacity and continued prosperity of the city and its inhabitants;
 - Contribution to global threats which could substantially affect health, way of life or biodiversity;
 - Issues which are liable to consume inordinate resources to mitigate the above consequences, or to comply with national and international legislation (often with the threat of severe financial penalties if compliance is not achieved);
 - Threats which would severely undermine Edinburgh's highly renowned quality of life, and make it a less desirable place to live, work and invest in, or to visit;
 - Issues which are particularly pervasive in Edinburgh or relevant to Edinburgh, in comparison with other similar cities

- 2.12 Based on such criteria, our assessment is that the following **eight ‘big issues’** will merit particular attention in Edinburgh in the foreseeable future :
- Contributing to the global effort to mitigate and adapt to **CLIMATE CHANGE**, in particular through promoting more efficient energy usage and reducing dependence on fossil fuels;
 - Minimising the amount of **WASTE** produced, facilitating re-use and recycling of waste which cannot be avoided, and treating any residual waste in accordance with best environmental practice;
 - Ensuring compliance with national and European **AIR QUALITY** objectives throughout the city, especially in relation to nitrogen dioxide and particulates;
 - Taking all reasonable measures to minimise the potential devastation caused by **FLOODING** – whether from rivers, the sea, or drainage / sewerage systems;
 - Re-doubling efforts to create and maintain the very highest quality of **PUBLIC REALM**, in the city centre and in local neighbourhoods, and conserve the city’s distinctive historic and cultural assets (with strong focus on high design standards, quality materials and community involvement);
 - Shaping an urban structure and **ENVIRONMENT WHICH SUPPORTS HEALTHY, ACTIVE LIFESTYLES**, helping to counter the obesity ‘timebomb’ and other debilitating conditions;
 - **HARNESSING PRESSURES FOR DEVELOPMENT AND CHANGE** in Edinburgh’s many **GROWTH AND REGENERATION AREAS** to create an environment which future generations will be proud of and which will firmly establish the city as a showpiece of sustainable development; it would be unforgivable if the opportunities presented in these areas were squandered, and any pressures to settle for ‘second best’ must be resisted;
 - Embedding **BIODIVERSITY** as a key consideration at the very earliest stage in all decisions affecting land use, property and development, and seeking out every opportunity to create habitat networks to bring the countryside into the city.
- 2.13 Table 1 summarises why these issues are a particular priority. It identifies some of the strategies which are currently in place or are being developed to tackle them, and suggests key lessons from this report which will need to be taken on board.
- 2.14 Although there is a particular significance or urgency attached to these issues, they cannot necessarily be regarded as a definitive or exhaustive list. It must be emphasised that other issues raised in this report will continue to require attention. Whilst the list in Table 1 may seem somewhat selective, it is important to remember that tackling the ‘big issues’ will often lead to progress on a broader environmental front, and indeed will require supporting actions across a wide front.
- 2.15 Although the State of the Environment report is organised in topic chapters for convenience, in reality the environment cannot be compartmentalised. Actions in one area will more often than not have consequences elsewhere. Therefore no part of the environmental spectrum should be neglected.

TABLE 1 : KEY ENVIRONMENTAL PRIORITIES

	KEY PRIORITIES – THE ‘BIG ISSUES’	SIGNIFICANCE	MAJOR INITIATIVES	STRATEGY ASSESSMENT
1	Contributing to the global effort to mitigate and adapt to CLIMATE CHANGE , in particular through promoting more efficient energy usage and reducing dependence on fossil fuels	profound local and global effects on all aspects of civilised lifestyles - health, economy, social stability etc.; habitats & biodiversity	<ul style="list-style-type: none"> •Climate Change Framework / Scotland’s Climate Change Decl’n •Sustainable Development Strategy •Warmburgh Plan •other Council strategies (see below) 	Core environmental issue; Councils expected to play a lead role in mitigating & adapting, and must be adequately resourced to investigate & implement all opportunities. Scottish Climate Change Bill will provide clear framework.
2	Minimising the amount of WASTE produced, facilitating re-use and recycling of waste which cannot be avoided, and treating any residual waste in accordance with best environmental practice	implications for climate change, resource conservation, human health, wildlife habitats; potential punitive fines if targets missed	<ul style="list-style-type: none"> •Integrated Waste Management Strategy •Lothian & Borders Area Waste Plan & L&B Area Waste Project 	Highly challenging targets demand continuing commitment. Inventive, co-operative, region-wide solutions and sea-change in attitudes to waste, all needed to urgent timescale.
3	Ensuring compliance with national and European AIR QUALITY objectives throughout the city, particularly in relation to nitrogen dioxide and particulates	can trigger / exacerbate chronic illnesses; degradation of property & habitats	<ul style="list-style-type: none"> •Air Quality Management Areas / Air Quality Action Plan •Local Transport Strategy •Sustainable Development Strategy 	Stubborn issue - persists despite previous mitigation measures; may be exacerbated by development pressures; also issues re. biofuels. Needs careful integration with transport & sustainability strategies.
4	Taking all reasonable measures to minimise the potential devastation caused by FLOODING – whether from rivers, the sea, or drainage / sewerage systems	potential for major dislocation of lives, property, infrastructure, economy; contamination risk; effects on wildlife	<ul style="list-style-type: none"> •Flood Risk Strategy •Flood Prevention Schemes •Planning controls; sustainable urban drainage systems (SUDS) 	Up-to-date flood risk assessments vital to reflect latest info & advice. More flexible funding would help to procure wider environmental benefits.
5	Re-doubling efforts to create and maintain the very highest quality of PUBLIC REALM , in the city centre and in local neighbourhoods, and conserve the city’s distinctive historic and cultural assets (with strong focus on high design standards, quality materials and community involvement)	key cultural and economic asset; makes Edinburgh distinctive; needs continuous investment to maintain and improve quality; sound investment for future	<ul style="list-style-type: none"> •Capital Streets programme etc. •Tram Public Realm •Conservation grants •Keep Edinburgh Clean •Comprehensive planning policies & guidance, e.g. Edinburgh Standards for Streets, & for Urban Design 	Economic & social benefits of pro-active public realm investment deserve greater recognition : Firm, long-term commitment will stimulate private investment and boost civic pride / respect for environment.
6	Shaping an urban structure and ENVIRONMENT WHICH SUPPORTS HEALTHY, ACTIVE LIFESTYLES , helping to counter the obesity ‘timebomb’ and other debilitating conditions	growing ‘epidemic’ with potential for major burden on health service; erodes vital human capital	<ul style="list-style-type: none"> •Joint Health Improvement Plan •statutory Development Plans •Open Space Strategy •Local Transport Strategy etc. 	Response under-developed compared with other issues. Much more explicit recognition needed for role of built environment in delivering public health objectives.
7	HARNESSING PRESSURES FOR DEVELOPMENT AND CHANGE in Edinburgh’s many GROWTH AND REGENERATION AREAS to create an environment which future generations will be proud of and which will firmly establish the city as a showpiece of sustainable development; it would be unforgivable if the opportunities presented in these areas were squandered, and any pressures to settle for ‘second best’ must be resisted. Need to avoid car-based dormitory suburbs.	can be difficult to incorporate best practice in established urban fabric; but scale of future brownfield re-generation opens enormous opportunities to create new communities in harmony with natural environment	<ul style="list-style-type: none"> •statutory Development Plans; Development Frameworks •Edinburgh Standards for Sustainable Development •Local Transport Strategy 	Strong conviction & co-ordination needed to drive visionary district-wide approaches to sustainable development, e.g. decentralised energy systems, integrated waste infrastructure, flexible-use buildings, localised service provision, quality green spaces. However, mustn’t neglect established areas of city : need to continue developing sustainable solutions which fit with historic environment.
8	Embedding BIODIVERSITY as a key consideration at the very earliest stage in all decisions affecting land use, property and development, and seeking out every opportunity to create habitat networks to bring the countryside into the city	a vital physical, cultural and spiritual resource which also acts as a barometer of our stewardship of the environment	<ul style="list-style-type: none"> •Biodiversity Action Plan •Planning policies & supplementary planning guidance •Forest Habitat Network etc. 	Value of biodiversity is generally recognised, but future emphasis must be on habitat <i>networks</i> linking individual sites. Tree planting efforts need to be revived.

Common themes

2.16 Monitoring of environmental issues and trends on a topic-by-topic reveals a number of common 'themes' :

- (1) Edinburgh is generally a clean, healthy and attractive place to live, work and visit. Many (though not all) indicators demonstrate favourable comparisons with other major cities and continuing improvements in environmental conditions. However, this has to be seen in the context of rising public expectations, reduced 'tolerance' of environmental threats, and a society which is becoming increasingly 'risk averse'. Such attitudinal changes have been reflected in stricter regulations emanating from European and national governments. The pressure to meet and exceed ever stricter targets means that there can be no room for complacency.
- (2) A high quality environment strengthens communities and enhances human capital, by
 - contributing to improved physical and mental well-being;
 - fostering a sense of place and civic pride; and
 - involving and empowering members of the community in shaping and improving their own living conditions.
- (3) A high quality environment can contribute to social justice objectives, by making sure that local resources are not squandered, for example :
 - Home insulation and other home energy conservation measures;
 - Recycling projects which provide those in need with good quality furniture and other household goods, which would otherwise be sent to landfill;
 - Healthy eating and similar initiatives linked to active involvement in local cultivation
- (4) A high quality environment will also underpin Edinburgh's continuing prosperity, by
 - sustaining a healthy and productive workforce
 - helping to maintain a quality of life which is nationally and internationally renowned, which in turn will continue to attract highly qualified, skilled labour and mobile investment;
 - creating a 'must see' destination with unique aesthetic and cultural appeal to high spending visitors and tourists;
 - affording commercial opportunities as a 'centre of excellence' in sustainable technologies and environmental improvement initiatives;
 - maintaining and enhancing property values
- (5) In turn, a healthy economy is vital for protecting and enhancing Edinburgh's environment over the long term, by :
 - ensuring that land and buildings have a viable use and are not neglected;
 - providing the stimulus and investment to tackle environmental degradation from previous eras;
 - providing the major capital investment required to mitigate against future environmental risks, such as climate change or flooding, and to support the development and uptake of low impact technologies
- (6) Development, change and economic progress can potentially be injurious to the environment if they are promoted without due care. However, they can also be a catalyst for setting higher environmental standards, for example in terms of energy conservation, sustainable drainage, the creation of high quality civic spaces, or the creation of 'healthy' neighbourhoods. In many cases they also afford a rare opportunity to conduct detailed site investigations which can improve our understanding of the local environment – for example features of archaeological or wildlife interest.
- (7) The statutory land use planning system has a particularly vital role in seizing the opportunities presented by change and fashioning a more sustainable urban environment.

It has a locus in virtually all the environmental issues considered in this report : from mitigating flood risk and minimising noise and light pollution, to ensuring adequate infrastructure for water supply, drainage and waste, preserving and improving wildlife habitats, and maintaining good access to open space (to name but a few). It will be important to ensure that the planning service is adequately resourced and skilled to discharge this critically important role – to develop and mediate the long-term vision, and ensure delivery of highest standards on the ground.

- (8) Complex inter-relationships between different aspects of the environment mean we always have to be on the look-out for unintended side effects of any actions we take, including measures which are meant to deliver environmental benefits. In particular, care needs to be taken that ‘solutions’ to one issue do not undermine other environmental strategies. Flood control measures, for example, may affect wildlife habitats, landscape quality and countryside access. Renewable energy technologies may also have side effects. However, conflict cannot always be avoided, and there may be a need for compromise and prioritisation between competing objectives. Detailed design and implementation will often be the crucial factor in maximising benefits.
- (9) However there may also be opportunities for synergies whereby a number of issues can be tackled simultaneously through a single initiative, for example the use of waste materials for local energy generation (within carefully controlled parameters), or the designation of semi-natural flood storage areas which double up as wildlife sanctuaries or areas of accessible urban greenspace.
- (10) There are signs that we are taking environmental issues more seriously and adopting mitigating strategies such as improvements in building energy efficiency, better vehicle engine design, and increasing recycling rates. However, valuable though these strategies are, they are sometimes undermined by the sheer underlying growth in the volume of consumption and waste production : The number of homes to be heated continues to grow. We continue to travel more often and further. And the amount of household waste sent to landfill is still growing. All of this suggests that there is still a pressing need to address root causes of environmental issues and reconsider fundamental lifestyle choices.
- (11) Monitoring of environmental trends may itself be problematic because of potential environmental impacts. For example air quality monitoring equipment will need to be sensitively sited to avoid negative impacts on heritage and the public realm. Reducing the ‘red tape’ (e.g. planning consents) associated with installation of small-scale renewable energy technologies may encourage take-up, but it may be very difficult to monitor just how successful this is if administrative records are no longer kept.
- (12) The maintenance of environmental assets is a significant issue. It is one thing to expend effort and resources on creating high quality spaces, facilities and environments, but these will be of little lasting value if adequate resources are not set aside to maintain them and ensure that they continue to be valued and used. This applies across the whole spectrum of environmental assets, from woodlands and recreational areas to civic spaces and built heritage.
- (13) However, a balance has to be struck to avoid over-maintenance. It is important to leave some areas ‘untamed’, giving space for natural processes and wildlife, and creating a network of diverse and inspiring spaces as a setting for daily urban activities.
- (14) Even in large urban areas like Edinburgh the environment is an all-encompassing matrix, not a residual feature which can be preserved in small pockets. Environmental resources need to be regarded as part of functional and geographical networks, rather than in isolation. The value of networks is always greater than the sum of the individual parts, whether in relation to cultural heritage, public realm, recreational spaces, woodland, wildlife sites or flood prevention measures. Features which may seem relatively insignificant on their own can make a disproportionate contribution to the environment by virtue of their setting and linkages with other features nearby.

HEADLINE FINDINGS

3 : POPULATION & HOUSING

Why population matters

- Size of population affects consumption of resources : energy, materials etc, and production of waste.
- Number of households has perhaps even more significance for the environment, as independent living leads to higher per capita resource use, e.g. water & energy consumption. One person living alone uses 40% more water than one living in a two-person household.
- Composition of population (e.g. age structure) affects environmental impacts. Also, some sections of the population may be more vulnerable than others to environmental conditions.

Edinburgh Characteristics & Trends

- Greater Edinburgh area has fastest growing population in Scotland, and one of fastest growing in UK. 9% growth projected 2005-2024.
- Edinburgh is particularly attractive destination for in-migrants, with a very cosmopolitan population. Relatively high proportion of young adults and students, but fewer children.
- Number of households increasing even more rapidly than population, with an ever growing number of smaller households. Projected 23% household growth by 2024 : will see the creation of more households than any other local authority in Scotland.
- Annual house building has risen to more than 2,400 per annum
- High proportion of flats, both in existing stock and new build. Flats may have lower environmental impacts than houses (subject to detailed design etc.)
- High proportion of housing development takes place on 'recycled' / 'brownfield' land

Key Issues

- Strong pressure to meet growing housing needs. Location, layout and design must be as sustainable as possible. Difficult choices to be made - finding locations which are accessible, and making efficient use of limited land resources, whilst protecting most valuable and most sensitive environmental assets.
- Very high land values in Edinburgh create pressures for intensive use of land. However, need to avoid excessive 'cramming', loss of human scale & local distinctiveness, and lack of contact with nature.
- Also need to ensure that pressures on space do not over-ride other long-term sustainability requirements. Dwellings must be designed to meet a range of future needs – e.g. garden space, space to work from home, accessible to people with impaired mobility.
- May be pressure to build in more challenging locations, e.g. areas which require remediation or new infrastructure, or may be more prone to environmental hazards.

What is Being Done

- Development plans (including structure plans and local plans) being progressed to identify the scale of future land requirements for housing, employment and other uses, and to identify the most sustainable locations, e.g. with regard to public transport accessibility, infrastructure, flood risk, landscape quality, protective designations
- These development plans are based on extensive local consultation, and are also subject to 'strategic environmental assessment' (SEA) – a statutory process whereby the environmental

implications are assessed systematically throughout the plan-making process, including evaluation of alternatives.

- Affordable housing policies pioneered within Edinburgh, and being updated, to provide diverse range of housing for different needs; seen as a key prerequisite for sustainable economic growth.
- Edinburgh has a strong suite of supplementary planning guidance to ensure that design quality, local distinctiveness, sustainability and wider environmental concerns are not over-ridden by pressure for development; such guidance is constantly reviewed and updated.

4 : ECONOMIC TRENDS AND DEVELOPMENT PRESSURES

Why the economy matters

- Scale and character of economic activity affects consumption of resources, production of wastes and potential for nuisance effects. Legacy of past activity is also important.
- Economic connectivity means environmental effects extend beyond administrative boundaries.
- Creation of wealth provides resources to invest in environment. Development creates opportunities to remedy environmental degradation from previous eras.
- Quality environment is critically important in supporting economic growth – attracts inward investment, sustains tourism etc.
- Environmental focus can create efficiency savings for businesses. Environmental technologies also open up new opportunities to develop centres of excellence / competitive advantage.

Edinburgh Characteristics & Trends

- Edinburgh has one of fastest growing and most successful economies in UK. Along with Glasgow, likely to remain major economic powerhouse for Scotland. Future growth regarded as being in the national interest.
- Economic growth has undepinned general upward trend in development activity, though this has tended to be cyclical, with peaks and troughs.
- Edinburgh now has one of most service-orientated economies in UK, so little direct threat from heavy industrial pollution. However, contamination from previous processing activities cannot be discounted.
- Edinburgh renowned for high quality of life and remarkable natural and cultural features, which are fundamental to the city's international image and continuing economic success.
- Higher than average levels of wealth and consumption impact on environment, though some effects may be felt elsewhere rather than in Edinburgh.
- Population is also highly educated and articulate, with relatively high environmental awareness.
- Economic growth has been catalyst for environmental regeneration in many areas of Edinburgh, and this is set to continue.

Key Issues

- Edinburgh is in competition with other cities on a global scale and needs to secure its future economic prosperity. However, accommodating competitive, modern businesses in a sustainable way represents a major challenge. This needs to be done with due regard for natural and built heritage, which are also key to economic health : need to 'decouple' economic growth from waste and pollution.
- Offices, shops, colleges, schools and hospitals are major components of Edinburgh's building stock. They need to be located, designed, built and managed to minimise harmful impacts on the environment, and indeed to contribute positively to environment as far as possible.
- Economy is highly dependent on national and international connectivity (e.g. for financial sector, tourism), but this can have significant environmental repercussions.
- Demand for labour increasingly outstripping local workforce, leading to greater number of workers commuting over longer distances; also fuels mounting pressure to build more affordable housing accessible to main employment hubs.

- Strain on environment and infrastructure from very high non-resident population : tourists, visitors, workers, shoppers.
- Key employers may be reluctant to compromise over exacting locational criteria, which may sometimes give rise to development pressures in sensitive locations.
- Need to ensure that the opportunities afforded by economic regeneration are not squandered. New development in these areas must create an environment of enduring quality, befitting Edinburgh.
- Despite economic success, disparities persist across the city, with variations in environmental quality often related to other dimensions of deprivation.

What is Being Done

- Business sector adapting to growing body of European and national legislation designed to protect the environment, e.g. relating to building standards, air quality, waste.
- Many businesses also recognising that waste reduction and other environmental initiatives also make sound economic sense, in terms of financial savings, customer relations and staff satisfaction; e.g. increasing prevalence of 'green' workplace design.
- National Planning Framework sets out national context for balance between development pressures, heritage conservation and sustainability requirements; e.g. identifies West Edinburgh as area of national strategic economic significance.
- Sustainability principles embedded in development frameworks for areas of regeneration and growth; neighbourhood regeneration in more deprived communities also prioritising environmental improvements.
- Development pressures being harnessed to revitalise neglected environmental assets and improve public access, e.g. waterways, coastline

5 : TRAVEL AND TRANSPORT

Why transport matters

- Transport sector is major source of pollutants which reduce urban air quality; also contributes significantly to carbon emissions which affect global climate.
- Transport also a significant source of noise disturbance and other 'nuisance' (e.g. vibration, dust, light)
- Transport related land uses account for substantial proportion of urban areas, with hard surfaces exacerbating surface run-off.
- Arterial transport routes enhance economic connectivity but can also create hazards / barriers for people and wildlife.
- Walking, cycling and public transport generally have lower pro rata environmental impacts than private motor transport, and have other benefits e.g. in terms of health. However the balance of benefits / disbenefits is affected by detailed issues such as levels of patronage, technologies etc.
- Growth of air travel particularly implicated in carbon emissions and climate change

Edinburgh Characteristics & Trends

- In common with other large UK cities, Edinburgh has experienced growth in travel by all major modes of transport, private and public.
- Particular features of Edinburgh have increased demand for travel still further : peripheral UK location, national capital status and roles as tourist destination and economic hub.
- High inner city land values and decentralisation of some land uses / activities have also contributed to travel demand, especially by car.
- Car ownership has grown rapidly in Edinburgh, though some signs of recent levelling out. Car usage and traffic volumes are increasing relentlessly, with more and longer trips. Car use dominates for travel to work, shopping and many other activities.
- Edinburgh characterised by high proportion of school trips by car.
- Recent years have seen resurgence of bus travel in Edinburgh, against national trends (reflecting significant local investment).
- Rail travel has grown rapidly and is expected to continue growing, subject to network capacity.
- Air travel has particularly 'taken off', with Edinburgh on course to become Scotland's premier airport hub.
- Edinburgh's busy roads, hilly terrain and climate (along with other factors) may deter walking and cycling to some extent. Nevertheless, Edinburgh is regarded as relatively pedestrian and cyclist-friendly, with signs of more people opting to travel by these low impact modes.

Key Issues

- A number of existing and impending transport bottlenecks threaten to constrain Edinburgh's future economic prospects. These will need to be addressed, but emphasis will need to be on promoting those forms of communication and modes of transport which have least harmful environmental effects.
- Provision also needs to be made for discretionary personal travel, and ensuring no sections of the community are disadvantaged through poor mobility / accessibility. However, continuing growth in traffic volumes cannot be accommodated indefinitely, and local opportunities / facilities need to be enhanced to reduce the need to travel.

- Environmental impacts of essential transport schemes will need to be minimised and mitigated through careful attention to routing, design, construction and operation.

What is Being Done

- Local planning policies seeking to reduce the need to travel by promoting balanced communities with a mix of uses, including good local services; planning policies also underpinning efficient public transport systems by clustering facilities in defined centres close to major transport corridors and accessible to large populations.
- Regional and Local Transport Strategies for SE Scotland & Edinburgh are geared towards promoting sustainable, low impact, modes of travel, e.g. by investment in new infrastructure & improved facilities, re-allocation of limited road space, provision of better information, educational initiatives, and better integration between modes. Transport strategies have seen subject to strategic environmental assessment (SEA).
- Public transport operators investing in new fleets and better facilities to encourage uptake and reduce impacts.
- Several local organisations actively encouraging participation in cycling and walking, e.g. through lobbying and practical advice.
- Major employers increasingly implementing travel plans to promote sustainable travel; such plans are often required as a condition of consent for major developments.
- Major transport projects (e.g. the tram) subject to exhaustive environmental appraisal.
- Case being developed to press for a shift from short-haul air travel to rail; depends on influencing national policy & investment.

6 : SPATIAL DEVELOPMENT PATTERNS AND URBAN STRUCTURE

Why spatial development patterns matter

- City-scale urban form and spatial structure affects demand for travel and viability / efficiency of public transport networks; hence has major implications for energy consumption, carbon emissions, and other transport effects noted in chapter 5.
- Urban form affects the distribution and character of urban green spaces, and their usability by people and wildlife.
- May have other effects, e.g. urban 'heat islands'

Edinburgh Characteristics & Trends

- Edinburgh has a generally compact urban form, with centres of activity focussed on arterial public transport corridors, and a diversity of local land uses – all of which tend to support sustainable transport modes.
- Population distribution within Edinburgh has become slightly more centralised over the last 25 years, while some other functions & land uses have tended to gravitate away from the central area, e.g. employment, retailing.
- However there has been 'overspill' of many functions out of Edinburgh altogether to surrounding local authorities, including population, housing, workforce, retailing, educational institutions.
- Most recent housing and office developments have been located within easy walking distance of arterial public transport corridors. However the proportion of programmed future development close to existing transport corridors is significantly lower.
- About one-third of recent housing and one-half of recent office development has been in or close to established 'town centres' in Edinburgh; on the basis of current planning consents these proportions are set to fall.

Key Issues

- While urban form is critically important for the environment, it can only be modified incrementally over a long time period, whenever and wherever development occurs. However, Edinburgh is in the midst of major economic and physical changes, with a number of large development areas. These afford a rare opportunity for the future shape of the city to be guided by sustainable principles.
- Potential conflicts between different environmental objectives, e.g. efficient high density living vs. harmful environmental effects of excessive 'town cramming'; and potential 'bad neighbour' effects of mixed use developments designed to improve local facilities & reduce travel demand.

What is Being Done

- Statutory development planning process has a key role in shaping settlement patterns. Historic emphasis has been on preventing urban sprawl & coalescence (e.g. through green belt policies), preserving compact settlement forms, and encouraging more intensive uses in proximity to major transport corridors & interchanges.
- Under-used brownfield land is being 'recycled' in major regeneration areas such as the Waterfront and Fountainbridge to accommodate the city's growing population with minimum need for new land-take beyond the existing urban edge.
- Longer-term options for accommodating Edinburgh's growth have set out the case for a pattern of radial urban corridors separated by green 'wedges', to overcome unsustainable leapfrogging

of the green belt ('A Vision for Capital Growth 2020-2040').

- As summarised under chapter 3, development plans and supplementary planning guidance have a number of policies in place to guard against over-development which would be detrimental to the environment. Achieving efficient use of space without over-development requires finely balanced policies and careful judgement.

7 : ENERGY PRODUCTION AND CONSUMPTION

Why energy matters

- Consumption of fossil fuels produces carbon dioxide which is a 'greenhouse gas' with the potential to cause major changes in the earth's climate if growth continues unchecked. Some of these changes could have catastrophic effects for human welfare, natural ecosystems and the global economy.
- Harnessing and distributing power can also have major environmental repercussions – e.g. extraction of coal, oil & gas, hydro-schemes (dams), wind farms, high voltage power lines.
- Energy consumption strongly influenced by local lifestyles, including economic structure, urban form, travel patterns, building characteristics, consumption of food & durable goods etc. Domestic sector and transport are largest sources of energy demand in Scotland.
- Reducing overall demand for energy is primary objective. However, essential energy demands will have lesser environmental impact if supplied from a less polluting fuel mix. Lowest impacts from small scale renewable generation serving domestic / institutional / corporate needs, or community schemes delivering combined heat & power (CHP).

Edinburgh Characteristics & Trends

- Data on local energy consumption only starting to become available. Early indications are that Edinburgh uses less energy per person overall of Scottish and UK averages, but mainly because of lower commercial and transport consumption. Domestic energy consumption per capita is slightly above national rates.
- Domestic energy consumption in Edinburgh influenced by cooler climate, short winter daylight and prevalence of flatted properties (though energy rating of properties is variable). Growing transport-related energy demand discussed in chapter 5.
- Significant 18% domestic energy savings so far achieved in Edinburgh under Home Energy Conservation Act, but this lags behind other Scottish cities, and HECA local target of 31% may be difficult to achieve.
- National Home Energy Rating for private housing stock in Edinburgh compares favourably with Scottish average, but still leaves plenty of scope for improvement.
- Energy generation within Edinburgh is insignificant at present, including renewables. Uptake of micro-scale domestic renewables is difficult to monitor, but some evidence to suggest local interest in this is picking up.
- Edinburgh's relatively high density central area, with large concentration of commercial buildings, could make decentralised energy systems (including CHP) viable.

Key Issues

- Consumption of fossil fuels contributes to climate change, but changing climate is also likely to affect demand for energy.
- Energy conservation in domestic and commercial buildings should be a key priority, and will help to tackle fuel poverty and secure financial benefits as well as environmental benefits. (13,000 Edinburgh households affected by fuel poverty).
- Prevalence of communal living and large numbers of historic buildings in Edinburgh presents additional challenges in securing both energy efficiency improvements and micro-renewable generation.
- Considerable potential for decentralised energy generation in Edinburgh, providing local neighbourhoods with heat and power. This is efficient (and relatively low-carbon) way of meeting local energy demand, but would need to be reconciled with heritage conservation

issues. Likely to be fewer barriers to implementation in areas of major new development & regeneration. Edinburgh needs to rise to this challenge.

What is Being Done

- Home energy conservation being promoted through the Warmburgh Plan, with ongoing advice and practical support tailored to different tenures. Progress being made towards energy conservation targets, but variable progress between tenures (slowest for private rented).
- Warmburgh Unit and Edinburgh World Heritage Trust undertaking pioneering work to implement energy saving measures appropriate for historic buildings.
- Edinburgh Standards for Sustainable Building, which came into force in May 2007, will have a significant impact on the lifetime energy budgets of new buildings in Edinburgh.
- Local businesses increasingly adopting energy conservation measures as part of corporate social responsibility agenda, as well as for sound commercial reasons. Increasing commitment demonstrated by Prince of Wales' Business Summit on Climate Change, which recently convened in Edinburgh.
- Supplementary planning guidance being developed to facilitate installation of micro-renewable energy generation technologies, in a manner sensitive to other environmental considerations.
- Opportunities for decentralised energy generation, including combined heat & power, under active consideration, especially in areas of growth & regeneration.
- Working group established to explore potential for establishing Edinburgh as a 'transition city' (transitioning towards low energy consumption lifestyles).

8 : ENVIRONMENTAL FOOTPRINTS

Why environmental footprints matter

- Two methodologies of ecological footprinting and carbon footprinting provide a valuable means of summarising environmental impacts of individuals and localities, and comparing them with others, or with the global norm.
- Ecological footprint is particularly valuable because it traces flows of resources across the world, and accounts for resources at the place of consumption rather than place of production. Measured as the area of productive land and sea which is needed to provide all the food, energy, transport, community services, waste disposal facilities and other material needs of an individual in a particular community. Measured in average 'global hectares'.
- Carbon footprint measures the amount of the climate changing 'greenhouse gas', carbon dioxide, which stems directly or indirectly from the activities of an individual or a community. Again, it traces emissions back through complex production and distribution chains, allowing for variations in efficiency and volumes of energy usage at all stages.

Edinburgh Characteristics & Trends

- Recent analysis of data for 2001 indicates that Edinburgh has a larger per capita ecological footprint than any other Scottish local authority : 5.83 global hectares per person compared with Scottish average 5.37, UK 5.36 and World 2.20. All of these figures exceed the World's carrying capacity of 1.8 ha per person.
- Current best estimate is that Edinburgh residents and businesses produce some 3.37M tonnes of CO₂ per annum in total – the 3rd highest for any Scottish local authority. Business sources are responsible for a significant 44% (cf 40% at UK level)
- Per capita CO₂ production is currently estimated to be below Scottish & UK averages. However, this partly reflects methodological limitations whereby secondary energy consumption (e.g. used in manufacture of consumer goods) is not currently allocated to end users. Hence current figures are likely to under-estimate Edinburgh's contribution to climate change.

Key Issues

- 'Footprinting' methodologies and data are largely experimental at present : They need to be developed further to improve reliability and consistency, and to provide a robust basis for measuring progress and testing alternative future scenarios.
- National Climate Change Programme envisages prominent role for local authorities in reducing local carbon emissions and tackling the causes of climate change.

What is Being Done

- In October 2007 Edinburgh was among the first seven Scottish local authorities to sign up to the 'Local Footprints Project', a 3 year programme which will help to monitor both ecological footprints and carbon footprints, and provide tailored advice on footprint reduction.

9 : WASTE AND RECYCLING

Why waste matters

- Waste represents inefficient use of material resources and energy consumption.
- Has wide range of environmental effects including contamination of land and watercourses, aesthetic impacts, attracting vermin, creating hazards for wildlife. Disposal also generates major transport requirements, with resultant impacts.
- Landfilling of biodegradable waste is particularly harmful to environment, through emission of climate changing greenhouse gases and generation of leachates.

Edinburgh Characteristics & Trends

- Volume of municipal waste collected in Edinburgh has grown by about 1.4% per annum on average over the last decade.
- Waste production per household is amongst the lowest in Scotland (partly due to small average household size), but has been growing rapidly. Average Edinburgh household produced 0.85 tonnes of waste in 1994, rising to nearly a tonne in 2005.
- The combined recycling / composting rate for Edinburgh has increased rapidly from 4.5% in 2001/2 to 24.4% in 2006/7. This lags behind the Scottish average, but compares reasonably well with many other large cities both in Scotland and the rest of the UK.
- Total volume of waste sent to landfill has started to fall. Reduction in construction waste may have played a significant part in this, as well as increased recycling. Worryingly, the volume of household waste sent to landfill is still growing.

Key Issues

- Stringent EU and national targets for reducing volume of biodegradable municipal waste sent to landfill, with severe and escalating penalties if targets are not met.
- Meeting these targets will be challenging, despite increase in recycling, because overall volume of waste generated is still rising. May be very difficult to meet first EU Landfill Directive target of reducing landfill waste to 75% of 1995 levels by 2010.
- Need to continue promoting major shift in attitudes & behaviours, to reduce waste generation and encourage recycling. However this needs to be carefully matched with enhanced provision of recycling services & facilities to maintain public engagement.
- Nature of Edinburgh's housing stock (large number of tenements and flats) presents significant difficulties in achieving higher levels of recycling.
- Improved facilities for waste collection and recycling need to be harmonised with other environmental objectives, e.g. minimising street clutter, maintaining character of conservation areas, and not generating unnecessary travel.
- Non-municipal wastes are by far the largest component in the total waste stream. Reducing commercial, demolition and construction waste must remain a priority.
- Need to resolve region-wide (SE Scotland) approach to integrated waste recycling and treatment, including identification of appropriate sites for essential infrastructure through the planning process (e.g. potentially for waste transfer, processing, incineration, residual landfill etc.).

What is Being Done

- National and regional priorities set through the National Waste Plan and the Lothian & Borders Area Waste Plan; these include targets for halting growth of municipal waste, boosting

recycling and reducing volume of waste sent to landfill.

- Council has implemented an Integrated Waste Management Strategy, prioritising waste prevention, re-use and recycling.
- Award winning Waste Aware Edinburgh campaign has helped to raise profile of waste issues and change public attitudes. Supplemented by specific campaigns e.g. to promote composting & re-usable nappies, and reduce fly-tipping, junk mail, excess packaging etc.
- Extensive roll-out of recycling facilities leading to on-going improvements in recycling rates, e.g. kerbside dry recyclates & garden waste collections, community recycling centres, 'bring' recycling facilities. Practical solutions for tenement recycling being considered.
- Facilities for waste storage & recycling being incorporated in new housing developments.
- Region-wide approach to treatment of residual waste being pursued through the Lothian & Borders Area Waste Project. Business case being developed to assess the best practical environmental option, and the infrastructure required to implement this. Planning system gearing up to support this once finalised.
- Business Waste Framework established at national level to tackle non-municipal waste.

10 : CLIMATE

Why climate matters

- Climate affects virtually every aspect of human activity. Amongst other things climate change could have major implications for : flood risk, building structural safety, insurance costs, water supply & distribution, energy demand for heating & cooling, power supply networks, air quality, infections & diseases, transport services, communications networks, agricultural productivity, forestry & woodland, fire incidences, tourism, outdoor leisure and events, construction industry etc. etc.
- Also affects natural heritage, landscapes, wildlife habitats, biodiversity and incidence of pests.
- Changing climate may have some localised benefits as well as negative impacts, but on the whole future national scenarios for climate change indicate more challenging climatic conditions, e.g. more frequent and intense storms overall, but hotter and drier summers.

Edinburgh Characteristics & Trends

- Edinburgh enjoys relatively equable climate, with few extremes. Winters generally mild and summers warm rather than hot. Tends to be sunnier and drier than west of Scotland, but subject to distinctive east coast 'haars' (low, grey cloud from the North Sea) in certain anticyclonic conditions.
- Local climatic data for Edinburgh show midsummer and midwinter temperatures have both been rising slowly since the 1970s, while autumns have tended to become cooler. Winter frosts noticeably fewer. Summers getting drier, but other seasons wetter. Period of most intense rainfall seems to be shifting from summer towards autumn.
- Future scenarios produced under the UK Climate Impacts Programme envisage a continuation of these trends, with :
 - overall increasing temperatures – hotter summers and milder winters;
 - increased rainfall in winter but less in summer;
 - increase in extreme climatic events such as storms & flash floods, with higher intensity rainfall;
- There is still substantial uncertainty over precise trends, and outcomes will be highly dependent on curtailing growth of atmospheric 'greenhouse gases' at the global scale.

Key Issues

- Repercussions of climate change could be profound and sustained. 'Stern Review' commissioned by UK Treasury warned of possible world-wide recession and underlined economic sense in tackling root causes of climate change at earliest possible stage. Likely to be very expensive, but a sound investment.
- Critical issue will be how Edinburgh can contribute fully to the global effort to arrest anthropogenic climate change, in particular by taking every opportunity to move towards 'carbon neutral' lifestyles. Needs to be tackled in a co-ordinated way and embedded in decision making of all organisations at the highest level, as well as individual lifestyle choices. Likely to involve the setting of local targets as part of a national programme.
- Mitigation will need to be backed up by adaptation measures to reduce the impact of climate changes which are already under way. Will depend on more detailed local climatic scenarios / projections.

What is Being Done

- In Jan. 2007 City of Edinburgh Council and 31 other local authorities signed up to Scotland's

Climate Change Declaration; acknowledges the reality and importance of climate change; commits to mitigating future impacts and adapting to changes which are already under way.

- Climate Change Framework for Edinburgh being progressed – will identify specific opportunities for reducing greenhouse gas emissions - directly from the Council's own activities and indirectly through policies & strategies and influencing partner agencies.
- Scottish Climate Change Bill expected to give further backing to local authorities, recognising their front line role, and making necessary information and guidance available.

11 : TOPOGRAPHY

Why topography matters

- Terrain and altitude have influences on drainage, flood risk, water supply (gravity feed), soils, microclimate, wildlife habitats, communications
- Topography is also key element contributing to landscape character, views, and tourist / visitor interest.

Edinburgh Characteristics & Trends

- Edinburgh located on coastal plain between Pentland Hills and Firth of Forth. Punctuated by volcanic outcrops and dissected by small rivers flowing generally SW to NE.
- Altitude ranges from sea level to 493 metres. Virtually all populated areas below 200 metres.
- Dramatic crags, wooded valleys and panoramic views with Firth of Forth and Pentland Hills as backdrop contribute to Edinburgh's distinctive landscape setting.
- Over half of Edinburgh's population live between 25 and 75 metres above sea level. Some 67,000 people (15% of the total) live more than 100 metres above sea level, while 74,000 (17% of the total) live below 25 metres.

Key Issues

- No significant issues, though massive Waterfront developments are likely to result in a shift in population distribution towards lower altitudes.

What is Being Done

- No specific actions

12 : GEOLOGY AND MINERALS

Why geology matters

- Geology exerts a major influence on landforms, which in turn shapes the natural setting and character of places.
- Affects soils and drainage, with consequences for agriculture, natural habitats and biodiversity.
- Mining & quarrying activity generates noise, dust, traffic etc. Legacy of historic mineral extraction affects the landscape, and can potentially create issues with subsidence.
- Character of buildings and streets influenced by local building stones; also affects issues such as resilience to weathering.
- Aquifers affect water storage and provide medium for potential transmission of contaminants. Some types of rocks are themselves sources of contamination, e.g. oils & gases, radiation.

Edinburgh Characteristics & Trends

- Edinburgh predominantly underlain by Devonian ('Old Red Sandstone') and Carboniferous sedimentary rocks with igneous intrusions and other volcanic features. All subsequently transformed by fracturing & folding, glacial erosion & deposition, glacial meltwater erosion, and post glacial changes in sea level.
- Has given the city its distinctive scenic features : hills, 'crag-and-tail' outcrops, incised river valleys, raised beaches, flat former lake beds, and general topographical orientation SW to NE.
- Geology has provided basis for mineral extraction in the past, including coal, limestone, building stone, aggregates, oil shale, clay, sand & gravel. Virtually no extraction activity nowadays within city boundary, but continues in surrounding areas to some extent.
- Many of the city's older buildings formed from locally quarried sandstone (esp. from the now defunct Craighleith Quarry).
- Unusually large number of rock faces for an urban area – contributes to biodiversity.

Key Issues

- Lack of detailed historical records to show areas which might be prone to mining subsidence. (Subsidence led to demolition of several properties at Ferniehill in 2000).
- Restoration and re-use of former quarries, in a manner sympathetic to landscape setting, natural / built heritage designations and other considerations.
- Difficulty in sourcing replacement building materials which can be used for repair of historic buildings and is compatible with original materials.

What is Being Done

- Careful checks required on sub-surface geology and ground stability when development is proposed in areas with potential subsidence risk.
- Local plans and design briefs set parameters for restoration of quarries.
- Planning guidance provides advice on restoration materials, including emphasis on salvage and re-use of original materials wherever possible (Development Management Guideline 'Historic Building Repairs', 1998)

13 : SOILS AND AGRICULTURE

Why soils and agriculture matter

- Soil quality is critical resource affecting productivity of the land for agriculture, forestry, gardening etc. Affects natural vegetation cover and hence wildlife habitats.
- Quality reflects cumulative effect of natural processes and human husbandry over many millennia, but can be destroyed in years if not looked after.

Edinburgh Characteristics & Trends

- Soils generally more mineral rich and less acidic than in west of Scotland. Much land immediately girdling the built-up area of the city is classed as land with a moderate to good capability for agricultural production, though very little land achieves the highest grade.
- Number of agricultural holdings in Edinburgh has declined to about 125, but these occupy 50% of the local authority land area.
- Approximately three-quarters of Edinburgh's farmland managed for arable & vegetable crops.
- Agricultural census data only available for wider area of Edinburgh & Lothians. Shows barley the main crop. The region accounts for 17% of Scottish wheat and 12% of Scottish poultry.
- Large part of Edinburgh falls within a designated 'Nitrate Vulnerable Zone' : special controls to limit pollution of watercourses by agricultural nitrates.

Key Issues

- Farming activity close to a major city presents a number of challenges, and pressures for development are increasing, with rising land values. However, vitally important to preserve agricultural activity as it supports important habitats and shapes the landscape setting of the city. Also provides a significant recreational / educational resource close to the city.
- A number of key development areas on the fringes of Edinburgh include substantial areas of good quality agricultural land, e.g.A8 corridor (covered by the West Edinburgh Planning Framework), and the South East Wedge.

What is Being Done

- Farm diversification in rural fringes of Edinburgh, particularly educational and conservation roles, being promoted by agencies such as Edinburgh & Lothians Greenspace Trust and Farming & Wildlife Advisory Group.
- Edinburgh Biodiversity Action Plan sets out habitat action plans for farmlands, uplands, wetlands & other rural habitats (see chapter 14).
- Attractions such as Gorgie City Farm, weekly farmers markets, and annual Royal Highland Show have helped to communicate countryside and ecological issues to wider urban population.

14 : BIODIVERSITY

Why biodiversity matters

- Biodiversity conservation acknowledges need for wider conservation activity extending beyond specially protected sites. Can act as a barometer of our care for the environment.
- Biodiversity important for its own intrinsic value, and because it improves richness of human life. But also offers tremendous practical benefits for humankind.
- Biological resources provide a range of natural 'ingredients' for foods, medicines etc. Important to keep that range as big as possible.
- Natural ecosystems can act as buffer to absorb harmful environmental impacts, e.g. flooding, erosion, carbon emissions, provided critical capacity is not exceeded.
- Potential economic benefits e.g. tourism, natural pest control
- Community benefits – biodiversity frequently a focus for active community engagement & healthy outdoor activity. Also provides a gateway to wider appreciation of environmental issues.

Edinburgh Characteristics & Trends

- Despite 43% of the local authority area being classed as 'urban', Edinburgh retains wide variety of wildlife habitats : coastal & marine, farmland, woodland, wetlands, uplands, semi-natural grassland and rock faces, as well as urban spaces and wildlife corridors. About one-third of Edinburgh comprises 'semi-natural' environments.
- Edinburgh & East Lothian has been recognised as one of 6 biodiversity 'hotspots' in Scotland.
- A number of European Protected Species are to be found in Edinburgh & the Firth of Forth, notably bats, otters, great crested newts, dolphins, whales & porpoises.
- Edinburgh Biodiversity Action Plan (EBAP) highlights 8 habitats and 97 species, though the latter are only a small fraction of total no. of species occurring in Edinburgh. 37 of the EBAP species also feature on the Scottish Biodiversity List.
- Systematic information on biodiversity progress difficult to obtain, but some positive signs evident, e.g. recovery of otter population indicative of cleaner watercourses; badgers also appear to be extending their range. However, no room for complacency.

Key Issues

- Some sensitive locations in Edinburgh under development pressure – if development is to occur it will need to be designed with full understanding of local wildlife interests, and incorporate appropriate mitigation measures.
- Ideal should be to use development as an opportunity to increase local biodiversity.
- Important to think in terms of corridors and networks for biodiversity, rather than isolated projects or spaces.
- Need to consider long-term management of habitats once they have been established, but also important to avoid over-zealous maintenance of open spaces. Vacant and overgrown areas can have significant wildlife value.
- Private gardens and institutional grounds are under-estimated as a key biodiversity resource.
- Climate change likely to place additional stress on biodiversity.
- More resources needed to measure biodiversity outcomes at the local level – are we making headway ?

15 : NATURAL HERITAGE DESIGNATIONS

Why natural heritage designations matter

- Complementary to general biodiversity duty (see chapter 14), giving special protection to sites with particularly important species, habitats, geology etc. Natural heritage encompasses plants, animals, landforms, geology, natural beauty & amenity.
- Natural heritage provides vital ecological framework to sustain human life, but as summarised under chapter 14 (biodiversity) it also serves many other functions. Plays major role in defining character and identity of places, and improving quality of life. Has significant economic, cultural, community and educational value.
- Protected areas range from those declared under international (European) and national legislation to local designations. All are important in their own way. International sites recognise that species are not constrained by national borders. Local sites make natural heritage accessible to local residents.

Edinburgh Characteristics & Trends

- In terms of international designations, one 'Natura 2000' Special Protection Area falls entirely within Edinburgh (Imperial Dock Lock, Leith), and two are partly in Edinburgh (Firth of Forth & Forth Islands).
- In terms of national designations, Edinburgh has 6 Sites of Special Scientific Interest (SSSIs) extending to 4.5% of the local authority area. Recent monitoring by SNH indicates deterioration in the condition of some key features of SSSIs in Edinburgh.
- 2 Country Parks : Bonaly – part of Pentland Hills Regional Park; and Craigmillar Castle.
- Substantial Areas of Great Landscape Value / Areas of Outstanding Landscape Quality (AGLV / AOLQ) to south and west of the main urban area.
- 6 Local Nature Reserves (LNRs) covering 165 ha. Provision has been increasing, but Edinburgh falls well below national target of 1,000 people per ha. of LNR. (However, need to take account of proximity to LNRs in neighbouring local authorities).
- Edinburgh also has large number of Local Nature Conservation Sites (63 including equivalent designations)
- Area of Edinburgh Green Belt (GB) has increased by 24% since original designation – now extends to some 166 sq.km.. Current local plan proposals would lead to reduction of 8%.
- Green Belt experiences significant pressure for development (10% of all Edinburgh planning fees related to GB applications). Upto now, however, policies have been mostly successful in preventing major new development (e.g. less than 1% of new housing in GB since 1991).

Key Issues

- Green Belt has helped to preserve compact form of the city and provided an invaluable landscape, recreational and biodiversity resource. However, rigid green belt policies may encourage 'leap-frog' development and longer travel distances – not entirely compatible with long-term sustainable development. Need to keep role, structure & boundaries of GB under review, taking account of long-term sustainable settlement strategy.
- Potential tensions between waterfront developments and European designations protecting Firth of Forth
- Need to seek further opportunities to enhance provision of Local Nature Reserves, and move towards national standard.

What is Being Done

- Designated natural heritage sites kept under review and accorded appropriate protection through the development planning process. Designations such as the green belt, areas of great landscape value, local nature reserves and local nature conservation sites are fundamental considerations which help to shape future development options for the city.
- Formal protection extended to new sites as opportunities arise; e.g. Burdiehouse Burn Valley Park declared a new local nature reserve in 2007.
- Boundaries of the Edinburgh Green Belt, in particular, are subject to regular review - partly to ensure compliance with government policy. Current national policy indicates that green belt reviews should look to a 20 year time horizon, with boundaries set to take account of long-term settlement strategies and to accommodate planned long-term growth.
- Green Belt Capacity Study being progressed as part of the work prog. for the new Strategic Development Plan covering the 'city region'; purpose is to identify long-term defensible boundaries which accommodate future development needs as sustainably as possible.
- Major development proposals must include full environmental appraisals which are used to assess impacts on protected areas, and to shape the content and form of development accordingly.

16 : URBAN GREEN SPACE

Why urban green space matters

- Green space functions as ‘lungs’ of the city – provides space for life-sustaining natural processes, e.g. sustainable drainage, attenuation of noise & air pollution. Particularly important in Edinburgh, with tradition of dense tenement living.
- Contributes to physical & psychological well-being and act as focus for community (opportunities for active outdoor pursuits, community events, environmental education etc).
- Defines structure and character of the city; provides settings for buildings & townscapes; and vantage points to appreciate urban vistas.
- Affords variety of habitats for wildlife.
- Green setting and outlook attracts business investment and supports tourism.

Edinburgh Characteristics & Trends

- Preliminary findings from Open Space Audit carried out in 2005 indicate that 60% of Edinburgh’s urban area is open space of varying types. Main sub-categories are : private garden space (27%), golf courses (6.7%), public parks & gardens (4.6%) and amenity green space (4.4%).
- Although varying definitions make comparisons difficult, indications are that Edinburgh is less well provided with public green spaces than other Scottish cities. Edinburgh also compares poorly in terms of per capita expenditure on parks & open spaces.
- Area of public parkland appears reasonably constant over last few decades. Significant enhancements to provision are included in current local plans & development frameworks.
- Quantitative provision of sports pitches and childrens play parks generally in balance with demand, but affected by quality & maintenance issues.
- Demand for allotments growing steadily, with lengthening waiting list. Some geographical gaps in provision. Provision relatively low in Edinburgh compared with many English cities.
- Cemeteries are important element in Edinburgh’s open space network. New cemetery being created at Craigmillar Castle Country Park.

Key Issues

- Lack of consistent data on open space provision makes it difficult to monitor trends with confidence, or draw meaningful comparisons with other cities.
- Work ongoing to assess accessibility to open space within the city, and level of provision relative to accepted standards.
- Pressures for development of open space, especially playing fields, are source of significant public concern.
- Important to ensure that new developments incorporate quality open space.
- Networks of linked spaces provide far greater benefits than piecemeal provision, in terms of recreational value, biodiversity value, and pedestrian movement. Key objective is to increase ‘permeability’ of the city.

What is Being Done

- Comprehensive inventory of open spaces has recently been assembled; will help to gauge accessibility to different types of open space across the city, monitor trends in provision, and inform the development of an Open Space Strategy for Edinburgh.

- New parks, allotments & other open spaces being created, especially in regeneration areas such as Craigmillar & the Waterfront.
- Planning system provides mechanism for ensuring adequate provision of communal open space and play facilities within or close to new housing developments (e.g. subject of specialist development management guideline).
- Qualitative improvements to management & facilities, with a particular emphasis on encouraging greater community involvement. Achievements recognised by a number of awards, e.g. Green Flag Awards for two parks, Beautiful Scotland in Bloom Awards, UK-wide allotment award for the new organic allotments at Bridgend.

17 : TREES AND WOODLAND

Why trees and woodland matter

- Trees fulfil several vital ecological roles, e.g. recycling carbon & nutrients, attenuating rainfall run-off, stabilising soils, absorbing airborne pollutants, regulating local air temperature and providing specialist habitats for plants & animals.
- They generally enhance urban amenity & quality of life.
- Provide privacy, shelter & shade, and screen against noise and pollution.
- Keep city dwellers in touch with changing seasons and increase opportunities to observe wildlife.
- Help to define urban form reduce impact of development.
- Trees can also create maintenance issues, e.g. relating to overshadowing, dangerous branches, leaf fall, litter trapping, root penetration, interference with traffic sight lines, personal security.

Edinburgh Characteristics & Trends

- Edinburgh's tree stock estimated to have increased from approx. 1 million to 1¼ million between 1972 and 2000, largely as result of Urban Forest Project (1995-2000).
- Varying estimates of total woodland cover, ranging from ca. 2,000 ha. to 3,300 ha., depending on definitions & methodology. (i.e. 8% to 13% of total land area) Less than 200 ha. classed as 'ancient woodland' (which has richest biodiversity).
- Woodland provision per capita is relatively modest, and some areas of city fall below accessibility standards recommended by Woodland Trust.
- Now 152 Tree Preservation Orders (TPOs) in force, cf 111 in 1981. Notifications of tree work have been increasing – 667 in 2006.
- 52 'heritage trees' (including some groups) identified.
- Some 25,000 elm trees lost to Dutch Elm Disease since 1985, though application of strict controls has enabled Edinburgh to preserve more mature elms than many other cities.
- Edinburgh now has network of 40 voluntary tree wardens

Key Issues

- Some areas of city have relatively poor access to woodlands, including large parts of Waterfront which are likely to see substantial population growth.
- Not all areas of tree planting well maintained, including some planted under Urban Forest Project. Urban Forest concept needs renewed impetus. Need to ensure tree stock has broad age profile.
- Promotion of a 'forest habitat network', linking core areas of woodland biodiversity, to facilitate colonisation, migration & foraging movements. Will give species space to adapt to change, including climate change.
- Recognition that control measures cannot completely eradicate Dutch Elm Disease. Indeed climate change may exacerbate it.

What is Being Done

- Urban Forest Project in late 1990s created substantial new woodland, increasing Edinburgh's tree stock by about 25%. However, momentum needs to be regained.
- Forest Habitat Network for Edinburgh & the Lothians provides a cogent strategy for future

woodland planting & management, creating arteries for biodiversity & recreational use, and focussing on opportunities in the 'core development areas' identified in the structure plan.

- Planning system has provided effective protection to many valuable woodland areas & individual trees, through ongoing designation of tree protection orders (TPOs), planning guidance, and conditions attached to planning consents. Guidance requires consideration to be given to protecting and maintaining all trees, including those outwith TPOs & conservation areas, both during and after construction.
- Council has drawn up management plans for many larger woodland areas in the city.
- 52 'heritage trees' identified, with particular historic, cultural or visual significance.
- Network of voluntary tree wardens established to enhance community involvement and monitoring of potential threats.

18 : PEST INFESTATIONS

Why pest infestations matter

- Can cause health hazards through spread of bacteria, parasites etc., or through stings or bites.
- Some species may cause material damage or environmental degradation, e.g. through raiding waste bags, blocking pipes & gutters, damaging cables & insulation.
- Sometimes thin line between biodiversity, pets and pests (e.g. bees, foxes, pigeons). Pests cause potential nuisance or hazard by virtue of close contact with humans in significant numbers. But some can also have important ecological roles, e.g. pollination, predation.
- Infestation may be exacerbated by failure to maintain cleanliness standards or failure to maintain property.

Edinburgh Characteristics & Trends

- Cooler climate may be deterrent to some pests, but large numbers of older buildings and ageing drainage & sewerage systems may increase vulnerability.
- Some indication that relatively high 'churn' in population & turnover of accommodation facilitates transfer of bugs.
- Wasps & mice are most common pests prompting calls for Council services – approx. 2,400 each per year.
- No particular evidence of pests being more prevalent in Edinburgh than other major cities. However the city is recognised as having a distinctive urban fox population (the largest in Scotland). Also significant seagull nuisance. Recent warm summers have led to rise in wasp complaints.
- Significant geographical variations in incidence of pests within the city, e.g. gulls in Bruntsfield & Leith, bees in southern & western suburbs, pigeons in Gilmerton, rats in inner-city area and western rural fringes.

Key Issues

- Climate change could lead to spread of new pests or increase virulence of existing infestations.
- Fostering biodiversity can help to provide natural checks on some pests.

What is Being Done

- Ongoing monitoring of incidence of specific pests, and their implications for public health.
- Use of appropriate treatments sensitive to biodiversity needs.

19 : WATER SUPPLY

Why water supply matters

- Water is relatively plentiful in Scotland at present, but this is no reason to squander it. Takes considerable amount of energy to abstract it, store it, purify it & distribute it. Also costs a lot.
- Process of water supply takes up significant areas of land and can radically alter landscapes and ecosystems (e.g. through changing river levels).
- Water also has to be treated and disposed of after usage. Excessive quantities discharged through foul water drainage systems can create problems with flooding and contamination.
- However water supply can also be combined & harmonised with other functions, e.g. recreation.
- Increasing variability & unpredictability of rainfall as result of climate change could also place stress on supplies, even where rainfall is normally high.

Edinburgh Characteristics & Trends

- Edinburgh households & businesses consumed 192 million litres per day in 1999; projected to increase to 210 million by 2020, due to growing population & economy & increasing no. of households. Main storage reservoirs are Megget, Talla & Fruid in Scottish Borders.
- Domestic consumption accounts for over half of total consumption. Typical household consumption 140-150 litres per day. No indication of Edinburgh being any lower or higher than Scottish average.
- Significant level of leakage – estimated at over 30%.
- Supply generally now more reliable as result of recent investment. Further radical upgrade of treatment and distribution infrastructure planned under the 'Edinburgh Drinking Water Project' – includes proposals for new treatment plant at Glencorse in Midlothian to replace Fairmilehead & Alnwickhill.
- Water quality generally good, with shortcomings mainly limited to 'aesthetic' aspects such as discoloration & taste. After exceptionally heavy rainfall, low concentrations of '*cryptosporidium*' bug have been detected on occasions.

Key Issues

- Adequacy of future water supplies not an immediate threat, but treatment and distribution networks are ageing and need investment / replacement.
- High level of leakage is an issue, with significant energy wasted on treating water which returns to the ground.
- Infrastructure capacity (both drinking water and waste water) needs to be expanded to service areas of planned major development, such as Waterfront & South East Wedge.
- Potential for disruption to public realm as result of upgrading & replacement work.
- Considerable potential for making Edinburgh's housing and office stock less profligate in water consumption. Similarities with waste reduction hierarchy : reduce, re-use & recycle. Measures include tackling leakage, more efficient appliances & WCs, improved pipework layout, rainwater harvesting for flushing WCs, gardening etc.

What is Being Done

- Ongoing programme of water mains replacement, focussing on sections with worst leakage.
- Scottish Water taking a more pro-active approach to ensure development isn't impeded by lack

of strategic water supply infrastructure : now actively co-ordinating investment programme with spatial development priorities identified in structure plans. Publishes annual capacity reviews for each local authority area.

- £100M Edinburgh Drinking Water Project now under way to maintain assured future supply of the highest quality. Will entail construction of a major new water treatment plant outwith the city boundary, to replace existing ageing facilities.
- Marchbank Water Treatment Works near Balerno being upgraded to meet tighter water quality regulations and increase capacity to serve Edinburgh waterfront developments.
- Edinburgh Standards for Sustainable Building (2007) seek to ensure that new residential, commercial & other developments will incorporate best practice techniques for conserving and recycling water, as well as attenuating run-off.

20 : RIVER WATER QUALITY

Why river water quality matters

- Watercourses with poor water quality (e.g. due to contamination, nutrient enrichment, depleted oxygen levels, littering) have reduced capacity to support a range of aquatic plant & animal life.
- Poor water quality can be injurious to human health & property.
- Also constrains use for recreational purposes and reduces amenity value.
- Water quality influenced by a range of factors, including agricultural & industrial discharges, sewage overflows, climatic factors, topography & flow volumes.

Edinburgh Characteristics & Trends

- None of Edinburgh's rivers are seriously polluted. The city's rivers have been getting cleaner : length of rivers classed as having 'excellent' or 'good' water quality improved from 29% of the total in 2001 to 40% in 2005.
- However, the proportion classed as 'excellent' has fallen from 11% to 4%, while the proportion classed as 'poor' has risen from 23% to 29%, so no room for complacency.
- Water of Leith & Braid Burn, which flow through the built-up area, are mostly of 'good' water quality, with some 'moderate' stretches. Reflected in increasing variety of wildlife, e.g. otters, kingfishers.
- River Almond & Gogar Burn, which flow through more agricultural areas to west of city, have long sections of 'poor' quality.
- General improvement reflects stricter legislation & tighter control on pollutants, combined with significant community / voluntary efforts, e.g. in removing rubbish.
- Improved access to city's waterways has raised public awareness & interest (e.g. Water of Leith Walkway, Union Canal & 'Millennium Link')

Key Issues

- Increasing recognition of need to manage river catchments holistically, to balance competing demands (e.g. biodiversity, flood prevention, recreation) whilst safeguarding or improving ecological condition. EU Water Framework Directive intended to achieve this.
- Main threats from foul water overflows after prolonged or intensive rain, and from fly-tipping.
- Water of Leith affected by litter accumulation, sedimentation & slightly reduced oxygen levels where impounded at Leith Docks.

What is Being Done

- More demanding water quality targets now being developed to comply with EU Water Framework Directive.
- Improved sewerage / foul water treatment and voluntary river clean-up campaigns have helped to improve water quality in Water of Leith and other Edinburgh rivers. General improvements in cleanliness standards (e.g. littering / dumping) have also benefitted the water environment (see chapter 29).
- Agreement reached between various agencies on responsibility for clearing impounded litter within the lock gate at Leith Docks.
- Sustainable urban drainage systems will help to reduce contamination from excess urban run-off after heavy rainfall

21 : COASTAL AND BATHING WATER QUALITY

Why coastal and bathing water quality matters

- As with rivers & other waterways, good coastal water quality is important to sustain a diversity of wildlife, to minimise risk to public health, to provide a recreational & tourist resource, and to enhance overall amenity.

Edinburgh Characteristics & Trends

- Edinburgh's coastline extends to 27.5 km. – of which about ¾ is urban in character. Also two offshore islands – Cramond & Inchmickery. Located on south shore of Firth of Forth, one of Scotland's most important estuaries, with significant wildlife interest as well as major commercial gateway.
- Much of coastline previously occupied by industrial uses; rapidly being opened up to public access, with major development under way and substantial new communities planned.
- Traditional holiday resort at Portobello, which still has 5th most popular beach in Scotland.
- Virtually all of Edinburgh's coastline now classed by SEPA as having 'good' water quality, following investments to improve treatment of waste water.
- Three Edinburgh beaches monitored by Marine Conservation Society against EU bathing water standards : Portobello Central, Portobello West & Cramond. All 3 currently meet EU 'mandatory' standard – an improvement on 2001 when two failed.
- However, none currently meet the more stringent standards to merit 'Recommended' status, so scope for improvement. Portobello Central did previously achieve 'recommended' status between 2004 and 2006.
- Forth Estuary Forum cited as exemplar of good practice in maintaining beach cleanliness.

Key Issues

- Coastal water quality still prone to periodic low level contamination from diffuse sources, e.g. urban run-off, dog faeces. Will be a challenge to meet stricter standards recently introduced through revision of EC Bathing Waters Directive.
- Concern about potential impacts of port and oil related activities on fragile marine ecosystems of national & international significance, especially birds & cetaceans.
- Potential recreational & other pressures from substantial waterfront development areas.
- Pollution incident following major pump failure at Seafield Sewage Treatment Plant has raised concerns about adequacy of back-up systems to cope with such incidents.

What is Being Done

- More demanding water quality targets now being developed to comply with EU Bathing Waters Directive.
- Recent investments in waste water treatment have paid dividends in terms of coastal water quality. Voluntary beach clean-ups and campaigns to reduce littering, dog fouling etc. also make a vital contribution.
- Sustainable urban drainage systems will help to reduce contamination from excess urban run-off after heavy rainfall.
- Electronic signs erected at Portobello beach - better communication of water quality information to public.
- Forth Estuary Forum setting standards of good practice for its co-ordinated approach to

maintaining beach cleanliness.

- Scottish Govt. considering regulatory regime for oil-related activities in estuaries.

22 : RIVER FLOW AND FLOODING

Why flooding matters

- Can cause severe dislocation of lives, ruining property & irreplaceable mementos, and posing significant threats to physical & mental health (e.g. sewage contamination, mobilisation of rodent pests)
- May be major economic consequences, with livelihoods destroyed, businesses disrupted, damage to buildings and vital infrastructure.
- Higher frequency flooding liable to put up insurance premiums, and possibly make it very difficult to obtain insurance cover in some locations.
- Flooding can cause setbacks for populations of vulnerable animals, birds & plants.
- Measures to prevent flooding are expensive and can themselves have major repercussions, e.g. affecting water levels, water quality, wildlife habitats, access to riverside, land values.

Edinburgh Characteristics & Trends

- Approximately 4% of Edinburgh's population lives on inland flood plains – slightly higher than Scottish average. Area at risk would be larger but for fact that sections of rivers flow through incised 'dells'. Small catchment areas and modest flows of Edinburgh rivers tend to limit flood risk.
- Nevertheless, Edinburgh has suffered significant flooding events – most recent major episode being in April 2000 when some 750 properties were severely damaged by overtopping of Water of Leith and Braid Burn. Total damage in Edinburgh estimated at £25 million.
- City has a number of flooding 'hotspots', e.g. Roseburn, Stockbridge, Warriston, Bonnington, Peffermill, Colinton Mains. Flood Prevention Schemes now being progressed for Water of Leith and Braid Burn should significantly reduce the threat to these areas.
- Largest continuous area of flood plain is adjacent to River Almond, near Edinburgh Airport.
- Some major shopping centres & the new Royal Infirmary are located in flood plains.
- Although river volumes are fairly modest, evidence that peak flows have been increasing.
- Apart from rainfall, other important contributory factors to flooding in Edinburgh are surcharging of culverted streams, flows impeded by obstructions (e.g. bridge supports), and watercourses choked with rubbish. Also, overloading of foul drainage systems means not all flooding is adjacent to rivers.
- Council expenditure on flood prevention has increased substantially since 2000.

Key Issues

- Prospect of climate change leading to more intensive precipitation and more frequent / more severe flooding events.
- Flooding likely to be exacerbated by increasing run-off from hard impervious surfaces – roads, roofs, car parks, monoblocked gardens etc. Needs to be combatted by firm policies to promote sustainable buildings & streets, and sustainable urban drainage systems (SUDS).
- SUDS have particularly important role to play, not only for absorbing and delaying run-off but also for potential biodiversity / amenity / recreational value, and filtering pollutants. Edinburgh needs to remain in forefront in promotion of SUDS.
- Ever-growing demand for new housing leads to intense pressures for development of flood plains. General recognition that storage capacity of functional flood plains needs to be safeguarded; however, brownfield redevelopment behind flood defences is acceptable subject

to strict controls.

- Good maintenance of watercourses and sewers critically important in reducing flood risk. Council responsible for former, Scottish Water for latter.
- Culverted watercourses problematic for flooding and detract from wildlife value. Aim is to avoid culverting in future.

What is being done

- Indicative maps flood risk maps covering whole of Scotland now published by SEPA. Council has also identified Areas of Importance for Flood Control in Edinburgh.
- Work started on £22M Braid Burn Flood Prevention Scheme in 2007; £51.5M Water of Leith Flood Prevention Scheme expected to enter construction phase in 2008.
- Water of Leith headwater reservoirs transferred to Council control in 2007.
- Local supplementary planning guidance on planning & flooding currently being updated to incorporate latest knowledge & government advice – will help to ensure new development does not exacerbate flooding, and minimise exposure of property & key infrastructure to flood risk.
- Planning system also promotes ‘sustainable urban drainage systems’ (SUDS) in all new developments where appropriate – seeks to minimise and attenuate run-off.
- Strong focus on maintenance of watercourses and drainage infrastructure, to minimise obstructions which can lead to flooding. Council publishes biennial reports giving more detailed information on progress with flood prevention measures.
- Flood Risk Strategy for Edinburgh being prepared

23 : COASTAL FLOODING AND EROSION

Why coastal flooding and erosion matters

- For impacts of coastal flooding, refer to river flooding (chapter 22).
- Coastal erosion may lead to complete and irrecoverable obliteration of buildings and other real estate. Loss of homes, heritage & habitats.

Edinburgh Characteristics & Trends

- Coastal flooding and erosion have not been significant issues in Edinburgh so far. Post-glacial raised beaches limit area of flat ground adjacent to sea, while isostatic recovery of land mass after removal of ice has limited sea level rise (e.g. in comparison with SE England). Configuration of North Sea tends to reduce height of storm surges around east of Scotland.
- Edinburgh has only 1% of properties lying at or below the 5 metre contour (4th lowest for any Scottish local authority).
- No record of Leith having suffered significant damage from flooding, despite location adjacent to Water of Leith where it discharges into Firth of Forth.

Key Issues

- Concern that climate change could make coastal flooding more of an issue in the future, through combination of rising sea levels, more frequent storm surges & rougher sea conditions.
- Considerable uncertainties attached to predictions of future sea level changes, with high dependency on climate change scenarios and levels of carbon emissions. Worst case scenario envisages sea levels in Firth of Forth could be up to 1 metre higher by end of 21st century.
- However, combined with effects of storms surges, high tides and high waves, there could be potential for flooding to affect properties at 4 metres above present sea level, or more.
- Massive Waterfront developments will significantly increase the number of properties and the resident & working populations close to sea level. However, development here is being designed to take account of flood risk.

What is Being Done

- Rigorous flood risk assessment being conducted for Leith area, given proximity both to sea and Water of Leith (possible combined effects of coastal & river flooding); especially important in light of significant development proposals for docks area.
- Assessments of flood risk also being carried out in other coastal locations – notably Portobello, Granton & Cramond.
- Coastal defences inspected regularly and provision made for repair & maintenance.
- Shoreline Management Plan for Firth of Forth will promote integrated approach to coastal flood management throughout the Forth estuary – expected completion 2009.

24 : AIR QUALITY

Why air quality matters

- Air pollution at sufficiently high levels can trigger onset of chronic diseases, exacerbate pre-existing medical conditions (e.g. asthma, cardiovascular disease), and weaken the immune system.
- Degrades natural & semi-natural habitats, e.g. through acidification & contamination
- Discoloration & disfiguration of property, speeds up corrosion, and exacerbates deterioration of stonework & other building fabric.

Edinburgh Characteristics & Trends

- Edinburgh meets national and EU objectives for most airborne pollutants – including small particulates, carbon monoxide, sulphur dioxide, benzene & lead. However, some locations on course to fail EU limit values for nitrogen dioxide (NO₂) which have been set for 2010.
- Two 'Air Quality Management Areas' (AQMAs) now in place, covering parts of City Centre and St. Johns Road in Corstorphine. These have been declared under s.83 of the Environment Act for failure to meet the national annual air quality objective for NO₂.
- Nowadays, very little air pollution in Edinburgh from local industrial & domestic sources.
- Transport / traffic congestion (especially road vehicles) by far the main source of NO₂ pollution. Buses and HGVs have been major contributors, but engines are being upgraded to deal with this. Buses still relatively clean per person mile.
- Worst 'hot spots' tend to be in canyon-like streets with high traffic volumes & limited air circulation, where residential & business premises are exposed to higher concentrations of NO₂. Tenemental properties, characteristic of Edinburgh, are part of this equation.
- AQMAs in Edinburgh now include approx. 3,300 residential properties and 11.2 km. of major roads.
- Ground level ozone concentrations rising fairly steadily – unwelcome trend, but not subject to national objectives because concentration reflects complex, slow-acting, global processes.

Key Issues

- Increasing traffic volumes tending to negate improvements in engine efficiency and local remedial measures, leading to rising NO₂ levels in some locations. Latest figures give cause for concern, prompting consideration of need for further AQMAs, and re-doubling of efforts in existing AQMAs.
- New development areas such as the Waterfront could create new air quality hot spots on arterial roads to city centre. Switching travel to more sustainable & less polluting modes will be vital. Tram will have key role to play in this, but any impedence of general traffic by tram could have negative consequences.
- Immediate vicinity of airport not thought to be at risk of failing NO₂ objective. However, rising traffic volumes from central Edinburgh to airport could increase levels in Roseburn / Corstorphine corridor unless there is significant shift to public transport.
- Need to reconcile conflicting environmental implications of biomass fuelled heating – energy efficiency & reduced dependence on fossil fuels contribute to sustainability objectives, but increased particulate emissions could lead to non-compliance with strict Scottish air quality objective.

What is Being Done

- Air quality systematically and continuously monitored & assessed by the Council in accordance with government guidance on Local Air Quality Management – picks up emerging trends and helps to establish whether remedial measures are effective.
- Air Quality Action Plan produced for Central Edinburgh AQMA in 2003. Currently under review to reflect recent information and changing context.
- Measures proposed to improve air quality centre around public transport promotion, traffic management, adoption of cleaner engine technologies, controls over idling engines etc.
- Land use planning makes significant contribution to air quality objectives : helps to reduce car dependency by promoting compact, mixed use neighbourhoods, amply provided with services & facilities (see chapter 6).
- Clean mass transit systems being promoted to access key growth areas (tram to Leith, tram / train to airport)
- Bus operators modernising fleets to make use of vehicles which comply with most stringent emission standards.

25 : CONTAMINATED LAND

Why contaminated land matters

- Injurious to human & animal health – may be sudden & catastrophic (e.g. explosive substances) or long-term & insidious (e.g. irritants, toxins, biological agents).
- Degrades natural ecosystems – contaminants may spread through food chain or seep into water resources.
- Corrosion of buildings, property & underground services.
- Blighting of land, leading to wasteful land use & inefficient settlement patterns.

Edinburgh Characteristics & Trends

- Edinburgh economy heavily service-orientated. Only a few current activities classed as ‘high risk’ for ground contamination, e.g. petrochemical storage, pharmaceuticals, scrapyards. Also a number of ‘medium risk’ activities, e.g. sewage treatment, printing, transport depots, garages.
- Most contamination is legacy of historic land uses. Even in Edinburgh the number of sites affected could be quite substantial – old tanneries, rubber tyre plants, engineering, printing & chemical works, gas & electricity works, manufacturing using animal products etc. etc.
- Very little contamination from natural sources in Edinburgh (radiation, oil seepage etc.)
- Quantification of land affected by contamination can be problematic, due to limitations of historic records and varying interpretations of contamination.
- However, ‘contaminated land’ is a term which has a very specific legal definition. The formal process of inspection for the purpose of identifying such land is still progressing. No sites in Edinburgh currently feature on the statutory local authority Register of Contaminated Land. At present only 8 sites are listed on such registers across the whole of Scotland.
- Conditions relating to the investigation and remediation of contaminated land are applied to approx. 80 planning applications per year.

Key Issues

- Lack of reliable information on extent and nature of contamination from historic land uses – very few records kept. Hence high dependency on intrusive investigations carried out when redevelopment of ‘brownfield’ land is proposed, and the investigation process set out in Part IIA of the Environmental Protection Act 1990.
- Development of land & property is major catalyst for investigation & remediation of contamination. Raised land values resulting from development are effective way of paying for clean-up. Many regeneration areas in Edinburgh are on brownfield sites with potential contamination.
- Potential for blighting of land, even by rumours of contamination. Very sensitive issue where clear understanding of risks is vital.

What is Being Done

- City of Edinburgh Council has developed a Contaminated Land Inspection Strategy which sets out clear priorities & procedures for identifying statutorily defined ‘contaminated land’ throughout the city.
- Vast majority of remediation is achieved through the statutory land use planning process, with strict conditions attached in relevant cases to investigate and treat contamination to approved standards before development can commence.

26 : VACANT AND DERELICT LAND

Why vacant and derelict land matters

- Detracts from appearance and quality of landscape or townscape. Aura of neglect may sap community pride & motivation, and deter investment, leading to spiral of decline. Often associated with economic decline and multiple deprivation.
- Can attract accumulations of litter & fly-tipping
- Can sometimes be a focus for vandalism & anti-social behaviour.
- May be linked to other issues such as ground contamination (see chapter 25).
- Under-used resource, increasing pressure on more 'pristine' areas.
- However, in some situations vacant land can make positive contributions to urban green space & biodiversity.

Edinburgh Characteristics & Trends

- Edinburgh has relatively low incidence of vacant & derelict land compared with other Scottish cities and most other local authorities in the Central Belt – accounts for just 3% of Scotland's vacant land and 1% of derelict land. Not a particularly significant issue.
- Only 9% of Edinburgh's population lives within 500 metres of a derelict site, cf 27% across Scotland as a whole.
- High land values & pressures for development means land tends to be re-used quickly in Edinburgh. However, may be kept vacant for a number of reasons : 'hope' value, keep out competitors, waiting for right market conditions, negotiating planning consent etc.
- No evidence that 'land banking' contributes significantly to vacant land in Edinburgh.
- Currently 45 vacant sites with total area of 106 ha., and 20 derelict sites, with total area of 83 ha. Main concentrations in the regeneration areas & business growth areas on edge of city, where large scale development is either under way or planned. Also some relatively small inner-city sites.
- Amount of recorded vacant & derelict land has fluctuated, partly due to definitional & methodological changes.
- 25% of vacant & derelict sites have remained vacant or derelict for 5 years or more.
- Dominant previous uses prior to becoming vacant or derelict (in terms of land area) are mineral extraction, transport (esp. railways), housing & manufacturing.

Key Issues

- Correlation between location of vacant / derelict land and more deprived communities.

What is Being Done

- Many vacant & derelict sites are in or close to areas of regeneration and are likely to be brought back into beneficial use in due course through the normal development process. Many are earmarked for residential or commercial development in local plans, though this may be phased over a number of years.

27 : BUILT HERITAGE

Why built heritage matters

- Imprint of past generations; contributes to sense of place & cultural identity; defines unique character of a place.
- Well cared-for built environment makes city a more pleasant & civilised place to live.
- Represents priceless economic asset – historic townscapes & architecture are major tourist draw, and also help to attract key workers, inward investment, international conferences etc.

Edinburgh Characteristics & Trends

- Edinburgh's historic environment & natural features combine to create strong physical identity which is highly valued by residents & instantly recognisable to many people across the world.
- Old & New Towns of Edinburgh World Heritage Site (EWHS) is jewel in Edinburgh's historic heritage crown – one of only 4 across Scotland and 26 in UK. Monitoring reports for EWHS have concluded that state of historic fabric is generally good, though some concerns expressed about massing of proposed developments in and just outside the site.
- Total 4,548 listed items comprising 31,647 individual properties. Largest concentration of listed buildings in UK outside London, with unusually large proportion in the highest category: 39% of listed buildings in the EWHS are category 'A' cf 8% across Scotland as a whole.
- Only 21 Edinburgh buildings feature on Scottish Civic Trust's 'buildings at risk' register, out of 1,300 across Scotland.
- Edinburgh now has 39 conservation areas (CAs), including 23% of the city's population (cf 11% in Glasgow). 'Conservation Area Character Appraisals' now prepared for all of these, to help identify conservation grant priorities, and to assess merits of new proposals which could affect character.
- Conservation areas subject to significant development pressure : over the period 2002-2006 CAs accounted for 35% of total planning application fees.
- Approx. £3M per annum of public money spent on building conservation in Edinburgh, with funding from a range of organisations, including successful bids to Heritage Lottery Fund.
- Edinburgh has 64 scheduled ancient monuments, out of about 7,000 across Scotland.
- Archaeological investigations routinely included as planning condition when development proposed for sites with potential archaeological interest.
- Edinburgh has 20 historic gardens listed on the Inventory of Gardens & Designed Landscapes, covering 2,853 ha.

Key Issues

- Maintaining character of World Heritage Site at heart of a modern, economically dynamic city is inherently challenging. Need for balance - no easy formulaic solutions.
- Similar challenge for conservation areas, where development pressures are generally above average (especially New Town, Old Town, Leith; and to lesser extent Inverleith, Merchiston & Greenhill, Southside,).
- Need to promote highest standards of modern urban design & architecture, so we can create the next generation of conservation areas & listed buildings, but these need to complement the ones we already have.
- Occasional conflicts between heritage interests & other environmental interests, e.g. visual impacts of wheelie bins, air quality monitoring stations.

- Built heritage conservation can have powerful effect in stimulating wider economic & social regeneration, as recognised by Townscape Heritage Initiative projects in Leith.
- Pro-active funding to assist maintenance & restoration of key heritage features is vitally important investment for the future. Needs to be carefully targeted on identified priorities & objectives. Council efforts can lever in significant funding from other organisations.
- Uncertainties surrounding future funding situation for conservation of built heritage;
- Need for more systematic & comprehensive information on the condition of the historic built environment, to monitor changes over time. Being addressed by Historic Scotland through the promotion of a Historic Environment Audit.

What is Being Done

- Council makes full use of its listed building and conservation area powers to resist inappropriate development and protect the essential character of Edinburgh's built heritage, whilst welcoming appropriate development which helps to maintain economic viability & fabric.
- Conservation Area Character Appraisals recently completed for all of Edinburgh's 39 conservation areas – provides a sound basis for planning decisions and award of grants.
- World Heritage Site covered by an up-to-date management plan and systematic monitoring which is held as an example of good practice (undertaken by EWHT).
- Conservation grants provided by several organisations, including the Council, Historic Scotland & Edinburgh World Heritage Trust, depending on context. Grants carefully prioritised, and supplemented by owner contributions.
- Resources focussed on restoring original features and protecting distinctive characteristics. Some funds dedicated to specific projects, e.g. shopfronts in Leith & Portobello, town schemes in Southside & Portobello.
- Ongoing Leith Townscape Heritage Initiative (THI) has been a particular success, with Council funding leveraging in substantial UK lottery funding, and conservation of key historic buildings contributing to wider economic & social regeneration efforts. First stage project completed; second now under way, worth £6.5 million.
- Council maintains records of archaeological sites and ensures archaeological features are investigated, recorded and protected as necessary as an integral part of the land use planning / development process.

28 : PUBLIC REALM

Why the public realm matters

- Public realm is the public 'face' of the city : shared, accessible space where citizens spend significant amount of time and hence have sense of ownership. City centre and local centres particularly important as focal points for human activity.
- Area commonly seen by tourists & visitors – city's 'shop window'.
- Powerful role in shaping the image of the city and sustaining quality of life.
- Sign of civic confidence, civic pride, and ability of agencies to work together.
- Well designed public spaces create opportunities for social interaction – civilised city.
- Quality of public realm exerts significant influence on decision-making : where to invest, where to live, where to visit.
- Poor quality or poorly maintained public realm can be health hazard, and can deter some people from venturing out, leading to social exclusion.

Edinburgh Characteristics & Trends

- Quality of public realm difficult to define & measure. Generally recognised that Edinburgh has inherited highly distinctive, dramatic public spaces, but has tended to under-invest in public realm and neglect upkeep.
- Gradual loss of original materials, e.g. paving.
- Increasing street clutter.
- Road & pavement maintenance expenditure historically low but has recently increased substantially – now 4th highest in Scotland relative to road length.
- Recently updated 'Edinburgh Skyline Study' (draft) concludes that Edinburgh is aware of the value of its skyline and has been relatively successful in preserving it. However, foreground intrusions now more prevalent.
- Volume of road & pavement works increasing – now 27,000 excavations per year. More utility works relative to road length than any other local authority in Scotland.
- Variable quality of building stone in some older properties leading to significant deterioration of building fabric. Some 300-400 incidences of falling masonry or potentially dangerous masonry reported per year.

Key Issues

- Creating, maintaining & improving public realm is sound investment for future quality of life and economic prosperity. Especially relevant to City Centre.
- Edinburgh has perhaps rested too much on its laurels as far as public realm is concerned. Gradual erosion of quality in existing spaces. New spaces of varying quality. Some recent initiatives launched, but efforts on this front need to be redoubled, with progress speeded up.
- Authenticity and durability of materials, and standard of maintenance are particularly important. Use of quality materials can save future expense and disruption.
- Rationalisation of street furniture to reconcile legal, safety, commercial, amenity & heritage interests.
- Structural safety of buildings is issue of vital public interest in Edinburgh – especially falling masonry. Historic building stock, nature of building stone, air quality, vibration, climatic factors & maintenance all play a part.

- Quality of pavements & roads remains a major issue for residents. Also concern about increasing volume of street works and generally poor standard of instatement. These concerns now fully recognised and being addressed, but no room for complacency.
- Public realm implications of tram network recognised as being of fundamental importance, requiring fully co-ordinated approach.
- Large development sites open opportunities to create new, high quality public spaces; widely promoted through the planning system, via site development briefs. May also be opportunities to create dramatic new skylines in appropriate locations.
- Need to explore more systematic ways of measuring the quality of the public realm, and monitoring changes.

What is Being Done

- Inter-agency 'Capital Streets' programme acting as pump primer, with major upgrades to design & materials in three selected public spaces – Castle Street (completed), St. Andrew Square (nearing completion) & Grassmarket (under way). Aims to encourage public usage.
- Substantial efforts made to raise profile of design issues and encourage more rigorous consideration of design at all stages in the development process, e.g. appointment of a Design Champion (Sir Terry Farrell); instigation of training in design awareness. Momentum to be continued with establishment of City Making Board & City Making Forum.
- Strategy for raising the quality of the public realm in new developments clearly set out in recent supplementary planning guidance, including Edinburgh Standards for Urban Design (2003) and Edinburgh Standards for Streets (2006).
- Design briefs for major development areas set out parameters for good design.
- Edinburgh Skyline Study commissioned to assess key views & ensure they are protected, whilst identifying scope for taller buildings in other locations.
- Neighbourhood Regeneration Programme & Town Centre Improvement Programme have helped to improve local environment in suburban neighbourhoods around the city.
- Edinburgh has in place one of the most comprehensive systems in Scotland for monitoring structural safety of buildings and reporting / investigation of incidents.
- Establishment of Roads Commissioner for Scotland should help to co-ordinate streetworks.

29 : STREET CLEANLINESS

Why street cleanliness matters

- Unsightly and unhygienic – potentially injurious to health; can attract vermin, cause offensive smells.
- Barometer of respect for local environment – deeply affects civic pride, community spirit, & quality of life.
- Creates deep impression on outsiders & influences decisions to invest, or recommend as a place to visit.

Edinburgh Characteristics & Trends

- Independent, systematic monitoring reveals general improvement in cleanliness standards in Edinburgh streets & public spaces since 2001. Whilst there has been some improvement within the City Centre, recent results show more of a struggle to maintain standards here.
- Perception of litter as an issue is more acute than across Scotland as a whole, but not untypical of large urban areas. Gradually improving perceptions have mirrored improvements in performance.
- Edinburgh has reached finals of ‘Britain’s Cleanest City’ awards three years in a row.
- Comparative cleanliness audit data for Scottish local authorities (2004 / 5) ranks Edinburgh poorly (3rd from bottom overall), though figures make no allowance for urban / rural differences or very high visitor populations. Fairer comparison with other major cities. Edinburgh has similar score to Dundee & Aberdeen, and higher score than Glasgow.
- City centre littering particularly prevalent at weekends – dominated by discarded food & drink packaging and cigarette litter (especially since start of the indoor public space smoking ban).

Key Issues

- Struggle to maintain & improve cleanliness standards in City Centre – progress more erratic here. Has major effects on civic pride and image of city, so needs to remain a priority.
- Visitors expect to see high standard of cleanliness, but high visitor numbers contribute to pressures.

What is Being Done

- Rapid response teams established to tackle litter hot-spots; also ‘hit squads’ to tackle graffiti, chewing gum & fly-posting. Services increasingly tailored to meet local needs & priorities, based on neighbourhood partnership areas.
- Other recent initiatives have included award-winning anti-litter campaign, appointment of Environmental Wardens (with power to impose on-the-spot fines), increasing number of litter bins, containerisation of waste etc.

30 : NOISE

Why noise matters

- Noise can significantly reduce indoor and outdoor amenity, detracting from the enjoyment of both private and public space.
- Can cause sleep disturbance and stress, which may over time contribute to other health problems.
- Can interfere with communication, and affect learning, understanding, creativity, productivity at work etc.

Edinburgh Characteristics & Trends

- High density inner-city population, with preponderance of flatted accommodation, together with mixture of residential, leisure, tourist, commercial and other uses, creates potential for noise disturbance.
- Dense road network and significant volume of construction activity also contribute to environmental noise; also noise from growing air and rail transport.
- Antisocial noise and environmental noise are both significant sources of disturbance; former covers disturbance by neighbours; latter covers transport & industrial sources, construction etc.
- Noise complaints have generally been rising (allowing for changes in legislation & reporting). Reduced tolerance may play a part in this.
- By far the greatest source of noise complaints is domestic music, followed by other domestic & street noise, commercial noise, construction noise and entertainment.
- Some residential areas in the vicinity of Edinburgh Airport are affected by aircraft related noise disturbance. While quieter engine technology and stringent operational controls will help to limit the number of people affected, this has to be set against projections of continuing rapid growth in air services, with proposals for further physical expansion of the airport (including an additional parallel runway)
- First round of environmental noise mapping in urban Edinburgh has recently been completed under EC Environmental Noise Directive, focusing on noise from transport & industrial sources; shows significant localised variations in environmental noise levels.

Key Issues

- High density, mixed use areas may be more 'sustainable' in certain respects (e.g. energy consumption), but they also have the potential to create higher levels of noise disturbance unless careful attention paid to design.
- Growing development pressures may lead to development of sites with higher exposure to noise, with consequent rising costs of achieving adequate noise insulation.
- Need to reconcile economic / competitive imperatives (e.g. world class transport links) with amenity / noise impacts.
- Need to take careful account of possible noise impacts of transport infrastructure design, e.g. traffic calming & road safety features.
- Not all noise issues fall within the local authority's jurisdiction – e.g. aircraft noise. Public are not always clear where complaints should be directed.

What is Being Done

- Anti-social noise being tackled vigorously through use of new Anti-Social Behaviour powers. Edinburgh was one of the first local authorities to make active use of new powers to deal with

anti-social behaviour & related noise issues; this is a key factor behind the apparent large upsurge in noise complaints over 2005 / 6, compared with other Scottish cities.

- Environmental noise increasingly being tackled under EU Environmental Noise Directive. Background environmental noise levels for Edinburgh now mapped. Will form the basis for production of Noise Action Plans which could entail identification of remedial measures, and designation of quiet areas.
- Council Noise Team now operates round-the-clock and seeks to respond to complaints within one hour.
- Construction noise and operational noise in commercial premises mitigated by imposition of planning conditions, e.g. controlling design, materials, construction methods, hours of operation.
- Airport operator has policies in place to minimise area affected by airport-related noise, and severity of disturbance, especially at night-time (e.g. routing of flightpaths, fines for noise exceedences, variable airport charges in favour of quieter aircraft). Noise Action Plan currently being developed for the airport.

31 : LIGHT POLLUTION

Why light pollution matters

- Obtrusive light affects sleep, melatonin levels etc. and may contribute to stress and other health problems.
- Can reduce privacy & amenity.
- Lighting the sky is a waste of energy and contributes to carbon emissions.
- Disorientating & disruptive to nocturnal wildlife.
- Sky glow impairs astronomical observation and undermines appreciation of man's place in the universe.
- Disbenefits need to be balanced with benefits : safety & security, extended use of outdoor facilities, tourism boost from floodlighting of buildings etc.
- However, excessive lighting doesn't help safety / security and may even compromise it.

Edinburgh Characteristics & Trends

- Main sources of complaints relate to domestic security lighting, sports pitch floodlighting & stray light from commercial premises overnight.
- No evidence to suggest that light pollution is any more or less of a problem than any other large city in UK. Badly affected by 'sky glow', like other large urban areas.
- Closest truly dark skies to Edinburgh are about 17-20 miles away from the city, in the Scottish Borders.
- Proud history of astronomical research in Edinburgh, but sky glow means most observation now 'outsourced' overseas.

Key Issues

- Reduction of unnecessary illumination whilst maintaining adequate lighting for safety & security. Sensitive public issue, so needs delicate handling to achieve appropriate balance. Lighting affects perceptions of safety.
- Many monuments & public buildings in Edinburgh are, or could be, floodlit. However may be opportunity to develop floodlighting strategy which achieves subtle floodlighting without wasting energy & polluting skies.

What is Being Done

- Light pollution is a material planning consideration. Control exercised over lighting in new developments through the planning system : through supplementary planning guidance (Light Intrusion (1999) and Standards for Sustainable Building (2007)); and by planning conditions e.g. to prevent light spillage.
- Street Lighting Strategy being prepared – will take cognisance of energy conservation & light spillage issues.
- Commercial organisations and public institutions becoming increasingly aware of light pollution issues as part of wider push to economise on energy consumption.
- Scottish Government considering whether light pollution should be classified as a 'statutory nuisance' (as in England & Wales).

32 : HUMAN HEALTH

Why the environment is relevant to human health

- Increasing recognition of influences of environment on health, although very difficult to quantify. Understanding of linkages is far from complete.
- Range of health conditions caused or aggravated by polluted air and contaminated water, food or ground (e.g. asthma, allergic reactions, skin conditions). More rarely, health & safety affected by catastrophic events such as explosions, fires or flooding.
- Environment influences road traffic casualties through land use patterns, traffic generation, and design and maintenance of the public realm.
- Energy efficiency can lead to improved home environment, leading to health benefits, financial savings and reduced impact on global environment. Indoor air temperature has significant effect on morbidity.
- Environment has an important influence on health by encouraging or discouraging lifestyle choices, e.g. exercise, healthy eating. Can contribute to or combat childhood obesity, heart disease etc.
- Also some impact on wellbeing, as result of anxiety about environmental impacts (e.g. flooding, high voltage power lines, ground contamination, traffic noise), or unhappiness about condition of local environment (e.g. litter, dereliction).
- Poor quality environment can break down spirit of whole communities.

Edinburgh Characteristics & Trends

- Life expectancy in Edinburgh above Scottish average, and has been improving, but variations from one locality to another.
- Lower incidence of premature coronary heart disease in Edinburgh than Scotland, and significant improvements over last decade, but rates much higher in more deprived areas of city.
- Evidence on local trends in obesity not conclusive, but has been increasing at Scotland level.
- Edinburgh has relatively good provision of paths, cycleways & open spaces to encourage active lifestyles.
- Reasonably good distribution of local facilities, to support walking rather than driving. No evidence of 'food deserts' as such, but accessibility to high quality foods is open to debate.

Key Issues

- Design of cities and spaces which facilitate healthy outdoor exercise : attractive path networks, parks, recreational areas, everyday facilities which can be reached on foot. Avoidance of 'fat city'.
- Approximately 38,000 asthma sufferers in Edinburgh, for whom air quality is significant issue.
- In general, studies at Scotland level have shown correlation between areas of deprivation, poor health, and environmental degradation. However, some environmental issues in Edinburgh affect wealthy as well as poorer communities, e.g. air quality, flooding.

What is Being Done

- Actions on many aspects of the environment described in previous chapters will ultimately have a beneficial effect on human health, e.g. reducing car dependency, provision of networks of green spaces, improving air & water quality, reducing noise pollution, improving energy efficiency in homes.

- Local Transport Strategy has strong focus on promoting walking & cycling as alternatives to the car, citing health reasons as a major justification.
- Environmental improvements are integral part of many regeneration projects in disadvantaged areas of the city. These will potentially deliver significant health benefits since environmental and social inequalities often go hand in hand.
- Planning system can support local availability of inexpensive, wholesome food, but only in tandem with other initiatives, e.g. education, advertising; changes in national planning guidance might be required to make significant difference, e.g. tighter regulation of supermarkets.
- Joint Health Improvement Plan for Edinburgh identifies a safe & healthy environment as a key objective, with focus on improving housing quality, affordable warmth, bus & cycle lanes, and crime reduction.

33 : COMMUNITY SAFETY AND CRIME

Why the environment is relevant to community safety and crime

- Some types of crime & anti-social behaviour have direct negative impacts on environment, e.g. fly-tipping, vandalism, littering, graffiti.
- Equally, the environment can influence crime & anti-social behaviour, e.g. where environment is neglected or misused there may be perception that rules and conventions can be broken with impunity.
- Well designed environment can deter crime. Positive features include mixed uses, steady activity, good natural surveillance, safe pedestrian routes, good (but not excessive) lighting, defensible spaces, clear signage etc.
- These features also provide re-assurance and help to reduce fear of crime
- Provision of attractive outdoor spaces & recreational areas provides constructive alternative to anti-social behaviour.
- However, environment is just one of many influences affecting crime.

Edinburgh Characteristics & Trends

- Crime rates in Edinburgh are slightly above UK average but are relatively low compared with other major cities.
- Fear of crime is amongst lowest in UK, with 18% of citizens feeling very or fairly threatened by crime.
- Incidence of so-called 'environmental crimes' (vandalism, fly-tipping etc.) is close to Scottish average.
- As with health, crime rates vary in different parts of Edinburgh and are closely correlated with various other dimensions of multiple deprivation. However, *perceptions* of crime are more complex and do not correlate so well with deprivation.

Key Issues

- Residents surveys reveal that tackling crime is regarded as one of the top priorities for improving local quality of life.
- These surveys consistently reveal about 20% of Edinburgh residents think their neighbourhood has got worse over the previous year (cf 12% who think it has got better).
- Main factors behind perceived deterioration are vandalism, damage to cars, graffiti, gangs hanging around, and litter (though concerns about litter have reduced).

What is Being Done

- Tackling anti-social behaviour is a top Council priority, entailing close co-operative working with police and local communities. Anti-Social Behaviour and Community Safety Strategies in place.
- In the first initiative of its kind in Scotland, the Council and the Police have set up six 'Safer Communities Units', supported by six additional Council-funded police officers.
- Neighbourhood Response Teams established to provide a rapid response to antisocial behaviour issues across the city, complimenting existing local services