

1 Quality of life

Sustainable Greater Nottingham 2010

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Introduction and background

It seems appropriate to start this chapter with a disclaimer to the effect that it is probably unlikely that Greater Nottingham will be 'sustainable' by the year 2010. Indeed, nor is it likely that any city in the world can, or will, become sustainable in such a short time frame. The best we can hope, along with other cities, is that Greater Nottingham can move towards sustainability over the next ten years. So – what is sustainability?

The Government White Paper on Sustainable Development, published in mid 1999, adopts the standard definition of sustainable development as being "development which meets the needs of the present without compromising the ability of future generations to meet their own needs". It also puts it into simpler terms of ensuring "a better quality of life for everyone, now and for generations to come". The White Paper acknowledges that, although the idea is simple, the task is substantial and requires four objectives to be met at the same time, in the UK and in the world as a whole:

- ❖ social progress which recognises the needs of everyone
- ❖ effective protection of the environment
- ❖ prudent use of natural resources; and
- ❖ maintenance of high and stable levels of economic growth and employment

It is worth noting that these are to be seen as simultaneous objectives. Thus, the expression *sustained economic growth* which is sometimes mistakenly used in documents without the links to social progress, prudent use of natural resources and care for the environment, should not be seen as the equivalent of *sustainable development*.

The idea of *sustainable development* implies the need for some forms of economic activity actually to decline. For example *energy use*, which contributes to economic growth *but also* contributes to pollution, global warming and ozone depletion, must somehow be contained or reduced to achieve sustainability. Also the extensive growth in the use of private cars in our cities (*which would count as economic activity and growth*) may need to be managed and curtailed in favour of public transport in order to achieve protection of the environment and social progress and inclusion. Fewer cars, with a consequent reduction in fuel use, roadside pollution, asthma reduction and lower road maintenance costs would contribute significantly to the *quality of life* of the majority, including, of course, car owners and their families.

Pressures for change

We attempt here to identify the impact of sustainable development upon Greater Nottingham and give some indication of how the city and its population needs to respond to this rapidly changing world. We intend to concentrate, therefore, upon the local issues but these issues cannot be taken out of the context of a wider view of the world itself.

The planet has a weather system which carries both airborne and waterborne pollution across parish, district, county, regional and national boundaries with no regard for lines on maps. Movements of hazardous land based pollutants are still possible on a global basis with relatively little control. In a UK and European context, pressure on availability of landfill sites causes much cross boundary movement of waste materials at considerable economic and environmental cost to the community as a whole. The global picture is striking, literally so from satellite views of pollution damage, with holes in the

ozone layer, algal blooms in the coastal seas around Europe and elsewhere - and it has been increasingly recognised in recent years that mankind lives on 'spaceship Earth'. We are all interdependent, therefore, in a truly global economy.

The Government's White Paper recognises that **Climate Change** is "one of the greatest environmental threats facing the world". UK emissions of carbon dioxide (the main greenhouse gas) per head are similar to the European average and half that of the United States but around twice the average for the world as a whole. "We must continue to reduce our emissions now and plan for greater reductions in the longer term" - it warns.

However, statements by a leading world environmental expert, Dr. Klaus Topfer, head of UNEP and formerly Germany's Environmental Minister, indicate the strongly held view in many scientific circles that there is now nothing we can do in practice to avoid significant global warming in the forthcoming years. Recent major hurricanes and other extreme weather events around the world suggest we may face more increasingly violent storms, consequent flooding and disruption, more severe winter weather, summer droughts and so on. It is also anticipated that there may be significant changes to the geographical spread of wildlife, birds and insects in particular, with associated changes in the spread of insect borne diseases facing the human population.

Other widely recognised global pressures include depletion of natural resources; deforestation; ozone layer depletion and acid rain. The list goes on but it is clear that there has been an impact upon the way individuals and businesses respond to these pressures, just as much in Greater Nottingham as anywhere. Yet, the *concept* of sustainable development is so new that few people have been able to apply it to their daily lives. For one thing, we know very little about how sustainable our actions really are in most fields of human activity.

Guiding principles and approaches

The Government proposals also take account of ten principles which reflect key themes from the Rio Declaration on Environment and Development. Some are established legal principles. Others might better be described as 'approaches' to decision making. These are indicated in the table below.

Putting people at the centre

Sustainable development must enable people to enjoy a better quality of life, now and in the future. In the words of the Rio Declaration, "*human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature*".

Taking a long-term perspective

Sustainable development thinking cannot restrict itself to the life of a Parliament, or the next decade. Radical improvements have to begin now to safeguard the interests of future generations. At the same time we must meet today's needs, for example, people need warm homes, which at present, means using predominantly fossil fuels.

Taking account of costs and benefits

Decisions must take account of a wide range of costs and benefits, including those which cannot easily be valued in money terms. In pursuing any single objective, we should not impose disproportionate costs elsewhere. Public values, the timing of costs and benefits and risks and uncertainties should be taken into account.

Creating an open and supportive economic system

Sustainable development requires a global economic system which supports economic development in all countries. We need to create conditions in which trade can flourish and competitiveness can act as a stimulus for development and greater resource efficiency.

Combating poverty and social exclusion

Eradicating poverty is indispensable for sustainable development. We must help developing

countries to tackle widespread, abject poverty. In this country, everyone should have the opportunity to fulfil their potential, through access to high quality public services, education and employment opportunities, decent housing and good local environments.

Respecting environmental limits

Serious or irreversible damage to some aspects of the environment and resources would pose a severe threat to global society. Examples are major climate change, overuse of freshwater resources, or collapse of globally significant fish stocks. In these cases, there are likely to be limits which should not be breached. Defining such limits is difficult, so precautionary action needs to be considered.

The precautionary principle

The Rio Declaration defines the precautionary principle as "*where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.*" Precautionary action requires assessment of the costs and benefits of action, and transparency in decision making.

Using scientific knowledge

When taking decisions, it is important to anticipate early on where scientific advice or research is needed, and to identify sources of information of high calibre. Where possible, evidence should be reviewed from a wide-ranging set of viewpoints.

Transparency, information, participation and access to justice

Opportunities for access to information, participation in decision-making, and access to justice should be available to all.

Making the polluter pay

Much environmental pollution, resource depletion and social cost occurs because those responsible are not those who bear the consequence. If the polluter, or ultimately the consumer, is made to pay for those costs, that gives incentives to reduce harm, and means that costs do not fall on society at large. At the same time, it may not always be possible for everyone to bear all such costs, particularly for essential goods and services.

Sustainable regeneration – Principles

The Good Practice Guide on Sustainable Regeneration published by the DETR in September 1998 recognises a number of basic principles which now underlie sustainable development worldwide:

- ❖ the pursuit of **lasting economic benefit** in terms of investment, employment, incomes and wealth which enhances the capacity of localities to maintain a continuing and stable level of economic activity.
- ❖ recognition that there are limitations to the exploitation and use of current resources and that exceeding this **carrying capacity** threatens long-term sustainability.
- ❖ acceptance that **social, economic and environmental** sustainability are inter-related and are in turn linked to **institutional** and **cultural** sustainability.
- ❖ belief in **consultation, empowerment and partnership** as the means of mobilising, informing and encouraging changes in attitudes and behaviour.
- ❖ respect for **diversity**, and the strengths which can be built from the co-existence of difference and variety.
- ❖ commitment to **equity** at local, national and international levels, in relation both to current inequalities and to the needs and aspirations of future generations.

Sustainable regeneration - Processes

As well as the principles outlined above, the Government White Paper goes on to identify a number of processes, spelt out at some length in the document but listed here in bullet point form.

- ❖ **maintenance, care and repair** Long-term revenue implications need to be considered and built into SRB schemes.
- ❖ **recycling, re-use, reinvestment** Regeneration is inherently about the re-use of resources - new schemes need to ensure principles of re-use and recycling are built in.
- ❖ **responsibility** Clarity required as to who holds responsibility for long term management.
- ❖ **income flow, funding, resources** Resource flows necessary to long term sustainability involve internally generated income and savings
- ❖ **local resources of labour, supplies, skills** Sustainable local economic activity means relying, wherever possible, on local resources
- ❖ **capacity building, community stability** Social sustainability is enhanced through the establishment of structures which underpin commitment to community empowerment and local ownership.
- ❖ **dynamism, flexibility, variety, change** Sustainability involves the ability to change, adjust to changing circumstances, to foresee new challenge and meet them through flexibility and judgement

These principles and processes should be borne in mind in the context of building the outline of a sustainable regeneration programme for the Greater Nottingham area. A point made by the Good Practice Guide is that an effective approach to sustainable development lies in the integration of a range of policies and programmes which are complementary across social, economic and environmental sectors. In other words a "holistic approach" should be favoured. Having said this, there are several topics associated with regeneration which will be used to outline the key issues which need to be addressed in order to achieve the practical implementation of a sustainable development strategy for the area.

Quality of Life indicators

In order to be able to judge exactly 'where we are now' and to try to make a judgement as to whether things are becoming more or less sustainable we need to examine a number of indicators which may give a clue as to what our current Quality of Life comprises. Much still needs to be done, however, to determine whether things are getting better or getting worse.

As we have seen, it is not enough merely to measure economic activity with GDP figures per person. Other indicators of the quality of life and social inclusion need to be assessed. Thus the GDP per person figure which places the East Midlands, with 94% of the European Union (EU) average, as 43rd out of 76 regions in the EU, needs to be tempered by the fact that Greater Nottingham is also perceived as scoring 'highly for its quality of life'. And yet, the population drift from city to suburbs suggests that there is some inequity in *quality of life* amongst the conurbation's citizens. The City's indices of deprivation, showing the city as the 12th worst in the country, are a strong indication of this persisting inequity.

Regional indicators

The recent publication, in May 1999, of *Sustainable Development Indicators (SDIs) for the East Midlands*, by a consortium of the Environment Agency, the Government Office for the East Midlands, the RSPB and the East Midlands Regional Local Government Association, provides 19 headings from which SDIs for the Region should be developed.

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|---------------------------------|------------------------------------|
| ❖ agriculture | ❖ homelessness |
| ❖ air quality | ❖ income, unemployment and Poverty |
| ❖ built heritage | ❖ participation and democracy |
| ❖ country access | ❖ social cohesion |
| ❖ crime | ❖ tranquillity |
| ❖ culture | ❖ transport |
| ❖ derelict land and development | ❖ waste |
| ❖ economy and business | ❖ water |
| ❖ education | ❖ wildlife, habitats and landscape |
| ❖ health | |

Indicators within each of these headings are seen as 'provisional' and, for many of them, their recent adoption means that they can only be snapshot measures, with no trends apparent to show whether things are getting worse or better. For some, historical information is available in some detail to provide a baseline. For example, under the Derelict Land and Development heading, the report makes the observation that although between 1988 and 1993 the amount of derelict land reclaimed within the East Midlands Region was 1,825 hectares (the highest area reclaimed within any English region), the amount of land becoming derelict was also high and the net amount reclaimed was only 22 hectares. It must also be added that some of these "derelict sites" may act as havens for wildlife too. Even some industrial dereliction has encouraged wildflowers and weeds which represent valuable insect habitats and support birdlife dependent upon insects for food

National SDIs

The Government has proposed a set of about 150 indicators, divided into groupings with approximately 14 'Headline' indicators, shown below.

- ❖ total output of the economy (GDP)
- ❖ investment in public, business and private assets
- ❖ proportion of people of working age who are in work
- ❖ educational qualifications at age 19
- ❖ expected years of healthy life
- ❖ homes judged unfit to live in
- ❖ level of crime
- ❖ emissions of greenhouse gases
- ❖ days when air pollution is moderate or high
- ❖ re-use of previously developed land for new homes
- ❖ rivers of good or fair quality
- ❖ populations of wild birds
- ❖ road traffic
- ❖ waste arisings and management

One other national sustainable development indicator is being planned but has yet to be fully developed - *Satisfaction with quality of life*.

The same consortium which produced the Sustainable Development Indicators (SDIs) for the East Midlands, also published a parallel document, *Viewpoints on the East Midlands Environment*, in May 1999. This points out that "a healthy regional economy requires a good environment to help create the right conditions for tourism, inward investment and business growth - through new environmental markets, waste reduction and long term competitiveness by being ahead of new regulation and legislation".

Air quality monitoring

Two of the key headings for SDI noted above were Health and Air Quality and there is evidence that the two are linked, particularly with respect to respiratory diseases such as bronchial problems amongst the elderly, and asthma.

Intermittent measurements have been made for some time and there have been moves to improve the regular monitoring of the air quality in the city of Nottingham and surrounding areas. Nevertheless it appears that measurements depend upon just two measuring points, one Automatic Urban Network (AUN) and one mobile unit (AQMS). More sites for tests and more frequent testing would provide more assured baseline data. The main pollutants assessed are carbon monoxide, carbon dioxide, ozone, lead, hydrocarbons, oxides of nitrogen and particulates.

Low level ozone is a secondary pollutant formed by chemical reactions of primary pollutants in the presence of sunlight, usually at some distance from their source. Monitored levels exceed air quality objectives at monitoring stations throughout the country and the Government has concluded that there is little effective action that local authorities can take to reduce this pollutant. National policies and international action must be relied upon to achieve the necessary reduction in ambient levels.

Other indicators for sustainable development

As has been identified, sustainable development is such a 'new field', that assessing where the Greater Nottingham conurbation stands is fraught with difficulty. Taking individual issues we can only paint a partial picture as things stand at this moment.

There are, however, several key areas where some assessment may be made. These include buildings and land use; business and the environment; energy; food; waste; transport, and, more generally, the Local Agenda 21 initiatives in the area.

Buildings and land use

The East Midlands Regional Local Government Association recently published a Consultation Draft for Regional Guidance for the Spatial Development of the East Midlands in which it asserted its overall aim to be - *to establish a land-use planning framework which will contribute to improving the quality of life of the citizens of the East Midlands by:-*

- ❖ creating the conditions for economic prosperity and competitiveness
- ❖ safeguarding and nurturing the region's natural and cultural resources; and
- ❖ providing choices and opportunities (including employment, housing and transport) for all

It pointed out that the Government has announced a target of 60% new houses to be built on former brownfield sites over the next ten years, an increase from the former 50% target. This will require phasing to encourage maximisation of use of urban areas and extra effort to identify and remediate derelict land with potential for new building.

The report also points out that housing " ... should be designed to further the aims of sustainable development by encouraging mixed use development in both new-build and regeneration schemes. In doing so, the requirement for development of greenfield land should be reduced, along with the need to travel." Building on brownfield, rather than greenfield, sites will have an important effect in helping to stem population drift - and, thereby, moving towards greater sustainability.

Employment land

Across the East Midlands region a considerable amount of land has already been identified in local plans for employment uses, some 5,653 hectares altogether. For the region as a whole about 29% of land so identified is on brownfield sites. The proportion available for Nottinghamshire and Nottingham city is 43% brownfield (502 hectares), as against 57% greenfield sites (657 hectares). This reflects the former industrial and other uses especially in the City.

With respect to shopping centre provision there is a clear indication that a " ... regional out-of-centre retail development to serve the East Midlands would not be consistent with the sustainable development policies." The document sets out in clear terms, "The role of city and town centres in the region should be protected and sustained. Mixed use developments within and on the edge of such centres can play an important role in achieving this."

Business and the environment

Greater Nottingham appears to be well advanced in the context of business and the environment, since the **Greater Nottingham Business Environment Forum (GNBEF)** has been active since at least 1996 as a *Local Action Group* under the umbrella of the East Midlands Action Group on the Environment (**EMAGE**). EMAGE itself has existed as a networking organisation since 1992 and brings together, uniquely in the UK, all the key players in the business support community concerned with environmental issues.

The Forum, GNBEF, has already undertaken both a supply-side and demand-side analysis of environmental advice capability in the area and the need for such advice amongst local businesses. This is already seen as a "*best practice*" process in the regional context and other EMAGE *Local Action Groups* are adopting this approach. The Forum is also targeting other specific industry sectors for more general environmental advice and support, particularly engineering and printing.

There is much more work that can be done of this kind, not least in terms of sharing information about types of material in the waste stream which may yet have some residual value for other businesses as part of their raw material stream. There is also a

growing pressure on businesses to introduce environmental management systems to their organisations as a matter of good practice.

Energy

Energy production and use are amongst the most significant factors causing pollution and global warming. This is why the issue was considered in depth at the Rio Summit in 1992 and why it was the subject of further international agreements at Kyoto in 1998. Indeed, the pressure for the generation of cleaner energy was largely the cause of the so-called "*dash for gas*" in recent years - with the consequent closure of large portions of the coal industry in this country, not least in the East Midlands, and Nottinghamshire in particular.

Also through the Home Energy Conservation Act (HECA) local authorities now have a wide remit in improving home energy efficiency. Energy plans developed by councils include such measures as draught proofing and loft insulation as well as information, advice and training initiatives. The Ashfield *Energy for Jobs* project was an exemplar project in this field, linking housing energy saving measures with an employment objective to good effect. An indication of the potential savings in this area is provided from the following information from a new survey by Nottingham Energy Partnerships quoted in the Nottinghamshire County Council July/August 1999 Economic Bulletin:-

"Energy-saving measures introduced in council homes have saved Nottingham tenants £5.5m in two years. Almost all the council's 35,000 council houses have had double-glazing, insulation and draught proofing installed in a bid to save energy. This has helped each tenant save £160 in bills between 1996-98 and reduced greenhouse gas emissions by 11,000 tonnes - the equivalent of taking 1,100 cars off the road for a three-year period."

In terms of the 'equity and social inclusion' aspects of sustainable development, energy is potentially a vital factor. Since those at the lower levels of income distribution are known to expend a much higher proportion of their income on heating than those at the higher income levels, savings in energy use can be disproportionately beneficial financially as well as environmentally.

Combined Heat and Power

In terms of energy efficiency Combined Heat and Power (CHP) schemes provide significant benefits over most other forms of energy creation and use. Typically, generation of electricity by itself only converts between only 30%-50% of the input energy, whereas if a suitable use can be made of the waste heat in a CHP plant, the efficiency of the process increases to between 80%-90%. Thus businesses, or groups of businesses, large enough to be able to warrant the capital costs of a new CHP scheme or to be able to negotiate advantageous deals with energy providers, might be targeted for support in any appropriate sustainable development scheme relating to energy provision.

Energy recovery, energy saving and renewable technology

Energy recovery from waste streams is one area where Nottingham, however, has led the way and should be explored as a potentially significant option in a local energy strategy and in terms of waste minimisation and effective waste management practices. Energy saving is potentially a great environmental and economic boost to many businesses who may look at waste minimisation initiatives in their operations.

Transport

As already identified there needs to be a considerable modal shift back towards public transport provision, walking and cycling and away from use of the private car. This is clearly recognised in the recently published Greater Nottingham Package of Transport Policies and Programme 1999/2000, covering the City and its Travel To Work Area.

The go-ahead for Line One of the Nottingham Express Transit programme, Bus Promotion Measures, Park and Ride, Cycling and Pedestrian Schemes are the key issues in a long list of measures discussed in the document. The Summary of the strategy (paragraph G2.25) explains that the main thrust of the strategy for Greater Nottingham is " ... improved environmentally sustainable accessibility to Nottingham City Centre, to

Greater Nottingham's District Centres and to major transport generators such as the hospitals, universities and other major employers."

Whilst all this is likely to effect some improvement in the balance of transport use, it is still the case that increased car ownership and perceptions of the "convenience" of car transport by the majority of car owners who travel to work by car, will continue to increase pressure on road use at peak periods when the system is considered to be saturated. Yet-to-be-agreed elements such as integrated ticketing, increased use of "green commuter planning" and significant improvements in east-west rail links are also needed to begin to see an improving trend.

Greater Nottingham has been declared a "Centre of excellence for integrated transport" by a partnership including the City Council, the County Council, Nottingham Express Transit partners (GNRT/Arrow Light Rail Ltd), Bus Quality Partnership Steering Group (includes Nottingham City Transport and Trent/Barton Bus Operators), National Express Group (includes Midland Main Line & Central Trains Train Operators), Greater Nottingham Commuter Planners and the Nottingham Green Partnership. The following key targets have been set by this broad partnership group:

- ❖ establish the standards and quality of public transport in Greater Nottingham through Public Transport Plans
- ❖ complete Line One of Nottingham Express Transit, operational by 2002
- ❖ increase morning peak journeys into Nottingham by public transport from 27% to 37% by 2011
- ❖ implement public transport infrastructure improvements along 10 of the 14 Bus Quality Partnership corridors by 2006
- ❖ achieve standards of accessibility to public transport as required by the Disability Discrimination Act
- ❖ develop transport hubs in the city centre, district centres and other strategic locations based on Government guidance on interchange best practice
- ❖ work with operators to encourage the introduction of smartcard technology and through ticketing for the majority of public transport journeys by 2001
- ❖ develop the Greater Nottingham Mobility Centre

Waste arisings, recycling and disposal

Action on waste and waste management in the Greater Nottingham area will be very strongly influenced by the impending changes in Government views and strategies on these issues. The Government's Strategy for Waste lays the groundwork against which the activity in Nottingham and environs is benchmarked. The draft waste strategy published in June 1999 indicated that "Waste and waste management have an impact on each of the four key aims of sustainable development". These points are listed below against the four key areas mentioned.

- ❖ **social progress which meets the needs of everyone**
- ❖ social factors can impact on the quantity and nature of waste, often through our patterns of consumption
- ❖ waste can affect our health if it is not properly controlled and managed

- ❖ **effective protection of the environment**
- ❖ the types of wastes we produce, the way we manage them and the way we transport them have impacts upon the environment
- ❖ ensuring high environmental standards for waste management is a priority for Government

- ❖ **prudent use of natural resources: waste as a resource**
- ❖ much of our waste arises from the way we use resources to produce goods and deliver services - this is referred to as process waste
- ❖ the remaining waste we produce results from the goods and services we choose and the way we use them. This is referred to as post-consumer waste
- ❖ learning to see waste as a potential resource is a key step towards sustainable development

❖ **economic growth and employment**

- ❖ the state of our economy has an impact on the waste that we produce and the production and management of wastes has impacts upon our economy

Nationally there were around 27 million tonnes of municipal waste in 1997/98, an increase from the 25.2 million tonnes in 1995/96. Over 90% of municipal waste comes from household sources, which represents around 22kg per household per week. The majority of that waste, around 85%, was disposed of to landfill and about 14% had some value recovered from it.

Nottinghamshire produces around 500,000 tonnes of domestic waste each year, of which 400,000 tonnes was collected and 100,000 tonnes delivered by members of the public to household waste and recycling centres. Of this some 380,000 tonnes (76%) went to landfill and just under one quarter, 120,000 tonnes, was incinerated and used for heating in Nottingham city centre. Nottingham City itself produced approximately 100,000 tonnes of domestic waste - 55% of this tonnage is incinerated too and 5% recycled, the rest being sent to landfill.

All the potential key challenges for society associated with managing our waste strategy differently are likely to involve significant decreases in tonnage of waste being sent to landfill. For example, one goal is expected to be that 45% of municipal waste should be "recovered" from the waste stream by the year 2010. "Recovery", in this context, includes the recovery of useful energy or materials through recycling, composting, incineration or other form of energy from waste.

Summary

It has only been possible to skim the surface of the issues underlying the sustainability of the conurbation of Greater Nottingham over the next ten years - but some indication has been given of the possible nature of just a few of the changes that may be necessary to move towards sustainable development. Broadly, in order to become a more sustainable society in Greater Nottingham by the year 2010, we must:-

- ❖ use energy much more efficiently and a greater share of that energy should be generated from renewable sources
- ❖ conduct business operations more sustainably, introducing environmental management systems and use all resources much more efficiently, paying far greater attention to waste minimisation practices
- ❖ build more on brownfield rather than greenfield sites, using sustainable and waste minimising technologies as much as possible
- ❖ accept that social, economic and environmental sustainability are inter-related and are in turn linked to institutional and cultural sustainability
- ❖ improve the public transport infrastructure and service to encourage moves from private car use
- ❖ reduce pollution of all forms to air, land and water, eliminating it altogether wherever possible.

We cannot do all of this in ten years but we can make a significant start.

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