

Chapter 8 Material Assets

Material assets summary		
Key messages of policy		
<ul style="list-style-type: none">The bulk minerals and waste transport aspects of Derby and Derbyshire Minerals and Waste Local Plans are relevant to the Local Transport Plan. The process of reviewing these has commenced in 2009, with adoption of the waste documents expected in 2012, and mineral documents in 2013. These processes will therefore be interlinked.Asset management will enable a strategic approach to better manage assets to meet customer expectations and ensure the long term sustainability of the transport infrastructure. Lifecycle planning and costing will consider a long term period of 15-20 years, to achieve timely maintenance and value for money.		
Environmental baseline		
Environmental description	Baseline condition	Future trend without LTP3
Transport asset	Extensive transport networks. Generally in a good to moderate condition. Cycle network has been expanding in recent years.	Likely that condition/ provision of more sustainable transport networks would deteriorate.
Use and re-use of materials	Although there is no comprehensive data there are many examples of use of recycled materials and re-use of materials to reduce waste	If resources reduce then there could be a likelihood that less expensive raw materials would be used
Use of energy and fuels by the Authority	No comprehensive data but electrical energy likely to now be at peak usage with efforts to reduce through cost. Fuel usage is likely to be reducing through procuring a greener fleet.	Further reductions would be likely because usage is being driven by cost savings as well as reducing carbon emissions
Environmental issues and opportunities		
Description of issue	Implications/ opportunities for LTP3	
To maintain the transport asset	LTP3 should seek to maintain the transport asset for local travel, to protect sense of place and the natural and historic environment	
Material usage and re-use	LTP3 should seek to minimise the use of raw materials, re-use or recycle materials where possible to reduce waste materials.	
Electrical energy and fuel usage by the Authority	LTP3 should seek to reduce the use of electrical energy and fuel usage.	
Environmental management of LTP3 delivery	LTP3 should seek to incorporate the findings of the SEA process into the Authority's Environmental Management System	
Data gaps		
Description	Action	
Asset condition	The Transport Asset Management Plan is currently developing the asset inventory. In future this inventory will include condition, but it would be impractical to gather this at this stage.	
Volumes of material usage and waste	New software being introduced may allow future material usage to be monitored. A waste management database is currently being developed.	
Fuel usage	Not planning to collect at this stage, but to focus on carbon emissions from the vehicle fleet.	
Draft objectives		
SEA 2 Maintain the transport asset for local travel, to protect sense of place and the natural and historic environment		
SEA 12 Minimise energy usage and reduce dependency on non-renewable resources		
SEA 15 Increase the proportion of re-used and recycled materials used in road and Rights of Way construction and maintenance		
SEA 16 Use locally sourced materials wherever feasible.		

8.1 Stage A1: Key messages of policy context analysis

- 8.1.1 Stage A1 of the SEA, see Annex 1, has identified the key relevant plans, programmes and environmental protection objectives relating to material assets. The key messages of policy context are:-
- The bulk minerals and waste transport aspects of **Derby and Derbyshire Minerals and Waste Local Plans** are relevant to the Local Transport Plan. The process of reviewing these has commenced in 2009, with adoption of the waste documents expected in 2012, and mineral documents in 2013. These processes will therefore be interlinked.
 - Asset management will enable a strategic approach to better manage assets to meet customer expectations and ensure the long term sustainability of the transport infrastructure. **Lifecycle planning and costing** will consider a long term period of 15-20 years, to achieve timely maintenance and value for money.

8.2 Stage A2: Environmental Baseline

Introduction

- 8.2.1 The material assets topic is linked to a number of NATA sub-objectives, including business users and providers, consumer users and public accounts. These cover issues like vehicle operating costs and value of land and property. We don't have any information on this as most of this is outside the remit of the Local Transport Plan. The following baseline assessment focuses on the material assets and use within the gift of the LTP:-
- The transport asset
 - Material usage, re-usage and waste
 - Energy and fuel usage

The Transport Asset

- 8.2.2 The transport asset is a significant part of the County's infrastructure. It has been estimated to be worth £3.5 billion and is therefore a significant asset for communities locally. It allows us to get around whether we drive, walk, cycle, use public transport or horse-ride to visit places or access a wide range of services including working, shopping, education, leisure etc. It also contains many important features relating to our sense of place, much of it features as our historic environment and it provides habitats for many species. During the five-year LTP2 period we will have spent around £125 million of capital funds maintaining and improving Derbyshire's transport asset¹. The Environmental Services Department will also have spent around £625 million² of revenue funds covering services such as routine maintenance, fleet management, waste management, public transport and community transport provision, concessionary fare scheme, winter maintenance and street lighting provision.

Road Network

- 8.2.3 There are 5,656km (3,515 miles) of roads in Derbyshire. 5,528km are controlled by the County Council, the remainder, the M1 Motorway and Trunk Roads, are controlled by the Highways Agency³. County Council roads are classified using the national system:-
- A roads – 618km total length. 83% of which are located in rural areas (509km)
 - B Roads – 471km total length. 80% of which are located in rural areas (378km)
 - C Roads – 1,327km total length. 85% of which are located in rural areas (1130km)
 - Unclassified – 3,112km total length. A more even urban and rural split with 59% in rural areas and 41% urban. 8.8% of unclassified roads are unsealed i.e. they generally do not have a tarmacadam surface and because of their general rural location they are known as green lanes⁴.
- 8.2.4 In addition to the national classification, the Authority has undertaken a project to produce a separate County Road Hierarchy to prioritise different routes depending on the role they perform for the County. As shown in Figure 8.1, this differs to the national classification in some instances.

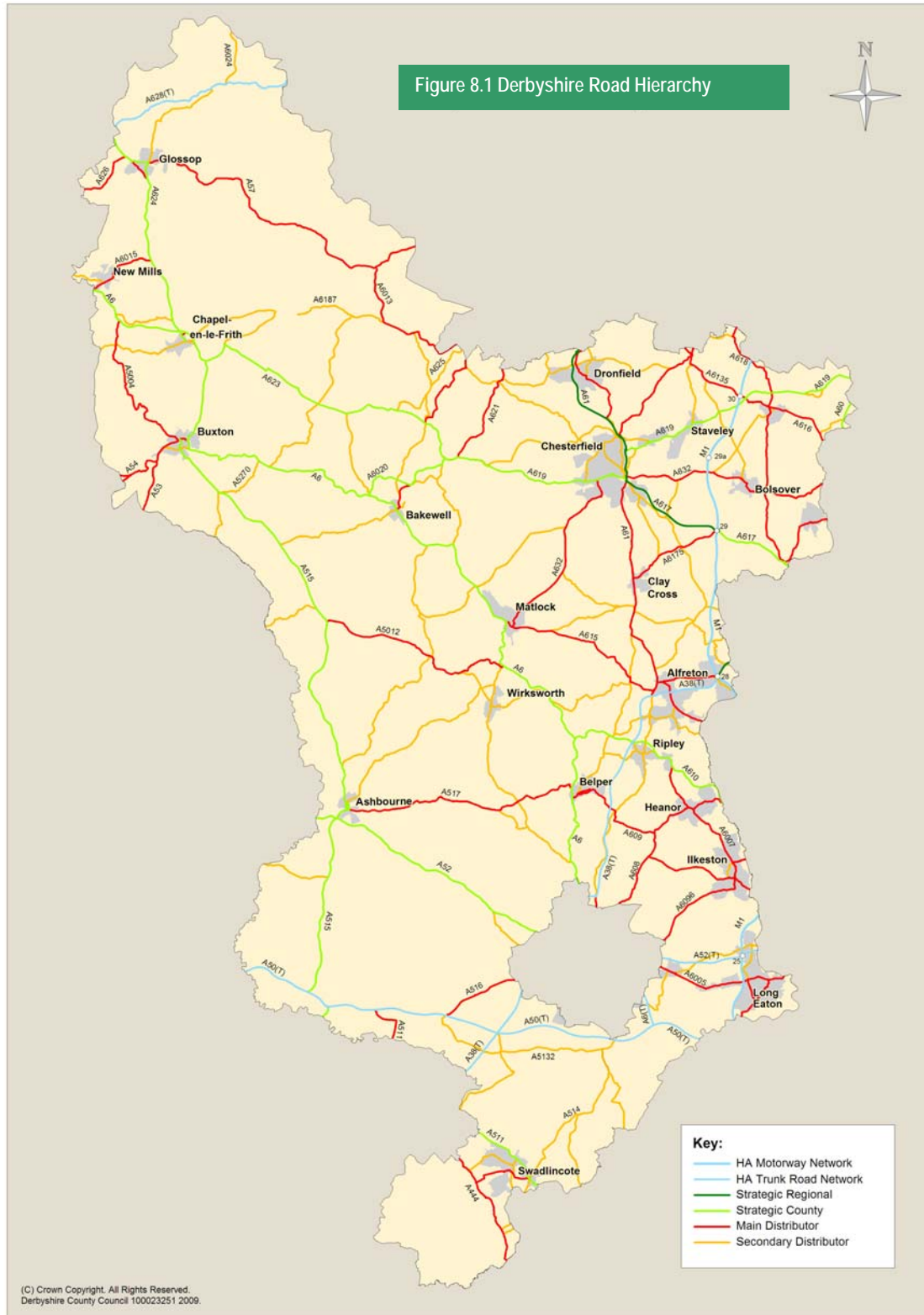
¹ DCC Capital Monitoring/ Capital Allocations

² Using DCC 2009/10 Revenue Allocation as a proxy

³ Department for Transport Estimated Road Lengths 2008

⁴ DCC Rights of Way Improvement Plan 2007

8.2.5 During the last ten years, the condition of all Derbyshire roads has got better. In 2009, only 4%⁵ of A' Roads were found to be requiring structural maintenance which is around the optimum level from a cost-efficiency point of view to maintain annually (compared to around a fifth requiring structural maintenance in 2001 – but the figures are not wholly comparable as different survey techniques were used). The current condition is comparable to the national average of 4.6%⁶. B and C roads are generally in a good condition too and have also improved, although 11% were assessed as requiring structural maintenance in 2009. This is slightly worse than the national average of 8.3%. 14% of unclassified roads require structural maintenance.



⁵ 2009 DCC Scanner Surveys

⁶ www.ltpnetwork.gov.uk Benchmarking tool comparing Counties

- 8.2.6 As part of the Transport Asset Management Plan, an inventory of highway infrastructure is currently being collected. Initial data is shown in table 8.1 below. There is no detail on the condition of these assets within the inventory at present. Bridges and structures are generally in a good condition; in 2009 6.5% were assessed as being substandard and requiring maintenance.

Table 8.1 Derbyshire Road Asset Summary

Asset	Length/ Number	Asset	Length/ Number
Bollards/ hazard markers	22,404 (No)	Kerbing	3,730 (Km)
Warning signs	21,245 (No)	Safety fencing	107 (Km)
Regulatory signs	31,055 (No)	Road bridges	822 (No)
Direction signs	8,199 (No)	Gullies	130,978 (No)
Services/ tourist signs	1,132 (No)	Pumping stations	5 (No)
AA/ RAC signs	7,230 (No)	Culverts	214 (No)
Parking signs	866 (No)	Road studs	353,231 (No)
Bus/cycle/ pedestrian signs	2,259 (No)	Speed cushions	856 (No)
Longitudinal lining	7,214 (Km)	Road humps	2,358 (No)
Yellow lining	407 (Km)	Raised junctions	69 (No)
Special road markings	29,899 (No)	Traffic islands	1,480 (No)
Hatched markings	186 (Km)	Manholes	5,836 (No)
Transverse lining	380 (Km)	Retaining walls	450 (Km)

Note these figures are initial outputs/ estimates from Asset Management Inventory Collection and may change as data is verified.

Electrical Infrastructure

- 8.2.7 The road and walking network contains a wide variety of illuminated transport infrastructure. At April 2009, the majority is street lights with 88,026 lighting columns containing 92,621 lamps across the County. These range from historic lamp columns to new energy efficient columns which are generally replacing dangerous concrete columns. Through the LTP2 environmental strategy lamps have been replaced to make existing columns more energy efficient. Other illuminated infrastructure is:-

- 2,760 illuminated bollards
- 7,453 illuminated signposts
- 622 illuminated flashing amber warning lights for schools
- 232 central refuge beacons
- 182 pedestrian crossing beacons
- 629 illuminated bus shelters

- 8.2.8 In addition to lit infrastructure, there are of course a number of electronic traffic management signals, signs and infrastructure. Technological improvements are now contributing to energy efficiency savings through the use of LEDs in signal heads or the use of solar/ wind energy to power some electronic warning signs. In January 2010 these assets were:-

- 118 Traffic signals
- 7 Equestrian crossings
- 17 Toucan crossings
- 172 Puffin crossings
- 95 Pelican crossings
- 8 Bridge protection signs
- 94 Electronic warning signs
- 45 Mobile electronic warning signs
- 99 Safety Cameras
- 5,500 signal heads

Parking Infrastructure

- 8.2.9 Parking in Derbyshire is provided by a mixture of local authority/ National Park/ privately run controlled off-road car parks; and free, parking meter controlled, residents permits on-street parking. The County Council only has control over the on-street parking in Derbyshire, although a partnership between the County Council and local planning authorities exists for the enforcement in both off-road and on-street parking areas controlled by the authorities. We do not have any details about the number of spaces for parking on our roads.

Walking Network

- 8.2.10 There are 4,217km of footways in Derbyshire. Footways are categorised by their usage. The busiest of these are known as Category 1 & 2. The condition of these is surveyed on an annual basis which shows that this has improved significantly over recent years with only 6% requiring structural maintenance, compared to 32.7% surveyed between 2003 and 2005. Other infrastructure associated with walking networks are; 23km of pedestrian guard railing and 55 footbridges.

- 8.2.11 There are also 9,311 public rights of way in Derbyshire recorded on the Definitive Map and accompanying Statement. Their total length is 5,176km (more than 3,200 miles)⁷. There are 5,364 public rights of way signs alongside the road network. The majority are located within the more rural districts of Derbyshire Dales and High Peak. There are four categories of rights of way:-
- Footpaths – 4,589km
 - Bridleway – 516km
 - Restricted Byway (formerly known as Roads Used as Public Paths) – 61km
 - Byway Open to All Traffic (BOATs) – 10km
- 8.2.12 All rights of way are available for walking including a further 380sq km of open access land located across the moorlands and limestone valleys of High Peak Borough and Derbyshire Dales District. There is also an increasing network of multi-user off-road routes being developed – see paragraph 8.2.14 below. Many rights of way are over land outside the ownership of the County Council. A proportion of the network is surveyed each year to assess whether a right of way is easy to use, rather than purely consider condition of surfaces which can vary. 72.5% were assessed as being easy to use in 2008/09 rising from 51.5% in 2003/04.
- 8.2.13 Motorised users wanting to use rights of way for recreational purposes are only entitled to use BOATs. We are aware that there are issues of motorised users using other rights of way, which cause damage to the landscape and historical features and safety concerns for people e.g. damage to scheduled ancient monuments described in Chapter 5.

Cycling Network

- 8.2.14 In April 2009, there were 388km of off-road routes available for cyclists to use⁸ see Figure 8.2. 289km of these are also multi-user routes available for walking and horse riding, as well as cycling. These networks have increased significantly over the last ten years – in 2001 there were just 135km of off-road cycle routes⁹. It is estimated that there are 53km of on-road cycle routes in Derbyshire. The condition of the off-road routes is not assessed and therefore we do not have any data about this, but since 2006 an allocation has been made towards their upkeep from LTP monies. Other facilities for cyclists are also provided such as advanced stop lines at traffic signals and cycle parking facilities. We have not yet collected this information.

Bus Network

- 8.2.15 Over 260 separate bus services operate across Derbyshire during each week¹⁰. During 2008/09 29.5 million passengers were carried, which has increased from 26.8 million in 2003/04¹¹. Around 90% of bus services are provided on a commercial basis, the remaining 10% are supported by the County Council which are usually evening, recreational or health related services. Service frequency can vary from 10 minutes in some urban centres to rural villages that have services on only certain days of the week. An example of the bus network and frequency in Derbyshire is shown on page 4-21. In addition the County Council funds free school transport for around 9,000 students and supports bus services for about 20,000 fare-paying students. There are eight Community Transport schemes around the County providing accessible transport for people and groups who cannot normally use public transport. The LTP has provided capital support for vehicle purchase over the last few years.
- 8.2.16 There are nine bus stations in Derbyshire. In addition there are around 7,500 bus stops, of which around 1,500 have shelters¹². The total number of stops in Derbyshire varies depending on the bus services operating at the time. Shelters are usually owned by the District or Parish Councils. Many stops have been improved over the last few years with better information and raised boarding areas.

⁷ DCC Rights of Way Improvement Plan 2007

⁸ Email from DCC Countryside 26/09/2009

⁹ Derbyshire LTP 2001 Annual Progress Report

¹⁰ DCC List of Bus Services in Derbyshire

¹¹ Derbyshire Bus Operator Returns

¹² Draft DCC Traffic Network Management Duty Plan January 2010



Rail Network

- 8.2.17 The County is well served by rail services to all the nearby conurbations. Much of the rail network in Derbyshire is managed by Network Rail, although there are a number of privately owned heritage railways. There are 34 rail stations which are managed by the relevant train operating companies, the largest is Chesterfield railway station. During the last ten years we have made contributions to train operating companies to improve facilities at railway stations, including refurbishing waiting rooms, providing new shelters, better information, help points, CCTV etc.
- 8.2.18 There are also a number of freight lines and terminals in Derbyshire. The majority of these are located around the limestone quarries in the High Peak. Derbyshire is one of the richest county's in the country in terms of the variety of mineral resources. The Draft Derby and Derbyshire Minerals and Waste Core Strategy Draft Scoping Report 2009 highlights that the county (excluding the Peak District National Park) produces around 12 million tonnes of minerals each year, of which sand and gravel and crushed rock for both aggregate and industrial uses (limestone and sandstone) are the most prevalent. The majority of crushed rock for aggregate use comes from limestone and is mainly

used in the production of concrete, as roadstone, or filling material. This material is transported by a mixture of both road and rail, particularly within the East Midlands and Yorkshire and the Humber, but also to the North West, West Midlands and the East of England.

Canals

8.2.19 The canal network has already been described in the water chapter – see chapter 8.

Data Gap

Although we now have comprehensive data about most of our transport assets, we do not have condition for much of the infrastructure, other than condition of roads, footways and bridges. At this stage the asset management data collection will not include condition data, but it will in future be extended to this as our assets are managed through the Asset Management Plan.

County Council Vehicle Fleet

8.2.20 The County Council, in 2010, has a vehicle fleet of 850 various vehicles. In addition to this employees use around 8,000 of their own vehicles (known as the grey fleet). The County Council is at the forefront in establishing a greener fleet and is undertaking a number of initiatives, mainly targeted at reducing its carbon emissions such as purchasing more environmentally friendly vehicles when replacing fleet vehicles, trialling alternative vehicles such as electric cars and undertaking driver training to reduce fuel consumption.

Material Usage, re-usage and waste

8.2.21 Each year we undertake over 200 capital maintenance schemes and 200 capital integrated transport schemes¹³. These schemes involve a whole range of different transport interventions, such as resurfacing a road, replacing bridges, bus facilities, cycle routes, purchasing Community Transport vehicles, road safety schemes, environmental schemes, contributions to others etc. Revenue funding includes an even wider range of interventions. Each of the capital schemes and revenue funded services therefore use a wide range of materials.

8.2.22 We have found it difficult to obtain comprehensive information about the current volumes of materials used in road and transport schemes' construction. This information is kept on a scheme by scheme basis and it would require a significant amount of work, even just the capital schemes, to calculate this. Having said that we do know that we try to use reuse materials where possible or use recycled materials. For example, since 2000 we have used recycled materials such as 'Tarmac Toptrek' to construct or resurface our greenways. Materials are also re-used on site where possible, such as reusing road planings on greenways or using materials from cuttings in ramps elsewhere.

8.2.23 Within the sections relating to Cultural Heritage and the Landscape we have described the impact the geology of the County has in relation to the use of locally distinctive materials and the sense of place that is characterised by this. These sections highlight evidence on a scheme by scheme basis on the usage of locally distinctive materials e.g. use of gritstone kerbing in Buxton town centre. However, as with all other material usage, we do not have records of total usage per annum.

8.2.24 We do not have any comprehensive information about the recycling of our waste materials from transport interventions or the volumes of waste sent to landfill. Some analysis was undertaken in 2004/05 which showed that around 49% of waste created was recycled¹⁴. We do have a target to encourage recycling for road building purposes and promote a 'rethinking construction'¹⁵, approach to highways operations to hopefully reuse or recycle all highway waste. For other waste that is produced by the Environmental Services Department, a waste register is kept which records the type of waste but does not at the moment collect the volume. Some types of waste on the register are:-

- Bitumen containing coal tar
- Concrete lighting columns
- Gully cleansing silts
- Road traffic accident wastes
- Street lighting lamps
- Electrical components

¹³ Using DCC 2009/10 LTP Capital Programme as a proxy

¹⁴ Email from DCC Environmental Management Team

¹⁵ Application of best practice and improving performance which was the outcome of a Report produced by Sir J Egan for John Prescott Deputy Prime Minister 1998

Data Gap

We do not intend to collate information on total material usage at this stage because of the significant time and cost it would take to compile this. A new software programme being introduced by the County Council may allow future use of materials to be monitored but this is yet to be confirmed. A DCC Waste Management database is currently being developed which will collect and analyse all of the Authority's future waste. However, it is unlikely that the data will be useful to identify trends until at least 12 months from launch and will therefore be more of a useful tool to monitor delivery of LTP3, but we will revisit the issue should there be a likely impact shown.

- 8.2.25 We are also aware that we have an Environmental Management System in place within the Department that helps manage the work of the Department in relation to meeting environmental requirements. The EMS manages the daily work of the Department and therefore the delivery of the Local Transport Plan. An opportunity exists to incorporate the findings of this SEA into the EMS. The extract from DCCs EMS Manual below provides details about the system.

Environmental Services has therefore developed an Environmental Management System (EMS) to assist the department in meeting applicable legal requirements and policy commitments and to achieve continual improvement in environmental performance as expected by our customers, partners and regulators. The EMS enables us to manage our activities, establish objectives or set controls to achieve the Council's environmental policy commitments and take action as necessary to improve our environmental performance. It has been designed to apply to and support delivery of our department's services and it is an integral part of managing our daily work.

The department's EMS gained certification for meeting the requirements of the International Standard BS EN ISO 14001 in February 2002. Since then it has been checked twice yearly by external auditors and on an annual programme basis by internal auditors to ensure that it continues to meet the Standard.

Road Salting

- 8.2.26 A significant amount of materials used is the use of salt to de-ice/ act as a precaution against ice on the road network. The County Council currently salts 2,500 km of the highway network which represents 45% of the total county controlled highway network. Table 8.2 below shows the average salting figures for Derbyshire. The predicted impact from climate change is reduced temperature leading to less periods of freezing conditions or snowfall which should see a reduced requirement for road salting. However, there is still a likelihood of extreme weather events such as a severely cold winter such as that experienced in 2009/10 which could mean greater fluctuations in salt usage.

Table 8.2 Derbyshire Road Salting 2005/06 to 2008/09

Year	Salting Turn Outs	Amount of salt used (tonnes)
2005/2006	110	28,079
2006/2007	55	14,622
2007/2008	92	21,302
2008/2009	131	32,287

Energy and Fuel Usage

- 8.2.27 In examining energy and fuel usage we are only considering County Council operations and provision of transport networks of which the Authority is in direct control of use of both electrical energy and oil. In Chapter 6 we have already examined the environmental baseline in relation to carbon emissions. In Chapter 6 we have detailed the Authority's energy usage from its lit transport infrastructure. We have less information about the use of oil as fuel is bought from a variety of sources. As an example we have detailed of our 'bunkered fuel'¹⁶ use at three depots as shown in Table 8.3. We only have three years of data so it is difficult to determine any trend in fuel usage. Future focus is likely to be about carbon emissions so we suggest we scope out fuel usage and focus on carbon emissions.

¹⁶ Fuel stored at DCC sites for use by the vehicle fleet

Table 8.3 Bunkered Fuel Use at DCC Depots 2007/08 to 2009/10

Year	Derv (Litres)	Gas Oil (Litres)
2007/2008	333,909	100,316
2008/2009	412,450	132,010
2009/2010	310,062	70,726

Data Gap

Total fuel usage by the County Council's vehicle fleet is not currently known. This information should be available but it will be collected through many different systems. In terms of fuel usage we are not seeking to collect this information at this stage as we will concentrate on the Carbon emissions as described in Chapter 6 as a reduction in carbon emissions should replicate in a reduction of fuel usage.

8.3 Stage A3: Environmental Problems and Opportunities

- 8.3.1 In this section we summarise the key issues or challenges for LTP3 that we have identified through the SEA stages A1 and A2 which have identified the key messages of policy and an assessment of the environmental baseline. In this section we also identify the key opportunities for LTP3.

Key Issue/ Challenge	Implication/ Opportunity for LTP3
To maintain the transport asset	LTP3 should seek to maintain the transport asset for local travel, to protect sense of place and the natural and historic environment
Material usage and re-use	LTP3 should seek to minimise the use of raw materials, re-use or recycle materials where possible to reduce waste materials.
Electrical energy and fuel usage	LTP3 should seek to reduce the use of electrical energy and fuel usage.
Environmental management of LTP3 delivery	LTP3 should seek to incorporate the findings of the SEA process into the Authority's Environmental Management System

8.4 Stage A4: Developing SEA Objectives

- 8.4.1 Emerging SEA objectives for material assets are as follows:

SEA 2 Maintain the transport asset for local travel, to protect sense of place and the natural and historic environment

SEA 12 Minimise energy usage and reduce dependency on non-renewable resources

SEA 16 Increase the proportion of re-used and recycled materials used in road and Rights of Way construction and maintenance

SEA 17 Use locally sourced materials wherever feasible.