

OXFORDSHIRE MINERALS & WASTE CORE STRATEGY

PROPOSED PREFERRED WASTE PLANNING STRATEGY

Purpose of the Waste Strategy

1. The Waste Planning Strategy must make planning provision for the facilities that will be required for the management of all wastes in Oxfordshire over the period to 2030. This reflects the role of the County Council as waste planning authority, with responsibility for planning all waste developments. The County Council is also the waste disposal authority and as such has responsibility for the management of household waste and other municipal waste collected by the five district councils. The county and district councils work together on municipal waste management as the Oxfordshire Waste Partnership. This planning strategy is separate from, but is consistent with and compliments, the municipal waste management strategy of the Oxfordshire Waste Partnership (see paragraph 17 below). Other (i.e. non-household) types of waste are managed by private sector companies.
2. This planning strategy makes provision for the waste management capacity that is expected to be needed in order to effectively manage the waste produced in Oxfordshire. In doing so, it anticipates the requirements of the waste disposal authority and the private sector waste management industry within the context of changes in the quantities of waste produced and the effects of other policy and financial drivers on the way waste is managed. But, in facilitating new waste management facilities, though making provision for development, this strategy itself seeks to promote changes in waste management practice in line with European, national and other relevant policy and the objectives of this Core Strategy.

Context for Waste Development in Oxfordshire

Current Waste Production and Management in Oxfordshire

3. It is estimated that over the last 10 years Oxfordshire has produced approximately 2.2 million tonnes of waste each year, principally made up of:
 - Municipal Solid Waste (MSW) – approximately 0.3 million tonnes a year – this is waste that is collected and managed by the District and County Councils; it mainly comprises household waste and some commercial waste;
 - Commercial and Industrial (C&I) waste – approximately 0.6 million tonnes a year – this is waste produced by businesses, much of which is similar to municipal waste; this waste is managed by private sector companies;

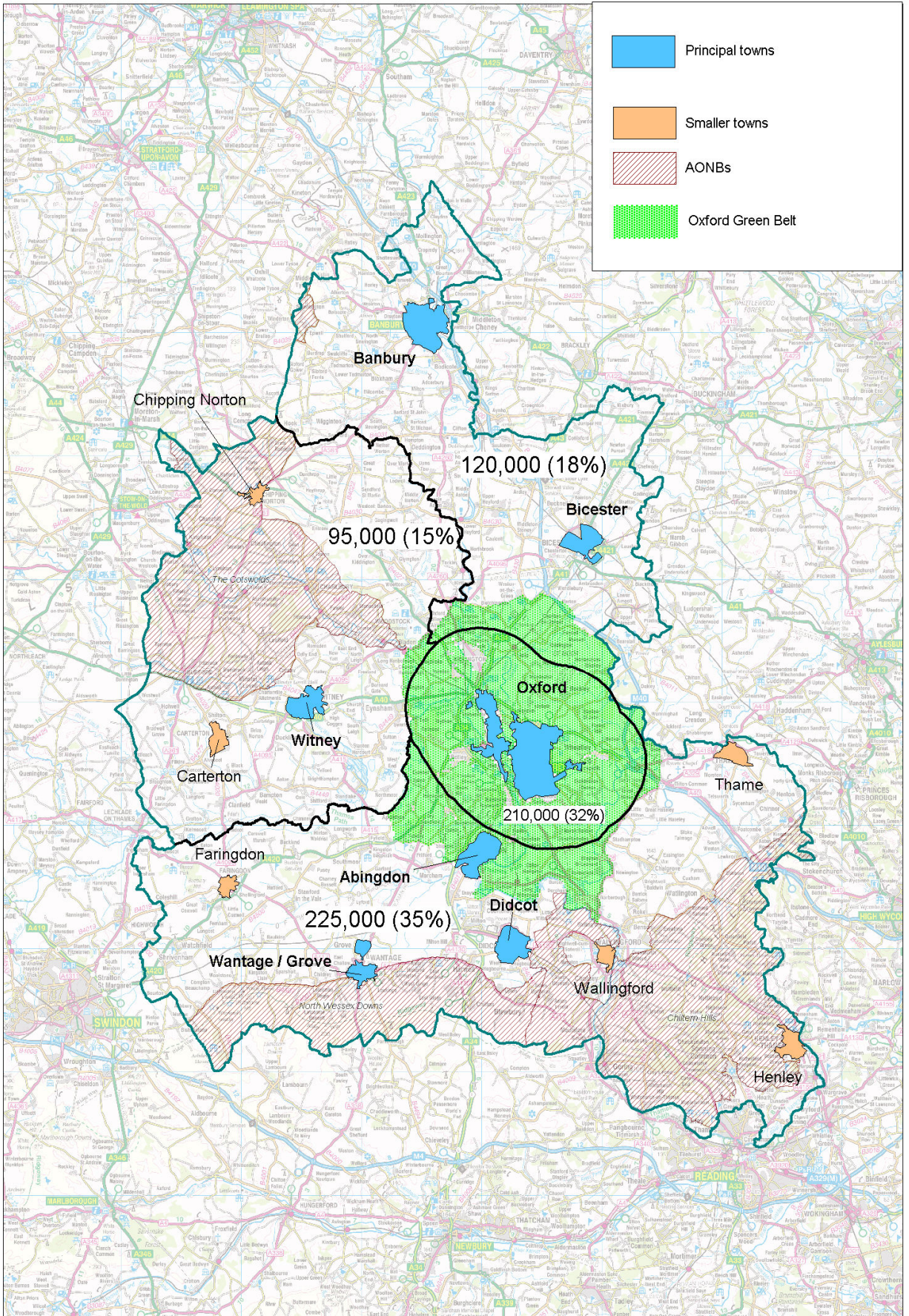
- Construction, Demolition and Excavation (CDE) waste – approximately 1.2 million tonnes a year – this is waste produced from demolition and construction activities, much of which is inert material such as soils, brick and concrete; this waste is managed by private sector companies.
4. Other wastes are produced in smaller quantities:
 - Metal waste – approximately 50,000 tonnes a year – this is end of life vehicles and other scrap metal;
 - Sewage Sludge – approximately 20,000 tonnes a year – this is the waste that results from the treatment processes at waste water treatment works;
 - Hazardous waste – approximately 40,000 tonnes a year – this comprises a variety of materials which are hazardous in nature, including oils and solvents, chemicals and asbestos;
 - Radioactive waste – see paragraph XX below.
 5. It is estimated that the total amount of waste produced fell to approximately 1.6 million tonnes in 2010, largely due to an estimated halving in production of CDE waste resulting from a decline in building activity with the economic recession.
 6. Some waste produced in Oxfordshire is sent out of the county. Approximately 0.7 million tonnes of waste a year is imported into Oxfordshire; this is mainly MSW and C&I waste for disposal to landfill. (see paragraphs 18 – 22 below).
 7. In the past the majority of waste was sent to landfill, but the management of waste in Oxfordshire has changed markedly in recent years. In 2009/10, 43% of MSW was recycled or composted. Figures for C&I waste are less certain, but it is estimated that between 30% and 50% of C&I waste is recycled. For CDE waste, no more than 15% is now landfilled with the majority being recycled as aggregate or soil or recovered for other use (including quarry restoration and landfill engineering). Metal waste is collected for recycling at scrapyards. The majority of sewage sludge is spread on agricultural land, with the remainder being taken to London for incineration. Hazardous wastes are dealt with at a variety of specialist facilities, mostly outside the county.

Population and Economic Growth in Oxfordshire

8. The population of Oxfordshire in 2008 was estimated to be 640,000, and is forecast to grow by a further 12% by 2026. This growth will require the construction of a large number of new dwellings and related development. The largest concentration of housing and businesses in the county is Oxford, which together with nearby places like Kidlington, Botley, Kennington and Wheatley contains a third of the county's population. Outside Oxford, there are large towns at Banbury and Bicester to the north, Witney to the west, and at Abingdon, Didcot and Wantage and Grove (the Science Vale area) to the south.

9. Future growth in Oxfordshire is planned to be focused around Bicester, Oxford and Science Vale (Didcot and Wantage and Grove). The Science Vale area (including Harwell, Culham, Milton Park and Grove) has a concentration of globally competitive science and technology businesses and provides 13% of all research and development employment in the South East. A key objective of the Oxfordshire Local Economic Partnership and the Oxfordshire Sustainable Community Strategy is to encourage further economic growth so that Oxfordshire retains its global competitiveness.

10. The following map shows the location of Oxford and the large towns of Banbury, Bicester, Witney, Abingdon, Didcot and Wantage and Grove, together with the small towns of Chipping Norton, Carterton, Faringdon, Wallingford, Henley and Thame. It also shows the county divided into four areas, with the proportion of the county population within each area:
 - Oxford and nearby areas (as described in paragraph 8 above);
 - Northern area, around Banbury and Bicester;
 - Western area, around Witney;
 - Southern area, around Abingdon, Didcot and Wantage and Grove.The population figures give an indication of the likely distribution of waste production across the county. The majority of the county's waste is expected to be produced within the Bicester – Oxford – Science Vale area, but with significant amounts also arising from Banbury and Witney / Carterton. The small towns and surrounding rural areas will produce much smaller quantities of waste.



Provision for Waste Management

11. A waste needs assessment has been produced as a separate document. This sets out in more detail the amounts of waste produced and managed in Oxfordshire; estimates of the quantities of waste that will need to be managed in Oxfordshire over the period to 2030; the existing capacity at waste management facilities in the county; and the additional capacity that it is estimated could be required over the plan period and for which provision needs to be made.
12. It is estimated that the amounts of waste produced in Oxfordshire could increase over the period to 2030, as shown in the following table for the three main waste types.

Estimates of Oxfordshire waste to be managed 2010 – 2030
(tonnes per annum)

	2010	2015	2020	2025	2030
MSW	310,000	330,000	340,000	350,000	370,000
C&I	570,000	580,000	600,000	620,000	640,000
CDE	650,000*	1,300,000	1,300,000	1,300,000	1,300,000
Total	1,530,000	2,210,000	2,240,000	2,270,000	2,310,000

Figures rounded to nearest 10,000 tonnes

* Reflects reduction in normal construction activity due to current economic position.

13. The annual quantities of other types waste are also estimated to increase over the period 2010 to 2030:
- Hazardous Waste – from approximately 40,000 tonnes to 60,000 tonnes;
 - Metal Waste – from approximately 50,000 tonnes to 60,000 tonnes;
 - Sewage Sludge – from approximately 20,000 tonnes to 25,000 tonnes.

How wastes should be managed in future

14. European and national policy for waste management (EU Waste Framework Directive, 2008 and Planning Policy Statement 10 'Planning for Sustainable Waste Management') set out the following waste hierarchy, in which prevention of waste is the most desirable option and disposal is the option of last resort:



By moving the management of waste up the hierarchy, the Government aims to achieve more sustainable waste management and to break the link between economic growth and the environmental impact of waste.

15. Landfilling biodegradable waste produces methane gas which is a powerful greenhouse gas. European and national legislation and policy has put in place financial and policy drivers to reduce the amount of biodegradable waste that is sent to landfill, and increase the recovery of resources from waste. The European Landfill Directive sets challenging targets for the reduction of biodegradable municipal waste sent to landfill and the National Waste Strategy includes targets for recycling and diversion of waste from landfill. There are strong financial drivers towards achieving these targets in landfill tax, which applies to all wastes and has been increasing year on year; and the Landfill Allowance Trading Scheme, which applies to municipal waste. These measures are increasing the costs of landfill so that it will no longer be the cheapest means of dealing with waste, with the objectives of diverting waste away from landfill, moving up the waste hierarchy to more sustainable ways of waste management and increasing the recovery of resources from waste.
16. In line with the waste hierarchy, this strategy provides for the management of waste produced in Oxfordshire to move as quickly as is practical to a situation of maximising recycling and composting and minimising the disposal of waste to landfill. In assessing the provision to be made for waste management facilities, the waste needs assessment works from targets that reflect this approach, as set out in the following table. These take account of targets in the South East Plan, but are modified to reflect the higher recycling and composting targets for MSW that are considered achievable in Oxfordshire and maximum diversion of MSW and C&I waste from landfill being achieved from 2015. These targets assume that from 2015 any MSW and C&I waste that is not recycled or composted will, so far as is practical, be treated in an energy from waste or other resource recovery facility, and that only approximately 2% of these wastes will be sent direct to landfill.

Oxfordshire waste management targets 2010 – 2030

Waste Management / Waste Type	Target Year				
	2010	2015	2020	2025	2030
MSW:					
Composting & food waste treatment	29%	30%	31%	31%	31%
Recycling	25%	31%	31%	31%	31%
Treatment of residual waste	0%	37%	36%	36%	36%
Landfill	46%	2%	2%	2%	2%
C&I:					
Composting & food waste treatment	0%	5%	5%	5%	5%
Recycling	50%	50%	55%	60%	60%
Treatment of residual waste	0%	43%	38%	33%	33%
Landfill	50%	2%	2%	2%	2%
CDE:					
Recycling	50%	50%	60%	60%	60%
Landfill/Restoration	50%	50%	40%	40%	40%

17. The Oxfordshire Joint Municipal Waste Management Strategy (2007) is being reviewed by the Oxfordshire Waste Partnership; consultation is expected later in 2011. It is unlikely that this review will raise significant planning issues (e.g. radical changes to targets for MSW recycling and diversion of waste from landfill or needs for new waste management facilities) that have not already been anticipated. Nevertheless, the waste spatial strategy should include flexibility to allow for any changes in municipal waste management requirements in Oxfordshire.

Waste imports and exports

18. Oxfordshire is largely self sufficient in waste management, with about 90% of its waste currently being managed within the county. Approximately 140,000 tonnes of waste were exported out of the county in 2008.
19. Oxfordshire is a net importer of waste. It receives large amounts of waste from elsewhere, particularly from London (much of it by rail) and Berkshire, most of which goes to landfill. In 2008, more than 700,000 tonnes were imported into Oxfordshire, with Sutton Courtenay being the biggest receiving landfill site. Oxfordshire has a large remaining non-hazardous landfill capacity (suitable for MSW and C&I waste) compared with London or much of the rest of the South East. South East Plan

policy W3 recognises this and specifies the landfill provision that Oxfordshire should make for waste from London.

20. It is expected that waste will continue to be brought into Oxfordshire for disposal by landfill, but in declining amounts over the period to 2030 as waste is increasingly diverted to new recycling and residual waste treatment facilities in London and elsewhere. The rate of decline is difficult to predict but, based on South East Plan policy W3, it is estimated that imports into Oxfordshire could be as shown the following table.

Oxfordshire: estimates of waste imported for disposal to landfill 2010 – 2030
(million tonnes)

	Total imports for 5 year periods			
	2010-15	2016-20	2021-25	2026-30
London	1.33	0.84	0.42	0.42
Elsewhere	2.25	1.42	0.71	0.71
Total	3.58	2.26	1.13	1.13

London Waste Imports to 2025 are as for South East Plan Apportionment

London Waste for period 2016-2025 assumes that 66% of the apportionment for that period is taken up in first 5 year period

Waste from elsewhere is based on an assumed current import rate of 450,000 tpa

Waste from elsewhere for period 2016-20 is in same proportion to period 2010-15 for London (63%)

London waste and waste from elsewhere for 2026-30 is assumed to be as for period 2012-30

21. These figures show a decrease in imports over time, reflecting the expected development of new waste recycling and treatment capacity and diversion of waste from landfill in London and elsewhere. But the rate at which this change will take place is uncertain. Also, as landfill sites elsewhere in the South East are filled up, there could be an increase in the residual waste that is sent to remaining landfills in counties like Oxfordshire.
22. Apart from deliveries by train to Sutton Courtenay, it is expected that waste will be transported by road. Movements into the county are expected in particular to be via the A34, M40, and A43, from sources of waste production to the south and east of Oxfordshire.

Vision and Objectives for Waste Planning Strategy

23. The vision for Oxfordshire's waste planning strategy is informed by the character of and growth and development aspirations for the county, the policy context and the issues for waste planning that need to be addressed. It responds to the need to support Oxfordshire's economy but also to protect its environment.

24. Waste Planning Vision

- a) By 2030 there will have been a transformation in the way Oxfordshire manages its waste, with increased recycling and

composting of waste, treatment (so far as is practicable) of all residual waste that cannot be managed in those ways, and only the minimum amount of waste that is necessary being disposed of at landfill sites. The county will remain largely self-sufficient in dealing with the waste it generates. An economically and environmentally efficient network of clean, well-designed recycling, composting and other waste treatment facilities will have been developed to recover material and energy from the county's waste and help sustain its world class economy.

- b) Waste management facilities will be distributed across the county, with larger-scale and specialist facilities being located at or close to large towns, particularly the growth areas, and close to main transport links, and smaller-scale facilities at or close to small towns. This network will have helped to build more sustainable communities that increasingly take responsibility for their own waste and reduce the distance waste needs to be moved within the county.

Waste Planning Objectives

- 25. The Oxfordshire Waste Planning Vision is supported by the following eight waste planning objectives.
 - i. Provide for waste management capacity that enables Oxfordshire to be self-sufficient in meeting its own waste needs.
 - ii. Provide for delivery as soon as is practicable of waste management facilities that will drive waste as far up the waste hierarchy as possible, in particular recycling and composting facilities that are at least sufficient to meet the targets set and facilities for treatment and diversion from landfill of Oxfordshire's remaining (residual) waste.
 - iii. Provide for waste to be managed as close as possible to the source of arising and minimise the distance waste needs to be transported by road, to reduce the adverse impacts of mineral transportation on local communities, and allowing communities to take responsibility for their own waste and generally providing for a broad distribution of facilities, but recognising that some types of waste management facility are uneconomic or not practical below a certain size and therefore will need to serve a wider area.
 - iv. Recognise that waste management is an integral part of community infrastructure and take opportunities for facilities to be located in or close to the communities they serve, including in conjunction with planned growth, and for recovery and local use of energy (heat and power) from waste.
 - v. Prioritise the use of previously developed land, including land within the Green Belt if appropriate, and ensure that new waste

management facilities are sensitive to the amenities of local communities and do not cause unnecessary harm to the County's distinctive natural and built environment.

- vi. Promote sustainable waste practice in new construction work based on the principle of keeping waste to a minimum, managing waste on site where possible, recycling construction waste as aggregate, and creating buildings and layouts that facilitate the recovery of resources from waste and opportunities for combined heat and power.
- vii. Secure the satisfactory restoration of landfill sites and other temporary waste management sites where the facility is no longer required or acceptable in that location, in keeping with the surrounding area.
- viii. Recognise that waste will continue to be imported into Oxfordshire from London and elsewhere for disposal by landfill and seek to limit this to residual waste following recycling and treatment elsewhere and for the quantity to decrease over time as new facilities are provided where the waste is produced.

Development of the Spatial Strategy for Waste

- 26. The Core Strategy needs to set out how much additional capacity for different types of waste management is expected to be needed over the period to 2030, and how, where and when it should be provided, including a clear framework for the identification of suitable sites for waste management facilities. This can be through the specific allocation of sites in the Core Strategy, the identification of broad areas within which such facilities may be acceptable or a combination of the two. Options have been identified that give a broad indication of the areas where new waste facilities might be located. Other, small facilities could be delivered through criteria based policy. It is clear from the waste needs assessment that the strategy should in particular support the provision of additional facilities for the following:
 - Recycling of C&I waste ;
 - Recycling of CDE waste;
 - Residual treatment of C&I waste;
 - Transfer of residual waste to treatment facilities.
- 27. For clarity and ease of explanation, the different types of waste are considered separately. But, in practice, MSW and C&I waste recycling and treatment facilities can and will cater for both of these waste streams, and it may be appropriate for some existing facilities to be extended to help meet the additional requirements that are identified.
- 28. The chosen strategy must be deliverable. Sites have been nominated by waste companies and landowners for recycling and residual waste

treatment. But in terms of the needs to be met this does not necessarily mean there is plenty of choice, particularly in the case of residual waste treatment. So, regardless of whether the Core Strategy makes specific site allocations, site deliverability should be considered in developing the strategy, particularly where there is an urgent need for new facilities to be provided in the short term.

29. The strategy also needs to have flexibility to enable it to respond to future changes in waste management. There have been huge changes over the last 10 – 20 years and it is likely there will be further changes over the period to 2030. This plan should be reviewed within 10 years, when any changes in requirements can be taken into account.
30. Earlier consultation (Minerals & Waste Core Strategy Issues and Options Consultation Paper, June 2006; Minerals & Waste Core Strategy Preferred Options Consultation Paper, February 2007) indicated general support for locating waste facilities close to urban areas, where waste is produced. PPS10 includes an objective for planning strategies to provide a framework in which communities take more responsibility for their own waste, and enable sufficient provision of waste management facilities to meet the needs of communities. In line with this objective, the location of waste management facilities should be related as far as possible to the large towns, which are likely to be the main areas of waste generation in the county, as shown on the map above. This points to a strategy for locating facilities close to the Oxford and Abingdon, Didcot and Wantage and Grove (Science Vale) areas and Bicester, with possible additional strategic provision at Banbury and Witney. But the small towns may also have a role to play in meeting some of Oxfordshire's waste management needs.
31. Areas could be identified around each of the large towns that might be considered to be close to an urban area and within which larger waste facilities might be accommodated. These could for example be 2 kilometre or 5 kilometre bands around the towns or they could be more specifically related to the main road network. The availability of potentially deliverable sites will also be important, particularly where the requirement for new facilities is urgent, and needs to be taken into account.
32. For the main waste streams, there are two broad strategy options:
 - concentration at large/medium facilities focused on the large towns, particularly the Bicester/Oxford/Science Vale area;
 - a more dispersed pattern of smaller facilities related to both the large and small towns.

The most appropriate option will vary between waste streams and waste types of waste management facility.

Municipal Solid Waste (MSW)

Existing Facilities

33. Existing facilities that handle MSW include:
- three open windrow composting sites (two permanent and one temporary), and a further temporary site (Sutton Courtenay) which takes waste from London;
 - one in-vessel composting site (Ardley);
 - one anaerobic digestion plant (Cassington);
 - three recycling facilities (Witney, Enstone and Culham), which take in kerbside collected recyclable waste and separate it into individual materials to be sent on to reprocessors (although the Culham facility is a transfer station that bulks up recyclable waste and send it on to a recycling plant in the West Midlands); and
 - eight household waste recycling centres, where members of the public can take waste for recycling – under a strategy agreed by the County Council in April 2011 these will be reduced to six (two serving Oxford and one each in the other four Districts).

There are also planning permissions for a second anaerobic digestion plant (Crowmarsh) and a further (temporary) in-vessel composting facility (Sutton Courtenay).

34. Residual MSW is currently landfilled in Oxfordshire (apart from a small amount which goes to Buckinghamshire.) From mid 2014 it is planned that the vast majority of this waste will instead be treated at the permitted energy from waste facility at Ardley. It is estimated this will take up approximately 120,000 tpa of the total 300,000 tpa capacity of the plant. Residues from the Ardley plant will comprise: bottom ash (25% of the weight of the waste input), which will have ferrous metals recovered and the remainder will be recycled as a construction material (aggregate); and hazardous fly ash, which will be disposed at a hazardous waste landfill outside Oxfordshire (it is proposed to be taken to a site in Gloucestershire).
35. There is just over 13 million cubic metres of non-hazardous landfill capacity in Oxfordshire, mostly at 5 landfills which can take both MSW and C&I wastes: Sutton Courtenay; Dix Pit; Ardley; Alkerton; and Finmere.

Additional Requirements

36. Taking into account the permission at Crowmarsh, there is sufficient provision to meet expected food waste treatment requirements for MSW. For green waste there will be a need to replace (or extend the life of) the capacity at the temporary composting site at Hinton Waldrist (2024). The temporary site at Sutton Courtenay (2019) would only need to be extended or replaced if it was decided it would be appropriate to continue to take green waste from London for composting.
37. Under the new Household Waste Recycling Centre Strategy two new facilities need to be provided:
- on the north side of Oxford by 2012, for which a site has been identified at Kidlington and a planning application has been submitted; and

- at Banbury by 2014, to replace the existing facility at Alkerton. The existing facilities at Stanton Harcourt (Dix Pit), Drayton, Oakley Wood and Redbridge will continue to operate, but four others will close (Alkerton, Ardley, Dean, and Stanford in the Vale).
38. The existing provision for recycling of MSW is otherwise sufficient to meet expected requirements. But replacement of the transfer station at Culham by additional recycling capacity for the southern part of Oxfordshire (whether at Culham or at a new location) could reduce the distance waste is transported. The provision of such a facility would be dependant on the recycling contractor for South Oxfordshire and Vale of White Horse Districts.
 39. The Ardley energy from waste facility is expected to meet all Oxfordshire's requirement for residual MSW treatment from mid 2014. In view of the location of this plant in the north east of the County, a need has been identified for bulking up and transfer of residual MSW from the southern and western parts of the County for efficient transportation to Ardley, and the County Council (as waste disposal authority) intends to let a contract for to provide these. It seems most likely that this will involve two transfer stations, but other solutions may be put forward by private sector bidders.
 40. There will be a small (approximately 7,000 tpa) on-going requirement for landfill of MSW that cannot be composted, recycled or treated at the Ardley plant. The existing permitted non-hazardous landfill capacity is estimated to be sufficient to meet this to 2030.

Commercial & Industrial (C&I) Waste

Existing Facilities

41. The relatively small quantities of C&I green and food waste are handled at the same facilities that handle MSW.
42. Recycling of MSW and C&I requires similar types of facilities for taking bulked up waste delivered by lorry and separating it into individual materials to be sent on to reprocessors. Some of the existing facilities handle both waste streams. Current combined MSW and C&I recycling capacity is approximately 400,000 tpa (not including household waste recycling centres), but about 40% of this is at temporary facilities. The most significant permanent facilities are at Banbury, Enstone, Chipping Norton, Witney (2 sites), Cassington, and Grove. The Banbury facility currently operates as a transfer station, but planning permission has been granted for a new recycling plant.
43. From mid 2014 the energy from waste facility at Ardley is expected potentially to have capacity to treat up to approximately 180,000 tpa of C&I waste. Residual C&I waste is currently landfilled, at the same 5 non-hazardous landfill sites that are currently available for MSW (see paragraph 13 above). These sites have a combined capacity of just over

13 million cubic metres. Some 1.2 million tpa (from both within and outside Oxfordshire) have been disposed at non-hazardous landfills in recent years. This is expected to decrease as increased recycling, composting and recovery diverts both MSW and C&I waste away from landfill. But there is uncertainty over future amounts of waste from outside the county (see paragraph 21 above) and this decrease could partly be off-set by a decline in landfill capacity in other areas (particularly elsewhere in the South East).

Additional Requirements

44. The relatively small requirement for C&I composting and food waste treatment could be met by the same facilities that provide for MSW. But further opportunities for treatment of commercial food waste may arise in conjunction with farm waste or sewage sludge, as in the on-farm anaerobic digestion plant proposed at Warborough which the County Council has resolved to permit. Such facilities would provide benefits in terms of recovery of energy from waste.
45. For C&I waste recycling, there is an estimated gap of approximately 170,000 tpa between the capacity forecast to be required and capacity at existing facilities, mainly due to the temporary nature of many existing facilities. This requirement mainly arises from 2015 onwards. Provision of this capacity could range from 3 or 4 large facilities to 6 to 8 medium or small facilities. The additional provision is mainly expected to be needed to serve Banbury (where there is planning permission for a new facility), Bicester, Oxford and Southern Oxfordshire, particularly Didcot and Abingdon. There are permissions for new large permanent recycling facilities at Banbury and near Oxford (Gosford), although there are doubts that this will be built, and for a large temporary facility at Finmere.
46. The location of the Ardley plant, just off the M40/A43 junction and close to the county boundary, means it is likely to attract waste from outside Oxfordshire. It is therefore assumed that only half (90,000 tpa) of the potential C&I waste capacity will be available for non-municipal waste from Oxfordshire. This leaves an estimated gap in required provision of approximately 160,000 tpa by 2015. The need for this additional capacity will be mainly in Southern Oxfordshire but also in the Witney area. Provision of this capacity could range from 1 large facility to 4 small facilities. A current planning application proposes a large mechanical biological treatment plant at Sutton Courtenay which, if approved, could meet the requirement. Also, the County Council has resolved to grant temporary planning permission for a gasification plant of 90,000 tpa at Finmere.
47. As with MSW, it is expected that from 2015 there will be a small (approximately 10,000 tpa) on-going requirement for landfill of C&I waste that cannot be composted, recycled or treated. The existing permitted non-hazardous landfill capacity is estimated to be sufficient to meet this to 2030, even allowing for continued landfilling of waste from London and elsewhere.

Construction, Demolition and Excavation (CDE) Waste

Existing Facilities

48. Current recycling capacity is nearly 600,000 tpa, across 22 sites, but about 40% of this is at temporary facilities. The main permanent facilities are at Bloxham, Eynsham and Playhatch (Caversham).
49. There is approximately 3.7 million cubic metres of inert landfill void currently available, at 19 sites, providing space for about 5.7 mt of waste. But much of this is at just two sites (Shellingford Quarry and Shipton on Cherwell Quarry).

Additional Requirements

50. There is currently a surplus of CDE recycling capacity but this is expected to change to a deficit by 2015, as demand for recycling increases with economic recovery and planning permissions for temporary facilities expire. The maximum requirement is estimated to be approximately 420,000 tpa. There are potential benefits, through operating synergies and reduced transportation of waste, from locating temporary recycling facilities at landfill and quarry sites. If it is assumed that about 240,000 tpa of CDE recycling capacity will continue to be provided in this way, the capacity required in additional, permanent facilities is estimated to be 180,000 tpa. Provision of this capacity could range from 2 or 3 large facilities to 15 small facilities.
51. It is estimated that the existing permitted inert landfill void is sufficient to provide for CDE waste landfill until at least 2020. Over the period to 2030 It is estimated there will be a need for an additional 2 – 3 million m³ of landfill capacity. But there will be an ongoing requirement for inert waste for infilling and restoration of quarries which could accommodate this. Therefore no additional separate provision needs to be made for inert waste landfill.

Metal Wastes (including end of life vehicles)

52. Existing permanent waste metal sites (scrapyards) have capacity to manage approximately 160,000 tpa of waste. This is sufficient to meet estimated requirements over the plan period.

Sewage Sludge

53. Oxfordshire lies almost entirely within the operational area of Thames Water and has 6 sludge treatment centres, at Banbury, Bicester, Oxford, Witney, Didcot and Wantage & Grove. These treat sludge from both their immediate treatment works and from smaller treatment works and have a combined capacity of approximately 27,000 tpa (dry solids). This is sufficient to meet estimated requirements over the plan period.

Hazardous Waste

54. Many of the hazardous waste management facilities in Oxfordshire are small and specialised. The more significant facilities are: the hazardous waste transfer stations at Ewelme and Banbury; the oily waste transfer facility at Standlake; and the Ardley landfill, which currently can accept non-reactive hazardous waste (mainly asbestos). In view of the specialist nature of hazardous waste management facilities, hazardous wastes often have to be transported much longer distances to suitable sites than do other waste types. The nearest hazardous waste landfills to Oxfordshire are at Swindon, Cheltenham and East Northamptonshire; and the nearest hazardous waste incinerators are at Slough and Fawley (Southampton).
55. Production of hazardous waste in Oxfordshire will increase with construction of the Ardley energy from waste incinerator, which will produce hazardous fly ash, but the operator proposes this will be taken to a hazardous waste landfill in Gloucestershire. It is estimated that additional capacity could be required for approximately 50,000 tpa of hazardous waste. But this will comprise different waste materials that require different types of treatment or disposal facility. The specialised nature of most hazardous waste facilities is such that they need to serve a larger than single county area and absolute county self-sufficiency is not practical.

Radioactive Waste

56. Radioactive waste in Oxfordshire mainly comprises the nuclear legacy wastes which already exist, principally at Harwell, with smaller quantities at Culham (JET project). The decommissioning of these nuclear sites is important for future economic development within the Science Vale area. This will require the storage, removal and disposal of radioactive wastes from these sites. The County Council, as waste planning authority, would deal with planning applications for any facilities for storing, managing or disposing of radioactive waste in Oxfordshire. Policies and provision for management of this waste should be included in the Minerals and Waste Development Framework.
57. The Nuclear Decommissioning Authority is responsible for decommissioning and site clearance at Harwell, through the site licence company Research Sites Restoration Limited. Decommissioning is expected to be carried out over a long period; the current target date for final site clearance at Harwell is 2064, but much of the decommissioning is planned to be carried out by 2031.
58. There is no waste of high level radioactivity remaining at Harwell, but some of the waste is of intermediate level radioactivity. This will need to be disposed at the proposed national facility (deep geological repository), but that is not expected to be available during the period to 2030. In the meantime there will be a requirement for treatment and storage of an estimated 10,000 m³ of intermediate level waste from Harwell and a

smaller amount from Culham. The site waste management plan for Harwell envisages provision of a new on-site storage facility, with the possibility of this also accommodating some waste from Winfrith in Dorset. The Nuclear Decommissioning Authority is also considering an alternative option of moving intermediate level waste from Harwell to a storage facility elsewhere (outside Oxfordshire), but is thought to be less likely.

59. Most of the nuclear waste at Harwell and Culham is of low level radioactivity and mainly arises from demolition and clearance of buildings which have a small amount of radioactive contamination. Small quantities of this will have to be taken for disposal to the existing specialist facility in Cumbria (near Drigg), or may possibly need to be disposed at the proposed national deep geological repository. But the remainder of this waste is classified as very low level waste and could be disposed in a suitable landfill facility rather than unnecessarily taking up valuable space at the facility in Cumbria. Some low level waste may need to be stored for a time to allow radioactive contamination levels to reduce to the appropriate level for safe disposal by landfill. It is estimated there is a requirement for storage and/or disposal of approximately 100,000 m³ of low level radioactive waste from Harwell and a smaller amount from Culham. Disposal could be in a small bespoke facility, most likely at or near the source of the waste, or at a technically suitable conventional landfill.
60. In addition, small quantities of low-level activity radioactive wastes are produced in Oxfordshire from non-nuclear sources, mainly from medical, research and educational establishments. These are currently taken to specialist disposal facilities outside Oxfordshire. The small quantities of non-nuclear low level waste arising in Oxfordshire could continue to be managed through existing arrangements.

Spatial Strategy Options for Waste

A. Municipal Waste (MSW)

61. The need for additional facilities specifically for MSW is for a few specific facilities, and the spatial options for these are limited.
62. Option A1: Municipal Waste (MSW) Recycling
Under the County Council's new Household Waste Recycling Centre Strategy, the only reasonable option is for two new household recycling centres at:
- Oxford area;
 - Banbury.
- A new facility has been proposed and a planning application submitted for a site at Kidlington which was previously identified in the Oxfordshire Minerals and Waste Local Plan. A site needs to be identified at Banbury to enable provision in 2014 (to replace the existing site at Alkerton).

63. Whilst there is otherwise sufficient existing provision for MSW recycling, the distance waste is transported for recycling could be reduced by provision of a new recycling facility in the Abingdon/Didcot/Wantage & Grove area (to replace the transfer station at Culham, either at the same site or another location). But there is no requirement for this facility in the short term and provision would be dependent on the recycling contractor for South Oxfordshire and Vale of White Horse Districts and therefore it is not identified as a separate option. Instead, a criteria policy could be included, against which any proposal could be considered.

64. Option A2: Municipal Waste (MSW) Transfer Stations

In line with assumptions about the likely outcome of the procurement of these facilities, a single option has been identified to meet the need for transfer of MSW to the Ardley energy from waste facility from 2014; this is for two transfer stations at:

- Abingdon/Didcot/Wantage & Grove;
- Witney/Carterton

Sites need to be identified for these facilities to enable provision in 2014. However, a contract has yet to be let by the County Council (as waste disposal authority) for this provision and it is possible that other solutions may be put forward by bidders. Flexibility is therefore needed.

B. Commercial & Industrial (C&I) Waste Recycling

65. Option B1: 3 or 4 additional large recycling facilities at or close to large towns in:

- Northern Oxfordshire (Banbury/Bicester);
- Oxford and nearby areas;
- Southern Oxfordshire (Abingdon/Didcot).

66. Option B2: 6 to 8 additional medium or small recycling facilities at or close to large and small towns in:

- Northern Oxfordshire (Banbury and Bicester);
- Oxford and nearby areas;
- Southern Oxfordshire (Abingdon, Didcot, Faringdon, Henley, Thames).

67. These facilities would not need to be exclusively for C&I waste, and could take MSW as well, but the identified need is specifically for C&I recycling. It mainly arises from 2015, particularly from 2020 onwards, and therefore there is not an immediate need to identify sites. Facilities should be sized in relation to the quantity of waste expected from that locality. Large facilities would be over 50,000 tpa; medium facilities would be 20,000 – 50,000 tpa; small facilities would be less than 20,000 tpa. Small facilities may be acceptable on suitable sites in rural parts of the county. There are permissions for new large permanent recycling facilities at Banbury and near Oxford (Gosford), although there are doubts that this will be built, and for a large temporary facility at Finmere.

C. Construction, Demolition and Excavation (CDE) Waste Recycling

68. Option C1: 3 or 4 large permanent facilities at or close to large towns in:
- Northern Oxfordshire (Banbury/Bicester);
 - Oxford and nearby areas;
 - Southern Oxfordshire (Abingdon/Didcot/Wantage & Grove);
- and
Medium or small temporary facilities at landfill and quarry sites across Oxfordshire.
69. Option C2: 6 or more medium or small permanent facilities at or close to large or small towns;
and
Medium or small temporary facilities at landfill and quarry sites across Oxfordshire.
70. Option C3: a range of permanent facilities at or near the large and small towns across Oxfordshire.
71. The requirement for additional provision mainly arises from 2015. Facilities should be sized in relation to the quantity of waste expected from that locality. Large facilities would be over 50,000 tpa; medium facilities would be 20,000 – 50,000 tpa; small facilities would be less than 20,000 tpa. Small permanent facilities may be acceptable on suitable sites in rural parts of the county.

D. Commercial & Industrial (C&I) Residual Waste Treatment

72. Option D1 1 large facility in the Abingdon/Didcot/Wantage & Grove area.
73. Option D2: 3 or 4 smaller facilities at:
- Oxford;
 - Didcot/Abingdon/Wantage & Grove;
 - Witney/Carterton)
74. There is an urgent need for site(s) to be identified to enable this provision by 2015. A current planning application proposes a large mechanical biological treatment plant at Sutton Courtenay.

E. Hazardous Waste Landfill

75. Option E1: No additional provision
Continue to rely on hazardous landfill sites outside Oxfordshire, apart from disposal of non-reactive hazardous waste (mainly asbestos) in existing non hazardous landfills in Oxfordshire where acceptable.
76. Option E2: Existing landfill

Change one of Oxfordshire's existing non-hazardous landfills to hazardous landfill (Alkerton, Ardley, Finmere, Dix Pit or Sutton Courtenay).

77. Option E3: New landfill
New hazardous waste landfill in Oxfordshire.
In the absence of any site nominations for hazardous landfill, no particular location is put forward at this stage.

F. Intermediate Level Radioactive Waste Storage

78. Option F1: Storage at source of waste
Treatment and long-term storage of intermediate level nuclear waste at:
- Harwell (waste arising from Harwell only);
 - Culham (waste arising from Culham only);
- pending removal to a national disposal facility.
79. Option F2: Concentrate Oxfordshire waste storage at Harwell
Treatment and long-term storage of intermediate level nuclear waste (waste arising from Harwell and Culham) at Harwell, pending removal to a national disposal facility.
80. Option F3: Concentrate Oxfordshire and Dorset waste storage at Harwell
Treatment and long-term storage of intermediate level nuclear waste from Oxfordshire (waste arising from Harwell and Culham) and storage of waste from Dorset (waste arising from Winfrith) at Harwell, pending removal to a national disposal facility.

G. Low Level Radioactive Waste Management

81. Option G1: Disposal at source of waste
Storage and disposal in a bespoke facility at source of waste at:
- Harwell (waste arising from Harwell only);
 - Culham (waste arising from Culham only).
82. Option G2: Concentrate waste disposal at Harwell
Storage of waste at source of waste and disposal in a bespoke facility at Harwell (waste arising from Harwell and Culham)
83. Option G3: Disposal at off-site landfill in Oxfordshire
Storage of waste at source of waste and disposal in a suitable off-site landfill in Oxfordshire.
84. Option G4: Disposal at off-site landfill outside Oxfordshire
Storage of waste at source of waste and disposal in a suitable off-site landfill outside Oxfordshire.

How we Propose to Provide for Waste Management in Oxfordshire

85. A key objective of the Plan is to manage waste as close as possible to the source of arising. This generally points to a broad spread of facilities in order to minimise transport distances. However, different sizes of facility are appropriate to different types of waste management and technology.
86. The overall emphasis is to make provision for a range of additional waste management facilities (taking into account the locations of existing facilities) within or close to the large and small towns in Oxfordshire, but with more concentrated provision for the treatment of residual waste and more specialist requirements such as for hazardous and radioactive waste.
87. Detailed assessment of the options, including sustainability appraisal and strategic environmental assessment has not yet been carried out, and where a view is given on preferred strategy this is an initial view only.

Municipal Waste (MSW)

88. MSW Composting and Food Waste Treatment
 - Anaerobic digestion plants at Cassington (in operation) and Crowmarsh (planning permission granted);
 - In-vessel composting at Ardley (in operation);
 - Open-windrow composting at existing network of 3 sites with the temporary site at Hinton Waldrist being extended or replaced by 2024.
89. MSW Recycling

Network of 6 household waste recycling centres: 4 existing facilities (Dix Pit, Redbridge, Drayton and Oakley Wood) (Dix Pit is temporary to 2028 but the issue of replacement could be addressed in a future review of the plan); and 2 new facilities: one in the Oxford area (planning application submitted for site at Kidlington); and one at Banbury (site required by 2014);

Existing waste recycling facilities at Enstone, Witney and Culham, with possible replacement of the Culham transfer facility by new recycling capacity in Southern Oxfordshire (Abingdon/Didcot/Wantage & Grove) (which could be at the Culham site); and potential additional recycling capacity in conjunction with provision for C&I waste.
90. MSW Residual Waste Treatment

All residual MSW will be treated at the Ardley energy from waste facility (planning permission granted and contract awarded) (apart from a small fraction that will be disposed direct to landfill);

Provision is proposed to be made for 2 transfer stations at Southern Oxfordshire (Abingdon/Didcot/Wantage & Grove) and West Oxfordshire (Witney/Carterton) (sites required by 2014).

91. MSW Residual Waste Disposal
Disposal of residual waste which cannot be treated at the Ardley facility to one or more of the existing non-hazardous) landfill sites in Oxfordshire (Alkerton, Ardley, Finmere, Dix Pit and Sutton Courtenay – only Sutton Courtenay has a permitted life to 2030 but Ardley and Dix Pit are permitted to 2027/2028);
Disposal of hazardous fly ash from the Ardley plant to a hazardous waste landfill outside Oxfordshire (in Gloucestershire).

Commercial and Industrial Waste (C&I)

92. C&I Composting and Food Waste Treatment
Provision is proposed to be made through treatment at facilities provided for municipal waste and at other anaerobic digestion facilities which may be provided in conjunction with farm waste or sewage sludge treatment (e.g. the on-farm anaerobic digestion plant proposed at Warborough which the County Council has resolved to permit).
93. C&I Recycling
Provision is proposed to be made for up to 7 or 8 additional recycling facilities located within or close to the towns in north, central and southern Oxfordshire.
These facilities could take MSW as well, but the identified need is specifically for C&I recycling. It mainly arises from 2015, particularly from 2020 onwards, and therefore there is not an immediate need to identify sites. Facilities should be sized in relation to the quantity of waste expected from that locality. Small facilities may be acceptable on suitable sites in rural parts of the county.
94. C&I Residual Waste Treatment
Treatment of commercial and industrial waste from the northern part of the county will be provided for by the Ardley energy from waste facility. Provision is proposed to be made for treatment of commercial and industrial waste from the southern part of the county by one other large facility in the Abingdon/Didcot/Wantage & Grove area. A site needs to be provided for this facility by 2015.
95. C&I Residual Waste Disposal
As for municipal waste (above).

Construction, Demolition and Excavation Waste (CDE)

96. CDE Recycling
Provision is proposed to be made for 6 or more additional permanent facilities from 2015 at Banbury, Bicester, Witney, Oxford, and Abingdon/Didcot/Wantage & Grove; and
Continued provision of medium or small temporary recycling facilities at landfill and quarry sites.
97. CDE Residual Waste Disposal

Provision is proposed to be made for 3 million m³ of additional inert landfill capacity for beyond 2020 at quarry sites that will require infilling to achieve restoration; this provision should be made in conjunction with identification of sites for mineral working, rather than as separate landfill sites.

Hazardous Waste

98. Provision for management and disposal of hazardous waste is proposed to be made through:
- Continued use of existing hazardous waste management facilities in Oxfordshire, including the transfer facilities at Ewelme, Banbury and Standlake;
 - Continued landfill of non-reactive hazardous waste (mainly asbestos) at the existing facility at Ardley Landfill and/or at other existing non hazardous landfills in Oxfordshire where this is acceptable; and
 - Management and disposal of other hazardous wastes at appropriate hazardous waste facilities outside Oxfordshire.

Radioactive Waste

99. A primary aim of a strategy for radioactive waste should be to enable the decommissioning and clearance of the Harwell and Culham sites at the earliest practicable date. Further work on and assessment of waste management options is required, but the following is put forward as an initial view on proposed provision for this waste.
100. Intermediate Level Radioactive Waste:
Treatment and storage of intermediate level nuclear waste from Harwell and Culham on site?, pending removal to a national disposal facility. Any proposal also to store intermediate level waste from Winfrith at Harwell should be considered on its merits, taking into account relevant national and development plan policy, and should only be allowed if there are clear overall social, economic and environmental benefits.
101. Low Level Radioactive Waste
Storage (if required) of low level radioactive waste arising from Harwell and Culham on site and disposal at a suitable landfill(s) off-site within Oxfordshire or (if none is available) at one or more of the nearest appropriate installations elsewhere.
102. Non-Nuclear Low Level Radioactive Waste:
Continued disposal at specialist disposal facilities outside Oxfordshire.

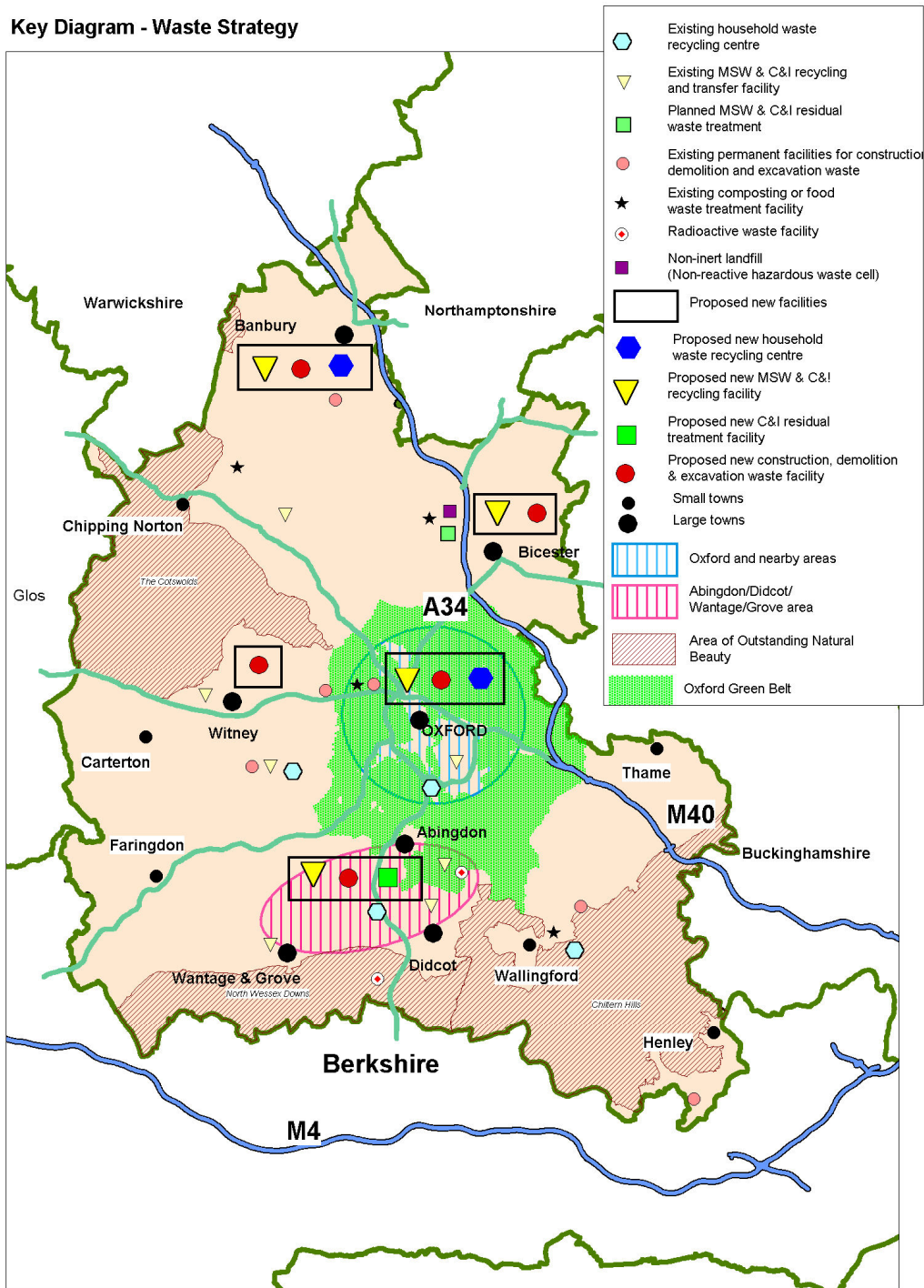
Metal Waste (including end of life vehicles)

103. Continued use of existing permanent waste metal recycling sites in Oxfordshire.

Sewage Sludge – initial preferred strategy

104. Continued use of existing sludge treatment centres (Banbury, Bicester, Oxford, Witney, Didcot and Wantage & Grove); and allow for further development at these facilities, if required.

Key Diagram - Waste Strategy



Proposed Waste Planning Policies

105. Policy W1: Waste management targets

Provision will be made for waste management in Oxfordshire in accordance with the following targets, to provide for the maximum diversion of waste from landfill and the management of waste in accordance with the waste hierarchy.

Oxfordshire waste management targets 2010 – 2030

Waste Management / Waste Type	Target Year				
	2010	2015	2020	2025	2030
MSW:					
Composting & food waste treatment	29%	30%	31%	31%	31%
Recycling	25%	31%	31%	31%	31%
Treatment of residual waste	0%	37%	36%	36%	36%
Landfill	46%	2%	2%	2%	2%
C&I:					
Composting& food waste treatment	0%	5%	5%	5%	5%
Recycling	50%	50%	55%	60%	60%
Treatment of residual waste	0%	43%	38%	33%	33%
Landfill	50%	2%	2%	2%	2%
CDE:					
Recycling	50%	50%	60%	60%	60%
Landfill/Restoration	50%	50%	40%	40%	40%

106. Policy W2: The amount of waste to be provided for

Provision should be made for waste facilities sufficient to manage the following amounts of waste over the period to 2030:

- Municipal Solid Waste – 403,000 tpa;
- Commercial and Industrial Waste – 707,000 tpa;
- Construction Demolition and Excavation Waste – 1,430,000 tpa.

The following figures should be used as a guide to the amount of provision to be made for each type of waste management.

CA10

Oxfordshire: estimated waste to be managed 2010 – 2030 (including +10% contingency) (tonnes)

	2010	2015	2020	2025	2030
Composting					
MSW	98,500	107,300	115,200	119,900	124,800
C&I	-	32,200	33,200	34,300	35,400
Total	98,500	139,500	148,400	154,200	160,200
Recycling					
MSW	84,900	110,800	115,200	119,900	124,800
C&I	311,800	321,700	365,100	411,100	424,100
Total	396,700	432,500	480,300	531,000	548,900
Resid. Treatment					
MSW	-	132,300	133,800	139,300	144,900
C&I	-	276,700	252,300	226,100	233,300
Total	-	409,000	386,100	365,400	378,200
Landfill					
MSW	156,200	7,200	7,400	7,700	8,100
C&I	311,700	12,900	13,300	13,700	14,100
Total	467,900	20,100	20,700	21,400	22,200
CDE Recycling	357,500	715,000	858,000	858,000	858,000

Composting includes capacity for food waste

Landfill estimates do not include for hazardous waste to be disposed of from residual treatment

Landfill estimates for 2010 reflect the fact that residual waste targets will not be met

CDE recycling based on South East Plan targets (50% to 2019; 60% to 2025).

107. Policy W3: Self sufficiency and waste imports

Provision will be made to enable Oxfordshire to be self-sufficient in the management of MSW, C&I and CDE waste. Provision will be made for disposal of a declining amount of waste from London and elsewhere at existing landfill sites. Facilities which provide substantially for the treatment of waste from outside Oxfordshire will not be permitted unless there would be clear benefits within Oxfordshire.

108. Policy W4: Provision of additional waste management capacity

Provision of the additional waste management capacity required to meet targets will be made in accordance with the spatial strategy for waste (as set out in paragraphs 88 – 104 and shown on the key diagram). Sites for waste management facilities will be identified in a separate Sites Development Plan Document.

The following figures should be used as a guide to the amount of additional provision to be made for each type of waste management.

Oxfordshire: additional waste capacity required (tonnes per annum)

	2010	2015	2020	2025	2030
Composting					
MSW/C&I	-67,500	-21,500	27,400	33,200	41,400
Recycling					
MSW/C&I	-57,200	22,600	96,800	222,500	268,900
CDE	-240,500	214,000	412,000	502,500	502,500
Residual Treatment					
MSW/C&I	- 2,000	190,700	167,000	143,500	153,500

Figures based on waste arising estimates with +10% contingency

109. Policy W5: Safeguarding

Existing and proposed waste management sites will be safeguarded for waste management use. Proposals for other development that would prevent or prejudice the use of a safeguarded site for waste management will not normally be permitted unless appropriate provision for new waste management capacity is made at a suitable alternative location.

110. Policy W6: Location of waste management facilities

a) Broad locations

Broad locations that are proposed for strategic waste facilities are identified in the key diagram. Waste management facilities will be permitted on suitable sites within these broad locations. Small scale facilities to serve local needs will be acceptable outside these locations where they meet general locational criteria.

b) Specific locations

Sites to provide additional waste management capacity will be identified in the Sites Development Plan Document in accordance with the waste spatial strategy. Priority will be given to land that

- is already in permanent waste management or industrial use;
- is previously developed, derelict or underused;
- involves existing agricultural buildings and their cartilages;
- adjoins sewage works or other uses compatible with waste management development.

The release of green field land will only be considered where there is an established over-riding need and it has been demonstrated that there are no more suitable sites available.

111. Policy W7: Green Belt

The need for waste management facilities to serve the needs of Oxford City may be a very special circumstance for allowing waste development in the Green Belt where it can be demonstrated that there is an established over-riding need and there is no reasonable prospect of an alternative site becoming available.

112 Policy W8: Areas of Outstanding Natural Beauty

A primary consideration for waste development proposals within an Area of Outstanding Natural Beauty will be the effect of the development on the special character and visual amenity of the area, as described in the objectives of designation for the Area of Outstanding Natural Beauty. Only small-scale development to meet local waste needs will normally be acceptable.

113. Policy W9: Landfill

Permission will not be granted for new landfill sites for non-hazardous waste. Permission will normally only be granted for landfill of inert waste at sites where it is required for the restoration of mineral workings or where there would be overall environmental benefit. Landfill sites should be restored in accordance with the policy for restoration of mineral workings.

114. Policy W10: Hazardous and radioactive waste

Permission will be granted for specialist facilities for the management of hazardous and radioactive wastes where they accord with the spatial strategy for waste and:

- they are designed to meet a requirement for the management of waste produced in Oxfordshire; or
- they are reasonably required to meet a need for waste management that is not adequately provided for elsewhere.