PLANNING SUPPORTING STATEMENT

Introduction

1.1 Viridor Waste Management Ltd (Viridor) is applying for planning permission for the following development at Ardley waste management facility in Oxfordshire;

“The construction and operation of an Energy from Waste (EfW) Facility, together with associated office, Visitor Centre and bottom ash recycling facilities, new access road and weighbridge facilities and the continuation of non hazardous landfill operations and landfill gas utilisation with consequent amendments to the phasing and final restoration landform of the landfill, surface water attenuation features and improvements to the existing household waste recycling facility”.

1.2 The application is supported by an Environmental Statement (ES) which reports the results of an Environmental Impact Assessment (EIA), undertaken by SLR Consulting Ltd. The EIA has assessed the potential environmental impacts of the proposed development.

1.3 This supporting statement contains the completed planning application forms and certificates. It then proceeds to give a description of:

- the site and the proposed development;
- a summary of the potential environmental effects;
- a review of relevant planning policies for the development and
- a summary of the benefits of the proposed development.
PLANNING APPLICATION FORMS AND CERTIFICATES
Site Description

1.4 The application site is located at Ordinance Survey Grid Reference 454 200 225 900, with access being gained from the B430, which leads north to J10 of the M40 and south to the A34 towards Oxford. Drawing No.1 Site Location Plan identifies the location of the site in context of the surrounding area.

1.5 The application site area comprises 95 hectares and includes the entire existing Ardley Waste Management site. The proposed EfW will be located in the south eastern corner of the application site. The existing landfill site will be rephased to wrap around the EfW site whilst the existing civic amenity site in the north of the site will be slightly extended to incorporate improvements. The existing gas utilisation plant will be retained unchanged.

1.6 The site is located in a semi rural setting, west of the M40. The Banbury to High Wycombe railway line and Gagle Brook form the northern and eastern boundaries of the wider landfill site respectively. The western site boundary is the B430.

1.7 The nearest settlement is Ardley village, approximately 1 km north of the current site access. The village of Middleton Stoney is located 1.7 km to the south and Bucknell, 1.2 km to the east. The settlement of Upper Heyford is located over 2km to the west, adjacent to the former airfield.

1.8 The southern boundary of the site is a public bridleway and to the south of the bridleway is arable land with permission for mineral extraction, which is due to commence in 2009. A bridleway also runs along the eastern boundary of the site.

1.9 The site is not covered by any statutory landscape or ecological designations.
Description of the Development

Introduction

1.10 This planning application has three main elements to it and as such each one is described in turn:

- Energy from Waste Facility;
- Landfill Amendments and Restoration;
- Household Waste and Recycling Centre Improvements; and
- Ancillary development (mainly in respect of a new access to serve the proposed EfW and modified landfill facility.

Energy from Waste Facility

1.11 The main aspect of the proposed development is the construction of an Energy from Waste facility (EfW) that would generate energy and heat from the combustion of residual waste. Residual waste is that which remains following removal of waste which can be recycled or composted.

1.12 The EfW facility would combust up to 300,000 tonnes of residual Municipal Solid Waste (MSW) and Commercial and Industrial (C & I) waste per annum. All waste would be non hazardous.

1.13 It is understood that the facility would generate over 180,000 MW hours of electricity annually. A proportion of the electricity would be used to power the EfW facility but the majority would be exported to the National Grid. The applicant is also considering the potential to use waste heat created by the process in local projects.

1.14 The EfW facility would be enclosed within a purpose designed building, 229 metres long, varying from 38 to 70 m in width and a maximum of 38 metres high. The chimney stack will be 80m high. The facility would be set at 100m AOD with the waste bunker within the main building at 12.5 m below base, 87.5 AOD. All reception and treatment of waste would take place within the building.

1.15 The construction of the facility is likely to take 2 years and once complete, the EfW facility would operate 24 hours a day, seven days a week.

Operation of the EfW facility

1.16 A detailed description of the EfW facility can be found in Chapter 3 of The Environmental Statement. The EfW process would be contained within two production lines, each with a 150,000 tonnes per annum capacity. In brief, the EfW has 4 key elements;
PLANNING SUPPORTING STATEMENT

i) Waste Reception;

ii) Waste Combustion;

iii) Energy Recovery; and

iv) Flue Gas Treatment

1.17 Waste Reception (i) – residual waste will be delivered by HGVs and refuse collection vehicles (RCVs) via the weighbridge to a dedicated handling area within the EfW building. Waste is discharged from the vehicles into a collection pit or hopper. A grab crane is used to transfer the waste to two parallel process lines, before it enters the combustion chambers. The cranes mix and break up the materials to ensure homogeneity of feed to the combustion chambers.

1.18 Waste Combustion (ii) – Primary combustion takes place on a moving mechanical grate to promote the mixing of burning and unburnt waste. The combustion gas from the primary stage would be heated in the secondary combustion chamber to reach its specified temperature (850 degrees for a minimum of 2 seconds). The burnt waste from the primary combustion is removed as incinerator bottom ash (IBA). This IBA is then treated and recycled to produce secondary aggregate by the on site plant.

1.19 Energy Recovery (iii) – Heat from combustion is recovered initially to form steam and ultimately electricity at approximately 180,000 MW hours a year. A proportion of the electricity produced would be used to power the facility itself but the majority would be exported to the National Grid.

1.20 Flue Gas Treatment (iv) – An air pollution control system will treat all flue gas prior to emission so that human health and amenity guidelines on emissions are not exceeded. Fly ash from the heat recovery system can be combined with the flue gas treatment residues and will be transported off site in sealed tankers for disposal at a hazardous waste landfill near Cheltenham.

Landfill Amendments and Restoration

Landfill Amendments

1.21 The existing landfill at Ardley currently accepts in the region of 300,000 tpa of municipal, commercial and industrial waste (50,000 tonnes municipal and 250,000 tonnes industrial and commercial). Current permitted voidspace at Ardley is estimated at 2.65 million tonnes.

1.22 As part of the proposed development the landfill landform has been remodelled to accommodate the EfW development in the south eastern corner of the site. The eastern side of the existing Ardley landfill has a requirement for a 100m wide strip where only inert waste may be deposited so the location of the EfW has been selected in order to minimise the loss of non inert void space. In addition the contours of the revised restoration landform have been increased in order to recover voidspace lost to the EfW development. The revised phasing plans for the landfill (Drawings 3/4 to 3/9)
identifies that there will be approximately 2.06 million tonnes of non inert void space, resulting in the loss of an estimated 600,000 tonnes of void space as result of the EfW development.

1.23 The revised scheme is described in Table 1 below. Based on an EfW development not becoming operational until the final quarter of 2012 it is assumed that landfilling at existing rates will continue up until the EfW becomes fully operational. Thereafter it is assumed that landfill inputs will decrease to approximately 200,000 tpa and would be a mix of industrial and commercial waste and inerts.

1.24 This small loss in potential non-inert landfill through re-phasing will not have a significant bearing on the projected life of the landfill which is estimated to be completed by 2019.

1.25 The existing gas utilisation plant at Ardley will also be retained unchanged as part of the proposed development, see drawing number 3/16.

Landfill Restoration

1.26 The main aim of the Landfill Restoration is to produce final and interim landforms/land uses which maintain and enhance the landscape character and ecological value of the site, while mitigating the proposed EfW development and providing long term agricultural land, ecological habitats and woodland planting.

1.27 The table below provides a rough guide showing how the eventual completion of the landfill and implementation of the EfW will evolve over time.

Table 1 - Landfill Restoration Phasing Plan (see Drawings 3/4 to 3/9)

<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 (2009)</td>
<td>Groundworks to prepare the EfW site; Landfill operations in Phase 1 comprising of non inert and inert fill operations; Formation of cell for Phase 2 and Construction of new site access.</td>
</tr>
<tr>
<td>Year 2 &amp; 3 (2010 – 2012)</td>
<td>Construction of EfW; Landfill in phase 1 complete and under restoration; Landfilling in phase 2; Formation of cell for Phase 3</td>
</tr>
</tbody>
</table>
## PLANNING SUPPORTING STATEMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 4 &amp; 5 (2013-2014)</strong></td>
<td>New southern access in use; Relocate Landfill offices to the south and upgrade the HWRC</td>
</tr>
<tr>
<td></td>
<td>EfW operational</td>
</tr>
<tr>
<td></td>
<td>Landfilling in phase 2 complete</td>
</tr>
<tr>
<td></td>
<td>Landfilling in phase 3 with inert fill around EfW;</td>
</tr>
<tr>
<td></td>
<td>Formation of cell for Phase 4; and</td>
</tr>
<tr>
<td></td>
<td>Completion of surface water attenuation lagoons</td>
</tr>
<tr>
<td><strong>Year 6 &amp; 7 (2015-2016)</strong></td>
<td>EfW operational;</td>
</tr>
<tr>
<td></td>
<td>Landfill in Phase 3 complete and under restoration;</td>
</tr>
<tr>
<td></td>
<td>Landfilling in phase 4.</td>
</tr>
<tr>
<td><strong>Year 8 &amp; 9 (2017-2018)</strong></td>
<td>EfW operational</td>
</tr>
<tr>
<td></td>
<td>Landfilling in phase 4 complete and under restoration;</td>
</tr>
<tr>
<td></td>
<td>Landfilling in Phase 5 and final phase of inert fill.</td>
</tr>
<tr>
<td><strong>Year 10 (2019)</strong></td>
<td>Landfill Restored and Completed</td>
</tr>
<tr>
<td></td>
<td>EfW operational</td>
</tr>
</tbody>
</table>

**Note: HWRC** To remain operational throughout period

### Household Waste Recycling Centre (HWRC)

1.28 The existing HWRC operates a split level site with five skip bays at the lower operational area of the site and nine parking spaces on the upper public area. As a result of the space to be created by re-locating the landfill offices and weighbridge to the proposed new southern access it is proposed to extend the HWRC to provide a further four skip bays and six additional public parking spaces (see drawing 3/14). The proposed extension works will involve:

- Construction of new reinforced concrete retaining walls to tie into existing;
- Relocation of site offices;
- Removal of the site weighbridge and foundations;
Ancillary Development

1.29 In addition to the EfW facility, the proposed development includes a range of ancillary services. These are as follows;

- Bottom Ash Recycling Facility;
- Visitor Centre;
- Offices and ancillary buildings including weighbridges and gatehouse;
- Staff and visitor’s car park;
- New access for EfW and landfill onto the B430;
- Surface water attenuation measures;
- Additional ecological habitats; and
- Substantial new landscaping and planting

Details of these are provided below;

1.30 **Bottom Ash Recycling Facility** - The bottom ash recycling facility will be located at the base of the EfW and is approximately 176m long and 60m wide. The bottom ash will be removed from the EfW by conveyor and will be discharged under cover at the base of the EfW. The bottom ash will be processed (washed, crushed if required and screened) on a “campaign” base by mobile plant as stock accumulates to produce a secondary aggregate. Once processed the aggregate will be stockpiled, awaiting sale, within the two uncovered areas on either side of the EfW.

1.31 **Visitor Centre** - The Visitor Centre would have meeting rooms, an audio visual seminar room, exhibition space, viewing gallery and canteen. The Centre would also provide information about the dinosaur footprints which have been found at Ardley Quarry.

1.32 **Offices and ancillary buildings** - Offices, workshops, storage and control rooms and a weighbridge will be required to accommodate the day to day operation of the EfW facility. Separate offices will be provided to serve the landfill.

1.33 **Staff and Visitor’s carpark** – There will be 52 parking spaces at the EfW, 4 of which will be disabled spaces. A lay-by will be provided for coach/minibus parking. Separate staff parking will be provided at the landfill offices.

1.3 New access to EfW and Landfill off B430 – A new priority T junction access from the B430, incorporating a ghost right hand turn will be created to serve the EfW facility and landfill. Vehicles leaving the public highway, to access the EfW facility and landfill will proceed to the gatehouse and weighbridge located adjacent to the southern boundary of the site via a redesigned junction and newly formed access road. From the gatehouse
entry vehicles will proceed to the roundabout. A separate spur road before the roundabout will provide access to the landfill

1.2 Vehicles bound for the EfW will proceed from the roundabout along a two-way road along the southern boundary of the incinerator bottom ash facility and then around the eastern end of the facility to enter the tipping hall at its southeast entrance and continue through the hall before returning to the weighbridge via the roundabout prior to leaving the site. This movement arrangement allows the natural safe reversing of right hand drive vehicles depositing waste into the bunker.

1.3 Vehicles for the loading and transporting of incinerator bottom ash off site will proceed again from the roundabout around the southern and eastern end of the facility to enter the IBA facility at its east entrance and continue through the plant before returning to the weighbridge via the roundabout prior to leaving the site.

1.4 Vehicles for the residue silo’s, the flue gas treatment area and plant maintenance will proceed from the roundabout along the two-way road around the southern and eastern side of the facility, continue around a single lane road to the east of the air-cooled condensers, turn south around the northern tip of the EfW to enter the building at the north west entry.

1.34 Loading and unloading will take place inside the building. The vehicles will then leave the facility and proceed south picking up the two lane road to the south of the air cooling condensers and proceeding around the southern boundary of the IBA facility to the roundabout and then to the weighbridge.

1.35 The HWRC would retain the existing access to the north of the site.

1.36 **Surface water attenuation** - A number of attenuation ponds are proposed to ensure surface water drainage does not exceed the greenfield rate, therefore mitigating any potential increase in downstream flooding. It is proposed that all runoff is intercepted by perimeter drains which convey surface water to one of five ponds linked by open drainage ditches. The discharge from each pond is routed to the next pond downstream with the discharge from the final pond into the Gagle Brook. These new wetland areas will provide opportunities to enhance the ecological value of the site.

1.37 **Additional ecological habitats** – The aim of the restoration scheme is to create a landform which is in keeping with the surrounding landscape character, and enhances the ecological value of the site. A key part of the scheme will be to integrate the EfW facility into the surrounding landscape.

1.38 **Wildlife corridors** will be created to provide links to and from the surface water attenuation lagoons to areas of open countryside and to the restored landfill that will provide suitable commuting and foraging habitat for amphibians and reptiles including the provision of suitable hibernacula. Further consideration to habitat creation and enhancement will be made through landscaping proposals both within the application site and in the wider context of the landfill site.
Hours of Operation

1.39 The proposed EfW facility operation would be a continuous 24 hour operation, however it is anticipated that the majority of waste would be received during the normal daytime operating hours of the landfill (see below) and that only approximately 10% of inputs would be outside these hours.

1.39 The hours of operation of the landfill will remain as permitted, as follows:

- 0700 to 1800 Monday to Friday
- 0700 to 1300 Saturdays
- Specific exceptions for receiving waste from the HWRC site

1.39 The hours of operation of the HWRC will also remain as currently permitted, which are:

- 0830 to 1730 Monday to Friday
- 0830 to 1600 Saturdays
- 1000 to 1600 Sundays

Employment

1.39 The proposed EfW facility would create in the region of 40 new full time posts. Employment at the landfill and HWRC would remain as existing (10).
PLANNING SUPPORTING STATEMENT

Review of Planning Policy

1.39 This section reviews the national, regional and local planning policy which has been considered in the preparation of this planning application

National

1.40 The following national planning policy documents have been considered with regards to the proposal;

- PPS1 - Delivering Sustainable Development (2005) Planning and Policy Statement and Climate Change (supplement to PPS 1) (2007);
- PPS9 - Biodiversity and Geological Conservation (2005);
- PPS 10 – Planning for Sustainable Waste Management (2005);
- PPS23 - Planning and Pollution Control (2004);
- PPS 25 - Flooding (2004);

PPS 1

1.33 PPS1 states that planning should facilitate and promote sustainable patterns of urban and rural development by making land available for development in line with economic, social and environmental objectives and protecting and enhancing the natural environment. PPS1 also stresses the importance of ensuring high quality development through good design and the efficient use of resources.

1.34 The supplement to Planning Policy Statement 1 (PPS1) ‘Planning and Climate Change’ sets out how planning should contribute to reducing greenhouse gas emissions and stabilising climate change and also how new developments should be designed to reduce risk from climate change e.g. flooding.

1.35 SLR has completed a Life Cycle Assessment, using the Environment Agency’s modelling tool ‘Waste and Resource Assessment Tool for the Environment’ (WRATE), to assess the environmental impacts, including global warming potential, of the proposed EfW plant compared to a number of other waste management technologies.

1.36 The WRATE assessment (see Appendix 4 of the ES) concluded that the proposed EfW facility will result in an environmental footprint that has an overall reduction in environmental impacts such as global CO\text{2} emissions. In accordance with PPS1, the EfW facility has been designed to minimise energy use and carbon emissions during construction and operation. In diverting residual waste away from landfill to a treatment facility higher up in the waste hierarchy, the proposals will have a positive impact on the environment.

1.37 The existing landfill gas utilisation plant which recovers energy from the landfill operations will also be retained and so will continue to contribute electricity to the grid.
PLANNING SUPPORTING STATEMENT

1.38 The site has also been designed to attenuate surface water runoff and not give rise to additional surface water runoff or down stream flooding;

1.39 The EfW facility will have the potential to provide heat and energy to existing and future development in a 5km area. New development in the vicinity of the EfW facility could be future proofed by ensuring the infrastructure is in place to allow CHP system to be retro fitted. Having regard to the above, it is considered that the development proposals will not have an adverse effect on climate change and therefore the proposals meet the sustainable development objectives set out in PPS1.

PPS 9

1.40 PPS9 states that developments should conserve and enhance biological and geological diversity. Although the site is not covered by any statutory geological or ecological designations and the Ecological Assessment confirmed that the development would not have a significant adverse impact on the ecology of the area, a range of mitigation measures and enhancements are proposed to improve the biodiversity of the site.

PPS 10

1.41 PPS 10 – Planning for Sustainable Waste Management sets out the latest Government policy on planning for waste management facilities and objectives for sustainable waste management. The proposed development has been considered against these objectives in order to demonstrate its compliance with national waste policy.

1.42 Annex E of PPS 10 sets out the main factors waste planning authorities should take into account when testing the suitability of a site for waste management purposes. These are:

- protection of water resources, considerations will include the proximity of vulnerable surface and groundwater. For landfill or landraising, geology conditions and the behaviour of surface water and groundwater should be assessed both for the site under consideration and the surrounding area. The suitability of locations subject to flooding will also need particular care;

- land instability, locations, and/or the environs of locations, that are liable to be affected by land instability will not normally be suitable for waste management facilities;

- visual intrusion, considerations will include (i) the setting of the proposed location and the potential for design-led solutions to produce acceptable development; (ii) the need to protect landscapes of national importance (National Parks, Areas of Outstanding Natural Beauty and Heritage Costs);

- nature conservation, considerations will include any adverse effect on a site of international importance for nature conservation (Special
PLANNING SUPPORTING STATEMENT

Protected Areas, Special Areas of conservation and RAMSAR sites) or a site with a nationally recognised designation (Site of Special Scientific Interest, National Nature Reserve);

- historic environment and built heritage, considerations will include any adverse effect on a site of international importance (World Heritage Sites) or a site or building within a nationally recognised designation (Scheduled Monuments, Conservation Area, Listed Buildings, Registered Historic Battlefields and Registered Parks and Gardens);

- traffic and access, considerations will include the suitability of the road network and the extent to which access would require reliance on local roads;

- air emissions, including dust, consideration will include the proximity of sensitive receptors and the extent to which adverse emissions can be controlled through the use of appropriate and well maintained and managed equipment;

- vermin and birds, considerations will include the proximity of sensitive receptors. Some waste management facilities, especially landfills which accept putrescible waste, can attract vermin and birds, and may be influenced by the distribution of landfill sites;

- noise and vibration, considerations will include the proximity of sensitive receptors. The operation of large waste management facilities in particular can produce noise both inside and outside buildings. Intermittent and sustained operating noise may be a problem if not kept to acceptable levels and particularly if night-time working is involved;

- litter, can be a concern at some waste management facilities; and

- potential land use conflict, likely proposed development in the vicinity of the location under consideration should be taken into account in considering site suitability and the envisaged waste management facility.

1.43 Developing the EfW facility at Ardley together with the landfill and HWRC will be key to meeting the targets in national and regional waste management strategies and its considered appropriate to make maximum use of existing waste management facilities when they are well located and do not have any significant adverse effects on the environment or local communities.

1.44 The EfW facility would be located within an existing landfill site with no significant physical or environmental constraints. The site is well located in terms of the primary highway network and the facility would divert a significant proportion of Oxfordshire’s waste from landfill. At the same time the redeveloped HWRC will continue to support and encourage the achievement of higher recycling rates.
PPS 23

1.45 PPS23 provides advice on planning and pollution control to land, air and water and the potential impacts to human health. The assessments undertaken as part of the EIA found no significant adverse impacts on human health or the environment arising from the construction and operation of the EfW plant as well as the continuing use of the existing landfill. At the same time the redeveloped HWRC will continue to support and encourage the achievement of higher recycling rates.

PPS 25

1.46 A small section of the application site is within the floodplain of the Gagle Brook. PPS25 states that developments should take account of flood risk at all times in the planning process. A Flood Risk Assessment was undertaken and an appropriate surface water management scheme has been designed to protect both landfill and the EfW facility from flooding, and to ensure that its presence will not increase flood risk in other areas.

Waste Strategy 2007

1.47 Finally, the Waste Strategy 2007 sets out the Government’s vision for sustainable waste management. The strategy’s key objective is the diversion of waste from landfill and it recognises that EfW is an essential component of a well balanced energy policy. EfW is expected to account for 25% of municipal waste treatment by 2020, compared to 10% today. In addition there is still a continuing need for landfill particularly for commercial and industrial residual wastes.

Regional Policy

South East Plan Core Document (2006)

1.48 At the regional level, waste policy is set out in the draft South East Plan Core Document (March 2006). The plan states that the total waste managed in the South East is estimated to rise to nearly 35 million tonnes by the year 2025.

1.49 The existing waste management facilities in the South East cannot deal with this growth in waste. Landfills will be full within a decade, creating a management problem but also representing a waste of potentially valuable resources. There is an immediate and acute shortfall in facilities to deal with ever increasing amounts of waste thus a more sustainable waste management system needs to be developed, which increases the proportion of waste from which value can be recovered.

1.50 Significantly reducing the amount of waste which is landfilled will require a switch to industrialised waste handling and processing, including energy recovery plants. In relation to EfW facilities, the plan states that these represent a proven technology, which are strictly regulated and whose emissions of pollutants have declined dramatically in recent years. As evidenced by many more plants being approved in the UK.
1.51 Section D6 of the plan sets out the minerals and waste policies for the South East. Policy W5 sets a target of diverting 86% of waste from landfill by 2025. Policy W7 states that Waste Planning Authorities will have to provide the waste management capacity required to achieve the targets set out in the Plan. The average tonnages which will have to be managed by Oxfordshire by 2025 are 571,000 tonnes Municipal Solid Waste (MSW) and 791,000 tonnes of Commercial and Industrial Waste.

1.52 Policy W12 states that the Regional Assembly, the South East England Development Agency (SEEDA), the Environment Agency and the regional partners will promote and encourage the development and demonstration of advanced recovery technologies that will be expected to make a growing contribution towards the delivery of the regional targets for recovery, diversion from landfill, and renewable energy generation over the period of the Plan. Waste Development Documents and municipal waste management strategies should only include energy from waste as part of an integrated approach to management.

1.53 The plan identified that Oxfordshire, along with all other Counties in the South East region has a shortfall in capacity requirement for Municipal Solid Waste and Commercial and Industrial Waste recycling, recovery and composting.

| 2015 Additional Capacity Requirement for Oxfordshire (million tonnes per annum) |
|--------------------------------|--------------------------------|--------------------------------|-----------------|
| -0.288                   | -0.253                   | -0.059                   | 0.027          |

Negative figures represent deficits/shortfall


1.54 Policy W17 deals with the location of waste management facilities. The policy states that priority should be given to expanding suitable sites with an existing waste management use and good transport connections and compatible land uses, namely active mineral working sites; and previous or existing industrial land use.

1.55 Policy W13 deals with landfill requirements and seeks to husband this resource to ensure that adequate capacity is maintained. Whilst the proposed development will result in a small loss of permitted non inert void space this will not impact on Oxfordshire’s ability to deliver their local and regional commitments because of the high level of permitted void space that is available in the county.

1.56 In summary, regional waste planning policy recognises that increasing amounts of waste cannot be landfilled if waste management is to become
more sustainable but that there will be an ongoing need for landfill. Local Planning Authorities will be required to provide the capacity to manage waste sustainably and this is likely to include technologies such as EfW, if targets to divert waste from landfill are to be met. The plan states that it is essential sites are safeguarded in Local Development Frameworks and identified in Waste Development Frameworks. It is considered that Ardley Landfill site complies with the location criteria set out in policy W17 and that the EfW facility will make a significant contribution to Oxfordshire’s target for managing its residual waste and diverting waste from landfill without compromising landfill capacity in the county.

Local Policy

Non-Statutory Cherwell Local Plan 2011

1.57 On 13 December 2004 the Council decided to discontinue work on the draft Cherwell Local Plan 2011 and has begun preparing a Local Development Framework (LDF) under the new planning system.

1.58 The Council also decided on this date to approve the draft Cherwell Local Plan 2011 as interim policy.

1.59 The text of this Plan, the Proposal Map and the Inset Maps have been updated since the production of the Revised Deposit draft September 2002 to reflect the Pre-inquiry Changes made to the Revised Deposit draft Plan, and the decisions made by the Council following consideration of the representations to the Pre-inquiry Changes.

1.60 There are a variety of policies within this plan that have been taken into consideration for the proposed development of the EfW at Ardley Waste Management Facility.

1.61 There are no direct policies contained within The Non-Statutory Cherwell Local Plan regarding waste facilities however Chapter nine Conserving and Enhancing the Environment is considered to be of particular value.

1.62 The environment of Cherwell District is of high quality and this is important in helping to contribute to the economic success of the area.

Oxfordshire Structure Plan 2016

1.63 The Oxfordshire Structure Plan 2016 and Minerals and Waste Local Plan 1996 provides the policy framework for waste planning in Oxfordshire. The waste policies in the Structure Plan will be replaced by the Minerals and Waste Development Framework in the future. The following policies are considered to be relevant to the proposed EfW facility;

- Policy G1 – General Policies for development;
- Policy G2 – Improving the Quality and Design of Development;
- Policy G6 – Energy and Resource Conservation;
1.64 Policy G1 seeks to provide a framework for development, in part to guide the investment decisions of a range of organisations in ways which will deliver the level of development required to meet the objectives of the Structure Plan. One of the objectives is sustainable waste management.

1.65 Policy G2 states that all development should be of a type and scale appropriate to the site and surroundings. Due to the required height of the chimney stack, the development will be visible in the landscape. However, the design proposes the careful use of landscaping and materials to both improve the appearance and to reduce the overall visual impact.

1.66 Policy G6 requires new developments to incorporate energy efficiency and resource conservation measures. The EfW facility is designed to incorporate best technologies in sustainable development and would be powered by the energy it produces and would use recycled or recyclable materials in construction, wherever possible.

1.67 Policy WM1 states that provision will be made for the treatment and/or disposal of a quantity of waste equivalent to the total quantity of waste produced in Oxfordshire, except for that waste which requires management at specialised sub-regional, regional or national facilities. The EfW facility is specifically designed to meet the requirements of waste arisings from Oxfordshire.

1.68 Policy WM2 supports waste management facilities to ensure sufficient capacity for the management of that waste which needs to be managed within Oxfordshire. It is considered that the EfW facility complies with policies WM1 and WM2 as it will provide significant capacity to treat Oxfordshire’s waste.

1.69 In terms of transport, Policy T8 states that proposals for development should be permitted only if they provide adequate access and mitigation of adverse transport impacts. The potential traffic impacts of the development have been assessed in the ES and found not to have a significant adverse effect on the highways network, the local environment or local communities.

1.70 Policy EN1 seeks to protect and enhance the landscape. Policy EN2 states that in determining proposals for development, local planning authorities will seek environmental measures and promote the use of conditions and management agreements to help protect, manage and expand the biodiversity resource of the county, in particular priority habitats and species.

1.71 The site has protected species but mitigation programmes and would be carried forward in the new development as part of the existing approved
landfill development are already in place and would be carried forward in the new development. In addition, the importance of enhancing the long term biodiversity of the area is recognised and forms part of the proposal. Measures to mitigate the visual impact of the development are also integrated into the design.

1.72 Policy EN8 states that development that will lead to unacceptable deterioration in water quality will not be permitted and Policy EN9 states that development in undeveloped areas at high risk from flooding or in the functional floodplain will not be permitted. The hydrological assessments undertaken as part of the ES found no evidence that the EfW plant would lead to deterioration of water quality or increase the risk of flooding.

1.73 Policy EG2 encourages new energy generation plants to include combined heat and power (CHP) for the recovery of waste heat for use in other processes. The potential to provide heat for local projects is also being investigated by the applicant (see Appendix 4 – Heat Plan) and utilisation of the landfill gas to generate electricity will continue.

Core Strategy Minerals and Waste Development Framework

1.74 The Minerals and Waste Development Framework, which will replace the Oxfordshire Structure Plan and Minerals and Waste Local Plan policies, is still in draft form. However, upon adoption, it will be a material consideration in the determination of planning applications.

1.75 Approximately 2 million tonnes of waste is produced each year in Oxfordshire and at present, the main method of management is disposal by landfill. The draft South East Plan indicates a requirement for additional capacity for waste recycling, composting and resource recovery in Oxfordshire totalling over 0.6 million tonnes a year by 2015. This figure is thought to be an underestimate and will be reviewed when new information becomes available. The Minerals and Waste Development Framework will need to ensure the facilities that are needed can be delivered.

1.76 The aim of the Minerals and Waste Development Framework is ‘to provide for the safe and sustainable treatment and disposal of waste requiring management in Oxfordshire in a way that makes the best practical use of resources and protects and enhances the environment and quality of life in Oxfordshire’. The draft policies in the Framework have broadly similar aims to national and regional policy i.e. the provision of sufficient capacity for waste management and the diversion of waste from landfill in line with national and regional targets.

Oxfordshire Joint Municipal Waste Strategy

1.77 The Oxfordshire Waste Partnership (OWP) is a partnership of the County and District Councils of Oxfordshire who are working together to improve waste management services within the County. In January 2007, the OWP agreed a Joint Municipal Waste Management Strategy ‘No Time to Waste’ which sets out plans for dealing with Oxfordshire’s municipal waste to 2030.
1.78 The Strategy states that Oxfordshire’s households produced 300,000 tonnes of household waste in 2005-06 and this is forecast to grow to over 450,000 tonnes a year by 2035. Of this tonnage, 67% was sent straight to landfill. The OWP aims to reduce waste going to landfill and recover value from residual waste, to create new products or produce energy.

1.79 The OWP recognises that despite increasing efforts to reduce, reuse, recycle and compost Oxfordshire’s rubbish, the County will still be short of meeting the requirements of LATS targets. In order to meet these targets, the OWP states that some form of ‘waste treatment’ including high temperature incineration will be necessary. Policy 9 of the Strategy states that the OWP will provide a system for recovering value from residual wastes in order to meet LATS targets.

**Oxfordshire Minerals and Waste Local Plan 1996 – saved policies**

1.80 The Minerals and Waste Local Plan (MWLP) was adopted in 1996. The relevant saved policies are W3, W4 and W5. The Minerals and Waste Development Framework is being prepared and will replace the MWLP upon adoption. At present, work on the Framework has been deferred thus the MWLP is still the appropriate policy document for decision making.

1.81 Policy W3 supports proposals for re-use/recycling provided that the site is close to the source of the waste and/or the market for the re-used/recycled material, is well related to appropriate parts of the transport network and will not cause unacceptable nuisance in terms of noise, dust, fumes, smell, visual intrusion or traffic or pose an unacceptable risk to the water environment.

1.82 The EfW is designed to deal with Oxfordshire’s residual municipal waste after recycling. In addition it has capacity to deal with industrial and commercial arisings which are currently disposed of in the landfill. The site is well located in relation to the strategic and high capacity road network and has good access from the main centres of population. The environmental assessments undertaken in the ES concluded that the facility represented no significant adverse risk or nuisance to the amenity of local people, the local environment or the water environment.

1.83 Policy W5 also aims to reduce the visual impact of waste treatment plant by requiring buildings, machinery and stockpiles to be properly screened from the surrounding landscape.

1.84 The EfW facility will be visible due to its chimney stack. However, amendments to the height of the landfill, proposed planting and careful choice of materials will ensure that the buildings and chimney have as little impact on the landscape as possible. The main part of the building, offices, car parking etc will be set down within the quarry void which will reduce their visibility from outside of the site.

1.85 Policy W4 states that proposals for re-use/recycling and ancillary processes will not normally be permitted in the open countryside unless there is an established overriding need and there is no other suitable site available.
and/or the development is to form part of a mineral extraction/landfill site and will be removed on completion of extraction/landfill.

1.86 The established need for additional waste management capacity has been demonstrated in the South East Plan which shows an immediate and acute shortfall across the South East. Alternative sites have been considered against a range of locational criteria and Ardley was found to be the most suitable site. Details of the alternative sites considered are set out in the Environmental Statement. Since the adoption of the MWLP in 1996, locational criteria for waste management facilities has become more flexible, as demonstrated in PPS 10 Annex E. This is mainly in response to the number and size of facilities required to deal with increasing amounts of waste sustainably.

Development in the Open Countryside

1.87 The Draft Oxfordshire Minerals and Waste Framework and the Draft South East Plan recognise that waste management is facing a period of rapid and radical change and that there is an immediate and acute shortfall in capacity to meet ambitious waste management targets.

1.88 In response to this shortfall in capacity, PPS10 states that Waste Planning Authorities (WPAs) must find sufficient opportunities for new waste management facilities of the right type in the right place at the right time.

1.89 As yet, Oxfordshire County Council has not allocated sites for new or expanded waste management facilities; however, guidance is given in the Minerals and Waste Local Plan on where waste recycling facilities will be permitted. This will be reviewed in the Minerals and Waste Development Framework, which will consider the need for detailed locational guidance for other types of waste treatment facilities, and whether appropriate sites for waste management development should be identified.

1.90 The application site is located within an existing quarry void, within a wider waste management complex which includes a landfill site, gas utilisation plant and a Household Waste Recycling Centre. To the south is further land with permission for mineral working. The site but has excellent connections to the M40 and is close to the main potential sources of waste i.e. Bicester, Banbury and Oxford. The site is not covered by or close to any statutory landscape or wildlife designations e.g. Area of Outstanding Natural Beauty (AONB) or Special Area of Conservation (SAC).

1.91 However, the site is located within open countryside. The Oxfordshire Minerals and Waste Local Plan (OMWLP) 1996 states that further re-use and recycling of waste will be welcomed and may be permitted in the open countryside where the criteria of Policy W4 are met. Policy W4 states that

1.92 ‘Proposals for re-use/recycling and ancillary processes will not normally be permitted in the open countryside unless:

(a) there is an established overriding need and there is no other suitable site available and/or,
(b) the development is to form part of a mineral extraction/landfill site and will be removed on completion of extraction/landfill.

1.93 The established overriding need for additional waste management capacity in Oxfordshire has been demonstrated in the Draft South East Plan which identified a capacity gap of 250,000 tonnes per annum by 2015 for Municipal and Commercial and Industrial waste recovery facilities. Failure to deliver the required waste management capacity will lead to meet national and regional targets on diversion of waste from landfill being missed.

1.94 Eight alternative sites were considered for the EfW facility, however, Ardley was considered to be the most suitable in terms of access, proximity to highways and having the least adverse impacts on the local environment and communities.

1.95 The Draft Minerals and Waste Framework Core Strategy Preferred Option 11b puts forward a sequential approach to locating waste facilities; urban areas, close to urban areas and rural areas and within this; previously developed land, temporary waste sites and greenfield sites. It is considered that the application site is a temporary waste site in close proximity to urban areas i.e. not the most preferred option but not the least.

1.96 Policy G5 of the Structure Plan deals with developments outside settlements and states that ‘the countryside will be protected from harmful development. Special consideration will be given to development for agricultural, forestry or outdoor recreational needs or for other uses appropriate to a rural area which cannot reasonably be accommodated in a nearby settlement.

1.97 This leads to the question of whether an EfW facility can be considered an appropriate use in a rural area. Whilst waste management was not traditionally associated with rural areas, PPS 10 has recognised that rural areas may be appropriate for some types of waste management and that when identifying suitable sites, previously developed land and opportunities to co-locate facilities together with complementary activities should be considered.

1.98 The review of alternative sites has identified Ardley as the most suitable and deliverable site within Oxfordshire. Also, as the site is located within a waste management complex and much of the waste it would combust would be coming in to Ardley to be landfilled in any case, it is considered that the co-location of the EfW facility site is appropriate.

Summary

1.99 It would appear that as the need for waste management capacity becomes more immediate and acute, site location becomes more flexible. Whilst development plan policy had a general presumption against industrial development in the open countryside, it is acknowledged that in the case of waste facilities this can be overridden when there is an overriding need and no alternative sites are readily available.
1.100 This is not to say that waste management facilities should be built on any site at any cost, but recognises that there is no ‘perfect’ site and that a range of sites in a variety of locations should be considered.

1.101 Whilst the draft Minerals and Waste Framework sequential test may prioritise the use of previously used, vacant plots in urban areas, Oxfordshire is a largely rural county and the site selection work carried out by ERM highlights the limited number of sites that may be appropriate for this type of development.

1.102 It is considered that even though the application site is in a semi rural area, it is located within an existing waste management site and is well located in terms of the primary highway network and the main potential sources of waste and any adverse environmental impacts can be satisfactorily mitigated. Furthermore, there is an overriding need for additional waste management capacity and no more suitable alternative site.

1.103 Consequently, it is considered that the application site is supported by National, regional and local waste management policy and that the immediate and acute need for waste management capacity overrides the presumption against more general industrial type developments in the open countryside. Waste management facilities by this very nature have unique locational requirements that can not be readily accommodated in a broad spectrum of sites through Oxfordshire. This is demonstrated by the study conducted by ERM as part of the work on the Minerals and Waste Development Framework.

**Overall Summary**

1.104 In summary, the adopted Development Plan polices are broadly supportive of waste management facilities which divert waste away from landfill and do not have significant adverse impacts on local communities or the environment state that we consider that Ardley development complies with these policies, whilst continuing to ensure that adequate landfill capacity is maintained to meet local and regional commitments.
PLANNING SUPPORTING STATEMENT

Need and Alternatives

Need

1.105 Whilst Oxfordshire does not have an up to date Waste Local Plan, a substantial amount of data relating to waste arisings, capacity and future management requirements has been generated by the preparation of the South East Plan.

1.106 The draft South East Plan identifies a capacity gap of 250,000 tonnes per annum (TPA) by 2015 in Oxfordshire for Municipal and Commercial and Industrial waste recovery facilities. Work undertaken by Oxfordshire County Council’s Waste Management Team has identified a likely need for 180,000 tpa of recovery capacity to deal with the county’s residual municipal waste by 2014/2015, based on achieving a 50% recycling and composting rate.

1.107 Oxfordshire has annual Industrial and Commercial waste arisings of 901,000 tonnes, of which 422,000 tonnes (53%) is landfilled. As the EfW facility has a capacity of 300,000 tpa and only 180,000 is required for residual municipal waste, the facility would have 120,000 tpa capacity to divert Industrial and Commercial waste from landfill. This would represent a diversion of 66.5% of Industrial waste from landfill.

1.108 The proposed 300,000 tpa capacity is therefore considered appropriate to ensure the waste recovery requirements for Oxfordshire are met and that the diversion rates of Municipal and Industrial and Commercial Wastes are maximised.

1.109 The existing landfill and HWRC already contribute to the disposal and recycling capacity available within the county and this would continue to the case with the proposed development.

Alternative Sites

1.110 A total of 8 sites with the potential to locate a strategic waste management facility were identified by consultants ERM, for Oxfordshire County Council. These were as follows;

- Gosford Grain Silos
- Former Quarry, Shipton on Cherwell
- West of M40, Banbury
- Culham Science Centre
- Land at Banbury Cross Business Park, Banbury
- Sutton Courtenay Landfill
- Ardley Landfill
- Land at Palmer Avenue

1.111 The advantages and disadvantages of each of these sites were considered with regard to Green Belt, access and highway network, proximity to centres of population, proximity to international nature conservation sites and deliverability.
The two sites which were considered to be the most deliverable were Sutton Courtenay and Ardley landfill sites. Ardley outperformed Sutton Courtenay on the basis of the surrounding road network, the proximity to international conservation sites and traffic impacts.

**Alternative Technologies**

The Environment Agency life cycle assessment software ‘Waste and Resource Assessment Tool for the Environment (WRATE) was used to model the environmental impacts of the EfW facility.

The environmental burden of processing 300,000 tonnes of waste through the following waste treatment processes was calculated;

- Landfill;
- Energy from Waste;
- Advanced Thermal Treatment (ATT);
- Mechanical Biological Treatment with refuse Derived Fuel to EfW and;
- Mechanical Biological Treatment with refuse Derived Fuel to landfill.

The treatment processes are assessed in terms of their potential impacts on the following;

- Abiotic Resource Depletion;
- Global Warming Potential (GWP100);
- Human Toxicity (HTP inf.);
- Freshwaster Aquatic Ecotoxicity (FAETP inf.);
- Acidification (AP); and
- Eutrophication (EP19912).

The WRATE modelling results indicates that when considering the six environmental impact criteria in WRATE, the best performing options are Energy from Waste and Advanced Thermal Treatment. Energy from Waste scores highest on 3 criteria (abiotic resource depletion, global warming and freshwater aquatic ecotoxicity) and ATT scores highest on 1 criterion (eutrophication), but close to the top scoring technology on two other criteria (abiotic resource depletion, human toxicity).

Although scoring comparably to EfW on the life cycle impact assessment it should be considered that ATT is not currently a bankable solution for the treatment of municipal waste, and there are no full scale operational plants in the UK. It is also unclear if ATT is a viable technology for quantities of waste as large as 300,000 tonnes per annum.

In conclusion, through the use of the WRATE life cycle assessment software, it can be demonstrated that Energy from Waste yields an environmental impact that is comparable to Advanced Thermal Treatment, and better than other competing technologies. On this basis it is concluded that the proposed Ardley EfW facility will result in a negative environmental footprint, that is, an overall reduction in environmental impacts such as global CO2 emissions.
Summary

1.119 The review of the need for the proposed EfW establishes that Oxfordshire needs to deliver a waste recovery facility in order to meet its landfill diversion targets and that a capacity of 300,000 tpa would enable landfill diversion targets for both municipal and industrial/commercial waste to be achieved.

1.120 In respect of alternative sites that have been considered Ardley and Sutton Courtenay have emerged as the top performing sites with Ardley being preferred because of its access, surrounding highway network and its distance from international conservation sites. The review of alternative technologies also confirms that EfW offers the best performing, deliverable technology.
Summary of Potential Environmental Effects

Highways

1.121 An assessment of the potential impacts of the proposed development on the local highway network has been undertaken.

1.122 The proposed EfW facility is designed to deal with around 300,000 tonnes of waste per annum, arising from the Oxfordshire area. It is proposed that traffic serving the EfW facility and existing landfill would access the site via a new junction and access from the B430 (Drawing Number 3/15). The existing access to the Household Waste Recycling Centre would remain the same.

1.123 It is anticipated that the EfW facility and landfill together would generate 404 HGV movements per day which will reduce to 222 movements a day upon completion of the landfill. In addition, the development would generate a small number of light vehicle movements from staff and contractors. The two junctions in close proximity to the site are Junction 10 of M40 and the Middleton Stoney Crossroads each would only be subject to a marginal percentage increase over existing traffic movements, which is not considered significant from a highway point of view.

1.124 No increase in throughput is predicted as a result of the proposed changes to the HWRC which are about improving internal circulation and improving the facilities available to existing users.

1.125 The safety record of the B430 in the vicinity of the site has been reviewed and it was concluded that there is no pattern of accidents to suggest a highway layout deficiency or a capacity difficulty.

1.126 The impact of generated traffic on the operation of the highway network has been calculated using computer modelling techniques. As traffic generated by the proposed development will be spread throughout the day, rather than concentrated at peak times, the modelling exercise demonstrated that the proposed development would not have a bearing on the capacity of the road network, particularly at peak times.

1.127 The site is well located in respect of the strategic and high capacity road network and has good access from the main centres of population, from which the waste will be imported. The site is not readily accessible by means other than the car due to a lack of pavements and bus stops on the B430.

1.128 Overall, it is considered that the development proposals for the EfW, Landfill changes and the extension to the HWRC are acceptable in terms of highway amenity safety and capacity.

Noise

1.129 A noise assessment was undertaken to determine the following;

- the existing noise levels at noise sensitive receptors around the site;
The noise levels from on site noise sources have been assessed against standards appropriate for each noise source. The predicted operational noise levels were then assessed against the existing noise levels at each noise sensitive receptor. It is predicted that there will be no increase in noise at each noise sensitive receptor as a result of the proposed development, therefore, no mitigation measures are necessary.

Dust and Air Quality

An assessment of the potential impacts of the proposed development on air quality during the construction and operational phase was undertaken. The assessment was based upon a comparison of the current situation against the air quality impacts resulting from the proposed development. An assessment of finer particles (PM$_{10}$) has also been carried out as part of the stack dispersion modelling for the EfW facility.

The potential impacts on sensitive receptors, human receptors and ecological receptors were considered. Sensitive receptors include any persons, locations or systems which may be susceptible to changes as a result of the proposed development. Human receptors are locations where members of the public are reasonably likely to be exposed to air pollution for the duration of the relevant objective. For example, short term standards such as the 1 hour standard for NO$_2$ should apply to footpaths at site boundaries. Longer term standards such as the 24 hour PM$_{10}$ should apply at houses or other locations expected to be occupied on a continuous basis.

Ecological receptors include Sites of Special Scientific Interest (SSSI) or European sites e.g. Special Areas of Conservation (SAC) within 10 km of major emitters. A radius of 10 km has been applied in this assessment, as advised by the Environment Agency.

In terms of wind blown dust being deposited outside of the site, it is common to use a distance of 100-200 m from major sources as the radius within which there is the potential for significant air quality impacts from deposition of dust. Landfill and HWRC activities will be no closer to residential properties than existing and there are no residential properties within several hundred metres of the proposed EfW, therefore, the potential for dust impacts at residential receptors are considered to be negligible with the following mitigation measures proposed:

- damping down stock piles and haul roads;
- controlling the speed of site traffic; and
- a road sweeper will be employed on the public highway if necessary.

The impact of traffic on air quality was also calculated. The additional Nitrogen Dioxide (NO$_2$) and PM$_{10}$ generated by construction vehicles was
considered to represent an ‘extremely small’ change according to the air
quality National Society for Clean Air (NSCA) impact criteria. In accordance
with the NSCA significance criteria, whereby the predicted environmental
concentration is compared with the air quality objective, it is demonstrated
that the development would result in a ‘negligible’ impact at the assessed
locations.

1.136 In terms of dust and litter during operation of the proposed development all
waste handling activities associated with the EfW would be inside the waste
reception building, the risk of fugitive dust and litter is considered to be
insignificant and no mitigation measures are required. As waste would be
present at the facility for no more than few days pending treatment, the
potential for odour and bio aerosol formation would be minimal. As all
operations will be enclosed within the building, no mitigation to control
bioaerosols or odours are required. Existing measures such as use of daily
cover and the regular emptying of bins would continue at the landfill and
HWRC to control these impacts.

1.137 Emissions from the EfW stack were calculated from design data provided by
the manufacturer. The significance of impacts of predicted long term
Predicted Environmental Concentrations (PEC) for all pollutants have been
classified as ‘negligible’. The predicted process contributions (PCs) of both
nitrogen oxides and sulphur dioxide at all of the identified sensitive
ecological receptors have been classified as insignificant and no further
assessment is required.

1.138 In summary, the air quality impacts of pollutants from vehicles, the EfW
stack, dust and litter and odour and bioaerosols have been assessed. The
assessments concluded that the impacts of these emissions would not give
rise to significant adverse air quality effects for human or ecological
receptors in either the short or long term.

Geology, Hydrology, Hydrogeology and Flood Risk

1.139 The potential impacts of the proposed development upon the geological,
hydrogeological and hydrological environments have been identified and
assessed in the ES. The application site is located on a Major Aquifer but not
within a groundwater source protection zone. There are no private
groundwater abstractions within 3km of the site.

1.140 A small part of the south eastern corner of the site lies within the floodplain
of the adjacent Gagle Brook. However, the Environment Agency has
confirmed they do not hold any records of historic flooding at or adjacent to
the site.

1.141 The site has already been considered and found appropriate for landfill and
HWRC development and the changes proposed to these activities represent
no greater risk to the water environment than the existing approved
schemes.

1.142 Construction and operation of the EfW facility will increase the area of
hardstanding on the site but the surface water attenuation scheme has been
designed to manage run off from the entire site in accordance with the latest Environment Agency guidelines.

**Potential impacts on geology**

1.143 Earthworks at the site have the potential to expose dinosaur footprints known to be present in the Upper Flaggy Limestone adjacent to the proposed footprint of the EfW facility. Although not designated as a SSSI, if footprints are found during construction, their loss is considered to be significant.

1.144 If dinosaur footprints are exposed during the preparatory work for the development, Natural England will be contacted for advice on whether they merit removal and preservation. Any important features exposed will therefore be protected, reducing the impact significance from ‘Medium’ to ‘Low’

**Potential impacts on groundwater level**

1.145 The increase in hardstanding and impermeable buildings has the potential to reduce the amount of groundwater recharge, potentially affecting groundwater flows to the Gagle Brook. The groundwater assessment calculated that due to the relatively small size of the area affected (in relation to the outcrop area of the aquifer), the overall risk of reducing groundwater discharge will be ‘low’. In addition, surface water run off from the development will be discharged to an unlined pond in the south east of the site, from where it will infiltrate to the groundwater. This will reduce the ‘low’ significance to ‘near zero’ thus no mitigation is considered necessary.

**Groundwater and Surface Water Quality**

1.146 The development and operation of the EfW site could lead to contaminated runoff. Without mitigation, the probability of fuel and lubricant spillages are considered to be ‘medium’. The magnitude of the impact is considered to be ‘moderate’ given the limited volume of contaminative liquids on site. In addition, there is potential for sediment erosion to the Gagle Brook during the construction phase. Mitigation measures are therefore required to reduce impacts to an acceptable level.

1.147 In order to minimise the potential for spills of potentially contaminating material during the construction phase of the project, environmentally hazardous material used during the operational phase of the site will be kept in dedicated stores and storage tanks will have appropriate secondary bunding.

1.148 The potential for leachate generation and discharge to groundwater or surface water will be minimised by the design of the facility. The waste would be delivered to a dedicated handling area using bulk transfer and street refuse collection vehicles (RCV’s). All vehicles delivering residual waste will discharge their waste directly into a pit or storage hopper. This will minimise the potential for the generation and discharge of leachate.
1.149 Existing leachate management controls will be continued for the landfill and HWRC developments.

1.150 To minimise the risk of sediment build up in the Gagle Brook during earthworks, a range of appropriately designed surface water management measures will be implemented including:

- Erosion control measures – these aim to prevent runoff from flowing across exposed ground and becoming polluted with sediments.
- Sediment control measures – these aim to slow runoff and allow for settlement of sediment as close to the source as possible.
- Site Measures – these aim to provide end of pip treatment for polluted water, for example reed beds or settlement ponds

The implementation of appropriate surface water management measures outlined in the Flood Risk Assessment will reduce the risk of surface water quality impacts from the development to ‘Low’.

1.151 It is concluded that, with respect to geology, groundwater and surface water, there would be no significant impacts. The proposed development will utilise the same controls and mitigation as that employed by the landfill therefore no adverse impacts on the water environment or increased risk of flooding are considered likely as a result of the proposed development.

Ecology

1.152 An Ecological Impact Assessment (EcIA) was conducted to determine the potential impacts of the development on the ecology of the application site and surrounds.

1.153 A preliminary desk based study was undertaken to obtain data on statutory and non statutory nature conservation sites within a 10km radius of the application site (a distance considered appropriate with respect to controls required by the Waste Incineration Directive for aerial deposition).

1.154 Field surveys were also undertaken. These surveys included:

- Extended Phase 1 Habitat Survey;
- Breeding bird survey;
- Great crested newt survey; and
- Reptile survey

1.155 No statutory protected or notable plant species were recorded in or directly adjacent to the survey area. Protected and notable plant species were recorded within 2 km of the proposed development but none were identified within the application site. The site is not considered likely to be key for any of these species.
PLANNING SUPPORTING STATEMENT

1.156 Records of protected and notable fauna within a 2km radius around the site were obtained from Thames Valley Ecological Records Centre (TVERC).

1.157 No evidence of badger activity was observed within the survey area, however, badgers are known to be active on the restored parts of the landfill and it could be reasonably expected that badgers cross the southern corner of the quarry site.

1.158 There are no historical records for any bat species at or in close proximity to Ardley Quarry. The closest records are for brown long-eared bat (Plecotus auritus) at Bucknell Churchyard approximately 1.7km east of Ardley Quarry.

1.159 The application site offers very low bat roosting opportunities. Whilst, there is potential for bat species to utilise the area for foraging purposes, with the quarry linked to surrounding countryside by well defined features (i.e. Gagle Brook) offering suitable commuting routes, it is unlikely that this site is important or critical for bats.

1.160 The habitat types within and around the survey area provide suitable habitat for a range of breeding bird species typical of woodland, farmland and wetland habitats. The breeding bird survey identified a number of species using the site for breeding purposes with the large pond providing the main feature for breeding birds. Of the species recorded only little ringed plover is listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended).

1.161 The application site supports a large population of both common lizard (Lacerta vivipara) and grass snake (Natrix natrix). A mitigation strategy for this species, including trapping, relocation and exclusion, is currently in process as part of the permitted landfill development.

1.162 In addition to great crested newts, the site supports a ‘large’ population size class of smooth newts (Triturus vulgaris) as well as common toad (Bufo bufo) and common frog (Rana temporaria) with these two latter species listed as priority species in the UK BAP.

1.163 A number of butterfly and moth species as listed in the UK BAP as Priority Species have been recorded in close proximity to the application site (these are detailed in Chapter 10 of the ES). The survey area provides potentially suitable habitat for a diverse range of invertebrate species but none of the aforementioned species or other notable species were observed during any fieldwork carried out on the site.

Mitigation

1.164 The section outlines the mitigation measures that will be incorporated into the proposed development to prevent, reduce or offset any adverse effects on ecology and nature conservation although it should be noted that the proposed location of the EfW already has planning permission to be landfilled and these areas will be lost whether or not the proposed EfW is implemented. In general, mitigation measures include minimising land take and disturbance by reducing the footprint of the works so that adjacent habitats are not impacted, avoiding key habitat and areas used by protected species and minimising pollution of watercourses. Habitat creation is also an
important aspect to ensure that key habitats are reinstated and wherever possible enhanced through use of seed sources on the site and through selective planning using locally sourced native species that are appropriate to the locality.

1.165 The layout of the EfW facility has been designed to minimise the land take in the existing quarry that is already consented for landfill operations. All works will be undertaken in a sensitive manner and in accordance with agreed mitigation plans for protected species.

1.166 A series of air pollution controls are included in the design of the EfW facility as standard including gas scrubbing to remove heavy metals and other contaminants, bag filters to remove dust and particulates and non-catalytic reduction measures to reduce NOx and other gasses. The air pollution modelling detailed in Chapter 5 of the ES, suggests that the effect of emissions from the EfW facility on designated sites is negligible and therefore it is not intended to provide any further mitigation other than that already incorporated into the design of the facility.

1.167 All work to remove scrub and other vegetation shall be avoided during the bird breeding season between the middle of March and the end of August, wherever practicable. If any clearance works need to be carried out during this period they will only proceed after the vegetation to be removed has been checked and deemed free of active nests by a suitably qualified ecologist. If active nests are found then no clearance works will begin at the nest site and buffer zone around the nest site until the young birds have left the nest.

1.168 Although not currently active on the site, areas to be cleared will be inspected for any badger setts inside, or within 30m of, these areas. If badgers are found, an appropriate mitigation plan will be produced and all works will be carried out under licence from Natural England.

1.169 Suitable site management will be implemented to avoid and/or minimise the generation of excessive human disturbance, dust, noise and light during the construction works.

1.170 Wildlife corridors will be created to provide links to and from the surface water attenuation lagoons to areas of open countryside and to the restored landfill that will provide suitable commuting and foraging habitat for amphibians and reptiles including the provision of suitable hibernacula. Further consideration to habitat creation and enhancement will be made through landscaping proposals both within the application site and in the wider context of the landfill site.

1.171 No statutory or non-statutory designated nature conservation site will be directly or indirectly affected during the construction phase of the EfW facility.

**Landscape and Visual Impact**

1.172 The potential landscape and visual impacts of the development have been assessed and full details are provided in Chapter 6 of the ES.
PLANNING SUPPORTING STATEMENT

1.173 The site has no statutory landscape designations, however, due to the size and height of the development, there will be a visual impact. Therefore, mitigation strategies and compensation/enhancement measures have been integrated into the development scheme.

1.174 The main aim of the restoration is to produce final and interim landforms/land uses which maintain and enhance the landscape character and ecological value of the site, while mitigating the proposed EfW and Landfill development and providing long term agricultural land. The main aim of the landscape proposals are to integrate the EfW into the surrounding landfill restoration and landscape character of the area, while providing a setting and complimentary design form to the built development.

1.175 The landscape of the proposed development can therefore concerns a number of basic elements as outlined below, each with different constraints and potentials:

- the continued restoration and management of the existing landfill development;
- the design of the proposed landfill landform and its integration into the existing completed landfill landform;
- the design of the proposed landfill land uses (including seeding, hedgerows and woodland planting) and their short and long term management;
- the more detailed design of the proposed building setting in terms of style and relationship to the proposed buildings;
- the more intensive and detailed management required to ensure the successful establishment of the landscape setting of the building; and
- treatment of the application area boundary, and how this merges with the surrounding landscape character.

1.176 Modifications to approved landfill levels are proposed to maximise screening and minimise landfill void lost to the location of the EfW facility. The proposed new contours are illustrated in the restoration masterplan and include a 5m high increase to the southern landfill from 122m AOD to 127m AOD. The northern section of the landfill is permitted to a post settlement height of 128m AOD so there would not be an increase in the height of the landfill overall.

1.177 It is proposed to revise the field pattern and woodland planting on the restored landfill area to reflect the amended landfill levels. Planting would also be increased to provide greater levels of screening to the north and west. Planting around the EfW facility would be extended onto the landfill to help integrate the building into its surroundings. The proposed planting is based on the permitted landfill restoration scheme and would blend with the local landscape hedgerow and woodland character.

1.178 Materials used in the design of the EfW facility have been chosen to create a light coloured building, which will reduce the visual impact of the bulk and scale of the development. Translucent materials, greys, browns, pale greens and other natural colours would all be used to blend the building into the agricultural background.
1.179 In terms of the connection of the EfW facility to the National Grid, a preliminary route has been identified for the undergrounding of the connection to the Bicester sub station. Whilst this may cause some loss of hedgerows and visual impact in the short term, it is considered preferable to permanent overhead power lines.

1.180 Cut and fill operations will be required to adjust the base levels in the quarry to 100m AOD, to form a base level for the proposed EfW. A surface water management scheme will include the development of a number of surface water attenuation lagoons to the south east of the EfW facility. Wetland habitats would be created within these areas, adding to wetland habitats linked to the Gagle Brook.

1.181 The most visible elements of the development would be the buildings and chimney stack. The stack would consist of 2 flues with a lattice tower structure around them.

1.182 The proposed mitigation measures in relation to landscape are as follows;

- the creation of a rolling landfill landform;
- a building base level close to the base of the quarry floor;
- large blocks of woodland planting;
- a ‘parkland’ type landscape around the EfW;
- a high standard of building design, including careful choice of materials;
- preservation of existing boundary trees and hedges;
- a curved access road to reduce views into the development area; and
- a landform screened access road, gatehouse and weighbridge area.

**Restoration Objectives**

1.39 The general restoration objectives for any mineral or waste site can be listed as:

- Restore the site area to a suitable landform and after use;
- Ensure suitable landscape features and land cover are introduced to the site;
- Establish vegetation through suitable aftercare; and
- Maximise the landscape and ecological potential of the resultant habitats.
In the case of the proposals these objectives have been developed within the constraints and opportunities listed above to create the following specific objectives:

- successfully merge and integrate the proposed landfill landform with the existing landfill landform;
- integrate surface water management for the landfill and building development into the overall landscape design;
- locating the EfW development close to the base of the quarry at 100m AOD;
- ensure ground water conflicts are avoided or resolved;
- take into consideration proposed new landfill phasing and ensure any revisions are practical;
- design revised landfill landform to maximise EfW building screening potential;
- include native woodland planting to boost long term screening levels;
- utilise the permitted mineral development to the south in mitigation and landscape strategies;
- ensure final landfill restoration design is in character with field pattern and scale of the surrounding landscape; and
- use biodiversity and existing ecological management aims as basis for range of final land uses.

No designated landscapes would be directly affected by the proposed development, however, the buildings will have an inevitable landscape impact. Landform, landscaping, building design and careful use of materials will all be used to reduce the visual impact of the buildings. As the building cannot be entirely hidden, the aim has been to create a high quality, landmark building, which will have a positive effect on views and the landscape of the area.

Socio - Economic Impacts

The potential benefits and costs of the development were assessed and suggest mitigation measures where relevant.

This assessment is based on a 5km study area from the proposed development site, incorporating the lower layer super output areas of the Cherwell District (Cherwell 10C, Cherwell 10D, Cherwell 11B and Cherwell 16A).

The main positive impact of the facility on the socio economic situation in the local area is the provision of 150-200 jobs during the 2 year construction of the facility. Upon operation, 40 permanent jobs would be created. The EfW facility may also create jobs indirectly, for example waste separation jobs in waste transfer stations. The facility will also help Oxfordshire meet its landfill directive targets and avoid costly penalties, which may otherwise have to be met by increasing council tax. Existing employment would be maintained at the landfill and HWRC.
Cultural Heritage

1.187 The potential impact of the development on the area’s cultural heritage was assessed. Cultural heritage includes below and above ground archaeology, historic buildings and conservation areas and their settings.

1.188 As the application site has been previously quarried, the development will have no direct impacts on cultural heritage. The settlements within the vicinity of the site include conservation areas, a registered park, and a scheduled castle. Given the location of the application site, it is considered that the EfW facility would create a negligible to moderate indirect visual impact on the cultural heritage of the area.

Palaeontology

1.189 Due to the existing paleontological interest at Ardley Quarry and the potential for the proposed development to impact on this resource, a stand alone assessment of the potential impacts of the proposed development has been undertaken.

1.190 The dinosaur footprints and trackways found to date at Ardley Quarry have provided an important insight into how two species of dinosaur that lived 168 million years ago moved. There is a low possibility that further trackways remain in a horizon of the Upper Flaggy Limestone under the proposed EfW facility site that could be exposed during construction works. Therefore prior to start of all groundworks, contractors will be fully briefed on the paleontological features to look out for when undertaking excavations on site. During groundworks through the horizon where dinosaur trackways have been found, care will be taken to strip this horizon in layers and if any dinosaur footprints are exposed all works within that area will stop and Natural England will be contacted for advice. Where any footprint and/or trackway is deemed worthy of protection these will be removed and preserved under the guidance of suitable palaeontologists as advised by Natural England and the County Council.

1.191 It is concluded that with the above mitigation measures, the proposed development is not likely to have a significant impact on the potential paleontological resource at Ardley Quarry.
Benefits of the Development

1.192 The benefits of the proposed development are considered to be as follows:

- The EfW facility will use proven, highly regulated technology to extract energy from residual waste and will make a fundamental contribution to the management of residual waste in Oxfordshire. It will provide capacity for the 180,000 tpa shortfall identified to deal with Oxfordshire’s residual municipal waste remaining after recycling and composting by 2014/15.

- It will also provide up to a further 120,000 tpa of capacity for diverting industrial and commercial waste from landfill.

- The site is well established waste management operation with good transport links and the consideration of potential environmental effects carried out as part of this application did not identify any unacceptable adverse effects on the community, environment or highways as a result of the proposed development.

- It will provide for the diversion of waste from landfill in accordance with national, regional and local waste planning policy and targets whilst ensuring that adequate landfill capacity is maintained;

- It will generate significant amounts of energy to power the facility and export to the National Grid. There is also potential to utilise excess heat in local homes and businesses.

- EfW will have a lower carbon footprint than other waste management technologies.

- It will provide a bottom ash recycling facility to create secondary aggregate for use in the construction industry.

- Will provide up to 40 permanent jobs plus further contract/temporary employment.

- Will provide a Visitor Centre to allow a range of groups to find out about EfW technology.

- The upgraded Household Waste Recycling Centre will provide an improved facility for local people which will eventually benefit from HGV traffic relocating to the new access proposed.