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ENVIRONMENTAL STATEMENT

A171 Guisborough to Whitby Park & Ride Facility, North Yorkshire

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REPORT

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NON-TECHNICAL SUMMARY

Introduction

North Yorkshire County Council (NYCC) is promoting the development of a Park & Ride facility adjacent to the A171 Guisborough to Whitby road, located to the northwest of the town of Whitby and close to the junction of the A171 and the B1460, in North Yorkshire. An earlier application for a Park & Ride facility on the same site received planning permission from North York Moors National Park Authority in February 2009; however, as no lawful start had been undertaken to construct the facility, that permission subsequently lapsed in February 2012. This planning application, which in effect is a resubmission of the earlier scheme, now seeks to renew that consent with a view to progressing the construction of the facility.

Whitby is a popular coastal resort on the east coast of England. It attracts high numbers of tourists, especially during the summer months. Traffic congestion is a problem in the town centre. The current provision for car parking is not sufficient to match the high demand during peak tourist season, and there is very little off-street parking; survey information showed there are only 2,865 car parking spaces in the town centre

A Traffic Management Strategy has been developed for Whitby in an attempt to reduce congestion and improve tourist access. A key aspect of this strategy is the proposal to introduce a Park & Ride facility which would provide parking on the outskirts of Whitby and linked public transport into the town, therefore reducing numbers of vehicles needing to enter the town centre reducing congestion and the impacts of traffic on the environment and townscape of Whitby.

Application for Planning Permission

The site chosen for the Park & Ride facility lies within the boundary of the North York Moors National Park. The North York Moors National Park Authority is therefore the Planning Authority and has confirmed that an Environmental Impact Assessment (EIA) should be undertaken in accordance with the regulations in order to assess whether the scheme would have any significant impacts on the environment. EIA helps to ensure that the importance of environmental impacts of the proposed development are properly understood before a decision is made on whether to grant development consent. It also addresses the capacity for reducing these impacts. This document is a Non-Technical Summary (NTS) of the key findings of the EIA process which was originally undertaken in the period 2006-2009, and has been updated by Golder Associates (UK) Ltd on behalf of North Yorkshire County Council as part of this application.

The Proposed Development

The proposal aims to provide significant relief to traffic congestion commonly experienced in the town during the tourist season. The scheme would aim to reduce traffic congestion and associated environmental deterioration in the town centre, with predicted benefits for pedestrians and local residents. The proposed facility located at the junction of the A171 Guisborough Road and the B1460 at Cross Butts, was selected because of its relationship to the highway network, topography, ease of access and distance from the town centre.

The site is currently an area of open farmland enclosed by hedgerows. A small number of isolated farms and residential properties are situated close to the site, including the settlement of Newholm, approximately 0.9 km to the northwest. The A171 runs along the southern edge of the site and Barkers Lane defines the northern boundary.

The site would cover an area of approximately 4.3 hectares and would provide in the region of 450 car parking spaces, including: an internal road network, an overspill car park to the west, extensive planting, a pond, bus shelter, incorporating toilet facilities, waiting area and tourist information boards, and CCTV cameras would be installed for security. A new roundabout would be constructed at the existing A171/B1460 junction. Access to the Park & Ride facility would be off the roundabout.

Planning and Policies

The site is located within the boundary of the North York Moors National Park. The proposed scheme has been evaluated in the light of the current national, regional and local planning and transport policy in order to determine whether the scheme is in accordance with and assists in fulfilling the objectives of the relevant plans. The planning landscape has changed significantly since the submission of the earlier scheme, but a review of the proposal in the context of the current development plan shows that the scheme will still play a beneficial role in achieving local, regional and national objectives of development plan policies relating to transport, the environment, the tourism industry and general economic development in the town of Whitby and the wider region.

Landscape and Visual Aspects

A Landscape and Visual Assessment of the proposed Park & Ride facility has been undertaken by an experienced landscape architect. The appraisal process has been carried out in accordance with recognised guidelines.

The quality of the existing landscape is considered to be 'good' to 'very attractive' with areas of higher quality landscape to the west and north of the site. However it should be noted that locally there is no discernible difference between the quality of the landscape either side of the National Park boundary.

Overall the landscape surrounding the development area is considered to have Medium to High sensitivity to change, although existing development around the junction of the A171 and the B1460 detracts from the rural qualities of the landscape.

The development would result in the loss of 4.3 hectares of agricultural land. No trees or hedgerow would be affected by the proposals. By contrast the proposals would include approximately 8,000 new native trees and shrubs planted mostly along the northern and western boundaries of the application site, and 120 linear metres of new native species-rich hedgerow to screen the development from the National Park and the surrounding area.

The lack of houses in the region (or publicly accessible viewpoints) combined with the undulating topography means that the visual intrusion is considered to be very low. The most notable receptors being:

- three isolated properties to the west of the site (New Ville and adjacent cottage and Bannial Flat farm;
- Victoria Farm Garden Centre to the east;
- Cross Butts Farm and Restaurant immediately to the southeast;
- sections of the A171 and B1460 immediately adjacent to the site; and
- public footpaths north and west of the site.

These receptors are all within 500 metres of the site, it is predicted that there would be minimal impact beyond this distance and very limited views from within the National Park.

It is anticipated that the proposed landform (the parking area will be below existing ground level), combined with the perimeter planting, will provide a screen to development.

Overall the proposal will have an urbanising effect on the rural landscape; however the impact will be localised and will be largely off-set by the extensive mitigation measures proposed, as the planting matures.

Surface Water and Groundwater

There are predicted to be increased flow rates and water quality degradation resulting from the introduction of hard surfaces at the site.

The impacts would be reduced by taking preventative action to regulate flow rates and water discharge quality. This would involve building a balancing pond with interceptors, which act to prevent harmful substances entering watercourses. Impacts would be reduced further by implementing a programme for

monitoring of flow rates and water discharge quality. With such measures in place the environmental effect on the quality of the local surface water drainage network is considered to be negligible.

Ecology and Nature Conservation

A habitat and badger survey, along with review of species records for the local area, has been undertaken by an experienced ecologist. Consultation with relevant organisations such as English Nature, North and East Yorkshire Ecological Data Centre and North Yorkshire Bat Group has also been undertaken in order to obtain information regarding any designated sites, protected species or other features of nature conservation interest within 1 kilometres (km) of the site.

The site comprises arable land, which is of low ecological value. The field hedgerow boundaries are mostly hawthorn. The hedge along Barkers Lane is more diverse and has some potential ecological value; this would be retained within the development. Presence of badgers has previously been confirmed in the surrounding areas, but no recent activity was detected in the survey area during this assessment. Other protected species including bats and birds have not been recorded on site, therefore no mitigation is proposed at this stage. The proposed woodland planting, wildflower seeding and marginal planting round the balancing pond will increase the ecological diversity compared to existing, and consequently the scheme is assessed as having a minor positive impact.

Cultural Heritage

An updated desk-based study involving consultation of archaeological databases and historic maps has been undertaken, in conjunction with an earlier geophysical survey of the site undertaken in 2007. These results were used to inform an updated assessment of the predicted impacts upon Archaeological Remains, Historic Buildings and the Historic Landscape.

A total of 39 Archaeological Remains, 16 Listed Buildings, 10 non-designated Historic Buildings, and 17 Historic Landscape Character units were identified within the 1 km Study Area. There are no World Heritage Sites, Scheduled Monuments, Conservation Areas, Registered Historic Parks and Gardens or Battlefields in the Study Area. A stone ‘trod’ (a flagged pathway) reported in the earlier ES as crossing the site was not identified, and it is concluded that the report was inaccurate.

The results of the assessment indicate that there could be impacts to previously undiscovered buried Archaeological Remains, and there will be impacts to known agricultural features of relatively low value. There would be some adverse impacts to two Listed Buildings during construction, but these effects would be temporary, and minor beneficial effects are predicted during the operational phase of the scheme. The impacts upon the Historic Landscape are considered to be neutral.

A ‘strip, map and sample’ exercise ahead of construction would enable any archaeological features that are present on the site to be excavated and recorded, thereby achieving ‘preservation by record’ of these remains.

Air Quality

An assessment of the potential impacts of the development on local air quality has been undertaken.

Construction activities are likely to generate dust, and changes to traffic flows during the operation will potentially result in a small increase of road traffic emissions within the local area.

During site construction works adequate dust control measures will be implemented, such that fugitive dust releases will have a negligible impact on the nearest sensitive receptors to the site.

With the development it is predicted that the change in traffic flow on the local road network will be minimal, with a reduction in traffic flows predicted in Whitby during the peak period. Very minor increments in traffic flows are predicted to result in a small increase in road traffic emissions, but due to the good air quality across the study area, this will have a negligible impact on local air quality, and there will also be a reduction in emissions in the town centre as a result of the scheme.

Noise and Vibration

An assessment of potential noise impacts has been undertaken at sensitive locations. The assessment considered the potential impacts of noise during the construction phase and operational lifetime of the development.

The existing background noise levels around the site have been measured as a baseline against which any changes can be evaluated. Traffic on the A171 travelling at speed currently dominates the local noise environment.

Predicted construction noise levels at Cross Butts Farm and Restaurant and Victoria Farm and Garden Centre indicate noise levels will be below the suggested target of 75 db (decibels) for most aspects of the construction. Noise levels may for a short time exceed the target during the breaking out and removal of parts of the existing road. Mitigation measures will help to ensure that noise levels are reduced as low as is reasonably practicable.

An assessment of road traffic noise levels has been undertaken using traffic count data and forecasted traffic data. A very small increase in the road traffic flows is predicted for the B1460. Such an increase would not be perceptible. Traffic on the A171 is predicted to decrease slightly, leading to a small reduction in noise level which would also not be perceptible.

Highways and Traffic

The Park & Ride development is part of a consistent strategy for managing parking within Whitby and adheres to all national and local policies and guidelines for such developments.

The development intercepts rather than generates traffic and will have no material impact on the highway network beyond the immediate vicinity of the site other than to slightly reduce the traffic levels. The proposed construction of a roundabout at the site entrance is appropriate to the size and nature of the development, and has been shown to be of sufficient capacity to cater for predicted traffic movements from the site and on the A171, through to 2019.

Construction

The construction of the Park & Ride facility itself is expected to last for 15 months, whilst the construction of the roundabout and surrounding highway network is expected to last for approximately three months. The highways works would be undertaken some months prior to the construction of the facility itself, and during this period there will be some disruption to traffic using the A171 and B1460. Works will be phased to minimise this disruption and to avoid the peak visitor times.

Pedestrians and Cyclists

The Park & Ride scheme will not directly affect any footpaths, bridleways or cycle routes, however, traffic in Whitby would be reduced compared to existing, making the locality a safer and better environment for ‘non-motorised users’. This secondary impact has not been assessed in detail but will undoubtedly benefit pedestrians and cyclists in the town centre.

Summary and further information

In summary, the findings of the EIA demonstrate that if the mitigation measures are properly implemented and managed, it is predicted there will be ***no long-term significant environmental impacts*** as a result of the proposed Park & Ride development.

Should you require a copy of the Environmental Statement (paper copies are available at a cost of £100 each and copies on CD-Rom are available at £15 each), or further information relating to this proposal, please contact John Smith at North Yorkshire County Council using the contact details below. Copies of this Non-Technical Summary are provided free of charge from the address below.

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1.0 INTRODUCTION

1.1 Project Title and Applicant

This Environmental Statement (ES) presents the findings of an Environmental Impact Assessment (EIA) for the following project:

Project Title: A171 Guisborough to Whitby Park & Ride facility.

Applicant: North Yorkshire County Council

County Hall

Northallerton

North Yorkshire

DL7 8AD

1.2 Status and Purpose of this Report

This ES accompanies, and should be read in conjunction with, the Planning Application and supporting documents produced by North Yorkshire County Council (NYCC). A planning application for the Park & Ride Facility and accompanying ES was originally submitted in June 2007 (Ref No NYM/2007/1016EIA), but this was refused in March 2008 due to unacceptable impacts relating to proposed lighting columns within the car park area. Subsequently a revised application was submitted in 2009 (Ref no NYM/2007/0621/EIA) which omitted the lighting columns, and an addendum to the previous ES was submitted as a supporting document which provided a re-assessment of the Landscape and Visual Impacts of the revised proposals. This application received planning permission in February 2009, but the scheme was not implemented during the subsequent three year period, and consequently lapsed in February 2012.

NYCC now intend to resubmit the application for the previously permitted scheme, but acknowledge that in planning terms there has been a significant time lapse since the original assessments were completed in 2006-2008. Consequently, Golder Associates has been commissioned to produce this updated ES, taking into consideration any changes in the baseline conditions, new legislation (for example the introduction of the new National Planning Policy Framework in 2012), or assessment methodologies/guidelines.

Much of the original 2007 ES has been deemed fit for purpose and has consequently been reproduced *verbatim*, however a number of Sections have required a substantial re-write to take account of changes in the baseline conditions and/or changes in legislation.

1.3 Scheme Background, Purpose and Overall Objectives

The proposed scheme is a Park & Ride Facility which would involve the creation of a large car parking facility and provision of regular buses departing from the site to Whitby town centre, and back in return. The proposed site for the car parking is situated to the west of Whitby town centre, within the North York Moors National Park. It comprises a roughly triangular piece of agricultural land. The grid reference at the centre of the site is NZ 4872 5100 and the site covers an area of approximately 4.3 hectare (ha). It is located at the intersection of the A171 Guisborough Road to the south and the B1460 to the east, and is bounded to the north by Barkers Lane.

Whitby is a popular coastal resort which attracts high numbers of tourists due to its interesting heritage and various tourist attractions. Traffic congestion within the town centre is currently an issue. The current provision for car parking is not sufficient to match the high demand during peak tourist season. There is very little off-street parking and there are only 2,865 car parking spaces in the town centre.[1] The total number of vehicles at peak times exceeds the road network and car parking capacity[2] and the trend of growth in traffic

[1] Whitby PACT Area Quality of Life Survey, Final Report, (2002) Yorkshire Rural Community Council

[2] Traffic Management Strategy Final Report (2003), Mouchel Parkman

in the town has led to a deterioration of conditions in central Whitby, particularly during the peak tourist periods in the summer months.

NYCC are the promoters of the proposed Park & Ride Facility. Throughout the County, a number of traffic schemes are in development in an attempt to improve the situation regarding traffic facilities. In 1999 and 2000, the Council commissioned a series of transport studies in Scarborough and Whitby. Mouchel Parkman was commissioned to develop a Traffic Management Strategy (TMS) for Whitby and a local consultation group The 'Whitby Traffic Partnership' was established to assist with this work.

A Whitby TMS was developed by Mouchel Parkman using the framework set by the North Yorkshire County Council Local Transport Plan 2001–2006, and referring to national level guidance set out in Planning Policy Guidance Note 13 (PPG 13); Transport. Central to the Strategy produced was a proposal to introduce a Park & Ride Scheme on the A171 approach road to Whitby.

The most recent North Yorkshire Local Transport Plan 2011-2016 identifies Whitby as one of the nine main locations across the County that regularly experience significant congestion issues.

In 2005 an assessment of potential sites adjacent to the A171 was undertaken; this identified seven sites as potential locations for the scheme (Appendix ES1.1). Following an examination of these sites by Mouchel Parkman, and an Environmental Appraisal by Golder Associates, a preferred site location was identified by Mouchel Parkman as the northwest corner junction of the A171 Guisborough Road and the B1460 at Cross Butts. The site lies entirely within the North York Moors National Park, hence the determining authority for the proposal are the North York Moors National Park Authority (NYMNPA). Figures ES1.1 and ES1.2 depict the location of the site.

The proposed scheme will provide alleviation of traffic congestion in the centre of Whitby by providing a means of accessing the town without travelling through the busier areas by car. It will provide parking for approximately 450 cars, and associated infrastructure such as sheltered waiting areas, toilets, information boards and an internal road system. A roundabout at the A171/B1460 junction roundabout will also be installed.

1.4 Requirement for Environmental Impact Assessment

The requirement for EIA to be carried out for certain development projects was established by the 1985 European Union Council Directive 85/337/EEC (as amended by Directive 97/11/EC), in respect of the assessment of certain public and private projects on the environment. This has been transposed into UK law by the Town and Country Planning (Environmental Impact Assessment) (England and Wales) 1999, and through various other consent systems.

In accordance with relevant EIA legislation, NYMNPA Planning Officers determined in Screening Opinion that undertaking of an EIA would be required and that an Environmental Statement was to be produced to support the planning application for the scheme. The development constitutes 'EIA Development' under Category 2, 10, b of Schedule 2 of the regulations; i.e. an 'Infrastructure Project' that exceeds 0.5 hectares. The sensitivity of the local environment (National Park) was also stated as a factor in placing a requirement for EIA to be carried out in this instance.

The case planning officer at NYMNPA confirmed that it would not be necessary to resubmit the Screening/Scoping requests for the update of this ES and that further consultation would only be necessary if notable differences between the findings of this and the previous EIA were predicted.

This report has been prepared for NYCC in consideration of the proposed scheme herein and should not be used in a different context without reference to Mouchel Parkman and to Golder Associates. In addition, in time, variations or amended legislation may necessitate reassessment.

Details relating to the current conditions within the scheme Study Area have been obtained through a review of available site documentation and site visits/baseline surveys undertaken by representatives of Golder Associates and its EIA team during the assessment period of 2005-2007, and the subsequent update during 2012. The assistance of Mouchel Parkman and NYCC in the provision of data and support for this work is

gratefully acknowledged; however, Golder Associates has not attempted to verify independently any of the information supplied. It should be noted that Mouchel Parkman were not involved in the update of the ES; NYCC produced the updated Traffic Assessment (Appendix ES11.1) and Highways and Traffic section (Section 11) and confirmed that Sections 12 and 13 required no changes and could be re-issued *verbatim.*

1.5 Purpose of the Environmental Statement

The purpose of the Environmental Statement (ES) is to publish the results of the EIA process within an accessible document, and to ensure that all parties understand the likely significance of potential environmental effects of the proposed scheme before any decision is taken to proceed with the development.

The main aims of an ES are thus:

- to provide a description of the scheme proposals;
- to accurately describe the existing 'baseline' conditions that exist in and around the site of the proposed scheme;
- to assess the significance of impacts of the scheme upon the environment, taking into account any measures that may reduce or compensate such impacts and any beneficial effects or enhancements that form part of the scheme, and
- to allow the general public, consultees and interested parties the opportunity to express an opinion in respect of the proposals before a decision is made whether or not to proceed with the scheme.

1.6 Structure of the Environmental Statement

The structure of the ES has been agreed with NYMNPA, acting as the determining authority. The format of this ES follows guidance issued by the Highways Agency within the Design Manual for Roads and Bridges (DMRB), Volume 11 Section 4, Part 3 'Preparation of the Environmental Statement', the purpose of which is to publish the potential effects of a highway scheme in a clear and logical manner. Golder Associates Internal EIA Methodology was also used to provide consistent, transparent methodology for impact assessment and characterisation.

A Non-Technical Summary is included at the beginning of the ES which describes in accessible, non-scientific language, the scheme proposals and potential effects. It may be read as a separate 'stand-alone' document.

This ES comprises a comprehensive document which outlines specific environmental topics and assesses the potential environmental effects and the significance of such impacts. Where necessary, mitigation measures to reduce impacts are discussed.

After this introductory Section 1, Section 2 provides an overview of the EIA Process undertaken and Section 3 provides information on the nature of the scheme proposals, including the scheme history and the need for the scheme. Section 4 then assesses the planning context of the proposed development and assesses compliance with relevant key policies.

The remaining sections (Sections 5-13) present the findings of the EIA process in relation to impacts associated with the proposed development on the environment. The sections are structured in order to provide all information the Scoping Study deemed necessary. They have been grouped under the following headings:

- Section 5 – Landscape and Visual Impacts;
- Section 6 – Hydrological and Hydrogeological Assessment;
- Section 7 – Ecology and Nature Conservation;

- Section 8 – Cultural Heritage;
- Section 9 – Air Quality;
- Section 10 – Noise;
- Section 11 – Highways and Traffic;
- Section 12 – Disruption Due to Construction; and
- Section 13 – Pedestrians, Cyclists, Equestrians and Community Effects

Appendices follow at the end of the document. All Appendices follow in the order of the sections of the ES as set out above, and are preceded by the relevant section number.

The use of technical terms in the ES has been kept to a minimum to aid understanding of the scheme by the widest audience.

1.7 EIA Team

The EIA and production of this ES has been undertaken by Golder Associates, with technical assessment support and input from the following organisations:

- Mouchel Parkman was responsible for the original planning application and, for the original EIA, described the need for the scheme and provided the assessment of effects the scheme could potentially generate in terms of traffic, construction and socio-economic impacts. This work has been largely reproduced unchanged in this updated submission, although NYCC produced an updated Traffic Assessment (Appendix ES11.1);
- ADG Architects was the Project Architect, responsible for designing the on-site buildings and facilities; and
- Archaeological Services WYAS was contracted by Golder Associates to design and coordinate the onsite archaeological assessment works using geophysical surveying techniques.

2.0 APPROACH TO ENVIRONMENTAL IMPACT ASSESSMENT

This section describes the main features of the approach which has been adopted in preparing the ES. The approach and methodologies applied to assessment of each environmental topic are detailed in the each topic sections (Sections 5-13).

2.1 The EIA Process

The EIA process is a mechanism by which development proposals are appraised in relation to environmental and socio-economic criteria. This allows such matters to be considered in addition to traditional engineering and technical considerations. The EIA procedure is a means of drawing together, in a systematic way, an assessment of a project's likely significant environmental effects. This helps to ensure that environmental issues are afforded consideration throughout the design and development process. The process described in the text following is essentially a procedure that must be followed for certain types of project (set out in the EIA Regulations) before projects can be given 'development consent'.

2.2 Screening

As described in Section 1.4, a screening opinion was provided by NYMNPA in May 2006, confirming that an ES would be required prior to consideration of a planning application for the proposed development. The proposal is classed as a 'Schedule 2' project; *"for which EIA is only required if the particular project in question is judged likely to give rise to significant environmental effects."*

Under Schedule 2 of the regulations, the proposed development is categorised as an "Infrastructure Project", and falls under Schedule 2, 10, b; i.e. it exceeds 0.5 hectares. The requirement for EIA was therefore to be determined by the determining Authority, (North York Moors National Park Authority [NYMNPA]) who had to decide if significant environmental effects were likely.

A formal Screening Opinion request was made by Golder Associates to NYMNPA in February 2006. They subsequently advised that EIA was to be required for the development. This decision was confirmed at a meeting with the NYMNPA on 3 May 2006. The justifications provided by NYMNPA for requiring an EIA under Schedule 2 were as follows:

- significant impacts were likely (due to the **nature** of the proposal, the **scale** of vehicle numbers involved, and the extent of new planting, buildings and lighting likely to be required) coupled with the fact that; and
- the proposal is situated in a **sensitive setting** (high quality landscape of a National Park).

A copy of the request submitted and the resulting Screening Opinion obtained from NYMNPA confirming that an ES would be required is presented in Appendix ES2.1, Consultation Responses.

2.3 Scoping

Once the need for EIA has been established the scope of the study must be set. Not all potential effects require detailed assessment in an EIA given that the EIA Regulations and DMRB are concerned with the presentation of information on 'significant environmental effects'. The EIA Directive states that an ES is required to address, *"the aspects of the environment likely to be significantly affected by the proposed project, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors."* These aspects were all considered in the light of the site specific environmental setting in order to derive a potential list of topics which could be covered in the EIA. They were as follows:

- Landscape and visual aspects;
- Soils, Geology, Surface water and Groundwater;
- Ecology and Nature conservation;

- Cultural Heritage;
- Air Quality;
- Noise and Vibration; and
- Highways and Traffic.

A Scoping Study was prepared by Golder Associates in June 2006, identifying those effects on resources/receptors which it was believed did, and conversely did not, require detailed assessment (i.e. which studies could be "*scoped in"* or *"scoped out*"). This study was sent to NYMNPA with a request for a formal Scoping Opinion.

In a letter dated 9 August 2006, Mark Hill, the NYMNPA Development Control Manager, confirmed that, following discussion with the Chief Planning Officer, the Authority considered the Scoping Study covered all foreseeable relevant issues. This meant all the identified issues listed above that were covered in the scoping study were to be carried forward to the impact assessment and characterisation stages. They stated there were no other matters which NYMNPA considered to have been neglected and required consideration.

2.4 Post Scoping EIA Methodology

The techniques involved with undertaking EIA are well developed in the UK and Golder Associates has developed a broad standardised internal assessment framework which can be followed for each environmental topic forming part of the EIA. This process is illustrated on the diagram below:

STEP 1

Establish Receptors which could be Affected by the Development and their Sensitivity

Determined through baseline studies on the local environment.

STEP 2
Impact Characterisation

Description of the potential changes brought about by the development proposals on the sensitive receptors.

STEP 3
Cumulative Impact Characterisation

Identification of incremental/additional impacts due to past, present and reasonably foreseeable future actions.

STEP 4

Impact Significance Assessment

Consideration of the nature and scale of impact characteristics, combined with the importance/sensitivity of receptors to produce a judgement of overall significance.

STEP 5

Consider Need for Mitigation

If significant environmental impacts are deemed unacceptable, opportunities for reducing their nature, scale, duration or geographical extent may be available through re-design or alternative methods of development. These should be considered by the developer and committed to as appropriate to reduce the significance of environmental effects.

STEP 6

Assess Significance of Residual Impacts

Where the developer has firmly committed to undertaking mitigation to reduce the predicted significance of environmental effects, the overall significance can be re-assessed to show the predicted change from baseline conditions with successful mitigation in place.

STEP 7

Monitoring and Management Strategies

The success of mitigation measures may need to be monitored in order to ensure impacts are no worse than those predicted.

2.5 Consultation Process

Consultation with the following stakeholders was undertaken to obtain information and opinions relating to the baseline environment and potential for impacts:

- North Yorkshire County Council (Landscape, Air, Noise, Cultural Heritage);
- NYMNPA (Scoping, Ecology, Landscape, Cultural Heritage);
- Environment Agency (Landscape, drainage);
- English Heritage (Cultural Heritage);
- Countryside Agency (now Natural England) (Landscape);

- English Nature (now Natural England) (Ecology);
- North Yorkshire Bat Group (Ecology); and
- North & East Yorkshire Ecological Data Centre (Ecology).

Data and opinions provided by statutory and non-statutory consultees with respect to the EIA have been referenced within the relevant sections of this ES.

2.6 Establish Receptors and Sensitivity through Baseline Studies

In any EIA it is necessary to collect information on which receptors and biophysical resources occupying both the site and surrounding area may be affected by the development proposals. These targets are then used to establish a 'baseline scenario', (i.e. the conditions that would prevail in the event that the proposed scheme did not go ahead). By establishing the baseline, the impacts of the scheme can be measured and their acceptability assessed in terms of environmental effects.

It is recognised that environmental impacts can operate over a range of geographical areas. The spatial extent of impacts (and thereby the spatial coverage of necessary baseline studies) is dependent on the extent of land to be affected directly and indirectly by the development, the extent of the road network affected, the means by which impacts propagate (e.g. upstream and downstream) and the jurisdiction of the relevant authorities including NYMNPA which provide the planning policy framework for the assessment.

A summary of the current baseline scenario at the time of this updated assessment (2012) has been established through desk studies, field surveys and consultation as described in the relevant sections of this ES.

2.6.1 Human Receptors

Receptors are often human beings living, working or taking part in activities in the vicinity of a proposed development. These can either be individuals (e.g. residents, employees) or wider communities.

The location of the proposed scheme layout, as shown in Figure ES1.1 means that there are few residential properties in close proximity to the site (i.e. within 200 m), with the main areas of population lying in Whitby itself and in the hamlet of Newholm cum Dunsley 500 m to the northwest. All distances mentioned are stated in metres and are an approximate distance as measured from the boundary of the site to the relevant feature of interest.

The potential environmental effects associated with the scheme on human receptors are presented in individual topic sections.

2.6.2 Biophysical Resources

In addition to human receptors, the environment surrounding a scheme often contains biophysical resources which are important in terms of environmental protection or may be particularly sensitive to disturbance. These include the quality of land, local rivers and groundwater, particular habitats and species of ecological interest, landscape character and views, the historic environment, the transport network, air quality and the ambient noise climate present within the site vicinity.

The biophysical resources which may be directly or indirectly affected by the development proposals are described within the relevant sections of the ES.

In relation to biophysical resources, the area comprising the site and the immediate environment has been considered in greatest detail. However, when assessing certain impact types such as those related to visual impact, a wider geographical area has been considered as is deemed best practice. The geographical scope is presented in each of the technical sections of this ES.

For the purposes of assessing the significance of environmental impacts predicted throughout the EIA, the sensitivity and/or value of receptors are scaled based on the relative importance of the receptor, using the terms detailed in Table ES 2.1 below:

Table ES2.1: Methodology for Determining Value or Sensitivity of Receptors and Resources

Importance/Sensitivity	Area
International	European Community or wider area
National	England/UK
Regional	North East England
County	North Yorkshire
Borough	Scarborough
Local/Neighbourhood	Whitby

Judgements of receptor significance are made for each receptor or particular resource identified as having the potential to be subject to impacts associated with the proposals.

It is also necessary to consider in the case of a proposed scheme such as the Park & Ride facility, how the baseline scenario may change in the future as the various stages of the development occur. For certain environmental topics (e.g. Landscape and Visual) therefore, a number of assessment years have been chosen so evaluation of environmental impacts can be carried out for the lifetime of the development.

The anticipated construction and subsequent scheme opening will necessarily be highly dependent on timescales related to obtaining planning consent, developing a detailed design and appointing principal contractors. Some basic assumptions have therefore been made regarding timescales in order to predict longer term impacts.

2.7 Impact Characterisation

An assessment of potential environmental effects has been carried out through consideration of baseline environmental conditions and the elements of the proposed development that could potentially result in environmental impacts. Such impacts may be:

- positive or negative;
- short, medium or long term;
- direct or indirect; and
- reversible or irreversible.

Key impacts have been identified and the likely scale (magnitude) of potential impacts determined, in terms of the predicted deviation from the baseline conditions during the various phases of development.

It should be noted that the construction effects will generally be temporary in nature, related to particular tasks and programmes which are required in order to establish the site as suitable for the scheme. Operational effects of the new scheme will largely be permanent, linked to the lifetime of the scheme operation.

The Golder Associates methodology employs the terms **Substantial, Moderate, Slight** and **Negligible** to describe the different scales of potential environmental impacts. For the purposes of this EIA, the scale of impact is detailed for individual topics and described in the relevant sections. Where accepted published methodologies are available, these have been used in the impact assessment process (e.g. Ecology[3], Landscape and Visual Impacts[4], Cultural Heritage[5], Air Quality[6] and Noise[7]) and these are described in the

[3] The Institute of Ecology and Environmental Management, Guidelines for Ecological Impact Assessment, IEEM, Amended Pilot November 2002 and subsequent draft February 2006.

[4] The Landscape Institute & Institute of Environmental Assessment, *Guidelines for Landscape and Visual Impact Assessment*, E & FN Spon, 2002.

[5] Department for Transport, *Design Manual for Roads and Bridges Volume 11 section 3, Part 2: Cultural Heritage (HA208/07)*, 2007.

[6] Air Quality Management (IAMQ) *Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of Significance*, 2012

[7] Department for Transport, *Design Manual for Roads and Bridges Volume 11 section 3, Part 7: Noise and Vibration (Hd213/11)*, 2011.

relevant sections). In the absence of such standard methodologies, the Golder Associates in-house methodology for determining the scale of impact was applied in order to provide a transparent assessment. This is outlined in Table ES2.2 below.

Table ES2.2: General Methodology for Assessing Scale of Impacts on Receptors

Scale of Impact	Assessment Criteria
Major	Impact predicted to extend over a large or very large area Impact predicted to affect considerable numbers of people Impact predicted to affect considerable numbers of other receptors (ecological, businesses, facilities) Impact predicted to have transboundary effects Significant change in environmental conditions predicted Impact will entail unusual/complex effects for receptors Impact will affect particularly scarce features/resources Impact entails a high probability that breaches of legislation or statutory Environmental Quality Standards or Objectives will occur Impact will result in a loss of attribute Impact will continue for a long time Impact will be permanent rather than temporary Impact will be continuous rather than intermittent, or where intermittent, frequent rather than rare. Impact will be irreversible Impact will be very difficult to avoid, reduce, repair, or compensate for or Significant positive change in environmental conditions resulting in major improvements in quality or value of a receptor.
Moderate	Impact predicted to extend over a moderate area Impact predicted to affect moderate numbers of people Impact predicted to affect some other receptors (ecological, business, facilities) Impact unlikely to have transboundary effects but possibility remains Moderate change in environmental conditions predicted Impact unlikely to entail unusual/complex effects for receptors but possibility remains Impact unlikely to affect particularly scarce features/resources but possibility remains Impact entails a low probability that breaches of legislation or statutory Environmental Quality Standards or Objectives will occur Impact unlikely to result in a loss of attribute but possibility remains Impact will continue for a moderate period of time Impact will be semi-permanent Impact will be intermittent Impact will be reversible Impact will be possible to avoid, reduce, repair or compensate for or Notable positive change in environmental conditions resulting in measurable improvements in quality or value of a receptor.
Slight	Impact predicted to extend over a small area Impact predicted to affect small numbers of people

Scale of Impact	Assessment Criteria
	Impact predicted to affect a small number of other receptors (ecological, business, facilities) Impact not predicted to have transboundary effects but possibility remains Slight but discernible changes in environmental conditions predicted Impact not predicted to entail unusual/complex effects for receptors Impact not predicted to affect particularly scarce features/resources Impact not predicted to result in breaches of legislation or statutory Environmental Quality Standards or Objectives Impact not predicted to result in a loss of attribute Impact will continue for a short period of time only Impact will be temporary Impact will be intermittent, and/or rare Impact will be reversible Impact will be possible to avoid, reduce, repair or compensate for or Slight positive change environmental conditions resulting in minor improvements in quality or value of a receptor.
Negligible	Results in effects on attribute but of insignificant magnitude to affect the use/integrity

Within each topic section of the ES, timescales over which the impacts might operate are considered, given that the scale of impact will vary accordingly with time. Predictions and forecasting are necessary when assessing potential future impacts, particularly relating to Noise, Air Quality and Visual Impacts. Established good practice methods have been used throughout this assessment to ensure that the predictions are as accurate as possible.

Where possible, estimates of impacts have been recorded in measurable quantities with ranges and/or confidence limits as appropriate, and where only qualitative descriptions can be provided, these have been defined as fully as possible. Key effects are, therefore, described both quantitatively and qualitatively, as appropriate.

2.8 Impact Significance

As previously stated, the EIA Regulations are concerned with the requirement to identify 'significant environmental effects'. Thus an assessment of significance is necessary in order to provide the means by which proposals are judged as acceptable or unacceptable in environmental terms. As with impact characterisation, established transparent methodologies for establishing significance exist for some environmental topics (Noise, Ecology etc), and where appropriate these have been applied in undertaking the EIA. There is no definitive guidance available for the majority of topics however. Where such methodologies are absent Golder Associates has produced an impact significance matrix for transparently determining 'significance' of environmental impacts within EIA and this is presented in Table ES2.3 below. It takes into account the sensitivity/importance of receptors and the predicted scale of the impact.

Table ES2.3: Impact Significance Matrix

receptor sensitivity/ Importance [1]	**Scale of Impact Upon Receptor** [2]			
	Substantial	***Moderate***	***Slight***	***Negligible***
International	Major	Major	Intermediate	Minor or neutral
National	Major	Major	Intermediate	Minor or neutral
Regional	Major	Intermediate	Intermediate	Minor or neutral
County	Major	Intermediate	Minor	Minor or neutral

receptor sensitivity/ Importance [1]	Scale of Impact Upon Receptor [2]			
	Substantial	***Moderate***	***Slight***	***Negligible***
Borough	Intermediate	Intermediate	Minor	Minor or neutral
Local	Intermediate	Intermediate-Minor	Minor	Neutral

[1] Refer to Table ES2.1

[2] Refer to Table ES2.2

The following definitions are used to define impact significance in the Golder Associates Methodology:

- **Substantial**: An effect, which in isolation could have a material influence on the decision making process;
- **Intermediate**: An effect, which could have some influence on decision making, particularly when combined with other similar effects;
- **Minor**: An effect, which on its own is likely to have little influence on decision-making, but when combined with other effects could have a more material influence; and
- **Neutral**: Significant effect not predicted.

2.9 Consider Need for Mitigation

In accordance with Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011, Environmental Statements should include a description of *"measures envisaged to prevent, reduce, and where possible offset any significant adverse effects on the environment".*

Such mitigation measures can be incorporated at the following stages of the development:

- during the design stage of the entire project life cycle to avoid or minimise the magnitude of negative impacts at source, and promote positive effects where possible;
- during the physical execution of construction to control negative impacts to acceptable levels;
- after opening (compensation and environmental enhancement measures); and
- during operation of the development through good practice operation and management.

At each stage, mitigation measures must be of an appropriate level and be maintained over the relevant timescale in order to be effective. A number of mitigation measures are suggested in each technical section.

It is best practice to consider mitigation measures for effects that are of minor/slight negative significance or higher and this has been undertaken throughout the ES. All mitigation measures described or proposed in this ES have the support of NYCC. Considering the effect mitigation measures may have on reducing impacts allows the significance of **residual** effects to be predicted. Necessary monitoring/management strategies may be identified in the light of these findings.

Proposed mitigation measures are currently at the conceptual stage only. It is recognised that final details regarding the precise form and extent of each mitigation measure would need to be finalised taking into account the safety, operational and maintenance practicalities of the Scheme. In some cases, detailed consultation and agreement with relevant authorities or stakeholders may be required.

2.10 Assess Significance of Residual Impacts

Residual impacts are those predicted to remain after implementation of mitigation measures. It is important to assess the significance of residual impacts in order to provide the decision maker with a realistic assessment of what is likely to happen as a result of the scheme. This is undertaken in this ES at the end of

each topic section where mitigation is proposed. In each case, the residual impact assessment takes into consideration the ability of the mitigation measures to reduce the effects and their likely success.

2.11 Monitoring and Management

For certain topics, where significant environmental impacts are predicted without mitigation, it is important that post-determination mitigation measures are implemented and managed and that their success is monitored. A commitment to undertaking environmental monitoring is therefore given by NYCC where this is considered to be necessary to achieve a successful, longer term mitigation, without which the environmental effect of the proposed development would be unacceptable.

In general following the scheme's construction, monitoring and evaluation will be carried out in order to provide both qualitative and quantitative assessments of the impacts as a result of the scheme's implementation. This will relate closely to targets and proposals set within local planning documents.

Mouchel Parkman confirmed that the following post decision monitoring will be carried out:

- traffic surveys will be undertaken annually as part of the NYCC Monitoring programme; and
- environmental effects (noise and air quality) and other specific mitigation measures will continue to be monitored.

3.0 SCHEME DESCRIPTION

3.1 Overview of Scheme History

Whitby has a population of 14,000 people and currently experiences traffic congestion problems. These problems are particularly apparent in the tourist season due to the town's popularity with visitors and its shortage of capacity to deal with such high numbers of car users. There are various car parks within Whitby, most of which involve navigating through the town centre area. The road network within the town mainly consists of busy single lane roads through residential areas. As previously described, the trend of growth in traffic in the town has led to a deterioration of conditions in central Whitby.

In response to growing concern over traffic matters NYCC arranged for a Traffic Management Strategy to be produced for the town. This was carried out by Mouchel Parkman, assisted by a local consultation group, 'The Whitby Traffic Partnership'. It was adopted in December 2002, and central to this strategy was a proposal to introduce a Park & Ride Scheme on the A171 approach road to the town.

A Planning Application (Ref no NYM/2007/1016/EIA) and accompanying Environmental Statement (Golder Associates 2007) was originally submitted in 2007, however this was refused permission due to adverse impacts of the proposed lighting columns which were unacceptable to NYMNPA. A subsequent application minus the columns (Ref No NYM/2008/0621/EIA) received planning permission in February 2007, with 22 planning conditions. As the scheme did not progress within the stipulated 3 year time period (Condition 1) that permission has now lapsed.

3.2 The Site

The proposed site is located approximately 2.5 km west of the centre of Whitby, east of the A171/A169 roundabout, close to the junction of the A171 and the B1460 (see Site Location Plan, Figure ES1.1), at grid reference NZ 4872 5100. As previously mentioned, it is situated entirely within the North York Moors National Park. The area in general is perceived as a transitional zone between the coast and the moors. The coastal area is more urban in character than the largely undisturbed rural moors. As noted by Mouchel Parkman in their Traffic Management Strategy Final Report (October 2003), all roads to Whitby pass through the National Park.

The site is located in an area of open farmland comprising predominantly of large arable fields divided by hedgerows. The area is sparsely populated but some isolated farms and residential properties are situated in the site vicinity. Immediately adjacent to the site there is a cluster of buildings situated around the junction of the A171 and the B1460. This includes the Victoria Farm Garden Centre. The hamlet of Newholm lies approximately 0.5 km northwest of the site. The following boundaries delimit the site:

- the B1460 provides the eastern boundary;
- a northern boundary is provided by Barkers Lane;
- the A171 forms the southern boundary of the site; and
- another pasture field to the west bounds the remainder of the site.

The site topography varies between 90 m and 100 m above Ordnance Datum (AOD) due to its situation on ground that rises up to the moorland plateau to the west of the site. This gives the site an easterly aspect. There are no water bodies or watercourses within or adjacent to the site. There are no trees within the site and no Tree Preservation Orders (TPOs) on or within the immediate vicinity of the site. In terms of land use, the site is classified as good quality Grade 3 agricultural land.

3.3 The Proposed Scheme

The proposal aims to provide significant relief to traffic congestion commonly experienced in the town during peak tourist seasons. It would involve diversion of cars that would previously have travelled in to the town centre, to the facility's car park on the outskirts of town. Visitors would then be transported into the town by a

regular bus service. The scheme would aim to reduce traffic congestion and associated environmental deterioration in the town centre, with predicted benefits for pedestrians and local residents.

The site area is approximately 43,000 m^2, of which, approximately 15,000 m^2 would be surfaced parking bays (250 spaces) and roadways. A further 5,000 m^2 would be used for overflow parking (200 spaces) and would be 'reinforced' grassland. Approximately 23,000 m^2 would be used for woodland planting, a pond and wildflower areas.

The facility would provide in the region of 450 car parking spaces, including provision of disabled parking. An internal road and pedestrian pathway network would be established and infrastructure would include a sheltered waiting area, public toilet facilities, and tourist information boards. 3 x CCTV cameras would be situated at various points across the site to provide personal and vehicle security.

The scheme would involve creation of a roundabout at the A171/B1460 junction. A balancing pond would be put in place to manage site drainage and an integral landscape scheme would be put in place to help integrate the facility into its surrounding environment.

A new roundabout at the A171/B1460 junction will be constructed to allow access to the site. (It should be noted that the roundabout forms an integral part of the development but does not form part of this Planning Application).

A new a single-storey bus shelter will be provided towards the centre of the site. The building will be constructed in random rubble stone with raised glass atrium, a grass/sedum roof and photovoltaic panels. It will have a gross external footprint of approximately 155 m^2 and will accommodate a waiting room, toilets (male, female and disabled WCs with baby change facility) and plant/ store rooms. Externally there will be a seating area and covered bike storage area (12 spaces). The building which will accommodate a tourist information board will be heated, illuminated and monitored by a CCTV system. (The bus shelter is shown on Figures ES3.1a and ES3.1b).

Central to the scheme is the incorporation of sustainable design. Heating will be provided by a ground source heat pump, which will provide all the year round under-floor heating and hot water for wash basins. This will be linked to solar hot water system/photovoltaic panels, which will reduce the usage, and therefore power consumption of the heat pump in hot sunny periods. All water used for WCs and wash-hand basins will be from recovered and stored rainwater from the car parks, except in drought conditions when a backup supply will be used. Drinking water alone will be from a mains source. A micro sewage station would be installed discharging clean effluent to the balancing pond.

The scheme has been designed in accordance with Building Regulations Part M (Access for the Disabled) and the requirements of the Disability Discrimination Act.

3.4 Scheme Construction

Construction works on site will include; construction of the ancillary roundabout, earthworks, creation of pavements and kerbed areas, building works, drainage works, insertion of electrical infrastructure, landscaping, and the placing of signage and markings.

NYCC have provided a draft construction programme which involves completing the roundabout before work starts on the car park. It is envisaged that the construction of the roundabout will take approximately 12 weeks to complete, with a 2 week lead in time for utility diversions. It is envisaged that the construction activity in the car park area will last for 25 weeks, of which the latter 20 weeks will comprise the drainage works and the construction of the bus shelter. An idealised construction plan for the scheme can be found in Appendix ES3.1.

3.4.1 Construction Impacts

Potential impacts of the construction phase of the proposed scheme have been addressed in the individual ES topic sections. Where necessary the measures deemed necessary to mitigate any construction related impacts have been stated. The environmental aspects potentially most affected by construction will be Air

Quality, Noise, and Cultural Heritage. Sections 8, 9 and 10 fully consider the construction of the scheme and any potentially significant impacts that require mitigation.

3.5 Consideration of Alternatives

Following an initial feasibility assessment by Mouchel Parkman of a variety of alternative site locations and potential routes, a handful of potential sites for the scheme were identified for the proposal, and a brief appraisal was prepared for each site (refer to Appendix ES1.1).

Of the seven sites, Sites 1 and 2 were identified as suitable locations for the Park & Ride facility. Of the other sites:

- Site 3 was unsuitable. The length of frontage to the A171 was insufficient to provide a suitable and, therefore, safe means of vehicular access;
- Site 4 was unsuitable. On its own site 4 was too small with insufficient frontage to provide safe access to the A171; and
- Sites 5, 6 and 6A were unsuitable. There is insufficient frontage and the gradients at the southern end of the site are unsuitable for the parking facility.

With Sites 3 to 6A having been eliminated as potential locations; Sites 1 and 2 became the favoured sites.

Site 2 has insufficient frontage to provide an adequate roundabout. This site would, therefore, require left-in/left-out priority junctions. Access to the site would be gained via a left turn only from the A171 along the southern side of the site. Egress from the site would be via a left turn only exit onto the B1460. In addition, a new roundabout would be provided at the A171/B1460 junction. This roundabout would provide the flexibility that bus routes require. It would also reduce the temptation for drivers to contravene the right-turn ban on the site egress. Not having a roundabout would see drivers wishing to travel north 'U' turning at the junction, likely to increase accident risk.

The access arrangement at Site 2 would result in a high proportion of land being used for access, egress and circulation routes. With the required car parking in addition to this there would be insufficient space for landscape mitigation works.

A far more satisfactory means of access can be provided at Site 1. As with Site 2, a roundabout would need to be constructed at the A171/B1460 junction. However, because this junction abuts the site it is possible to provide direct access between the roundabout and the Park & Ride facility. The roundabout would need four arms and is, therefore, larger than that required for Site 2. However, this additional area can be accommodated within the Park & Ride site.

An initial Environmental Appraisal of Sites 1 and 2 was conducted by Golder Associates in 2005. The assessment concluded that in ecological and cultural heritage terms there was no real difference between the two sites. In landscape and visual terms Site 2 was considered marginally better, however from the point of view of vehicular access, junction design and Safety Site 1 was the better site. Consequently Site 1 is being promoted as the preferred location for the Park & Ride facility.

4.0 PLANNING CONTEXT

4.1 Introduction

This Environmental Statement (ES) has been prepared in support of a planning application for the development of a Park & Ride scheme on the outskirts of Whitby. The application site is located within the National Park so the determining Authority will be the North York Moors National Park Authority (NYMNPA) although the boundaries are contiguous with those of the adjacent authority Scarborough Borough Council (SBC) in whose area the town of Whitby is located.

It is considered important in this case to establish the background to the planning policy review and to outline the planning history of the site, which is a material consideration. The application is in effect a resubmission of an earlier application (Ref no. NYM/2008/0621/EIA) that was submitted by North Yorkshire County Council (Business and Environmental Services) for the:

'*Construction of a 450 space Park & Ride facility together with associated highway alterations (revised scheme to NYM/2007/1016/EIA including additional information and justification) at OS Field 3618 bounded by Guisborough Road A171, B1460 and Barkers Lane, Whitby'.*

The earlier application (Ref No NYM/2007/1016) to which reference is made in the above 'description of development' was refused due to design issues relating mainly to the lighting proposals. The subsequent application NYM/2008/0621/EIA was however granted full planning permission by the NYMNPA by decision notice dated 16 February 2009 and subject to a total of 22 planning conditions. Condition no.1 of which states that the:

'*Development hereby permitted shall be begun before the expiration of three years from the date of this permission'.*

A substantive start was not made within that period, and as a result the permission has in effect lapsed, the consent as a result expired on the 16 February 2012 and could not thereafter be implemented.

This application will therefore have to take account of the changes to the planning policy 'landscape' which has occurred during the intervening period which have been significant with the adoption of the National Planning Policy Framework (NPPF) and changes to the documents that comprise the development plan.

The NPPF Para 2 does however still maintain the primacy of the development plan in the decision making process on determination of planning applications. It states in Paragraph 2:

'Planning law requires that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise. The National Planning Policy Framework must be taken into account in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions'.

This advice is of direct relevance to the outcome of this application and the matters considered in reaching the 'planning balance' on the proposal. It is also considered to be important in the compilation of this planning application that the content of that earlier consent was noted as were the conditions and their requirements which have implications for the determination of this application, and the potential to significantly reduce 'outstanding' issues.

Formerly the ES supporting application NYM/2008/0621/EIA advised the development plan to consist of a hierarchy of documents that were made up of the Regional Spatial Strategy (RSS) known as 'The Yorkshire and Humber Plan', below which was the 'saved policies of the North Yorkshire Structure Plan (alteration 3 adopted October 1995). The Local level consisted of the North York Moors Local Plan (NYMLP) and the Scarborough Borough Local Plan.

Significant changes have occurred in the intervening period in that Central Government has made clear its intention to abolish the RSS as part of the development plan. This has been articulated through the Localism Bill, although it is understood that pending the issue of formal Orders, the RSS and its policies

should still be regarded as a material consideration, although it should be afforded limited weight in the decision making process.

The North Yorkshire Structure Plan has in effect ceased to have any relevance with the exception of Green Belt policy which has no relevance to this application.

Similarly at the local level all the policies of the North York Moors Local Plan have now been replaced by those in the NYMNPA Local Development Framework Core Strategy and Development Policies Document which was the subject of an 'Adoption Statement' dated 13 November 2008. This document therefore now takes the place of the Local Plan in decision making at District level.

As we have outlined above, the determining authority will be the NYMNPA, but the contiguous application site boundary with the administrative area of Scarborough Borough Council does make it important to consider the planning policies of SBC to ensure that any decision on making the 'planning balance' is inclusive. This is afforded increased weight given that the proposed Park & Ride facility seeks to resolve accessibility issues in Whitby which is outside the National Park but within Scarborough Borough, the tourism and transport policies of which are therefore afforded weight as a material consideration.

The development plan situation in Scarborough still consists of the old style Local Plan; the Scarborough Borough Local plan which was adopted in 1999 and that is subject to a 'saved policies' directive. Work is still progressing on the replacement Local Development Framework and the underlying document the 'Core Strategy' has reached the 'preferred approach' stage. However the council has in the face of emerging policy direction from Central Government reported on 17 January 2012 to Cabinet that their recommendation to 'rebrand' the Local Development Framework (LDF) as a Local Plan incorporating the former LDF Core Strategy and Community, Environmental and Economy Development Plan documents. It was resolved by the councils 'Cabinet' to adopt the recommendation. The Local Plan would take forward the work done on the Core Strategy and a programme released by SBC expected the release of a consultation document later in 2012.

The policies of both the adopted 1999 Local Plan and the emerging Local Plan should therefore be considered in evaluating the proposals (the NPPF confirms that weight should be afforded to emerging plan polices; the amount of weight being dependant on the stage of progress).

This sets the scene for the identification of relevant documents and the source of individual policies that will be used in this section of the ES 'Planning Context'. We have not dealt in this introduction with the policy scenario of National Planning Policy other than to refer to the adoption of the NPPF, but we will later in the section also detail the changes that have occurred to the PPSs and PPGs referred to extensively in the earlier ES, and which are now redundant.

4.2 Planning Policies

4.2.1 Regional Spatial Strategy

Within the context of the above comment this document will outline the former policies of the RSS that were relevant to the application and that may still be considered material to the decision making process, but are no longer part of the development plan. In part this is because they have been used to inform the decisions of the individual councils in formulating their own development plan policies and fulfilling a coordinating role between governmental objectives and land use planning policy.

Former General Policies of the RSS that provide relevant evidence of direction of travel on planning are:

Policy P1 (d.ii) provided support for proposals for development of the local economy in coastal towns in a sustainable way and recognised changes that had evolved in tourist demand.

Policy E2 Rural Employment (j) seeks to encourage tourism to develop in an integrated and sustainable way.

Elsewhere in the plan there are specific policies which considered issues pertinent to tourism, and the underlying themes of these policies are still relevant to this application, such as Policy E6 which advises that tourism should be considered in local transport plans (LTPs) and that policies needed to:

i) identify and support assets for tourism to manage enhance and promote the industry;

ii) identify review and introduce measures to aid capacity and reduce pressure on resorts;

iii) balance needs of locals with those of tourists; and

iv) manage visitor flows and encourage alternative forms of transport, encouraging provision for visitors and disadvantaged groups.

Chapter 7 Transport in the RSS – detailed the Regional Transport Strategy (RTS) and confirmed that its purpose was to coordinate transport and land use planning to promote the economy and facilitate access and efficiencies in the transport network and associated infrastructure.

Policy T1 (d) seeks to protect and enhance the viability and sustainability of local centres.

As with any development proposal the issue of impact on the environment is a clear material consideration, a cornerstone of the planning system and current governmental policy in the post NPPF era is still that land use proposals are undertaken in the most sustainable manner, and that the proposal must be a carefully weighted balance of need against impact. The former RSS policies on the built and natural environment were directly relevant and must be considered in any proposal. Policies N1 Biodiversity, N2 Historic and Cultural resources, N3 Landscape character and N5 Agricultural and sustainable land management are all relevant and are now articulated through polices at the local level with additional support from the NPPF.

4.2.2 North York Moors National Park Authority Local Development Framework Core Strategy and Development Policies

This document was the subject of a formal 'Adoption Statement' on 13 November 2008 and became the development plan for the Park authority, replacing the former North York Moors Local plan (2003) and it's saved policies. The Core Strategy and Development Policies form the basis for future spatial planning in the Park area going forward, whilst balancing these interests within the context of sustainable development and National Park objectives.

The A171 Guisborough Road which runs to the south of the site is the boundary between the National Park Authority and Scarborough Borough Council's area, given the proximity of the two areas there will be consultation between the authorities as there are clear implications for both in the nature and potential impacts of the proposal both on the character of the area and the road networks.

The 1995 Environment Act sets out the key purposes for the National Park, as being to:

- conserve and enhance the natural beauty, wildlife and cultural heritage of the national park; and
- promote opportunities for the understanding and enjoyment of the special qualities of the park by the public.

The Act goes on to place a duty on the National Park Authorities to:

- seek to foster the economic and social wellbeing of the local communities, and to
- have regard to the statutory purposes in exercising or performing any functions in the National Park and;
- if it appears that there is a conflict between those purposes, to attach greater weight to the purpose of conserving and enhancing the natural beauty, wildlife and cultural heritage of the area.

The environment of the North York Moors National Park, its scenic beauty and the wealth of biodiversity are the principal features that have led to the designation of the National Park. The importance of tourism is

recognised in the Park and in 2005 visitors generated a £298 million spend, and the proximity of resorts such as Whitby does have a key part to play in the visitor attraction even though the town is outside the Park. The A171 on which the application site is located is the main coastal route through the east side of the Park linking Whitby, Guisborough and Scarborough.

The Park is subject to a Management Plan which provides an overarching strategy for its future. The Management Plan is intended to influence the work of all organisations which operate in the Park not just the National Park Authority. The plan outlines a list of visions to encourage the delivery of the economic and social wellbeing of the local community; these visions include the following objectives which are considered to be of relevance to this application:

- a place managed with care and concern for future generations;
- a place where the diversity and distinctiveness of the landscape is respected and cherished;
- a place where cultural and recreational opportunities of visitors are accessible; and
- a place that continues to adapt to change whilst furthering and pursuing the purposes of the Park.

The LDF has an important role to play in the delivery of these objectives and in the delivery of the spatial aspirations of the five Community Strategies (the North Yorkshire Community Strategy, Hambleton Community Strategy, Redcar and Cleveland Community Strategy, Imagine Ryedale, and Scarborough Borough Community Strategy) which cover the Park.

A number of key spatial themes from these Strategies have been identified in the LDF Core Strategy including the environment, communities, health, the rural economy and accessibility.

The development which is the subject of this application is considered to have implications for three of these themes:

Environment:

- protecting and enhancing the natural environment;
- addressing the causes and effects of climate change, including reducing the risk and impact of flooding and promoting renewable energy and reduced energy use;
- encouraging sustainable design, construction and energy use in new development; and
- protecting cultural assets including distinctive landscapes, settlements and buildings.

Rural economy:

- enabling the creation of new businesses and continued viability of existing businesses; and
- supporting recreation and providing opportunities for the enjoyment of these.

Accessibility:

- encouraging more sustainable modes of travel and reducing dependency on the car; and
- locating new development where services are available and can be supported

The text of the plan highlights the point that there is a need to maximise potential for facilities to be accessed by transport modes other than the private car in order to address the environmental effects of car use. It does however acknowledge that in rural areas car use remains the only realistic option. The plan sets out a series of spatial objectives that the plan seeks to further and these are of direct relevance to the development which is the subject of this application.

Spatial objectives:

The spatial objectives outlined in the LDF are designed to bring together in one place the land use implications of all the policies relevant to the area. The spatial strategy provides a framework within which the policies will operate to provide an appropriate pattern of development in the Park.

The following spatial objectives have been identified as being of relevance to the determination of this application:

1) Conserve and enhance the natural environment and the biological and geological diversity of the Park;

2) Reduce the causes and assist in adaptation to the effects of climate change on people, wildlife and places;

3) Promote prudent and sustainable use of natural resources;

4) Secure high quality new development that takes account of and enhances the unique landscape character, settlement pattern and built characteristics of the landscape character areas;

5) Preserve and enhance historic assets;

6) Promote sustainable design and efficient energy use in new buildings;

7) Support the tourism and recreation industry be ensuring that the development contributes to the local economy;

8) Strengthens and diversifies the local economy by supporting a range of opportunities for employment ;

9) Reduce need to travel and facilitate alternative, more sustainable modes of travel to the private car and minimise the environmental impacts of transport; and

10) Facilitate access to services and facilities.

The plan sets out the Spatial Strategy for the North York Moors in Part 4 and which is of relevance to the underlying themes of this application. It confirms that key challenges for the LDF are to reconcile the need to promote and maintain sustainable communities and encourage opportunities for conserving and enhancing its special qualities. Efforts to minimise the effects of climate change can adversely affect the Park's special qualities through increased levels of traffic. It encourages a strategy for the location of development that moves towards an integrated approach that encourages alternative forms of transport to the private car, this also involves an understanding of how the Park functions including the role of settlements beyond the Park.

The plan goes on in Part 5 to detail the policies that will provide a strategic framework for future development in the Park and deliver the spatial objectives set out above.

Core Policy A – Delivering National Park Purposes and Sustainable Development

This policy states that:

The LDF seeks to further the National Park purposes and duty by encouraging a more sustainable future for the Park and its communities whilst conserving and enhancing the Parks special qualities. Priority will be given to:

1) Providing a scale of development and level of activity that will not have an unacceptable impact on the wider landscape or quiet enjoyment, peace and tranquillity of the Park, nor detract from the quality of life of local residents or the experience of visitors;

2) Provide for development in locations and of a scale that will support the character and function of individual settlements;

3) Maintaining and enhancing the natural environment and conditions for biodiversity and geodiversity;

4) *Conserving and enhancing the landscape, settlement, building features and historic assets of the landscape character areas;*

5) *Applying the principles of sustainable design and energy use to new development;* and

6) *Enabling access to services, facilities, jobs and technology whilst minimising the environmental impacts of transport.*

Core Policy B – Spatial Strategy

This policy outlines a hierarchy of development that it sees as being applicable to development proposals within the Park and prioritises the concentration of development within settlements where services and infrastructure can support development. It does however provide guidance on development proposals within open countryside that should be supported and they are dealt with in Part 5 of the policy and includes exclusions that are reflective of the character and nature of the development the subject of this application as follows:

5d) Development to meet the needs of farming, forestry, recreation, ***tourism*** *or other rural enterprise with an essential need to locate in the countryside.*

Core Policy C – Natural Environment, Biodiversity and Geodiversity

This policy states that:

The quality and diversity of the natural environment of the NYMNP will be conserved and enhanced. Conditions for biodiversity will be maintained and improved and important geodiversity assets will be protected. Protected sites and species will be afforded the highest levels of protection with priority also given to local aims and targets for the natural environment.

All development projects and activities will be expected to:

1) *Provide an appropriate level of protection to legally protected sites and species;*

2) *Maintain and where appropriate enhance, conditions for priority habitats and species identified in the North York Moors Local Biodiversity Action Plan;*

3) *Maintain and where appropriate enhance recognised geodiversity assets;*

4) *Maintain and where appropriate enhance other sites, features, species or networks of ecological or geological interest and provide appropriate management of these;*

5) *Maximise opportunities for enhancement of ecological or geological assets, particularly in line with the North York Moors Local Biodiversity Action Plan, Tees Valley and North East Yorkshire Biodiversity Action Plans and regional Habitat Enhancement Areas;* and

6) *Militate against any necessary impacts through appropriate habitat creation, restoration or enhancement on site or elsewhere.*

The text of the plan does make some very important comments in regard to the guidance in Core policy C in Paragraph 6.11 it states that '*the creation of and enhancements to green infrastructure in the Park will be largely beyond the role of the planning system as levels of new development will be limited, and it may be that the Authority's Management Plan is better placed to identify, and set the framework for green infrastructure within the Park'.* However within the plan the delivery of Core Policy C is supported by Development Policy 1.

Development Policy 1 – Environmental Protection

This policy advises that:

To conserve and enhance the special qualities of the North York Moors National Park, development will only be permitted where:

1) *It will not have unacceptable adverse impacts on surface and ground water, soil, air quality and agricultural land;*

2) *It will not generate unacceptable levels of noise, vibration, activity or light pollution;*

3) *There will be no adverse effects arising from sources of pollution which would impact on the health, safety and amenity of the public and users of the development;*

4) *Land stability can be achieved without causing unacceptable environmental or landscape impacts;* and

5) *There is or will be sufficient infrastructure capacity to accommodate the demand generated by the development.*

The text supporting this policy recognises that the assets of the Park are susceptible to damage from pollutants such as lighting, noise and air and water pollutants.

Core Policy D – Climate Change

This policy has relevance in the context of traffic management, resource efficiency and reducing greenhouse gas emissions. The policy states (part):

Activities in the National Park will address the causes of climate change and contribute to reducing greenhouse gas emissions, by:

1) *Reducing the use of energy and the need to use energy.*

It proposes that the impacts of climate change on the National Park will be mitigated by:

2) *Directing development away from flood risk areas.*

The text to this policy acknowledges that the Authority must ensure that the causes of climate change are addressed at a local level and is working to reduce energy use. It also concedes that transport contributes significantly to climate change and that changing transport patterns can afford significant benefits.

Core Policy G – Landscape, Design and Historic Assets

This policy advises that:

'The landscape, historic assets and cultural heritage of the North York Moors will be conserved and enhanced. High quality sustainable design will be sought which conserves or enhances the landscape setting, settlement layout and building characteristics of the landscape character areas identified in the North York Moors Landscape Character Assessment. Particular protection will be given to those elements which contribute to the character and setting of:

1) *Conservation Areas;*

2) *Listed Buildings;*

3) *Historic Parks and Gardens; and*

4) *Scheduled Monuments and other sites of archaeological importance.*

The re-use of buildings of architectural or historic importance which make a positive contribution to the landscape character of the National Park will be encouraged.'

This Core Policy is afforded additional weight in its delivery by the content of the Development Policy 3 – Design, and is secured in the application process by the use of Design and Access Statements, secured by design and safer places initiatives that contribute to the need to support local distinctiveness and character as well as ensuring the highest design standards are achieved.

Development Policy 3

This policy advises that:

'Development will be permitted where:

1) *The siting orientation, layout and density preserves or enhances views into and out of the site, spaces about and between buildings and other features that contribute to the character and quality of the environment and will not result in the loss of an open space which contributes to the amenity, character and setting of a settlement;*

2) *The scale, height, massing, proportions, form, size, materials, and design of the proposals are compatible with surrounding buildings, and will not have an adverse effect upon the amenities of the adjoining occupiers;*

3) *A high standard of design detailing is used whether traditional or contemporary, which reflects or compliments that of the local vernacular;*

4) *Provision is made for adequate storage and waste management facilities;*

5) *Good quality sustainable design and construction techniques are incorporated in the development including measures to minimise energy use and where possible use energy from renewable sources;*

6) *A satisfactory landscaping scheme forms an integral part of the proposals;* and

7) *The design takes account of the safety, security and access needs for all potential users of the development and provides car parking provision in line with the standards adopted by the Authority.'*

Development Policy 7 – Archaeological Assets

This policy advises that:

'Proposals for development that would have an unacceptable impact on the integrity or setting of a Scheduled Monument, or other site or remains considered to be of national archaeological importance will not be permitted. In cases of sites or remains of regional or local importance, development proposals will only be permitted where the archaeological interest is capable of being preserved in situ. Where this is not justified or feasible permission, will only be permitted where provision is made for appropriate preservation by record. In all cases, an appropriate assessment and evaluation will be required to be submitted as part of the planning application in areas of known or potential archaeological interest.'

Core Policy H – Rural Economy

The part that tourism plays in the rural economy is recognised in the LDF Core Strategy and its policies and this policy identifies 'sustainable tourism based on recreation activities and tourism development related to the understanding and enjoyment of the Park' although this policy is more related to tourism within the Park itself it does indicate that tourism development and facilities that supports tourism is important to the rural economy. It is also considered that there is likely to be some 'wash' effect to the economy of the Park from visitors to Whitby.

Development Policy 14 – Tourism and Recreation

Again this policy does generally relate more to tourism within the Park and the purpose of the Park & Ride scheme is primarily to further the needs of visitors to Whitby as a destination, which is outside the Park. However, we consider its opportunities and constraints can equally be applied to the proposals which are the subject of this application.

Development Policy 14 states: *'The quality of the tourism and recreation product in the National Park will be maintained and improved through adopting the principles of sustainable tourism. New tourism development and the expansion or diversification of existing tourism businesses will be supported where:*

1) *The proposals will provide opportunities for visitors to increase their awareness, understanding and enjoyment of the special qualities of the National Park in a manner that will not undermine the special qualities of the National Park or in a way that conserves or enhances the special qualities;*

2) *The development can be satisfactorily accessed from the road network (categories 1,2 or 3) or by other sustainable modes of transport including public transport, walking, cycling or horse riding;* and

3) *The development will not generate increased level of activity, including noise, which would be likely to detract from the experience of visitors and the quality of life of local residents.'*

Core Policy M – Accessibility and Inclusion

Is also of relevance to this application; it states:

'Through strong and effective partnership the Park Authority will work to improve accessibility to services and facilities within and beyond the National Park for all users and to encourage more sustainable patterns of travel. This will be achieved by (part):

1) *Locating new development in settlements where services and facilities are available or where they can be accessed in another settlement by a range of transport modes;*

6) *Supporting the development and implementation of Service Centre Transportation Strategise contained in the LTP;*

7) *Demand management measures that reduce seasonal traffic congestion, minimise the environmental impacts of transport and increase road safety for the benefit of all users; and*

8) *Improve accessibility through the use and development of innovative and alternative modes of transport to the private car – including public transport, walking, cycling and horse riding.'*

The text for this policy confirms that a key planning objective for transport is to reduce the need to travel by private car by making alternatives more accessible 'travel plans' are a mechanism by which alternatives to the car can be considered and more sustainable options for travel can be encouraged.

Development Policy 24 – Transport Infrastructure,

This is considered to be the key policy with regard to the proposed scheme, and advises that:

'Infrastructure that is required to facilitate transport related schemes or initiatives will be permitted where

1) *They are for new Public Rights of Way, linear routes and other access routes for pedestrians, cyclists or equestrians; and*

2) *In the case of Park & Ride schemes:*

   A) The location of the proposed site is on, or in close proximity to a Category 1 road and the National Park boundary;

   B) Where possible, the site is accessible by alternative modes of transport; and

   C) The siting, scale and design does not have any adverse impact on the landscape character and amenity of adjacent occupiers.'

It advises in the supporting text to this policy that 'proposals for Park & Ride schemes' within close proximity to the Park boundary will be considered provided that a thorough and comprehensive assessment of alternative sites has been carried out, having regard to suitable development objectives, the scale and design of the scheme together with potential impacts on adjacent communities and the surrounding area. Particular care will be needed on matters such as floodlighting which are essential to the safe operation of Park & Ride schemes but which may be visually intrusive unless carefully designed.

Para 10.17 provides more supportive text for the proposals it states: '*The Authority recognises that there are potential opportunities to integrate public transport services serving the Park with proposed and developing Park & Ride schemes in and around the periphery of Scarborough and Whitby, all of which are identified in and have the support of the Local Transport Plan (LTP).'*

4.2.3 North Yorkshire Local Transport Plan 2011-16

The Local transport Plan (LTP) is in its third iteration and sets out how the County Council as Highways Authority will manage, maintain and improve transport networks and services to achieve the objectives for a transport network that addresses local problems.

The North Yorkshire Local Transport Plan (LTP3) replaced LTP 2 in March 2011 and is a material consideration in determining planning applications. It states the objectives of LTP3 are:

- Supporting flourishing local economies by delivery of reliable and efficient transport networks and services (local economies);
- Reducing the impacts of transport on the natural and built environment and tackling climate change (environment and climate change);
- Improving transport safety and security and promoting healthier travel (safety and healthier travel);
- Promoting greater equality of opportunity for all by improving peoples access to all necessary services (access to services); and
- Ensuring transport helps improve quality of life for all (quality of life).

The proposal which is the subject of this application is considered to align well with the objectives of LTP3 and the scheme is considered to further issues such as reducing the impacts of transport on both people and the environment, improving quality of life and improving the efficiency of the transport network. By improving the network through the provision of new infrastructure and services, transport can help the recovery of areas of the County with weaker economies; 'parts of Whitby' are recognised in the plan as being within this definition. The LTP advises that these improvements are best achieved through making sure that the transport network is properly managed. Where possible this will be supported by addressing identified road congestion issues in towns and helping to reduce the economic impacts of traffic delays by making journey times more consistent and predictable.

LTP3 will require the most cost effective means of achieving its visions and objectives. Consequently, the aim is to achieve these objectives by managing the transport network and services to make the best use of what already exists. This includes encouraging people to use public transport to reduce the number of cars causing congestion and pollution, managing parking, and reducing transport emissions of carbon dioxide and other greenhouse gasses.

Within 'Section 2.4 – Commitment', the LTP advises that the County Council has adopted a commitment to manage, maintain and improve transport networks and services through 'a hierarchy of intervention'.

The importance of transport to the economy is borne out in the text of LTP3, which advises that the role of transport is to support the economy providing reliable and efficient infrastructure and services that allow business and individuals to move people and goods around.

It acknowledges that congestion can occur in urban areas as well as the wider road network and identifies Whitby town centre as one of nine locations across North Yorkshire that experience regular and significant congestion issues.

Congestion leads to poor and unpredictable journey times, restricts movement and causes unreliable supply and distribution of goods and services for business this may reduce profitability and viability of businesses, deter new businesses and discourage potential visitors and customers from shops and tourist attractions.

The LTP outlines a number of 'actions' to reduce congestion that includes:

- Better traffic management;
- Reducing and managing travel demand;

- Modal shift to more sustainable modes of transport; and
- Providing additional capacity within the transport network.

Reducing the need to travel through demand management, encouraging multipurpose trips and the use of more sustainable travel modes such as public transport can significantly reduce traffic volumes and congestion. One of the most significant methods of achieving this modal shift is the provision of improved public transport services, either through local bus services or through the provision of Park & Ride facilities. The LTP advises that where management or maintenance cannot address a transport related issue the council will aim to provide appropriate new infrastructure or services which it advises can include new 'Park & Ride sites and services'.

As is the case when evaluating development proposals against policies of the development plan, the LTP sounds a cautionary note in that it acknowledges the importance of the landscape of North Yorkshire as one of its most important assets. The impacts of transport schemes must therefore be carefully considered, and an underlying objective of such schemes must be to:

- Minimise the impact of transport on the environment; and
- Seek to improve the environment through transport improvements.

It does, however, advise that reducing demand for travel and encouraging travel by sustainable modes is the most popular way of protecting the environment. Overall the LTP is considered to be supportive of the provision of Park & Ride schemes as a response to identified problems with congestion or road capacity/network problems.

4.2.4 Scarborough Local Plan (and LDF)

The site is located within the National Park so the determining authority will be the NYMNPA, but the contiguous nature of the site with SBC's area and the underlying purpose of the application which is to address traffic issues surrounding the town of Whitby are such that the policies of SBC should be afforded some weight and will be likely to reflect in the consultation response that the council will make to the Park on the application.

The Scarborough LDF has progressed to the Preferred Options (Core Strategy) stage since the last application and makes a number of policy references in its preferred approach to development in the Borough that are of relevance to this application. However until the adoption of this LDF (which SBC have resolved to rebrand as a Local Plan) their Local Plan will continue to form the basis of their development plan.

We will therefore look at specifically relevant policies from both the existing and emerging Local Plans to consider the proposals in the context of the wider area.

The Scarborough Borough Local Plan 1999 is subject to a saved policies directive (Sept 2007) and lists the policies that are not saved and no longer form part of the development plan.

Within the traffic and transportation section reference is made in Policy T5 to 'Park & Ride'; it makes reference to the need to provide Park & Ride facilities to maintain high levels of accessibility to town centres, and with reference to Whitby suggests a search area for potential sites off the A171 west of the town, a location that is reflected within the current application.

Within the new Local Plan (formerly the LDF) Core Strategy Preferred Options the council set its preferred strategy for planning in the Borough and outlines the policy it would like to see going forward. The plan confirms that Whitby is a principal town in the settlement hierarchy of the Borough and that the council will 'support its role as a service centre and key asset in the authorities tourism offer'. In its core strategy policies it highlights the 'opportunities and synergies of sustainable tourism presented by the town and North York Moors National Park should be realised and partnership working will be encouraged'.

Core Policy INF1 - Increasing Accessibility

This policy has regard to the need to improve levels of accessibility across the Borough and ensure the necessary infrastructure is in place to support development. A key role of the LDF is to ensure land use and transport policies are fully integrated and consistent with national objectives that seek to ensure that the necessary facilities are available to make facilities accessible by a variety of modes of transport, in particular by public transport. This is in the interests of environmental sustainability and social equity, and is a key aspect of the Community Strategy which identifies accessible communities as being a 'core theme' and highlights the following key priorities:-

- Reduce the need to travel;
- Increase the integration of transport systems;
- Improve parking and traffic management to reduce congestion; and
- Improve infrastructure along existing road corridors including the A171.

The council's preferred approach to this key policy is to reduce the need to travel, improve modal choice and car reliance and encourage investment in main transport corridors.

The text of the SBCCS at Paragraph 11.17 makes reference specifically to Park & Ride schemes and their objective as a means to reduce traffic, congestion and parking problems within urban areas, especially in the summer months. It advises that a Park & Ride Scheme has been approved on the outskirts of Whitby (application ref no NYM/2008/0621/EIA) by the NYMNPA in order to alleviate high levels of transport movement within the town, creating traffic congestion and parking difficulties. It also advises that subject to the success of that scheme a further location would in principle be supported by the Borough Council.

Core Policy INF1 advises with regard to Park & Ride that:

'*we will promote the provision of appropriately located and designed new transport infrastructure within the Borough, including:*

Park & Ride schemes where they are proven to be viable and in an area of demonstrable need.'

Which the plan clearly indicates to be the case in the Whitby area.

4.2.5 Governmental Policy

It is usual practice in seeking to make the planning balance that all material considerations are considered to establish a true picture of the application, its opportunities and constraints, and to establish if it makes a contribution to a wider agenda than just local planning issues.

There are considered to be a number of government policies that should be considered in the context of this application at a national level; the White Paper "A New Deal for Transport: Better for Everyone" July 1998 sets out that decisions on when and where to invest in network improvements, including measures to manage traffic, will be based on the following criteria:

- **Integration** – ensuring that all decisions are taken in the context of the integrated transport policy;
- **Safety** – to improve safety for all road users;
- **Economy** – supporting sustainable economic activity in appropriate locations and getting good value for money; and
- **Accessibility** – improving access to everyday facilities and reducing severance.

The White Paper emphasises that decisions regarding transport should be made in the context of an integrated transport policy.

A further White Paper is also of relevance (*The Future of Transport 2004*) which sets out how the government would respond to the increasing demand for transport by maximising the benefits of transport whilst minimising the negative impacts on both people and the environment. Importantly it acknowledges that transport is essential to the economy and the way in which we live. The challenge is to meet the challenges of the transport system but to do so in a way that meets environmental objectives.

The UK's Sustainable Development Strategy (2005) relates to the key priority areas:

- sustainable consumption and production;
- climate change and energy;
- natural resource protection; and
- sustainable communities.

Transport plays a key role in the furthering of all these objectives and as such should therefore be considered as background to assessing the opportunities of all transport related projects including that the subject of this application.

The national approach to delivering these key objectives through the planning system would formerly have been set out in Governmental guidance in Planning Policy Statements (PPSs) and Planning Policy Guidance Notes (PPGs). However as a result of the adoption of the NPPF earlier in 2012 the national policy landscape has changed significantly since the submission of application Ref No NYM/2008/0621/EIA, and these policies have been superseded by the NPPF and its first 'Technical Guidance Note'. Consequently, references from the previous Environmental Statement to the following PPSs are no longer of relevance as they have been superseded by the NPPF:

- PPS 1 - Delivering Sustainable Development;
- PPS 7 – Sustainable Development in Rural Areas;
- PPS 9 – Biodiversity and Geological Conservation;
- PPS 23 – Planning and Pollution Control; and
- PPS 24 - Planning and Noise.

The NPPF now articulates government guidance to planning both in the context of development plan, form and content; and in reaching individual decisions on planning applications, its content is a clear material consideration that must be afforded appropriate weight by the local planning authority in reaching their decision.

The NPPF outlines a presumption in favour of 'sustainable development'. It does not change the statutory requirement that applications for planning permission should still be determined in accordance with the development plan unless material considerations indicate otherwise. It reiterates that:

"Where the development plan contains relevant policies, applications for permission should be determined in line with the plan, unless material considerations indicate otherwise".

In Paragraphs 7 and 8 it sets out three roles for the NPPF and these are:

- An economic role;
- A social role; and
- An environmental role.

It conforms that these roles should not be undertaken in isolation, because they are mutually dependant.

Paragraph 14 outlines that the NPPF and the presumption in favour of sustainable development should in the case of 'decision taking' mean:

- Approving development that accords with the development plan without delay; and
- Where the development plan is absent, silent or out of date granting permission unless adverse impacts are so significant as to outweigh the benefits when assessed against the Framework as a whole.

The core planning principles of the NPPF are that the planning system is not just about scrutiny but should be creative in finding ways to enhance and improve places. In advocates supporting sustainable economic development to deliver infrastructure, whilst always seeking good design and protecting the intrinsic beauty of the countryside and driving the transition to a low carbon resource efficient future. Supporting the business sector is seen as a key objective and requires the identification of priority areas for infrastructure provision to support their viability and vitality.

Section 4 of the NPPF promotes sustainable transport as a cornerstone of its planning policy and acknowledges its role in sustainable development. It advises that the transport system needs to be balanced in favour of sustainable transport modes giving people choice how they travel with different solutions for urban and rural areas. With clear support for solutions which reduce greenhouse gas emissions and congestion.

As we have advised above the NPPF does in fact supersede the former PPG 13 – Transport; but we consider that much of its guidance is still of relevance in providing some direction to transport issues in the NPPF. At the heart of the NPPF is the Government's statement that there should be a '*presumption in favour of sustainable development'.* Annex 2 Glossary provides some added guidance to what 'Sustainable Transport Modes' actually means and defines it as:

'Any efficient and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra low emission vehicles, car sharing and public transport'.

This PPG made it clear that our quality of life is dependent upon transport and easy access to facilities and services. We still need a safe, efficient and integrated transport system to support a strong economy. But the way we travel and the continued growth in road traffic is damaging towns and harming the countryside.

The objectives of the former PPG 13 were to integrate planning and transport at all levels to:

- promote sustainable transport choices;
- promote accessibility to services by public transport, walking and cycling; and
- reduce the need to travel, especially by car.

It acknowledged that (as is still the case of this application) the car will continue to have an important part to play and for some journeys, especially in rural areas, it will remain the only real option for travel.

It also made specific reference to Park & Ride schemes and that in appropriate circumstances they can help to promote more sustainable travel patterns, and improve accessibility to town centres. Schemes need to be subject to robust assessment, including consideration of alternative sites, the impact on local amenity and travel impacts including reduction of traffic generation. Where they are proven to be appropriate, schemes need to be designed and implemented to a high design standard. It is considered that these comments from PPG13 are equally applicable to this scheme as are the merits of Park & Ride as a 'traffic management' tool to improve accessibility to town centres and is consistent with the NPPF definition of 'Sustainable Transport Modes'.

Para 32 advise that development proposals should only be prevented or refused on transport grounds where the residual cumulative impacts of a development are severe.

Good design is afforded considerable weight in the NPPF and shows the importance that government attaches to its objectives and its importance in achieving sustainable development. Development should be planned to:

- Function well over the lifetime of the development;
- Establish a strong sense of place;
- Optimise the potential of the site;
- Create safe and accessible environments; and
- Respond to local character, be visually attractive and the result of good architecture and landscaping.

Section 11 of the NPPF (Conserving and Enhancing the Natural Environment) makes it clear that the development proposals should contribute to enhancing the natural environment by a number of ways which include:

- Protecting and enhancing valued landscapes;
- Recognising the wider benefits of the ecosystems;
- Minimising impacts on biodiversity;
- Preventing new development contributing to unacceptable levels of soil, air or water pollution, and
- Remediating and mitigating despoiled degraded, derelict or contaminated land.

It advises local planning authorities when determining planning applications to conserve and enhance biodiversity by avoiding significant impact by design, and takes opportunities where appropriate to incorporate biodiversity in and around the development. To prevent unacceptable risk from pollution the planning authority in reaching its decision should ensure the proposed development is suitable for its proposed location, and the appropriate effects have been afforded suitable weight in the decision process.

Local authorities are also urged to consider the issue of contamination in new development either as a potential result of the proposals or as a result of former uses of the land. The balance being to establish the suitability of the land for the proposed use but it does advise that in making the balance the planning system should not replicate controls available under other regimes. The decision should seek to:

- Avoid unacceptable noise;
- Mitigate to reduce to a minimum other impacts; and
- Recognise that development will cause some noise and that proposals should not be unreasonably restricted.

The wider impacts of potential schemes are also noted in the NPPF guidance as are other forms of pollution which may result from proposed developments. It does however attach considerable weight to the design process as a methodology of mitigating impacts and this is supported by the requirements to articulate the design agenda in the 'Design and Access Statement'. By encouraging good design, the NPPF and planning policies should limit the impact of light pollution from artificial light on intrinsically dark landscapes and nature conservation.

The previous planning permission NYM/2008/0621/EIA was granted subject to a total of 22 planning conditions and the NPPF reiterates the ability of local planning authorities to grant planning permission subject to conditions. It advises however those conditions should only be imposed where they are necessary and fulfil the tests set out in Circular 11/95.

4.3 Conclusion

The NPPF reinforces the status of the development plan it advises in Para 12 that –

'*This National Planning Policy Framework does not change the statutory status of the development plan as the starting point for decision making. Proposed developments that accord with an up to date development plan should be approved.'*

The review of the planning policies clearly shows that there has been a very significant change in the planning landscape regarding policy at all levels and this is highlighted by the references above to the documents that make up the development plan when compared against the same exercise undertaken for the application in 2008 Ref No NYM/2008/0621/EIA, even national policy has changed with the introduction of the NPPF.

These changes must therefore be reviewed to ascertain the bearing they have on the renewal of this permission. It should however be acknowledged that the previous grant of a planning permission for the development on the site is a significant 'material consideration' that needs to be afforded considerable weight in making the planning balance. In resolving to grant permission for that application the local authority would have reached a decision on the underlying issues surrounding the physical impacts of the scheme on the site and the potential impacts on such as character and amenity, heritage and ecological assets, traffic generation and highway safety and that they were all acceptable in the context of the site, or that any impacts could be mitigated by the use of planning conditions. That consent included 22 planning conditions and we would expect similar conditions to be applicable in this case.

However we have in accordance with the NPPF and undertaking due process reviewed the proposal to establish its conformity or otherwise with the current development plan.

Taking the documents in the order set out above, firstly in the context of the RSS, although we have acknowledged its current status and impending demise, the proposals supports a number of its policies and objectives. Policies P1 (d – ii), E2 (j) and E6 supports development that makes a positive contribution to the changing needs of tourism and the provision of infrastructure which supports its development as an important part of the local economy. The role of Park & Ride is recognised in Policy E6 (iv) which advises support will be given for schemes that, manage visitor flows and encourages alternative forms of transport. The scheme also recognises the constraints of individual environmental policies to which the scheme is considered to conform, either with or without mitigation that can be secured by planning condition where required; these include N2 Historic Resources, N3 Landscape Character and N5 Sustainable Land Management and the impacts on each of these issue is as previously deemed satisfactory in the earlier application.

The most pertinent document is considered to be the NYMNP LDF Core Strategy which replaces the former Local Plan and introduces a raft of new Core and development policies. The proposed Park & Ride scheme should be considered against the core objectives of the plan and the key purpose of conserving the natural beauty and character of the National Park. In its core strategy the LDF identifies as a key issue for consideration, whether proposals resulting in significant increases in traffic should be resisted, it is considered important to evaluate this proposal on the basis of the proposal being a traffic management scheme rather than one of traffic generation, the traffic and congestion conflicts are, in principle, considered to be existing.

Note is taken of the reference in the National Park Management Plan Review Consultations to the objectives set for resources allocation of "*promoting sustainable transport so as to protect the National Park and its communities"* this scheme is considered to be consistent with the theme of these objectives.

The underlying objectives of the scheme are to reduce the impacts of traffic on the town of Whitby and the ancillary impacts regarding traffic congestion, and its implications on the townscape and economy of the town as well as recognising the impacts of vehicle traffic on pollution and climate change resulting from emissions and the unsustainable use of resources that congestion causes.

We also consider that the proposal furthers the Core objectives of the plan and its individual policies including those articulated in Core Policy A – which lends support to proposals supporting the function of settlements (although Whitby is outside the Park it is recognised that its function has impacts on the park and development proposals should be considered in a wider context), Core Policy B - settlement hierarchy and ensuring infrastructure provision; and Core Policy D – which seeks to reduce use of energy which is supported by reducing congestion.

The proposal also feeds into a number of core policies which promote tourism and the support it gives to the local economy. These include Core Policy H and Development Policy 14 which supports the needs of tourism and balancing the impact of proposals against the benefits.

Core Policy M (supported by Development Policy 24) deals specifically with accessibility and inclusion and advocates support for schemes that provide '*demand management measures to address seasonal congestion, minimise the environmental impacts of transport, improve accessibility and encourages transport infrastructure that doesn't create adverse impacts on the environment'.* These two policies are regarded as being at the centre of this scheme and Policy 24 specifically encourages Park & Ride schemes within close proximity to the Park Boundary, subject to their scale and design being acceptable. The council has already considered and provided opinion on these matters in granting the earlier permission, and these elements of the scheme are unaltered.

Other Development policies considered relevant include Development Policy 1 - Environmental Protection, Development Policy 3 - Landscape and Visual, and Development Policy 7 – Archaeology. We have considered the content of these policies in detail as they are material to informing the outcome of this application and all are dealt with in specific sections of the Environmental Statement that supports this application. We are however mindful that as with the above reference to Development Policy 24 these are issues which have been considered in detail previously in the earlier application and we remain of the view that there have been no material changes in the revised policy structure that would render that support inappropriate or that cannot be controlled by condition.

We consider therefore that in terms of the 'key' development plan document the proposals accord with its policies and there are no material considerations as a result of the specific topic reviews that would undermine that opinion.

As will be seen from the policy review undertaken above, although the site is within the administrative area of the NYMNPA there are strong synergies with SBC in whose area Whitby is located, and there are inextricable links between the site and Whitby. SBC as the adjacent authority will be a consultee and as a result we have considered relevant polices from that councils Local Plan and emerging Core Strategy, a number of which do make material references to the issue of Park & Ride at this location.

Saved Local Plan Policy T5 refers to the need to make provision for Park & Ride Facilities to maintain high levels of accessibility to towns including Whitby, with an area of search on the A171. The recognition of the previously consented Park & Ride in the Core Strategy with references to support in principle to a further site is considered indicative of the stance of SBC and we would have clear expectation based on these comments that their consultation response would be one of support for the resubmission of this scheme.

The final tier of reference in establishing the 'planning balance' is to review the new NPPF to establish if it either tones down or withdraws the governmental support that was apparent for the earlier scheme. The NPPF advocates sustainability and growth as key objectives and we consider that the application makes a positive contribution to both. The NPPF tempers its support by pointing out the obligation that development has in protecting and enhancing our natural environment, helping to improve biodiversity and using resources prudently.

The presumption in support of '*sustainable development'* is furthered by this application. Other key objectives of the NPPF are similarly furthered by the proposals such as supporting a competitive economy and ensuring the vitality of town centres. The reduction of congestion furthered by this Park & Ride development also promotes sustainable transport by reducing greenhouse gasses resulting from congestion.

The conclusions that can as a result be drawn from this review are that the proposal does accord with the development plan at all levels, it makes a positive contribution to 'sustainable development', and in accordance with the NPPF local authorities are urged to 'approve without delay' schemes which accord with the development plan 'unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits when assessed against the policies of this framework'.

The review of the application when subject to objective assessment on its impacts and those associated with its operation are not considered to outweigh those benefits.

5.0 LANDSCAPE AND VISUAL IMPACTS

5.1 Introduction

This section of the report deals specifically with the assessment of the potential landscape and visual impacts of the proposed Park & Ride facility.

5.2 Assessment Method

The Assessment has been carried out using guidance set down in the Design Manual for Roads and Bridges (DMRB) Volume 11: Environmental Assessment, Section 3, and Part 5 Landscape Effects and Interim Advice Note IAN 135-10, dated November 2010. Additional contemporary guidance from the Landscape Institute/Institute of Environmental Management and Assessment, namely "*Guidelines for Landscape and Visual Impact Assessment, second edition, 2002*" (GLVIA 2002) has also been used to develop the methodology. In addition, the Countryside Agency and Scottish Natural Heritage have published "Landscape Character Assessment Guidance for England and Scotland, 2002". The guidance in these publications has been used to augment the method outlined in DMRB Volume 11 Section 3, Part 5.

The assessment of landscape and visual impacts has been undertaken by a Chartered Landscape Architect. The findings of this report are based on field observations together with some consultation and reference to published documents. Information gained from parallel assessments for ecology, cultural heritage and planning policy have also contributed to this section. The main data sources for this assessment are as follows:

- Meetings with North Yorkshire Moors National Park Authority, May 2006;
- Findings of a preliminary 'Environmental Appraisal' undertaken by Golder Associates in December 2005;
- Site visits carried out in October 2005,May 2006 December 2006 and July 2012
- Ordnance Survey Map: Landranger 94 1:50,000;
- Ordnance Survey Map: Explorer 0L27 1:25,000;
- Countryside Commission (CCP 537) 1998 Countryside Character, Volume 3: Yorkshire and the Humber;
- Scarborough Borough Local Plan, Adopted April 1999;
- North York Moors National Park (NYMNP) Local Plan; Revised Deposit March 2001;
- Environment Agency website, May 2006;
- 'Magic Interactive Map' database, www.magic.gov.uk;
- Scarborough Borough Council website: November 2005;
- North York Moors National Park website: November 2005;
- Scarborough Borough Council Landscape Appraisal 1994;
- North York Moors National Park Landscape Character Assessment 2003; and
- DOT (Department of Transport) 2003 Transport Analysis Guidance (TAG).

At this point, it is important to make distinctions between landscape and visual impacts:

- **Landscape Impacts** are the result of a change to the fabric, character or quality of the landscape or townscape as a result of development. They do not have to be seen; and

- **Visual Impact** results from a change in views of the landscape.

There may be substantial landscape impact but little visual impact if the site is remote with no residential properties, public rights of way or other public access areas to view it. Alternatively there may be significant visual impacts and few landscape impacts if a development does not result in a change to physical elements, for example, in a landscape with similar development that is already characteristic.

5.2.1 Assessment Scenarios

The assessment of landscape and visual impacts of the proposed scheme is based on three stages of development; during the **construction stage**, at **completion (Opening Year/Year 0)** and then at **15 years after completion (Design Year/Year 15)**. This method of assessment serves to provide a greater level of understanding of any likely landscape and visual impact through a period of time and considers the development of mitigation proposals; particularly screen planting which takes a period of time to establish.

5.2.2 Assumptions

The following assumptions have been made in carrying out the assessment:

- planting and landform would be implemented by the day of opening and average growth rates have been assumed for the native tree planting;
- there would be no off-site planting;
- the construction programme has not been finalised, this assessment assumes that the preliminary programme given in Appendix ES3.1 would be implemented;
- planting, mounding etc. would be implemented by the day of opening; and
- all of the environmental mitigation will be carried out as shown in Figures ES5.1 Masterplan and ES5.2 Planting Plan.

5.3 Landscape Proposals (Mitigation)

Comprehensive landscape proposals for the scheme have been developed as part of an on-going interactive process in conjunction with the engineering design to seek where possible to avoid potential adverse impacts. This design – assess – redesign approach has ensured that potential adverse impacts have continually been considered throughout the design process.

The North York Moors National Park Authority (NYMNPA) has also been consulted during the design process. Notably their requirement for a dense belt of woodland along the northern and western edges of the site has been incorporated into the design.

The overall objectives of the landscape proposals are:

i) to aid the integration of the Park & Ride facility with the landscape and minimise the alteration of the existing pattern/character of the area;

ii) to minimise the visual impacts on surrounding settlements and public areas including views from the adjacent Garden centre cafe; and

iii) to minimise the loss and degradation of the existing landscape.

The landscape proposals are shown in Figures ES5.1 and ES5.2.

The following mitigation techniques are proposed to achieve the objectives identified above:

- tree and shrub planting;
- hedgerow planting;

- stone walls;
- balancing pond;
- earthworks and mounding; and
- off-site planting (by agreement).

Tree and Shrub Planting

Tree and shrub planting will be the principal means of mitigating the potential visual impact of the Park & Ride facility.

Native tree and shrub planting would be established round the edge of the site to help integrate the Park & Ride into the surrounding landscape and reduce potential views from adjacent properties. Due to the open nature of the landscape groups or lines of trees have been be avoided, in favour of dense woodland planting to replicate existing plantations in the region.

Planting would use native species, preferably indigenous to the area, comprising mainly bare-root transplants 450-900 mm high. For early impact, a limited number of feathered standards, standards and extra heavy standards will be used. Experience has shown that smaller stock adapts to site conditions more readily and tends to catch up and over-take specimens planted at a larger size. The planting scheme would therefore rely on smaller stock at initial planting.

Planting would in time provide habitats for wildlife and would significantly increase the ecological diversity of the area compared to the existing situation. Species used would be those which occur naturally within the local area.

Ornamental planting within the car park would be used to visually break up the parking area and create an attractive internal environment for the facility users. The extensive woodland planting around the site perimeter means it is unlikely that this 'non-native' planting will be visible from the wider landscape.

Hedgerows

Boundary hedgerows are a common feature within the surrounding landscape, which are predominantly hawthorn (*Crataegus monogyna*) species with some sections of more diverse hedgerows along Barkers Lane. Existing hedgerows along Barkers Lane and much of the A171 adjacent to the site will be retained. New hedgerows will be planted within the actual Park & Ride areas to break up and disguise the overall visual impact from the surrounding landscape.

New native species-rich hedgerow would be planted along the A171 highway boundary to fill in any existing gaps in the extant hedge line. The hedgerows would comprise a double row of transplants, typically at 450 mm centres, with occasional feathered trees. Approximately 120 linear metres of new hedgerow would be planted as part of the proposals.

Boundary Wall

The existing stone wall on the eastern site boundary is a notable landscape feature. The wall would be carefully dismantled prior to construction and rebuilt on the new site boundary adjacent to the entrance.

Balancing Pond

A large balancing pond would be constructed on low-lying ground at the eastern end of the site. The pond, which is designed to regulate surface water run-off, would be planted with marginal planting to create an attractive landscape feature and increase the ecological diversity of the Site.

Earthworks/Mounding

Within the site, it is proposed to reduce the potential visual impact of the car park through the creation of earth mounds around the edge of the site and by partly constructing the car parking areas below the existing ground level

The creation of earth mounds around the perimeter of the site would in conjunction with the surrounding topography help to screen views from surrounding settlements. The mounding would also increase the apparent height and maturity of the proposed planting during the establishment period. Material used for the mounding would be won from site. Mounds would be no more than 2 m in height.

Cutting the parking areas into the existing slope would help the car park visually recede into the 'hillside'. By lowering the parking areas, even by a small amount, would lower the relative height and prominence of the car park helping to reduce visual impact while retaining the continuity of the undulating landscape from the surrounding area.

Off-Site Planting

Off-site planting on privately owned land, outside the site boundary has been considered as additional mitigation to screen views of the development. This would be carried out with the individual landowner's agreement. It would be offered to those properties that would be adversely affected by the proposals.

Properties which may benefit from potential off-site planting are as follows:

- Victoria Farm Garden Centre;
- Cross Butts Farm;
- Cross Butts Stable Restaurant; and
- Bannial Farm, New Ville and The Cottage.

Planting may take the form of tree/shrub planting within gardens, new infilling of boundary hedgerows, or mounding adjacent to the Park & Ride Scheme.

At present the possibility of off-site planting has not been discussed nor agreed with landowners (apart from planting within the adjacent highway land) and would only be carried out with their formal agreement. It is important to note that in the preparation of this report no discussions have been held with any of the landowners with regard to the possibility of off-site works. Therefore any potential benefits it may offer have not been accounted for in the Landscape and Visual Assessment. Planting proposed as an integral part of the associated junction improvements would be located within land owned by the Highway Authority.

5.4 Assessment of Landscape Effects

The criteria used to define potential adverse (negative) or beneficial (positive) impacts upon the landscape character are as follows:

- the **character** of the **existing** landscape;
- the **quality** (or **condition**) and value of the existing landscape (when making judgements);
- the **sensitivity** and **value** of the landscape (the ability of the landscape to accommodate change without adverse effects on its character); and
- the **magnitude of change** on the landscape. This is generally based on the scale or degree of change to the landscape/townscape resource i.e. Major, Moderate, Slight or No Change, the nature of the effect i.e. negative (adverse) or positive (beneficial) and its duration i.e. short, medium, long term, permanent or temporary.

Landscape Character - An assessment of the existing landscape character is based on the Countryside Agency (CA) Guidelines, regional landscape assessments and site observations. It is important to establish the existing character as a benchmark to assess the 'appropriateness' of the proposed development and to formulate appropriate mitigation measures.

Landscape quality has been assessed based on the five point scale given in DMRB using the following criteria:

Table ES5.1: Landscape Quality

Landscape Quality	Description
1 - High Quality	Landscapes that are nationally recognised with National Park or Area of Outstanding Natural Beauty status
2 - Very attractive	Attractive, diverse landscapes with few visual detractors, often designated locally as Special Landscape Areas or similar for their quality
3 - Good	Pleasant landscapes with some distinctive qualities
4 - Ordinary	Average landscapes with no particularly distinctive features and occasional visual detractors
5 - Poor	Unattractive landscapes with many visual detractors

Landscape Sensitivity -*"The sensitivity of the landscape to change is reflected in the degree to which the landscape is able to accommodate change (due to the type of development or land use change) without adverse effects on its character. This may be influenced by the extent of existing or new landform and/or existing vegetation or new planting. These and other factors determine the visibility of the proposed development and therefore influence the extent of its effect on the perceived character and visual amenity of the surrounding landscape." (GLVIA 2002)*

Table ES5.2: Landscape Sensitivity

Sensitivity	Description
High	Landscape/townscape of particular distinctive character or highly valued for its scenic quality or rarity. A landscape or townscape that may be susceptible to relatively small change.
Medium	Landscape/townscape of moderately valued characteristics of medium importance, scenic quality or rarity. A landscape or townscape that may be reasonably tolerant to moderate change.
Low	A landscape or townscape of low importance which is not particularly valued for its scenic quality or rarity and is potentially tolerant to substantial change.
Not Sensitive	A landscape of low importance which is not valued for its scenic quality or rarity or is significantly degraded and is tolerant of substantial change.

Magnitude (scale) of landscape effects can be adverse (negative), no change or beneficial (positive). It is generally based on the nature of the development, the degree of change to the landscape resulting from the development, and the duration of its effects (i.e. permanent or temporary). The **Magnitude (Scale) of Landscape Change** is described as follows:

Table ES5.3: Magnitude (Scale) of Change

Major	Adverse The proposals are the dominant feature and there is severe damage to key characteristics, features and elements that contribute to landscape/townscape, and/or the effects are long-term and irreversible.
	Beneficial The proposals offer large scale or major improvement to landscape quality through extensive restoration or enhancement possibilities.

Moderate	**Adverse** The proposal forms a new feature that results in partial damage to key characteristics, elements and features that contribute to landscape/townscape, and/or the effects are medium to long term and largely irreversible.
	Beneficial The proposals offer benefit to, or addition of, key landscape characteristics, features and elements resulting in an improvement to landscape quality.
Minor	**Adverse** Some measurable change where the proposal constitutes a minor feature in the landscape/townscape and results in loss of one (or maybe more) key characteristics, and/or the effects are short to medium term or could be irreversible.
	Beneficial The proposals offer minor benefit to, or addition of few key landscape characteristics, features or elements. Possible beneficial impact on the landscape or a reduced risk of any negative impacts occurring.
Negligible	The proposal results in very minor loss to the characteristics, features and elements that contribute to character, and/or the effects are likely to be short term or could be reversible.
No Change	No loss or alternation of characteristics or elements which contribute to landscape/ townscape. No observable impact in either direction.

Level of Landscape Effect could be adverse (negative), negligible or beneficial (positive) and cross references the sensitivity of the landscape with the magnitude of the proposed change. The scale of impact is measured as follows:

Table ES5.4: Level of Landscape Effect

VALUE/SENSITIVITY	**Very High**	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
	High	Neutral	Slight	Moderate or Slight	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight
		No change	**Negligible**	**Minor**	**Moderate**	**Major**
		MAGNITUDE OF IMPACT (Adverse or Beneficial)				

5.5 Baseline Conditions (Landscape)

The baseline conditions have been assessed through desk-top and site based work, including the following:

- landscape planning context (planning policies and landscape designations);
- topography;
- hydrology;
- vegetation cover (including ancient woodlands etc.);
- land use;

- settlement and townscape (including industry, recreation and building materials);
- historical and cultural components;
- communications; and
- public rights of way.

5.5.1 Local Landscape Policy and Designations

The North York Moors Local Development Framework Core Strategy and Development Policies

This has been adopted and forms the development plan for the area superseding the previous saved policies of the old Local Plan. The supporting text in the plan highlights the landscape quality and sensitive nature of the National Park environment. Its policies place an obligation on applicants to have regard for the unique nature and character of its environment which requires the highest standards of development. A brief description of these policies is included below, as follows:

Core Policy A – Delivering National Park Purposes and Sustainable Development states:

The LDF seeks to further the National Park purposes and duty by encouraging a more sustainable future for the Park and its communities whilst conserving and enhancing the Parks special qualities priority will be given to:

1) *Providing a scale of development and level of activity that will not have an unacceptable impact on the wider landscape or quiet enjoyment, peace and tranquillity of the Park, nor detract from the quality of life of local residents or the experience of visitors; and*

2) *Conserving and enhancing the landscape, settlement, building features and historic assets of the landscape character areas.*

Core Policy G – Landscape, Design and Historic Assets – advises that:

'The landscape, historic assets and cultural heritage of the North York Moors will be conserved and enhanced. High quality sustainable design will be sought which conserves or enhances the landscape setting, settlement layout and building characteristics of the landscape character areas identified in the North York Moors Landscape Character Assessment. Particular protection will be given to those elements which contribute to the character and setting of:

1) *Conservation Areas;*

2) *Listed Buildings;*

3) *Historic Parks and Gardens; and*

4) *Scheduled Monuments and other sites of archaeological importance.'*

This Core Policy is afforded additional weight in its delivery by the content of the Development Policy 3 – Design and is secured in the application process by the use of Design and Access Statements, secured by design and safer places initiatives that contribute to the need to support local distinctiveness and character as well as ensuring the highest design standards are achieved.

Development Policy 3 advises that:

Development will be permitted where:

1) *The siting orientation, layout and density preserves or enhances views into and out of the site, spaces about and between buildings and other features that contribute to the character and quality of the environment and will not result in the loss of an open space which contributes to the amenity, character and setting of a settlement;*

2) *The scale, height, massing, proportions, form, size, materials and design of the proposals are compatible with surrounding buildings, and will not have an adverse effect upon the amenities of the adjoining occupiers;*

3) *A high standard of design detailing is used whether traditional or contemporary, which reflects or compliments that of the local vernacular;*

4) *Provision is made for adequate storage and waste management facilities;*

5) *Good quality sustainable design and construction techniques are incorporated in the development including measures to minimise energy use and where possible use energy from renewable sources;*

6) *A satisfactory landscaping scheme forms an integral part of the proposals; and*

7) *The design takes account of the safety, security and access needs for all potential users of the development and provides car parking provision in line with the standards adopted by the Authority.*

In addition to these policies from the Local Development Framework consideration should also be given to guidance within the National Planning Policy Framework which is a material consideration in the determination of planning applications.

It advises that the decision makers and applicants have an environmental role to play contributing to protecting and enhancing the natural environment.

Para 115 advises that 'great weight should be given to conserving landscape and scenic beauty in National Parks. Section 7 of the NPPF places a responsibility on applicants and the decision makers to secure good design. Para 58 require applications to:

- Respond to local character and history, and reflect local surroundings and materials, whilst not preventing or discouraging innovation; and
- Developments are visually attractive as a result of good architecture and appropriate landscaping.

The NPPF is less prescriptive than the former system of Planning Policy Statements and Planning Policy Guidance Notes which it replaces but continues to recognise the importance of mitigating impacts on the character and amenity of an area by securing good design through the planning system.

5.5.2 Conservation Areas and Listed Buildings

There are no Conservation Areas affected by the Scheme.

There are 20 Listed Buildings within the Study Area, all of which are registered Grade II. The majority of Listed Buildings are located at Newholme and Ewe Cote, with further examples at Sneaton Castle, Greystones Farm and Cross Butts Farm. The proposed junction improvements have no direct impact on any of these Listed Buildings.

5.5.3 Tree Preservation Orders

There are no Tree Preservation Orders (TPOs) within or immediately adjacent to the proposed scheme.

5.5.4 Topography

The undulating landform can be best described as 'simple and majestic'. The site is located on high ground to the north of Eskdale, which separates the North York Moors from the Cleveland Hills. Land to the south of the site drops down to the Esk Valley at approximately 20 m AOD before rising to approximately 110 m AOD at Sneaton. The land to the north rises to a maximum of 100 m AOD at Newholm. The site topography is illustrated on Figure ES5.3.

The site itself varies between 90 m and 100 m AOD. The site has an easterly aspect, being situated on ground which rises up to the moorland plateau west of the site.

5.5.5 Hydrology

According to the Ordnance Survey Landranger Map 94 for Whitby and Esk Dale, the nearest water feature is located approximately 100 m to the south of the site; a watercourse flowing west to east, and discharging into the River Esk.

There are no water bodies or watercourses within or immediately adjacent to the site.

5.5.6 Vegetation Cover

The landscape within the Study Area is dominated by land under arable production, with some smaller areas of grazing pasture. Agricultural fields are bounded by mostly single species hedgerows and stone walls. Areas of woodland/plantations are mostly limited to valleys, often following the routes of water courses, or to a lesser extent along field boundaries and around farm and residential properties.

There are no trees within the site, although a potentially species rich hedgerow alongside Barkers Lane runs along the northern edge of the site (refer to Section ES7 Ecology for details).

5.5.7 Land Use

The site is situated within good quality Grade 3 agricultural land. The site covers an area of approximately 4.3 hectares.

5.5.8 Public Rights of Way

Enquiries to North Yorkshire County Council's Public Rights of Way department have revealed that there are several definitive footpaths and bridleways within 1 km of the scheme. The closest public rights of ways are footpaths numbers 327005 and 327003 located off Barkers Lane leading to Bannial Flat Farm and the A171 (these are shown in Figure ES5.4). There are no footpaths or bridleways within the site boundary.

5.6 Landscape Character, Quality and Sensitivity

5.6.1 Regional Landscape Character

The proposed 'Park & Ride' Facility falls wholly within the 'North York Moors and Cleveland Hills' (Character Area No. 25), as defined by the Countryside Agency's 'Countryside Character Initiative'. The relevant characteristics of this area are:

- upland plateaux landscape being underlain by mainly sandstone and mudstone of the middle Jurassic age. With, in the south, calcareous sandstone and limestone of the upper Jurassic age with areas of undulating land arising from deposits of glacial till, sand and gravel;
- the plateau is dissected by a series of dales, often broad and sweeping, but with steep sided river valleys;
- extensive areas of heather moorland on the plateaux creating a sense of openness and space. With arable landscape to the south and the east, but with pasture on the elevated, sweeping plateaux and hills;
- sparsely settled, with populations concentrated in the dale or around the fringes; and
- traditional stone walls or hedgerows enclosing the fields within the dales and lower fringing farmland.

5.6.2 Local Landscape Character

A more detailed landscape character assessment was undertaken by the North York Moors National Park Authority, in 2003.

According to the assessment the site is located within the character area referred to as the *'Coast and Coastal Hinterland – Boulby - Whitby'.*

The key characteristics of the area as described are:

- *undulating coastal and coastal hinterland area, becoming more steeply undulating in the north, rising to over 200 m close to the edge of Newton Mulgrave Moor; the area is underlain by Deltaic sandstones and mudstones with soft Lias mudstones and Cleveland ironstones in deeper valleys and on more low lying parts of coast and overlain by deposits of boulder clay which give rise to intensive farming. The Runswick fault line runs south from Runswick Bay. Coastal areas are designated as part of the North Yorkshire and Cleveland Heritage Coast;*

- *inland from the coast, the mixed farmland is interspersed with pasture for livestock and occasional generally small plantations. Regular fields of recent enclosure predominate near the coast, divided by a mixture of fences or closely trimmed hedgerows, often thin, gappy and windblown with very occasional trees, creating a bleak and open appearance. In some areas field boundaries have been removed. In the south east of the area, south of the A174, fields become smaller in size and slightly less regular in shape. Around a number of settlements a pattern of historic strip fields remains. Small patches of scrub, bracken and upland heath/bracken also occur;*

- *the area is drained by a series of steeply incised and winding minor becks that flow towards the coast, or in the north west towards the edge of the National Park. The densely wooded valleys contrast sharply with the openness of the farmed landscape. The becks frequently occur in pairs, following close and parallel courses with occasional waterfalls; and*

- *the deep valleys are densely wooded with mainly deciduous linear woodland, much of which is ancient semi natural woodland. Extensive deciduous woodlands occur at Mulgrave, Easington and Roxby Woods.*

5.6.3 Assessment of Landscape Quality

The site is located within the boundary of the National Park. Using the five point scale given in the Design Manual for Roads and Bridges (refer Table ES5.1) the landscape quality within the Study Area is classed as ***High*** reducing to 'very attractive' or 'good' towards the urban edge of Whitby (to the East).

5.6.4 Assessment of Landscape Sensitivity

North York Moors National Park landscape is considered to be of National Importance, with a high degree of sensitivity. However, the sensitivity of the landscape is considered to be locally reduced by the presence of the Victoria Farm Garden Centre, the illuminated roundabout on the A171 and the cluster of buildings, including a restaurant at Cross Butts Farm. These features detract from the attractive rural characteristics of the landscape.

Based on site observations the landscape within which the proposed Park & Ride facility is located is assessed as being of ***Medium*** to ***High*** sensitivity.

5.7 Assessment of Landscape Impacts

The landscape impacts have been assessed in relation to the direct loss of landscape features such as hedgerows etc and taking into account the extensive mitigation measures described at the end of this section and illustrated in the Landscape Masterplan (Figure ES5.1) and the detailed Planting Proposals (Figure ES5.2).

Table ES5.5: Summary of Vegetation Loss

Landscape Element	Approximate Area/Length of Vegetation Lost due to 'Park & Ride' Facility	Approximate Area/Length of Proposed Vegetation
Woodland & Woodland Edge	0 m²	8,000 m² (approximately)
Hedgerow	0 linear m	128 linear m
Isolated Trees	0	350 no.
Arable Land	4.3 ha	0
Amenity Grassland	N/A	1,815 m²
Wildflower Grassland	N/A	12,500 m²
Water Body	0 m² (surface area)	500 m² (surface area)
Ditches	N/A	0

A summary of the predicted magnitude of landscape Impacts is given in Table ES5.6 below:

Table ES5.6: Schedule of Predicted Landscape Impacts

	Description	Magnitude (Scale) of Change		
		Construction	Year 0	Year 15
Landscape Character	The area is predominantly rural with large open fields giving way to moorland on the higher ground. The proposals would conflict with the rural character of the area. However the existing garden centre adjacent to the site is a significant 'urbanising' feature which reduces the relative impact of the development on the landscape.	**Moderate Adverse**	**Moderate Adverse**	**Slight to Moderate Adverse**
Landscape Designations	The Site is within the North York Moors National Park. There are no other Landscape Designations directly applicable to the site.	**No Change**	**No Change**	**No Change**
Vegetation Cover	Additional woodland, shrub and wildflower planting would increase vegetation cover and bio diversity compared to existing.	**No Change**	**Slight Beneficial**	**Moderate Beneficial**
Tree Preservation Orders (TPOs)	There are no TPOs within the site.	**No Change**	**No Change**	**No Change**
Land Use	The proposals would result in the loss of approximately 4.3 hectares of Grade 3 agricultural land. The proposed land use is not typical of the wider area, although a large car-park already exists at the adjacent garden centre.	**Moderate Adverse**	**Moderate Adverse**	**Moderate Adverse**
Public Rights of Way	No public rights of way would be directly affected. Public access to land within the National Park boundary would be increased slightly compared to existing.	**No Change**	**No Change**	**No Change**

5.7.1 Predicted Magnitude (Scale) of Landscape Change

Overall, it is predicted that the magnitude of landscape impacts will be **Moderate Adverse** at scheme opening, due largely to the loss of agricultural land; reducing in 15 years' time to **Minor Adverse** as the proposed planting matures, providing effective screening of the Park & Ride facilities (refer Photomontages Figures ES5.6a-c, ES5.7a-c and ES5.8a-c).

The loss of agricultural land would be partly off-set by the increased amount and diversity of new native planting, which would be integral to the scheme. Outwardly the planting would appear as a block of woodland, similar in size and appearance to woodland blocks elsewhere in the locality.

The presence of the adjacent nursery garden and associated development also serves to reduce the magnitude of the landscape impacts. (i.e. the scheme would not be a totally new feature in a completely undeveloped area).

5.7.2 Predicted Level of Landscape Effect (Significance)

Based on the criteria given in Table: ES 5.4 the level (significance) of the landscape effect would be **Moderate Adverse** at scheme opening, reducing to **Slight Adverse** in 15 years' time.

5.8 Summary of Landscape Effects

The site is located in open countryside close to the A171, the main route into Whitby from the west. It lies within the boundary of the North York Moors National Park, i.e. it is a nationally recognised landscape classed as High Quality.

The sensitivity of the landscape is considered to be ***Medium*** to ***High***.

It should be noted that the quality and sensitivity of the landscape varies considerably throughout the National Park. It is considered that the peripheral part of the park in which the proposed facility is located is not particularly attractive and the landscape character and sensitivity is influenced by the adjacent landscape (outside the National Park) and by the busy arterial road into Whitby.

The proposals would initially have some urbanising effect on the predominantly rural landscape, however, the Garden Centre, associated café and the junction of the B1460 and the A171 are existing prominent features, which by virtue of their size, scale and design, already detract from the rural qualities of the area and would therefore lessen the relative impact of the Park & Ride development.

There would be no loss of trees, shrubs or hedgerow on the site, and no mature trees would be affected. The main landscape effect would be the loss of agricultural land.

The introduction of dense planting around the perimeter of the site would, in time, give rise to dense plantation, which is not untypical of the wider area, although in the immediate locality woodland tends to be confined to the lower valleys and water courses.

The *magnitude* of landscape impacts will be **Moderate Adverse** at scheme opening, due largely to the loss of agricultural land; reducing in 15 years' time to **Minor Adverse** as the proposed planting matures.

Considering the matrix table ES5.4, the *level* (significance) of the landscape effect would be **Moderate Adverse** at scheme opening, reducing to **Slight Adverse** in 15 years' time.

5.9 Assessment of Visual Effects

Visual effect is the result of a change in view either from residential property, public rights of way, land with public access, roads and offices. The sensitivity of receptors is scored as high, medium or low and relates principally to three factors:

- the location and context of the viewpoint;
- the expectations and occupation or activity of the receptor; and

- the importance of the view (which may be determined with respect to its popularity or numbers of people affected).

Using these factors the most sensitive receptors may include the following:

Table ES5.7: Sensitivity of Visual Receptors

Sensitivity	Description
High	Occupiers of Residential properties, Listed Buildings/structures, Conservation Areas, Scheduled Monuments. Users of Long Distance Routes, National Trails, Recreational Routes). Key tourist/visitor attractions with views of the landscape as part of their setting. A view from a valued landscape, or a regionally important recreation facility.
Medium	Users of public rights of and minor roads where views are considered important, identified by the presence of stopping points. Publicly accessible areas, including recreational grounds, sports facilities, parks and other public open space; e.g. public parks and Golf Courses. Users of public buildings, retail and leisure uses. A view from a landscape of moderate importance, or a locally important recreation facility.
Low	People at their place of work, or engaged in similar activities, whose attention is not focussed on their external surroundings Office accommodation, educational facilities and places of employment, Commercial/industrial areas and road (transportation). Local roads, side roads and access tracks. Locations where the view of the landscape is not the reason for visiting.
Not Sensitive	Transient views from motorways, major roads and rail lines. The view is not the reason for visiting.

The **Magnitude (scale) of Visual Change** is assessed according to:

- The size and type of the development;
- The numbers of viewers affected (if assessed as a group);
- The distance of the receptor from the site;
- The loss or addition of features in the view; and
- Proportion of the view occupied by the proposed development.

The magnitude (scale) of visual change (assessed in terms of Major, Moderate, Minor or Negligible, is the result of a change in view either from residential property, public rights of way, land with public access, roads and offices. Residential properties are considered the most sensitive receptors to changes in view, whereas road users are the least sensitive as their experience is transient. The magnitude of the change is recorded as either *adverse* or *beneficial*.

Table ES5.8: Criteria for Assessing the Magnitude (Scale) of Visual Change

Magnitude of Visual Change	Description
Major	**Adverse** The proposal is the prominent feature and there is severe damage to key characteristics, features and elements that contribute to view. Markedly affecting the overall character of the scene.
	Beneficial The proposal is the prominent feature and there is large scale or major improvement to key landscape characteristics, features and elements that contribute to view. Proposals markedly improve the overall character of the scene.

Magnitude of Visual Change	Description
Moderate	**Adverse** The proposal forms a visible and immediately apparent new feature that results in partial damage to key characteristics, elements and features that contribute to view. A noticeable deterioration in the existing view.
	Beneficial The proposal forms a visible and immediately apparent new feature that results in partial improvement to key characteristics, elements and features that contribute to view. A noticeable improvement in the existing view.
Minor	**Adverse** Some measurable change where the proposal constitutes a minor feature in the landscape/townscape and results in loss of one (or maybe more) key characteristics that contributes to the view. A barely perceptible deterioration in the existing view.
	Beneficial Some measurable change where the proposal constitutes a minor feature in the landscape/townscape and results in improvement to one (or maybe more) key characteristics that contributes to the view. A subtle improvement to the existing view.
Negligible	**Adverse** The proposal results in very minor loss to the characteristics, features and elements that contribute to view. The proposal would be scarcely appreciated.
	Beneficial The proposal results in very minor improvement to the characteristics, features and elements that contribute to view. The proposal would be scarcely appreciated.
No change	No loss or change of characteristics or elements which contribute to view. No part of the proposal would be discernible.

The **Level of Visual Effect** is assessed using the scoring matrix below in Table ES5.9 (i.e. Sensitivity x magnitude).

Table ES5.9: Criteria for Assessing the Level of Visual Effect

VALUE/SENSITIVITY						
	Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
	High	Neutral	Slight	Moderate or Slight	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight
		No change	**Negligible**	**Minor**	**Moderate**	**Major**
		MAGNITUDE OF IMPACT (Adverse or Beneficial)				

The Visual Effects should be assessed for two scenarios:

- Upon construction; and
- 15 years after opening when the proposed mitigation measures have been implanted and vegetation has matured.

5.10 Visual Baseline Conditions

A number of visual receptors potentially affected by the proposed scheme have been identified following a baseline visual appraisal. This appraisal was informed by a desktop review of OS maps, and aerial photographs, as well as digitally modelled Zone of Visual Influence (ZVI) and field surveys undertaken in May 2006, January 2007 and July 2012. A broad scale ZVI computer generated model was produced to identify areas from which the proposed facility would be visible; this was then followed up by field surveys to verify the findings. Figure ES5.8 illustrates the computer generated theoretical ZVI. (It is important to note that this model was generated using 10 m contours and therefore does not take into account localised undulations, either does it take into account screening afforded existing vegetation or structures).

The site survey established that, with the exception of a few distant high points, the actual visibility of the proposed scheme would be limited to an area generally within 1.5 km of the site.

The existing (baseline) views experienced by nearby residents are recorded in Table ES5.10: High Sensitivity Visual Receptors and Table ES5.11: Medium Sensitivity Visual Receptors and the location of each receptor is illustrated in Figure ES5.8.

Baseline Night Time Views

The Study Area is predominantly a rural landscape with minimal lighting during the hours of darkness. The existing roundabout at the Junction of the A171 and the A169 is illuminated, although none of the roads or lanes in the immediate locality are lit. There is also some external lighting at the adjacent Victoria Farm Garden Centre and some low level lighting at Cross Butts Farm, which is visible from the surrounding areas. Land within the National Park boundary particularly the upland areas to the west and north are very dark at night with very few points of illumination.

5.11 Sensitivity of Visual Receptors

A total of thirteen visual receptors were identified as having potential views of the P&R facility and therefore have the potential to be affected by the proposed development. Photo sheets provided in Figure ES5.9a-f illustrate the views from several of the receptors/illustrative views of the area. The most sensitive receptors are the residential properties which, in accordance with the criteria in Table ES5.7, are classed as ***High*** sensitivity. These are listed in Table ES5.10 below:

Table ES5.10: High Sensitivity Visual Receptors

Ref No.	Visual receptor	Location of receptor (approximate distances from P&R boundary)	Description of existing view
A	Victoria Garden Centre, A171	45 m	Views to the existing A171 in the foreground, with arable farm land, boundary hedgerows and isolated farms in the background.
B	Cross Butts Farm	130 m	Views to the A171 and arable farmland. Views partially restricted by surrounding buildings.
C	Cross Butts Stable Restaurant	40 m	Views predominantly to south. Views from access and garden/grass areas to side of property.
D	Bannial Flat Farm, New Ville and The Cottage	295 m	Views to arable farmland and hedgerows in the foreground. Victoria Garden Centre and Cross Butts Farm in the background. The A171 runs east.
E	Broad Ings Farm	610 m	Arable farmland surrounded by hedgerows. The A171 runs adjacent to the property.
F	Sneaton Castle	515 m	Open arable farmland with boundary hedgerows and areas of semi mature trees to the property boundary.

Ref No.	Visual receptor	Location of receptor (approximate distances from P&R boundary)	Description of existing view
G	Newholm Hall	645 m	Views to open arable farmland and boundary hedgerows.
H	Ewe Cote Farm, Ewe Cote Hall and Cottages	635 m	Views to Sneation Castle to the east and arable farm land with boundary hedgerows and areas of semi mature trees.
I	Fernhill Cottage and Fell View	435 m	Open views to arable farmland and hedgerows through to Victoria Farm Garden Centre and Cross Butts Farm.
J	Ewe Cotes/Properties Along B1460	860 m	Views to open arable farmland with hedgerows. Areas of semi mature trees adjacent to Sneaton Castle. Victoria Farm Garden Centre and Cross Butts Farm can be seen in the background.
K	Properties Along B1416/High Stakeby	1020 m	Open arable farmland surrounded by hedgerows through to Victoria Farm Garden Centre and Cross Butts Farm.
L	Properties Along Holmstead Avenue and Ruswarp Lane, Ashes Farm and Ruswarp	855 m	Views to arable farmland bounded by hedgerows through to Broad Inges Farm with Victoria Farm Garden Centre and Cross Butts Farm in the background.
M	Sneaton Village	2800 m	Views to open grazing and arable farmland with boundary hedgerows and isolated settlements.

In addition to the above there are two important non-residential receptors which have the potential to be affected by the proposed development and in accordance with the criteria in Table ES5.7, are classed as ***High*** sensitivity. These are listed in Table ES5.11 below:

Table ES5.11: Medium Sensitivity Visual Receptors

Ref No.	Visual Receptor	Location of receptor (approximate distances from P&R boundary)	Description of existing view
N	Public Rights of Way	35 m	Open arable farmland and hedgerows with views of the A171 and B1460. Cross Butts Farm and Victoria Farm Garden Centre are also clearly visible. Footpath 372005 is closest receptor.
O	Views from the A171	10 m	Arable farmland and boundary hedgerows with existing settlements and the A171/B1460 junction.

5.12 Assessment of Visual Impacts

To fully assess the potential visual impacts of the Park & Ride facility a 'Zone of Visual Influence' (ZVI) map and photomontages were produced using 3D computer modelling software.

Figure ES5.8 shows the approximate visual envelope for the scheme and was generated by superimposing the 3D digital proposals on to a digital terrain model of the region. The dark green hatch shows the areas from which the parking facility would be visible (assuming no mitigation is implemented).

It should be noted that the ZVIs show the worst case scenario, in that they do not take into account screening afforded by existing hedgerows/built structures or by the proposed mitigation measures (planting/earth mounding).

It should be noted that the visual envelope is restricted by the undulating topography to localised areas of high ground to the south and east, which are mostly open farm land.

The key findings of the ZVI analysis are:

- the proposals would be largely hidden from the National Park. Views from within the park would be limited to a 500 m zone immediately adjacent to the site; and
- there are comparatively few residential properties or publicly accessible areas within the visual envelopes, consequently there are very few visual receptors.

Views from potential receptors have been assessed/ verified in the field, with site surveys undertaken in January 2007 (optimum time of year when the vegetation was not in leaf).

A schedule of the receptors and an assessment of the predicted visual impacts is listed in tables ES5.12 and ES5.13.

5.12.1 Predicted Magnitude (Scale) of Visual Change

Overall, it is predicted that the magnitude of visual change will be **Moderate Adverse** at scheme opening, when the new facility would be partially visible from a number of the receptors; reducing in 15 years' time to **Negligible Adverse** as the proposed planting matures, providing effective screening of the Park & Ride facilities (Refer Photomontages Figures ES5.5a-c, ES5.6a-c and ES5.7a-c).

5.12.2 Predicted Level of Visual Effect

Based on the criteria given in Table ES5.9 the level of the visual effect would be **Moderate Adverse** at scheme opening, reducing to **Slight Adverse** in 15 years' time.

The predicted Level of Visual Effect for individual Properties is shown in Tables ES5.12 and ES5.13 below:

High Sensitivity Receptors

High sensitivity receptors include impacts on; Residential Properties, Listed Buildings, Conservation Areas, Scheduled Monuments or Visitor Attractions/Holiday Accommodation

Table ES5.12: Visual Impact Schedule – High Sensitivity Receptors

Ref	Receptor	Type of Receptor	Description of view (following construction of P&R)	Sensitivity of Visual Receptor	Magnitude of Change (at scheme Opening	Level of Visual Effect (Sensitivity x Magnitude) At P&R opening, with immature mitigation	Magnitude of Change (following 15 years, semi mature planting)	Level of Visual Effect (Sensitivity x Magnitude. Following 15 years, semi mature planting)
A	Victoria Garden Centre, A171	Residential	Views west towards entrance of P&R facility and parking areas beyond. Views part screened over time as perimeter planting matures.	***High***	**Moderate Adverse**	**Moderate Adverse**	**Minor Adverse**	**Slight Adverse**
B	Cross Butts Farm	Residential	Views west over A171 to P&R facility entrance area and main car park beyond. Partially screened by intermediate buildings. Views partially screened over time as perimeter planting matures.	***High***	**Moderate Adverse**	**Moderate Adverse**	**Minor Adverse**	**Slight Adverse**
C	Cross Butts Stable Restaurant	Residential/ commercial	Views predominantly to south. Views from access and garden/grass areas to side of property. Views to car park area at scheme opening but over time these will be screened by perimeter vegetation.	***High***	**Moderate Adverse**	**Moderate Adverse**	**Minor Adverse**	**Slight Adverse**
D	Bannial Flat Farm, New Ville and The Cottage	Residential	Elevated properties offer views east over the P&R facility. Over time views will be screened by perimeter vegetation.	***High***	**Major Adverse**	**Large Adverse**	**Minor Adverse**	**Slight Adverse**
E	Broad Ings Farm	Residential	Views to the P&R screened by intervening buildings and landform.	***High***	**No Change**	**Neutral**	**No Change**	**Neutral**
F	Sneaton	Residential	Views to the P&R screened by intervening	***High***	**No Change**	**Neutral**	**No Change**	**Neutral**

	Castle	(priory/school)	buildings and landform.					
G	Newholm Hall	Residential	Views to the P&R screened by intervening buildings and landform.	***High***	**No Change**	**Neutral**	**No Change**	**Neutral**
H	Ewe Cote Farm, Ewe Cote Hall and Cottages	Residential	Views to the P&R screened by intervening buildings and landform.	***High***	**No Change**	**Neutral**	**No Change**	**Neutral**
I	Fernhill Cottage and Fell View	Residential	Views to the south and south west towards the P&R Facility. Views part screened by the adjacent existing development. Over time views further screened by the northern perimeter vegetation to the P&R facility.	***High***	**Minor Adverse**	**Slight Adverse**	**Negligible**	**Slight Adverse**
J	Ewe Cotes/ Properties Along B1460	Residential	Distant views south west towards the P&R facility beyond the existing development at the entrance to the facility. Glimpsed views screened by intermediate and perimeter vegetation over time.	***High***	**Minor Adverse**	**Slight Adverse**	**Negligible**	**Slight Adverse**
K	Properties Along B1416/ High Stakeby	Residential	Views to the P&R screened by intervening landform.	***High***	**No Change**	**Neutral**	**No Change**	**Neutral**
L	Properties Along Holmstead Avenue and Ruswarp Lane, Ashes Farm and Ruswarp	Residential	Distant views to the west towards the P&R facility. Views part screened by intervening buildings and vegetation. Potential views to elevated western edge of P&R only.	***High***	**Negligible**	**Slight Adverse**	**No Change**	**Neutral**
M	Sneaton Village	Residential	Views to P&R facility screened by intervening landform	***High***	**No Change**	**Neutral**	**No Change**	**Neutral**

Medium Sensitivity Receptors

Medium sensitivity visual receptors include: Public rights of way (not considered to be key rights of way) and minor roads where views are considered important, identified by the presence of stopping points.

Table ES5.13: Visual Impact Schedule – Medium Sensitivity Receptors

Ref	Receptor	Type of Receptor	Description of view (following construction and opening of P&R Facility)	Sensitivity of Visual Receptor	Magnitude of Change (at scheme Opening	Significance of Visual Effect (Sensitivity x Magnitude) At P&R facility opening, with immature mitigation	Magnitude of Change (following 15 years, semi mature planting)	Significance of Visual Effect (Sensitivity x Magnitude. Following 15 years, semi mature planting)
N	Public Rights of Way	Public right of way	The closest PROW (no. 327005) offers expansive views over the P&R facility to the east. Over time mitigation planting around the facility would screen views to the parking areas	***Medium***	**Major Adverse**	**Large Adverse**	**Moderate Adverse**	**Moderate Adverse**
O	Views from the A171	Road	Views from passing highway into whole car park area at scheme opening (over perimeter hedge and wall) but over time these will be screened by perimeter vegetation.	***Medium***	**Moderate Adverse**	**Moderate Adverse**	**Minor Adverse**	**Slight Adverse**

5.13 Summary of Visual Effects

Following the site assessment the main visual receptors were identified as:

- properties around the existing A171/B1460 Junction (Victoria Farm & Garden Centre);
- properties to the west of the site (New Ville and adjacent Cottage, and Bannial Flat Farm);
- public footpaths north and west of the site; and
- the A171 adjacent to and immediately west of the site.

Photographs of the site from the surrounding areas are shown in Figures ES5.9a-f. The photographic viewpoint locations are shown on the Visual Analysis Plan, Figure ES5.8.

To aid visual assessment of the proposals photo-montages have been prepared for three separate viewpoints (refer Figures ES5.5a-c, ES5.6a-c, ES5.7a-c). The montages have been generated from 3D wireframe CAD models, which have been 'camera matched' to site photographs and digitally rendered using appropriate software to create realistic textures and colours.

Each montage shows:

- the existing situation;
- the scheme on opening (with new planting/mounding implemented); and
- the scheme in 15 years' time (when the vegetation has matured).

Analysis of the photomontages suggests the following:

- from all three viewpoints the Park & Ride scheme would be prominent at 'scheme opening' and would detract visually from the rural character of the landscape;
- visually the bus shelter is an insignificant feature especially when viewed against the backdrop of the Garden Centre and adjacent properties; and
- within 15 years the development would largely be screened by proposed planting. Eventually open farmland would be replaced by a perceived block of dense woodland.

Additional Mitigation

Following detailed visual analysis of the scheme it is proposed that the following additional mitigation measures would be beneficial and therefore will be implemented.

- the car park at the western part of the site, which is visually more exposed and more rural than the eastern part (closest to the Garden Centre) will be surfaced with reinforced turf (as opposed to tarmac) to create an informal overspill car park), thus minimising urbanisation; and
- the proposed site boundaries will be hedges/fences appropriate to the rural character of the area. Security fences normally associated with such facilities will be not be used, in order to aid visual integration.

The proposed Park & Ride facility will primarily operate during the summer months when the long daylight hours will mean lighting will not be required. There are no proposals to provide permanent lighting in the scheme, although occasional temporary lighting may be provided to some events.

It is predicted that the level (significance) of the visual effect would be **Moderate Adverse** at scheme opening, reducing to **Slight Adverse** in 15 years' time. The reduction would be due to mitigation planting maturing, helping to integrate the proposals with the surrounding landscape.

5.14 Construction Stage Impacts (Landscape and Visual)

In order to assess the landscape and visual impacts during the construction phase of the proposed works, the following assumptions have been made:

- there would be a site compound which would comprise accommodation, parking and storage;
- there would be some traffic congestion on the A171 during construction of the new roundabout; and
- there would be a temporary increase in traffic, primarily construction vehicles in and around the site.

Landscape and visual impacts are predicted to be most significant during the construction stage. This is due to a number of factors:

- the proposed scheme planting and earth works would not be in place; and
- brightly coloured construction vehicles would be prominent.

Visual mitigation in the form of advance screen planting would take some time to be effective and is therefore not proposed. However, it is recommended that consideration be given to the location of site cabin to avoid encroachment in the more exposed landscape at the eastern end of the site.

5.15 Overall Conclusions (Landscape and Visual)

The site is located on the edge of the North York Moors National Park. The *quality* of the landscape in the Study Area is assessed to be 'High', reducing to 'Very Attractive' or 'Good' towards the urban edge of Whitby (to the east). The landscape of the Study Area is predominantly of ***medium*** to ***high*** sensitivity**,** increasing to ***high*** sensitivity further west towards the North York Moors National Park. The sensitivity of the site is negatively influenced by the presence of the adjacent restaurant and garden centre developments which detract from the rural qualities of the landscape.

The development would result in the loss of 4.3 hectares of arable land. No trees would be affected by the proposals. By contrast the proposals would include approximately 8,000 new native trees, 128 linear metres of hedgerow and shrubs planted mostly along the northern and western boundaries to screen the development.

The lack of houses in the local area (or publicly accessible view points) combined with the undulating topography means the visual intrusion is considered to be very low. The only notable receptors being:

- three isolated properties to the west;
- Victoria Farm to the east;
- sections of the A171 and B1460 adjacent to the site; and
- three footpaths to the north and west within 500 m of the site.

These receptors are all within 500 m of the site, and it is predicted there would be minimal impact beyond this distance, and very few from views from within the National Park.

It is anticipated that the proposed landform and perimeter planting will in time screen the Park & Ride facilities. Overall the proposal will have an urbanising effect on the rural landscape, however the impact will be localised and will be partly off-set by the extensive mitigation measures proposed. In the short term the parking facility will be visible from a small number of properties within a 500 m radius of the site. Considering the matrix table ES5.4, the level (significance) of the landscape effect would be **Moderate/Large Adverse** at scheme opening, reducing to **Slight/Moderate Adverse** in 15 years' time, as the proposed woodland/hedgerow planting matures, which in turn will lessen the potentially urbanising influence of the Park & Ride facility during the construction and establishment phases.

Based on the criteria given in Table ES5.9 the level (significance) of the visual effect would be **Moderate Adverse** at scheme opening, reducing to **Slight Adverse** in 15 years' time, as the planting matures and screens the majority of views into the main facility area.

6.0 HYDROLOGICAL AND HYDROGEOLOGICAL ASSESSMENT

6.1 Introduction

This Section considers the existing hydrological and hydrogeological (surface water and groundwater) conditions and the potential impacts of the proposed Whitby Park & Ride scheme as defined by the planning application redline boundary (the Site). The Section presents an update of baseline conditions and an assessment of the impact on the water environment based on any changes to baseline conditions, along with proposed and recommended mitigation measures.

The geographical scope of the Study Area for this Section has comprised a 1 km radius from the Site. However, more detailed consideration has been given to features within the Site, its immediate environs and the area within 500 m of the boundary.

The temporal scope of the assessment considers the construction, operation and decommissioning and demolition phases.

6.2 Baseline Studies

The methodology which has been employed to evaluate baseline conditions relating to the hydrological and hydrogeological conditions on the Site and surrounding area includes collation of baseline information from the following reference sources:

- Ordnance Survey Landranger Sheet 94 (Whitby and Esk Dale) (1:50 000);
- Ordnance Survey Outdoor Leisure Sheet 24 (1:25 000);
- British Geological Survey (BGS) Sheets 35 and 44 (Whitby and Scalby) (1:50,000);
- Soils Survey of England and Wales, Sheet 1 Northern England (1:250,000);
- National Soils Research Institute Website (www.landis.orh.uk/soilscapes)
- Environment Agency (EA) Groundwater Vulnerability Sheet 9 (North East Yorkshire);
- Environment Agency website, www.environment-agency.gov.uk (Environment Agency, 2012);
- Environmental information for the Site and its surroundings contained the Envirocheck report (Landmark, 2012) contained in Appendix ES6.1;
- Whitby 'Park & Ride' Geotechnical Preliminary Sources Study, Mouchel Parkman, June 2006; (Mouchel Parkman, 2006);
- Environment Agency (Email dated 13 October 2006, Letter dated 28 September 2006); and
- Scarborough Borough Council (Email dated 4 December 2006 and 24 July 2012).

The original consultation responses are contained in Appendix ES2.1.

6.2.1 Geology & Soils

The National Soil Resources Institute website indicates that soils beneath the site are dominantly slightly acid loamy and clayey soils with impeded drainage. They have a moderate to high fertility.

The Soils Survey map indicates that the Site lies on the 'Salop' soils sub-group described as slowly permeable seasonally waterlogged reddish fine loamy over clayey, fine loamy and clayey soils with slowly permeable subsoil's and slight seasonal waterlogging.

The published geological map for the region, sheets 35 and 44 covering Whitby and Scalby (BGS 1998) shows that the site is underlain the geological succession summarised in Table ES6.1below and illustrated in Figure ES6.1 and further detail is contained in Appendix ES6.1:

Table ES6.1: Site Geology (from BGS, 1998)

Age	Group	Formation/Description
Drift Deposits:		
Quaternary	Glacial Till	Clay with pebbles and lenses of gravel
Solid Geology:		
Middle Jurassic	Ravenscar Group:	Scalby Formation: Long Nab Member – mudstone and sandstone
		Moor Grit Member – quartz sandstone
		Scarborough Formation: Limestone and mudstones
		Further formations: Comprising sandstones, ironstones, mudstones and thin coal seams
Lower Jurassic	Lias Group	Formations comprising: Predominantly mudstone with some sandstone and ironstone.

The drift geology beneath the Site consists of Glacial Till, described as clay with pebbles and lenses of gravel. A previous report has estimated that bedrock may underlie the drift deposits at a depth of 3 m to 5 m (Mouchel, 2006).

The solid geology, directly underlying the Glacial Till, consists of the Ravenscar Group comprising the Scalby Formation and Scarborough Formation (Middle Jurassic). The Scalby Formation underlies the drift across a majority of the Site area comprising the Long Nab Member (mudstones and sandstone) with a narrow subcrop of the Moor Grit member (quartz sandstone) less than 100 m wide in the southwest corner of the Site which then dips beneath the younger strata towards the northeast. Underlying the Scalby Formation is the Scarborough Formation, comprising interbedded limestone and mudstone and is present adjacent to the south western corner of the Site. These strata are underlain by further formations of the Ravenscar Group, then the Lias Group and Mercia Mudstone Group at depth.

There are no geological folds or faults shown in the vicinity of the site. No significant potential for ground stability hazards have been identified for the Site with the hazard potential classed as 'no hazard' to 'very low'.

The Envirocheck report (Landmark, 2012) identifies the Site as lying in an area potentially affected by coal mining activity and iron ore mining activity and recommended that a coal mining report and further information from relevant sources is obtained.

6.2.2 Hydrogeology (Groundwater)

6.2.2.1 Aquifer Status and Vulnerability

The Environment Agency has produced a series of groundwater vulnerability maps, covering England and Wales, which identify the vulnerability of groundwater to contamination. These use geological information to define major, minor and non-aquifers, and information on soils to determine the protection afforded to the underlying geology and therefore its overall vulnerability.

The groundwater vulnerability map for this area (Sheet 9, Groundwater Vulnerability of North East Yorkshire). This indicates that the Site is overlain by drift deposits and soils across the majority of the Site are classed as soils of intermediate leaching potential and can potentially transmit a wide range of pollutants, having a moderate ability to attenuate diffuse source pollutants or in which it is possible that some non-adsorbed diffuse source pollutants and liquid discharges could penetrate the soil layer. Soils in the southwest corner of the Site are classed as being of low leaching potential and therefore are unlikely to transmit adsorbed pollutants.

The map also indicates that the Ravenscar Group (Scalby and Scarborough Formations) are classed as a minor aquifer (Figure ES6.1). In April 2010, the EA issued new aquifer designations to supersede the previous system of classifying aquifers as major, minor and non-aquifer. This new system is in line with the EA's Groundwater Protection Policy (GP3) and the Water Framework Directive (WFD) and based on BGS mapping. These designations reflect the importance of aquifers in terms of groundwater as a resource and their role in supporting surface water flows and wetland ecosystems.

According to the new aquifer designations (Environment Agency, 2012 and contained in Appendix ES6.1) the drift deposits directly underlying the Site are indicated as 'unproductive strata'. These represent drift deposits with low permeability and have negligible significance for water supply or river base flow. The Ravenscar Group underlying the drift deposits is designated as a 'Secondary A' aquifer. 'Secondary A' aquifers have permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers, this is consistent with the previous classification as a minor aquifer.

The Environment Agency have defined Source Protection Zones (SPZs) for 2000 potable groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activity that might cause pollution in the area, the closer the activity the greater the risk. The maps show three main zones (inner, outer and total catchment) and a fourth zone of special interest, which the EA occasionally apply to a groundwater source. According to data maps provided on the EA website and the Envirocheck report (Landmark 2012) the Site is not located within an SPZ. The nearest SPZ is located over 5 km away from the Site.

As part of the measures implemented under the Water Framework Directive (WFD) the Environment Agency have introduced Drinking Water Protected Areas (DrWPAs) and associated Safeguard Zones where DrWPAs are at risk. The DrWPAs are water bodies where 'raw' water is abstracted for human consumption at a rate of at least 10 m^3/day or where over 50 people are served. The Site lies within a groundwater DrWPA deemed to be in a 'Not at Risk Area' (Environment Agency, 2012).

6.2.2.2 Groundwater Levels and Flow

No site-specific information regarding groundwater flow or level was available for review. Groundwater flow within the drift is likely to be influenced by local topography and surface drainage and the extent to which more permeable sand and gravel layers are connected. It is anticipated that given the close proximity to the North Sea, that regionally groundwater within the bedrock aquifers will flow in a north easterly direction. It is possible that due to the presence of River Esk to the south of the site, that locally groundwater may flow towards this and local tributaries in a south easterly direction. Groundwater also issues via springs in the area.

The Site lies within the Humber River Basin Management District and is underlain by the Esk & Yorkshire Coast Ravenscar WFD waterbody (EA, 2012). The River Basin management Plan identified the current WFD quantitative quality status for groundwater in the Site area as Good and predicted WFD quantitative status by 2015 is also Good.

6.2.2.3 Groundwater Abstractions and Discharge

The Envirocheck Report (Landmark, 2012) indicates that there is one groundwater abstraction recorded within 1 km of the Site. This is located approximately 500 m to the east of the Site boundary at Ruswarp and is a spring abstraction from the 'oolitic limestone' used for general farming and domestic purposes with an annual volume of 1364 m^3/year or 5 m^3/day. Due to the low volumes this may now be a de-regulated licence exempt abstraction.

Scarborough Borough Council has no record of private water supplies within a 1 km radius of the site.

Two consents for discharge to land/soakaway are recorded within 1 km of the Site with only one within 500 m of the Site at Cross Butts Farm for discharge of treated sewage effluent and located approximately 130 m to the southeast of the Site boundary. The second is also for treated sewage effluent and is located approximately 830 m to the east of the Site.

6.2.2.4 Groundwater Pollution Incidents

There are no pollution incidents to groundwater recorded within 1 km of the Site boundary.

6.2.3 Hydrology (Surface Water)

6.2.4 Rainfall

Total long-term rainfall and potential evapotranspiration are reported in the Ministry of Agriculture, Fisheries and Food Technical Bulletin 35 for the period 1941 to 1970 (MAFF, 1976). The site lies within Area 7 (North Yorkshire), for which rainfall is reported as 808 mm per year and potential evapotranspiration as 437 mm per year. Rainfall data supplied by the Environment Agency from Ruswarp gauging station (NGR NZ 891 088) indicates total annual rainfalls of 841 mm in 2004 and 690 mm in 2005. This is consistent with the values obtained from MAFF documentation.

6.2.4.1 Topography and Drainage

The Site lies on an area of high ground to the west of Whitby at approximately 90 m AOD (metres above Ordance Datum) to 100 m AOD and typically slopes to the east. In a previous study (Mouchel, 2006) a possible dried up water course was noted through the western side of the Site with a north-south trend.

The Site is located within the catchment of the River Esk, which is located approximately 1.5 km south of the Site. The River Esk flows west to east, through Whitby and discharges into the North Sea. According to the OS Landranger Map 94 for Whitby and Esk Dale and the 1:10,000 OS map from 2006, the nearest watercourse is an unnamed tributary of the River Esk, which runs parallel to the south of the site, approximately 100 m away and flowing to the east (Figure ES6.2).

Three further smaller watercourses arise from springs approximately 500 m from the Site boundary to the north, east and south (Figure ES6.2).

The Environment Agency monitors the flow of the River Esk at Biggswath monitoring station number F2902 (NGR NZ 873 082) located approximately 2 km south of the Site. This reported an average daily flow of 6.48 m/s in 2004 and 4.71 m/s in 2005 from a catchment area covering 325 km^2.

6.2.4.2 Surface Water Quality

The Environment Agency does not have any records of surface water quality in the immediate vicinity of the site. The previous general quality assessment (GQA) grades have now been superseded by monitoring under the WFD. Site drainage will be directed to road drains and then to a surface water course that drains into the River Esk. There is no surface water ecology or chemical quality WFD status described for the River Esk downstream of the Site, however the Esk at this location is classed as an estuarine water body. The current WFD ecological quality status of the Esk estuary is classed as having ***moderate*** potential and predicted status by 2015 remains ***moderate*** with an objective of ***good*** status by 2027.

The Environment Agency has previously specified that all surface water drainage from parking areas and hard standing shall pass through an oil interceptor prior to discharge into the water environment.

The Site lies within a surface water DrWPA deemed to be in a 'Not at Risk Area' (Environment Agency, 2012).

6.2.4.3 Surface Water Abstractions and Discharge

The Envirocheck report (Landmark, 2012) indicates that there are no current licensed surface water abstractions within a 1 km radius of the site. The nearest is located on the River Esk at Ruswarp, approximately 1.7 km to the southeast. Scarborough Borough Council has no record of private water supplies (licence exempt abstractions) within a 1 km radius of the site.

There are nine discharge consents to surface water recorded within 1 km of the site and four of these lie within 500 m of the Site boundary. The nearest is located approximately 475 m to the northeast of the Site at Sneaton Castle for discharge of storm sewage overflow to a surface water drain and is held by Yorkshire Water.

6.2.4.4 Pollution Incidents

There is one pollution incident recorded within 1 km, located approximately 700 m to the west of the Site in a different surface water sub-catchment. This was recorded in 1989 and classed as a Category 2 – Significant Incident relating to discharge of diesel oil into a stream.

6.2.4.5 Fisheries

The Environment Agency has previously stated that they have no direct issues or concerns regarding fisheries.

6.2.5 Environmentally Sensitive Areas

There are no statutory designated water sensitive sites located within 1 km of the site, including RAMSAR sites, Special Areas of Conservation, Special Protection Areas, or Sites of Special Scientific Interest (Landmark, 2012).

6.2.6 Receptor Sensitivity

There are no surface water abstractions from the tributary located to the south of the A171 close to the Site or within 1 km and therefore the surface water is considered to be of ***local importance*** as a receptor.

The Drift deposits directly underlying the Site are classed as unproductive strata the bedrock aquifer underlying the drift is classed as a 'Secondary A' aquifer generally capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to local streams and rivers. One groundwater abstractions is recorded within 1 km of the Site boundary. Groundwater is considered to be of ***local importance*** as a receptor.

6.2.7 Flood Risk

The site does not lie within a designated floodplain and is not in an area identified as being at risk from flooding rivers or sea. A Flood Risk Assessment (FRA) has been produced in accordance with the National Planning Policy Framework (NPPF) and is contained in Appendix ES6.2.

The Environment Agency has specified requirements for management of the surface water discharges from the Site so as not to exacerbate flooding problems elsewhere in the catchment. Therefore an appropriate surface water regulation system should be agreed with the Local Planning Authority before development commences, and implemented prior to the development being brought into use. The discharge should be regulated to greenfield run-off from a 1 in 1 year storm, with sufficient storage within the drainage system to accommodate at least a 1 in 30 year storm. It is required that adequate flow controls are placed on the attenuation pond to ensure that the runoff rate of 1.4 litres/sec/ha is achieved (EA letter dated 28 September 2006). The design should also ensure that storm water resulting from a 1 in 100 year event and surcharging the drainage system can be stored on the site without risk to people or property and without overflowing into the water courses. The Environment Agency notes that it is keen to promote the use of sustainable drainage systems.

6.3 Proposed Site Drainage

The proposed drainage design for the Site is for surface runoff to be discharged via an oil interceptor into a balancing pond located in the northeast of the site. From this pond, water will be discharged into the existing highway drains along the B1460 and also into the watercourse to the south of the A171 and Cross Butts Farm. Foul drainage from a toilet block will be directed to a sealed on-Site septic tank/cess pit and emptied on a periodical basis. Detailed drainage designs have not yet been made available.

6.4 Impact Assessment

6.4.1 Information Sources

The assessment of impacts of the proposed scheme on groundwater and surface water in the absence of mitigation has been undertaken with reference to the following Environment Agency guidance documents:

- A1 Scoping the environmental impact of construction works (2002);
- K7 Scoping the environmental impacts of vehicle parks and park-and-ride schemes (2002); and
- A2 Scoping the environmental impacts of demolition and decommissioning works (2002).

The potential impacts have been considered during construction, operation and decommissioning/post operation of the facility in line with EIA methodology and are presented in Section 2 and below.

6.4.2 Groundwater Impact Assessment

6.4.2.1 Impact Characterisation

The potential impacts on groundwater arising from activities carried out during the three phases of the site, construction, operation and post-operation, are identified in Table ES6.2, as outlined in the relevant Environment Agency Scoping Guidance documents.

Table ES6.2: Groundwater Impact Identification

Receptor of Impact	Phase of Site	Activity	Potential Impacts
Groundwater Resources	Construction	Earthworks and site drainage	Some excavation required to produce finished levels however no significant de-watering is currently proposed for the scheme and it is anticipated therefore that it will not impact the water table.
	Operation	Physical presence of infrastructure	No underground parking structures are proposed therefore no changes to local water table of groundwater distribution or flow. Hard surfaces may prevent groundwater recharge, however, site currently lies on clayey deposits (Glacial Till) which will limit existing groundwater recharge.
	Decommissioning/Post-operation	Removal of infrastructure	No underground parking structures to remove. No significant changes to local water table or groundwater distribution or flow anticipated.
Groundwater Quality	Construction	Earthworks	Disturbance of contaminated soil and subsequent groundwater pollution: There has been no previous development on site and no made ground is reported (Mouchel Parkman, 2006) and therefore no soil contamination is not anticipated at this site.
		Materials Management	Pollution from spills or leaks of fuel, oil and building materials.
	Operation	Surface runoff	Pollution from spills or leaks of fuel and oil, heavy metals, high suspended solids, PAHs and oils.
			Discharge of surface water will be to highway drainage and surface water and not to soakway.
		Foul Drainage	Discharge to a sealed septic tank/cess pit system, no discharge to groundwater.
	Decommissioning/Post-operation	Materials Management	Contamination from accidental spills or leaks of fuel and oil.

The scale or magnitude of impacts upon groundwater can be assessed using the criteria presented in Table ES 2.2, which have been developed by Golder Associates in the absence of recognised criteria for this topic.

Based on the methodology set out above the scale of impact to groundwater resource and quality is therefore considered to be **Slight Negative.**

6.4.2.2 Significance of Impacts

Taking into account the sensitivity of the receptor and identified potential scale of impacts, it is anticipated that the significance of impacts on groundwater resources and quality, in the absence of mitigation, will be **Minor (negative).**

It is understood that while some ground excavation will be required to form the final platform levels at the Site in particular for the main parking area, it is understood that no significant dewatering is proposed during construction and no underground parking is planned as part of the development, therefore no significant potential impacts on the water table and groundwater flow are anticipated. The construction of hard standing at the Site will decrease infiltration, however recharge rates will be limited under baseline conditions since the underlying geology consists of clayey Glacial Till.

There is potential for impact on groundwater quality from leaks or spills of contaminative materials during all phases of the development. The underlying clay will provide some attenuation capacity to migration of contaminations during construction, and post construction and a majority of the site is to be covered with hard standing. Run-off from parking areas is to be directed to surface water drains via an oil interceptor.

6.4.2.3 Proposed and Recommended Mitigation Measures

It is understood that the scheme design proposes to discharge surface run-off from car parking areas and areas of hard standing via surface drainage and no groundwater soakaways are proposed. Foul drainage will be discharged to a sealed system. On this basis, no specific additional design mitigation measures are therefore considered necessary with regard to groundwater. However, the proposed developments are required to comply with industry best practice and the Environment Agency's Pollution Prevention Guidelines (EA PPGs) which aim to provide advice on statutory responsibilities and good environmental practice.

Compliance with industry best practice guidance and the EA PPGs is considered to be essential in ensuring the development is designed with sensitivity to the groundwater environment and to mitigate any potential impacts, including:

- Environmental Good Practice on Site (third edition) CIRIA Publication C692 (CIRIA, 2010);
- Sustainable Urban Drainage Systems – Best Practice Guidance and Manuals. CIRIA various publications.
- Groundwater Control Design and Practice. CIRIA Publication C515, London 2000;
- Environment Agency’s Groundwater Protection Policy and Practice (GP3);
- PPG1 General guide to the prevention of water pollution;
- PPG 3 Use and design of oil separators in surface water drainage systems;
- PPG 4 Treatment and disposal of sewage where no foul sewer is available;
- PPG 5 Works or maintenance in or near water;
- PPG 6 Working at construction and demolition sites;

- PPG 8 Safe storage and disposal of used oils;
- PPG 13 Vehicle washing and cleaning;
- PPG 20 Dewatering of underground ducts and chambers;
- PPG21: Pollution incident response planning.
- PPG 22 Incident Response Planning;
- PPG 22 Dealing with Spills
- PPG 23 Maintenance of structures over water; and
- PPG18: Managing fire water and major spillages.

No site specific geology or groundwater information is currently available and a Site investigation to confirm Site specific ground conditions should be undertaken as part of the final detailed design. The updated Envirocheck report (Landmark, 2012) identifies the Site as lying in an area potentially affected by coal mining activity and iron ore mining activity and this recommends that a coal mining report and further information from relevant sources is obtained.

General mitigation measures proposed for surface water (Section 6.4.3.2) are also relevant to protection of groundwater.

6.4.2.4 Residual Impacts and Summary

The residual significance of impacts on groundwater resources and quality taking into account general mitigation measures described above are predicted to be **Neutral**.

Low permeability (clayey) drift deposits comprising Glacial Till are present across the Site under current baseline conditions and where excavation is carried out to form the final levels this may reduce the thickness of drift areas in areas where hard standing is proposed, this combined with the distance to the nearest recorded groundwater abstraction (c. 500 m) means that with good environmental practices in place, contamination of groundwater resources and impact on groundwater flow are unlikely.

6.4.3 Surface Water Impact Assessment

The proposed Whitby Park & Ride scheme could impact on surface water courses in the vicinity of the Site, in particular flow rates and water quality. The potential impacts arising from activities carried out during the three phases of the site, construction, operation and post-operation, are identified in Table ES6.3, as outlined in relevant the Environment Agency Scoping Guidance (refer to Section 6.4.1).

Table ES6.3: Surface Water Impact Identification

Receptor of Impact	Phase of Site	Activity	Potential Impacts
Surface Water Hydrology and Channel Morphology	Construction	Site Preparation	Erosion from soil stripping operations and resultant exposed areas deposited in streams as sediments.
		Use of vehicles and machinery	Increase in surface runoff from soil compaction.
		Works next to or near watercourses	Nearest watercourse is located approximately 100 m south of the site. Change in flow velocities.
		Earthworks	Increased sedimentation of watercourses.
	Operation	Surface runoff	Rapid transfer of rainwater to water courses via drains.
			Minor changes to flow regimes of water courses downstream of the development, in particular the watercourses into which runoff is to be discharged.
			Change in deposition regime, caused by changes in flow and possible increase in sediment input from soil erosion.
			Potential increased flood risk in downstream catchment.
		Foul Drainage	Discharge to a sealed septic tank/cess pit system, no discharge to surface water.
	Decommissioning/ Post-operation	Works next to or near watercourses	Nearest watercourse is located approximately 100 m south of the site. Potential change in flow velocities.
			Potential increased flood risk in downstream catchment.
Surface Water Quality	Construction	Earthworks	Pollution from suspended material.
			Disturbance of contaminated soil and subsequent pollution of watercourse. There has been no previous development on site and no made ground is reported (Mouchel Parkman, 2006) and therefore no soil contamination is anticipated.
	Operation	Surface runoff	Pollution from spills or leaks of fuel and oil, heavy metals, high suspended solids, PAHs and oils.
	Decommissioning/ Post-operation	Materials Management	Pollution from spills or leaks of fuel, and oil.

The scale or magnitude of impacts upon surface water can be assessed using the criteria presented in Table ES 2.2, which have been developed by Golder Associates in the absence of recognised criteria for this topic.

Based on the methodology described above the scale of impact on surface water flows and quality of the local drainage network from the proposed Whitby Park & Ride scheme in the absence of mitigation is therefore considered to be **Moderate Negative**.

Increased surface runoff is likely from the construction of hardstanding across the site and there is also potential for contamination to arise and enter the local surface water course in the absence of mitigation. There are no surface water abstractions recorded within 1 km of the Site.

6.4.3.1 Significance of Impacts

Taking into account the sensitivity of the receptor and identified potential scale of impacts, the potential significance of impacts on surface water hydrology and quality, within the highway drains along the B1460 and the surface water course to the south of the A171, and the water courses into which these flow is predicted to be **Intermediate** to **Minor Negative,** in the absence of mitigation.

During construction of the Park & Ride scheme there is a risk of increased run-off from compacted soil areas and during operation increased run-off from hardstanding areas entering local watercourses and drains and altering flow regimes.

During construction and operation of the Park & Ride scheme there is a risk to the quality of surface water collecting on Site from increased quantities of suspended solids caused by excavation or compaction of soil. There is also a risk from spills or leaks of fuel or oil from plant machinery operating on site during the construction or decommissioning phases and from vehicles using the Park & Ride during operation. The discharge of potentially contaminated surface water drainage to surface water courses could impact water quality.

There are no watercourses crossing the site that would be interrupted or diverted. Therefore, riparian rights will not be impaired.

6.4.3.2 Proposed and Recommended Mitigation Measures

The Environment Agency in their letter dated 28 September 2006 and email dated 13 October 2006 have stated several requirements for the scheme drainage design in order to mitigate impacts on the water environment. The proposed and recommended mitigation measures have been developed taking into account these consultation responses, the proposed outline drainage design and relevant EA guidance. An appropriate surface water regulation system should be agreed with the Local Planning Authority before development commences.

In order to minimise potential impacts on the surface water courses, the following impact mitigation measures are required for the scheme:

- during the construction phase employment of techniques to minimise the compaction of soil, such as restricting access during wet conditions, using protective boarding and low ground pressure machinery;
- A suitable temporary drainage system will be designed to prevent contaminated or sediment laden run-off originating from construction to enter groundwater/surface water;
- The amount of exposed ground surface at any one time will be kept to a practical minimum and temporary soil stockpiles will be seeded or covered with use of silt fences or cut-off ditches to prevent/manage release of sediments as appropriate;
- during construction phase storage of fuel, hazardous materials, equipment and construction materials according the best practice guidance so as to minimise the risk of soil contamination or water pollution;

- investigation to ensure that the proposed receiving highway drains/culverts/water course are in a satisfactory condition to receive the additional surface water volumes being created by the Site via the proposed operational drainage scheme, without increasing flood risk to the site or to third parties;
- all site drainage should be routed into a temporary storage area comprising a retention pond prior to discharge from the site into the local drainage system or surface water receptors. The design should ensure that storm water resulting from a 1 in 100 year plus climate change (+20%) rainfall event and surcharging the drainage system can be stored on the site without risk to people or property and without overflowing into the water courses;
- surface water discharged should be flow regulated so as not to exacerbate flooding problems elsewhere in the catchment. Discharge from the site should be regulated to the greenfield run-off rate from a 1 in 1 year storm with sufficient storage in the drainage system to accommodate at least a 1 in 30 year storm. The Environment Agency has also specified that adequate flow controls should be placed on the balancing pond to achieve a run-off rate of 1.4 litres/sec/ha;
- a flood risk assessment (contained in Appendix ES6.2) has been undertaken to insure that the proposed development and drainage design is not considered to pose a flood risk to the Site or increase flood risk to third parties and the attenuation pond should be constructed in accordance with the minimum volume capacity specified.
- as required by the Environment Agency, prior to discharge to a water courses or surface water sewer (or soak away) all surface water drainage from parking areas and hard standings should be passed through an oil interceptor in order to reduce the risk of contamination to the surface water courses. The interceptor should be inspected and cleaned regularly;
- surface water quality monitoring should be undertaken in compliance with any required discharge consents;
- an emergency plan should be formulated and tested to ensure that procedures to prevent or mitigate impacts due to accidental releases are in place and operate effectively; and
- a risk assessment should be carried out for the development covering fire and spillage hazards for all substances handled.

In addition to these mitigation measures, the proposed development phases with industry best practice guidance which aim to provide advice on statutory responsibilities and good environmental practice, including those listed in Section 6.4.2.3.

6.4.3.3 Residual Impacts and Summary

With the mitigation measures above in place, the impact significance on surface water quality of the local surface water drainage network is considered to be **Minor Negative** or **Neutral.** The regulation and monitoring of the flow rates and quality of the discharge through appropriate design and construction of a balancing pond with flow regulation and interceptors will ensure that the impact on watercourses is acceptable.

6.5 References

Ordnance Survey Landranger Sheet 94 for Whitby and Esk Dale, 1:50 000.

Ordnance Survey Outdoor Leisure Sheet 24 (1:25 000).

British Geological Survey Sheets 35 and 44 for Whitby and Scalby, 1: 50 000.

Environment Agency Groundwater Vulnerability Sheet 9 for North East Yorkshire.

Soils Survey of England and Wales, Sheet 1 Northern England (1:250,000).

Mouchel Parkman (2006), Whitby 'Park & Ride' Geotechnical Preliminary Sources Study, June 2006.

Environment Agency Groundwater protection: policy and practice.

Environment Agency (2002) K7 Scoping the environmental impacts of vehicle parks and 'Park & Ride' schemes, May 2002.

Environment Agency (2002) A1 Scoping the environmental impacts of construction works, May 2002

Environment Agency (2002) A2 Scoping the environmental impacts of demolition and decommissioning works (2002).

National Soil Resources Institute Soilscapes website http://www3.landis.org.uk/soilscapes/

Environment Agency website www.environment-agency.gov.uk

MAGIC website www.magic.co.uk

7.0 ECOLOGY AND NATURE CONSERVATION

This Section provides an assessment of the likely effects of the proposed A171 Guisborough to Whitby Park & Ride development on the ecology and nature conservation status of the land contained within the site (refer to Appendix ES7.1 Figure 3) and its surroundings. It should be read in conjunction with technical Appendix ES7.1, which accompanies this Section and contains the relevant baseline ecology report.

7.1 Scope of Assessment

7.1.1 Method of Assessment

The assessment is based on the *Guidelines for Ecological Impact Assessment (EcIA) in the United Kingdom* (IEEM, 2006). The assessment involved the following key stages:

- Scoping and consultation;
- Identification of the likely zone of influence of the proposed development;
- Identification of ecological resources and features likely to be affected (baseline environment);
- Evaluation of ecological resources and features likely to be affected;
- Identification of the changes likely to affect valued ecological resources and features and an assessment of whether these changes are likely to give rise to a significant ecological effect (impact assessment);
- Refinement of the project to incorporate ecological mitigation and enhancement measures to avoid, reduce or compensate for any significant adverse impacts; and
- Assessment of the ecological impacts of the project, including any mitigation and enhancement measures and definition of the significance of any residual effects.

7.1.2 Scoping Opinion

Full details of the Scoping process are given in Section 2 of the Environmental Statement (ES). In accordance with the EcIA guidelines (IEEM, 2006), the main focus of the scoping opinion was to ensure that:

- There was interchange of ideas amongst the other members of the EcIA team (including the North York Moors National Park Authority and the Area Officers at Natural England and the Environment Agency);
- Regulatory bodies were consulted as well as key non-statutory organisations;
- All proposed activities that may result in significant ecological impacts were identified, and that all ecological features that could be impacted upon were identified;
- Spatial and temporal scopes for the assessment of impacts on ecological features were identified;
- Suitable survey methodologies were adopted as necessary, to inform an EcIA, in agreement with consultees;
- Assessment of recognised ecological features (likely to be impacted) was undertaken; and
- Opportunities for ecological enhancement or avoidance of impacts were sought.

The scoping opinion was originally carried out in November 2005 for the previous EIA (Golder, 2007). After consultation with Mark Hill, the case officer at North York Moors National Park Planning Authority, it was agreed that further consultation would only be necessary if notable differences between this and the previous EIA were predicted. As this is not the case the scoping responses presented in this document are from the 2005 consultations. Consulted organisations with regards ecology and nature conservation included: the Environment Agency (EA), North York Moors National Park Authority (NYMNPA), English Nature (EN) (now

Natural England), North Yorkshire County Council (NYCC), North Yorkshire Bat Group and the North and East Yorkshire Ecological Data Centre (NEYEDC).

Responses were received from all but the Environment Agency. The bat group and NEYEDC provided background data records relevant to the site. No comments were received in relation to ecology and nature conservation from NYMNPA, NYCC or EN.

7.2 Study Area and Sensitive Receptors

The geographic definitions used in this report are provided in Table ES7.1.

Table ES7.1: Geographic Definitions

Term	Definition
The site	This refers to all land within the development (red line) boundary for the proposed Park & Ride site (see Appendix ES7.1, Figure ES7.3).
Zone of influence	The use of the term 'zone of influence' refers to those areas/resources that may be affected by changes caused by activities associated with the proposed scheme (IEEM, 2006).
Desk study area	This is defined by the zone of influence and refers to the area within a 2 kilometres (km) radius of the site, used to obtain compiled records of statutory and non-statutory designated sites and species of nature conservation concern.
Survey area	The survey area includes all land within the red line boundary for the current application and land immediately adjacent (see Appendix ES7.1, Figure ES7.3). The survey area for badger extends a further 30 m from the red line boundary. This reflects the likely zone of influence for each biotic group, over which significant impacts may occur.

The following ecological surveys were undertaken in the survey area in order to identify potential sensitive receptors:

- Extended Phase 1 Habitat survey;
- Non-native invasive species survey;
- Badger *Meles meles* survey; and
- Great crested newt *Triturus cristatus* Habitat Suitability Index (HSI) Assessment.

7.3 Legislation and Policy Context

Relevant national planning policy guidelines, international commitments, legislation and planning policies relevant to the protection, conservation and enhancement of nature conservation interests associated with the development are outlined in Section 4 Planning Policy. Further explanation of the planning and legislative instruments that are relevant to the species at the site are given in Appendix ES7.1 *Ecology Appraisal.*

7.3.1 Statutory Sites

Sites of Special Scientific Interest (SSSIs) are the country's very best wildlife and geological sites designated by Natural England and they are protected under the Wildlife and Countryside Act 1981 (as amended).

Local Nature Reserves (LNRs) are statutory sites that are declared by the competent statutory authority under powers granted to them by the National Parks and Access to the Countryside Act 1949.

7.3.2 Non-Statutory Sites

A number of sites recognised for their nature conservation importance have been designated (and receive protection through the planning system) as non-statutory Sites of Importance for Nature Conservation (SINCs).

7.3.3 Protected Species

Under European and/or UK legislation, a number of species and their habitats, including (but not exclusively) great crested newt, otter, water vole, bat (all species), and badger are strictly protected from damage, disturbance and destruction etc. Certain species such as some reptiles and birds receive partial protection under UK legislation, e.g. protection from killing/injuring/taking only or protection at certain times of the year only. For full details of species protection refer to Appendix ES7.1 *Ecology Appraisal.*

7.3.4 Planning Policy

7.3.4.1 National Policy

In March 2012 the Government published a new *National Planning Policy Framework* (NPPF), which sets out national planning policies for England and how they should be applied by local planning authorities. The NPPF condenses over 1000 pages of national planning policy into a single 59 page document and replaces the existing suite of national Planning Policy Statements, including *Planning Policy Statement 9: Biodiversity and Geological Conservation* (PPS9, 2005). A central opinion of the NPPF is a clear *"presumption in favour of sustainable development"* both in plan-making and decision-taking, putting the need to balance mutually dependent economic, social and environmental goals at the heart of planning.

National policy on the protection of nature conservation interests and enhancing biodiversity through the planning system is primarily set out under Chapter 11 of the NPPF, 'Conserving and enhancing the natural environment' (page 25). The Government has summarised this policy as follows:

"The Framework underlines that the planning system should seek not just to protect, but, where possible, to enhance biodiversity – making sure we don't just have isolated pockets of wildlife, but rich and connected green spaces for all kinds of species to thrive. Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland." (DCLG, 2011)

7.3.4.2 Regional Planning Policy

Relevant policy in the Regional Spatial Strategy, North Yorkshire Moors Local Plan, Scarborough Local Plan and North York Moors Local Development Framework are discussed in Section 4 of the ES.

7.3.4.3 Biodiversity Action Plans

In response to the Convention on Biological Diversity signed in 1992, the UK Government launched the UK Biodiversity Action Plan (BAP) in 1994. The UK Biodiversity Action Plan describes the UK's biological resources and commits a detailed plan for the protection of these resources. The UK Biodiversity Partnership conducts reviews of Priority Habitats and species (a major review was completed in 2007). The UK priorities are used at country based and local geographic levels to assist determination of local priority species and habitats and conservation action.

The Scarborough BAP published in 2005 and the North York Moors National Park BAP published in 2008 are the relevant local BAP's to this development. These include a suite of habitat action plans and species action plans that are relevant at the county level. Further details are provided in Appendix ES7.1 *Ecology Appraisal.*

7.4 Existing Environment

7.4.1 Establishing the Baseline Environment

Establishment of the baseline environment has involved a combination of desk based review, consultation and site surveys, as summarised below. The full desk and field survey information is included within Appendix ES7.1 *Ecology Appraisal*.

All of the ecology field surveys were undertaken using recognised survey methods and during optimal seasons for the species and habitats concerned.

The precise area for each survey (desk study area and survey area) was determined according to the greatest distance by which a potential impact (whether direct or indirect) may occur and affect the chosen species/habitat at a level deemed to be significant (i.e. the zone of influence).

The following ecological surveys were undertaken in order to identify potential receptors within the desk study area and survey area (Table ES7.2).

Table ES7.2: Survey Methodologies and Survey/Study Areas

Survey	Survey Methodology	Date	Survey/Study Area
Desk Study	For the previous ES background data had been gathered from North and East Yorkshire Ecological Data Centre (NEYEDC), North Yorkshire bat group and North Riding Badger Group. In 2011 ecological data from North and East Yorkshire Ecological Data Centre was updated.	First undertaken in 2005 and updated in October 2011	Up to 2 km from the site for statutory and non-statutory sites and species of nature conservation concern.
Extended Phase 1 Habitat	Extended Phase 1 Habitat Survey methodology (JNCC, 2010).	September 2011	The survey area.
Non-native Invasive Species Survey	All areas of the survey area were searched for presence of non-native plant species as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).	September 2011	The survey area.
Badger	Searched for evidence of badger activity including setts, latrines, paw prints, snuffle holes (created when foraging), track-ways and hairs (caught on fencing). Harris *et al.* (1989).	September 2011	The survey area.
Great Crested Newt HSI Assessment	HSI methodology developed by Oldham (2000) and modified by the Amphibian and Reptile groups (2010).	September 2011	The survey area.

7.4.2 Baseline Environment – Summary of Results

Full results of the ecology baseline surveys are provided in Appendix ES7.1 *Ecological Appraisal*.

7.4.3 Regional Context

The site lies within the North York Moors National Park and is within the North Yorkshire Moors and Cleaveland Hills National Character Area. This area is described by Natural England (2012) as an upland plateau landscape dissected by a series of dales with extensive areas of heather moorland and coniferous plantations with remnant areas of predominantly ancient semi-natural woodland occurring mainly on the valley side slopes, on escarpments and fringing hills.

The valley landscapes are characterised by predominantly pastoral farming with arable to south and east. The area is sparsely settled with the population concentrated in the dales and around the fringes.

7.4.4 Sites of Nature Conservation Interest

The site lies within the North York Moors National Park. No other statutory sites of nature conservation interest exist within the desk study area.

Six non-statutory sites of nature conservation interest were found within the desk study area (see Appendix ES7.1, Figure ES7.2):

- **1 - The Bats SINC** (1.5 km east/southeast);

- **2 - Turnerdale Slack SINC** (1 km southeast);
- **3 - River Esk SINC** (1.5 km southeast);
- **4 - Upgang Beck to Sandsend Cliff SINC** (1.75 km north);
- **5 - Upgang Beck SINC** (1.25 km north/northeast); and
- **6 - Raithwaite Gill/Dunsley Beck SINC** (1.5 km north/northwest).

7.4.5 Habitats and Flora

The desk study did not find any records of notable plant species within the 2 km search area.

The Extended Phase 1 Habitat survey recorded habitats within the site boundary as shown in Appendix ES7.1 Figure ES7.3. Mostly these are considered to be of low ecological value with the majority of the survey area being an arable field with no noteworthy flora.

The arable field margin and the roadside verge of the A171 and B1460 adjacent to the site supported poor semi-improved grassland. No noteworthy species were recorded and these areas are considered to be of low ecological value.

Species-poor hedgerows consisting of mainly hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa* were present around much of the site boundary. The hedgerow along the northern site boundary and Barker's Lane contained a greater diversity of plant species but was not judged to be species-rich and would not qualify as 'important' under the Hedgerow Regulations 1997 for wildlife and landscape reasons (although it does for historical reasons). Hedgerows although species poor could support foraging bats, birds and invertebrates and therefore have some nature conservation value.

No non-native invasive species were found within the survey area.

7.4.5.1 Badger

No records of badger were found in the desk study area. No confirmed evidence of recent badger activity was found in the survey area, although a number of pathways in the hedgerows along Barker's Lane and the western site boundary could potentially have been created by badger. A disused outlier sett was recorded in the hedge bank beside Barker's Lane.

7.4.5.2 Great Crested Newt

There are no water bodies on the site and no records of great crested newt within the locality. A pond is present within 100 m of the site boundary (refer to Appendix ES7.1 Figure ES7.3) which was assessed for its potential to support great crested newt. This pond was classified as having an average suitability for great crested newts.

7.5 Evaluation Criteria and Ecological Assessment

In accordance with IEEM guidance (2006), the value of habitats and species has been measured against published selection criteria where available. Recognised site selection criteria are applied for the designation of sites of international importance, such as Special Areas of Conservation (SACs) (McLeod *et al.*, 2005) and nationally important sites such as SSSIs (Nature Conservancy Council, 1989). Other selection criteria may be present at a regional or local level, most often prepared by the local authority or Wildlife Trusts. Where such guidance exists it forms a clearly defined starting point for the evaluation of sites that fail to meet the criteria set out for national sites. However, in the absence of such selection criteria guidance, it is possible to place ecological importance on recognised site features, based upon the criteria defined in Ratcliffe (1977), namely: naturalness, size, rarity and diversity. Application of these criteria follows the principles described by the Nature Conservancy Council (1989) that includes the attributes of "non-recreatability" as a general integrating measure of nature conservation value.

For the evaluation of habitats, reference has also been made to UK Habitat Action Plans (HAPs) within the UK BAP, the North York Moors National Park BAP and the Scarborough BAP. It is noted by the IEEM guidance (IEEM, 2006) that the recognition of a habitat subject to a HAP reflects the fact that the habitat concerned is in a sub-optimal state (typically threatened) and hence that conservation action is required. The HAP does not necessarily imply any specific level of value to the habitat type concerned. In congruence with the above, reference is also made to UK Species Action Plans (SAPs) although, as for HAPs, the fact that a species is subject to a SAP implies that the population is in a sub-optimal state (typically threatened) and does not necessarily imply any specific level of value to the species concerned.

As stated by the IEEM (2006), '*the value or potential value of a feature should be determined within a defined geographical context*'. Accordingly, each feature has been assessed based on the scale described in Table ES7.3.

Table ES7.3: Criteria for the Determination of Ecological Value

Level of Value	Examples
International	■ An internationally designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site, Biogenetic Reserve) or an area which the country agency has determined meets the published selection criteria for such designation, irrespective of whether or not it has yet been notified. ■ A viable area of habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat, essential to maintain the viability of a larger whole. ■ European Protected Species (and their habitats) listed on Annex 1 of the EC Birds Directive, Annex IVa and IVb of the EC Habitats Directive listed on Schedules 2 and 4 of the Conservation of Habitats and Species Regulations 2010; ■ Any regularly occurring population of an internationally important species, which is threatened or rare in the UK i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10 km squares in the UK (Categories 1 and 2 in the UK BAP) or of uncertain conservation status or of global conservation concern in the UK BAP. ■ A regularly occurring, nationally significant population/number of any internationally important species.
National	■ A nationally designated site (SSSI, NNR) or a discrete area, which the country conservation agency has determined meets the published selection criteria for national designation (e.g. SSSI selection guidelines) irrespective of whether or not it has yet been notified. ■ A viable area of a priority habitat identified in the UK BAP, or of smaller areas of such habitat, which are essential to maintain the viability of a larger whole. ■ Semi-natural Ancient Woodland greater than 2 ha. ■ Any regularly occurring population of a nationally important species that is threatened or rare in the region or county (see local BAP). ■ A regularly occurring, regionally or county significant population/number of any nationally important species. ■ A feature identified as of critical importance in the UK BAP.
Regional	■ Viable areas of key habitat identified in the North York Moors National Park BAP or smaller areas of such habitat, which are essential to maintain the viability of a larger

Level of Value	Examples
	whole. ■ Viable areas of key habitat identified as being of Regional value in the appropriate National Character Area. ■ Any regularly occurring, regionally significant population of a species listed as being nationally scarce which occurs in 16 - 100 10 km squares in the UK or in the City of York Local BAP or relevant National Character Area on account of its regional rarity or localisation. ■ Any regularly occurring, regionally significant population of a species which is listed in a regional "red data book" or BAP on account of its regional rarity or localisation. ■ A regularly occurring, locally significant number of a regionally important species. ■ Regional sites and other sites that the designating authority has determined meet the published ecological selection criteria for designation. ■ Sites which exceed local level designations but which fall short of SSSI selection guidelines, where these occur.
County	■ Semi-natural ancient woodland greater than 0.25 ha. ■ County sites and other sites that the designating authority has determined meet the published ecological selection criteria for designation, including LNRs selected on County ecological criteria (County sites will often have been identified in local plans). ■ A viable area of habitat identified in the County BAP. ■ Any regularly occurring, locally significant population of a species which is listed in a County "red data book" or BAP on account of its regional rarity or localisation. ■ A regularly occurring, locally significant number of a County important species.
District	■ Semi-natural ancient woodland smaller than 0.25 ha. A population of a species that is listed in a sub-regional BAP. ■ Areas of habitat identified in a sub-County (District) BAP or in the relevant Natural Area profile. ■ District sites that the designating authority has determined meet the published ecological selection criteria for designation, including LNRs selected on District ecological criteria (District sites, where they exist, will often have been identified in local plans). ■ Sites/features that are scarce within the District or which appreciably enrich the District/habitat resource. ■ A diverse and/or ecologically valuable hedgerow network. ■ A population of a species that is listed in a District BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation. ■ A regularly occurring, locally significant number of a District important species during

Level of Value	Examples
	a critical phase of its life cycle.
Local	■ Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish or neighbourhood, e.g. species-rich hedgerows. ■ LNRs selected on Parish ecological criteria.
Within zone of influence	■ Very low importance and rarity. ■ Ecological feature of value within the immediate zone of influence only i.e. within 100 m from red line boundary. Examples can include areas of amenity grassland, rye-grass leys or arable fields.

NB. Where species or habitats occur in more than one category above, the highest value is applicable.

SAC = Special Area of Conservation

SPA = Special Protection Area

cSAC = candidate Special Area of Conservation

pSPA = possible Special Protection Area

pSAC = possible Special Area of Conservation

SSSI = Site of Special Scientific Interest

LNR = Local Nature reserve

NNR = National Nature Reserve

Certain species may also receive statutory protection that is not necessarily relative to their ecological value. Nonetheless, it is important to include these at this stage due to the responsibility of the developer to work within the law where such species are concerned. Examples include certain common nesting birds (the nests of which are subject to legal protection) and in many parts of the UK, badgers, which are subject to protection primarily on animal welfare grounds. Non-native invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended); also become considerations, which are governed by strict controls regarding their spread.

In line with the above, once the baseline of the Site has been determined, it is possible to examine the most important elements (typically habitats, communities and populations of a species) and consider these as ecological features. Identified features must '*be of sufficient value that an impact upon them would be considered significant* (IEEM, 2006)'. It is these features that will become the basis of subsequent assessment.

No valued ecological features which merit further assessment are present within the survey area. Accordingly, an impact assessment has not been carried out.

The ecological features specified in Table ES7.4 have been excluded from further consideration within the ecological assessment. This is because there is either no likelihood of a significant ecological effect upon a feature, either with or without design mitigation; or the feature is considered to be of insignificant ecological value. The rationale is provided for each excluded feature to demonstrate the consideration and reason for the decision.

Table ES7.4: Assessment of Ecological Value and a Rationale for Exclusion from the Assessment Process

Ecological Feature	Inclusion in BAP; Legislation and Protection	Level of Value	Rationale
Statutory designated sites			
North York Moors National Park	North York Moors National Park BAP	National	Not relevant – The objective of the North York Moors National Park is *'to conserve and enhance the natural beauty, wildlife and cultural heritage of the National Parks'* (NYMNPA 2008). In order to do this a number of individual action plans have been prepared for priority species and habitats as listed in the LBAP. The National Park has an important mosaic of habitats including heathland, woodland, parkland, flower rich calcareous grasslands, acid grasslands and areas of open water, marshes and fens. The development of arable land with poor semi-improved grassland margins of low ecological value will not have an adverse impact on any ecologically sensitive habitats within the national park.
Non-statutory sites			
The Bats	SINC	District	Not relevant – no effect anticipated upon this site, which is 1.5 km from the development site.
Turnerdale Slack	SINC	District	Not relevant – no effect anticipated upon this site which is 1 km from the development site.
River Esk	SINC	District	Not relevant – no effect anticipated upon this site which is 1.5 km from the development site.
Upgang Beck to Sandsend Cliff	SINC	District	Not relevant – no effect anticipated upon this site which is 1.75 km from the development site.
Upgang beck	SINC	District	Not relevant – no effect anticipated upon this site which is 1.25 km from the development site.
Raithwaite Gill/Dunsley Beck	SINC	District	Not relevant – no effect anticipated upon this site which is 1.5 km from the development site.
Habitats and flora			
Arable	None	Within the zone of influence	Not relevant – although this habitat will be lost it holds negligible ecological value and therefore need not be considered further.

Ecological Feature	Inclusion in BAP; Legislation and Protection	Level of Value	Rationale
Poor semi-improved grassland	None	Within the zone of influence	Not relevant –.although this habitat will be lost it holds low ecological value and therefore need not be considered further.
Species-poor hedgerows	UK BAP habitat	Local	Not relevant – all hedgerow will be retained within the development, therefore this need not be considered further.
Fauna			
Bats	Protected under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010. UK BAP, Scarborough BAP and North York Moors National Park BAP.	N/A	Not relevant – no bat roosts have been confirmed within the survey area and the site offers limited foraging opportunities. The lighting columns originally proposed in the previous ES (Golder 2007) have now been removed, therefore no impact upon foraging/commuting bats is anticipated
Badger	Protection of Badgers Act 1992 (as amended).	N/A	Not relevant – surveys indicate that this species is not currently residing within the survey area and the site offers limited foraging opportunities.
Birds	WCA 1981 (Sch.5), Scarborough BAP and North York Moors National Park BAP	Local	Not relevant– only small areas of habitat suitable for nesting/foraging birds is present within the site. It is likely that birds could be displaced during construction but there are plenty of suitable habitats within the locality.
Reptiles	WCA 1981 (Sch.5) and Scarborough BAP	N/A	Not relevant– the areas of the site suitable for reptile are small, isolated and subject to regular disturbance by farming activities and traffic. It is therefore unlikely that reptiles are present on site.
Great Crested Newt	WCA 1981 (Sch.5.), UK BAP, Scarborough BAP, North York Moors National Park BAP.	N/A	Not relevant– there are no wetland habitats on site and only limited terrestrial habitat. There is one pond of average great crested newt suitability within 100 m of the site boundary; this pond will not be impacted by the development and is separated from the site by a major barrier to great crested newt dispersal (a main road). Due to the lack of great crested newt records in the area, the poor connectivity of the site to the wider landscape and the lack of suitable habitat within the site it is unlikely the development will have an adverse impact on great crested newts.

7.6 Mitigation, Compensation and Enhancements

7.6.1 Design Mitigation

This section describes the mitigation measures that were incorporated at the design stage. Although no valued ecological features were identified during the ecological assessment, the following measures are recommended to maintain the integrity of existing habitats where possible, and avoid harm to protected species during the proposed works.

The layout of the proposed Park & Ride has been purposely designed to avoid impacts on sensitive ecological habitat wherever possible. This includes avoiding any hedgerow loss particularly the more species diverse hedgerow along Barker's Lane in order to allow access to and from the site.

Although badgers were not confirmed on site, an inactive outlier badger sett is located within the hedge bank along Barker's Lane. Works have been designed to minimise impacts in this area. A pre-construction badger survey will be carried out in advance of the works to confirm the continued disuse of the sett and to identify any new setts that may have been created in the vicinity of the site. Should any active setts be found it may be necessary to set up exclusion zones: 30 m for heavy machinery (generally tracked vehicles); 20 m for lighter machinery (generally wheeled vehicles) and 10 m for light work (hand digging or scrub clearance). Any works that are unavoidable within the exclusion zone(s) will need to be carried out under a mitigation licence granted by Natural England and may involve the closure of setts to avoid harm to badgers.

During construction work the site will be maintained in a 'badger-safe' manner. This will involve insuring any trenches/excavations on site have means for a badger to escape if necessary. Badgers are inquisitive, and so vulnerable to accidental death in un-covered pits and holes; may choke on litter; or may become entangled in wire and other construction materials.

Construction work will be planned with due consideration of seasonal constraints affecting ecological interests and will be timed to minimise disturbance during critical periods when they may be more susceptible. All vegetation removal will occur outside the bird nesting season (i.e. avoiding March-August inclusive), where possible. Where this is not possible a suitably qualified ecologist will check for the presence of nesting birds immediately prior to vegetation removal. If nesting birds are found, a 5 m exclusion buffer should be set up around the nest and work within this buffer must be put on hold until the young have fledged. Timing considerations will be incorporated into Construction Method Statements prior to works commencing.

7.6.2 Compensation

There will be a loss of poor semi-improved grassland of low ecological value. As this habitat is reasonably common in the locality and easily re-creatable the loss of this habitat is not significant. However, to compensate for the loss it is proposed to plant a new wildflower grassland within the site (refer to Figure ES 5.1)

7.6.3 Enhancements

The proposals include the construction of a large balancing pond within the site (refer to Figure ES 5.1) to deal with any additional run-off associated with the development (refer to Section ES 6 Hydrological and Hydrogeological Assessment). The proposed planting of native marginal and emergent vegetation is likely to have a positive impact on local amphibian and invertebrate populations. An increase in invertebrates may in turn attract foraging bats and birds to the site.

The hedgerows bordering the site will be enhanced by the in-filling of gaps along the southern boundary hedgerows and the planting of native species rich hedgerow (refer to Figure ES 5.1). Additionally a 20 m wide woodland strip will be created along the northern boundary, which will offer greater opportunities to small mammals (including bats), birds and invertebrates.

7.7 Conclusions

The assessment approach has followed IEEM (2006) and taken account of national planning policy, Structure and Local Plan policies in respect of nature conservation and protected species legislation in identifying appropriate avoidance, mitigation and compensation measures to take.

No statutory or non-statutory nature conservation sites will be significantly affected by the proposed development.

The site consists primarily of arable land bound by mostly species-poor hedgerows. Due to these habitats being reasonably common in the locality and their relatively low ecological value, their loss is not significant. The planting of a new native species-rich hedgerow, a woodland belt, a wildflower meadow and the construction of a new balancing pond on the site will increase the biodiversity value of the site and local area, and as such it is concluded that overall, the scheme proposals would have a **Minor Positive** effect upon Ecology and Nature Conservation.

7.8 References

Amphibian and Reptile Groups of the United Kingdom (2010) Great Crested Newt Habitat Suitability Index. ARG UK Advice Note 5.

Department for Communities and Local Government (2011) *Media summary - Draft National Planning Policy Framework*. London:

Golder Associates (UK) Ltd (2007) A171 Guisborough to Whitby Park & Ride Facility North Yorkshire: Environmental Statement.

Harris, S., Cresswell, P. and Jefferies, D. (1989) *Surveying for Badgers*. Mammal Society Occasional Publication No. 9. The Mammal Society, Southampton.

Institute of Ecology and Environmental Management (2006) *Guidelines for Ecological Impact Assessment in the United Kingdom.* IEEM, Winchester.

Joint Nature Conservation Committee (2010) *Handbook for Phase 1 Habitat Survey - A Technique for Environmental Audit*. Revised reprint. JNCC, Peterborough.

McLeod, C.R., Yeo, M., Brown, A.E., Burn, A.J., Hopkins, J.J., and Way, S.F. (eds.) (2005) *The EC Habitats Directive: Selection of Special Areas of Conservation in the UK, 2nd Edn*. Updated 2009. JNCC, Peterborough.

Natural England (2012) National Character Area 25: North Yorkshire Moors and Cleveland Hills [online] available at http://www.naturalengland.org.uk/publications/nca/north_yorkshire_moors_and_cleveland_hills.aspx [accessed July 2012]

Nature Conservancy Council (1989). *Guidelines for the Selection of Biological SSSIs*. Nature Conservancy Council, Peterborough.

North York Moors National Park Authority (2008) *North York Moors National Park Local Biodiversity Action Plan* [online]. Available from: http://www.northyorkmoors.org.uk/biodiversity-action-plan/ [Accessed July 2012]

Oldham,R.S., Keeble, J., Swan, M.J.S and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (Triturus cristatus). *Herpetological Journal*, 10, pp. 143-155.

Ratcliffe, D. A. (ed.) (1977) *A Nature Conservation Review*. Cambridge University Press, Cambridge.

Scarborough Biodiversity Steering Group and Scarborough Borough Council (2005) *Scarborough Biodiversity Action Plan* [online]. Available from: http://www.scarborough.gov.uk/default.aspx?page=7910 [Accessed July 2012].

8.0 CULTURAL HERITAGE

8.1 Introduction

This section provides an assessment of the known and potential impacts upon the historic environment which could result from the proposed development. The assessment of impacts follows the 6 Step procedure outlined in Section 2 of this ES, and specifically follows the Highways Agency's Design Manual for Roads and Bridges (DMRB) methodology for assessing the impact of road schemes upon the historic environment (DfT 2007). The assessment is undertaken through establishing the existing receptors and sensitivity at today's 'baseline' and then assessing the potential magnitude of impacts and whether any cumulative impacts are likely to occur. The significance of effects is then assessed. The need for mitigation is then considered to reduce the significance of adverse effects and where mitigation measures are committed to by NYCC, an assessment of residual impacts is made. The latter can be used by the Planning Service as the basis for considering the potential significant environmental impacts due to the development.

Details are provided in Section 3 on the purpose and physical characteristics of the project. These details have been used to inform the assessment presented in this Section.

8.2 Background

As discussed in Section 1 of this document, the scheme has previously undergone a phase of environmental assessment and was approved by the North York Moors National Park (NYMNPA) Planning Authority in February 2009. However, this planning approval has now lapsed and North Yorkshire County Council (NYCC) have requested that the previous assessment be updated, taking into consideration any changes in the baseline conditions, assessment methodology or legislation, in order that the planning application can be re-submitted.

The Scoping Study for the previous ES (Golder Associates 2007) comprised a discussion of the baseline cultural heritage conditions, which were obtained from readily available sources (the NMR and the former Sites and Monument Records of North Yorkshire and the NYMNPA), and concluded that a more detailed desk based assessment was not necessary, and that a geophysical survey should be undertaken once planning permission was obtained in order to further evaluate the site. This approach was approved by the Development Control Manager at NYMNPA in August 2006.

However, due to the perceived risk that significant archaeological remains might be encountered, it was decided that the geophysical survey should be undertaken prior to determination, and the result incorporated into the ES. This survey was undertaken in 2007 (see Appendix ES8.5), and the results incorporated with the Cultural Heritage section of the Scoping Report to form the Cultural Heritage section of the ES (Golder Associates 2009). A further addition was a 'trod' (Site 21) which had been reported as crossing the proposed development site, but which had not been previously identified during the Scoping Study.

A re-appraisal of the earlier ES Section has indicated that the assessment was not carried out to the standards of current best practice as enshrined in DMRB, and consequently was lacking in sufficient detail. However, consultation with the Senior Conservation Archaeologist at NYMNPA confirmed that he was in broad agreement with the conclusions of the previous ES, although he was of the view that any adverse impacts to the trod were of greater significance than had been previously concluded, as recent work (e.g. Evans 2008) had highlighted that these features were becoming increasingly scarce and were considered to be of at least regional importance.

Consequently, it was concluded that a new assessment should be completed to accompany the re-submission of the planning application, in line with the updated assessment methodology and incorporating any changes in legislation. This updated assessment also includes a more detailed appraisal of the impacts to the trod, as this had only come to light during the final stages of the previous EIA and the site had not been re-visited to confirm its status, location, and extent. The baseline conditions have been fully updated through consultation of the National Monuments Record (NMR) and Historical Environment Records (HERs) as well as a full historic map regression (reproduced in Appendix ES8.1), and a site visit.

The site visit was undertaken on 16 July 2012, however the site itself was under cultivation at this time and this precluded a full site walkover. It had previously been reported that the trod skirted the southern boundary to the site, along the grass verge to the south of the drystone wall. This feature could not be located; the verge itself had recently been mowed and yet no stones of a limestone path were identified. Tall weeds were growing alongside the base of the wall and so this area was probed with the point of a ranging pole, but no stones were located. However, a stone footway was noted adjacent to the proposed development area (hereafter 'PDA'), running alongside the base of the drystone wall which forms the eastern boundary of the next field to the north. These stones were laid 'end-on' to each other, and flush against the base of the wall, and did not have the appearance of the classic trods or pannier ways which were designed as packhorse routes across open moorland, and which were laid in a perpendicular fashion.

Whilst it is possible that the trod could have been removed since it was reported in 2006, it is considered likely that the earlier description was referring to the feature to the north described above, in the mistaken belief that it was of some antiquity and moreover continued in a southerly direction along the boundary of the PDA. It is considered likely that this feature was constructed as a footway at the same time as the adjacent drystone wall which it abuts, and probably dates to no earlier than the 20th century. The lack of any reference to this supposed trod in any of the major gazetteers (e.g. Hayes 1988; Evans 2008), the HER, the NMR, or on any historic mapping, suggests that the previous identification of a trod was mistaken, and consequently any supposed impacts to this feature can now be discounted and are not addressed further in this assessment.

8.3 Legislative and Policy Framework

This section will discuss the legislative and regulatory frameworks within which cultural heritage assets are managed. Cultural heritage assets are protected by international conventions, European law, national statutory and non-statutory designations, planning guidance issued by the Government, and planning policies adopted by local authorities.

8.3.1 International Conventions

At an international level, the UK government is committed to protecting and enhancing its cultural heritage as far as practicable as a result of its ratification of a number of Conventions. These include the European Cultural Convention (1954), the UNESCO Convention Concerning the World Cultural Heritage (1972), the Convention on the Protection of the Architectural Heritage of Europe (1985), the European Convention on the Protection of Archaeological Heritage (1992), and the European Landscape Convention (2000).

8.3.2 Statutory Designations

Some cultural heritage assets receive statutory protection within the UK, such as Scheduled Monuments and Archaeological Areas, which are protected in England, Scotland and Wales by the Ancient Monuments and Archaeological Areas Act 1979. With regard to built heritage, Listed Buildings of Special Architectural Interest and Conservation Areas are covered by the Planning (Listed Buildings and Conservation Areas) Act 1979.

8.3.3 Non-Statutory Designations

Some cultural heritage assets have non-statutory designations that recognise their national importance, but do not legally enshrine their protection. Such sites include UNESCO designated World Heritage Sites and sites included on English Heritage's Register of Historic Parks and Gardens of Special Historic Interest and Register of Historic Battlefields. Local authorities may also designate areas as Conservation Areas as a result of their perceived historic value, which must be taken into account as a material consideration during the planning process. Local authorities will also hold lists of known cultural heritage assets – the Sites and Monuments Record (SMR) or Historic Environment Record (HER) – which will also contain undesignated sites, which will be used as a resource to inform the planning process.

8.3.4 National Planning Guidance and Law

The Department for Communities and Local Government's National Planning Policy Framework sets out the government's policy towards heritage assets and development in England and Wales (DCLG 2012). Policies

126 – 141 inclusive are concerned with 'Conserving and Enhancing the Historic Environment', recognising that heritage assets are an irreplaceable resource, and that they should be conserved in a manner appropriate to their significance.

8.3.5 Local Planning Guidance

The Local Development Framework is the name given to the system of Development Plans introduced by the Planning and Compulsory Purchase Act 2004. Local Development Frameworks will gradually replace Structure, Local, and Unitary Development Plans, which previously served as the main vehicles for ensuring that local authority conservation policies were co-ordinated and integrated with other planning policies affecting the historic environment. Chapter 54A of the Town and Country Planning Act 1990 provides that where, in making any determination under the Planning Acts, the determination must be made in accordance with the development plan unless material considerations indicate otherwise.

The NYMNPA adopted the Core Strategy and Development Policies incorporating the Inspector's changes on 13 November 2008, and this document now forms part of the Development Plan for the Park for the purposes of making decisions on planning applications. This document contains a number of policies and core strategies concerning the historic environment, as set out in below in Table ES8.1:

Table ES8.1: Local Planning Policy in Relation to Cultural Heritage

Policy	Title	Details
Core Policy G	Landscape Design and Historic Assets	The landscape, historic assets and cultural heritage of the North York Moors will be conserved and enhanced. High quality sustainable design will be sought which conserves or enhances the landscape setting, settlement layout and building characteristics of the landscape character areas identified in the North York Moors Landscape Character Assessment. Particular protection will be given to those elements which contribute to the character and setting of: 1) Conservation Areas 2) Listed Buildings 3) Historic Parks and Gardens 4) Scheduled Monuments and other sites of archaeological importance The re-use of buildings of architectural and historic importance which make a positive contribution to the landscape and character of the National Park will be encouraged.
Development Policy 3	Design	To maintain and enhance the distinctive character of the National Park, development will be permitted where: 1) The siting, orientation, layout and density preserves or enhances views into and out of the site, spaces about and between buildings and other features that contribute to the character and quality of the environment and will not result in the loss of an open space which contributes to the amenity, character and setting of a settlement. 2) The scale, height, massing, proportion, form, size, materials and design features of the proposal are compatible with surrounding buildings, and will not have an adverse effect upon the amenities of adjoining occupiers. 3) A high standard of design detailing is used whether traditional or contemporary, which reflects or complements that of the local vernacular. 4) Provision is made for adequate storage and waste management

Policy	Title	Details
		facilities. 5) Good quality sustainable design and construction techniques are incorporated in the development including measures to minimise energy use and where possible use energy from renewable sources. 6) A satisfactory landscaping scheme forms an integral part of the proposal. 7) The design takes account of the safety, security and access needs for all potential users of the development and provides car parking provision in line with the standards adopted by the Authority
Development Policy 4	Conservation Areas	Proposals for development within or immediately adjacent to a Conservation Area will only be permitted where they preserve or enhance the character and appearance or setting of the area and where: 1) Buildings and features, including open spaces, watercourses, trees, hedges, walls and railings that make a significant contribution to the character and appearance of the Conservation Area are retained and respected. 2) The scale, proportions, design detailing and materials of the development respect the existing architectural and historic context with reference to: a) the form, scale, proportions, design detailing and materials of traditional buildings; b) historic plot boundaries and layouts; c) traditional street patterns; d) the relationship between buildings and spaces; and e) views into and out of the area. 3) In cases where the demolition of a feature or building that makes a positive contribution to the character and appearance of the Conservation Area is proposed, there is an overriding justification for the proposal.
Development Policy 5	Listed Buildings	Proposals for the alteration, extension or change of use of a Listed Building or the construction of any structure within its curtilage will only be permitted where they will not have an unacceptable impact on the special historic or architectural interest of the building. Any development which would have an unacceptable impact on the setting of a Listed Building will not be permitted. Proposals for the demolition of a Listed Building will not be permitted unless there is overriding justification to warrant this.
Development Policy 6	Historic Parks and Gardens	Development will only be permitted where there is no unacceptable effect on the character, appearance, amenity, setting, views out of or enjoyment of: 1) Arncliffe Hall; 2) Duncombe Park; 3) Mulgrave Castle; and

Policy	Title	Details
		4) Rievaulx Terrace and Temples.
Development Policy 7	Archaeological Assets	Proposals for development that would have an unacceptable impact on the integrity or setting of a Scheduled Monument, or other sites or remains considered to be of national archaeological importance will not be permitted. In the case of sites or remains of regional or local importance, development proposals will only be permitted where the archaeological interest is capable of being preserved in situ. Where this is not justifiable or feasible, permission will only be granted where provision is made for appropriate preservation by record. In all cases, an appropriate assessment and evaluation will be required to be submitted as part of the planning application in areas of known or potential archaeological interest.
Development Policy 8	Conversion of Traditional Rural Buildings	Outside the settlements identified in the settlement hierarchy, the conversion of traditional unlisted rural buildings for an employment use, short term self-catering holiday accommodation, residential annexe to an adjacent existing dwelling or long-term/permanent residential letting units for local occupancy will be permitted where: 1) The building is of architectural and historic importance and makes a positive contribution to the landscape and character of the National Park. 2) The building is in a structurally sound condition, capable of conversion without substantial rebuilding, as demonstrated by a structural engineer's report. 3) The building is capable of conversion and of sufficient size to accommodate the proposed use without the need for significant alterations, extensions or other new buildings. 4) The proposed use is compatible in nature, scale and level of activity with the other buildings in the group and the character of the locality. 5) The proposal is of a high quality design which retains existing external features which contribute significantly to the character of the building including original openings and roofing materials; reflects the simple functional form and traditional character of the building and provides for essential services and other functional requirements without harm to the fabric of the building or its setting. 6) The proposed use does not lead to changes to the building's curtilage or the creation of new vehicular access or parking areas that would adversely affect its character and appearance or that of the wider landscape. 7) The building is located within an existing group of buildings that have a close physical and visual relationship to each other and, where holiday cottage use, annexes or local needs letting is involved, include an existing residential unit within the group. 8) In the case of long-term/permanent residential uses, the occupancy of the accommodation is restricted to a person satisfying the local needs criteria set out in Core Policy J and the tenure will be restricted to letting only and the unit will not be sold off separately from the main dwelling. 9) In the case of residential annexes, the building is within the immediate curtilage of the main dwelling and the occupancy of the accommodation is

Policy	Title	Details
		restricted to a family member and the unit will not be sold off separately from the main dwelling

For the wider Study Area beyond the National Park, the Scarborough Local Plan (1999) contains a number of policies relating to the historic environment (E22 – Development in Conservation Areas; E23 – Detailing in Conservation Areas; E24 – Demolition in Conservation Areas; E25 – The Change of Use and Alterations to Listed Buildings; E26 – Demolition of Listed Buildings; E28 - Archaeology; E29 - Historic Parks and Gardens, and; E31 – Advertisements on Listed Buildings) and in Conservation Areas. However, all of these policies expired on 27 September 2007, and consequently will not now be referred to in making decisions on planning applications.

8.4 Assessment Methodology

8.4.1 Study Area

The spatial scope of this assessment comprises all the land required for the development together with land located within 1 kilometre (km) of the PDA (see Figure ES8.1). Although some elements of the scheme will be located within the highways boundary adjacent to the main site, and as such will not require planning permission, this assessment will address any impacts that may occur within the whole scheme boundary, and not just the application boundary itself. The outline of the PDA is depicted in red on Figure ES8.1.

8.4.2 Information Sources

A desk–based assessment was carried out to identify the nature, location and status of any cultural heritage assets which are present within the vicinity of the PDA and which may be affected by the proposed development.

Sources of information consulted for this assessment included:

- The National Heritage List (NHL) for information regarding statutorily designated assets;
- The National Monuments Record (NMR) maintained by English Heritage, for information regarding non-designated assets;
- The North York Moors Historic Environment Record (NYMHER) for details of non-designated assets within the North York Moors National Park;
- The North Yorkshire Historic Environment Record (NYHER) for details of non-designated assets within North Yorkshire, and for Historic Landscape Characterisation (HLC) data;
- The Archaeology Data Service's online database, including their 'Defence of Britain' dataset;
- The North Yorkshire County Record Office at Northallerton for historic maps and plans of the Study Area;
- The Scarborough Borough Council website for information regarding local planning policy and Conservation Areas; and
- Reports of previous archaeological work undertaken in connection with the site.

8.4.3 Assessment of the Magnitude of Impact

The scale and magnitude of impacts upon cultural heritage assets can be assessed using the five tier impact grading system presented below in Tables ES8.2 – ES8.4. These guidelines have been adapted from advice provided by the Highways Agency in their DMRB (DfT 2007) for the assessment of cultural heritage assets in relation to road construction, but these are of equal application to other development schemes, and

have been adopted for this assessment as current best practice. It should be noted that the DMRB methodology has been adapted to reflect the recent changes in national planning policy (see Section 8.4.4 below).

Table ES8.2: Factors in the Assessment of the Magnitude of Impact for Archaeological Remains

Factors in the Assessment of the Magnitude of Impact for Archaeological Remains	
Major	■ Changes to most or all key archaeological elements, such that the resource is totally altered; and ■ Comprehensive changes to setting.
Moderate	■ Changes to many key archaeological elements, such that the resource is clearly modified; and ■ Considerable changes to setting.
Minor	■ Changes to key archaeological elements, such that the asset is slightly altered; and ■ Slight changes to setting.
Negligible	■ Very minor changes to elements or setting.
No Change	■ No change.

Table ES8.3: Factors in the Assessment of the Magnitude of Impact for Historic Buildings

Factors in the Assessment of the Magnitude of Impact for Historic Buildings	
Major	■ Changes to key historic building elements such that the resource is totally altered; and ■ Comprehensive changes to setting.
Moderate	■ Changes to many key historic building elements, such that the resource is significantly modified; and ■ Changes to the setting of an historic building, such that it is significantly modified.
Minor	■ Changes to key historic building elements, such that the asset is slightly different; and ■ Changes to the setting of an historic building, such that it is noticeably changed.
Negligible	■ Slight changes to historic building elements or setting that hardly affect it.
No Change	■ No change to fabric or setting.

Table ES8.4: Factors in the Assessment of the Magnitude of Impact for Historic Landscapes

Factors in the Assessment of the Magnitude of Impact for Historic Landscapes	
Major	■ Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character unit.
Moderate	■ Changes to many key historic landscape elements, parcels or components; visual change to many key aspects of the historic landscape; noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to historic landscape character.
Minor	■ Changes to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access resulting in limited changes to historic landscape character.
Negligible	■ Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes in noise levels or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character.
No Change	■ Very minor changes to key historic landscape elements, parcels or components; no visual or audible changes; no changes arising from amenity or community factors.

Impacts to archaeological receptors that are known or which are potentially present on-Site and off-Site could occur during both construction (including any of the development phases which require earthworks) and operational phases of the development. Such impacts require characterisation in order to evaluate their potential significance.

8.4.4 Assessing the Value of Cultural Heritage Assets

In order to assess the **Significance of the Effects** of the different **Magnitudes of Impact** resulting from the proposed development, the above factors have to be weighed against the ***Value*/*Sensitivity*** of each cultural heritage asset. Cultural heritage assets can include Archaeological Remains, Historic Buildings, and Historic Landscapes, and different criteria are offered as guidance for establishing a value for each of these assets, as tabulated in Tables ES8.5 – ES8.7 below. It should be noted that some of the factors in DMRB have been adapted here to reflect recent changes to national planning policy, specifically to recognise that 'assets of the highest significance' should include not only World Heritage Sites (as stated in DMRB), but also Scheduled Monuments, Protected Wreck Sites, Registered Battlefields, and Grade I and II* Listed Buildings and Registered Parks and Gardens.

Table ES8.5: Factors for Assessing the Value of Archaeological Assets

Factors for Assessing the Value of Archaeological Assets	
Very High	■ World Heritage Sites (including nominated sites); ■ Assets of acknowledged international importance; ■ Nationally designated assets (including proposed sites) such as Scheduled Monuments, Registered Battlefields and Protected Wreck Sites; and ■ Assets that can contribute significantly to acknowledged international research objectives.
High	■ Undesignated assets of national importance; and ■ Assets that can contribute significantly to acknowledged national research objectives.

Factors for Assessing the Value of Archaeological Assets	
Medium	■ Designated or undesignated assets that contribute to regional research objectives.
Low	■ Designated and undesignated assets of local importance; ■ Assets compromised by poor preservation and/or poor survival of contextual associations; and ■ Assets of limited value, but with potential to contribute to local research objectives.
Negligible	■ Assets with very little or no surviving archaeological interest.
Unknown	■ The importance of the asset cannot be ascertained.

Table ES8.6: Criteria for Establishing Value of Historic Buildings

Criteria for Establishing the Value of Historic Buildings	
Very High	■ Standing structures inscribed as of universal importance as World Heritage Sites; ■ Other buildings of recognised international importance. ■ Scheduled Monuments with standing remains; and ■ Grade I and Grade II* Listed Buildings;
High	■ Grade II Listed Buildings ■ Other listed buildings that can be shown to have exceptional qualities in their fabric or historical association; ■ Conservation Areas containing very important buildings; and ■ Undesignated structures of clear national importance.
Medium	■ Historic unlisted buildings that can be shown to have exceptional qualities in their fabric or historical associations; ■ Conservation Areas containing buildings that contribute significantly to its historic character; and ■ Historic Townscape or built-up areas with important historic integrity in their buildings, or built settings (e.g. including street furniture and other structures).
Low	■ 'Locally Listed' buildings; ■ Historic (unlisted) buildings of modest quality in their fabric or historical association; and ■ Historic Townscape or built up areas of limited historic integrity in their buildings, or built settings (*e.g.* including street furniture and other structures).
Negligible	■ Buildings of no architectural or historical note; buildings of an intrusive character.
Unknown	■ Buildings with some hidden (*i.e*. inaccessible) potential for historical significance.

Table ES8.7: Evaluating Historic Landscape Character Units

Evaluating Historic landscape Character Units	
Very High	■ World Heritage Sites inscribed for their historic landscape qualities; ■ Historic landscapes of international value, whether designated or not; ■ Extremely well preserved historic landscapes with exceptional coherence, time-depth, or other critical factor(s); and ■ Designated historic landscapes of outstanding interest (Grade I and II* Parks and Gardens).
High	■ Grade II Registered Parks and Gardens; ■ Undesignated historic landscapes of outstanding interest; ■ Undesignated landscapes of high quality and importance, and of demonstrable national value; and ■ Well preserved historic landscapes, exhibiting considerable coherence, time-depth, or other critical factors.
Medium	■ Designated special historic landscapes; ■ Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional value; and ■ Averagely well-preserved historic landscapes with reasonable coherence, time-depth, or other critical factor(s).
Low	■ Robust undesignated historic landscapes; ■ Historic landscapes with importance to local interest groups; and ■ Historic landscapes whose sensitivity is limited by poor preservation and/or poor survival of contextual associations.
Negligible	■ Landscapes with little or no significant historical interest.

8.4.5 Assessing the Significance of Effects

Using the **Magnitude of Impact** as ascertained from Tables ES8.2 – ES8.4, and the assessment of ***Value*** as indicated by Tables ES8.5 – ES8.7, Table ES8.8 below indicates how an assessment of the **Significance of Effects** of the development is reached.

Table ES8.8: Significance of Effects Matrix

VALUE/SENSITIVITY						
	Very High	Neutral	Slight	Moderate/ Large	Large or Very Large	Very Large
	High	Neutral	Slight	Moderate/ Slight	Moderate/ Large	Large/Very Large
	Medium	Neutral	Neutral/ Slight	Slight	Moderate	Moderate/ Large
	Low	Neutral	Neutral/ Slight	Neutral/ Slight	Slight	Slight/ Moderate
	Negligible	Neutral	Neutral	Neutral/ Slight	Neutral/ Slight	Slight
		No change	**Negligible**	**Minor**	**Moderate**	**Major**
		MAGNITUDE OF IMPACT (Adverse or Beneficial)				

8.5 Baseline Conditions

8.5.1 Designated Assets

8.5.1.1 Scheduled Monuments

English Heritage maintains a schedule of important historic sites and monuments that are protected under the Ancient Monuments and Archaeological Areas Act 1979. These are considered to be 'assets of the highest significance', and there is a presumption that 'substantial loss or harm' to such assets or their settings should be 'wholly exceptional' (NPPF Policy 132).

On Site

There are no Scheduled Monuments located within the PDA.

Off-Site

There are no Scheduled Monuments located within the Study Area; the nearest Scheduled Monument is Whitby Abbey (NHL no.1017941), c.2.67 km to the ENE of the PDA.

8.5.1.2 Listed Buildings

The Secretary of State for Culture, Media and Sport is responsible for compiling a statutory list of buildings of special architectural or historic interest and English Heritage provides advice and maintains this list. Grade I and II* Listed Buildings are considered to be 'assets of the highest significance', and there is a presumption that 'substantial loss or harm' to such assets or their settings should be 'wholly exceptional', whilst such damage to a Grade II Listed Building should be 'exceptional' (NPPF Policy 132).

On-Site

There are no Listed Buildings located within the PDA.

Off-Site

There are sixteen Listed Buildings within the Study Area (Table ES8.9):

Table ES8.9: Listed Buildings within the Study Area

LB ID	NHL no.	Description	Grade
LB1	1148878	Ye Olde Beehive Inn	II
LB2	1157287	Methodist Church	II
LB3	1148879	Manor Farmhouse	II
LB4	1180052	Greystone Farmhouse	II
LB5	1148874	Newholm Hall	II
LB6	1148253	Ewe Cote Cottage	II
LB7	1148255	Dovecote and Outbuildings to Ewe Cote Hall	II
LB8	1204669	Stables to Ewe Cote Farm	II
LB9	1204657	Garden Wall to Ewe Cote Cottage	II
LB10	1316408	Ewe Cote Hall Farmhouse	II
LB11	1148254	The Cottages	II
LB12	1148252	Ewe Cote Hall	II*
LB13	1204632	Garden walls to Ewe Cote Hall	II*
LB14	1148250	Smeaton Castle St. Hilda's Priory	II
LB15	1148251	Farm Buildings to Cross Butts	II
LB16	1204616	Cross Butts	II

8.5.1.3 Conservation Areas

Local authorities have the power to designate as a Conservation Area any area of 'special architectural or historic interest' that is seen as worth protecting or enhancing. Local authorities have extra powers in such areas as regards demolition, minor developments, and the protection of trees.

On-Site

There are no Conservation Areas located within the boundary of the PDA.

Off-Site

There are no Conservation Areas within the Study Area; the nearest is located at Ruswarp, c. 1.7 km to the southeast of the PDA.

8.5.1.4 Parks and Gardens of Special Historic Interest

English Heritage is enabled by Chapter 8C of the Historic Buildings and Ancient Monuments Act 1953 (inserted by Chapter 33 of, and Paragraph 10 of Chapter 4, to the National Heritage Act 1983) to compile the *Register of Parks and Gardens of Special Historic Interest in England.* Although the Register is non-statutory, Registration is a material consideration in planning terms (*Planning Policy Guidance Note 15, 2, 24* September 1994) and local authorities are required to take the historical importance of sites into consideration when considering planning applications.

Grade I and II* Parks and Gardens are considered to be 'assets of the highest significance', and there is a presumption that 'substantial loss or harm' to such assets or their settings should be 'wholly exceptional', whilst such damage to a Grade II Park or Garden should be 'exceptional' (NPPF Policy 132).

On-Site

There are no Registered Parks and Gardens located within the PDA.

Off-Site

There are no Registered Parks and Gardens within the Study Area, the nearest is Mulgrave Castle (NHL no.1001065), c.2.17 km to the northwest of the PDA.

8.5.1.5 Registered Battlefields

Since 1995, English Heritage has compiled the *Register of Historic Battlefields.* Local authorities are required to take the historic importance of these sites into consideration when considering planning applications and the inclusion of a battlefield on the Register will serve to highlight a site's potential.

Registered Battlefields are considered to be 'assets of the highest significance', and there is a presumption that 'substantial loss or harm' to such assets or their settings should be 'wholly exceptional' (NPPF Policy 132).

On-Site

There are no Registered Battlefields located within the PDA.

Off-Site

There are no Historic Battlefields located within 1 km of the PDA; the nearest is the Site of the Battle of Northallerton, 1138 (NHL no.1000027) which lies c.52 km to the west of the PDA.

8.5.1.6 World Heritage Sites

The Convention Concerning the World Cultural Heritage (1972), ratified by the UK Government, provides the United Nations Educational, Scientific and Cultural Organisation (UNESCO) with the power to inscribe sites of international importance as World Heritage Sites. Local authorities and stakeholders are encouraged to protect these sites through the production of Management Plans, which aim to manage the sites in a sustainable fashion.

World Heritage Sites are considered to be 'assets of the highest significance', and there is a presumption that 'substantial loss or harm' to such assets or their settings should be 'wholly exceptional' (NPPF Policy 132).

On-Site

There are no World Heritage Sites located within the PDA.

Off-Site

There are no World Heritage Sites located within 1 km of the PDA. The nearest World Heritage Site, Studley Royal Park including the ruins of Fountains Abbey (NHL no. 1000094), is located c.70 km to the southwest of the PDA.

8.6 Non-Designated Assets

8.6.1 Archaeological Remains

Within the 1 km Study Area, 39 non-designated Archaeological Remains were identified during the course of this assessment. The locations of these are indicated by yellow and red dots on Figure ES8.1, and further details can be found in the Gazetteer of Archaeological Remains in Appendix ES8.2.

On Site

Six Archaeological Remains were identified which are located partly or wholly within the PDA, and therefore have the potential to be directly impacted by the scheme (Table ES8.10):

Table ES8.10: On-Site Archaeological Remains

ID	Description
AR30	Furrows and former field boundary (geophysical anomalies)
AR31	Uncertain linear feature (geophysical anomalies)
AR32	Stone (site of)
AR33	Boundary stone (site of)
AR34	Guidepost (site of)
AR35	Guidepost (site of)

Off-Site

A further 33 Archaeological Remains were identified within the Study Area, but outside of the PDA (Table ES8.11):

Table ES8.11: Non-Designated Archaeological Remains within 1 km

ID	Description
AR1	Ridge and furrow earthworks
AR2	19th century sandstone quarry
AR3	Post medieval quarry and trackway
AR4	Post medieval quarry and trackway
AR5	Stone (site of)
AR6	Stone (site of)
AR7	Stone (site of)
AR8	Well (site of)
AR9	Well (site of)
AR10	Guidepost (site of)

ID	Description
AR11	Newholm village
AR12	Medieval or later pottery sherds (findspot)
AR13	20th century brickworks (site of)
AR14	Ridge and furrow
AR15	Stone (site of)
AR16	Guidepost (site of)
AR17	Guidepost (site of)
AR18	WWII military camp
AR19	Guidepost (site of)
AR20	Stone (site of)
AR21	Stone (site of)
AR22	Well Field (placename)
AR23	Aircraft crash site, Heinkel HE-111 at Bannial Flat Farm south-west of Whitby
AR24	Guidepost (site of)
AR25	Boundary Stones (site of)
AR26	Stone (site of)
AR27	Stone (site of)
AR28	Stone (site of)
AR29	Stone (site of)
AR36	Cropmarks of interrupted ditch system and linear feature of unknown date
AR37	Cropmarks of post-mdieval ditch and field system
AR38	Cropmark of ditched enclosure of unknown date
AR39	Ridge and furrow

8.6.2 Historic Buildings

Within the 1 km Study Area, ten non-designated Historic Buildings have been identified in the course of this assessment. Over half of these comprise boundary stones which are all located on the boundary which today divides the civil parishes of Whitby and Newholm cum Dunsley, and anciently the ecclesiastical parishes of Ruswarp and Newholm cum Dunsley. This also formed the boundary of the Parliamentary Borough of Whitby (following the great reform Act of 1832), and the boundary of the North York Moors National Park since its inception in 1952.

These non-designated elements of the built environment are depicted in light blue on Figure ES8.1, and further details can be found in the Gazetteer of Historic Buildings in Appendix ES8.3.

On-Site

There is one non-designated Historic Building within the PDA (Table ES8.12):

Table ES8.12: Non-Designated Historic Buildings within 1 km

ID	Description
HB6	Drystone wall

Off-Site

There are nine non-designated Historic Buildings within the wider Study Area, as listed in Table ES8.13 below:

Table ES8.13: Non-Designated Historic Buildings within 1 km

ID	Description
HB1	Boundary Stone
HB2	Boundary Stone
HB3	Boundary Stone
HB4	Boundary Stone
HB5	Boundary Stone
HB7	Milepost
HB8	Boundary stone
HB9	Boundary stone (with commemorative plaque)
HB10	Hawthorndale Farm, Aislaby

8.6.3 Historic Landscape

The Historic Landscape Characterisation (HLC) for North Yorkshire mapped 15 HLC units within the Study Area, comprising four Broad Types (Enclosed Land, Settlement, Communications and Industrial), which are further sub-divided into 8 HLC Types. The extents of these HLC units are illustrated on Plate 24 in Appendix ES8.1 and further details can be found in Appendix ES8.4.

On-Site

The PDA is situated largely within a single HLC unit, although the highway boundary is included within the adjacent unit relating to Cross Butts Farm (Table ES8.14):

Table ES8.14: On-Site HLC units

ID	Broad Type	HLC Type
HNY9859	Enclosed land	Piecemeal Enclosure
HNY23472	Settlement	Farm complex

Off-Site

A total of 17 HLC units are located within the Study Area, but either partially or wholly outside of the PDA (Table ES8.15):

Table ES8.15: HLC units within 1 km

ID	Broad Type	HLC Type
HNY10521	Enclosed land	Modern improved fields
HNY10768	Enclosed land	Modern improved fields
HNY10770	Woodland	Mixed plantation
HNY10772	Enclosed land	Piecemeal enclosure
HNY10773	Settlement	Linear village
HNY10774	Enclosed land	Crofts associated with settlement
HNY10775	Enclosed land	Large scale private enclosure
HNY10777	Enclosed land	Modern improved fields

ID	Broad Type	HLC Type
HNY23425	Settlement	Planned estate
HNY23469	Settlement	Elite residence
HNY23470	Enclosed land	Unknown planned enclosure
HNY23472	Settlement	Farm complex
HNY23480	Enclosed land	Modern improved fields
HNY23490	Settlement	Semi-detached housing
HNY9678	Enclosed land	Unknown planned enclosure
HNY9698	Enclosed land	Piecemeal enclosure
HNY9859	Enclosed land	Piecemeal Enclosure

8.7 Impact Assessment

8.7.1 Introduction

The proposed development will comprise the construction and operation of a Park & Ride facility, and will include the following elements of built development:

- a new roundabout at the A171/B1460 junction;
- 450 parking spaces and associated access routes;
- a reinforced grass overspill car parking area;
- a single storey bus shelter;
- an open air waiting area;
- a bus turning area;
- a balancing pond;
- internal tree and shrub planting; and
- the re-location of the extant stone walls along the southern boundary to the site.

8.7.2 Impacts during Construction

Potential impacts during the construction phase include:

- removal or disturbance of cultural heritage assets and impacts upon settings during site clearance (*e.g.* removal of vegetation, fencing, traffic movement, topsoil stripping);
- damage to archaeological features due to rutting from construction traffic movement;
- compaction or removal of cultural heritage assets during the construction of the facility; and
- other groundworks associated with the construction of the new facility, such as foundation and service trenches, which have the potential to damage or destroy below ground features or deposits of cultural heritage value.

8.7.2.1 Archaeological Remains

Potential impacts to six Archaeological Remains have been identified during the construction phase of the development:

AR30 – Ridge and furrow and former field boundary (geophysical anomalies)

This area of ridge and furrow and former field boundary are thought to have formed following the piecemeal enclosure of Newholm parish, probably during the 18th century or earlier. These are likely to be part of a wider area of similar remains, as has been identified at the northern part of the Study Area from air photographs (see AR1a-n). It is considered that these remains are of ***Low*** value, using the criteria set out in Table ES8.5, and that there would be **Major Adverse** impacts as a result of the scheme using the criteria set out in Table ES8.2, resulting in **Slight** or **Moderate Adverse** effects using the matrix in Table 8.8. However, considering that these remains in this field are one part of the wider distribution, it is concluded that their loss would result in at worst, **Slight Adverse** effects in the absence of mitigation.

AR31 - Uncertain linear feature (geophysical anomalies)

The nature of this feature which was identified by the geophysical survey undertaken in 2006 (see Appendix ES8.5), is unclear. It could be of natural origin, caused by a geological feature, or alternatively it could be a boundary of unknown date, perhaps related to those further to the south (AR36 and AR38), which are possibly of prehistoric origin.

The value of this feature is therefore ***Unknown***, but could range from Negligible to Medium using the criteria set out in Table ES8.5. This feature would be impacted during the construction of the bus turning area, bus shelter and associated roads and hardstanding, and these impacts would be likely to be of **Major Adverse** magnitude. Using the matrix in Table ES8.8, the effects could therefore range from **Neutral** to **Large Adverse** in the absence of mitigation.

AR32 – Stone (site of)

This feature was depicted on the north verge of the A171 on OS mapping from 1894 to 1958, and was not identified during the site visit in July 2012. Whilst it is possible that a stone hole survives, or the stone has become buried, it is considered that this feature would be of ***Negligible*** sensitivity using the criteria in Table ES8.5. However, this part of the verge would not be impacted by the scheme proposals, and therefore there would be **No Change** to this asset and therefore **Neutral** effects.

AR33 - Boundary Stone (site of)

This boundary stone was depicted on OS mapping from 1894 to 1938, but not subsequent to this, and there is nothing visible at this location today. Whilst it is possible that a stone-hole may survive at this location, it is considered that this would be of ***Negligible*** value, using the criteria outlined in Table ES8.5. Furthermore, as this part of the verge would not be impacted by the scheme proposals, then there would be **No Change** to this asset and therefore **Neutral** effects.

AR34 – Guidepost (site of)

A guidepost is depicted at this location on the OS mapping from 1913 to 1995, but nothing is visible at this location today. Any buried features associated with this guidepost would be of ***Negligible*** value, and there would be **No Change** as no groundworks or planting are proposed at this location. Consequently, there would be **Neutral** effects as a result of the scheme to AR34.

AR35 – Guidepost (site of)

A guidepost is depicted at this location on the OS mapping from 1913 to 1995, but nothing is visible at this location today. Any buried features associated with this guidepost would be of ***Negligible*** value, and there would be **No Change** as no groundworks or planting are proposed at this location. Consequently, there would be **Neutral** effects as a result of the scheme to AR34.

8.7.2.2 Historic Buildings

Impacts to three Historic Buildings have been identified during the construction phase of the development:

HB6 – Drystone wall

According to the OS mapping, this wall was constructed at some point between 1928 and 1938, and as a relatively recent addition to the built environment is considered to be of ***Negligible*** value using the criteria

set out in Table ES8.6. Approximately 80% of this feature would require dismantling to accommodate the new entrance to the Park & Ride facility, resulting in **Moderate Adverse** impacts using the criteria set out in Table ES8.3, and therefore Neutral or Slight Adverse effects using the matrix in Table ES8.8. Whilst it is considered that this would result in **Slight Adverse** effects in the absence of any mitigation, it is proposed that the wall will be reconstructed along the new boundaries of the entrance to the facility, and it is considered that this would mitigate the effects and reduce these to a **Neutral** score.

LB15 – Farm Buildings to Cross Butts

The Noise assessment (Section10 of this ES) has identified these Listed Buildings of ***High*** value will be subject to impacts as a result of the breaking out and removal of the road surface. Furthermore the Air Quality assessment (Section 9) has identified that the risk of giving rise to dust soiling (in absence of mitigation) is also high during the construction phase. These impacts to the setting of the buildings would be considered to be **Minor Adverse** magnitude, as they would noticeably change it, resulting in **Moderate** or **Slight Adverse** effects. As these effects would only be temporary, and mitigation measures will be put in place by NYCC to mitigate these impacts, it is considered that these temporary effects will be **Slight Adverse.**

LB16 – Cross Butts

The Noise assessment (Section10 of this ES) has identified these Listed Buildings of ***High*** value will be subject to impacts as a result of the breaking out and removal of the road surface. Furthermore the Air Quality assessment (Section 9) has identified that the risk of giving rise to dust soiling (in absence of mitigation) is also high during the construction phase. These impacts to the setting of the buildings would be considered to be **Minor Adverse** magnitude, as they would noticeably change it, resulting in **Moderate** or **Slight Adverse** effects. As these effects would only be temporary, and mitigation measures will be put in place by NYCC to mitigate these impacts, it is considered that these temporary effects will be **Slight Adverse.**

8.7.2.3 Historic Landscape

Impacts to two Historic Landscape units have been identified during the construction phase of the development:

HLC unit HNY23472

This unit relates to the historical farmstead at Cross Butts, and is described as *'This is Cross Gates* [sic] *which is a farm complex consisting of low density housing with farmyards as private space, car parking as public space and partial legibility with some expansion since 1850. There have been a few additional modern farm buildings and probably one original building demolished when the road has been widened. The main character is post medieval with buildings dating from the 17th century'.*

However, it should be noted that in reality the direct impacts of the scheme will be confined to the highway boundary, and that this area has been included with the Cross Butts HLC unit as a matter of expediency. Whilst Communications is a Broad Type of HLC unit used in the North Yorkshire HLC, a decision was made to only include larger scale features such as airfields, rail stations, motorway services and large road junctions, whilst individual roads would be subsumed by surrounding units. As such, this historic landscape parcel is considered to be of lower value than the HLC unit within which it is contained, which itself is considered to be of ***Low*** value. As the impacts within the highway boundary would be largely cosmetic and would not alter the landscape character of what is already a road junction, it is considered that the impacts would be **Negligible,** resulting in what are considered to be **Neutral** effects using the matrix in Table ES8.8.

HLC unit HNY9859

The HLC unit within which the development would take place is described as *'...an area of piecemeal enclosure consisting of medium sized fields in a semi-irregular pattern. It is defined by regular external and internal hedgerow boundaries and has significant legibility with up to 30% boundary loss since 1850.'* The particular landscape parcel that comprises the PDA has suffered above average boundary loss compared to the rest of this unit; a former internal field boundary was removed between 1863 and 1984 (see AR30), and much of the hedge line of the southern boundary was replaced by drystone wall (HB6) in the early 20th

century. Whilst the Piecemeal Enclosure HLC type is thought likely to date from the 18th century or earlier, a more fine grained analysis of this particular parcel would identify it as a largely modern unit formed by boundary loss, albeit with moderate legibility of the previous type. As such this parcel of the historic landscape is considered to be of ***Low*** value using the criteria set out in Table ES8.7.

There would be no changes to key historic landscape elements as a result of the scheme, as the northern and western field boundaries would remain intact, and whilst there would be changes to noise levels, use, and access, as this parcel only occupies c.1-2% of the area of the whole unit (which covers over 243 ha), the impacts would be **Negligible** using the criteria set out in Table ES8.4. Using the matrix in Table ES8.8, the effects could range from **Neutral** to **Slight Adverse** in the absence of mitigation. Considering that the scheme would result in beneficial impacts to the historic townscape of Whitby due to reductions in traffic flow, and the key historic landscape elements of the historic landscape parcel would remain, it is considered that the overall impacts to the Historic Landscape would be **Neutral.**

8.7.3 Impacts during Operation

Potential impacts after completion of the construction phase include:

- Impacts upon the setting of cultural heritage assets.

8.7.3.1 Archaeological Remains

It is considered that there would be no impacts to the settings of Archaeological Remains during the operational phase of the facility; the A171 is a busy road which is already in existence, and the presence of the Park & Ride facility would not alter this situation. None of the identified Archaeological Remains would have their settings compromised by the new facility, and the effects would therefore be **Neutral.**

8.7.3.2 Historic Buildings

Of the 16 Listed Buildings within the 1 km Study area, only two are located within the Zone of Visual Influence (ZVI) of the scheme (see Figure ES5.8); the Grade II Listed Cross Butts (LB16) and its outbuildings (LB15). The southern extent of Smeaton Castle also falls within the ZVI, but this part of the building is in fact a 20th century addition to the early 19th century original.

LB15 – Farm Buildings to Cross Butts

The location of the facility immediately adjacent to the Grade II Listed Buildings of ***High*** value at Cross Butts (LB15) would result in 'changes to the setting of a historic building, so that it is noticeably changed', as a result of the visual impact of the new facility, resulting in **Minor Adverse** impacts using the criteria set out in Table ES8.3. However, it should be noted that this would be offset by a **Minor Beneficia**l reduction in traffic noise (see Section 10 Noise), and therefore overall it is considered that the effects upon the setting would be **Neutral.**

It should also be noted that this building has been converted into a busy restaurant complex with an associated car park, and it is considered that the addition of the Park & Ride scheme would not further detract from the building's significance, and indeed the likely additional custom that the close proximity of the scheme would bring would bolster the commercial viability of the property and serve to consolidate its continued maintenance. Consequently, it is considered that the effects of the scheme could potentially provide **Slight Beneficial** effects in the longer term.

LB16 – Cross Butts

The location of the facility immediately adjacent to the group of Grade II Listed Buildings of High value of the Farm Buildings of Cross Butts (LB16) would result in 'changes to the setting of a historic building, so that it is noticeably changed', resulting in **Minor Adverse** impacts using the criteria set out in Table ES8.3. However, it should be noted that this would be offset by a **Minor Beneficia**l reduction in traffic noise (see Section 10 Noise), and therefore overall it is considered that the effects upon the setting would be **Neutral.**

8.7.3.3 Historic Landscape

HLC unit HNY23472

The Noise assessment has identified that there would in fact be Minor Beneficial effects in terms of road traffic noise in the vicinity of Cross Butts Farm during the operational phase of the scheme, and it therefore concluded that there would be no significant adverse impacts to the historic landscape character of this unit, and therefore the effects would be **Neutral.**

HLC unit HNY9859

There would be very minor changes to noise levels, use, and access to this parcel of the Historic Landscape during the operational phase of the facility. However, as this parcel only occupies c.1-2% of the area of the whole HLC unit (which covers over 243 ha), the impacts would be **Negligible** using the criteria set out in Table ES8.4. Indeed, the Noise assessment has identified that there would in fact be Minor Beneficial effects in terms of road traffic noise in the vicinity of Cross Butts Farm as a result of the scheme.

Using the matrix in Table ES8.8, the effects could range from **Neutral** or **Slight Adverse** in the absence of mitigation. Considering that the scheme would result in beneficial impacts to the historic townscape of Whitby due to reductions in traffic flow, and all the key historic landscape elements of the site would remain intact, it is considered that the overall impacts to the Historic Landscape during the operational phase would be **Neutral.**

8.8 Mitigation Measures

8.8.1 Archaeological Remains

This assessment has identified that there would be Neutral effects to four Archaeological Remains, and consequently these would not require mitigation. However there would also be Slight Adverse effects to AR30 – (furrows and former field boundary), and unknown (Neutral to Large Adverse) effects to AR31 (uncertain linear feature). Furthermore, Archaeological Remains are also inherently often hidden from view, and only discovered once topsoil has been removed, and therefore mitigation for chance discoveries is also required.

It has been agreed with the Senior Conservation Archaeologist at North York Moors National Park that a programme of archaeological monitoring should be undertaken during groundworks ahead of construction; this 'strip, map and record' exercise should be undertaken under the direct supervision of a suitably qualified archaeologist, and the stripping should be undertaken with a machine fitted with a toothless ditching bucket to enable the topsoil to be removed without disturbing underlying deposits where archaeological features might be revealed. This methodology will allow 'preservation by record' of any features of archaeological interest that are encountered, and thus mitigate any impacts to Archaeological Remains that might occur.

It is strongly recommended that these works are undertaken well in advance of construction, in order that any archaeological excavation and recording that is necessary does not cause costly delays to the construction programme.

8.8.2 Historic Buildings

This assessment has identified that there could be **Slight Adverse** impacts to one undesignated Historic Building (HB6 – drystone wall) as a result of the development; however, it is proposed to re-build this wall on a new alignment, and with this mitigation in place the effects would be reduced to **Neutral.**

The location of the Park & Ride facility would also result in **Slight Adverse** effects to two Listed Buildings (LB15 and LB16) due to impacts upon their settings. However, these impacts would be reduced over time as result of the proposed mitigation comprising planting which would screen the development from view. It is also noted that the proposed development could potentially have a beneficial effect in the longer term in that it could positively contribute to the continued economic viability of the business which currently maintains the buildings in sound condition.

8.8.3 Historic Landscape

Whilst very minor adverse effects to historic landscape have been identified as a result of visual effects and changes to sound quality, these effects will be localised, and mitigated to some degree by the proposed planting scheme. Furthermore, it is concluded that these impacts would be offset by the beneficial effects to the historic town of Whitby which the scheme would engender as a result of the reduction in traffic flow.

8.9 Conclusion

In conclusion, with the above mitigation in place any adverse impacts to Cultural Heritage assets that might occur as a result of the scheme would be reduced, and furthermore it is acknowledged that the scheme has the potential to result in some minor beneficial impacts to the Historic Environment. A stone trod of potential regional importance that was identified in the previous assessment could not be located during the course of this update, and it is concluded that either the earlier reports were inaccurate, or that this feature has been removed or buried during the intervening period.

Overall, it is considered that with mitigation in place, effects upon Archaeological Remains would be **Slight Adverse**, although the inherently unpredictable nature of the discovery of such remains means that the severity of this effect *could* increase.

For the Historic Buildings sub-topic, it is predicted that there would be **Slight Adverse** effects during construction due to impacts to the settings of two Listed Buildings, but that this would be temporary and reversible. Moreover, there is some potential for **Minor Beneficial** effects to one of these buildings in the longer term as a result of the scheme.

For the Historic Landscape, it is considered that overall, there would be **Neutral** effects as a result of the scheme.

8.10 References

Department for Transport, 2007a, *Design Manual for Roads and Bridges Volume 11 Chapter 3, Part 2 (HA208/07): Cultural Heritage*

Golder Associates, 2007, 'Environmental Impact Assessment Scoping Study: Whitby Park & Ride Facility, North Yorkshire'

Golder Associates, 2009, 'Environmental Impact Assessment: Whitby Park & Ride Facility, North Yorkshire'

Hayes, R.H., 1988 *Old Roads and Pannierways in North East Yorkshire*

Evans, C.P., 2008, *Trods of the North Yorkshire Moors: A Gazetteer of Flagged Paths*

9.0 AIR QUALITY

9.1 Introduction

The following section provides information with regards to likely air quality impacts including the potential for amenity loss related issues (nuisance) associated with the development of the new Whitby Park & Ride facility.

Potential airborne releases of main concern to human health and the local environment associated with the development are construction dust and road traffic emissions.

9.2 Legislative and Policy Framework

The UK's legislation and regulatory regime along with national, regional and local planning policy, plays a key role in the prevention, control and minimisation of atmospheric emissions that are potentially harmful to human health and the natural environment (e.g. flora and fauna). The following section provides a summary of those with relevance to the development proposals.

9.2.1 UK Air Quality Objectives

Air quality limit values and objectives are quality standards for clean air which are used as assessment criteria for determining the magnitude of any potential changes in local air quality resulting from development proposals. The EU Directive on Ambient Air Quality Assessment and Management, which came into force in September 1996 (Directive 96/62/EC) is intended as a strategic framework for tackling air quality consistently, through setting European wide air quality limit values in a series of daughter directives, superseding and extending existing European legislation. The first four daughter directives were placed into UK legislation, consolidated in the Air Quality Standards (England) Regulations 2007, which are summarised in Table ES9.1.

A new EU air quality directive (Directive 2008/50/EC) came into force in June 2008 which was transposed into The Air Quality Standards Regulations in England, Wales, Scotland and Northern Ireland in June 2010. The Directive merged the four daughter directives and one Council decision into a single directive on air quality. The new Directive also introduced a new limit value for fine particulate matter ($PM_{2.5}$) but does not change the existing air quality standards.

Current air quality objectives set for the protection of human health include the following for fine particulates (PM_{10}). Future objectives will be set in place for $PM_{2.5}$.

Table ES9.1: EU Air Quality Limit Values and National Air Quality Objectives for Relevant Pollutants for the Protection of Human Health and the Environment

Pollutant	Applies	Objective	Measured as
Current National Air Quality Objective for the protection of Human Health			
Benzene	UK	16.25 µg/m^3	Running annual mean
		5.00 µg/m^3	Running annual mean
1,3 - Butadiene	UK	2.25 µg/m^3	Running annual mean
Carbon Monoxide (CO)	UK	10 mg/m^3	Maximum daily running 8 hour mean
Nitrogen Dioxide (NO_2)	UK	200 µg/m^3 Not to be exceeded more than 18 times per year	1 hour mean
	UK	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	UK	266 µg/m^3 Not to be exceeded more than 35 times per year	15 minute mean

Pollutant	Applies	Objective	Measured as
	UK	350 µg m^{-3} Not to be exceeded more than 24 times per year	1 hour mean
	UK	125 µg m^{-3} Not to be exceeded more than 3 times per year	24 hour mean
Particles (PM_{10})	UK	50 µg m^{-3} Not to be exceeded more than 35 times per year	24 hour mean
	UK	40 µg m^{-3}	Annual mean

Future objectives

Pollutant	Applies	Objective	Measured as	To be achieved by
Particles ($PM_{2.5}$) Exposure Reduction	UK (except Scotland)	25 µg m^{-3} (target) 25 µg m^{-3} (stage 1 limit) 20 µg m^{-3} (stage 2 limit)	Annual mean	2010 2015 2020
	UK Urban Areas	Target of 15% reduction in concentrations at Urban Background		Between 2010 and 2020

In addition to the air quality objectives for human health, national objectives also exist for the protection of vegetation and ecosystems. They are presented in Table ES9.2 and apply to parts of the UK which are:

- more than 20 km from an agglomeration;
- more than 5 km away from industrial sources regulated under Part A of the 1990 Environment Act and Motorways; and
- built-up areas of more than 5,000 people.

Many of the objectives are specified in terms of the number of times during a year that a concentration measured over a short period of time (*e.g.* 15 minutes, 1 hour or 24 hours) is permitted to exceed a specified value. For example, the concentration of NO_2 measured as the average value recorded over a 1 hour period is permitted to exceed the concentration of 200 µg m^{-3} up to 18 times per year; any more exceedances than this during a one year period would represent a breach of the objective.

Table ES9.2: Statutory Air Quality Objectives in the UK for the Protection of Vegetation and Ecosystems

Pollutant	Applies	Objective	Measured as
Nitrogen Oxides (NO_x)	UK	30 µg m^{-3}	Annual mean
Sulphur Dioxide (SO_2)	UK	20 µg m^{-3}	Annual mean
	UK	20 µg m^{-3}	Winter average
	UK	10 µg m^{-3} for sensitive lichen communities & bryophytes and ecosystems where lichens & bryophytes are an important part of the ecosystem's integrity	Annual mean
Ozone[1]: Protection of Vegetation and Ecosystems	UK	Target value of 18,000 µg m^{-3} based on AOT40[2] to be calculated from 1 hour values from May to July, and to be achieved, so far as possible by 2010	Average over 5 years

Notes: Ozone is not emitted directly from any human-made source. It arises from chemical reactions between various air pollutants, primarily NO_x and Volatile Organic Compounds (VOCs), initiated by strong sunlight. Formation can take place over several hours or days and may have arisen from emissions many hundreds, or even thousands of kilometres away. Thus, ozone has not been assessed in this report; and AOT40 (Accumulated dose over a threshold of 40 ppb) is the sum of the differences between the hourly mean ozone concentration (in ppb) and 40 ppb for each hour when the concentration exceeds 40 ppb, accumulated during daylight hours.

9.2.2 Local Air Quality Management

The legislative basis for Local Air Quality Management (LAQM) in England is the Environment Act 1995. The LAQM regime requires individual local authorities to periodically assess air quality and identify locations within their boundary where the air quality objectives may be exceeded by their target dates. Where any such exceedances are predicted, and where there is relevant public exposure, local authorities have a duty to declare Air Quality Management Areas (AQMAs). Such designations are a statutory requirement and UK local authorities have a duty to work towards achieving air quality objectives.

Following the designation of AQMAs, local authorities are required to develop Air Quality Action Plans (AQAPs) to identify and implement actions to improve local air quality. Such plans require effective collaboration between authority departments and external agencies. Land-use planning and transport planning underpin the development of effective AQAPs.

9.2.3 Dust Standards

No statutory standards or limits on general dust emissions from construction sites exist, however such emissions are covered in statutory amenity loss provisions under the Environmental Protection Act 1990. In relation to dust, the decision as to what constitutes 'dust amenity loss' is a subjective one and will usually be dependent on the judgement of the LA, which will investigate this in response to complaints from the public. In the context of development, dust emissions from construction works could result in a statutory amenity loss if not appropriately controlled. The defence against amenity loss is the use of Best Practicable Means (BPM) to control emissions. In more practical terms, BPM essentially means the managed and thorough application of best practice techniques to minimise emissions in the context of the receiving environment.

Although no national statutory standards or guidelines currently exist, the former DETR (Department for the Environment, Transport and the Regions) advised that amenity loss levels of dust do not generally arise until deposited levels at residential properties exceed between 130 and 350 milligrams per square metre per day ($mg/m^2/day$). This guidance is often used by local authorities investigating the potential for statutory amenity loss claims. A 'custom and practice' limit of 200 $mg/m^2/day$ for annoyance is used for measurements made with dust deposition gauges, which provide results in mass per unit area per unit time values. This value is between other worldwide accepted standards which range between 133 and 650 $mg/m^2/day$.

Best Practice Guidance produced by BRE and the Greater London Authority (GLA) provides guidance for dust and other airborne emissions from construction activities. In terms of rating potential risk, the guidance provides site evaluation guidelines based upon the size in square metres (or number of properties) of a proposed development. The document prescribes best practice measures to mitigate risks on construction sites. Further to this guidance, the Institute of Air Quality Management has issued its guidance on the assessment of the impacts of construction on air quality (January 2012).National Planning Policy Framework

Air quality is judged to be a material consideration and as such the planning regime can result in the introduction of conditions that are more stringent than those associated with the regulatory regime for controlling emissions. The National Planning Policy Framework (NPPF) which was issued in March 2012 and replaces Planning Policy Guidance (PPGs) and Planning Policy Statements (PPSs) used to help regulate emissions, sets out the Government's planning policies for England and how these are expected to be applied to conserve and enhance the natural environment. It provides a framework within which councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

With relevance to conserving and enhancing the natural environment, the NPPF suggests that the planning system should contribute to and enhance the natural and local environment, by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected

by unacceptable levels of soil, air, water or noise pollution or land instability. In preparing plans to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment. Plans should allocate land with the least environmental or amenity value, where consistent with other policies in this Framework.

To prevent unacceptable risks from pollution, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account.

With specific relevance to air quality, planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of AQMAs and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in AQMAs is consistent with the local air quality action plan.

Core Strategy and Development Policies (November 2008)

In the North York Moors National Park Authority Local Development Framework; Core Strategy and Development Policies (November 2008); several policies address environmental protection within the National Park. Policies include:

Development Policy 1: Environmental Protection

'To conserve and enhance the special qualities of the North York Moors National Park, development will only be permitted where:

1) *It will not have an unacceptable adverse impact on surface and ground water, soil, air quality and agricultural land; or*

2) *It will not generate unacceptable levels of noise, vibration, activity or light pollution; or*

3) *There will be no adverse effects arising from sources of pollution which would impact on the health, safety and amenity of the public and users of the development; or*

4) *Land stability can be achieved without causing unacceptable environmental or landscape impact; or*

5) *There is or will be sufficient infrastructure capacity to accommodate the demand generated by the development.'*

9.3 Scoping

A planning application for the development was submitted in August 2008 to the North York Moors National Park Authority, with planning permission granted in February 2009. The planning permission lapsed in early 2012 due to limited funding available to deliver the scheme. The EIA that was undertaken for the August 2008 application included a scoping study to identify potential significant effects that would require further assessment, and an EIA.

For this new application, the 2008 EIA has been reviewed and updated where baseline conditions have changed, and where current guidance now applies to assessing impacts. For air quality, this comprises a review and update of current baseline conditions, the application of new guidance for construction dust assessment and the assessment of any major changes in traffic flow projections which have been brought in line with current guidance.

9.3.1 Technical Scope

The evaluation of baseline conditions was undertaken and with respect to the development (the Site) sensitive receptors that may be at risk of significant changes in air quality resulting from the development (*e.g.* residential properties, schools, recreation sites, workplaces and sensitive ecological receptors) have been identified. The extent of the study area was scoped to encompass those receptors most likely to be affected by airborne emissions from the construction and operational activities on the Site and due to road traffic emissions.

9.3.2 Geographical Scope

The Site and the area within its surrounding environs *(i.e*. up to 0.5 kilometres (km) of the on-Site activities) have been considered in detail. Sensitive ecological receptors located within up to 1 km of the Site have also been considered.

9.3.3 Temporal Scope

Potential impacts on the sensitive receptor groups given below have been assessed for the following stages of the development.

Table ES9.3: Receptors considered for Air Quality Impacts

Development Phase	Sensitive Receptor Groups
Site Construction (fugitive dust, plant/traffic emissions)	Dwellings, schools, hospitals, open spaces where the general public may be located for significant periods, work places, bridleways, footpaths, protected ecological sites (SSSI, SAC, SPA, Ramsar).
Site Operation (fugitive dust traffic related emissions)	

9.4 Assessment Methodology

For this section the assessment methods adopted include:

- A desk based review of current air quality conditions (i.e. baseline) using publicly sourced data and local planning policy;
- A qualitative assessment of potential sources of emissions during construction works, which takes into consideration the proposed programme of works, construction methods (where information available) and appropriate control measures that will be implemented to minimise the potential for public annoyance that could potentially result in amenity loss issues arising.

  The assessment method is aligned with the Institute of Air Quality Management (IAQM) *Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance* (January 2012). In addition, best practice guidance presented in the Greater London Authority (GLA) Best Practice Guidance *Control of dust and emissions from construction and demolition sites* has been considered in the assessment;
- For operation of the development, a simple screening assessment (based on Highways Agency assessment guidance, DMRB Volume 11, Section 3, Part 1, HA207/07 - Air Quality (May 2007) and Defra's Local Air Quality Management Technical Guidance TG.09 LAQM (February 2009) of the likely road traffic volumes that would be generated by the future operation of the development, and
- For all significant adverse effects, the need for mitigation/monitoring/management during the construction and operation phases of the development has been identified, with an evaluation of residual effects that would remain after implementation of mitigation measures.

9.4.1 Significance Criteria

The approach to determine the magnitude of impacts of airborne emissions and the criteria for significance of effects are presented in Appendix ES9.1.

9.5 Baseline Conditions, Key Receptors and Sensitivity

In its current state the proposed development site is not contributing direct emissions to atmosphere although fugitive dust emissions are likely to arise during farming activities on the site. The site is exposed to road traffic emissions due to its location adjacent to the A171, the main route into Whitby. As the site falls within the boundary of the North York Moors National Park, the site and its surrounding receptors are considered to be sensitive to potential changes in air quality.

Information relating to baseline air quality within the study area has been gathered using desk based research and review of information from published sources and public databases such as the UK Air Quality Information Archive (http://www.airquality.co.uk). No site-specific baseline monitoring has been undertaken as part of this application.

9.5.1 Local Ambient Air Quality Conditions

Scarborough Borough Council (SBC) is the statutory body accountable for the management of local air quality across the local area. Periodically SBC assesses local air quality by means of measuring ambient levels of pollutants of concern and evaluates both existing and potential future conditions against the set air quality objectives (Table ES9.1). Based on their LAQM findings, SBC has to date declared one AQMA within the borough; designated for Staithes village for pollutants PM_{10} and SO_2.

The AQMA which was declared in 2004 was designated due to high sources of domestic coal burning. The AQMA boundary is located approximately 12 km to the north of the development site, along the coastline with the North Sea.

In SBC's 2012 Air Quality Updating and Screening Assessment it is confirmed that no further modelling or monitoring will be carried out for the AQMA until the proposed installation of mains gas to the southern part of the village is completed. An Air Quality Action Plan for the AQMA has been drafted by SBC.

Ambient monitoring across the borough comprises a network of sites largely located within the urban areas, with one real-time ambient monitor located adjacent to the East Riding of Yorkshire council offices in Beverley (for validation purposes). A network of NO_2 diffusion tube sites also exists which largely measure levels at roadside locations. A number of NO_2 diffusion tubes are located at urban background and kerbside sites; however no rural monitoring is undertaken at present.

Within the area of Whitby two diffusion tube sites are located at kerbside/ roadside locations.

Table ES9.4: Measured Annual Mean NO_2 Concentrations Year 2011 (µg/m^3)

Site name	NGR	Local Bias Adjusted
Whitby 1, New Quay Road (Kerbside)	489863 510887	26
Whitby 2, Downdinner Hill (Roadside)	489388 510619	30.7

Within Whitby town area the above confirms that the annual mean NO_2 objective is not exceeded at roadside locations.

Monitoring of PM_{10} concentrations is no longer carried out in the borough.

9.5.2 Background Concentrations

Background data for NO_x, NO_2, and PM_{10} were obtained from the1 km by 1 km grid square background maps produced by Defra[8]. The latest 2010 background maps for SBC have been reviewed to obtain estimated concentrations for 2010.

Table ES9.5: Estimated Background Concentrations Year 2010

Year	Grid Square		NO_2 (µg/m^3)	NO_x (µg/m^3)	PM_{10} (µg/m^3)
2010	487500	510500	7.49	10.25	14.84

The above table illustrates that for the local area surrounding the Site, estimates of 2010 annual mean background pollutant concentrations were well below National AQOs, typical of rural locations.

[8] http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html

Local Emission Sources

Within the surrounding area, the main source of emissions to air is from road vehicles using the local road network. Additional sources comprise local agricultural and industrial sources within the borough.

9.5.3 Sensitive Receptors

Human beings living, working, or taking part in activities in the vicinity of a proposed development can either be individuals (*e.g*. residents or employees) or wider communities (*e.g*. areas of population). Transient human receptors may use and therefore temporarily occupy the local environment and would therefore be considered sensitive receptors to the potential air emission of the proposed development should they be located in the area for a prolonged period of time (*i.e*. 1 hour or longer), for public bridleways and parks. The impacts of deposited air emissions can also be seen on flora and fauna and it is therefore important to consider the impact on designated ecological Sites such as Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs) and non-statutory designated Sites, and ancient woodlands in the vicinity of the Site.

The sensitivity of receptors to general dust activity is presented below in Table ES9.6.

Table ES9.6: Receptor Sensitivity

Ranking	General (To Dust Deposition)[1]
High	Hospitals, retirement homes, hi-tech industry, painting and finishing, food processing
Medium	Schools, residential areas, food retailers, greenhouses, nurseries, horticultural land, offices
Low	Farms, light and heavy industry, outdoor storage

1 DOE 1995, Environmental Effects of Dust from Surface Mineral Workings

For the assessment of fugitive airborne emissions, consideration has been given to those sensitive human receptors located within 0.5 km of the Site.

Table ES9.7: Identified Sensitive Receptors within 0.5 km

Receptor Ref.	Name	Receptor Type/Sensitivity to dust activity (Table ES9.6)[1]	Approximate Distance and Direction from Development Works	
R1	Victoria Farm	Residential/Medium	30 m	East
R2	Cross Butts Farm	Residential/Medium	90 m	East
R3	Cross Butts Restaurant	Recreation/Low	35 m	East
R4	Bannial Flat Farm	Residential/Medium	330 m	West
R5	Fell View	Residential/Medium	400 m	Northeast
R6	Fernhill Cottage	Footpath following Foss Dyke towards the B1224 (transient receptor)/(Medium - Low	385 m	North
R7	Users of Public Footpath Nos. 327005, 328003	Footpath to the west of site boundary (transient receptor)/Low	45 m	West - southwest
R8	Users of Public Footpath Nos 327002, 30219.	Footpath to the north of sit boundary (transient receptor)/Low	190 m	North

[1] Sensitivity to construction dust activities (see Table ES9.6); [2]Development footprint is the area of operations within the Site.

Potential 'sensitive receptors' located within 0.5 km of the development footprint on the Site are identified in Figure ES5.4 in Appendix ES5**.** Receptors identified within the study area are deemed to be of ***Medium*** to ***Low*** sensitivity to potential construction dust emissions.

On-Site receptors will comprise human beings *i.e*. NYCC employees, accompanied at times by contractors (particularly during construction works). It is noted that the effects on employees and contractors in terms of health effects are dealt with under separate procedures/HSE guidance.

Designated Conservation Sites

The impacts of deposited air emissions including dust can also be seen on flora and fauna. It is therefore important to consider the impact on designated ecological sites such as SACs, SPAS, SSSIs and non-statutory designated sites, and ancient woodlands in the vicinity of the site. No statutory designated sites were identified within a 1 km radius of the site.

It is noted that Section ES7, Ecology and Nature Conservation identified that the land is of low ecological value. However, in regard to protected species site surveys have identified the presence of badgers on the site and within the surrounding area. On the basis of the survey findings it is therefore considered that the site and surrounding ecological receptors are of ***Low*** sensitivity to potential changes in air quality brought about by the development.

9.6 Impact Characterisation

9.6.1 Factors affecting Impact Characterisation

The assessment of impacts is determined as the predicted deviation from the baseline conditions, during the Site's development (*i.e*. construction and operation). The primary pathway for airborne emissions to be potentially transferred off-site and towards sensitive receptors is by wind transit with the main controlling factor of this being the meteorological conditions experienced across the area. Local wind conditions will determine the direction, distance and degree of dispersion of discharged air emissions from point sources and fugitive releases on the facility.

Those receptors positioned nearest to the development will likely be at a higher risk of impact than those located at increased distances from the sources of emissions however the magnitude of any impact at sensitive receptors will increase or decrease depending on the changes of prevailing wind direction and speed. Surface roughness, or turbulence generated by buildings or vegetation will also increase the dispersion of emissions, and similarly, higher wind speeds will also increase turbulence and dispersion. It is noted however that elevated wind speed may also lead to increased emission rates from certain activities, for example windblown dust from exposed construction works and access roads within the Site.

Local Topography

The site is located in an area of open farmland comprising predominantly of large arable fields divided by hedgerows. The area is sparsely populated but some isolated farms and residential properties are situated in the site vicinity. Immediately adjacent to the site there is a cluster of buildings situated around the junction of the A171 and the B1460. This includes the Victoria Farm Garden Centre. The village of Newholm lies approximately 900 m northwest of the site.

The site topography varies between 90 m and 100 m Above Ordnance Datum (AOD) as it is situated on ground that rises up to the moorland plateau to the west of the site. Given local topography as well as the existing land use, it is considered likely that these physical factors will enhance the dispersal of fugitive emissions during the construction works, and thus reduce the potential impact on surrounding sensitive receptors.

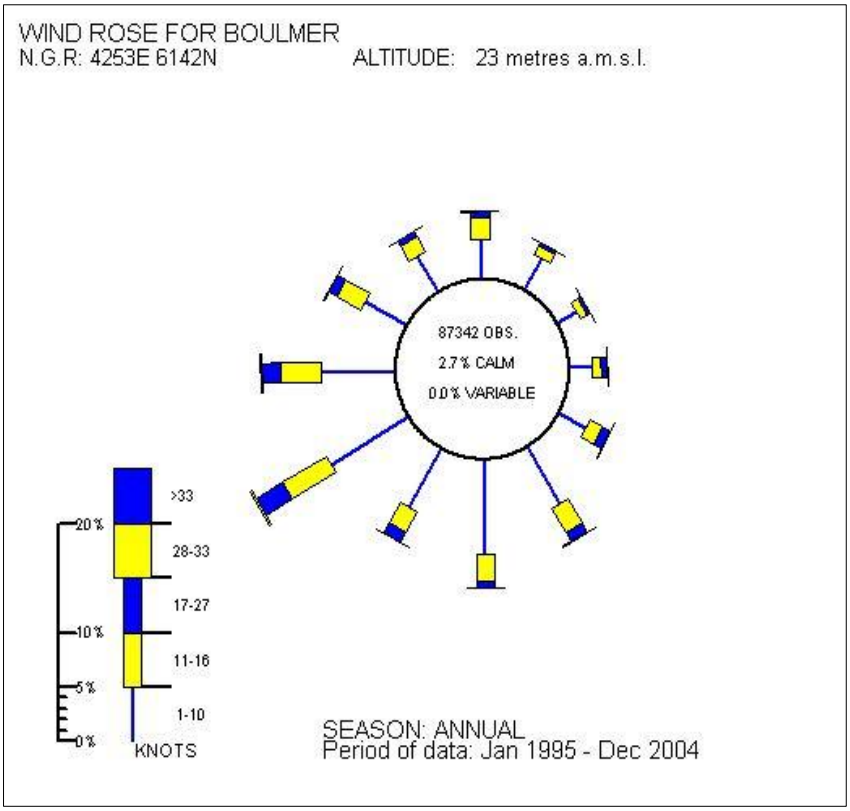
Local meteorological conditions

Prevailing weather conditions (i.e. precipitation, wind speed and direction) will influence the potential for fugitive emissions to firstly become airborne and secondly remain in the air and be transported off-site prior to being deposited to ground. Areas that are most consistently affected by dust due to the influence of prevailing winds are located downwind of emission sources.

Precipitation suppresses dust and prevents it from becoming airborne as well as increasing the rate at which dust is deposited onto ground surfaces (i.e. no longer airborne) due to surface wetting. Precipitation levels of >0.2 mm/day are considered sufficient to effectively suppress wind-blown dust emissions, whilst levels of <0.2 mm/day will still have a limited positive impact. Monthly rainfall data obtained from the UK Met office shows that for the region, monthly rainfall levels in 2011 range from 5 mm to 133 mm. Highest rainfall levels were experienced in July and August with rainfall levels of 66 mm and 133 mm. Lowest monthly rainfall levels were experienced in March with a rainfall level of 5 mm. No daily rainfall data was available for the local area.

During particularly dry or windy conditions, the potential for dust emissions to be generated and remain airborne cannot be discounted. Past studies have found that dust particles with a diameter >30μm, which make up the greatest proportion of dust emitted from demolition and construction sites, will largely deposit within 100 m of their source[9] as they are heavier than fine particulates (i.e. PM_{10}). Particles less than or equal to 10μm may remain airborne for distances of up to 1 km from source[10].

Regional data for the North East England has been obtained from the Met. Office website (http://www.metoffice.gov.uk/climate/uk/regional/). The annual wind rose for Boulmer provided in Figure ES9.1 below is typical of open level locations across the region, illustrating that a southwesterly wind direction prevails throughout the year, however a high frequency of north to northeast winds occur in the spring.



Drawing ES9.1: Boulmer wind rose (source: Met. Office)

9.6.2 Construction Phase Impacts (Risk of amenity loss)

A preliminary construction programme including the works associated with the construction of the new roundabout junction and the development is provided in Appendix ES3.1. The main construction of the

[9] The Environmental Effects of Dust from Surface Mineral Workings, Volume 1, DETR, HMSO, 1995;

[10] Control of Coal Dust in Transit and in Stock Piles, IEA Coal Research, London, 1994

development will be carried out over a period of 16 months with highway works commencing in December 2012 and construction of the Park & Ride site commencing in September 2013. Construction works will comprise site clearance and preparation including earthworks and general excavations, construction of hardstanding areas, building structures and site infrastructure (i.e. service connections, site access and internal roads).

During Site preparation and construction works, dust (*i.e*. PM) will be the key emission to be generated and it will be implicit to the development that appropriate control measures are incorporated into the development design to ensure that construction dusts will not result in any amenity loss at receptors (*i.e*. annoyance from deposited fugitive emissions or re-suspension of deposited dust from plant/vehicle movements off-site.

Dust particles generated on construction sites are generally of coarse size i.e. dusts are made up of a higher proportion of particles greater than 30 µm diameter. From an air dispersal perspective and considering local topography conditions, and surrounding surface roughness conditions *i.e.* woodland, vegetation; coarser particles that become airborne will mostly be brought to ground within 100 m of the source[11].

Presented in this section is a qualitative assessment of the likely scale of impacts from identified sources of potential airborne releases of dust during the development's construction. The method of determining the magnitude of risk and the significance of effects criteria applied is detailed in Appendix ES9.1. The impact assessment is carried out for identified *'sensitive receptors'* located within 0.5 km of the Site that could be at risk from dust impact during construction activities i.e. amenity loss (in the absence of suitable mitigation measures).

Table ES9.8: Key Activities and Associated Sensitive Receptors

Specific Phase of Works	**Key Activities**	**Discrete Sensitive Receptors**	
		Located within 100 m radius of Site boundary	**Located 100 – 500 m radius of Site boundary**
Off-site Highway works (14 wks)	■ Utility diversions and construction of roundabout and tie ins to existing road network (total of 14 wks – Dec 2012 – Mar 2013)	■ R1 - Residential dwelling (Victoria Farm) on B1460 - nearest dwelling c.30 m to the east. ■ R2 – Residential dwelling (Cross Butts Farm) off A171 - c.90 m to the east. ■ R3 – Users of Cross Butts Restaurant on A171 c.35 m to the south.	■ R4 – Residential dwelling (Bannial Flat Farm) off A171 c.330 m to the west. ■ R5 – Residential dwelling (Fell View) off B1460 c.400 m to the northeast. ■ R6 - Residential dwelling (Fernhill Cottage) off B1460 c.385 m to the north. ■ R7 - Users of Public Footpaths 327005, 328003 c.45 m to the west - southwest. ■ R8 - Users of Public Footpaths 327002, 30219 c.190 m to the north.
Preparation Site works (2 wks)	■ Site set-up, mobilisation of plant and equipment		
Site Earthworks (20 wks)	■ Site clearance, drainage and ducting (20 wks – from Nov 2013 – Mar 2014)		
Site Construction (25 wks)	■ Infrastructure works i.e. construction of parking areas, internal		

[11] M17 - Monitoring of particulate matter in ambient air around waste facilities. Environment Agency 2004.

Specific Phase of Works	Key Activities	Discrete Sensitive Receptors	
		Located within 100 m radius of Site boundary	Located 100 – 500 m radius of Site boundary
	roadways, tarmacing; buildings (25 wks – from Sept 2013 – Mar 2014)		

The Site covers an area of approximately 4.3 hectares (ha). Based on the scale and nature of the works *i.e.* site clearance; and the proximity of sensitive receptors, the dust emission class for the proposed development is classified as a *medium to large*[12] site.

Magnitude of Construction Impacts (in the absence of mitigation)

The IAQM methodology adopted in determining the magnitude of construction dust impacts *i.e.* risk of amenity loss through soiling is presented in Appendix ES9.1.

Table ES9.9 presents the magnitude of risk of dust soiling determined for sensitive receptors located within 0.5 km of the Site. This assessment is based on judgement of local physical characteristics (i.e. topography, meteorological conditions), proximity and sensitivity of the receptor to the development and likely construction activities to take place during the preparation and build of the development.

Table ES9.9: Magnitude of Construct Dust Impact (in the absence of mitigation)

Receptor/sensitivity to construction dust[1]	Risk of Giving Rise to Dust Soiling (in absence of mitigation)[2]
R1 - Residential dwelling (Victoria Farm) on B1460 - nearest dwelling/Medium sensitivity. Located c.30 m to the east. Likely to be Intermittent exposure and short-term.	■ Off-site highway works: *High risk* ■ Preparation site works: *Medium risk* ■ Site Earthworks: *Medium risk* ■ Site Construction: *Low risk*
R2 – Residential dwelling (Cross Butts Farm) off A171/Medium sensitivity. Located c.90 m east of the site.	■ Off-site highway works: *High risk* ■ Preparation site works: *Medium risk* ■ Site Earthworks: *Medium risk* ■ Site Construction: *Low risk*
R3 – Users of Cross Butts Restaurant on A171/Medium-low sensitivity. Located c.35 m south of the Site.	■ Off-site highway works: *Medium risk* ■ Preparation site works: *Medium risk* ■ Site Earthworks: *Medium risk* ■ Site Construction: *Low risk*
R4 – Residential dwelling (Bannial Flat Farm) off A171/Medium sensitivity. Located c. 330 m west of the site.	■ Off-site highway works: *Low risk* ■ Preparation site works: *Medium risk* ■ Site Earthworks: *Medium risk* ■ Site Construction: *Low risk*
R5 – Residential dwelling (Fell View) off B1460/ Medium sensitivity	■ Off-site highway works: *High risk* ■ Preparation site works: *Medium risk*

[12] IAQM Guidance on the assessment of the impacts of construction on air quality and the determination of Significance (December 2011)

Receptor/sensitivity to construction dust[1]	Risk of Giving Rise to Dust Soiling (in absence of mitigation)[2]
Located c. 400 m northeast of the site.	■ Site Earthworks: *Medium risk* ■ Site Construction: *Low risk*
R6 - Residential dwelling (Fernhill Cottage) off B1460/Medium sensitivity. Located c. 385 m north of the site.	■ Off-site highway works: *Low risk* ■ Preparation site works: *Low risk* ■ Site Earthworks: *Low risk* ■ Site Construction: *Low risk*
R7 - Users of Public Footpaths 327005, 328003 (transient)/Low sensitivity. Located c. 45 m west of the site.	■ Off-site highway works: *Low risk* ■ Preparation site works: *Low risk* ■ Site Earthworks: *Medium risk* ■ Site Construction: *Low risk*
R8 - Users of Public Footpaths 327002, 30219 (transient)/Low sensitivity Located c. 190 m to the north of the Site.	■ Off-site highway works: *Low risk* ■ Preparation site works: *Low risk* ■ Site Earthworks: *Low risk* ■ Site Construction: *Low risk*

[1] IAQM Guidance – Rural area of mixed light industrial use, residential and agricultural use; no dwellings located within 20 m of the site boundary; local PM_{10} concentrations <70% of air quality objective; no locally designated sites located within meters of the site boundary. Adjacent work places are not considered to be sensitive to dust.

[2] Magnitude based on professional judgement of effects of intervening surface conditions i.e. woodland, planting, agricultural land between source and receptor, and the percentage of winds blowing towards receptors (over period 2009-2011).

9.6.3 Operational Phase Impacts

The facility is aimed at providing relief to traffic congestion within Whitby town centre, which particularly occurs during peak tourist seasons. As well as reducing congestion the scheme will improve pedestrian access and safety.

The development Site area is approximately 4.3 ha, of which approximately 1.5 ha would become surfaced parking bays (250 spaces) and internal roadways. A further 0.5 ha would be used for overflow parking (200 spaces) and would remain as grassland. Access to the Park & Ride facility will comprise a roundabout junction with the A171/B1460. On-Site infrastructure would consist of public toilet facilities, waiting shelters, and information boards.

In view of the contribution of road traffic to current emission levels, the development may bring about additional vehicle movements and/or alter the movement of vehicles on the local road network. Such changes are considered to provide the most significant source of future emissions to air during the operation of the development. An assessment of potential significance of effects from road traffic sources is provided below.

9.7 Assessment of Operational Impacts (Road Traffic Emissions)

An updated Transport Assessment (TA) for the development has been submitted in support of the new planning application. The TA reports the current situation based on baseline traffic surveys carried out in 2006 as part of the 2008 application and the ARCADY (Assessment of Roundabout Capacity and Delay) model has been used to forecast future traffic movements for the proposed opening year 2014. NYCC has stated that the introduction of the development is likely to result in a redistribution of car based trips on interception, rather than generation of new trips. It is anticipated that the facility will reduce inbound trips into Whitby of between 1% and 5% with the greatest diversion likely to occur during the August peak periods.

The TA considers traffic movements for the AM (11:00-12:00 hours) and PM (16:00-17:00 hours) peak hours during both the weekday and weekend periods. For the screening of potential air quality impacts, NYCC

provided appropriate factors to be applied to peak hour traffic flow to derive Annual Average Daily Traffic (AADT) flows. The full TA report is provided in Appendix ES12.1.

DMRB Screening Criteria

In terms of assessing the potential effects on local air quality of the changes in road traffic flow and composition brought about by the development, a screening assessment has been undertaken using the guidance given in the advice note HA 207/07 within Design Manual for Roads and Bridges (DMRB).

Guidance in DMRB HA 207/07 is aimed at determining the level of assessment necessary to enable informed decision making for road schemes assessments. The guidance sets out the following criteria for identification of 'affected roads', (*i.e*. roads where traffic could have a significant impact on local air quality due to changes in traffic flows and composition):

- road alignment will change by 5 m or more;
- AADT (Annual Average Daily Traffic) Flows will change by 1000 vehicles or more;
- HGV flows will change by 200 AADT or more;
- daily average speed will change by 10 km/hour or more; or
- peak hour speed will change by 20 km/hour or more.

Development Flows

Forecasted AADT flows were calculated for the scheme's opening year (2014) for the 'do-minimum' and 'do-something' scenarios (i.e. with Park & Ride facility). Predicted traffic flows for the future opening year scenarios are given in Table ES9.10.

Table ES9.10: Future AADT Flows on Existing Network in 2014 'Opening Year'[1]

Road Link	'Do Minimum'	'Do Something'	Approximate Change in AADT
A171 East of B1460 Junction	12,278	12,287	+9
A171 West of B1460 Junction	15,268	15,647	+379
B1460	3,983	4,131	+148
'Park & Ride' access link	0	784	+784

[1] AADT flows derived from the Weekday peak hour flow

Road Traffic Emissions Screening Assessment

Based on the traffic data provided by NYCC, the DMRB screening assessment identified the following:

- The highway alterations to the A171/B1460 will result in the road alignment changing by more than 5 m; however the new roundabout junction will move the road alignment away from Victoria Farm compared with the current junction design. The roundabout junction will also provide a smoother flow of traffic onto the junction;
- The AADT flow on the Park & Ride access road is predicted to be 784 and the change in AADT flows due to the development on the existing A171 and B1460 (Table ES9.10) will result in AADT flows increasing; however the predicted change in ADDT is significantly less than DMRB screening criteria of 1,000 AADT;
- No HGV data was provided for this assessment; however for the 2006 application HGV data showed that the development would not change HGV flow by 200 AADT or more (Golder 2008); and

- No survey speed data was provided for this assessment.

The 2008 EIA (Golder 2008) for the development included the use of the DMRB screening tool model to calculate the change in ambient pollutant concentrations at the nearest sensitive receptors to the development (i.e. Victoria Farm, Cross Butts Farm). The calculations were carried out for an opening year of 2008 for the 'with' and 'without' development scenarios. The model results showed that the development would potentially result in a decrease of annual mean ambient NO_2 and PM_{10} concentrations at Victoria Farm, with a small increment at Cross Butts Farm. The model predicted concentrations were well below the air quality objectives (Golder 2008) i.e. approximately 40% of the objective, 40 µg/m^3.

In considering the findings of the DMRB screening assessment, the 2008 EIA air quality assessment and current estimated background concentrations of NO_2 and PM_{10} for the study area, the impact of road traffic emissions within the study area and in particular at the nearest sensitive receptors i.e. Victoria Farm, Cross Butts Farm) to the new junction, the magnitude of the likely increment in road traffic emissions brought about by the development are assessed to be **Small** to **Imperceptible** i.e. no greater than 2 µg/m^3 (refer to Appendix ES9.1).

9.8 Evaluation of Impact Significance

Construction Phase

A detailed programme of construction works is currently being developed. This will incorporate best practice measures into the Site design to ensure that exposed materials/surfaces will be managed and handled appropriately in order to control and minimize the generation of airborne emissions. Furthermore, a Construction Environmental Management Plan (CEMP) will be developed and implemented throughout the works which will incorporate the following control measures.

Table ES9.11: Best Practice and Management Measures to be implemented (to be included in the CEMP)

Emissions Control	Mitigation Effects
On and off Site management during construction	The impact of construction traffic on the local surroundings and road network will be minimised by careful on- and off-Site management with designated public routes and reducing the need to import or export materials.
Haul road design/construction tailored to reduce dust	Paved roads will be used where practicable to decrease the amount of dust created during vehicle movements and will further prevent mud accumulations on the vehicles' tyres which may cause dust release after exiting the Site.
Wheel Washing	Wheel washing will be introduced at the exit of the new access road to and from the Site to reduce the amount of mud and other material attached to the vehicles' tyres and minimise the deposit of mud to internal and external roads.
Vehicle speed limit	By reducing the speed of vehicles on-Site the volume of dust likely to be released to air will be reduced by reducing the entrainment of dust and other debris by vehicle wheels.
Cleaning of roadway and working areas	By regularly cleaning and watering of the haul road and working area, the build-up of mud and other materials is reduced minimising the release of dust on and in the vicinity of the Site.
Covering of vehicles carrying construction and excavation materials	By covering of loads, the potential of release of dust from any materials during transport to and from the Site is reduced.
Minimising drop heights	By minimising the drop heights of materials during unloading, the amount of dust released from the impact of the material on the ground will be reduced. Loading and unloading of materials is undertaken in areas protected from wind where practicable.

Emissions Control	Mitigation Effects
Minimise surface areas of stockpiles to reduce area of surfaces exposed to wind erosion	By minimising the surface areas of any stockpiles, *e.g.* of excavation material, wind erosion of dust from stockpiles will be reduced.
Dampening down of all dusty activities.	By dampening down of dusty activities, the amount of dust released will be reduced. This is especially important during dry weather periods when rain does not provide natural dampening and moisture.
Appropriate soil handling and storage	By restricting the duration of soil handling and storage, sealing and seeding storage mound surfaces as soon as is practicable and protecting surfaces from winds until disturbed areas are sealed and stable the amount of dust emissions will be reduced.
Appropriate material storage	By dampening stored materials where appropriate, covering and protecting stored materials from wind and screening material to remove dusty fractions prior to external storage the amount of dust released during construction will be reduced.

Prior to commencing works, the Site Manger will liaise and discuss the works with the Environmental Health Office (EHO) and this liaison will continue throughout the construction phase. Consultation with respect to specific method statements and general Site environmental management will be undertaken in order to agree the need for dust or any other monitoring during the construction works.

With the implementation of the CEMP and a robust remediation strategy for the Site, the residual impacts of construction dust or sporadic odour releases causing the loss of amenity at sensitive receptors located beyond the site boundary will be of **Negligible** significance.

However, the frequency of such impacts occurring would be significantly reduced. Potential air quality impacts during this phase of works will be short-term and reversible.

9.8.1 Operational Phase

Operational traffic will be appropriately managed on the local highway in order to have minimal disruption to local traffic and assist in the smooth flow of traffic onto and off the site. The development will result in a small addition of road traffic emissions on the local road network; the predicted impact is assessed to be of **Slight Adverse** to **Negligible** significance.

9.9 Conclusion

In contrast to the existing use of site the proposed Park & Ride development will result in the generation of additional road traffic sources of air emissions. During operation, future development generated traffic is to increase daily traffic flow on A171 by 2%. This predicted increase in vehicles has been assessed to result in a small increment in annual mean pollutant concentrations at worst case sensitive receptors, such that the impact significance would be **Negligible.**

For the construction of the development the implementation of a Construction Strategy which would incorporating a CEMP for the site, the residual dust impact resulting in amenity loss at sensitive receptors located within approximately 100 m is assessed to be of **Negligible** significance.

10.0 NOISE

10.1 Introduction

This section presents an assessment of the potential noise impacts of the proposed Whitby Park & Ride at potentially sensitive receptors in the vicinity of the development site. This constitutes an update to a previous assessment, undertaken as part of the June 2007 Environmental Statement. The revised impact assessment has been undertaken following the issue of new guidance and using recent calculations for the projected change in traffic flow amended for a proposed opening year of 2014. The updated assessment considers the potential impacts of noise during both the construction and operational phases of the development.

Broadly the assessment of noise impacts has involved:

- identification of appropriate standards and guidance for use in the assessment of noise impacts;
- consultation with North York Moors National Park regarding the scope and method of assessment to be adopted;
- adoption of typical daytime ambient noise levels from the previous ES, obtained by means of a survey at selected nearby receptors, in order to define the existing baseline noise climate at potentially sensitive properties;
- re-assessment of predicted noise levels at potentially sensitive receptors during the construction phase of the development in the light of updated guidance;
- review of the former assessment of predicted noise levels at potentially sensitive local properties, which have the potential to be affected by a change in noise levels as a result of variations in road traffic flows on the existing road network and as a result of the operation of the proposed 'Park & Ride' facility;
- determination of any changes to the significance of the predicted cumulative impacts associated with the construction and operational phases of the development;
- provision of proposals for mitigation measures, where appropriate, in order to minimise any potential negative impacts arising from the development; and
- prediction of any residual impacts which may remain following implementation of mitigation measures.

10.2 Site Description and Development Proposals

10.2.1 Site Description

The proposed Park & Ride site is located in an area of land bordered to the north by Barker's Lane, to the west of the town of Whitby. The A171 Guisborough Road runs along the southern boundary with the B1460 located at the eastern boundary. The existing T-junction road junction between the B1460 and A171 is located at the south-eastern end of the proposed development site.

The Site is relatively flat with a slight incline from east to west, and is currently under arable cultivation.

The Cross Butts Farm and Restaurant is located to the immediate south of the existing road junction between the B1460 and the A171 at distance of several metres from the A171 roadside. Access is gained directly onto the A171.

Victoria Farm Garden Centre is located to the immediate northeast of the junction between the B1460 and A171. Access to the premises is gained via the B1460 and the premises are located at a distance of approximately 6 m from the nearside kerb.

Bannial Flat Farm is located to the west of the proposed development site at a distance of approximately 250 m from the nearest boundary of the development Site. The intervening ground cover is existing agricultural land that is currently laid to grass.

10.2.2 Development Proposals

The development proposals will seek to construct a 'Park & Ride' facility to the northwest of the junction with the A171 and B1460. The existing T-junction between the A171 and B1460 will be removed and a new roundabout constructed slightly to the west. The roundabout will also provide access to the proposed Park & Ride facility. The proposed development is identical to that considered in the 2007 assessment.

In terms of noise there are two key areas that require assessment. These are; the construction noise, with respect to both the construction of the Park & Ride facility and proposed alterations to the junction the road alignment and secondly, the effects of any change to road traffic noise arising from the proposed Park & Ride facility.

10.3 Noise Assessment

10.3.1 Definitions of Acoustic Terminology

Before presenting the method for the assessment of potential impacts of the proposed development, it is considered useful to provide some background information on noise, the units of measurement, and perception of changing levels by the human ear.

Firstly, noise is defined as unwanted sound. The range of audible sound is from 0 dB to 140 dB, from the threshold of audibility up to the threshold of pain respectively. The frequency response of the human ear is usually taken to cover the range from 20 Hz (number of oscillations per second) to 20000 Hz. The ear does not respond equally to different frequencies at the same sound pressure level. It is more sensitive in the mid-frequency range than the lower and higher frequencies and, because of this, the low and high frequency components of a sound are reduced in importance by applying a weighting (filtering) circuit to noise measurements. The weighting which is most widely used and which correlates best with human subjective response to noise is the A-weighting. This is an internationally accepted standard for noise measurements to represent human subjective response to sound.

For steady state noise levels an increase or decrease of 1 dB(A) is not perceptible to most human beings under normal conditions, although this may be perceptible under laboratory conditions. An increase or decrease of 3 dB(A) is normally only just perceptible under normal conditions. The 'loudness' of a noise is a purely subjective parameter, but it is generally accepted that an increase/decrease of 10 dB(A) corresponds to a doubling or halving in perceived loudness.

External noise levels are rarely steady, but rise and fall according to surrounding activities. In an attempt to produce a figure that relates this variable noise level to the subjective response, a number of noise metrics have been developed. These include:

5) the L_{Amax} noise level

This is the maximum noise level recorded over a particular measurement period.

6) the L_{Aeq} noise level

This is the 'equivalent continuous A-weighted sound pressure level, in decibels', and is defined in British Standard BS 7445 as the 'value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time'. It is a unit commonly used to describe construction noise, noise from industrial premises and is the most suitable unit for the description of many other forms of environmental noise.

7) the L_{A10} noise level

The L_{A10} is the noise level that is exceeded for 10% of the measurement period, and gives an indication of the noisier levels. It is a unit that has been used over many years within the UK for the measurement and assessment of road traffic noise.

8) the L_{A90} noise level

The L_{A90} is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during quieter periods. It is often referred to as the background noise level and is used in the assessment of disturbance from industrial noise.

10.3.2 Planning Policy Context

Planning Policy Guidance (PPG) 24 (planning and noise) was superseded by the National Planning Policy Framework (NPPF) (Ref. 1) in March 2012. The NPPF states that:

'The planning system should contribute to and enhance the natural and local environment by…preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution'

The NPPF further states that:

'Planning policies and decisions should aim to:

- *Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;*
- *Mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;*
- *Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and*
- *Identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.'*

10.3.3 Construction Noise Assessment – Relevant Guidance

British Standard 5228 Noise and Vibration Control on Construction and Open Sites set out the accepted method for the prediction of construction noise. For this assessment construction noise levels have been considered quantitatively to establish the likely occurrence of potentially significant noise levels during the construction phases of the development, based upon information regarding the likely plant and the construction programme.

The procedures set out in British Standard, BS 5228 Part 1 2009 (Ref. 2) may be used to estimate construction noise levels at the nearest noise sensitive receptors and assess the significance of the works by comparison to ambient noise levels existing prior to commencement of construction activities. The standard allows for the assessment of significance of noise impacts arising from the works by three methods:

Fixed limits: trigger levels of 70 dB $L_{Aeq,T}$ in rural areas and 75 dB $L_{Aeq,T}$ in urban areas may be used to determine the eligibility of noise–sensitive receptors in close proximity to the works for receiving sound insulation. Limits are reduced for night-time periods, Sundays and public holidays.

Comparison with (pre-construction) ambient levels (ABC method): the significance of the noise impact is assessed by comparison with three sets of threshold values (A, B & C) relating to 1) night-time, 2) evenings and weekends and 3) weekday daytimes and Saturday mornings. Categories A, B and C apply where the pre-construction ambient level is below, equal to, or above the proposed thresholds respectively. In order to be significant the total noise level (i.e. ambient plus level due to construction activities) must exceed the threshold by 3 dB where ambient levels are less than or equal to the threshold. If the pre-construction ambient level exceeds the relevant threshold, the total noise level must exceed the ambient level by 3 dB for the effect to be considered significant. This method applies to residential receptors only.

Comparison with (pre-existing) ambient levels (5 dB increase): construction noise is assessed as being significant if the total noise level (ambient plus construction) exceeds the pre-construction ambient level by 5 dB for the corresponding time of day. Lower cut-off values of 65, 55 and 45 dB apply to daytime, evening

and night-time periods respectively. This method applies to all noise–sensitive receptors and may also be applied to public open space.

The unit used to assess construction noise is the Equivalent Continuous Sound Pressure Level, L_{Aeq}

10.3.4 Construction Noise Assessment – Method of Assessment

The ABC method assessment, as detailed above, has been used to assess noise from the construction phase. The potential impact of noise from the construction activities has been assessed in two broad phases, with each containing sub-phases of activity. These main phases include firstly, the construction of the parking area, and secondly, work to construct the roundabout. A list of the typical plant to be used for each of the phases, including relevant sound power level data obtained from BS 5228 and anticipated duration for the works are given below in Table ES10.1.

Table ES10.1: Construction Plant, Noise Levels and Anticipated Duration

Phase and plant	Sound Power Level/ dB(A)	Anticipated Duration/weeks
Phase I - 'Park & Ride' Construction		
Site clearance and earthworks		
JCB 3CX	104	7 weeks
Volvo 460 Excavator	107	
Dozer CAT D6	109	
Dump truck 5t	98	
A25D Volvo Hauler	108	
Drainage and ducting		
JCB 3CX	104	8 weeks
Volvo 460 Excavator	107	
2 * Dump truck 5t	101	
Kerbing and paved areas		
JCB 3CX	104	9 weeks
Paver and Tipper	105	
2 * 20t wagons	105	
Vibratory Roller	103	
Phase II - Roundabout Construction		
Breaking out and removal		
Backhoe mounted breaker	116	1 week
Wheeled excavator	101	
Spreading fill and earthworks		
Dozer CAT D6	109	4 weeks
Vibratory Roller	103	
Paving		
Asphalt Paver and Tipper	105	4 weeks
2 * 20t wagons	105	
Vibratory Roller	103	

The noise predictions have been undertaken for short term 1-hour periods with plant typically operating with a 100% on-time. This is expected to represent a worst-case scenario for typical noise levels as the on-time will generally be less than 100% over a typical 12-hour working day.

10.3.4 Operational Noise – Method of Assessment

The noise arising from operation of the proposed Park & Ride scheme will result in two potential noise impacts. This will be as a result of traffic movements within the Park & Ride area, and from additional road traffic on the existing road network. Variations in the road traffic on the existing road network have been initially screened using the guidance given in the Design Manual for Roads and Bridges, Volume 11, Section 3, Part 7 'Traffic Noise and Vibration' (Ref. 3).

Initial screening using this document seeks to identify existing roads or possible new routes where traffic flow changes exceeding +/- 25% are expected in the year of opening. It is stated that traffic flow variations below this level would give rise to a maximum change in the noise level of 1 dB(A), with change in noise below this level considered to be negligible. Consequently, an initial screening assessment of the variation of road traffic flows has been undertaken to determine the percentage change in road traffic flows.

The projections of traffic flow for the year of opening of 2014 have been reviewed for this update of the ES and the differences in absolute traffic flow between the formerly-proposed opening year of 2009 have been calculated. Using the screening criteria outlined above it was established that the increase in projected traffic flow is well below the 25% change which would require reassessment. The findings of the assessment conducted for the previous ES have therefore been adopted, as the application is unchanged in all other respects. The updated traffic flow projections are provided in Appendix ES11.1.

10.3.5 Evaluation Criteria

The two principal criteria used to predict the significance of potential noise impacts are:

- the magnitude of the impact; and
- the sensitivity of the receptors.

This assessment therefore combines these criteria in order to predict the significance of the noise impacts arising from the proposed development.

The *'Guidelines for Noise Impact Assessment'* produced by the Institute of Acoustics (IOA)/Institute of Environmental Management and Assessment (IEMA) Joint Working Party (Ref. 4) are at a draft stage at present, however, they are of use for this assessment. The Working Party has set out an example of how changes in noise level may be assessed, as shown in Table ES10.2, although it states that assessors should set out assessment criteria specific to each assessment. Consideration was given to this and is reflected in the impact scale set out below. To help understand the effects of noise changes, descriptions of subjective response have also been added.

Table ES10.2: Impact Scale for Comparison of Future Noise against Existing Noise

Change in Noise Level dB(A)	Subjective Response	Significance
0 to 0.9	Imperceptible	No Significant impact (negligible)
1.0 to 2.9	Barely perceptible	Slight
3.0 to 4.9	Noticeable	Moderate
5.0 to 9.9	Up to a doubling or halving in loudness	Substantial
10.0 or more	More than a doubling or halving in loudness	Severe impact

The draft guidelines state that the use of one decimal place is merely intended to avoid ambiguities at category boundaries, rather than an endorsement of the accuracy to be expected during noise assessment. However, the criteria in Table ES10.2 reflect key benchmarks of human response to changes in noise level. For example, a 3 dB change is generally taken to be the smallest change perceptible to the human ear and a 10 dB change is heard as a doubling or halving of the loudness of a source. The 5 dB category has been included as it provides a greater definition of the assessment of changes in noise level.

The impact scale in Table ES10.2 was used in the assessment of both construction and operational noise in this assessment.

In order to determine the significance of an impact, not only must the magnitude of this impact be determined but the sensitivity of the receptors to the impact must also be defined. This was scaled based upon professional judgement, taking into account the nature of the receptor. For the assessment the categories presented in Table ES10.3 were adopted.

Table ES10.3: Receptor Sensitivity

Receptor Sensitivity	Type of Receptor
High	Dwellings/residential properties including houses, flats, old peoples' homes, hospitals, schools, churches, caravans and open spaces/conservation areas where the existing noise level is low.
Moderate	Commercial premises including retails and offices etc.
Low	Industrial premises including warehousing and distribution etc.

Based upon the assessment of impact magnitude and the sensitivity of individual receptors, the matrix given in Table ES10.4 was developed in order to provide an indication of the possible significance of each predicted operational and construction noise impact. As mentioned, given that there are many factors which may affect the significance of an impact, not least the character of the noise and timescales over which the noise operates, the overall significance must be assessed on an individual basis and therefore the following matrix cannot be rigorously applied in all situations.

Table ES10.4: Significance Matrix

Impact Magnitude	Receptor Sensitivity		
	High	Moderate	Low
Severe	Major	Major/Moderate	Moderate/Minor
Substantial	Major/Moderate	Moderate	Minor
Moderate	Moderate	Moderate/Minor	Minor/Neutral
Slight	Minor	Minor/Neutral	Neutral
No Significant Impact (negligible)	Neutral	Neutral	Neutral

10.4 Baseline Conditions

10.4.1 Consultation with Environmental Health Departments

Golder corresponded with Mark Hill, the case officer at North York Moors National Park Planning Authority regarding the requirements for the updated ES. Mark confirmed that it was not necessary to resubmit the Screening/Scoping requests and that further consultation would only be necessary if notable differences between the findings of this and the previous ES are predicted.

10.4.2 Baseline Traffic Flows

The increase in traffic flow between 2006, when the baseline noise survey was conducted, and 2012, the new baseline, was calculated and found to be 5%. The change in traffic volume between these years is below the screening criteria of 25% set out in DMRB. It has therefore been concluded that this will result in an increase of less than 1 dB in the traffic noise. Road traffic is the dominant noise source in the area and, given the negligible predicted increase in traffic noise, the original (2006) baseline noise levels have been used in this assessment of operational noise.

10.4.3 Identified Potentially Sensitive Receptors

For the original ES, an initial desktop study was carried out using available mapping and aerial photography to identify potential noise-sensitive receptors in proximity to the proposed scheme. The receptors were verified during a site visit and described as follows:

- Cross Butts Farm and Restaurant. Located to the south of the A171 opposite the junction with the B1460 in close proximity to the roadside. The property has residential accommodation and is therefore identified as noise-sensitive;
- Victoria Farm and Garden Centre. Located to the east of the B1460 and north of the A171 in close proximity to both roads. The property contains a garden centre and café although the house appears

residential in nature and has facades facing both the B1460 and A171. For the purposes of this assessment the house is assumed to be residential; and

- Bannial Flat Farm. Located to the west of the proposed development site at a distance of approximately 270 m and to the north of the A171 at a distance of approximately 200 m.

10.4.4 Baseline Noise Survey

A baseline noise survey was conducted in support of the original ES. Representative existing ambient noise levels were obtained on Wednesday 18 October 2006. Ambient noise monitoring was undertaken at two locations in proximity to noise sensitive receptors neighbouring the existing road junction between the B1460 and A171 roads.

10.4.5 Measured Noise Level Data

A summary of the survey results is presented in Table ES10.5 below in terms of L_{Aeq}, L_{A90}, L_{A10}, and L_{Amax}.

Table ES10.5: Summary of Measured Daytime Noise Level Data

Location	Time Period	Measured Noise Level (dB)			
		$L_{Aeq, 1hr}$	$L_{A90, 1hr}$	$L_{A10, 1hr}$	$L_{Amax, 1hr}$
Cross Butts Farm*	12:14 – 12:29	76.2	55.4	80.2	92.1
	12:29 – 12:44	75.7	58.1	79.8	90.2
	12:44 – 12:59	75.4	56.1	79.6	89.4
	12:59 -13:14	74.9	54.3	79.2	90.6
Victoria Farm and Garden centre	13:15 – 13:30	66.3	55.6	70.1	78.5
	13:30 – 13:45	66.6	53.3	69.7	89.4
	13:45 – 14:00	65.3	54.0	69.0	80.4
	14:00 – 14:15	66.1	56.5	69.8	79.3

* - Note noise levels are at 1m from façade

Noise monitoring was undertaken at 1 m from the façade of Cross Butts Farm, owing to the proximity of the building to the road. Noise monitoring at White House Farm was undertaken in free-field conditions at the boundary of the property at an equivalent distance from the A171 as the residential dwelling.

10.4.6 Discussion of Baseline Noise Environment

Both ambient noise monitoring locations were found to be dominated by road traffic noise arising from vehicles on the A171. Sporadic noise from vehicles on the B1460 is not expected to significantly contribute the ambient noise environment. The A171 and B1460 are both single carriageway roads with a national speed limit (60 mph). Through traffic on the A171 travelling at speed was considered to dominate the ambient noise environment. No other noise sources were identified which contributed to the noise environment.

10.5 Construction Noise Assessment

The worst case unmitigated noise from construction activities were predicted for a number of phases of works for the proposed development. The resulting predicted noise levels are summarised below in Table ES10.6. Where works are being undertaken on the proposed Park & Ride facility there may be considerable variation of distances from the identified receptors owing to the closest and furthest distance the proposed facility is from any receptor. In such cases a range of noise levels is given, equating to operations at the furthest and closest approach to the receptor.

Table ES10.6: Summary Table of Unmitigated Construction Noise

	Bannial Flat Farm	Cross Butts Farm and Restaurant	Victoria Farm and Garden Centre
'Park & Ride' Facility	$L_{eq,1h}$/ dB(A)		
Site clearance	43 - 53	54 - 72	54 – 73

	Bannial Flat Farm	Cross Butts Farm and Restaurant	Victoria Farm and Garden Centre
Drainage & ducting	39 - 48	52 - 65	50 – 69
Kerbing & paved areas	40 - 47	52 - 60	52 – 60
Road & Roundabout Construction	$L_{eq,1h}$/ dB(A)		
Breaking out & removal	43	85	85
Spreading fill & earthworks	32	71	71
Paving	39	80	80

The impacts of the predicted noise levels have been reassessed under the new "ABC" method outlined in BS 5228 (2009) for each of the identified receptors and the results of this impact assessment are given in Table ES10.7 below:

Table ES10.7: Summary Table of Unmitigated Construction Noise

Receptor	**Bannial Flat Farm**	**Victoria Farm & Garden Centre**	**Cross Butts Farm & Restaurant**
Measured Ambient Level (rounded to nearest 5 dB)	No data available	65 dB (L_{Aeq})	75 dB (L_{Aeq})
Assessment Category as per ABC method (Daytime 07:00 – 19:00)	Category A* Threshold Value = 65 dB L_{Aeq}	Category B; Threshold Value = 70 dB L_{Aeq}	Category C; Threshold Value = 75 dB L_{Aeq}
Phase of works	**Predicted Level dB(A)/Exceedence of Threshold?**		
'Park & Ride' Facility			
Site clearance	43 – 53/No	54 – 73/Yes	54 – 72/No
Drainage & ducting	39 – 48/No	50 – 69/No	52 – 65/No
Kerbing & paved areas	40 – 47/No	52 – 60/No	52 – 60/No
Road & Roundabout Construction			
Breaking out & removal	43/No	85/Yes	85/Yes
Spreading fill & earthworks	32/No	71/Yes	71/No
Paving	39/No	80/Yes	80/Yes

* Note – no ambient noise level data available so lowest threshold adopted as a conservative measure

The predicted worst case noise levels at Bannial Flat Farm are all considerably below the threshold of 65 dB(A) $L_{eq,12h}$. Consequently, the resulting noise impact is considered to be negligible from all phases of the construction.

The predicted worst-case noise levels at Cross Butts Farm and Restaurant indicate levels below the threshold level of 75 dB(A) for all aspects of the construction for the Park & Ride facility itself.

Noise levels at Cross Butts Farm and Restaurant are predicted to exceed the suggested criteria during two particular activities; the breaking out and removal of parts of the existing road and the laying of the new road surface. Each of these operations is anticipated to be of short duration at the closest approach to the properties.

Very similar noise levels are predicted at Victoria Farm and Garden Centre. The lower measured ambient daytime noise level for Victoria Farm, however, results in a lower threshold limit and an exceedence of this

limit relating to site clearance during construction of the Park & Ride facility. The predicted noise levels indicate that noise from road and roundabout construction will exceed the threshold level during each of the three activities.

10.6 Operational Noise Assessment

10.6.1 Changes to Traffic Flows

An assessment of the impact of the variation of road traffic noise levels was undertaken using projected traffic flow rate. The findings are summarised below:

- Traffic flow variations on the B1460 indicated a very small increase in the road traffic flows. The resulting increase in noise level would be imperceptible.
- Traffic flow variations on the A171 to the east of the junction with the B1460 indicated a small decrease in the road traffic flows, equating to an imperceptible decrease in noise level.
- For the A171 to the west of the junction with the B1460 no variation in road traffic flows was predicted. As a result, no change in the noise level is predicted.

10.6.2 Changes to Noise Levels

The Cross Butts Farm and Restaurant and Victoria Farm and Garden Centre are located adjacent to the existing junction with the A171 and B1460. A more detailed assessment of the noise levels with and without the scheme was undertaken for these two properties.

Free field noise levels were predicted at 1 m from the northern façade of Cross Butts Farm and Restaurant. In addition, noise levels were predicted on both the southern façade (affected by road traffic on the A171) and western façade (affected by the road realignment, roundabout and Park & Ride facility) of the Victoria Farm and Garden Centre.

Noise level predictions were undertaken for the 'without scheme', 'with scheme' and 'with scheme including the Park & Ride facility', using the noise mapping software CADNA implementing the Calculation of Road Traffic Noise methodology. The predicted noise levels at the three identified receptor positions are summarised below in Table ES10.8. The resulting noise maps for the 'without scheme', 'with scheme', and 'with scheme including the Park & Ride are illustrated in Appendix ES10.2.

Table ES10.8: Predicted Road Traffic Noise Levels

	Predicted $L_{A10,18hr}$		
Receptor	**Without Scheme**	**With Scheme**	**With Scheme including 'Park & Ride'**
Cross Butts Farm and Restaurant	74.2	72.2	72.4
Victoria Farm southern façade	73.2	73.5	73.5
Victoria Farm western facade	68.9	68.6	68.7

The predicted changes in noise levels resulting from the proposed Park & Ride facility were compared with the predicted noise level without the scheme being implemented. This has also implemented the worst-case predicted change in noise level for Victoria Farm, on the southern façade, to represent a worst case scenario in terms of the noise impact. The results are summarised below in Table ES10.9.

Table ES10.9: Predicted Road Traffic Noise Impacts

Receptor	$L_{A10,18hr}$			Impact Magnitude	Impact Significance
	Without Scheme	With Scheme including 'Park & Ride'	Change in Noise Level/ dB(A)		
Cross Butts Farm and Restaurant	74.2	72.4	-1.8	Slight	Minor beneficial
Victoria Farm southern façade	73.2	73.5	+0.3	Negligible	Neutral
All properties in proximity to the A171 and B1460	68.9	68.7	< 1	Negligible	Neutral

It should be noted that the assessment used road traffic speeds for a national speed limit on a single carriageway (60 mph) for both the 'with scheme' and 'without scheme'. In reality, the inclusion of the roundabout will result in a considerable reduction in road traffic speeds compared to the current situation. Although the nature of the noise may change in the immediate vicinity resulted from vehicle braking and acceleration approaching and leaving the roundabout compared to vehicles currently travelling at constant speed, it was noted that there is highly likely to be a more substantial overall net reduction in noise level to those predicted as part of the assessment.

It was predicted that the small decrease in road traffic noise levels at Cross Butts Farm would result in a **Minor Beneficial** impact. The predicted noise levels at Victoria Farm and all other properties in proximity to the A171 and B1460 would be subject to noise level changes below 1 dB, resulting in a **Neutral** impact.

Consequently, the proposed development should prove to be acceptable with regard to the operational noise levels and no mitigation of the resulting impacts will be required.

10.7 Mitigation

It is expected that the contractors will follow best practicable means to reduce the noise impact upon the local community. Measures to be implemented are expected to include the following:

- proper use of plant with respect to minimising noise emissions and regular maintenance. All vehicles and mechanical plant used for the purpose of the works should be fitted with effective exhaust silencers and should be maintained in good efficient working order;
- selection of inherently quiet plant where appropriate. All fixed plant should be 'sound reduced' models fitted with properly lined and sealed acoustic covers which should be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools should be fitted with mufflers or silencers of the type recommended by the manufacturers;
- machines in intermittent use should be shut down in the intervening periods between work or throttled down to a minimum;
- ancillary plant such as generators, compressors and pumps should be positioned so as to cause minimum noise disturbance. Acoustic enclosures should be provided for all fixed plant, where appropriate; and
- adherence to the codes of practice for construction working given in British Standard BS 5228 and the guidance given therein minimising noise emissions from the site.

The impact significance of the proposed construction activities highlighted that a number of the phases may give rise to noise levels which exceed the applicable threshold values. These noise levels have been predicted to arise as a result of operations on the proposed Park & Ride facility and works to remove the existing T junction and construct the roundabout.

In order to reduce noise levels it is suggested that screening may be employed at the boundary of the Park & Ride facility during construction. Such screening typically employed on construction sites is in the form of plywood or similar hoarding erected at the boundary in order to prevent unauthorised access. 2 m high plywood or similar continuous screening at the site boundary would be expected to provide a minimum of 5 dB(A) sound reduction to neighbouring residential premises from construction activities at the closest approach. Such screening would only be required along the boundary facing Cross Butts and Victoria Farm.

Screening of construction activities involved with the road construction would be impracticable. Owing to the close proximity of the works and the movement of plant with the progress of works, temporary screening of particular operations may be more feasible. This could be implemented by way of self-standing plywood or similar screens located as close to the source of operations as possible. For example, such screening would be likely to provide beneficial noise reductions if located close to the source of road breaking activities. In this instance such screens would be expected to provide a noise reduction approaching 10 dB(A).

Screening may be employed on the boundary of work in proximity to Victoria Farm, where there is sufficient land on the edge of the highway to facilitate the erection of fencing. The requirement to maintain access to these premises would reduce the effectiveness of such screening. However, the screening would provide reasonable sound reduction to the residential premises at this location, although the garden centre would not be afforded as great a sound reduction owing to the requirements for gaps in the barrier to facilitate access.

A review of the predicted noise levels from construction activities with the above mitigation in place is presented below in Table ES10.10. These indicate the worst case construction noise levels for each construction phase at Cross Butts Farm and Restaurant and Victoria Farm and Garden Centre. No mitigation measures are deemed necessary for Bannial Flat Farm and, as such, this receptor has not been included within the mitigation assessment.

Table ES10.10: Summary of Mitigated Construction Noise Levels

	Cross Butts Farm and Restaurant	**Victoria Farm and Garden Centre**
'Park & Ride' Facility	$L_{eq,1h}$/ dB(A)	
Site clearance	67	68
Drainage & ducting	60	64
Kerbing & paved areas	55	55
Road & Roundabout Construction	$L_{eq,1h}$/ dB(A)	
Breaking out & removal	75	75
Spreading fill & earthworks	61	61
Paving	70	70

With the careful implementation of mitigation, particularly for the phase of breaking out the road surface, it can be seen that the predicted worst case noise levels should fall below the threshold of 75 dB(A) $L_{eq,12h}$ at Cross Butts Farm and, with one exception, below the 70 dB(A) $L_{eq,12h}$ threshold for Victoria Farm.

Following mitigation, breaking out and removal of the existing road layout is predicted to exceed the threshold value of 70 dB(A) $L_{eq,12h}$ at Victoria Farm by 5 dB(A). Of the proposed construction activities the breaking-out phase has the shortest duration, forecast to last for one week only. This temporary impact is considered to be of **Minor Adverse** significance only. Restricting the hours of operation for noisy plant during this phase of works would reduce the predicted levels and, therefore, the significance of the impact. However, this would also have the effect of prolonging disruption to the residents and increasing the duration of works at the closest proximity to these receptors and as such is not recommended.

10.8 Conclusions

The predicted noise impact from construction activities has been undertaken for the closest receptors to the proposed development site.

Noise levels predicted at Bannial Flat Farm to the west of the proposed development have indicated resulting worst case noise levels of 53 dB(A) $L_{eq,1h}$ well below the threshold value of 65 dB(A) $L_{eq,12h}$. Consequently, no mitigation of construction noise is proposed at this location.

The predicted construction noise levels at Cross Butts Farm and Victoria Farm indicate the potential for noise levels to exceed the suggested criterion of 75 dB(A) $L_{eq,1h}$ and 70 dB(A) $L_{eq,1h}$ respectively, as a result of the works to implement the new road layout and construct the roundabout. Works associated with the Park & Ride facility are at a greater distance from receptors and are predicted to exceed the threshold level at Victoria Farm during site clearance activities only.

Mitigation measures will need to be deployed during these works to reduce the noise impact to below the threshold levels. It is suggested that temporary self-standing screens constructed from plywood or similar material having a superficial mass of at least 10 kg/m^2 could be deployed, with screens located as close to the noise generating activities as possible. In addition, site screening in proximity to the Victoria Farm premises may be feasible owing to the availability of land between the existing road kerbside and property boundary.

The use of continuous site hoarding at the eastern and south-eastern boundary of the 'Park & Ride' site during construction works would help to reduce the impact of construction noise at both Cross Butts Farm and Victoria Farm. Such site hoarding constructed from plywood or similar material is typically used on many construction sites to prevent unauthorised access to site. The use of such hoarding forming a continuous barrier would be expected to result in a minimum 5 dB(A) reduction in construction site noise levels.

The implementation of mitigation measures are predicted to result in acceptable noise levels at all receptors from construction noise, with the exception of breaking out activities at Victoria Farm, which will be of short duration only, and therefore of **Minor Adverse** significance.

Predictions of the road traffic noise level variations, as assessed in the 2006 ES, indicate that Cross Butts Farm may experience a light reduction in road traffic noise levels resulting in a **Minor Beneficial** improvement with regard to the existing road traffic noise impact.

Noise levels at Victoria Farm and all other properties neighbouring the A171 and B1460 would experience a negligible variation in road traffic noise levels (less than 1 dB(A) which would not be perceptible). Consequently, the resulting impact significance of the proposals is deemed to be **Neutral**.

10.9 References

1 – The National Planning Policy Framework; Department for Communities and Local Government; 2012

2 – British Standard 5228-1: 2009 – Code of practices for noise and vibration control on construction and open sites – part 1: noise; British Standards Institute, 2009

3 – Design Manual for Roads & Bridges – Part 7, Noise & Vibration; The Highways Agency, 2011

4 – Guidelines for Noise Impact Assessment – consultation draft; Institute of Acoustics and Institute of Environmental Management and Assessment; 2002

11.0 HIGHWAYS AND TRAFFIC

11.1 Traffic and Highway Issues

A Transport Assessment was undertaken by North Yorkshire County Council to support a Planning Application for the development of the Park & Ride Site.

The Transport Assessment follows the framework set out within “Guidance on Transport Assessments” published by the DfT in March 2007.

The Transport Assessment Report is included in Appendix ES11.1 and the findings are summarised below.

11.2 Summary of Traffic and Highway Issues

The Park & Ride development is part of a consistent strategy for managing parking within the town and adheres to all national and local policies and guidelines for such developments.

The development intercepts rather than generates traffic and will have no material impact on highway network beyond the immediate vicinity of the site. The proposed construction of a roundabout at the site entrance is appropriate to the size and nature of the development, and has been shown to be of sufficient capacity to cater for predicted traffic movements from the site and on the A171, through to 2019.

12.0 DISRUPTION DUE TO CONSTRUCTION

12.1 Introduction

It is recognised both within the environmental topics assessed as part of this ES and within this section, that construction effects have the potential to impact upon both human and environmental receptors. The disruption due to construction may not be the direct result of construction works on the Site, but also from advanced works by utilities which may extend beyond the highway construction (i.e. pre-construction works to end of the contract maintenance period).

The following section summarises the effects which the construction phase of the scheme could potentially generate on local receptors. This follows the DMRB Volume 11 Chapter 3 Part 3 approach, although it should be noted that only limited information relating to the proposed construction programme and schedule of construction operations (i.e. working methods, plant type) is available at this stage.

12.2 Construction Programme

At this stage of the scheme's design, it is envisaged that the construction period will be approximately 9 months.

12.3 Potential Construction Works

Details regarding likely construction operations on the site have not been provided at this time, and therefore details on the likely scale of earthworks required is yet to be established. Ground investigation works will be programmed to take place prior to the final design of the scheme which will assist in determining the amount of cut and fill the scheme requires. At this time, it is estimated that the borrow associated with the scheme will be in the region of 200,000 m^2. As the earthworks design for the scheme is developed during the final stages of detailed design, this estimate will be reviewed.

It is not anticipated that construction will involve the significant removal of material from the site due to the nature and topography of the land. The majority of excavated material will be used in the construction of screen bunds along the northern and western side boundaries. It is not anticipated that significant quantities of contaminated material will be encountered.

The contractor will be required to prepare a Construction Environmental Management Plan (CEMP) for the construction of the scheme to mitigate the potential environmental impacts identified in this document as well as new potential effects that may be identified as the scheme progresses.

12.4 Potential Environmental Effects and Mitigation Measures

"The construction of the Park & Ride facility is expected to last for nine months. Within the nine month period works on the construction of the roundabout and surrounding highway network are expected to last for two months. During this two months period there will be an element of traffic disruption. Works will be phased to minimise this disruption.

The following could be used as a phasing programme:

Phase 1 – construct the north western half of the roundabout and the site access. Traffic will utilise the existing junction unhindered.

Phase 2 – construct the tie-ins between the north western half and the existing alignment. Traffic will operate under three-way traffic signals. Peak hour queuing would be expected.

Phase 3 – Southern half of the roundabout constructed. Traffic would be routed along the northern half and access the A171 east via the existing junction. Signals and peak hour disruption is likely.

Phase 4 – constructing the garden centre access and carriageway on the A171 east approach. Traffic will be diverted around the new roundabout with signal control.

Some road closures may be necessary during the works but these could be phased to occur overnight."

Construction Effects have been considered within the relevant environmental topic sections of this ES; Section 5: Air Quality, Section 6: Cultural Heritage, Section 8: Ecology and Nature Conservation, Section 9: Landscape and Visual Assessment and Section 13: Water Quality, for those receptors identified as being potentially sensitive to the development, an assessment of significant impacts that could occur during the construction phase has been carried out, and where deemed necessary committed mitigation and monitoring measures have been developed.

13.0 PEDESTRIANS, CYCLISTS, EQUESTRIANS AND COMMUNITY EFFECTS

13.1 Introduction

This section of the ES studies the potential effect of the proposals on non-motorised users (NMUs) and their movement and patterns in the local community.

13.2 Pedestrians

There are no public footpaths directly affected by the proposed route.

Overall the impact of the proposals on pedestrians (physical fitness) is assessed to be **Neutral**.

13.3 Cyclists

There are no cycleways affected by the proposed bypass route. Indirectly cyclists would benefit from a reduction in the volume of traffic in Whitby Town Centre, through the introduction of the 'Park & Ride'. *This potential benefit has not been assessed in detail.*

Overall the impact of the proposals on cyclists (physical fitness) is assessed to be **Neutral**.

13.4 Equestrians

No bridleways are affected by the scheme but it is likely that horse riders do use roads and tracks in the area. However, horse riders have not been seen in the Study Area during site visits. Based on current information, it is not thought that the Park & Ride would significantly affect horse riders.

Overall the effect of the scheme on horse riders is assessed to be **Neutral.**

13.5 Conclusion

Overall it is predicted that the impact of the proposed Park & Ride scheme on non-motorised users is predicted to be **Neutral**. Traffic in Whitby would be reduced making the locality a safer and better environment for NMUs. This secondary impact has not been assessed in detail but will undoubtedly benefit pedestrians and cyclists in the town centre.

14.0 CONCLUSIONS

This section summarises the key environmental issues and the proposed mitigation arising from the Environmental Impact Assessment from the development of the Whitby Park & Ride facility on the A171.

The proposed mitigation measures, described in the previous chapters, and summarised below will ensure the impacts are minimised.

14.1 Summary of Mitigation Measures Proposed

The following mitigation measures are proposed as an integral part of the scheme proposals:

- woodland planting and hedgerows on the perimeter of the site to screen the proposed development from the surroundings;
- cutting the parking area into the hillside to reduce its elevation in relation to the surrounding landform and further reduce its prominence;
- installation of balancing pond to regulate quantity and quality of surface water discharge;
- on-going monitoring of surface water discharge, to inform any remedial action required;
- temporary hoardings on the boundary facing Cross Butts and Victoria Farm Garden Centre;
- programming highway works to avoid peak holiday times, thus minimising queuing traffic;
- an archaeological 'strip, map and record' is to be undertaken in advance of the main phase of groundworks;
- dust and mud suppression measures to all vehicles and motorised machines; and
- routing of construction vehicles away from residential areas.

14.2 Summary of Residual Impacts

The impacts of the proposed development (assuming the above mitigation measures are implemented) have been assessed as follows:

Table ES14.1: Summary of Impacts.

	Construction	Opening Year	15 Years from Opening
Landscape Character	Moderate Adverse	Moderate Adverse	Slight Adverse
Visual Impact	Moderate Adverse	Moderate Adverse	Slight Adverse
Groundwater	Neutral	Neutral	Neutral
Surface Water	Minor Negative/ Neutral	Minor Negative/ Neutral	Minor Negative/ Neutral
Ecology And Nature Conservation (Badger Mitigation considered separately)	Neutral	Neutral	Minor Beneficial
Cultural Heritage: Archaeological Remains	Neutral to Large Adverse	Neutral	Neutral
Cultural Heritage: Historic Buildings	Slight Adverse	Neutral	Neutral
Cultural Heritage: Historic Landscape	Neutral	Neutral	Neutral
Air Quality	Negligible Adverse	Negligible Adverse	Negligible Adverse

	Construction	Opening Year	15 Years from Opening
Noise	Minor Adverse	Minor Beneficial	Minor Beneficial
Pedestrians, Cyclists, Equestrians	Neutral (benefits to Whitby Town Centre not quantified)	Neutral (benefits to Whitby Town Centre not quantified)	Neutral (benefits to Whitby Town Centre not quantified)

14.3 Key Issues

The key issues arising from the assessment, which may be a consideration when determining the planning application, are likely to be:

- short term visual impact of the development, during construction and the initial period prior to the establishment of the proposed vegetation, where the car park and bus shelter would be visible from the immediate surroundings;
- the prominence of the lighting columns associated with the roundabout on the A171/B1460 junction, along with the CCTV masts associated with the Park & Ride facility (although it should be noted that highway works outside the National Park Boundary do not form part of the planning application);
- the proposed Park & Ride facility is located within the North Yorkshire Moors National Park. National Parks represent the highest quality land in the country. However it should be noted that the application area is on the periphery of the Park, where the landscape quality is not considered as high. It is also important to note that within the vicinity of the application area there is no discernible difference in landscape character or quality either side of the park boundary. The landscape gradually changes from moorland to townscape, becoming more urban towards the outskirts of Whitby. In purely landscape terms the park boundary has no real significance;
- the consideration of the alternative sites for the Park & Ride is likely to be a key issue. A previous appraisal of the application site and an alternative site to the east of Victoria Farm Garden Centre (outside the National park) concluded that in Ecological and Cultural Heritage terms there was no real difference between the two areas. In Landscape and Visual terms the alternative site was considered marginally better, however from the point of view of vehicular access, junction design and safety the proposed application area is assessed as the better site; and
- the geophysical survey identified one feature of potential archaeological interest within the proposed development area; this has not been further evaluated, and it is possible that archaeological remains could yet be discovered on the site. It is therefore recommended that the stripping of topsoil from the site be undertaken well in advance of construction so that should archaeological recording be necessary, this does not impact upon the construction programme.

14.4 Secondary Impacts

The secondary impacts of the development have not been assessed. These are the positive benefits to the residents and visitors in Whitby. The Park & Ride scheme will reduce congestion on town centre streets, particularly during peak travel periods; reduce the level of noise and air pollution in the town centre and on the main approaches to the town; provide a sustainable alternative to town centre car parking; benefit shoppers, visitors, disabled people and support local businesses; improve the journey times/reliability of bus services; and improve road safety for road users by reducing traffic volumes.

The North York Moors National Park Authority's Core Strategy for the Local Development Framework, states that *'in recent consultation on the National Park Authority's Management Plan (2004) it was revealed that traffic was viewed as the greatest threat to the special qualities of the National Park'* and that *'Suggestions from the Initial Issues Consultation on the LDF on how planning policies can help reduce the impact of traffic*

levels in the National Park included …encouraging more Park & Ride schemes …'. Whilst the Park & Ride site has been designed to serve Whitby town centre, the proposals provide the opportunity to re-route the existing Moors bus service to incorporate the Park & Ride site, thus reducing the need to provide a similar facility in the more sensitive parts of the National Park.

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