

DD30

A453 Widening M1 Junction 24 to A52 Nottingham

PROOF OF EVIDENCE ENVIRONMENT

BY

Anthony W. Brown

BA (Hons)TP, MALD, CMLI

Inquiry commencing 10/11/09

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1. INTRODUCTION

Personal Details

- 1.1 My name is Anthony Walsham Brown. I am an Associate of David Tyldesley & Associates, a Planning, Landscape and Ecological Consultancy Practice based in Hucknall, Nottinghamshire. I hold a Bachelor of Arts Honours Degree in Town Planning and a Master of Arts Degree in Landscape Design. I have been a Chartered Member of the Landscape Institute for more than 20 years.
- 1.2 I have 25 years experience in planning and landscape architecture, comprising 5 years in local government with both Nottinghamshire and Leicestershire County Councils, and the past 20 years in the private sector. During this time I have been project Landscape Architect on 15 major trunk road schemes; on a further 5 schemes I have been the environmental specialist on the Highways Agency's multi-disciplinary employer's agent teams; and for the past 3 and a half years I have been working on the A453 Widening project within WYGs multi-disciplinary designer's team since the Early Contractor Involvement contract was awarded to Laing O'Rourke in March 2006. I have given environmental evidence as expert witness at a number of highways related Public Inquiries.

Role in the Scheme

- 1.3 Since March 2006 I have been the Environmental Co-ordinator, responsible for the co-ordination of all the environmental matters relating to the environmental impact assessment (EIA) [DD15] and design of the A453 Widening scheme. As part of the contractor's and engineering designer's core-management team I have led the environmental team, and ensured co-ordination with the engineering and traffic design and contractors teams. This has included delivery of the A453 Widening Environmental Statement (ES) [DD05] ensuring that the Highways Agency meets its responsibilities in reporting any significant environmental effects of the scheme in accordance with European and UK EIA legislation.

- 1.4 I have visited the location of the Published Scheme on numerous occasions and I am familiar with the study area. I have attended the consultations and exhibitions held for the scheme.

Scope of Evidence

- 1.5 My evidence describes the context of the scheme, its landscape setting and character, and provides information on the assessment carried out in respect of landscape and visual impact. I also describe the general environmental mitigation to be provided in conjunction with the scheme and the reasons for including the mitigation. In my evidence I cross-refer to a number of documents all of which will be available at the public inquiry.

2. CONTEXT OF THE SCHEME

Landscape Setting

- 2.1 The detailed A453 Widening Landscape Effects report in the Environmental Impact Assessment [DD15] describes the location of the proposed scheme, its landscape setting including topography, watercourses, nearby settlements, land cover and land use, heritage features, public rights of way and public amenity areas. Generally the rural section of the A453 between the motorway and Mill Hill passes through a gently undulating, open agricultural landscape where communication routes, in particular the trunk road itself where it is on embankment over the river Soar floodplain, and the Ratcliffe on Soar Power Station with associated infrastructure, are dominant features. Wooded hills, small blocks of woodland and small scale villages dot the landscape and limit views except from Mill Hill where broad south-easterly views are available across Clifton Pasture, Barton Moor, Ruddington Moor, Bradmore Moor and Bunny Moor.
- 2.2 In contrast the urban section of the scheme passes through the built up area of Clifton, dominated by housing, roads and other typical urban infrastructure. Areas of open space, planted mounds and mature vegetation provide some relief and screening from the road, particularly on the northern side. At Green Lane junction the Clifton Conservation Area provides an open, grassed area with several mature trees and the historic Village Green to the north. Further east the Nottingham Trent University

Clifton Campus borders the road on the north side, whilst houses on the southern side are set back 10-20 metres from the road behind a wide grassed and treed verge.

- 2.3 The A453 passes through the Nottingham-Derby Green Belt between the river Soar and Clifton. The Green Belt wraps around Clifton to the east through the narrow gap of the Fairham Brook corridor between Clifton and Ruddington. To the west the Green Belt includes the river Trent and floodplain between Clifton and Beeston.

Landscape and Townscape Character

- 2.4 The character of the landscape has been described by previous studies carried out at different scales, and described in the detailed A453 Widening Landscape Effects report [DD15]. The wider context of the baseline landscape character assessment is provided by the Countryside Agency's (now Natural England) Character of England Map. The A453 runs through two regional character areas: Trent Valley Washlands (Area 69); and Leicestershire and Nottinghamshire Wolds (Area 74). The extent of these areas is shown on Figure 2.5.1 in the ES Volume 2 [DD05].

- 2.5 Two county/regional-wide character assessment studies have identified a number of Local Landscape Character Areas within the study area. The two studies and their Local Landscape Character Areas that lie therein are:

1. Regional scale: Leicester, Leicestershire and Rutland Landscape and Woodland Strategy 2001 [DD62];

Local scale: *Trent Valley* (shown as Local Landscape Character Area 1(LLC Area 1) on Figure 2.5.1 in the ES Volume 2 [DD05]);

- 2.6 2. Regional scale: Nottinghamshire County Council Countryside Appraisal and Landscape Guidelines (Nottinghamshire Landscape Guidelines 1997) [DD63];

Local scale (i): *Trent Washlands* (further divided into four landscape character types, namely *Alluvial Estatelands*, *River Meadowlands A*, *River Meadowlands B*, and *Valley Wetlands*, shown as LLC Area 2 on Figure 2.5.1 in the ES Volume 2 [DD05]);

Local scale (ii): *Nottinghamshire Wolds (Wooded Hills and Scarps*, shown as LLC Area 3 on Figure 2.5.1 in the ES Volume 2 [DD05]);

Local scale (iii): South Nottinghamshire Farmlands (further divided into two landscape character types, namely *Alluvial Levels* and *Village Farmlands*, shown as LLC Area 4 on Figure 2.5.1 in the ES Volume 2 ([DD05]).

- 2.7 The existing landscape character assessments mentioned above were used to assist in further assessment work specifically to this scheme. Although largely consistent with the findings of these studies, the extensive fieldwork carried out as part of the assessment resulted in a ‘fine tuning’ and further observations with specific regard to the A453 Widening scheme. The A453 site assessed Scheme Landscape Character Areas (SLCA) 1 – 5 are shown on Figure 2.5.1 in the ES Volume 2 [DD05] illustrating any variations with the County assessed Character Areas. This work also included townscape assessment, not previously covered by any County appraisal. The revised SLCAs are described below. The Townscape Character Areas (TCA) are also described below and are illustrated in Figure 2.5.2 in the ES Volume 2 [DD05]. Appendix C in the detailed A453 Widening Landscape Effects report [DD15] contains illustrative photographs of the A453 SLCAs.

SLCA 1 – M1 to Ratcliffe on Soar

- 2.8 The character and quality of this Landscape Character Area is dominated by the Ratcliffe Power Station, associated infrastructure (overhead transmission lines) and the M1 motorway at its western edge. The A453 is prominent in the landscape, however it is partially screened in areas by mature roadside vegetation. Noise from the A453 is also apparent in many locations. The flat open topography of the Character Area affords long distance views of visual detractors such as overhead transmission lines and transportation routes (railway line, M1, A453). The predominant land use is medium scale agricultural farmland, mostly arable with some rough grazing, with isolated farm buildings. Mature hawthorn hedgerows provide the majority of the vegetation cover, forming boundaries to the agricultural fields. While many have hedge trees, there is some evidence of the hedgerows suffering from a lack of positive management intervention or restoration. There are pockets of woodland and shelterbelts, which provide some variety in the views. The natural features of the Soar valley, including Ratcliffe on Soar, previously designated a Mature Landscape Area, contrast with the man-made influences of the M1, Kegworth, Power Station,

Midland Mainline railway and A453. Overall the quality/condition of the landscape is assessed as ordinary.

SLCA 2 - South of A453, Kingston on Soar to Gotham, and north of Ratcliffe Power Station to edge of Thrumpton:

- 2.9 An undulating, medium scale agricultural landscape of mixed arable and pastoral grazing, with wooded hills of mixed broadleaf species. While the Ratcliffe Power Station is still very apparent from within the Character Area, it is obscured in places by topography and vegetation cover. The associated infrastructure (overhead transmission lines) is also less prominent, as is the A453, again due to topography and vegetation cover. Small scale villages dot the landscape, including Kingston on Soar and West Leake, and there are some good examples of quality local architectural vernacular within the Character Area. The village of Gotham lies on the edge of SLCA 3 but is more influenced by the undulating topography and wooded hills of this Character Area. Remnants of designed parkland, estate landscape and woodlands from the grounds of the country house of Kingston Hall are evident, improving the quality of this landscape area. Some areas of mixed plantations add to the increased variety of vegetation in this area when compared to adjacent ones. The quality/condition of the landscape is assessed as good.

SLCA 3 – Clifton Pasture and Barton Moor:

- 2.10 A plain, medium to large scale, flat, agricultural landscape, comprising mainly of arable land, but with some areas of rough pasture. This is a historically open, unenclosed landscape with very few hedgerows or field boundary features. Originally boggy moorland, its character has been changed by agricultural drainage. Occasional hedgerow trees, shelter belts, woodland clumps and isolated trees are present. Distant wooded hills bind the Character Area, however overhead transmission lines partially interrupt medium to long distance views. The Ratcliffe Power Station and A453 are apparent, but not dominant, to the west, and the British Gypsum works is an obvious, alien feature in distant easterly views. The suburban edge of Clifton to the north east is also evident, lying along part of this Character Area's boundary edge. The quality/condition of the landscape is assessed as ordinary.

SLCA 4 – Trent Washlands and Clifton Edge:

- 2.11 SLCA 4 comprises the flat meadowlands within the Trent floodplain, more intimate in nature than SLCA 3. A plain, medium scale, flat, agricultural landscape dominates, comprising mainly of arable land, but with some areas of rough pasture. Degraded and gappy predominantly hawthorn hedgerows with some hedge trees form field boundaries. Occasional shelter belts, woodland clumps and isolated trees are present but in my opinion add little to the quality of the landscape character. The A453, Ratcliffe Power Station and associated infrastructure (overhead transmission lines) are evident. Small settlements such as Thrumpton to the southern boundary edge and Barton in Fabis fall within the Character Area. There are some good examples of quality local architectural vernacular within these areas, and the wooded ridge between Barton in Fabis and the western edge of Clifton is an important natural feature overlooking the Trent valley. Overall the quality/condition of the landscape is assessed as ordinary.

SLCA 5 – Clifton Edge and Brands Hill to Gotham Hill:

- 2.12 A narrow, plain, open and relatively featureless agricultural landscape, dominated by arable land with large modern modified field patterns. With a sloping topography, the open fields fall away from the A453 and Mill Hill to the south east. The A453 and associated traffic are visible on the ridge line and the Ratcliffe Power Station is visible from most locations within the Character Area. There are occasional farm buildings within the open landscape. There are few hedgerows, and occasional small woodland clumps and isolated trees provide poor screening to the Ratcliffe Power Station and add little to the quality of the landscape. Wooded hills are visible in the distance, however overhead transmission lines interrupt medium to long distance views. The suburban edge of Clifton to the northeast is also evident. The quality/condition of the landscape is assessed as ordinary.

TCA 1 – Clifton Suburbs:

- 2.13 This TCA covers the area between Mill Hill on the southern edge of Clifton to the Crusader Roundabout, and a small section from the Crusader Roundabout to the Green Lane Junction. This Character Area is essentially a suburban road, with

relatively well screened residential developments lying to the north and south. The development to the south is more urban in character. The residential developments of post-war two and three story brick terraces and flats, typically set back from the road, are well screened by mounding and semi-mature screen planting which characterises this area. It differs in character from its neighbouring areas in that the road corridor is relatively narrow, widening out onto the Crusader Roundabout (TCA 2) to the east, and the wider countryside (SLCAs 3, 4 and 5) to the west. The section east of Crusader and to the north of the road includes an open field which lies within the Clifton Conservation Area. The quality/condition of the townscape is assessed as ordinary.

TCA 2 – Crusader Roundabout:

- 2.14 Crusader Roundabout is a relatively ‘green’ suburban roundabout. Semi-mature trees, shrubs and flower beds provide a suburban character to this large interchange that sits well, in terms of scale and massing, within its suburban environment. Two-story, brick, terraced and semi-detached residential properties, set well back behind semi-mature screen planting, surround the majority of this area. The Crusader public house forms a northern edge. Lighting on the outer edge of the roundabout along with road crossings, signage, and road markings are all utilitarian in character, reinforcing the character of a suburban roundabout. The quality/condition of the townscape is assessed as ordinary.

TCA 3 – Clifton Village / Amenity Open Spaces:

- 2.15 TCA 3 is centred on the Green Lane Junction and extends from the A453 to two-story terraced residential properties and front gardens set back some 60 metres to the south. TCA 3 is predominantly amenity open space with no apparent defined use. The area is of poor quality and not practically useable as an active recreational space due to the proximity of the A453 and side roads. It is bleak in appearance with scattered trees and areas of close mown grass. A petrol station (recently re-built) and the Man of Trent public house set back from the road with parking space in-between, dominate the built form in the area south of the junction. To the north of the junction a police station lies within an area of open mown grass and trees which, despite its ordinary

character, forms the southern extent of the Clifton Conservation Area. The quality/condition of the townscape is assessed as ordinary.

TCA 4 – Clifton Village Green:

- 2.16 The northern kerb of the A453, with a line of mature ash trees set slightly back to the north, defines an area of open amenity space with a distinctive Village Green character, which is lacking to the south side of the A453. When viewed from the A453, the area does not appear to be particularly attractive. However, once within the area, the boundaries of the designated Village Green become apparent and the A453 is visible from within the space beyond the line of trees. Older, typically two-story detached buildings are of a local architectural vernacular, typically stone and brick built. There are a number of listed buildings, including the 18th century Dovecote on the green which is also a Scheduled Monument. The built form in this area is of a low density and informal form, more characteristic of a village, as opposed to the higher density of the surrounding suburban housing. Street lighting is sympathetic to the historical local vernacular, and the space is free from urban clutter. This is an important open space, the quality/condition of which is assessed as good.

TCA 5 – Clifton Urban Greenway:

- 2.17 Running from the edge of the Village Green to the eastern edge of Clifton, this suburban road runs past Nottingham Trent University (NTU) to the northwest and residential properties to the south and northeast. Residential properties, typically two-story terraces and semi detached with some detached properties to the north, are set well back from the road behind a mature woodland tree belt 20 to 30 metres deep. The mature tree belt provides an important characteristic that not only provides screening, but also integrates the road into its suburban environment. The university campus to the north of the road is a younger landscape, comprising some modern university buildings of 3 and 4 stories, sports pitches and other open space. The planting along the university campus provides less screening and integration than the mature tree belts to the south of the A453. Roadside vegetation on the north side has recently been thinned out with the removal of dead elm trees for public safety reasons, leaving a somewhat unsightly verge. The road and its suburban setting of mature tree belts, residential properties, university campus and planting provide a good scale of

components that work well together. The quality/condition of the townscape is assessed as ordinary/good.

Overall Assessment of Landscape Quality , Value and Sensitivity to Change

- 2.18 The rural section is an area heavily influenced by man-made features including roads, railway, and the Ratcliffe Power Station and its associated infrastructure. The A453 passes through some pleasant Green Belt (east of the River Soar) countryside with some distinctive features and natural qualities beyond the road corridor, including the River Soar valley and wooded hills overlooking the Trent valley and at Gotham. However, in my opinion the overall quality of the landscape within the A453 corridor is ordinary due largely to the influence of visual detractors. The on-line urban section runs through a townscape also considered overall to be of ordinary quality, although the Clifton Village Green area (TCA 4) has some distinctive qualities. The quality of the landscape and townscape is not recognised by any national statutory or local non-statutory designation.
- 2.19 By gaining a better understanding of the landscape through the assessment of baseline landscape and townscape character, an assessment has been made as to the value and sensitivity of the study area to changes brought about by the proposed scheme, using the criteria in Table 1.3.1 on page 29 of the ES [DD05]. The landscape has been assessed overall as being of ordinary quality. The value placed on landscape differs from quality and depends upon the role the landscape plays and how it is viewed and appreciated, as well as its quality. For example, a landscape assessed to be of ordinary quality may have a higher value placed upon it if it is an area appreciated by local people for the role it plays in providing, for example, a distinctive setting for a town or a pleasant location for informal recreation.
- 2.20 The landscape within the road corridor is generally not sensitive to the further changes proposed as the landscape has already undergone considerable transformation. The wider area is more sensitive to change which would affect distinctive features or traditional landscape character. The proposed widening is characteristic of the area particularly as it is predominantly on-line.

- 2.21 The offline section has been subject to a more detailed Historic Landscape Character Assessment by the University of Leicester Archaeological Services (ULAS) [DD64]. The ULAS assessment, summarised in the ES Section 2 Part 2, page 88, paragraph 2.5.129 [DD05] concludes that the area immediately south-east of the existing A453, through which the offline route would pass, has been significantly changed by the removal of trees and hedges (except along Barton Lane) and many of the original smaller field patterns now barely visible in the landscape as ploughing patterns and soil marks. This historic landscape type, identified as Modern Modified Field Patterns, also contains the current A453. Although views from the A453 across the open land to Clifton Pasture and Barton Moor are of importance to the local communities the historical legibility and value of this character type is considered to be ‘low’.
- 2.22 The ULAS assessment notes that the Clifton Pasture and Barton Moor area preserve a much older landscape tradition of unenclosed land, held for the most part in common by the local community (ES Section 2 Part 2, page 88, paragraph 2.5.130 [DD05]). This landscape has been subject to some change in the 20th century with the use of drainage to cultivate the area, and a footpath across the site. This has changed the character somewhat – from the air the once completely open landscape is now divided into sections by straight lines. However, from the ground it is still very much an open landscape and the views of it from local villages and the public access onto the open space gives local people a sense of common ownership. Despite the changes the ancient landscape patterns are still visible and its heritage is accessible to the public via Barton Footpath 4 between Clifton and Gotham. The historic landscape value of this area to the east of the offline route is considered to be ‘high’.
- 2.23 In my opinion, overall, the value or sensitivity of the road corridor is low as defined in Table 1.3.1 on page 29 of the ES [DD05] i.e. of low or medium importance and rarity, at the local scale. This assessment is not undertaken for its own sake, but has influenced the alignment and design of the scheme to ensure measures included to mitigate environmental effects are focussed on avoiding or reducing the more significant effects.

Visual Amenity

- 2.24 Comprehensive fieldwork has identified a number of individual visual receptors or groups of receptors at various locations within the study area, where there are views of the A453. These are shown in Figure 2.5.9, sheets 1 – 6, of the ES Volume 2 [DD05]. In total some 565 visual receptors are identified, comprising views from residential properties, public rights of way, land with public access, places of employment, and roads. The sensitivity of the view has been assessed in accordance with the descriptions given in paragraphs 2.8 to 2.10 above.
- 2.25 The detailed A453 Widening Landscape Effects report [DD15]. describes the extent of existing views from the most sensitive receptors, taking into account topography, vegetation, elevation and other factors which influence visual amenity. As with the assessment of landscape effects described above, the visual assessment has influenced scheme design including mitigation measures to reduce the most significant effects.

3. ENVIRONMENTAL ASSESSMENT METHODOLOGY

General Assessment Methodology

- 3.1 Section 1, Part 3 of the ES, pages 25 – 34 [DD05] describes the general assessment methodology used in the EIA of the scheme. Generally, guidance within the Highways Agency's Design Manual for Roads and Bridges (DMRB) Volume 11 'Environmental Assessment' [DD176] has been followed.
- 3.2 In assessing the significance of effects on landscape/townscape and visual amenity I have used reasoned argument, objective judgement and my professional opinion, following standard guidance. My assessment is based on my experience of evaluating existing environmental quality/condition, value and sensitivity to change, and assessing the degree of change, or impact, as a result of the scheme.
- 3.3 A new road can affect the appearance of the landscape/townscape by changing the landform, affecting existing vegetation and other landscape features, and the pattern of settlement and other man-made features including historic and cultural associations. In assessing potential impacts I have given consideration to the level of the road relative to existing ground level (including embankments, screen mounds,

cuttings etc.); the road itself (including side roads, junctions and structures); lighting (both night time impact and daytime due to the columns); traffic on the road; loss of vegetation, open space and other features; and the relationships of scale and materials.

- 3.4 Scheme design, including mitigation measures to avoid or reduce impacts, is an important consideration in the assessment of impacts and overall significance of effects. Some impacts would be temporary, resulting from construction activities, or would continue until proposed mitigation such as planting has an effect. Other impacts would be longer term or permanent.

Assessing Landscape and Townscape Effects

- 3.5 The methodology used in the EIA of the landscape effects of the scheme is set out in the detailed A453 Widening Landscape Effects report [DD15], which is summarised in Section 2 Part 5 of the ES [DD05].
- 3.6 The methodology for the assessment follows guidance in DMRB Volume 11, Section 3, Part 5 Landscape Effects (June 1993) [DD176]. It also uses more recent guidance within the Department for Transport's Transport Analysis Guidance (TAG), December 2004, specifically TAG Unit 3.3.1 The Environment Objective [DD73], Unit 3.3.7 The Landscape Sub-Objective [DD74] and Unit 3.3.8 The Townscape Sub-Objective [DD75]; and the Highways Agency's updated DMRB guidance in HA 205/08, August 2008 [DD176].
- 3.7 The DMRB methodology is supplemented with more recent advice contained within the following documents:
- Guidelines for Landscape and Visual Impact Assessment (GLVIA) (Second Edition, 2002) published by the Landscape Institute and the Institute of Environmental Management and Assessment [DD65];
 - Landscape Character Assessment: Guidance for England and Scotland. (2002) – published by the Countryside Agency and Scottish Natural Heritage [DD151].
- 3.8 The assessment of the landscape effects of the scheme considers *landscape impacts* i.e. impacts to the fabric, character or quality of the landscape within the rural section of the scheme; *townscape impacts* i.e. impacts to the fabric, character or quality of the

townscape within the urban section through Clifton, and *visual impacts* which result from the change in views of the landscape and townscape due to the scheme.

- 3.9 In accordance with best practice guidance, the assessment follows three stages:
- (i) Collection, description and evaluation of baseline environmental information, leading to conclusions on the *quality/condition*, *value* and *sensitivity* of the landscape and existing views to changes likely to result from the scheme;
 - (ii) Identification and prediction of the *magnitude* of landscape and visual impacts i.e. the level of change as a result of the scheme; and
 - (iii) Evaluation of the *significance* of the effects identified.
- 3.10 Paragraph's 5.1.5 and 5.1.6 in the ES [DD05] describe the criteria used to define predicted adverse (negative) or beneficial (positive) impacts upon landscape and townscape character, following the procedure set down in TAG Unit 3.3.7 The Landscape Sub-Objective [DD74] and TAG Unit 3.3.8 The Townscape Sub-Objective [DD75]. Following a description of the character of the existing (baseline) landscape / townscape, its quality (or condition) are assessed using a five-point scale from '*poor*' to '*high quality*' (source: DMRB Volume 11, Section 3 Part 5) [DD176], its value or sensitivity to change are then assessed using a five-point scale from '*negligible*' to '*very high*' (source: HA 205/08, DMRB) [DD176], and the magnitude of impact of the scheme is then assessed using a five-point scale from '*no-change*' to '*major*' (based on experience from previous road scheme assessments).
- 3.11 Overall significance of landscape and townscape effects of the scheme are then assessed using the standard matrix from HA 205/08 [DD176] given in Table 1.3.4 in Section 1 Part 3, page 32 of the ES [DD05]. An eight point scale is used ranging from 'slight', 'moderate' to 'large' (beneficial or adverse) with 'neutral' and 'very large' at the extremes of the scale.

Assessing Visual Effects

3.12 Paragraphs 5.1.7 to 5.1.11 in the ES [DD05] describe the methodology used for assessing visual effects of the scheme. Visual impact is the result of a change in view from principally residential property, public rights of way, land with public access and roads. The *sensitivity* of receptors 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).

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

- Occupiers of residential properties with views affected by the development;
- Users of all outdoor recreational facilities including public rights of way, whose attention and interest may be focused on the landscape; and
- Communities where the development results in changes in the landscape setting or valued views enjoyed by the community.

3.14 The least sensitive receptors are likely to be people at their place of work, or engaged in similar activities, whose attention may be focussed on their work or activity and therefore may be potentially less susceptible to changes in the view. Road users are included in this category as their experience is transient.

3.15 The *magnitude of impact* is assessed according to the scale of the effect, which will depend largely upon the size and type of the development and the distance of the receptor from the site. The *significance* of visual impact depends upon the sensitivity of the receptor and the magnitude and duration of the effect. Therefore, the significance of the visual impact is higher for sensitive receptors where there are large-scale effects on a view for a long time. Table 2.5.3 in Section 2 Part 5, page 198 of the ES [DD05] shows the criteria used in arriving at the significance of visual impact of the proposed development using a seven-point scale from ‘negligible’ to ‘substantial’ (*adverse* or *beneficial*), based on guidance in both DMRB [DD176] and GLVIA 2002 [DD65].

- 3.16 Night-time impact of the proposed scheme lighting on the character of the landscape and views is assessed separately, where appropriate, to the daytime impact of lighting columns and gantries.

Assessment Scenarios

- 3.17 In accordance with DMRB guidance, the assessment of landscape and visual impacts of the proposed road improvements is based on three stages of development: during the construction stage; at completion (i.e. Year 0); and then at 15 years after completion, in summer for the landscape/townscape impacts and winter and summer for visual impacts. 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.

4. MITIGATION MEASURES

Overview of Mitigation Measures

- 4.1 Mitigation measures are included in the scheme design as illustrated in Figure 1.2.1, sheets 1 – 7, *Landscape Proposals and Mitigation* in the ES Volume 2 [DD05], also shown in more detail in Figure 1.2.3 *Environmental Masterplan* on the large plans folded into the back of the ES Volume 1 [DD05].
- 4.2 Section 1, Part 2 of the ES describes in paragraph's 2.4.13 – 2.4.20 (pages 22 – 24) the environmental management system to be adopted to mitigate potential environmental impacts during construction. An outline Construction Environmental Management Plan (CEMP) [DD09] has been developed which would become a live document during the works.
- 4.3 Section 2 of the ES describes the mitigation measures considered essential to avoid or minimise adverse environmental effects, and which have been included in the assessment of impacts of the scheme on each environmental topic. The ES Non-Technical Summary (bound in to the back of the ES) summarises the mitigation measures adopted.

- 4.4 Occasionally mitigation measures may themselves create adverse impact(s), and a judgement has been made on the most appropriate form of mitigation. For example, fencing to reduce noise may itself create unacceptable adverse landscape and visual impacts, and has been limited to three locations as described in the ES on pages 264 and 265. In these locations the proposed noise attenuation fencing and mounding would also provide visual benefits by reducing views of the road, and have therefore been included within the assessment of landscape and visual effects. Measures to reduce noise elsewhere are described by Mr. Holford in his Proof of Evidence on Noise [DD29].
- 4.5 Key mitigation planting proposals are described on the drawings in terms of their environmental objective (such as screening or landscape integration) and how that objective would be achieved (for example by planting native woodland or new hedgerows). Other measures are illustrated where the primary objective is to enhance the scheme for nature conservation (for example by installing wildlife underpasses) or for drainage/water environment reasons (for example by creating balancing ponds). There are close interrelationships between the objectives and features or elements used to achieve them, and mitigation measures often fulfil more than one role. For example, native hedgerow planting could help integrate the scheme into the landscape whilst also being of nature conservation value. The codes shown in the figures are based on guidance within the Highways Agency's Interim Advice Note (IAN) 84/07, July 2007 [DD66].
- 4.6 The main objectives of the landscape mitigation measures are to:
- Minimise the alteration of the existing pattern and character of the landscape, and enhance landscape character where possible, in accordance with strategies set out in the landscape and townscape character appraisals as described above;
 - Minimise visual impacts;
 - Minimise impacts on people in local communities by considering the effects on public rights of way;
 - Minimise the loss and degradation of existing landscape and ecological features, including maintaining the quality of watercourses; and

- Increase the nature conservation resources of the area through the creation of areas of wildlife habitat as an integral part of the landscape proposals.
- 4.7 Paragraph's 5.7.5 to 5.7.16 in the ES Volume 1, Section 2 Part 5 [DD05] describe the key mitigation measures adopted to meet these objectives within each of the scheme landscape character areas (SLCAs 1 – 5) and townscape character areas (TCAs 1 – 5) described above. Key mitigation comprises dense planting of woodland and hedgerows with trees, and providing species-rich grassland. Some areas would be kept relatively open in-keeping with the character of the landscape, whilst extensive planting at the junctions would help to reduce their impact. Ground modelling, for example within the West Leake Junction, would enhance the screening effect of planting, as would mounding around the proposed Mill Hill Roundabout.
- 4.8 The proposed scheme would not pass through SLCA 3 – Clifton Pasture and Barton Moor, but the offline route would bring the A453 closer to it. Concern has been raised locally and by English Heritage and the County Archaeological officer about the impact of the offline route on this historic landscape. Agreement has been reached on the most appropriate form of mitigation to further reduce impacts of this section of the scheme, over and above lowering the alignment down the ridge of high ground at Brands Hill and Mill Hill than the current A453. The openness of this character area has been respected by minimising planting that might interrupt views and affect the setting of the Clifton Pasture and Barton Moor area to the east. In some areas only hedgerows will be planted, keeping the area open and allowing views to the wider landscape from the A453. Localised clumps of dense roadside woodland planting would respect the landscape and help reintroduce a more enclosed character that once existed here (this is described in more detail in the ES, Section 2, Part 2 Cultural Heritage) [DD05]. A substantial area of woodland planting at Barton Lane Underbridge would more than mitigate the impact of the removal of existing vegetation in this area, keeping the character of this mature landscape area intact. Offsite planting (with landowner agreement) and slope/embankment woodland planting would replace lost vegetation at the Drift Lane Plantation, reinforcing this landscape feature.
- 4.9 Tree and shrub planting is the principal means of mitigating landscape and visual impacts of the proposed scheme. Planting would be carried out in accordance with

Highways Agency guidelines in DMRB Volume 10 “Environmental Design and Management” [DD176]. Planting would use native species, preferably indigenous to the area, comprising mainly bare-root transplants 450-900 mm high. Where trees are required for instant ‘maturity’ and/or early impact, a limited number of feathered standards, standards or extra heavy standards 4.5-6.0 m high would be used, particularly in the urban section. 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.

- 4.10 Ornamental (non-native) planting would be specified within the urban area in keeping with existing planting and for variety and interest, for example at feature roundabouts.
- 4.11 Hedgerows are important features of the landscape. Proposals would result in the loss of approximately 6,000 linear metres of hedgerow. To compensate for this, new species-rich hedges would be planted along strategic sections of the highway boundary as accommodation hedges with hedgerow trees, and would connect to existing hedgerows to maintain the integrity of the surrounding field patterns. Approximately 13,700 linear metres of hedgerows with hedgerow trees would be planted and approximately 1,200 m of offsite hedgerow enhancements as part of the mitigation proposals (subject to landowners’ agreement).
- 4.12 Table 2.4.4 on page 186 of the ES [DD05] shows the estimated areas of proposed habitat mitigation planting included within the Published Scheme, compared to the areas to be removed. In addition to the 13,700 linear metres of new species-rich hedgerow with trees, there would be a net gain of over 8 hectares of woodland, more than 9 hectares of pond/ marginal habitats and over 4 hectares of species-rich grassland. In this way the Highways Agency is meeting its duty to restore or enhance biodiversity under Section 40 of the Natural Environment and Rural Communities Act 2006 [DD67].

Description of Essential Mitigation Measures within the CPO

- 4.13 The draft Compulsory Purchase Order (CPO) for the scheme [DD04] includes the compulsory acquisition of land and rights for the mitigation of adverse effects of the scheme. The following paragraphs 4.14 to 4.25 of this Proof of Evidence describe the purpose of each essential mitigation plot with reference to the plot numbers included in the CPO as listed in Appendix D of the Proof of Evidence by Mr Pizzey on Government Policy and Scheme Overview [DD17]:
- 4.14 CPO Plot No. 1/4K. Dense woodland planting on a small triangular area of severed farmland, for landscape integration (to restore landscape character and reduce the impact of the scheme on the landscape) and conservation of biodiversity (to restore general habitats lost by the removal of roadside vegetation).
- 4.15 CPO Plot No's 2/9E, 2/10 & 2/10F. Mosaic of broadleaf woodland, scrub and species-rich grassland primarily for the conservation of biodiversity (to enhance the nature conservation value of the railway corridor and within the Parkway Junction visibility splays which prevents tall planting).
- 4.16 CPO Plot No's 3/1A, 3/1I, 3/1J, 3/1M, 3/1O & 3/1Q. Ground modelling (by disposal of surplus soil) and dense woodland planting between the new West Leake Junction and re-aligned Barton Lane, primarily for landscape integration (to reduce the impact of the scheme on the landscape by replacing vegetation to be removed which helps screen the Power Station, and to maintain the setting of the Thrumpton Conservation Area). Secondary function to conserve biodiversity (to restore general habitats lost by the removal of roadside vegetation).
- 4.17 CPO Plot No's 3/1C, 3/1E & 3/2A. Dense woodland planting on land between West Leake Junction and Winking Hill Farm, to screen the junction from the farm and for landscape integration (to reduce the impact of the scheme on the landscape by replacing vegetation to be removed). Secondary function to conserve biodiversity (to restore general habitats lost by the removal of roadside vegetation and to ensure protection of species-rich hedgerow).
- 4.18 CPO Plot No. 3/1L. Dense woodland planting on a small triangular area of severed farmland, for landscape integration (to restore landscape character and reduce the

- impact of the scheme on the landscape) and conservation of biodiversity (to restore general habitats lost by the removal of roadside vegetation).
- 4.19 CPO Plot No's 3/2C & 3/6B. Dense woodland planting for conservation of biodiversity (by providing tall planting on top of the cutting slopes to replace vegetation removed and to raise flight paths of bats and owls, and to provide habitat continuity with Twenty Lands Plantation).
- 4.20 CPO Plot No. 4/3G. Dense woodland planting on a small triangular area of farmland unlikely to be suitable for farming, to screen the A453 and lay-by from nearby properties on the edge of Thrumpton.
- 4.21 CPO Plot No. 4/4. Species-rich grassland closely associated with CPO Plot No. 4/4A (creation of balancing ponds), and CPO Plot No's 4/4B & 4/7 (cleaning and re-profiling of ditches) for conservation of biodiversity (restoration and enhancement of water vole habitat to mitigate potential impacts on existing ditches used by the species).
- 4.22 CPO Plot No's 5/2B & 5/3B. Dense woodland planting on severed farmland for landscape integration (to restore landscape character and reduce the impact of the scheme on the landscape) and to screen views of the A453 from Barton in Fabis. Also associated with CPO Plots 4/6B & 4/8B (construction of a balancing pond) for overall conservation of biodiversity (restoration and enhancement of wetland and marginal habitats).
- 4.23 CPO Plot No's 5/1C & 5/3G. Dense woodland planting associated with the construction of the Barton Lane Underbridge for landscape integration (to restore traditional landscape character of the Burrows Farm Mature Landscape Area) and for conservation of biodiversity (by providing tall planting to raise flight paths of bats and owls, and to provide habitat continuity with woodland to the north of Barton Lane junction).
- 4.24 CPO Plot No. 5/3O. Dense woodland planting on a small triangular area of severed farmland, for landscape integration (to restore landscape character and reduce the impact of the scheme on the landscape) and conservation of biodiversity (to restore general habitats lost by the removal of roadside vegetation).

- 4.25 CPO Plot No's 6/1B, 6/1C, 6/1G, 6/2 & 6/2A. Dense woodland planting for landscape integration (to reduce the impact of the Mill Hill roundabout on the landscape). Secondary function to conserve biodiversity (to restore general habitats lost by the removal of roadside vegetation).

5. LANDSCAPE AND VISUAL EFFECTS

Impacts during Construction

- 5.1 Paragraphs 5.8.2 to 5.8.17 in the ES Volume 1, Section 2 Part 5 [DD05] describe the magnitude of landscape/townscape and visual impacts during construction for sections of the route from the motorway to the Farnborough Road Junction in Clifton. The initial phase of works, involving the removal of vegetation, would have the greatest landscape and visual impact. The character of the landscape would change, and there would inevitably be significant landscape and townscape impacts during construction. Overall in my opinion the magnitude of impact would be 'moderate adverse' in accordance with Table 2.5.2 in Section 2 Part 5 of the ES Volume 1.
- 5.2 It is also inevitable that during construction the A453 and other features in the landscape would become more visible. Appendix A: Impact Summary Sheets in the detailed A453 Widening Landscape Effects report [DD15] show the assessment of construction impacts in the Visual Impact Table. Visual impacts during construction would be 'substantial adverse' to the following properties in the rural section: Long Lane Farm, Willow Farm, Cedar Isle, Riverside Farm, Winking Hill Farm, Tramway House, Fields Farm, Canterbury House, Keepers Cottage, Barton Lodge, Top Farm Cottage and Shepherds Barn. Temporary soil mounds could reduce visual impacts, but overall visual impact during construction of the rural section of the scheme is assessed as 'moderate adverse' in accordance with Table 2.5.3, which is defined therein as '*The proposals would cause change to a view from a sensitive receptor or less change to a view from a more sensitive receptor and would be an obvious element in the view*'.
- 5.3 Visual impacts during construction will be 'substantial adverse' to a number of properties close to the road in the urban section as shown in the Visual Impact Table [DD05]. Overall, visual impact during construction of the urban section of the scheme

is assessed as ‘moderate adverse’ in accordance with Table 2.5.3, as defined in the paragraph above.

Impacts Following Road Opening (Year 0 and Year 15)

- 5.4 Paragraphs 5.8.19 to 5.8.43 in the ES Volume 1, Section 2 Part 5 [DD05] describe the likely landscape and visual impacts during the operational phase of the proposed scheme immediately following road opening (Year 0) and fifteen years later both in the summer and winter (assessing the worse case without leaves on the vegetation). The effect of landscape mitigation measures as described in Section 4 above are taken into account in the Year 15 assessment but not the Year 0 assessment, apart from ground modelling and fencing. Visual impacts are illustrated in Figure 2.5.9 *Visual Impact Assessment* in the ES Volume 2 [DD05].
- 5.5 The magnitude of all landscape/townscape impacts throughout the scheme are predicted to be ‘minor’ and overall significance of effect ‘slight adverse’ in Year 0, compared to the situation in 2012 without the road improvements. In the design year 2027 (Year 15) some mitigation planting will have matured to reduce some landscape effects, but overall significance of landscape and townscape effects would remain slight adverse. Table 2.5.5 in the ES Volume 1, Section 2 Part 5, page 222 [DD05] provides a summary of landscape and townscape effects.
- 5.6 Appendix A: Impact Summary Sheets in the detailed A453 Widening Landscape Effects report [DD15] shows the predicted visual impacts in the Visual Impact Table on all identified properties, rights of way and views from other receptors within the study area, in Year 0 and Year 15. Moderate or substantial adverse effects in Year 15 are likely at the following visual receptors: Dowell’s Barn, Cedar Isle, Riverside Farm, Winking Hill Farm, No’s 1-13 Todd Close, No’s 1-12 Porter Close, No’s 1-11 Hodgkin Close, No’s 1-3 Krebs Close, No’s 18-35 Raleigh Close, No’s 11-14 Morgan Mews, No’s 7-10 Cavell Close, No’s 1-11 Dalehead Road, No’s 1-7 Glapton Lane, No’s 1-8 Grasby Walk, and Four Winds Rest Home. These are all properties with clear views of the existing road close by.
- 5.7 Although under construction at the time of assessment, moderate adverse visual impacts are predicted at the Lark Hill Retirement Village at Year 0. A 1.5m high

timber screen fence would be constructed on a 1.5m high planted earth mound around Mill Hill Roundabout. Whereas the roundabout is in cutting and the mitigation measures are predicted to screen high sided vehicles from dwellings inside the Village area, maturing planting would provide additional screening over time from open space areas within the Village site and of the lighting columns which are predicted to be visible from within the Village site.

- 5.8 Two long distance national Public Rights of Way (PROW) run through the study area: Midshires Way and the Trent Valley Way. A number of other PROW including footpaths, bridleways and cycleways circulate around the study area. All routes would be maintained with some alterations to the routes proposed. Impacts are predicted in consideration of the activity of the receptor and the change to the existing situation. As the A453 is already a significant feature of the landscape affecting all the PROWs identified, impacts are likely to be slight adverse at worst, generally due to the increased physical prominence of the road as a result of widening. However, impacts are predicted to reduce as integration and screen planting replaces vegetation lost due to construction of the road.

6. CONCLUSIONS

- 6.1 Generally the rural section of the A453 between the motorway and Clifton passes through a gently undulating, open agricultural landscape where communication routes, in particular the trunk road itself where it is on embankment over the river Soar floodplain, and the Ratcliffe on Soar Power Station with associated infrastructure, are dominant features. Wooded hills, small blocks of woodland and small scale villages dot the landscape and limit views except from Mill Hill where there are broad south-easterly views. The A453 passes through some pleasant Green Belt (east of the river Soar) countryside with some distinctive qualities, but overall in my opinion the landscape quality of the A453 corridor is 'ordinary'.
- 6.2 The eastern end of the scheme passes through the built up area of Clifton, dominated by housing, roads and other typical urban infrastructure, although areas of open space, planted mounds and mature vegetation provide some relief and screening from the road. In my opinion the urban townscape is also, overall, of ordinary quality, although

the historic Clifton Village Green area is an important open space with some distinctive qualities.

- 6.3 The value placed on landscape differs from quality and depends upon the role the landscape plays and how it is viewed and appreciated, as well as its quality. The landscape within the study area is not sensitive to the further changes proposed as the landscape has already undergone considerable transformation. The proposed widening is characteristic of the area particularly as it is predominantly on-line. The offline section has been subject to a more detailed Historic Landscape Character Assessment, which concludes that the historic legibility and historic landscape character of the area immediately south-east of the existing A453, known as Modern Modified Field Patterns, through which the offline route would pass, is 'low'. The historic landscape character value of the Clifton Pasture and Barton Moor area to the south-east of the offline route is considered 'high'. Overall, in my opinion the value and sensitivity along the entire route is 'low' in that it is of low or medium importance and rarity, at the local scale.
- 6.4 An assessment of likely significant environmental impacts has been undertaken in accordance with the Highways Agency's DMRB, Volume 11 [DD176]. The assessment takes into account the proposed environmental mitigation measures as described in this Proof of Evidence and the ES [DD05], designed to minimise environmental impacts of the scheme on the environment. This demonstrates that the Highways Agency has a clear idea of how it is intending to use the land to be acquired for essential mitigation.
- 6.5 During construction there would inevitably be some significant landscape and townscape impacts. Removal of roadside vegetation would have significant landscape impact and would open up views, affecting the character of the landscape and townscape. Overall, in my opinion, impacts during construction on landscape and townscape would be 'moderate adverse'. There would also inevitably be significant visual impact during construction to a number of residential properties lying close to the road, both in the rural and urban sections. In my opinion, overall, visual impacts during construction would also be 'moderate adverse'.

- 6.6 Immediately following road opening, landscape mitigation measures would not be effective with the exception of ground modelling, for example within the West Leake Junction. The magnitude of all landscape and townscape impacts throughout the scheme is predicted to be *'minor'* and overall significance of effect *'slight adverse'* in Year 0, compared to the situation in 2012 without the road. In the design year 2027 (Year 15) some mitigation measures would have matured to reduce some landscape effects, but in my opinion overall significance of landscape and townscape effects would remain slight adverse.
- 6.7 There will be moderate or substantial adverse visual impact to a number of properties lying close to the road in both the rural and urban sections in the year of road opening. In the design year, 15 years after road opening, mitigation planting would have matured to screen out some adverse impacts, but moderate or substantial adverse effects would continue at a number of properties. To these properties the widening of the A453 would cause substantial deterioration to existing views and would constitute a major dominant feature in the view. The erection of tall boundary fencing could reduce visual impacts from ground floor windows and gardens, but may introduce other adverse landscape and visual effects.
- 6.8 There are a number of Public Rights of Way in the study area. As the A453 is already a significant feature of the landscape affecting all the PROWs identified, in my opinion impacts are likely to be slight adverse at worst, generally due to the increased physical prominence of the road as a result of widening. However, impacts are predicted to reduce as integration and screen planting replaces vegetation removed during construction of the road. Mr. Howarth's Proof of Evidence on Highway Design [DD21; DD22]. will show that the scheme will benefit non-motorised users.
- 6.9 In my professional opinion, the ES [DD05], this Proof of Evidence and other environmental proofs presented to this Inquiry on air quality [DD27], noise [DD29] and planning policies and plans [DD24; DD25] demonstrate that, taking account of proposed mitigation measures, there would be no unacceptable adverse environmental effects of the A453 Widening scheme.