

PART 2 : THE PROJECT

2.1 Background to the Project

- 2.1.1 Various scheme options were put forward for consultation from 1985 onwards and by the mid 1990s detailed improvement proposal for both the rural and urban sections of the route had been developed and debated at Public Inquiry. However, the scheme was reassessed as part of the Government's Roads Review in 1997.
- 2.1.2 This resulted in the 1998 Transport White Paper ('A New Deal for Trunk Roads in England') announcement that it should be subject to further study to ensure solutions to the routes congestion and safety problems were developed in a manner consistent with the Government's integrated transport policy. In 2000 a Multi-Modal Study (MMS) was therefore initiated to develop a long-term strategy for the transport needs of the corridor, taking into account buses, rail, trams & Non Motorised Users (NMU's – a term used to refer to pedestrians, cyclists and horse riders).
- 2.1.3 Pell Frischmann were the consultants of this strategic level study, which included some environmental appraisal in accordance with the Guidance on the Methodology for Multi-Modal Studies (GOMMMS). The MMS reported in August 2002 and proposed a number of improvements, including on-line dualling of the rural section and widening through Clifton to a single 4-lane carriageway. In the Government's response, announced on 10 December 2002, the Highways Agency was asked to draw up proposals for improvements to the A453 between M1 J24 and the A52 Nottingham Ring Road.
- 2.1.4 Ove Arup & Partners validated the MMS on behalf of the Highways Agency between 2002 and 2003, which included some environmental assessment of the options recommended in the MMS, to a DMRB Stage 1 level only. This informed Appraisal Summary Tables (AST) prepared at that time in accordance with GOMMMS for each of the recommended route options. The ASTs record the degree to which the five Central Government objectives for transport (environment, safety, economy, accessibility and integration) would be achieved and promote a comprehensive summary of the impacts of an option. See paragraph 2.2.5.
- 2.1.5 As part of the validation process, Ove Arup carried out consultations with, amongst others, the Countryside Agency, Environment Agency, English Heritage and English Nature between February – March 2003.
- 2.1.6 The MMS recommendation for an on-line improvement was endorsed by the Regional Planning Body and now forms part of the Regional Transport Strategy.
- 2.1.7 In December 2003 Pell Frischmann were commissioned by the HA to progress the project to outline design stage and to prepare the Early Contractor Involvement (ECI) form of Contract. Detailed environmental assessment was not part of the

commission, but a report was prepared to collate all previous environmental data and to review the need for additional surveys (see 2.1.11 below). Consultations were undertaken and a Public Exhibition was held in September 2004 to explain the Preferred Route which had earlier been included in the Government's Targeted Programme of Improvements (TPI) in May 2004.

2.1.8 The environmental data review by Pell Frischmann in 2004 made several recommendations on the need for further surveys:

- baseline ecological survey to identify likely impacts on protected species and make recommendations for more detailed surveys;
- detailed agricultural survey of farms to record landscape/ecological features;
- archaeological survey;
- noise and vibration, and air quality surveys to provide up to date model predictions based on current legislation and traffic flow information;
- water quality;
- light pollution surveys to predict impacts of additional lighting on nearby residential properties.

2.1.9 No formal reporting to DMRB Stage 2 level has been undertaken due to programme constraints, although a number of key environmental surveys, including non-motorised user surveys, air quality and noise, and ecological surveys, were undertaken in 2004 / 2005. A Flood Risk Assessment scoping report was also prepared by Pell Frischmann following consultation with the Environment Agency.

2.1.10 In October 2005 Pell Frischmann prepared an updated AST for the scheme in accordance with the Highways Agency's Transport Analysis Guidance (TAG), a replacement to GOMMMS which is web-based (and referred to as WebTAG). The AST records the likely impacts of the Preferred Route on the five Central Government objectives for transport (environment, safety, economy, accessibility and integration).

2.2 Problems and Project Objectives

2.2.1 The A453 east of the M1 is a major route between Nottingham, the M1 and East Midlands Airport and forms part of the national strategic road network. The existing road is severely congested at peak hours, with unreliable journey times, has a poor safety record and poses maintenance difficulties.

2.2.2 Table 1.2.1 shows the existing annual average daily traffic (AADT) flows on the A453 in the rural and urban sections, including the percentage of heavy goods vehicles (HGVs). Also shown are predicted flows in the rural and urban areas for the opening year (winter 2012) and design year (2027), with and without the

scheme. Traffic flows are anticipated to increase significantly in the 'Do-minimum' situation (without the scheme) and the 'Do-something' situation (with the scheme).

Table 1.2.1 : Traffic Flows AADT with HGV%

	Rural	Urban
2006 existing	23,000 – 19%	30,000 – 12%
2012 without scheme (DM)	24,000 – 17%	29,000 – 13%
2012 with scheme (DS)	34,000 – 13%	37,000 – 10%
2027 without scheme (DM)	27,000 – 15%	31,000 – 12%
2027 with scheme (DS)	44,000 – 11%	48,000 – 10%

2.2.3 The A453 has a poor safety record, with a 33% higher accident level than the observed national average in the rural section and a 23% higher accident level than the observed national average in the urban section (source: 'Road Casualties Great Britain: 2006 – Annual Report'). Records indicate that between 2003 – 2007 there were 167 personal injuries, of which 134 were slight, 31 serious and 2 fatal.

2.2.4 The main project objectives are to reduce congestion and improve safety for motorists and non-motorised users such as pedestrians, cyclists and horse riders in the area.

2.2.5 The scheme brief cites the following scheme objectives with regard to the environment:

“ensure no significant change to the AST sub-criteria assessment results and improve on them, where possible, within the constraints of the brief, taking into account any special requirements”.

2.2.6 Table 1.2.2 shows the relevant AST sub-criteria/objectives:

Table 1.2.2 : AST Sub-Objectives of Relevance to the Environmental Requirements of the Scheme Brief

Objective	Sub-Objective
Environment	Noise
	Local Air Quality
	Greenhouse Gases
	Landscape
	Townscape
	Heritage of Historic Resources
	Biodiversity
	Water Environment
	Physical Fitness
	Journey Ambience
Accessibility	Severance
Integration	Transport Interchange
	Land-Use Policy
	Other Government bodies

2.2.7 Special requirements within the scheme brief are as follows:

- The urban S4 section between Crusader roundabout and Farnborough Road is to be open to traffic before the rural section.
- The urban section shall preclude opportunities for vehicular right-turning movements other than at roundabouts. (An exception to this is the NTU north gate access which is to be signalised to allow all movements except for the right turn out).
- The Scheme to provide for cyclists and pedestrians forming an element of a new long distance cycle route between Clifton and Kegworth; it also needs to take into account the relatively high numbers of non-motorised users along / across the urban section.
- Minimise disturbance to the River Soar flood plain.
- Provision of accesses to the East Midlands Parkway Station near Ratcliffe on Soar (under construction), and to the Nottingham Express Transit (NET) Park & Ride Site to the south of Clifton (if approved).

Central Government Policies for Trunk Roads

2.2.8 The Government's White Paper *"A New Deal for Transport: Better for Everyone"* (July 1998) recognised that traffic growth lies at the heart of the national traffic debate and that building new roads alone will not solve the problem of congestion. The White Paper and the associated Roads Review, *"A New Deal for Trunk Roads in England"* (July 1998) provided the Highways Agency with the strategic aim of contributing to sustainable development by maintaining, operating and improving the trunk road network in support of the Government's integrated transport and land use policies.

2.2.9 The Highways Agency's high level strategy for our national roads over the coming years is set out in the document *"Strategic Roads 2010: Highways Agency 10 Year National Roads Strategy"*. This document provides a strategy to help meet the Government's priorities for an integrated transport system as set out in *"Transport 2010: The 10 Year Plan"*, by reducing congestion and increasing safety, helping road users plan their journeys with better information and greater confidence, whilst providing quieter roads which have less impact on the environment.

2.2.10 Improvements to the A453 by the project would help to deliver the five Central Government objectives for transport, namely environment, safety, economy, accessibility and integration as follows:

- Impact on the natural and built **environment** would be minimised;
- **Safety** would be improved for road users on the A453 and local roads, and for other user groups including pedestrians, cyclists and equestrians;

- **Economic** efficiency would be improved by reducing congestion and improving the reliability of journey times;
- **Accessibility** around the A453 for those using non-motorised modes of travel, especially pedestrians, cyclists and equestrians, will be improved by reducing severance;
- Improvements would be made in the context of the Government's **integrated** transport policy by reflecting national, regional and local plans and policies and wider land-use considerations. Objectives of the Multi-Modal Study would be delivered, including the provision of access to the Parkway Station and NET developments.

2.3 Detailed Project Description

2.3.1 The following section provides a more detailed description of the significant aspects of the project to that given briefly in Section 1.1. Figure 1.1.1 in Volume 2 of the ES shows the scheme General Arrangement and Figure 1.2.1 Landscape Proposals and Mitigation, to illustrate the following description. An enlarged Environmental Masterplan, Figure 1.2.3 is folded into the back of this statement. Figure 1.2.2 in Volume 2 illustrates the key Environmental Constraints within the study area.

Rural Section

2.3.2 The existing A453 is to be improved from a single two lane (S2) carriageway with some at-grade junctions (i.e. where all carriageways are at ground level, e.g. a roundabout) to a dual two lane all purpose carriageway (D2AP) standard with grade separated junctions (i.e. where some carriageways are taken above or beneath others to allow different traffic flows at different levels). The rural section can be divided into three characteristic sections:

- (i) Between the M1 Motorway and the Midland Mainline Railway, the road is on embankment and passes over the River Soar floodplain. The road will be asymmetrically widened to the south, adding an additional carriageway on embankment alongside the existing carriageway. This embankment varies in height from about 8m near the motorway down to about 1m through the central portion, rising again to about 9m at the railway. The flood plain will be extended in two areas to compensate for the volume of flood water storage lost to the extended road embankment. In this section, the road passes over a number of structures including the River Soar Navigation (Ratcliffe Cut), The River Soar, two flood relief structures and the Midland Mainline Railway. New structures will be built alongside the existing. The designs for the structures will be sympathetic to, but not identical to, the existing ones.
- (ii) Between the railway and Thrumpton, the road is at grade or in cutting and includes two major junctions. The maximum cutting depth is 8.5m, and the maximum embankment height is 4.5m in this section. Parkway junction is

currently an 'at grade' junction and will be replaced by a 'grade separated' all movements junction connected to the East Midlands Parkway Station (under construction). West Leake Junction is currently a compact grade separated junction and will be replaced with a full standards grade separated junction. The road will be widened to the south with cutting depths increased as necessary to meet current design standards for visibility.

- (iii) Between Thrumpton and the new Mill Hill Roundabout, south of Clifton, the new road will be built offline to the south of the existing A453 and thus avoiding the Trent floodplain. The existing A453 and the local roads will be combined into a local collector distributor road. The new dual carriageway will be built mostly at grade with some sections of balanced cut and fill. The maximum cutting depth is 3m, and the maximum embankment height is 5m in this section. The road will sever Barton Lane which links Barton in Fabis and Gotham and this route will be re-connected via the new Mill Hill Roundabout. To complete the local road a short section of new road will be built adjacent to the existing Thrumpton junction, which will be closed, and a connection made to the new Mill Hill Roundabout.

2.3.3 The rural section will be unlit except for the junctions. Lighting will comprise 10m or 12m high columns designed to minimise light spillage.

2.3.4 The central reservation of the D2AP will be hardened, with a concrete road restraint system over much of its length except for the section between Long Lane and the Railway bridge where the central barrier will be steel.

2.3.5 All embankments will be constructed using Mercia Mudstone (Keuper Marl) excavated from site, with embankment and cutting slopes of 1:2.5 or 1:3. The alignment has been adjusted to provide optimal earthworks balance in order to minimise lorry movements to and from site.

2.3.6 Drainage will be via a combination of open surface water channels, combined kerb drainage systems and filter drains for the main A453 carriageway, with a combination of filter drains, kerbs and gullies for the side roads. Five balancing ponds and extensive lengths of highway drainage ditches will attenuate and clean storm water runoff prior to discharge at the rural outfalls. The balancing ponds will also have secondary functions to enhance ecological habitat and provide visual amenity for travellers.

2.3.7 We have begun liaising with landowners regarding access and boundary requirements. Direct access to the A453 currently available to most landowners will be closed on safety grounds. In the rural section, these will be replaced by accommodation tracks and Private Means of Access to other, more suitable, access points by agreement with the users. The only exception is at Cedar Isle where the most practical solution is to retain and improve the existing access as a 'left in/left out' onto the A453.

- 2.3.8 Generally, the highway boundaries will be marked by an accommodation hedge and 'post and 4 rail' fence. Where appropriate, wire netting will be attached to the boundary fence leading to culverts below the road to enable safe passage by wildlife.
- 2.3.9 A full size layby will be provided on each side of the road near Thrumpton, in similar locations to the existing laybys.
- 2.3.10 Conventional signage appropriate to a dual two lane all purpose (D2AP) carriageway will be provided including 1 mile and ½ mile advance direction signs (ADS) on the embankment approach to M1 Junction 24 and elsewhere where appropriate.

Urban Section

- 2.3.11 The existing A453 through Clifton between the new Mill Hill Roundabout junction and the Farnborough Road/Fabis Drive junction is to be improved from a single two lane (S2) carriageway to a single urban standard 4-lane (S4) carriageway with at-grade junctions. The S4 design is a 'Departure from Standards' in accordance with the Design Manual for Roads and Bridges. However there are over 9km of S4 – type roads in the City of Nottingham including nearly 2km along the A453 Queens Drive which is a continuation of the A453 from the A52 into the City.
- 2.3.12 Significant features affecting the design of the urban section include:
- (i) The Multi-Modal Study which recommended a single 4 lane (S4) design.
 - (ii) A belt of trees on the southern side opposite the Nottingham Trent University (NTU) in an area apparently set aside for future widening but now providing an attractive mature tree screen to residents.
 - (iii) The frontage of NTU and the three existing entrances.
 - (iv) The Village Green and Clifton Conservation Area at the Green Lane junction.
 - (v) The narrow corridor with existing noise and environmental screening between the Noble Road and Barton Green estates southwest of Crusader Roundabout.
- 2.3.13 The alignment of the new carriageway will follow the alignment of the existing road for most of its length. The widening will be achieved by the construction of a new carriageway on the north side of the existing road to avoid residential properties and to retain and protect the tree screen to the south. The exception to this is at Green Lane junction where widening will occur to the south to avoid the designated Village Green and archaeological features to the north.

- 2.3.14 The improvement includes signalling the existing Crusader Roundabout together with new signalised roundabout junctions at Green Lane and Farnborough Road. The signals will all include pedestrian/cycle phases for improved safety.
- 2.3.15 Minor junctions connecting into the A453 will be made 'left-in/left-out' only. An Esso petrol filling station and the Man of Trent public house currently have direct access on to the A453, and these will be retained but made into 'left-in/left-out' by preventing right turns. In addition, two care homes which currently have direct access will have a service road provided which will connect to the estate roads.
- 2.3.16 An exception to this is the NTU north gate access which is to be signalised to allow all movements except for the right turn out.
- 2.3.17 The urban section will be lit throughout, using 12m high columns designed to minimise light spillage.
- 2.3.18 Conventional urban drainage with kerbs, gullies and combined kerb drainage systems will be used. Pollution control will be introduced before discharging into Nethergate Stream and Fairham Brook, via oil interceptors and outfall penstocks. This has been discussed and agreed with the Environment Agency.
- 2.3.19 Land will be taken off the existing NTU frontage as the road is widened on the north side. New boundary treatment will include metal fencing/railings and tree and shrub planting in agreement with the University.

Non-Motorised User (NMU) Route

- 2.3.20 A continuous pedestrian / cycle route will be provided alongside the scheme between Long Lane in the rural section and Farnborough Road in the urban section, through a combination of contiguous and adjacent routes. The A453 between M1 Junction 24 and Long Lane is considered inappropriate for an NMU route as there is a safer alternative using Long Lane and existing roads to the south.
- 2.3.21 At M1 Junction 24, the existing at-grade crossing of the A453 will be replaced by a grade-separated crossing via ramps down the highway embankment to the Cattle Creep Underbridge. Existing accommodation tracks will be dedicated as a cycletrack to provide a segregated link between the existing shared use footway / cycle track on the A6 to the existing provision at M1 Junction 24. This will improve linkage to facilities to the west, in particular East Midlands Airport and the Hilton Hotel.
- 2.3.22 Between the River Soar Navigation (Ratcliffe Cut) and the railway bridge, a shared use footway / cycle track is proposed adjacent to the east-bound carriageway. This is necessary to get NMUs over the numerous structures in this section. On the southern, west-bound side, a bridleway would cross over the new Canal Bridge to connect to Long Lane Overbridge and link to the surrounding network of existing bridleways and footpaths. In both these cases NMUs would be segregated from

traffic by safety fencing. The scheme also allows for any future adaptation of the footway / cycleway fence to incorporate, for example, paddles / baffles should driver distraction from cycle headlights be a problem.

- 2.3.23 The route goes offline to pass over the railway bridge provided as part of the East Midlands Parkway Station development. It then uses the new Parkway Junction and a short section adjacent to the A453 on the north side before following the bottom of the embankment (following the alignment of the E.ON nature trail) to the West Leake Junction.
- 2.3.24 At West Leake Junction, the route continues along Barton Lane through Thrumpton and on to Mill Hill Roundabout using the de-trunked local distributor road (the current A453).
- 2.3.25 At Mill Hill, the route continues along the diverted Fox Covert Lane access and then runs parallel with the A453 down to Crusader Roundabout.
- 2.3.26 Between Crusader and Farnborough Road there is a combination of provision adjacent to the mainline on both sides of the road linked to signalised crossings at the junctions.

2.4 Existing Land Use Taken by the Project

- 2.4.1 A detailed assessment of impacts of the project on land use has been undertaken and is reported in Section 2 Part 6. In summary the existing land uses required by the project are as follows:
- 59.1 hectares of agricultural farmland (almost entirely arable land) of which approximately 16.4 hectares is Grade 2, 19.8 hectares is Grade 3a and 22.9 hectares is Grade 3b;
 - 0.04 hectares of private garden/access drives;
 - 10.48 hectares of existing highway land including roadside verge, hedges, trees, shrubs and other vegetation;
 - 17.24 hectares of operational land and open space from E.ON at Ratcliffe Power Station (e.g. car parking area, nature trail, woodland);
 - 0.08 hectares of land from the Lark Hill Retirement Village currently being constructed (land lost from the proposed woodland park);
 - 0.14 hectares of land from Nottingham Trent University (access roads, sports pitches and other open space).
- 2.4.2 Overall the footprint of the completed project as defined in the Draft Compulsory Purchase Orders is 87.08 hectares. Of this, 21 hectares will only be required temporarily during construction of the works, as described in section 2.5 below. Land required temporarily would be restored and returned to its previous use.

Areas Required Temporarily for Construction

- 2.4.3 Areas have been preliminarily identified at this stage for a main compound area in the urban section of the scheme (in Clifton), temporary topsoil storage areas, 'lay down' areas and working areas (for example around structures) in order that any environmental impact can be assessed, taking into consideration any mitigation measures to reduce impacts, and reported in the Environmental Statement (ES). These areas are shown on the scheme Land Reference Plans.
- 2.4.4 A site will be required in the rural area for the main offices and compound. At this stage a site has not been included within the Compulsory Purchase Order (CPO) plans as it could be located in any one of a number of locations. Final location will be determined following approval to construct the A453 Widening scheme, taking into consideration known environmental constraints, access and other requirements. An environmental assessment of options will be undertaken in order to determine the most favourable location, subject to landowner agreement.

Construction

- 2.4.5 Construction impacts on individual environmental topics are discussed in Section 2. Part 3 of Section 2 *Disruption Due to Construction* summarises the assessment of construction impacts within these specialist reports, and broadly considers likely cumulative effects. The main aspects of construction are outlined in paragraphs 2.4.6 to 2.4.11 below.
- 2.4.6 It is currently anticipated that construction of the scheme will take approximately 120 weeks (29 months) from the start of May 2010 to the end of December 2012. The urban section through Clifton, from the proposed Mill Hill Roundabout to the Farnborough Road junction, will be constructed in approximately 91 weeks (22 months) from the end of May 2010 to December 2011. The urban section will be completed approximately 7 months before the rural section is open to traffic. A summary draft construction programme is included at Appendix E. Programme dates and construction sequences are as accurate as they can be at the time of writing. They are intended as a guide to the nature, scope and timing of the works and may be subject to change as scheme design progresses.
- 2.4.7 The main objectives in the traffic management proposal are to maintain safe routes for all traffic for the duration of the works, minimise delays and disruption to local and trunk road traffic and disturbance to the local community. A public relations plan would be drawn up to ensure traffic management proposals received wide publicity.
- 2.4.8 In 2010 approximately 148,000 m³ of material will be moved in 60 days (310 wagons/day) by dump truck within the off-line section; and approximately 145,000 m³ of material will be moved in 60 days (302 wagons/day) by road haulage wagon elsewhere. In 2011 approximately 325,000 m³ of material will be moved in 140 days (290 wagons/day) by road haulage wagon. In 2012 approximately 37,000 m³ of material will be moved in 100 days (47 wagons/day). All such movements will be

within the scheme boundary. All of the suitable material removed from the cuttings would be used within the works. The only export of material to a local licensed waste disposal site would be unsuitable fill (i.e. contaminated soil) estimated at 500 m³. Approximately 42,000 m³ of granular materials (e.g. roadstone, free-draining sands and gravels), would need to be imported as they are not available within the works area. These would be sourced locally to minimise haulage costs, haulage impact and the scheme's carbon footprint.

2.4.9 During the road construction periods there will also be lorry movements associated with roadstone, drainage and surfacing materials. These on average will be 25/day but ranging from 15/day to 40/day.

2.4.10 The project would endeavour to recycle as much of the excavated material as possible, being suitably stockpiled awaiting re-use. Opportunities for recycling are as follows:

- topsoil – stored on site in stockpiles (>3m high) for re-use as the works are completed;
- subsoil, stones and gravels excavated from beneath the existing road and its embankments – generally reused immediately within the works but it would be necessary to stockpile some fill material until it is needed in a particular area;
- concrete – the concrete arisings from existing structures would be crushed and screened and reused in the road construction;
- timber – timber used in the construction process would be reused in the temporary works and collected and recycled once it is no longer required;
- scrap steel - such as reinforcement and structural steel recovered from the existing highway would be collected in designated scrap bins and recycled off site;
- felled trees and other vegetation removed as part of the site clearance - trees would be logged and reused off site; branches and brushwood would be shredded and spread locally or stored for use in the final scheme planting. A small amount of felled timber would be retained on site as hibernacula in ecological mitigation;
- the existing road surface (blacktop planings and tarmacadam) – these would be processed and reused in the works, if uncontaminated, for example in haul routes, and as capping material in permanent works.

2.4.11 It is anticipated that it may be necessary to install temporary environmental barriers to protect and direct pedestrians where construction works impact upon access, including public rights of way etc. It may also be necessary to erect temporary barriers at other environmentally sensitive locations such as at watercourses and in areas of protected species habitat, to exclude potential construction activity impact.

2.4.12 It is envisaged that there would be some out of hours and nightshift working during the project, and temporary closure of the A453 for safety reasons, although these would be kept to a minimum.

Environmental Management

2.4.13 Mitigation of any potential environmental impacts during the construction period will be by means of an Environmental Management System (EMS). This will identify potential effects and prescribe controls to minimise or remove impacts. Laing O'Rourke (LOR), the contractor for this scheme, operates an EMS that has been certified to the International Standard ISO 14001:2004. The system offers demonstrable evidence of consideration and control of environmental impacts, and the commitment to continual improvement.

2.4.14 The EMS will be implemented through the formulation of a Construction Environmental Management Plan (CEMP) specifically for the A453 Widening project. An outline CEMP has been developed in accordance with the contractor's EMS and with Highways Agency guidance, providing information on construction methods and controls to be employed. This will be finalised into a CEMP prior to construction and this will then become a live document during the works.

2.4.15 The aim of the CEMP is to:

- demonstrate the Contractor's ability to properly integrate the construction activities with the requirements of environment legislation and the environmental regulatory authorities and third parties;
- record environmental risks and identify how they will be managed during the construction period;
- detail how sensitive areas of the site are to be protected during the design, construction, maintenance and monitoring of the Works;
- describe the Contractor's proposals for ensuring that the requirements of the Environmental Masterplan are achieved, or are in the process of being achieved, during the Contract Period;
- achieve the environmental design and management objectives of the environmental elements, i.e. the man-made or natural assets comprising the environment within and surrounding the trunk road, for example 'woodland', as shown on the Environmental Masterplan.

2.4.16 The CEMP shall include arrangements for consultation with relevant statutory authorities, non-statutory authorities, interest groups and the public. Method Statements, procedures or plans for undertaking the Construction and 5 year landscape and ecological maintenance works based on the current design proposals and any subsequent survey work shall be included in the CEMP. These shall include measures agreed with Natural England and / or the Environment Agency, and any other statutory / non-statutory organisations. Method Statements

shall be provided for the following, and to cover any other environmental issues relevant to the development:

- pollution control and contingency plan – including water pollution control measures, noise prevention and abatement, control of airborne pollutants, and control of artificial light spillage;
- waste management plan;
- ecology and protected species management plan;
- geological site management plan;
- landscape management plan;
- archaeological protection management plan;
- public consultation and complaints procedure;
- construction site and compounds housekeeping plan.

2.4.17 An Environmental Manager (EM) will be appointed to ensure that environmental quality standards are adhered to throughout the detail design, construction, and maintenance and monitoring phases of the works. The EM will draw upon the expertise of environmental specialists as required, and liaise with all members of the environmental team, including an Environmental Clerk of Works (ECoW) who will be present on site all the time, to achieve the objectives of the CEMP. The EM will also be responsible for undertaking staff induction and training sessions on environmental matters, with assistance from the ECoW.

2.4.18 The Civil Engineering Environmental Quality (CEEQUAL) assessment and awards scheme methodology is being applied to the A453 Widening Scheme. CEEQUAL is an independent assessment of the environmental quality of the Scheme, building on current guidance and environmental good practise in construction and supporting the UK Government strategy and the engineering industry's contribution to sustainable construction. As part of the scheme's evaluation process the CEEQUAL framework is being used to assess the sustainability impact of proposals, targeting A453 key design areas to obtain best value from our approach under the following headings:

- Environmental management;
- Land use;
- Landscape;
- Ecology & biodiversity;
- Archaeology and cultural heritage;
- Impact on water resources;
- Energy;
- Material use;

- Waste management;
- Transport;
- Nuisance to neighbours; and
- Community relations.

2.4.19 In order to ensure that sustainability issues are considered throughout the design process, and that the principles of sustainable development are incorporated into the Scheme from an early stage, a bespoke assessment methodology for this Scheme has been agreed. A preliminary CEEQUAL assessment in accordance with the agreed methodology was undertaken in February 2007 to demonstrate compliance (either partially or wholly) prior to the commencement of construction. With regard to project environmental management, the assessment noted that the contractor's team has proposed changes to the specifications to improve the whole-life environmental performance of the project during the construction phase.

2.4.20 The CEMP is used as evidence required under the CEEQUAL assessment to demonstrate environmental performance during construction and that appropriate monitoring will be undertaken.