THE MERSEY GATEWAY PROJECT

LANDSCAPE AND VISUAL AMENITY

CHAPTER 12.0

LANDSCAPE AND VISUAL AMENITY

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12. LANDSCAPE AND VISUAL AMENITY

12.1 Introduction

Landscape and Visual Assessment

12.1.1 This chapter assesses both the effect of the Mersey Gateway Project (the Project) on the landscape and its visual effect on local people. The visual effect on the wider area of the Mersey Valley and its environs is also considered.

12.1.2 These assessments provide an indication of the Project's likely effect, not just on the views which people experience currently, but on the landscape as an evolving entity in its own right. Consideration is also given to potential changes to the local landscape and environment for the foreseeable future, up to fifteen years following the construction of the project.

Route Alignment

12.1.3 The highway alignment which is the subject of the landscape and visual assessment is shown on Figures 12.1.1 – 12.1.4 (Appendix 12.1) and its various components are described in Chapter 2.

12.1.4 The Reference Design illustrates, at 1:2500 scale on a sequence of A1 size drawings, the proposed scheme as envisaged.

12.1.5 The design, which incorporates a landscape scheme (the Landscape Reference Design) has been evolved to integrate the route with its surroundings and mitigate potential effects whilst recognising that the New Bridge structure proposed to span the tidal River Mersey (the River) would transform the appearance of the Upper Mersey. It should be a structure which, in scale and appearance, stands naturally within its context with limited physical effect on the natural resources of the Estuary, would instantly be identifiable with its location and would become a focus of local and regional identity.

12.1.6 The route alignment is assessed in terms of: the construction of: (i) new highway between South Widnes and North Runcorn; (ii) modifications to the existing highway network on the SJB (SJB) and its approaches from South Widnes; and (iii) modifications to the Central Expressway and the Expressway links to Junction 12 of the M56; (iv) the demolition and removal of sections of existing highway as a consequence of the construction of the Project.

12.2 Purpose of the Study

Purpose

12.2.1 The purpose of this study is to assess the effects of the construction and operation of the Mersey Gateway Bridge (the New Bridge) on the landscape and visual amenity of the areas affected by the works. The objective is to gain an in-depth appreciation of the beneficial and adverse consequences of the Project on landscape and visual amenity and to inform the preparation of appropriate mitigation measures to address any identified adverse consequences.

12.2.2 The study has been undertaken because the landscape and visual effects would be far reaching and embrace the greenbelt and protected landscapes of the Mersey Valley Estuary; Conservation Areas in Widnes and Runcorn; and the settings of listed buildings and structures principally the SJB. Due to the configuration of the local topography and the residential and industrial development of the estuary margins the visual effects of the Project could be significant to a large proportion of the local population.

12.3 Study Area

Definition of Study Area

12.3.1 The study area was defined by the extent to which the Project was estimated to be potentially visible, in clear weather conditions, subject to viewer location and any intervening features.

12.3.2 Three levels of study area have been determined as applicable to the Landscape and Visual Assessment to address the varying consequences of the construction of the scheme. These levels are:

a. *A Wider Study Area* at a sub regional scale which embraces the Mersey Valley between the conurbations of Merseyside and Greater Manchester;
b. *An Intermediate Study Area* which embraces the environs of the Upper Mersey Widnes and Runcorn; and
c. *A Local Study Area* defined by a 'highway corridor' to either side of the Project highway alignment.

12.3.3 This three tier approach is necessary to evaluate the beneficial and adverse consequences of the Project at appropriate levels of detail relative to the nature of the potential effects.

Wider Study Area

12.3.4 Due to the extent by which the existing SJB is visible a wider study area of a 30 km radius has been adopted Figure 12.2 (Appendix 12.1). This is an extent of study area used in assessing tall structures (such as wind farms) which can be seen from a distance. Given the height of the towers of the New Bridge (up to 140m above) and the fact that the existing SJB can be seen from at 30 km distance from selected viewpoints, this was considered to be suitable definition of the study area.

Intermediate Study Area

12.3.5 The intermediate study area Figure 12.3 (Appendix 12.1) has been defined by a 2 km wide zone to either side of the Project. This corridor embraces the most pertinent public realm viewpoints from which the Project is likely to register as a dominant feature which constitutes a substantial change to the existing views.

Local Study Area

12.3.6 The local study area Figure 12.4 (Appendix 12.1) has been defined by 1 km wide corridor, 500 metres to either side of the Project following an initial site inspection to determine the most significant aspects of route construction and operation on the adjacent communities and their facilities. The corridor is subdivided into segments for new highway construction and construction within the existing highway corridor.

12.4 Relevant Legislation and Planning Policy

Landscape / Townscape Policy Context

12.4.1 Various statutes and policy documents provide the policy framework for the direct and indirect protection, conservation and enhancement of important landscapes, areas of visual quality, and individual components of the landscape such as hedgerows and trees whilst the Government's objectives for national land use planning policy are outlined in national planning guidance which is reflected in regional and local planning guidance. The following paragraphs outline this framework at a national, regional and local level, relating the guidance to features of significance in the Study Area and the Project.

European Landscape Convention, Council of Europe, 2000

12.4.2 The context of landscape policy in the UK can be placed within the broad framework provided by the European Landscape Convention (ELC). The ELC was signed by the Government in February 2006 and signals a commitment to support the aims of the Convention, which include promoting landscape protection, management and planning. It covers both rural and urban situations, and suggests that: "*Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"*.

National Policy Framework

12.4.3 The Government's objectives for national land use planning policy are outlined in Planning Policy Guidance Notes (PPG) and more recently, Planning Policy Statements (PPS). Other guidance of relevance is provided in Government Circulars and legislation and guidance published by the Government's statutory environmental bodies.

Planning Policy Statements (PPS)

PPS 1 : Delivering Sustainable Development (2005);

12.4.4 **PPS1** states that "sustainable development is the core principle underpinning planning" (paragraph 3) and suggests that it can be delivered through the protection and enhancement of "the quality, character and amenity value of the countryside and urban areas as a whole" (paragraph 17). Paragraph 35 states that "High quality and inclusive design should be the aim of all those involved in the development process. It means ensuring a place will function well and add to the overall character and quality of the area, not just for the short term but over the lifetime of the development".

Planning Policy Guidance Notes (PPG)

PPG 2 : Green belt

12.4.5 Green belt Policy in PPG2 statutes (on visual): - *"Green belt should not be injured by proposals for development within or conspicuous from the Green belt which, although they would not prejudice purposes of including land in green belt, they might be visually detrimental by reason of their siting, materials or design"*.

Local Policy Framework

Halton Unitary Development Plan (adopted 7th April 2005) Halton Borough Council

12.4.6 The policies and proposals relevant to the landscape assessment are itemised below. Each of these has been considered throughout the assessment of landscape and visual effects.

Regeneration action areas

12.4.7 RG1 Action Area 1, Southern Widnes: This action area is proposed in an area of mixed uses including housing. The visual quality of the built and natural environment should be enhanced; the quality of design of any new development should enhance surroundings; public spaces should be included and the objective is to raise the overall amenity and appearance of the area. Specific opportunities include conservation area enhancement at West Bank promenade; tourist development based on Spike Island and the Catalyst Museum and water based recreation facilities.

12.4.8 RG3 Action Area 3, Widnes Waterfront: Acceptable uses will include employment, residential, leisure and open space. The nature and design of new development should take advantage of the waterside location beside the St Helens Canal and the Mersey Estuary. Provision should be made for increased public access to the waterside and significant improvements to the waterside environment and the visual quality of the built and natural environment should be enhanced.

12.4.9 RG6 Action Area 6, Castlefields and Norton Priory: Development within this area will embrace new housing, open space and community uses and the western fringe of this area bounds the Central Expressway. Local landscape and amenities include the Bridgewater Canal.

The Environmental Priority Area

12.4.10 The A562 from Liverpool to the SJB: This is one of a number of main transport corridors where one of the focus's should be improvement schemes involving land, buildings and landscaping to negate negative impressions for travellers.

The Built Environment

12.4.11 Promoting a quality built environment through enhancement initiatives based on a proper assessment of the character and defining characteristics of the surrounding natural and built environment is a key aim of the specific policy statements relating to archaeology, conservation areas and listed buildings and area based enhancement schemes. The conservation of the natural and historic environment is regarded as an essential element of sustainability. Key aspects for consideration include respecting and utilising positive site characteristics; townscape value; architectural and historical characteristics and their interrelationship with landscape features; creating visual interest and maintaining and protecting views which are important to the character and visual amenity of the local area.

BE3 - Environmental Priority Areas

12.4.12 Environmental priority areas within the borough are largely focused upon the waterfront / townscape fringes of Runcorn and Widnes where they abut the Mersey estuary. Within the environmental priority areas proposals for development will be expected to be of a quality of design that enhances the quality and appearance of the area and development, visible from main transport routes should be of a high quality of design in terms of landscape, boundary treatments and facing materials.

The Green Environment

12.4.13 Policies relating to the Green environment are extensive and most will be relevant to the landscape and visual assessment. Of particular significance are:

a. GE6 – proposed developments include Wigg Island;
b. GE10 – protection of linkages in green space systems. These embrace access to the waterfront;
c. GE19 – protection of sites for importance of nature conservation;

d. GE20 – protection and creation of local nature reserves;
e. GE23 – protection of areas of Special Landscape Value. A designation which applies to the whole of the Mersey estuary within the borough and includes important landscape features notably Wigg Island and Spike Island;
f. GE24 – protection of important landscape features. These include the Bridgewater Canal, Spike Island, Wigg Island and the Trans-Pennine Trail (West Bank dock section Widnes);
g. GE28 – the Mersey Forest. The largest in area of the twelve community forests being established throughout England. Identified opportunities include the banks of the Mersey east of Runcorn bridge (excluding the important areas of marshland); and
h. GE29 – canals and rivers. Development adjacent to the St Helens Canal, the Bridgewater Canal, the River Mersey will not be permitted if it would have an unacceptable affect on important amenity landscape and or ecological characteristics; the viability of important landscape and wildlife resources; attractive views along, onto or from the canals or river; the provision or improvement of access points onto the canals, towpath or rivers edge and the establishment of the greenway network.

Designations

12.4.14 The area and features indicated on Figure 12.5 refer to those landscape designations identified to inform and determine policy objectives in the Council UDP.

12.4.15 Of note are the fact that the areas of the Upper Mersey which lie within the borough and form the focus of the study area are designated as an Area of Special Landscape and that key landscape features affected by the scheme proposals – Spike Island and Wigg Island are identified as 'Important Landscape Features'.

12.4.16 The designations also identify two environmental priority areas which embrace both developed and undeveloped areas of the estuary margins along both the northern and southern fringes of the estuary throughout the study area.

12.4.17 Within the estuary the extensive inter-tidal sand and mudflats together with large areas of saltmarsh are of sufficient importance for the areas downstream of the SJB to be designated a Site of Special Scientific Interest (SSSI). The Mersey Estuary is also a Special Protection Area (SPA) and a Ramsar Site being a wetland of international importance. In consequence the whole of the estuary within Halton Borough is identified as an area of Special Landscape Value (SLV) of local significance in the borough containing Sites of Importance for Nature Conservation (SINC).

12.4.18 In terms of terrestrial ecology the areas of recognised value are predominantly on the southern side of the estuary and include Flood Brook Clough SSSI, Runcorn Hill Local Nature Reserve (LNR) and a number of non-statutory and local sites including the disused St Helens Canal Site of Biological Importance (SBI), the Upper Mersey SBI both of which are Grade A. A number of SBI's and Sites of Importance for Nature Conservation (SINC's) are associated with important landscape features such as Norbury Wood and Big Wood. These areas represent much of the remaining open space within the developed area of Runcorn, all of which have either been classified as areas of Special Landscape Value of Important landscape Features in the Council UDP.

12.4.19 There are designated Conservation Areas at the following locations:

a. Victoria Square Widnes;
b. West Bank Widnes;
c. Halton Village; and
d. Higher Runcorn.

12.4.20 There are 47 Listed Buildings / Structures within the Local / Intermediate Study Areas, most of which are clustered within and around the Conservation Areas

12.4.21 There are also two Scheduled Ancient Monuments in the Study Area, Halton Castle (which is also a listed building) and a heavy anti aircraft gun site.

12.4.22 Trees and woodlands adjacent to, or within the anticipated boundary of the extent of works are not under the protection of Tree Preservation Orders (TPO's).

12.5 Assessment Methodology

Methodology

12.5.1 The methodology for the landscape and visual assessment constitutes an evaluation of the baseline landscape; an assessment of the distribution and importance of local receptors; the analysis of visual effect from areas where the Project will be visible; an assessment of the significance of the potential effects; the effectiveness of mitigation and enhancement measures; the identification of residual effects and the suggestion of measures to enable predicted effects to be monitored to ascertain the effectiveness of proposed mitigation measures and make any adjustments which may be required. This is particularly relevant in those areas where substantial changes to the existing urban fabric could occur in areas where regeneration initiatives are under consideration outside the scope of the Project.

Assessment Techniques / Methodology Guidelines

12.5.2 The applied methodology for landscape and visual assessment is based upon the guidelines contained in Part 5 of Volume 11 of the Design Manual for Roads and Bridges, produced by the Highways Agency. Part 5 addresses the Landscape and Visual Effects of route construction and indicates a three stage assessment process:

a. Stage 1 - The objective at this stage is to undertake sufficient assessment to identify the landscape constraints associated with particular broadly defined routes, or corridors as developed by the Design Organisation, in this instance, the Borough Council;
b. Stage 2 - The objective at this stage is to undertake sufficient assessment to identify the landscape and visual factors and the effects upon them to be taken into account by the Design Organisation when evaluating selected route options; and
c. Stage 3 - The objective at this stage is to assess the detailed landscape and visual effects of the scheme.

12.5.3 The Stage 2 assessment methodology was used to evaluate route options which resulted in the Project being chosen as the preferred route option. For the detailed assessment of the Mersey Gateway the Stage 3 methodology has been selected and identified as the benchmark methodology. However, it is recognised that the scheme has aspects of its content which relate to area regeneration and wider environmental benefits so the scope and content of the DMRB guidelines (which are largely predisposed to an assumption of negative effect) has been augmented by best practice guidelines from Guidelines for Landscape and Visual Effect Assessment, prepared by the Landscape Institute with the Institute of Environmental Management and Assessment (2002) which adopt a broader perspective.

12.5.4 To gauge and quantify visual effects and to set those effects into a more structured appraisal of the landscape context, reference has been made to methodology guidelines outlined in Guidance on Methodologies for Multi Modal Studies (GOMMMS DETR 2000) and its bridging document (DETR 2001). The detailed guidelines, as expressed in the Transport Analysis Guidance (TAG) Unit 3.3.7 The Landscape Sub-Objective (June 2003) and Unit 3.3.8 Townscape Sub-Objective (June 2003) have been used as reference sources in formulating the methodology.

12.5.5 The methodology embraces five areas of study:

a. Data collection;
b. A description of the baseline landscape and its evolution;
c. Landscape classification;
d. Identification of physical and visual effects; and
e. An assessment of the magnitude of effects and how they may be modified by mitigation measures, together with an identification of any residual effects.

12.5.6 These five areas of study have been addressed by undertaking:

a. Desk top study of published policy documents and mapping with reference to aerial photography;
b. Site investigation with reference to data assembled for the Stage 2 assessment;
c. Site inspections from public realm land and defined public rights of way;
d. Where possible, particular considerations of private property have been accommodated; and
e. Modelling and illustrating the Project in its context using visually verified modelling (VVM) technology.

Landscape Assessment

12.5.7 The baseline conditions are defined by descriptions of the existing landscape in identified character zones with, where applicable, particular features cross referenced to relevant planning and environmental designations. Indications of the relative importance of the landscape in a national, regional, sub regional and local context are given together with a consideration of abundance or frequency of the particular type of landscape being assessed. Where appropriate, the study area is sub-divided into its constituent landscape components and tracts of landscape which constitute distinct character areas have been identified.

Baseline

12.5.8 The baseline for the landscape and visual assessment has been determined by investigations into three distinct aspects of the assessment process:

a. A consideration of the landscape and townscape within the prescribed study area defined in Section 12.3, in relation to the area within which the effects of the Project have been assessed;
b. The extent of the area from which the Project was considered to be visible; and
c. The development of a 'baseline' design of the Project which embraces both the highway engineering design and a landscape scheme. This scheme is identified as the Landscape Reference Design. Figures 12.6.1 – 12.6.7 (Appendix 12.1). This is an indicative scheme only and does not include details of all mitigation measures. For instance, noise attenuation barriers are not shown.

12.5.9 Of necessity the process of ascertaining the baseline content under each of these categories has been an iterative one, because the perception of what constitutes 'landscape' is based upon an intellectual and emotional response to the physical environment and its cultural associations. Therefore, investigations to determine the baseline have involved the assembly and collating of factual and empirical data largely comprising the findings of the assessment team, aspects of 'factual' data, particularly relating to published classifications of landscape quality and character are also based upon empirical data collection.

Baseline parameters

12.5.10 For the purposes of the assessment the baseline landscape and townscape is as existing in 2007 with an assumption that any discernable trends, for example ongoing initiatives for 'greening' the post industrial landscape and regeneration of the urban fabric, particularly in Widnes, would be addressed in the assessment process.

Visual Assessment

Visual Envelope

12.5.11 The assessment of visual effects has been conducted within a 'visual envelope' within which the Project is likely to be potentially visible.

12.5.12 The visual envelope has been determined by computer modelling of topographical and Reference Design data to identify the theoretical extent of this area.

Visual Envelope Mapping

12.5.13 The Visual Envelope Mapping has been carried out to determine the likely extent of visibility of the New Bridge within the respective study areas.

Wider Study Area

a. The theoretical extent of visibility has been determined within a 30km radius of the tallest tower of the proposed bridge to indicate where the New Bridge would possibly be visible from, subject to the intervention features which may wholly or partially obstruct a view.

Intermediate Study Area

b. Within the 2km zone the Project and particularly the New Bridge would become increasingly dominant in the landscape but this zone contains areas of 'visual shadow' within which views of the Project are screened by intervening features.

Local Study Area

c. The most significant effects of highway schemes are likely to be found within a 1km corridor (500m to either side of the edge of carriageways). Beyond this the physical and visual effects of a scheme tend to become less perceptible to receptors due to the aggregation of intervening features. The Local Study Area for the Project has therefore been defined as a 1km corridor where intervening features and landform create intermediate visual horizons these have been noted and incorporated into the assessment process. Within the Local Study Area there is a distinct difference between the visual effects of new highway construction which affect tracts of landscape not previously occupied by a road scheme and construction within the existing highway corridor beyond which the physical environment remains as existing.

Viewpoints

12.5.14 The representative viewpoints utilised for undertaking the assessment have been selected because they constitute readily accessible public realm spaces and rights of way and represent the range of situations from which the Project may be viewed from within the identified landscape types. Visualisations indicating how the scheme might appear from some of these viewpoints have been prepared based upon precisely identified viewpoint locations (GIS co-ordinates) and the three-dimensional representations of the computer model of the highway design. A schedule of the viewpoints and the visualisations is contained at Appendix 12.2.

12.5.15 The computer model for the Reference Design has been utilised to provide three-dimensional information upon which visualisations can be based and two-dimensional information which has been utilised to generate cross sections along the Central Expressway Corridor. These are indicated in Figures 12.18.1 to 12.18.6. The Location Plan for the cross sections is included as Figure 12.18.7.

Effect Assessment

12.5.16 The Project will be evaluated in terms of physical effect on the:

a. Landscape;
b. Visual effect on identified receptors in terms of intrusiveness, obstruction of the existing view and sensitivity of the view;
c. Proximity (reduction of the field of view); and

d. Physical appearance and configuration of the highway, its structures and the traffic upon it.

12.5.17 Effects have been identified by taking into account:

a. Horizontal and vertical alignment of the reference design scheme;
b. Size, scale and appearance of structures;
c. Traffic movement and its exposure to view;
d. Scope for mitigation; and
e. Identified short, medium, long term and residual effects.

12.5.18 The assessment has been based upon engineering layouts and technical descriptions. Both construction and operational phase effects have been assessed and Do Nothing effects have been considered. Construction effects include the demolition of existing buildings and structures and the changes from the existing scene to the completion of the Project. The operation phase effects are considered for the Project as it would appear in the first year of operation and following a period of fifteen years of operation by which time the landscape scheme would have matured.

Magnitude of Effect

12.5.19 The following provides a scale of magnitude that will be used for the landscape assessment of effects:

High beneficial effect	–	*represents a major improvement*
Moderate beneficial effect	–	*represents a moderate improvement*
Low beneficial effect	–	*represents a minor improvement*
No Effect	–	*no measurable effect is expected to occur*
Low adverse effect	–	*represents a small degradation*
Moderate adverse effect	–	*represents a moderate degradation*
High adverse effect	–	*represents a major degradation*

12.5.20 This scale describes the magnitude of change to the existing situation be it physical landscape or change of view. A High effect identifies a situation where the beneficial or adverse effect completely transforms the scene or the perception of the scene, the view or the perception of landscape quality. Examples will include the introduction of a new landscape infrastructure through the degraded environment of the Southern Widnes industrial zone where no such landscape structure currently exists (High beneficial effect); or the obstruction of views of the open estuary from the Trans-Pennine Trail by the New Bridge approaches (High adverse effect).

12.5.21 At the other end of the scale Low beneficial or adverse effects would represent a minor change from the existing situation which, in itself, would not be of sufficient magnitude to alter perception of essential characteristics.

12.5.22 The assessment of the magnitude of effect has been made in the context of the existing landscape quality.

Quality of Landscape

12.5.23 The importance of landscapes and views will be based on the quality of landscape in the study area that is effected.

Very High	High quality. Visually cohesive landscapes with a range of positive features, a discernable landscape pattern and distinctive landscape

character. These landscapes have an overall unity that will be susceptible to even minor changes.

High	Good quality. A landscape which has many of the attributes of a high quality landscape but is either less distinctive in character or has been compromised by intrusive elements.
Moderate	Moderate quality. Landscapes with some positive features that perform a valuable role as green space but tend to lack distinctive character and can be tolerant of change without undue detriment to their intrinsic qualities.
Low	Low Quality. Landscapes in which the components which once defined its character have been removed, fragmented or fallen into decline.
Negligible	Poor. Landscapes which have few positive features, many intrusive elements and could accommodate substantial change.

Sensitivity of Visual Receptors

12.5.24 The areas of highest sensitivity have been defined as being predominantly those residential areas and individual properties where occupants will be subjected to the greatest and most prolonged exposure to effects. Public Rights of Way, Public Open Spaces, Private Recreational Space, Schools and Business Premises were generally considered to be of lesser sensitivity but not lesser importance) because exposure to effects would be confined to restricted time periods.

12.5.25 Existing transportation routes were considered to have the least sensitivity.

Significance of Effect

12.5.26 A level of significance based on the magnitude of the effect and the sensitivity of the receptor has been identified in terms of the following seven point scale:

a. High Positive;
b. Moderate Positive;
c. Low Positive;
d. Not Significant;
e. Low Negative;
f. Moderate Negative; and
g. High Negative.

12.5.27 This is an assessment which depending upon situation could embrace varying considerations of scenic quality, duration of effect proximity and susceptibility of the receptor and extent of exposure to the effect.

12.5.28 The significance of effect has been determined in consideration of the magnitude of effect, quality of landscape and sensitivity of visual receptors. For example, a major beneficial magnitude of effect which transformed a landscape of low quality and benefited adjacent residential areas would be assessed as having a high positive significance whereas a loss of amenity due to physical proximity of the Project which obstructed views of a landscape of high quality would be assessed as being of high negative significance.

12.5.29 In each instance assessment of significance was determined through a review of baseline data, best practise guidelines and professional and expert judgement.

Established Assessment Techniques

12.5.30 Established assessment techniques have been developed in response to the effects of highway projects in landscapes and townscapes through which they pass.

12.5.31 In order to address the effects of a major bridge structure, which would be widely visible, the assessment methodology has been modified to:

a. Address the fact that the exposure of receptors to traffic on the bridge would be a significant consideration over a larger area than for the situation where the bridge approaches highway is passing through established landscapes and townscapes; and
b. Established assessment techniques tend to gravitate towards an assumption of negative effect whereas the New Bridge has very positive and beneficial attributes, which have merited assessment and have been addressed accordingly.

Assessment Assumptions

12.5.32 Due to the fact that the assessment has been conducted by desktop review and analysis supported by on-site investigation from areas of public access only, and given the size scale and potential extent of visibility of the New Bridge, assumptions regarding the priority of receptors, the degree of theoretical visibility assessed from base data and the interpretation of the significance of effect have been outlined in the methodology.

12.5.33 The outcome of the landscape and visual assessment process identifies the likely range and significance of receptors, anticipates the magnitude of effect of the scheme proposals and determines appropriate mitigation measures and techniques. However, the limitations inherent in the assessment process cannot guarantee that the effects as described and the mitigation measure promoted represent an appropriate response for each individual receptor – particularly where this relates to personal preference and / or assessment – which would involve the need to access private properties.

12.5.34 It is also assumed that the assessment findings, proposed mitigation measures and opportunities for additional benefit would continue to be refined during successive phases of detail design.

Assessment Limitations

12.5.35 The landscape and visual assessment is based upon data available at the time of preparation and a subjective assessment of the extent and degree of the likely visual effect of the proposed works. The assessment is subjective in that it relies upon an interpretation of the design intentions and an evaluation of the appearance of the designed scheme in the existing landscape, which in itself may be subject to change.

12.5.36 Whilst the landscape and visual assessment is a valuable and necessary process to enable the degree of effect to be evaluated and inform the preparation of subsequent mitigation measures the process cannot be relied upon to give definitive solutions to the specific effects of the 'as-built' scheme in relation to its evolving landscape and townscape context. A monitoring process to review the effectiveness of any mitigation measures will therefore be required.

12.6 Baseline & Results

Landscape and Townscape

Overview of Widnes and Its Environs

12.6.1 Widnes is situated on the north bank of the River Mersey. It is a low lying town which occupies a broad tract of gently sloping ground which falls southwards towards the river.

12.6.2 Other than occasional outcrops of the underlying red sandstone there are no distinctive landscape features and the town, which is characterised by its expansion in the Victorian era as a centre of the manufacture and processing of chemicals, has expanded from a core of high density terraced housing surrounding a compact town centre to absorb many of the surrounding villages into its urban fabric.

12.6.3 To the south of the town a spur of land projecting into the river contains the area of West Bank which, together with a spur projecting northwards from Runcorn, forms a narrowing of the Mersey to create the Runcorn Gap. This natural constriction became a focus for a ferry crossing and subsequently the first point upstream in the Mersey Estuary at which it was possible to construct a bridge crossing.

12.6.4 For almost the entire length of the local study area corridor the estuary is fringed by a mix of large and small scale industrial development, residential development and, latterly, edge of town commercial and retail expansion. The result is that, apart from intermittent views from the canal side and some of the adjacent areas, views of the estuary from residential areas and areas of public access are largely blocked or screened by the industrial/commercial fringe.

12.6.5 Between the industrial developments and shoreline is the local Garston to Timperley Freight railway line, which is adjacent to and parallel with the St Helens Canal. Although no longer used for navigation, the canal is an important recreational resource and the towpath, which is on the southern side of the canal and adjacent to the estuary, accommodates the Trans-Pennine Trail, a long-distance, coast to coast route for walkers, horse riders and cyclists, between Southport and Hornsea a distance of some 215 miles.

12.6.6 The A557 Widnes Eastern bypass forms a distinctive transportation corridor which is both visually dominant and a physical barrier, especially the elevated Queensway Highway and the SJB approaches. Other than this, transportation corridors do not form substantive visually significant landscape features being largely contained within the existing urban fabric or absorbed into the existing landform and land cover.

Overview of Runcorn and its Environs

12.6.7 The spur of land on which the old town of Runcorn is situated projects into the River Mersey which flows to the north and then to the west of the town, and it is this area which is the focus of Runcorn Old Town. In contrast to Widnes, the wider landscape and townscape is distinctive, with the north facing slopes of the margins of the Mersey rising steeply to form a local ridge which runs parallel to the estuary and culminates in natural outcrops of red sandstone the most prominent of which is occupied by Halton Castle.

12.6.8 The land use to the south of the estuary contains the same basic structure as that to the north but due to its topography, the landscape exhibits completely different characteristics throughout the slopes where there are both intermittent and panoramic views.

12.6.9 As with Widnes the older parts of Runcorn are characterised by high density predominantly terraced housing areas clustered around a compact town centre which expanded to absorb adjacent villages. However, it is the new town, built to the east of the existing town in the 1960's and 1970's which now defines much of Runcorn's character with its clusters of purpose built

high density residential districts. These are delineated by a series of expressways and bus ways, which provide links between the various districts and focus upon the purpose built commercial and retail centre of Halton Lea. Notwithstanding the generally high density housing and areas of associated development, there are significant areas of open green space, in particular heath land on Runcorn Hill and the extensive Town Park created as part of the new town.

12.6.10 The Daresbury Expressway, busway and Bridgewater Canal follow the contours of the slopes, but do not register as prominent features in the wider context. Much more significant are the natural valley features which punctuate the slopes. Running in a north south direction they contain the remnants of the natural land cover, open spaces and, most notably, the Central Expressway. The system of Expressways, although segregating the main traffic flows from the main urban areas, can create barriers to access but they are crossed in key locations by a system of bridges and underpasses, which link the residential areas to the main urban centres.

12.6.11 The Manchester Ship Canal forms a continuous, linear feature immediately adjacent to the estuary and it is backed by an industrial fringe albeit of smaller scale and generally more recent origin than that to the north. The industrial fringe gives way to mixed, but principally residential, development on the north facing slopes, which culminate in the vantage point of Halton Castle, visible from much of the area on the northern bank.

Description of the Mersey Estuary and Runcorn Gap

12.6.12 The most prominent feature of the estuary landscape is the Fiddlers Ferry Power Station. Located on the northern bank at the eastern extremity of the Borough, the power station is a well known landmark throughout the area and is readily visible from the Pennines, some thirty miles and more to the east.

12.6.13 Whilst the power station is the most prominent feature of the estuary, the most significant is the SJB which, in juxtaposition with the adjacent Aethelfleda railway bridge, forms the present Mersey crossing at Runcorn Gap.

12.6.14 The SJB, though not as prominent as the power station, can (depending on weather conditions) also be viewed from as far away as the Pennines. This bridge has become an iconic symbol of the north west region on a par with the Jodrell Bank radio telescope. Visible from all surrounding directions in the study area, the SJB is the principal focal point for the surrounding urban areas of Runcorn and Widnes and in turn it affords spectacular views of the upstream estuary to the east.

12.6.15 At either end of the SJB the cluster of mainly residential properties form the distinctive settlements of Runcorn Old Town and West Bank. Each is characterised by high density housing in narrow grid pattern streets and has a church as a prominent focal point. Lying, literally, in the shadow of the bridge these communities are completely distinct from the remainder of the developed landscape and, from their waterside fringes afford comprehensive and panoramic views over the estuary. The bridge dominates the scene but despite being imposed on the settlements, is not oppressive.

12.6.16 The estuary and its saltmarshes are designated as an Area of Special Landscape Value and there are two open spaces of particular significance, both on the margins of the estuary. Spike Island on the northern shore adjacent to West Bank and Wigg Island adjacent to the south shore are designated as Important Landscape Features due to their value as public open space and for their nature conservation interest and industrial heritage significance.

12.6.17 Spike Island, adjacent to West Bank, is formed around the point where the St Helens Canal enters the Mersey. Formerly the site of a soap works and processing plant the ‘island’ is now a popular recreation area, which also functions as a staging post on the Trans-Pennine Trail and

provides the setting for the 'Catalyst' Chemical Industry Museum. Spike Island affords some of the most expansive views over the estuary to be found within the study area.

12.6.18 Situated on the southern margins of the estuary, Wigg Island, formerly a repository for the storage and manufacture of munitions is now a community park with a strong emphasis on the enjoyment and appreciation of the nature conservation interest of the estuary. A series of bird hides provided at vantage points overlooking the adjacent saltmarsh also permit panoramic views over the whole estuary.

Landcover

12.6.19 For the purpose of this study landcover is defined as those land uses, features and habitats which contribute to the landscape character of those tracts of landscape which can be identified as the local landscape types which constitute the core study area. Reference Figure 12.7 (Appendix 12.1).

12.6.20 Within the core study area the landcover principally comprises an aggregate of:

a. Residential, civic, cultural, commercial and industrial areas;
b. Greenspaces (including wooded areas);
c. The estuary sandbanks, channel and saltmarshes; and
d. Transportation corridors (rail, principal road networks and canals).

12.6.21 Both Widnes and Runcorn contain landscape and townscape features which contribute to a sense of identity and place.

12.6.22 In Widnes these include Widnes town centre; West Bank; the Catalyst Museum; Spike Island; Industrial land (west of Cornwall Street in the Waterloo Road Area, around the former West Bank Dock area, the Catalyst Trade Park and around Moss Bank) and the retail and commercial areas centred upon the Green Oaks shopping centre.

12.6.23 In Runcorn these include Runcorn Old Town, Runcorn Old Quay frontage, Wigg Island, Halton Castle, the Astmoor Industrial Estate and the Dukesfield Dock area.

12.6.24 Beyond the core study area and within the ancillary study area the mapping of landcover is either considered not to be pertinent to the study or is mapped as part of the Reference Design Landscape Scheme.

Topography

12.6.25 Figure 12.8 (Appendix 12.1) illustrates the topographical range at 5m contour intervals of an area around Widnes and Runcorn which incorporates both the core and ancillary study areas.

12.6.26 The contouring demonstrates the clear distinction between the low-lying landform of the Widnes area and the more distinctive landform of Runcorn. Around Widnes the landform falls towards the Mersey from a height of only 20 – 30m to the north of the town centre to less than 5m on the fringes of the Upper Mersey. Also apparent is the clearly defined promontory of West Brook.

12.6.27 In the Runcorn Area, the relatively steep rise to 80m + around the high points of Runcorn Hill and Halton Castle is readily apparent as is the distinctiveness of the north facing valley which contains Norton Priory and Town Park. Equally of interest is the manner in which the topography falls once more towards the Southern and Weston Point Expressways and the M56 at Junction 12 where the contours average 50m. This effectively creates a 'ridge' between Runcorn Hill and Halton Castle.

12.6.28 From this illustration it is also apparent how the transportation corridors – expressways, canals and railways run with the grain of the landscape in contrast to the existing Runcorn Gap

Crossings and the New Bridge which achieve some of their distinctiveness by being sited 'against the grain'.

Landscape Classification

12.6.29 The landscape of the study area is subject to three levels of classification – regional context, local landscape types and designated features.

Regional Landscape Types

12.6.30 The Countryside Character Map of England, prepared by the Countryside Commission using a combination of computer based statistical analysis and the consistent application of structural landscape assessment techniques delineates a total of 159 Character Areas throughout England. The Character Areas are tracts of countryside exhibiting broadly cohesive character determined by landform, landcover, physical characterstics, natural environments and human activity.

12.6.31 Character Area 60, illustrated on Figure 12.2 (Appendix 12.1), The Mersey Valley, comprises a varied landscape which extends from the Merseyside conurbation to the flat Mosslands to the west and Manchester to the east. The western part of the Mersey Valley is of most relevance to the assessment of the Mersey Gateway and is summarised thus:

a. A very distinctive river-valley landscape focusing on the Mersey, its estuary and associated tributaries and waterways, although the Mersey itself is often obscured;
b. A range of landscape types, including saltmarshes around the estuary, remnants of semi-natural mosslands and pockets of basin peats towards Manchester, with the broad river valley in between;
c. Broad linear valley with large-scale, open, predominantly flat farmland supporting substantial bands of mixed agriculture;
d. Trees and woodland are scarce and are mainly associated with settlements;
e. Field pattern is regular and large-scale, often defined by degraded hedgerows;
f. Large-scale highly visible industrial development, particularly at the river crossings of Runcorn, Widnes and Warrington;
g. The valley has a dense communication network with motorways, roads, railways and canals producing a large number of bridge crossings. Power lines are also prominent along this corridor; and
h. Distinctive cultural landscape with major towns of Runcorn, Warrington and Widnes having much in common in relation to past and existing development pressures.

12.6.32 The character of this landscape has been highly influenced by the urban and industrial developments lining the banks of the Mersey. In most cases this has had a detrimental effect on the aesthetic quality of the landscape. The vast industrial developments at Runcorn and Ellesmere Port dominate the skyline and dwarf neighbouring residential development.

12.6.33 In the west, the Mersey Valley is estuarine in character with intertidal mud / sand flats and low exposed cliffs. This creates an almost flat landscape with broad panoramic views. Despite the substantial industrial development in this area, which includes extensive docks, oil storage depots and chemical works, the valley is a valuable site for nature conservation.

Landscape Types

12.6.34 These broad-scale character areas determine the landscape context but inevitably conceal diversity in local landscape character. Within the area of the Mersey Basin around Runcorn and Widnes, these smaller-scale differences in landform, land use, vegetation cover, degradation and enhancement, need to be recognised and evaluated for the purpose of distinguishing between route crossing options in the local landscape. Within the study area in which the

Project has been set, the landscape has four distinct components reference Figure 12.9 (Appendix 12.1).

The Inter-tidal Estuary

12.6.35 The expanse of saltmarsh, mudflats, sand banks and tidal channels which characterise the area between the SJB and Fiddlers Ferry Power Station.

12.6.36 This landscape type is characterised by its expansive scale, seascape, skyscape and bird-life interest. The landscape quality has been evaluated as moderate because its visual appeal is compromised by its degraded margins. Improvements to the overall landscape structure around the estuary would improve its inherent quality, which could then be classified as good.

Linear Waterways and Industrial Margins

12.6.37 The degraded, industrialised margins of the estuary containing the Manchester Ship Canal, St Helens Canal, road and rail corridors and industrial units of varying scales. The ThermPhos industrial complex and Fiddlers Ferry Power Station demonstrate the capacity of the estuarine landscape to absorb large scale development.

12.6.38 For the purposes of the assessment, this landscape type has been further subdivided to differentiate between the linear waterways of the St Helens Canal and the Manchester Ship Canal (from which there tend to be very focussed forward views due to their nature as linear features).

12.6.39 The linear waterways, though despoiled, are in themselves features of interest capable of considerable improvement, particularly with the increased use for recreation

Runcorn Slopes

12.6.40 The north facing slopes of Runcorn and Halton containing mixed urban development which overlook the estuary and culminate in the focal / vantage point of Halton Castle.

12.6.41 This is an intricate area, which contains pockets of both degraded and poor landscape and, small areas of good quality landscape around the more historic features, such as the village of Halton and Halton Castle.

Historic Settlement

12.6.42 The more historic small scale areas of settlement of distinctive character on the north and south banks of the Runcorn Gap, provide the setting for the SJB and railway bridge.

12.6.43 The bridge crossing and settlements constitute discrete landscape component when viewed from the wider surroundings. This is situated within the shadow of the bridge. Settlements of terraced housing in narrow streets interspersed with visually prominent and distinctive buildings are in sharp contrast to the size, scale and visual simplicity of the SJB but provide it with a cohesive setting.

12.6.44 Around the periphery of the boundary of the Halton Borough, both to the north and south of the estuary, the industrial margins give way to areas of residential development and an increasingly open and more rural landscape.

The Baseline Landscape and its Evolution

12.6.45 The physical influences which have shaped the landscape include the marked differences in geology and topography on the northern and southern sides of the estuary, the hydrology of the tidal stretch of the Mersey, the ecology of both the estuary and its margins, the terrestrial

ecology of the land overlooking the estuary and, most notably, the influences of human occupation, settlement and land use.

12.6.46 Widnes and Runcorn originally developed as settlements on the northern and southern shores of the Runcorn Gap ferry / bridge crossing, and subsequently prospered and expanded to their current size largely as a result of the introduction of the heavy chemical industry, soap production and iron founding. The peak of their prosperity was in the early 1900's and subsequent years have seen a substantial decline in these industries.

12.6.47 The historical importance of the Runcorn Gap, the natural landform constriction which provided initially ferry crossing and, subsequently, the first upstream opportunity to bridge the mouth of the estuary, underpins the growth of the medieval settlements of Halton and Runcorn Old Town and West Bank which sit at either end of the ferry / bridge crossing. The development of the associated port, the alignment of the St Helens Canal on the northern margin of the estuary and the Bridgewater Canal and the Manchester Ship Canal on the southern margin, stimulated the growth of chemical and processing industries and the resultant expansion of settlement.

12.6.48 The post industrial landscape which is now emerging is characterised not only by the successive phases of historical development but also by the consequent improvements to the water quality of the estuary (the Mersey Basin has now been the subject of a focused programme of clean-up campaigns for more than a quarter of a century). This has, in turn, improved habitats and stimulated nature conservation efforts.

12.6.49 Consequently, the particular cultural heritage of the area and the appreciation of the natural environment, particularly of the estuary and its bird-life, are inextricably linked with the perception of the quality, visual amenity and value of the landscape.

12.6.50 The Manchester Ship Canal forms a continuous, linear feature immediately adjacent to the estuary and is backed by an industrial fringe albeit of smaller scale and generally more recent origin than that to the north. The industrial fringe gives way to mixed, but principally residential, development on the north facing slopes which culminate in the vantage point of Halton Castle, visible from much of the area on the northern bank.

12.6.51 Throughout the slopes there are both intermittent and panoramic views across the estuary.

12.6.52 As noted above the most prominent feature of the estuary landscape is the Fiddlers Ferry Power Station. Also as noted above the most significant is the SJB and when viewed together these 'eyecatchers' define the location of this part of the Mersey Estuary in the wider scene.

Historic Landscape

12.6.53 A crossing point of the Mersey Gateway at Runcorn Gap may have existed since Roman times and is documented from the Medieval period.

12.6.54 Runcorn remained a small settlement until the opening of the Bridgewater Canal in 1776, when improved transportation provided the economic stimulus for industrial development and maritime trade. From the late eighteenth century Runcorn was a fashionable spa town, which only diminished as industrialisation increased in the nineteenth century. Halton meanwhile was absorbed in Runcorn's suburbs and Widnes developed a little later, the first chemical factory being built by John Hutchinson in 1849. Rapid industrialisation led to a demand for housing and social infrastructure for the increased population in the area.

12.6.55 A study of the early OS maps for the study area shows the development of settlement, industry and infrastructure within what was a primarily rural landscape. The Runcorn settlement was largely confined to the area between the shore and the Bridgewater Canal with a large area of woodland/rough pasture to the east extending almost from the estuary to the village of Halton.

The field systems indicate medieval and later enclosure patterns. The increase in the number of buildings around Runcorn was related to the increased industry in the area with a density of building constructed around the estuary, canal, road and rail routes.

12.6.56 Runcorn was situated at the terminus of five canals – St Helens Canal Sankey Navigation, the Bridgewater Canal, the Weaver Navigation, the Runcorn to Latchford Canal, the Manchester Ship Canal and the Severn-Vyrnwy aqueduct. This which greatly assisted its economic growth in the eighteenth and nineteenth centuries, together with the development of the road and rail networks. The Mersey was first bridged in 1868, by the Railway Bridge; by 1905 the transporter bridge was opened and by 1961 the current SJB had replaced the transporter bridge and was, at the time of its construction, one of the largest steel arches in Europe.

12.6.57 The mid-nineteenth century development of the chemical industry at Widnes and Runcorn arose from the accessibility of the means of transport for raw materials and finished products, as well as from the ability to develop industries that created much waste in sparsely populated areas. A ready supply of good quality water from the Bunter Sandstone aquifer also assisted the chemical industry development. Other major industries developed, including soap manufacture and shipbuilding, some as a direct result from the impetus of the chemical industry development. However, the most notable negative effect of the major industrialisation of the area was the huge amount of waste produced, particularly by the chemical industry. Indeed this led to the description of Widnes in 1888 as, '*the dirtiest, ugliest and most depressing town in England'*. (Diggle, 1961).

The Continuing Evolution of the Post Industrial Landscape

12.6.58 The baseline landscape is not a static baseline and the evolution of the post industrial landscape around the banks of the Upper Mersey has distinctive trends which are summarised as:

a. Conservation and consolidation of the historic communities which fringe the Runcorn Gap;
b. The preservation and enhancement of the SJB and adjacent railway bridge;
c. The development through proactive policy objectives of a stronger terrestrial landscape infrastructure; and
d. The continuing enhancement and improvement of the nature conservation value of the estuary.

12.6.59 Allotted development zones are carefully targeted and focussed upon opportunities to regenerate the existing sites and infrastructure, again with commitments to improving the landscape structure.

12.6.60 The anticipated decommissioning and demolition of Fiddlers Ferry Power Station would, apart from the construction of the Mersey Gateway, be the most significant single visual change but the overriding accumulative change that emerges is one of an increase in the physical and visual quality of the landscape into which the Mersey Gateway would be set.

Summary of Baseline Landscape Quality

12.6.61 Landscapes categorised as **Very High** quality are considered to be absent from the study areas. The summary of the assessment of baseline landscape quality within the study areas is as follows.

Wider Landscape Area

12.6.62 The area under consideration embraces the Mersey Valley Character Area and the fringes of the Merseyside conurbation, the Greater Manchester conurbation and the northern margins of the Cheshire Plain.

12.6.63 It is the SJB, intermittently visible throughout much of the area, which is the most notable constructed feature of this part of the Mersey Estuary but Fiddlers Ferry Power Station which is the most dominant.

12.6.64 Within this area there is considerable variation in landscape quality but, as the defining characteristics are the detrimental effects on the natural and semi natural landscapes by the industrial and urban development which line the banks of the Mersey, the overall quality of landscape is assessed as **moderate**.

North of the Estuary

12.6.65 Here, the area context includes the industrialised banks of the Upper Mersey; the urban fabric of the Widnes Town Centre and its surroundings; and areas of open land which lack a positive use.

12.6.66 The degraded nature of much of the urban fabric and the relative lack of discernable distinctive pattern, topographical interest or features of notable merit results in an assessment of **part low landscape quality part negligible** landscape quality.

Upper Mersey

12.6.67 For the purposes of this assessment the Upper Mersey is deemed to include Spike Island, Wigg Island and the natural promontory at Runcorn Gap which contains West Bank.

12.6.68 Despite its partially degraded margins and somewhat variable visual quality due to tidal fluctuations, the Upper Mersey at this point is regarded as the most distinctive and visually appealing component of the Mersey Valley Character Area and is assessed as **part moderate / part high** landscape quality.

South of the Estuary

12.6.69 To the south of the estuary the area context relates to the emergence of the central expressway corridor onto the Runcorn Slopes at its convergence with the Daresbury and Bridgewater expressways and the expressway corridor linkages to the M56.

12.6.70 This junction arrangement sits around the half way point between the estuary and the top of the ridge in a natural valley recess which contains the Central Expressway and the scale and configuration of the junction is absorbed into the natural landform.

12.6.71 The landscape in this area has been substantially altered by the construction of the existing Daresbury and Central Expressways, both of which follow the grain of the land and it is the topographical variation, culminating in the high point of Halton Castle, which is of interest rather than natural landscape features or components, none of which is particularly distinctive.

12.6.72 Consequently, the quality of the landscape in this area is assessed as **part low moderate**.

Representative Viewpoints

12.6.73 A series of representative viewpoints have been selected to ascertain the identification of receptors and inform subsequent evaluations.

12.6.74 Viewpoints selected as being representative of the range of situations to be found throughout the study area are identified on Figure 12.10 (Appendix 12.1).

12.6.75 The viewpoints identified have been selected because they constitute readily accessible public realm spaces and rights of way, which represent the range of situations from which the Project may be viewed from within the identified landscape types. The selected viewpoints are listed below and are distributed within the local and intermediate study areas:

- Viewpoint 1 South Liverpool / Speke Boulevard, to assess the area in which the route of the Project diverges from Speke Boulevard;
- Viewpoint 2 North of St Michael's Golf Course, to assess the effects of the main Toll Booth Plaza;
- Viewpoint 3 Spike Island, to assess the effects on participants in recreational activities;
- Viewpoint 4 West Bank, to assess the effects on residents and users of the Trans-Pennine Trail;
- Viewpoint 5 Runcorn Promenade, to assess the effects on users of this informal recreation space;
- Viewpoint 6 Wigg Island entrance, to assess the effects on the users of the community park;
- Viewpoint 7 Halton Castle, to assess the effects on the vantage point and recreation space;
- Viewpoint 8 Wigg Island Nature Reserve, to assess the effects as a nature reserve;
- Viewpoint 9 Trans-Pennine Trail at Cuerdley Marsh, to assess the effect on users who approach and pass under the Project;
- Viewpoint 10 M62 from footpath overbridge between junction 7 and 8, to assess views of the Project in the wider landscape context;
- Viewpoint 11 Moor Bridge Lapwing Lane, to assess views of the Project in the wider landscape context;
- Viewpoint 12 Pickering Pasture / Hale Point, to assess the effects of the New Bridge in the context of the SJB and the Aethelfleda railway bridge;
- Viewpoint 13 Weston Link Junction, to assess junction changes in the context of the surrounding landscape and urban development;
- Viewpoint 14 Footbridge (Central Expressway), to assess the effects of the proposed highway infrastructure changes to the Central Expressway;
- Viewpoint 15 Astmoor Road, to assess localised effects relating to appearance and visual permeability; and
- Viewpoint 16 Victoria Road, to assess localised effects relating to appearance and visual permeability.

12.6.76 Other considerations are the unfolding sequence of views from the communication corridors – the Daresbury Expressway /Bridgewater Expressway, busway and Astmoor in Runcorn and in Widnes the A562 Ashley Way / Fiddlers Ferry Road, the A557 Widnes Eastern Bypass.

Receptors to Potential Effects

12.6.77 The potential effects of the preferred scheme could be far reaching but could also diminish substantially depending upon receptor location and distance from the effect source, magnitude of effect, cause of effect and the individual and combined effects of intervening features of the built and natural environment. The principal receptors i.e. those considered to be most affected by the Project are identified on Figure 12.11 (Appendix 12.1).

12.6.78 There could therefore be a wide range of effects on receptors in the same area but, notwithstanding this situation it is, given the extensive distribution of receptors, both possible and beneficial to categorise primary, secondary and tertiary receptors on the basis of proximity, length of exposure to the effect source and the initially perceived magnitude of effect.

Receptors

12.6.79 Primary receptors are categorised as:

a. Being locally affected by specific elements of the Project; and
b. Also being in situations and locations from which the views of the existing scene are dominated by the Project generally.

12.6.80 Primary receptors are predominantly in the local study area and areas within the intermediate study areas which are closest to the Project. For most of primary receptors much of the project could very well have negative connotations.

12.6.81 Secondary receptors are categorised as those receptors which could experience the Project as a change or interruption to the scene but not necessarily a disbenefit and for whom the effects could be less consistent, not as dominant and possibly more fragmentary. They occur throughout the intermediate study area and should not likely to be subject to immediate effects.

12.6.82 Tertiary receptors are those for which the Project is perceived as a discernable feature in the landscape which is regarded as noteworthy or iconic and not having notable benefits or disbenefits. Tertiary receptors would principally be situated beyond the intermediate study area and within the 30km radius and would be found throughout this area. At this scale other than identifying receptors at representative viewpoints the extent has not been plotted.

Widnes

12.6.83 In Widnes the primary receptors are the residential communities of West Bank, visitors to Spike Island and the Catalyst Museum, users of the Trans-Pennine Trail and people living and working in the southern fringes of the town centre.

12.6.84 Secondary receptors are the residential, business and commercial districts of the south of Widnes which are either separated from much of the effects of the Project by intervening development, variation in local topography or are of a distance from it or have a particular orientation such that it is not a dominant feature.

12.6.85 Tertiary receptors are those districts and communities on the higher ground to the north of the Town Centre notably South Widnes, Simms Cross and Halton View, from which the scheme, and in particular the New Bridge, could be viewed as a feature.

Runcorn

12.6.86 In Runcorn the primary receptors are the residential communities of Runcorn Old Town and the northern fringes of Higher Runcorn, Halton Brook, Castlefields and Astmoor.

12.6.87 These districts could also claim to have secondary receptors which are less exposed to direct effects of the Project by intervening development and topographical changes as the landform first rises from the estuary and then begins to fall to the south.

12.6.88 The vantage point of Halton Castle can arguably be classed as a primary receptor, but the other notable high point, Runcorn Hill, is classed as a secondary receptor due to its distance from the Project and the greater dominance of views to the west and south west.

12.6.89 The Mersey Valley Trail, Bridgewater Canal and - to a lesser extent - the Manchester Ship Canal are classed as secondary receptors due to their intermittent exposure to the effects of the scheme.

12.6.90 The commercial districts of Old Runcorn and Dukesfield, Norton Priory and Sandymoor are similarly classified as secondary receptors.

12.7 Effect Assessment

Assessment of Potential Effects

12.7.1 The assessment of potential effects has been carried out within a framework of the wider study area, the intermediate study area and the local study area.

12.7.2 Each level of assessment is evaluated in terms of the degree of assessment appropriate to that level and at each level the following topics are systematically addressed:

a. Area context;
b. Description of effects of the highway scheme;
c. Landscape / townscape and visual assessment;
d. Key considerations (the most pertinent factors to be considered in the assessment);
e. Effect assessment (landscape, visual, proximity, physical appearance and magnitude of effect);
f. Importance, sensitivity and significance of receptors; and
g. Temporary effects (construction and effectiveness of landscape scheme between implementation and maturity).

12.7.3 The Project has been assessed in terms of the following discrete components:

a. Widnes approach works and tolling infrastructure;
b. SJB and associated de-linking;
c. New Bridge alignment;
d. Daresbury / Bridgewater Junction modifications;
e. Expressway Corridor modifications; and

12.7.4 Components of the Project assessed as contributing to potential effects are:

a. The highway, its structural earthworks and respective bridge structures;
b. The proposed lighting scheme;
c. Major directional signage;
d. Traffic (including the effects of vehicle lights);
e. Toll booth structures;
f. Noise attenuation and wind barriers; and
g. Lighting.

12.7.5 Given that the final detailed design will be proposed in the future, assumptions have been made regarding aspects of highway engineering detail which could have an influence on the landscape and visual assessment. These assumptions are itemised in Appendix 12.3.

12.7.6 The findings of the assessment process are summarised in tabular form in terms of construction phase effects and residual operational phase effects.

12.7.7 The visual effects of the various construction processes would be as a result of the loss of vegetation within the construction works boundary; the introduction of storage / construction compounds; haul roads; cranes and the demolition of existing structures and the construction process. The effects would be continually changing as work proceeds.

12.7.8 The operational effects have been assessed at the first year in which the Project would be fully operational and after fifteen years of operation when the landscape scheme would have matured. The year 1 assessment of effects embraces the impacts of the scheme without landscape interventions, the traffic upon it and the daytime winter effects of lighting.

12.7.9 Night-time effects have been assessed on the basis of a standard highway lighting scheme applied throughout the Project including the New Bridge.

12.7.10 The effects on landscape are assessed at the wider study area and intermediate study area scales with the focus at the local scale being predominantly on visual effects.

Wider Study Area

12.7.11 The effects on the landscape and the visual elements of the New Bridge are considered in the context of the wider study area. At this scale, the effects of the areas to the north and south of the estuary are not discernable and have not been assessed.

Visual Effects

12.7.12 Key visual considerations are the perception of the New Bridge, its contribution to the landscape and its visual relationship to the SJB. The theoretical extent of visibility, the Zone of Visual Influence (ZVI), of the SJB is shown on Figure 12.12 (Appendix 12.1) and that of the New Bridge on Figure 12.13 (Appendix 12.1). Refer also to Viewpoint 11 (Appendix 12.2).

12.7.13 Based upon the inherent quality of the New Bridge and reasonable assumptions as to the quality to be expected of the final, detailed design, the estuary landscape may be expected to have a certain capacity to accommodate such large scale structures. Given the possibility that the now dominant Fiddlers Ferry Power Station may be decommissioned and demolished, the New Bridge has the potential to be a major, iconic feature of the Mersey Valley Character Area and a defining image of Halton and a symbol of the North West of England.

12.7.14 It was a possibility that, particularly in views from the east, (where many of receptors are to be found) the New Bridge may dominate the SJB – itself an iconic structure. However, it is envisaged that, by virtue of its design, location and alignment the proposed bridge could be viewed in juxtaposition to the SJB from many viewpoints and not over-dominate it. The magnitude of visual effect is therefore assessed as a **high beneficial effect**.

12.7.15 At this scale of assessment it is considered that receptors would experience a change of scene in which the New Bridge is not a dominant element, but a notable feature and they are assessed as being of **low sensitivity**. The significance of the effect is therefore assessed as **moderate positive**.

Landscape Effects

12.7.16 Other key considerations of the effect on the landscape are the physical presence of the New Bridge and changes to the estuary margins. The design of the New Bridge limits physical impact of the structure to the 'footprints' of the towers and approach viaducts and the over-sailing effect of the carriageways. As noted above, the scale of the estuary is such that it is capable of absorbing large scale structures and in the context of this part of the Mersey Valley the introduction of the New Bridge can be regarded as the latest expression of the historical and cultural tradition associated with the crossing of Runcorn Gap. The implementation of the Landscape Reference Design would be consistent with the objective of improving the landscape structure of the degraded estuary margins.

12.7.17 For these reasons the magnitude of effect on landscape is assessed as **moderate beneficial**. The landscape quality is assessed as **moderate** and significance assessed as **moderate positive**.

Construction effects

12.7.18 The construction of the New Bridge would be more discernable from some viewpoints than others but in long distance views would not be the spectacle that it is from middle distance and local viewpoints. The magnitude of the construction effects is therefore assessed as a **low beneficial** effect. The sensitivity of receptors is assessed as **low** and the significance of effect is assessed as **not significant**.

Intermediate Study Area

12.7.19 The effects on the landscape, the visual effects of the Project and the effects on the Green Belt and cultural heritage are considered in the context of the intermediate study area.

12.7.20 The theoretical extent of visibility (the ZVI) for the 2km zone has been plotted in three segments – north of the estuary, the Upper Mersey (for the New Bridge) and south of the estuary.

North of the Estuary

Reference Figure 12.14.1 (Appendix 12.1) and Viewpoint 4 (Appendix 12.2)

Visual Effects

12.7.21 Key visual considerations are the extent of visibility of the Project, the disruption to local pedestrian movements and the potential for the scheme to be a catalyst for area regeneration.

12.7.22 In this area, the visibility of the Project will be limited from the point of view of receptors in the intermediate study area. The existing tree and shrub cover and the proposed woodland scale planting will serve to integrate the new highway and its structures within their surroundings. The exception is a section of the route that crosses and lies to either side of Victoria Road. This section has an urban context and which is enhanced in terms of visual quality and permeability but which exposes the crossing point to wider view. The inter-tidal estuary margins are visually unaffected by the landscape proposals which are confined to the immediate vicinity of the Widnes Loops Junction. The effects are assessed in the following sub sections - Speke Road to Ditton Junction, Ditton Junction to Victoria Road, Victoria Road to Estuary margins. The effects of the SJB link, being predominantly local improvements to the existing highway, are assessed at the local level.

12.7.23 From Speke Road to Ditton Junction the landscape scheme would improve the visual amenity of the area and provide opportunities for further visual diversity by habitat enhancement. The magnitude of effect is assessed as **high beneficial**. In this area, close to the open spaces, strong landscape structure and relative lack of residential property the sensitivity of receptors is considered to be **low** and the significance of the visual effect of a new landscape structure and the screening of the main toll plaza and its canopied booths is assessed as **moderate positive**.

12.7.24 From Ditton Junction to Victoria Road the Project would be extensively screened. Visual amenity would be improved by the introduction of a new landscape structure into a degraded urban environment and the magnitude of effect is assessed as **high beneficial**. In this area the sensitivity of receptors is considered to be **low** due to the characteristics of the largely industrial surroundings and the significance of introducing a substantial amount of woodland scale planting is assessed as **high positive**.

12.7.25 From Victoria Road to the estuary margins the landscape scheme would integrate the scale of Widnes Loops Junction into the local landscape and the woodland scale planting would improve visual amenity in a visually permanent location. The magnitude of effect is assessed to be **high beneficial**. Due to the proximity of Spike Island, the Trans-Pennine Trail and adjacent urban development the sensitivity of receptors is considered to be **moderate** and the significance of introducing a new landscape structure into this area is assessed as **high positive**.

Landscape Effects

12.7.26 Key landscape considerations are the introduction of a mostly woodland scale landscape scheme into the degraded landscape of South Widnes and the physical integration of the Project (and the geometry of its alignment) into the fragmented urban and landscape fabric of the area.

12.7.27 Whilst the Project occupies some areas of open landscape these are predominantly former industrial areas and for the most part of the land to be occupied has been already degraded by earlier industrial development.

12.7.28 The landscape effects are assessed in the same sub-sections as the visual effects.

12.7.29 From Speke Road to Ditton Junction the linear landscape structure of the existing planting, which defines the open space/urban pattern, is reinforced by the landscape scheme and the magnitude of effect is assessed as **high beneficial** given also that ecological diversity is improved. The quality of landscape is assessed as **low** and the significance of effect is assessed as **high positive**.

12.7.30 Between Ditton Junction and Victoria Road the landscape scheme would introduce a woodland scale landscape structure, consistent with the objectives of improving the landscape structure of South Widnes, in a degraded urban area. The magnitude of effect is therefore assessed as **high beneficial** and the quality of landscape is assessed as **negligible**. The significance of effect is consequently assessed as **high positive**.

12.7.31 From Victoria Road to the estuary margins the landscape scheme would again introduce a woodland scale landscape structure consistent with the objectives of improving the landscape structure of South Widnes. The magnitude of effect is also assessed as **high beneficial** but here the landscape quality is assessed as **low**. Again the significance of effect is assessed as **high positive**.

Construction Effects

12.7.32 Construction effects are assessed for the whole of the area to the north of the estuary. The assessment includes the demolition of the elevated sections of the Widnes Eastern Bypass, to facilitate the construction of the SJB link, which would register at the intermediate scale (note that the effects SJB link itself are assessed at the local scale only as they largely constitute 'on-line' improvements and would not register at this scale).

12.7.33 The process of construction would be both a visual spectacle and an intrusion. The magnitude of effect is assessed as **high beneficial** for the demolition of existing areas of degraded urban fabric and infrastructure but **moderate adverse** in terms of the impact of construction works. The sensitivity of receptors is considered to be **low** around the Ditton to Victoria Road sub section and **moderate** elsewhere. Significance is assessed as **moderate positive** in the demolition phase, **moderate negative** in the initial construction of the works and **high positive** as construction nears completion and the benefits of the Project become tangible.

12.7.34 The effects of construction on the landscape are considered to be of a **high beneficial** magnitude where features which contribute to the degraded landscape are removed and **moderate adverse** where the removal of parts of the existing landscape structure and its features occurs. The quality of the landscape is considered to be **negligible** between Ditton Junction and Victoria Road and **low** elsewhere.

12.7.35 The significance is considered to be **low negative** in the demolition phase, **moderate negative** when the initial construction works disrupt the landscape and **high positive** when the planting areas are formed.

The Mersey

Reference Figure 12.14.2 (Appendix 12.1) and Viewpoints 7 and 12 (Appendix 12.2)

Visual Effects

12.7.36 Key visual considerations are the degree to which the structures dominate the view, the visual relationship between the New Bridge, the SJB and the Aethelfleda railway bridge and the size, scale and appearance of the structures.

12.7.37 The skewed alignment of the New Bridge has the advantage of visually separating the SJB and the New Bridge from the viewpoints of many of the primary and secondary receptors, many of whom would not see both bridges in the same view. Where both bridges would be visible (from the areas to the east of the Project in the Upper Mersey) the form of the SJB should still be distinctive due to the slimness of the towers and the lightness of the cable stay structure.

12.7.38 When viewed from the Middle Mersey and its margins to the West of the Runcorn Gap, the New Bridge would be viewed as a backdrop to the existing bridges and collectively they should be discernable as an aggregation of contrasting styles of construction and design. This juxtaposition of the bridges would be a notable visual experience from both banks of the estuary and, in particular from ships approaching the Manchester Ship Canal.

12.7.39 The New Bridge would be highly visible from much of the surrounding area and it could be both, or either, a spectacle and an intrusive introduction, which might dominate (but not necessarily over-dominate), the existing scene. The magnitude of effect is assessed as a **high beneficial** when viewed as a spectacle and a **low adverse** magnitude of effect, when viewed as intrusive.

12.7.40 The sensitivity of receptors is considered to be **high** throughout the area and given that the majority of receptor locations are residential properties or 'visitor destination' public realm spaces the significance of effect is considered to be **high positive** when viewed as a spectacle and **moderate negative** when viewed as intrusive.

Landscape Effects

12.7.41 Key landscape considerations are the effects of the viaducts and earthworks on the estuary margins and the geometry of the highway alignment on the pattern and landcover of the estuary margins.

12.7.42 The viaduct structures avoid physical impact on the saltmarshes but, in the vicinity of Spike Island and on Wigg Island, the presence of the structure and the geometry of the alignment compromises the 'openness' of the linear estuary margins. In part this has been compensated by introducing woodland scale planting to improve the landscape structure and absorb the scale of the works into their surroundings but the physical imposition of the project would remain.

12.7.43 The magnitude effect is therefore assessed as **high beneficial** due to the avoidance of the physical impact on the saltmarshes and **moderate adverse** due to the physical presence of the structure in the landscape and the manner in which it compromises 'openness'. The quality of the landscape is assessed as **high**, within the estuary and **moderate** on the estuary margins and the significance is assessed **as moderate negative** in respect of the physical impact and **high positive** in respect of avoiding physical impact.

Construction Effects

12.7.44 The process of construction, with the New Bridge 'emerging' from the estuary would predominantly be a spectacle and as such the magnitude of visual effect is assessed as **high beneficial**. When viewed as intrusive the magnitude of effect is assessed as **low adverse**. The sensitivity of receptors is considered to be **high** throughout the area and the significance of effect is assessed as **high positive** when viewed as a spectacle and **moderate negative** when viewed as intrusive.

12.7.45 Construction effects on the landscape are assessed to be **moderate adverse** on a landscape which is **moderate** sensitive and the significance is assessed as **moderate negative**. In respect of avoidance of impact in the saltmarshes the magnitude of effect is assessed as **high beneficial**, the sensitivity of receptor as **high** and the significance as **high positive**.

Night-time effects

12.7.46 The night time effects would be greater in the open estuary than on the margins, where the lighting of the bridge deck would be viewed against a backdrop of existing lighting, and could be seen to merge with it.

12.7.47 The magnitude of the effect across the estuary is therefore assessed as **moderate adverse** whilst the magnitude of the effect on the estuary margins is assessed as **low adverse**.

12.7.48 In both instances the sensitivity of receptors is considered to be **low** as the significance is assessed as **moderate negative** throughout the estuary and **low negative** on the estuary margins.

Green Belt

12.7.49 Green belt would be affected visually and physically by the New Bridge.

Visual Effects

12.7.50 Whilst in planning terms the impact of the New Bridge could be considered as a high adverse magnitude of effect, the visual effects of the structure in the Green Belt are somewhat different. The slenderness of the structure and the lightness and openness of the design solution are such that the New Bridge is not the substantial imposition that it could have been with a less sensitive design solution. However, its very presence is an adverse visual impact on Green Belt and visually would constitute an intensive and obstructive introduction. The magnitude of effect is therefore considered to be **moderate adverse**. The sensitivity of the Green Belt, the landscaping of which is visually capable of accommodating large scale structures is assessed as **moderate** and the significance of effect is assessed as **moderate negative**.

Landscape Effects

12.7.51 For such a large structure the physical impact the New Bridge is confined to the points at which the supports meet the ground and the bridge abutments. The oversailing of the bridge deck is an aspect of physical impact but, at the height it is, it is not regarded as a substantial impact. The physical presence of the New Bridge is regarded as an impact on the Green Belt landscape but it could also be regarded as a feature of interest. The magnitude of effect on the Green Belt landscape is therefore assessed as **low adverse**. The sensitivity of the Green Belt which can physically accommodate this large structure is assessed as **moderate** and the significance of effect is assessed as **low negative**.

Construction Effects

12.7.52 Visually the construction effects would have more of an imposition on the Green Belt than the completed structure, being more extensive and disruptive. The magnitude of effect is considered to be **moderate adverse**. The sensitivity of the Green Belt is assessed as **moderate** and the significance of effect is assessed as **moderate negative**.

12.7.53 Similarly, the effect on the landscape of the Green Belt is more extensive and the magnitude of effect is also assessed as **moderate**. The sensitivity of the Green Belt is assessed as **moderate** and the significance of effect is assessed as **moderate negative**.

Cultural Heritage

12.7.54 There are two principal considerations in the assessment of aspects of cultural heritage; the visual effects on the SJB / Aethelfleda railway bridge and Halton Castle. The remainder of the listed buildings and structures are not visually affected to anything like the same degree, being either unaffected or affected at the local scale and addressed as part of the effects upon general urban fabric and considered as such when formulating the landscape proposals.

Visual Effects

12.7.55 The visual effects on the SJB occur at the wider and intermediate study area levels and relate to juxtaposition of the SJB and New Bridge, and the views of each structure from the other.

12.7.56 The alignment, design and scale of the New Bridge has been configured to minimise – as far as possible – any visual conflict between the two structures and, with the exception of some views from the east this has been achieved. The magnitude of effect is therefore assessed as **moderate beneficial**.

12.7.57 The de-linking of the SJB would also permit more opportunity to view the New Bridge from this significant vantage point and the use of transparent wind shields in the New Bridge will permit travellers to view the SJB which is considered to be a receptor of **moderate** sensitivity. Overall this is assessed as a **moderate positive** significant effect.

12.7.58 Halton Castle would be a focus for travellers on the New Bridge and would not have its function as a vantage point compromised by the construction of the Project. Consequently the magnitude of effect is considered to be **no effect**. Halton Castle is considered to be a receptor of **high** sensitivity. Due to the fact that the function of the Castle as a vantage point is not compromised the significance of effect is assessed as **high positive**.

Landscape Effects

12.7.59 The Project does not have any physical effects on the immediate setting on either the SJB / Aethelfreda railway bridge or Halton Castle and has therefore been assessed as **no effect**. Wider effects are assessed as part of the landscape effects.

Construction Effects

12.7.60 The visual aspects of construction would not directly impinge upon cultural heritage but would detract from the appreciation of these structures in their setting and are assessed as **low adverse** and significance is also assessed as **low.**

South of the Estuary

Reference Figure 12.14.3 (Appendix 12.1)

Visual Effects

12.7.61 The effects considered are those on receptors in the following sub sections: those situated around and overlooking the Project at the Astmoor Viaduct and Bridgewater Junction; and those which lie alongside the expressway corridor between the Bridgewater Junction and the M56.

12.7.62 Key visual considerations around the Astmoor Viaduct and Bridgewater Junction are changes to the existing scene which is for the most part already occupied by a highway corridor and has a designed landscape which responds to the presence of the highway.

12.7.63 Given that the Astmoor Viaduct is set within an industrial area, the Bridgewater Junction is contained by the surrounding landform and that much of the landscape is occupied by the existing expressway system the magnitude of effect is assessed as **moderate adverse**.

12.7.64 The sensitivity of receptors, most of which are either experiencing longer distance views or - although overlooking the Bridgewater Junction - have views which are screened by intervening vegetation, is assessed as **moderate** and the significance of effect is therefore assessed as **moderate negative**.

12.7.65 Key visual considerations throughout the existing expressway corridor are changes to the existing scene as a result of highway alignment improvements and the reconfiguration of junctions, busway/footbridge realignments and the extent to which these works occupy the existing landscaped margins of the highway.

12.7.66 The expressway corridor has two visually distinctive components; an urbanised section between the Bridgewater Junction and Lodge Lane Junction and a semi rural section between Lodge Lane Junction and the M56 at Junction 12. Throughout the Bridgewater Junction to Lodge Lane Junction section the loss of vegetation, which screens views from the surrounding areas, is more pronounced than in much of the corridor south of Lodge Lane Junction. The corridor is more constricted than is the case from Lodge Lane Junction southwards where the corridor tends to be broader and contains more extensive tracks of mature vegetation which has more screening benefit.

12.7.67 The magnitude of effect is assessed as **moderate adverse** the sensitivity of the residential properties in the viaducts of the highway corridor that have direct views over it is assessed as **moderate** and the significance is assessed as **moderate negative**.

12.7.68 Between Lodge Lane Junction and the M56 Junction 12 the magnitude of effect is considered to be **low adverse**. The sensitivity of receptors which overlook the route is also considered to be **moderate** and the sensitivity is assessed as **low negative**.

Landscape Effects

12.7.69 Key landscape considerations are the effects on the designed and natural landscape of improvements to the existing highway alignment, all of which take place within the existing highway corridor.

12.7.70 Principally, these relate to the loss of tree and shrub planting on the margins of the existing highway, which would result in a loss of landscape structure and amenity value. The affected planting also helps to integrate the existing highway within the landscape of the surrounding urban fabric and would not perform this role as effectively for the revised highway layout.

12.7.71 Notwithstanding these losses, much of the landscape structure would remain intact and, following implementation of the Project, there would be an opportunity to replant the highway margins, albeit over a reduced area of land.

12.7.72 Landscape effects in the expressway corridor mirror the visual effects with the most pronounced effects occurring to the north of Lodge Lane Junction.

12.7.73 Between Bridgewater Junction and Lodge Lane Junction the magnitude of effect is assessed as **moderate adverse**. The quality of landscape is assessed as **moderate** and the significance of effect is assessed as **moderate negative**.

12.7.74 South of Lodge Lane Junction the magnitude of effect is assessed as predominantly **moderate adverse** the landscape quality is assessed as **moderate** and the significance is assessed as **moderate negative**.

Construction Effects

12.7.75 The effects of construction principally relate to visual and physical change through the loss of established planting which helps to screen the existing highway, the magnitude of effect is assessed as mostly **moderate adverse**, the quality of the landscape is assessed as **moderate** and the significance is assessed as **moderate negative**.

Local Study Area

12.7.76 The assessments of effects within the local study area are indicated on Figures 12.15.1 – 12.15.4. Refer also to the illustration cross sections at Figures 12.18.1-12.18.7. At this level of assessment the assessment of effects is restricted to visual effects only as the landscape effects have been addressed as part of the intermediate study area assessment.

Widnes Approach Works and Tolling Infrastructure

Area context

12.7.77 The Project Corridor has six distinct components:

a. The open space associated with the disused St Michaels golf course in which the Main Toll Plazas will be located;
b. Ditton Junction;

c. The section between the Ditton Junction and Victoria Road which passes through a degraded industrial and commercial urban environment;
d. Victoria Road;
e. The Widnes Loops Junction to the St Helens Canal – an industrial area consisting of more recently constructed and larger units on the margins of the Upper Mersey; and
f. The area around the SJB link.

Description of effects of the highway scheme (Year 15)

12.7.78 The Toll Plazas will be constructed at, or slightly above, existing ground level and no other major earth works are proposed. Tolling booths will be covered by a canopy with a minimum headroom of 5.7m above each lane and will cover an approximate length of 10m.

12.7.79 The Ditton Junction will be changed from the existing roundabout to a signal controlled crossing with the preferred route being taken over the local road system on a single span bridge. At this junction the south-bound on-slip and the north-bound off-slip would also feature toll collection plazas.

12.7.80 Between the Ditton Junction and the Garston to Timperley railway freight line the proposed route would sit on an embankment about 10 metres high with the slip roads from the Ditton Junction joining the main carriageway as it crosses over the railway on a single span bridge which then becomes a high level multi span viaduct extending from the freight line bridge to the edge of the Widnes Loops Junction. The viaduct crosses Victoria Road at a height of approximately 10m.

12.7.81 The Widnes Loops Junction is a complex arrangement of bridges and loop slip roads which link the preferred route to the Widnes Eastern Bypass. The links to the bypass also include toll collection plazas which will be of a similar form to the main Toll Plaza. This is an extensive junction which rises to a height of about 10 metres and occupies a large 'footprint' contained within the junction and between the junction and rail freight line are sizeable areas of negated land.

12.7.82 The Project then begins to climb as it approaches the New Bridge as it crosses the St Helens Canal at approximately 15 metres above the existing ground level.

Visual assessment

12.7.83 Within the open space of St Michaels Golf Course the highway and the main toll plaza would be contained within the perimeter structure planting to the disused golf course. This would substantially screen the highway, toll booths and toll canopies from external views and the effectiveness of the existing vegetation as a visual screen would be bolstered by the introduction of further linear planting adjacent to the new highway. This, combined with the local topography, which rises to the north of the Project, would substantially, but not totally, screen the views of the Project from the surrounding area. The magnitude of effect is therefore assessed as **low adverse**. The sensitivity of receptors, which are some distance from the route, is assessed as **low** and the significance is assessed as **low negative.**

12.7.84 Ditton Junction is a large but unimposing 'gateway' to Widnes town centre. Removal of the overbridge for the existing SJB would, with the reconfiguration of the junction as an at-grade arrangement and the introduction of an ornamental landscape treatment as part of the landscape scheme, transform the appearance of the Junction to provide a more apposite feature. The magnitude of effect is therefore assessed as **moderate beneficial.** The sensitivity of receptors, which largely constitute road users and occupiers of adjacent industrial premises is assessed as **moderate positive**.

12.7.85 Between Ditton Junction and Victoria Road the elevated highway and toll booths and canopies would be extensively screened by dense tree and shrub planting on a woodland scale. The effectiveness of screening measures and the substantial improvements to visual amenity resulting from this landscape treatment are assessed as a **high beneficial** magnitude of effect. The sensitivity of receptors, which largely constitute occupants of surrounding industrial and residential premises, is assessed as **moderate** and the significance of effect is assessed as **moderate positive**.

12.7.86 At Victoria Road the proposed viaduct crossing would create a broad, open thoroughfare to replace the existing, visually restricted Widnes Eastern Bypass Bridge. This would substantially improve visual permeability between West Bank and Widnes town centre. The demolition of buildings and structures of low visual quality to facilitate construction of the viaduct would further improve visual amenity but also present a blank canvas on which to upgrade the urban quality of the area. The magnitude of effect is therefore assessed as **moderate beneficial**, the sensitivity of receptors is overall assessed as **moderate** (but high for the occupants of the Waterloo Centre) and the significance is assessed as **moderate positive**.

12.7.87 From Widnes Loops Junction to the St Helens Canal the woodland scale planting which would soften the appearance of the junction and the approach to the canal would also subsequently improve the visual amenity of the immediate locality and transform the currently visually poor scene. The magnitude of effect is therefore assessed as **high beneficial** and the sensitivity of receptors, users of Spike Island and the Trans-Pennine Trail, together with occupants of premises on the eastern side of Victoria Road is assessed as **moderate.** The significance of effect is assessed as **moderate positive**.

12.7.88 At the crossing of the St Helens Canal itself the visual impact is more pronounced and, although the canal is crossed by a reasonably open structure the width and local prominence of the structure would detract from the visual appeal of views from the Trans Pennine Trail. Here, the magnitude of effect is therefore assessed as **moderate adverse** the sensitivity of receptors is **high** and the significance of effect is assessed as **moderate negative**.

12.7.89 The area around the SJB link is, in part, visually degraded and is visually compromised by the high volume of traffic along the SJB, which impacts on the community of West Bank. The proposal to de-link the A533, the demolition of the existing elevated approach to the Ditton Junction and the recent figuration of the bridge check if the SJB to provide two lanes of traffic with improved facilities for pedestrians and cyclists would substantially improve visual amenity for the commuters of West Bank notwithstanding the presence of a toll collection plaza on the north approach to the SJB, which would not be screened because of the proximity of properties. Despite this drawback the magnitude of effect is assessed as **high beneficial**, the sensitivity of the West Bank community and parts of the Runcorn Old Town community is assessed as **high** and the significance of effect is assessed as **moderate positive.**

Construction Effects

12.7.90 In the local study area to the north of the estuary the construction effects are visually beneficial where existing sections of elevated highway are demolished and this is assessed as a **moderate beneficial** magnitude of effect for receptors in the northern part of West Bank, around Ditton Junction and around the Victoria Road Crossing. During the construction phase these receptors are assessed as having **moderate** sensitivity and the significance of effect is assessed as **moderate positive.**

12.7.91 The construction of the elevated section of the scheme between Ditton Junction and the Widnes Loops Junction and the Widnes Loops Junction is assessed to have a **high adverse** magnitude effect on occupants of adjacent buildings who are assessed as having - for the most part - **moderate** sensitivity. Here, the significance of effect is assessed as **high negative.**

12.7.92 Construction effects through St Michaels Golf Course and at Ditton Junction are assessed as having a **low adverse** magnitude of impact, the surrounding receptors (mostly occupiers of residential and industrial properties) are assessed as **low** sensitivity and the significance of effect is assessed as **low negative.**

Year 1 (2015) Effects

12.7.93 A **high adverse** magnitude of effect is assessed for receptors in the immediate locality of the Ditton Junction to Victoria Road section (but not Victoria Road itself) and around Widnes Cooper Junction and the St Helens Canal. The sensitivity of receptors is assessed as **moderate** and the significance of effect is assessed as **high negative.**

12.7.94 At Victoria Road and Ditton Junction the magnitude of effect is assessed as **moderate beneficial** and the sensitivity of receptors is assessed as **moderate** and the significance of effect is assessed as **moderate positive.**

12.7.95 Through St Michaels Golf Course the magnitude of effect is assessed as **moderate adverse**, the sensitivity of receptors is assessed as **low** and the significance of effect is assessed as **low negative.**

12.7.96 Around the SJB link the magnitude of effect is assessed as **moderate beneficial** the sensitivity of receptors is assessed as **high** and the significance of effect is assessed as **moderate positive.**

Night-time effects

12.7.97 Throughout the area to the north of the estuary lighting associated with the Project would be seen against a backdrop of existing lighting and the magnitude of effect for all receptors is assessed as **low adverse**. The receptors themselves are considered to have **low** sensitivity and the significance effect is considered to be **low negative.**

12.7.98 The lighting on the eastern side of Widnes Loops Junction would be partly viewed against the backdrop of the estuary but as the New Bridge would also be lit the effects are considered to be as above.

The New Bridge alignment

Area Context

12.7.99 The New Bridge crosses the Upper Mersey at a point some 1.8km upstream of the existing SJB at a point where the estuary comprises extensive areas of saltmarsh along its fringes. Here, the tidal river meanders through sandbanks and mudflats at low tide on a course which has over time migrated between the northern and southern banks of the estuary. The landscape is assessed as in **part high** quality within much of the estuary and **in part moderate** quality on some areas of the estuary margins.

Description of effects of the highway scheme

12.7.100 The New Bridge crosses the open Upper Mersey on a structure that would be 2.13km long between abutments including approximately 1000 metre long crossing of the tidal river.

12.7.101 For the length of the 1000 metre crossing the bridge deck would be supported from three towers by cable stays situated between the carriageways. The deck would be between 25 and 35 metres above the estuary as it climbs towards the Central Expressway and the towers would be between 120m and 140m AOD.

12.7.102 On the northern approaches the highway crosses the saltmarsh at a height of at least 20m plus and is exposed to full view. On the southern approaches the highway crosses Wigg Island at a carriageway height of around 25m AOD and is again, for the most part, open to full view.

Visual assessment

12.7.103 Strictly speaking the New Bridge does not warrant a local area assessment, other than at the estuary margins, as there are no receptors within the 1.0km band which occupies the open estuary. However, the changes to the existing scene are substantial for most of the identified primary receptors within the surrounding study area and such is the size, scale and 'presence' of the proposed bridge that it is prudent to subject it to a local area assessment.

12.7.104 Between the St Helens Canal and the tidal channel the road deck is some 20m above existing ground level. There is no scope for landscape mitigation if the saltmarshes are not to be adversely affected and any reduction in effect would be as a result of the manner in which the bridge design responds to the local environment.

12.7.105 Depending upon the observer's point of view the bridge could be regarded as an impressive feat of engineering or an intrusive imposition on the visual quality of the natural estuary. In the local context both statements are true.

12.7.106 When assessed in an intermediate study area context the assessment considers the ability of the landscape to accommodate the size, scale and alignment of the New Bridge and the visual consequences for receptors generally.

12.7.107 At this local area level of assessment the concerns relate to the intrusiveness of a structure which cannot be mitigated and whether or not it is this intrusiveness or the spectacle of the fine feat of engineering which is the predominant impression.

12.7.108 The crossing of Wigg Island is one of the most problematical aspects of this section of the route. The very presence of the highway in a publicly accessible and tranquil area of the estuary (one of few such areas in the borough) is detrimental and the exposure to view would be considerable. However, the height of the deck and the openness of the viaduct would permit through-views and take traffic out of normal lines of sight at close range. Existing mature tree cover helps to integrate the structure with the landscape at its southern point adjacent to the Manchester Ship Canal. Reference Viewpoint 6 (Appendix 12.2).

Key considerations

12.7.109 Here the key visual effects are:

a. Maintaining an open aspect from the St Helens Canal to the estuary margins;
b. The effect on the Spike Island leisure activities and receptors at Catalyst Museum (vantage point at the top of the building); and
c. Trans Pennine trail where it too occupies the eastern edge of West Bank.

12.7.110 The manner in which the design of the New Bridge has been articulated to permit extensive open views to the wider estuary and its margins, the slimness of the tower structures, lightness of cable stays and the subtle selection and use of colour finishes for that part of the tower above deck level would prevent the New Bridge from being over-dominant in the scene. The magnitude of effect for the receptors, considered to be **high**, is therefore assessed as **moderate adverse** and the significance of the effect is assessed as **moderate negative**.

12.7.111 The crossing of Wigg Island is one of the most visually intensive aspects of the Project. To a certain extent, the crossing point would be screened by existing vegetation and additional screen planning provided by the landscape scheme would reinforce this. However, views through the structure would have to be maintained as physical and visual permeability is necessary if users of Wigg Island and its community park are to benefit from the whole of its area. This is turn has exposed the structure and views of traffic upon it. As it crosses the salt marsh the New Bridge would become fully exposed to view. The magnitude of effect is therefore assessed as **high adverse**, the sensitivity of receptors is assessed as **high** and the significance of effect is assessed as **high negative**.

12.7.112 For users of the Manchester Ship Canal and receptors in the Astmoor Road area, see Viewpoint 15 (Appendix 12.2) the visual effects would also be, at least in part, intrusive. The visual effects would be partially screened by existing vegetation and surrounding buildings but the elevated structure would be visible throughout much of the locality and the crossing points would be exposed to view but would be elevated to permit open views along those linear routes. The magnitude of effect is therefore assessed as **moderate adverse** the sensitivity of receptors is assessed as **moderate** and the significance of effect is assessed as **moderate negative**.

Construction effects

12.7.113 Whilst the construction of the New Bridge would continue to be a spectacle at the local scale, the intrusiveness of construction operations and the emerging structures would be more of an issue at the local scale. The magnitude of impact is therefore assessed as **moderate adverse**, the sensitivity of receptors is assessed as **moderate** and the significance of effect is assessed as **moderate negative**.

12.7.114 The physical effects of construction on the landscape of the estuary margins are assessed as **moderate adverse**, the sensitivity of receptor is assessed as **moderate** and the significance is assessed as **moderate negative**. The avoidance of the saltmarshes is assessed as **high beneficial**, the sensitivity is considered to be **high** and the significance is **high positive**.

Year 1 (2015) effects

12.7.115 The Year 1 visual effects would be identical to those for the operational phase as there would be no change in effect.

Night-time effects

12.7.116 The night time effects would be greater in the open estuary than on the margins because the lighting of the bridge deck would be viewed against less of a backdrop of existing lighting than the lighting on the approach viaducts, which would be viewed against a backdrop ofexisitng lighting and could merge with it.

12.7.117 The magnitude of effect across the estuary is therefore assessed as **moderate adverse** whilst the magnitude of effect on the estuary margins is assessed as **low adverse**.

12.7.118 In both instances the sensitivity of receptors is considered to be **low** and the significance is assessed as **moderate negative** across the estuary.

Bridgewater Junction/Central Expressway modifications

12.7.119 The visual effects of highway modifications are assessed in two sub-sections; around the Bridgewater Junction and along the expressway corridor.

Area Context

12.7.120 The Bridgewater Junction modifications are focused upon the immediate vicinity of the existing Junction which sits on the edge of the Runcorn slopes at a height of approximately 30 metres in a natural valley within which is sited the Central Expressway.

12.7.121 The ridge and valley sides rise to a height of around 80m AOD and at the focal point of Halton Castle. Below the Bridgewater Junction the land is predominantly occupied by the Astmoor industrial estate which bounds the Manchester Ship Canal. To the north of the Ship Canal the margins of the estuary form the Wigg Island Community Park.

12.7.122 The upper areas of the Runcorn Slopes above the Bridgewater Junction contain areas of high density housing which overlooks both the junction and has panoramic views across the estuary to Widnes and the Merseyside conurbation beyond.

Description of effects of the highway scheme

12.7.123 Most of the effects are contained within the existing junction and are essentially self-contained. New structures are required over the existing Expressway and the Bridgewater Canal which is retained as an open watercourse capable of navigation with the towpath continuing to provide local recreation opportunities. The Project between the Bridgewater Junction and the southern abutment of the New Bridge is supported on a high level multi-span viaduct 20m – 25m above existing ground level.

Visual assessment

12.7.124 The junction modifications are largely contained visually as well as physically and although they are overlooked from surrounding residential areas, linear planting on the Upper Runcorn slopes, introduced to screen the effect of the existing Expressway would continue to be effective.

Key considerations

12.7.125 Here the key visual considerations are:

a. Integrating the scale and geometry of the Bridgewater Junction with the surrounding landscape and urban / light industrial development;
b. Mitigating the effect on residents in properties which overlook the Junction; and
c. The effects of lighting.

12.7.126 The landscape scheme would supplement the existing mature tree and shrub cover on the slopes around the Bridgewater Junction which helps to screen views of the Junction. The landscape scheme would also assimilate the Junction into the topographical and woodland scale landscape structure and improve the visual amenity of the Bridgewater Canal for its recreational uses.

12.7.127 The magnitude of effect of the local scale is therefore considered to be **moderate adverse** for those receptors overlooking the Junction and situated close to it. The sensitivity of receptors is considered to be **moderate** and the significance of effect is considered to be **moderate negative**.

12.7.128 In the outer areas of the local area study corridor the magnitude of effect is assessed as **low adverse** where the Junction may be visible. The sensitivity of receptors is assessed as **low** and the significance of effect is assessed as **low negative**.

Expressway corridor and M56 Junction 12 modifications

Reference to Cross Sections - Figures 12.18.1 - 12.18.7

The modifications to the existing Junctions would sit within the existing expressing corridor, much of which is in cutting.

12.7.129 As stated in the Intermediate Area assessment for the expressing corridor, the land taken for the improvements would vary within the corridor but be more of a consideration to the north in the Lodge Lane Junction than to the South of it. The Junction configurations vary as follows:

a. Lodge Lane Junction would be modified to make provision for through traffic from the Central Expressway;
b. Western Link Junction would be modified to include a new slip road connecting the northern section of the Western Point Expressway to Western Link.
c. M56 Junction 12 modifications would be to the self-contained junctions on the north side of the motorway and would not affect the motorway itself;
d. All modifications would be contained within the existing highway corridors;
e. With the exception of an overbridge in the centre of the Lodge Lane Junction the remainder of the junction amendments are at grade;
f. The existing Lodge Lane Junction is recessed below the existing ground level and the overbridge at approximately 5 metre high would sit at or just below the surrounding ground level; and
g. The busway bridge at Halton Lea and Lodge Lane North Footbridge would be replaced with new bridges to accommodation the carriageway amendments. Also he spiral ramps on Brook Place South Footbridge will be replaces with straight return ramps parallel to the main carriageway.

Visual assessment

12.7.130 It is anticipated that, along the margins of the expressway corridor, the receptors which overlook and the corridor and are immediately alongside it would be more subject to visual impact to the north of Lodge Lane Junction than to the South. However, this must be qualified by the fact that the proposed noise attenuation barriers which run along both sides of the carriageway for most of the length of the corridor would perform a visual screening function.

12.7.131 Given these considerations the magnitude of effect throughout the corridor is assessed as **moderate adverse**. The sensitivity of receptors is assessed as **moderate** and the significance of effect is assessed as **moderate negative**.

12.7.132 As was the situation with the assessment of the Bridgewater Junction, further receptors in the outer fringes of the Local Area Corridor the magnitude of effect is assessed as low adverse where the project would be visible. The sensitivity of receptors is assessed as low and the significance of effect is assessed as **low negative**.

Construction effects

12.7.133 The construction of the Lodge Lane Junction is assessed as a **moderate adverse** effect due to the intrusiveness of the works and the busway/footbridge are also assessed as a **moderate adverse** magnitude of effect albeit over a much smaller area.

12.7.134 Along lengths of the corridor where existing vegetation is retained, and the works are screened the magnitude of effect is considered to be **low adverse** and where screening vegetation is removed the magnitude of effect is assessed as **moderate**.

12.7.135 The sensitivity of receptors is assessed as **moderate** and the significance of effect, despite variations in the magnitude of effect is assessed as **moderate negative** throughout the corridor due to the general proximity of receptors.

Year 1 (2015) effects

12.7.136 In year 1 the magnitude of effect would be greater where vegetation, which performed a screening function, is lost and is assessed as **high adverse** north of Lodge Lane Junction and **moderate adverse** south of it. The sensitivity of receptors is considered to be **moderate** and the significance of effect is assessed as **high negative** and moderate negative respectively.

Night-time

12.7.137 The night time effects of lighting are assessed as **low adverse** because much of the corridor is currently lit and the Project Lighting would be seen against a backdrop of urban lighting. Throughout the corridor the sensitivity of receptors is assessed as **low** and the significance of effect is assessed as **low negative**.

Summary Tables

12.7.138 A summary of effects for wider area receptors, intermediate receptors and receptors within the local study area is provided on the following tables.

Table 12.7.1 - Wider Area Receptors

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Construction Phase				
Long distance views of New Bridge as iconic structure	Populations in areas from which the New Bridge would be visible Importance: Low	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Short term Temporary Direct Low beneficial	Not significant at this scale.
Operation Phase				
Long distance views of New Bridge as iconic structure	Populations in areas from which the New Bridge would be visible Importance: Low	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Long term Permanent Direct and indirect High beneficial	Moderate positive
Effect on landscape.	Landscape of Mersey Valley Character Area. Importance: Moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Long term Permanent Direct and indirect Moderate beneficial	Moderate positive.

Table 12.7.2 - Intermediate Area Receptors, North of the Estuary (1)

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Construction Phase				
Visual change demolitions (middle distance views)	Residents, occupiers and views of public realm areas. Importance moderate (Low Ditton to Victoria Road)	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Short term Temporary Direct High beneficial	Moderate positive
Visual change new construction.	Residents, occupiers and views of public realm areas. Importance moderate (Low Ditton to Victoria Road)	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative during construction. Positive upon completion. Short term Temporary Direct Moderate adverse.	Moderate negative during construction (high positive upon completion)
Effects on landscape and townscape.	Landscape / townscape of South Widnes and northern margins of estuary. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect:	Negative during construction. Positive upon completion. Short term. Temporary Direct	Moderate positive

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
		Magnitude:	High beneficial.	
Effects on landscape and townscape. Removal of existing landscape features.	Landscape / townscape north of the estuary. Importance low	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative during construction. Positive upon completion. Short term.. Temporary Direct Moderate adverse.	Moderate adverse.
Operation Phase				
Visual change	Speke Road to Ditton Junction. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Long term. Permanent. Direct. High beneficial.	High positive.
Visual change	Ditton Junction to Victoria Road. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect:	Positive. Long term. Permanent. Direct.	High positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
		Magnitude:	High beneficial.	
Visual change.	Victoria Road to the Estuary margins. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	High positive.
Landscape change	Speke Road to Ditton Junction. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	High positive.
Landscape change	Ditton Junction to Victoria Road. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	High positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Landscape change.	Victoria Road to the Estuary margins. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	High positive.

Table 12.7.3 – Intermediate Area Receptors, The Mersey (2)

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Construction Phase				
Visual change new construction, New Bridge as a spectacle. (middle distance views)	Users of Spike Island and Wigg Island and the residents of the western fringe of West Bank. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Short term Temporary Direct High beneficial	High positive
Visual change new construction, Intrusive effects.	Users of Spike Island and Wigg Island and the residents of the western fringe of West Bank. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Low adverse.	Moderate negative
Effects on landscape.	Landscape of the estuary margins, physical impact. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term. Temporary Direct Low adverse.	Low negative.
Effects on landscape	Landscape of the estuary margins,	+ve or –ve:	Positive.	High positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
	avoidance of saltmarshes. Importance high.	Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Short term. Temporary Direct High beneficial.	
Visual and landscape effects.	Green Belt. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term. Temporary Direct Moderate adverse.	Moderate negative.
Visual effects.	Cultural heritage. Importance low	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term. Temporary Direct Low adverse.	Low negative.
Operation Phase				
Visual change	Users of Spike Island	+ve or –ve:	Positive	High positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
new construction, New Bridge as a spectacle. (middle distance views)	and Wigg Island and the residents of the western fringe of West Bank. Importance high.	Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Long term. Permanent. Direct. High beneficial.	
Visual change new construction, Intrusive effects.	Users of Spike Island and Wigg Island and the residents of the western fringe of West Bank. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Moderate negative.
Landscape change, physical impact	Estuary margins presence of the structure in the landscape. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.
Landscape change, physical impact.	Saltmarshes.	+ve or –ve:	Positive.	High positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
	Importance high.	Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Long term. Permanent. Direct. High beneficial.	
Night-time effect.	Effect on estuary. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.
Night-time effect.	Effect on estuary margins. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Moderate negative.
Visual change.	Green Belt landscape visual impact.	+ve or –ve:	Negative.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
	Importance moderate.	Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Long term. Permanent. Direct. Moderate adverse.	
Landscape change.	Green Belt landscape physical impact. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Low negative.
Visual change.	Effect on Cultural Heritage, visual effect SJB Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. Moderate beneficial.	Moderate positive.
Visual change.	Effect on Cultural Heritage, visual effect	+ve or –ve:	Positive.	High positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
	Halton Castle as a vantage point. Importance high	Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Long term. Permanent. Direct. No effect.	
Landscape change.	Effect on Cultural Heritage, physical effect. Importance high.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. No effect.	Not significant.

Table 12.7.4 - Intermediate Area Receptors, South of the Estuary (3)

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Construction Phase				
Visual change new construction loss of screen planting. (middle distance views)	Residents, occupiers and users South of the Estuary and alongside the Expressway Corridor. Importance moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Moderate adverse.	Moderate negative.
Effects on landscape, loss of tree and shrub cover.	Landscape of the Expressway Corridor. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term. Temporary Direct Moderate adverse.	Moderate negative.
Operation Phase				
Visual change around the Bridgewater Junction. (middle distance views)	Residents, occupiers and users South of the Estuary. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative Long term. Permanent. Direct. Moderate adverse.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Visual change around Expressway Corridor, north of Lodge Lane Junction.	Residents, occupiers and users South of the Estuary and alongside the Expressway Corridor. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.
Visual change around Expressway Corridor, south of Lodge Lane Junction.	Residents, occupiers and users South of the Estuary and alongside the Expressway Corridor. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Low negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Landscape change, effect on the Expressway Corridor, north of Lodge Lane Junction.	Designed and natural landscape of the Expressway Corridor. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.
Landscape change, effect on the Expressway Corridor, south of Lodge Lane Junction.	Designed and natural landscape of the Expressway Corridor. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Low negative.

Table 12.7.5 – Local Area Receptors, North of the Estuary (1)

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Construction Phase				
Visual change demolitions.	Residents and occupiers around West Bank, Ditton Junction and Victoria Road. Importance moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Short term Temporary Direct Moderate beneficial.	Moderate positive.
Visual change Ditton Junction to Widnes Loops Junction.	Residents and occupiers north of the estuary. Importance moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct High adverse.	High negative.
Visual change St Michaels Golf Course and Ditton Junction.	Residents and occupiers surrounding the Golf Course and adjacent open space. Importance low	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Low adverse.	Low negative.
Operation Phase				

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Visual change Around St Michaels Golf Course.	Surrounding residents, occupiers and public realm area users. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative Long term. Permanent. Direct. Low adverse.	Low negative.
Visual change around Ditton Junction.	Surrounding residents, occupiers and public realm area users. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. Moderate beneficial.	Moderate positive.
Visual change between Ditton Junction and Victoria Road.	Surrounding residents, occupiers and public realm area users. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	Moderate positive.
Visual change	Surrounding residents,	+ve or –ve:	Positive.	Moderate positive

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
around Victoria Road.	occupiers and public realm area users. Importance moderate.	Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Long term. Permanent. Direct. Moderate beneficial.	
Visual change around Widnes Loops Junction / St Helens Canal	Users of Spike Island and the Trans-Pennine Trail. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	Moderate positive
Visual change around the crossing of St Helens Canal	Users of the Trans-Pennine Trail. Importance high.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.
Visual change around	Communities of West	+ve or –ve:	Positive.	Moderate positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
the SJB Link.	Bank and Runcorn Old Town. Importance high.	Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Long term. Permanent. Direct. High beneficial.	
Visual change Year One Effects. Around St Michaels Golf Course.	Surrounding residents, occupiers and public realm area users. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Medium term. Permanent. Direct. Moderate adverse.	Low negative.
Visual change Year One Effects. At Ditton Junction.	Surrounding residents, occupiers and public realm area users. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Medium term. Permanent. Direct. Moderate beneficial.	Moderate positive.
Visual change	Surrounding residents,	+ve or –ve:	Negative.	High negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Year One Effects. Between Ditton Junction and Victoria Road.	occupiers and public realm area users. Importance moderate.	Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Medium term. Permanent. Direct. High adverse.	
Visual change Year One Effects. At Victoria Road	Surrounding residents, occupiers and public realm area users. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Medium term. Permanent. Direct. Moderate beneficial.	Moderate positive.
Visual change Year One Effects. Around the SJB Link.	Surrounding residents, occupiers and public realm area users. Importance high.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Medium term. Permanent. Direct. Moderate beneficial.	Moderate positive.
Visual change	Residents, occupiers	+ve or –ve:	Negative.	Low negative.

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)
Night-time Effects.	and public realm throughout the north of the Estuary. Importance low.	Timescale of Effect: Long term. Permanent or Temporary Permanent. Direct or Indirect Effect: Direct. Magnitude: Low adverse.	

Table 12.7.6 – Local Area Receptors, The Mersey (2)

Effect	Receptor and importance	Nature of Effect		Significance (High, Moderate, Low and Positive/Negative)
Construction Phase				
Visual change. Intrusive effects of construction of New Bridge.	Users of Spike Island leisure facilities, Catalyst Museum (vantage point) and Trans-Pennine Trail. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Moderate adverse.	Moderate negative.
Visual change. Intrusive effects of construction of New Bridge.	Visitors to Wigg Island Community Park. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct High adverse.	High negative.
Visual change. Intrusive effects of construction of New Bridge.	Users of the Manchester Ship Canal and residents and occupiers in the Astmoor Road area. Importance moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Moderate adverse.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Operation Phase				
Visual change. Intrusive effects of New Bridge.	Users of Spike Island leisure facilities, Catalyst Museum (vantage point) and Trans-Pennine Trail. Importance moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Moderate adverse.	Moderate negative.
Visual change. Intrusive effects of New Bridge.	Visitors to Wigg Island Community Park. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct High adverse.	High negative.
Visual change. Intrusive effects of New Bridge.	Users of the Manchester Ship Canal and residents and occupiers in the Astmoor Road area. Importance moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Moderate adverse.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Visual change. Year One Effects of New Bridge.	Users of Spike Island leisure facilities, Catalyst Museum (vantage point) and Trans-Pennine Trail. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Moderate adverse.	Moderate negative.
Visual change. Year One Effects of New Bridge.	Visitors to Wigg Island Community Park. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct High adverse.	High negative.
Visual change. Year One Effects of New Bridge.	Users of the Manchester Ship Canal and residents and occupiers in the Astmoor Road area. Importance moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Moderate adverse.	Moderate negative.
Night-time effect.	Effect on estuary. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary	Negative. Long term. Permanent.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
		Direct or Indirect Effect: Magnitude:	Direct. Moderate adverse.	
Night-time effect.	Effect on estuary margins. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Moderate negative.

Table 12.7.7 – Local Area Receptors, South of the Estuary (3)

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)
Construction Phase			
Visual change. Around Bridgewater Junction.	Residents, occupants and users of public realm areas around the junction. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.
Visual change. Around the Expressway Corridor, north of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.
Visual change. Around the Expressway Corridor, south of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Low adverse.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)
Operation Phase			
Visual change. Around Bridgewater Junction.	Residents, occupants and users of public realm overlooking the junction. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Long term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.
Visual change. Around the outer areas of the local study corridor.	Residents, occupants and users of public realm overlooking the junction. Importance low	+ve or –ve: Negative. Timescale of Effect: Long term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Low adverse.	Low negative.
Visual change. Around the Expressway Corridor, north of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Negative. Timescale of Effect: Long term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)
Visual change. Around the Expressway Corridor, south of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Negative. Timescale of Effect: Long term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.
Visual change. Year One effects around Bridgewater Junction.	Residents, occupants and users of public realm areas around the junction. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Medium term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.
Visual change. Year One effects around the Expressway Corridor, north of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Negative. Timescale of Effect: Medium term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: High adverse.	High negative

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)
Visual change. Year One effects around the Expressway Corridor, south of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Medium term Temporary Direct Moderate adverse.	Moderate negative.
Night-time effect.	Residents, occupants and users of public realm areas alongside the Expressway Corridor. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Low negative.

12.8 Mitigation, Compensation, Enhancement and Monitoring

Mitigation and Enhancement Measures

12.8.1 The effectiveness of mitigation measures has been determined by reference to:

a. The ability to mitigate the effect at source;
b. The contribution the mitigation measures may make to improving the quality of the local landscape;
c. Proximity to receptor; and
d. Compensation for loss of existing landscape features and or amenity.

Project Reference Design

The Reference Design Landscape Scheme

12.8.2 The proposed landscape treatment for the Reference Design for the Project is shown on a drawing set comprising Figures 12.16.1 – 12.16.7 (Appendix 12.1) and the accompanying plan view aerial photographs (which cover the same area as the proposals at the same scale) are shown on Figures 12.17.1 – 12.17.7 Appendix 12.1). They incorporate measures to integrate the scheme into its surroundings, mitigate the effect of its construction and screen views of traffic. Opportunities for the mitigation of the effects of lighting and noise attenuation measures have also been considered.

Objectives and Scope of Work

12.8.3 The objectives are to:

a. Define and describe the Landscape Reference Design for the preferred route to inform the assessment of the environmental effects to be addressed in the various technical annexes;
b. Identify and illustrate sustainable proposals for landscape treatment as part of a comprehensive strategy for the environmental enhancement of the environs of the Mersey Estuary through a range of initiatives such as the New Mersey Forest; and
c. Define the scope of the work in order to define land acquisition requirements and provide a basis for budget cost estimates.

Preliminary Discussion of Mitigation Techniques

12.8.4 Options for mitigation of effects associated with the Project include a combination of those measures detailed in Volume 10 of the DMRB (Highways Agency. 2001).

a. Earth Mounding – a technique of creating natural-looking landform to integrate the structure and geometry of highway design with the surrounding landscape;
b. Screen Bunds – linear, often less natural-looking mounding usually situated parallel and adjacent to the highway to provide visual / noise attenuation;
c. Vertical barrier – usually 2m – 3m high and designed to provide visual / noise attenuation in confined areas. Vertical barriers can also be effective where it is beneficial to have instantaneous screening until associated planting matures. Vertical barriers are usually parallel to the highway and frequently used in combination with earth mounding or bunding and, because they can have an intrusive effect in there own right are often themselves screened by planting. The materials from which vertical barriers are constructed should reflect the urban / rural context of the associated section of highway; and
d. Planting which has a primary objective of mitigation has two distinct functions – to integrate the highway with its surroundings and screen / filter views of the highway scheme from receptors. Both these functions are regarded as being effective only in the

medium to long term. Planting with a screening function is usually planted at a density of 1.5m centres for trees and 1.0m centres for shrubs around the perimeter of the planting plot. The objective is to achieve a vertical screen for ground level to a height sufficient to screen traffic and screen / filter the effects of lighting. Planting intended to integrate the highway with its surroundings can be a variable density, height and species composition and is often far more extensive (sometimes on a woodland scale) than screen planting.

Mitigation Hierarchy

12.8.5 Mitigation measures have been considered for both the design, operational and construction phases (during which measures may be temporary) in accordance with the mitigation hierarchy indicated in Chapter 3, Table 3.2.

Design Phase

The Ability to Mitigate Effect at Source

12.8.6 In developing the Reference Design four changes to the scheme originally envisaged have contributed to a reduction in landscape and visual effect.

a. The relocation of the Widnes tolling plaza from its original location between Ditton Junction and Victoria Road to the former golf course site has resulted in less visual effect;
b. The provision of an open viaduct structure as opposed to the original embankment solution at Victoria Road has reduced visual effects and improved permeability;
c. The relocation of the northern abutment of the New Bridge to the north of the St Helens Canal and the provision of an open viaduct structure for the bridge approach instead of an earthworks embankment as originally envisaged has reduced visual effect and improved visual permeability particularly for users of the Trans-Pennine Trail; and
d. Similarly the provision of a viaduct structure for the southern approach to the New Bridge as it crosses Wigg Island has reduced the visual effect of the Project.

Contribution to improving landscape quality

12.8.7 The landscape scheme for the Project has been considered as an integral part of the development of the Reference Design. The areas of proposed landscape treatment accord with the replanting / woodland establishment of the Mersey Forest in terms of location, scale, species and opportunities for habitat diversification and expansion.

Proximity to Receptor

12.8.8 The Project has, where possible, been aligned to be located as far as possible from residential areas – the principal receptor of long term effects.

12.8.9 Principles of spatial planning have been adopted when considering noise and visual alternatives to avoid an excessive use of vertical barriers and screen bunds which themselves can have a detrimental effect.

Compensation for loss of existing landscape features / amenity

12.8.10 The extent and diversity of tree and shrub planting will create green corridors in areas where none existed previously and the provision of new planting is substantially in excess of that which is lost.

Construction Phase

The Ability to Mitigate the Effect at Source

12.8.11 The works would be executed within clearly defined work areas accessed from within the highway boundary and approached through prescribed access routes. Where possible, existing vegetation within the work areas would be retained, protected and improved.

Contribution to improving landscape quality

12.8.12 When the planting scheme is implemented opportunities would be taken to vary the suggested planting mixes to reflect and make better use of localised differences in ground conditions, adjacent landscape areas and any 'as built' amendments to scheme design.

Proximity to Receptor

12.8.13 Where achievable vertical barriers and other visual attenuation measures would be implemented as initial works so that in areas where proximity to the receptor is unavoidable there would be the possibility of screening at least some of the construction works.

Compensation for loss of existing landscape features / amenity

12.8.14 In the event of any features earmarked for retention within the work areas being lost contractual measures for appropriate compensation would be enforced if required.

Operational Phase

The Ability to Mitigate the Effect at Source

12.8.15 Measures intended to mitigate effect (e.g. screen planting) will be monitored during the establishment maintenance period to ensure design objectives are being met and following the establishment phase will be managed to ensure that the intended objectives are met and sustained.

Contribution to improving landscape quality

12.8.16 As the landscape treatment matures the maintenance regime will be responsive to beneficial naturally occurring local variations and detrimental changes (for example invasive species, will be controlled with a view to eradication).

Proximity to Receptor

12.8.17 The effects upon nearby receptors will be monitored to ensure that the landscape scheme does not become over dominant to the extent that it creates unintended obstructions.

Compensation for loss of existing landscape features / amenity

12.8.18 Any part or components of the landscape scheme considered to be essential to the project which are lost through diverse physical damage (e.g. vandalism, road traffic accident) or other unforeseen incident will be replaced in the most appropriate manner.

Mitigation Techniques

Spatial Planning

12.8.19 The objectives of spatial planning are to optimise the distance between effect source and receptor and utilise the available land for appropriate mitigation measures. The landscape scheme has been developed with reference to land ownership and with the intention that, where

it is reasonable and beneficial to do so, the land available for mitigation is fully utilised in order to maximise opportunities for planting to be as extensive as possible so that the route can be screened and integrated into its surroundings.

12.8.20 In Widnes in particular, mitigation measures have been formulated with an awareness that the Project unlocks opportunities for land assembly and redevelopment and where potential development sites have been identified land take has been minimised. If such site could be redeveloped in recognition of the route and its effect they could be instrumental in mitigating effect by screening views of traffic and lighting and integrating the scale and geometry of the highway with its surroundings. If development opportunities did not materialise, the land in question could be utilised for additional landscape treatment to achieve the desired degree of mitigation.

12.8.21 Spatial planning has been particularly significant in the highway corridor in Widnes between Ditton Junction and the Upper Mersey where land take for mitigation by landscape measures extends beyond that required for highway construction.

Earth-shaping and Mounding

12.8.22 These techniques are utilised to visually integrate the structural landform of highway construction - cutting and embankments - with the natural topography of the landform. These techniques are less appropriate for the Project where integration is best achieved by planting and / or redevelopment of the urban fabric around the route corridor. However, there are opportunities for considering earth shaping and mounding in conjunction with vertical barriers in selected locations. Prime locations where earth shaping would help to integrate the Project with its surroundings are around Ditton Junction (especially to the south) and to the outer edges of the Widnes Loops Junction.

Vertical Barriers

12.8.23 Vertical barriers deployed for noise and visual attenuation should in themselves integrate with their surroundings. For the most part it has been assumed that they would be constructed as timber panels which would be visually recessive and suitable for the urban and semi rural situations in which they would be deployed. In the more urban situations timber panels could be used in association with brick plinths and pillars to promote visual coherence with the surroundings.

12.8.24 The exception to the use of timber panels would be on the approaches to the New Bridge where transparent barriers have been advocated to permit views over the estuary from the highway.

Materials and Finishes

12.8.25 In visually prominent locations – Victoria Road, St Helens Canal, Bridgewater Canal – appropriately detailed facades utilising brick and stone have been promoted to articulate and express the design of the structures and integrate them into their immediate context.

12.8.26 Use of subtle, visually recessive colour themes has been considered to assist with the integration of the New Bridge into the estuary landscape.

Soft Landscape

12.8.27 Inherent in the landscape scheme are the benefits to the wider area in improved visual amenity brought about by the extensive introduction of planting in areas devoid of tree cover and the provision of highlights of ornamental planting in key locations, for example around ‘gateway’ junctions into Runcorn and Widnes.

12.8.28 However, opportunities for ecological enhancement also have a visual dimension in that the diversification of habitat has been approached by using native species selected for colour and form planted in drifts in selected areas to maximise visual as well as ecological interest.

12.8.29 The proposals have been developed between October 2006 and November 2007 in consultation with the design engineers. The agreed scope of work embraced:

a. Visual screening of the highway construction and, in particular, the traffic upon it;
b. Integration of the route alignment into the surrounding landscape – which has involved amendments to the engineering design – and the strengthening/enhancement of the existing landscape pattern and structure;
c. The protection and enhancement of existing habitats and the creation of a diverse matrix of integrated habitats to be managed for wildlife and nature conservation interest;
d. Improvements to the visual amenity, particularly in those parts which have a more urban context, for example around Widnes; and
e. Improved public access, particularly embracing 'green route' aspirations.

12.8.30 The landscape elements and environmental function codes are summarised overleaf and have been applied to the Reference Design scheme layout as mitigation measures following the identification of potential effects.

12.8.31 The landscape treatments, as indicated on the Reference Design landscape scheme, which incorporate ecological measures, have been formulated with reference to the following:

a. Design Manual for Roads and Bridges Volumes 10 and 11 (Department of Transport);
b. Series 3000 Specification for Highway Works; and
c. The standard nomenclature defined by the Highways Agency. This defines planting types (Landscape Elements) and identifies environmental function codes which help to determine the appropriate Landscape Elements to be incorporated into the scheme. The landscape elements are divided into broad classification types e.g. hedges, which are then subdivided again according to their detailed design or management needs, in conjunction with the stated environmental function. The range of elements is indicated in Table 12.8.1.

12.8.32 For the most part the proposals consist of the naturalistic planting of native species appropriate to the area at an average density of 1.5 metre centres. This could provide filtration and screening of traffic and engineering structures within 7 – 10 years bearing in mind that a planting width of around 30 metres would be needed to provide visual mitigation in winter. In urban areas and at key focal points more ornamental and non native species would be considered.

12.8.33 These measures conform to Highways Agency recommendations and guidelines and recognise the need to maximise environmental benefit in the knowledge that whole-life management and maintenance costs can be substantially greater then the implementation costs – naturalistic planting is environmentally more beneficial and less expensive to implement and maintain than more ornamental treatments.

12.8.34 The elements of the landscape design are identified by planting type / function. Appendix 12.4 indicates the plant species and combinations which could be deployed.

Table 12.8.1 – Landscape Elements

REF	DATASET	CORE DATA	AS-&-WHEN
LE1.1	Amenity Grass Areas	✓	
LE1.2	Grassland with Bulbs	X	✓
LE1.3	Species Rich (or conservation) Grassland	✓	
LE1.4	Rock and Scree	X	
LE1.5	Heath and Moorland	X	
LE1.6	Open Grassland		✓
LE2.1	Woodland	✓	
LE2.2	Woodland Edge	✓	
LE2.3	High Forest	X	
LE2.4	Linear Belts of Shrubs and Trees	✓	
LE2.5	Shrubs with Intermittent Trees	✓	
LE2.6	Shrubs	✓	
LE2.7	Scattered Trees	✓	
LE2.8	Scrub	✓	
LE3.1	Amenity Tree and Shrub Planting	✓	
LE3.2	Ornamental Shrubs	X	✓
LE3.3	Groundcover	✓	
LE3.4	Climbers and Trailers	X	
LE4.1	Ornamental Species Hedges	X	
LE4.2	Native Species Hedges	✓	
LE4.3	Native Species Hedgerows	✓	
LE4.4	Native Hedgerows with Trees	✓	
LE5.1	Individual Trees	✓	
LE6.1	Water Bodies and Associated Plants	X	✓
LE6.2	Banks and Ditches		✓
LE6.3	Reed Beds		✓
LE6.4	Marsh and Wet Grassland		✓
LE7	Hard Landscape Features		✓

Environmental Function Codes

EFA Visual screening.
EFB Landscape Integration.
EFC Enhancing the Built Environment.
EFD Nature Conservation and Biodiversity.
EFE Visual amenity.
EFF Heritage.
EFG Auditory amenity.
EFH Water quality.

12.8.35 The indicated landscape treatments represent the initial phase of a seamless and ongoing process of design, implementation and management and as such do not address detail planting design, the percentage of individual species in each planting mix or specific construction phase operational requirements (e.g. protection of existing trees and working margins).

Summary of Mitigation Measures applied to the Project

12.8.36 The main applications of the mitigation measures are summarised below: -

Around Widnes Tolling Plaza

12.8.37 As the tolling plaza and highway are contained by mature vegetation on the perimeter of the golf course an opportunity for mitigation measures to improve ecological diversity has been taken. Measures promoted include intermittent tree planting, hedgerows and scrub to maintain the open character whilst improving amenity and wildlife value.

Ditton Interchange to Victoria Road

12.8.38 Dense woodland scale planting has been promoted to screen the Project but the margins around Ditton interchange have been given over to more ornamental planting mixes at this 'gateway' to Widnes.

Widnes Loops

12.8.39 Woodland scale planting of variable density with scrub and wildflower grassland have been promoted to provide screening, integrate the junction into its surroundings and establish a diverse matrix of habitats.

Wigg Island

12.8.40 Woodland scale planting in intermittent groupings have been promoted to help to integrate the scale of the New Bridge approaches with the surrounding tree cover whilst continuing to permit through-views.

12.8.41 Additional planting has been promoted to provide ecological and landscape diversity.

Bridgewater Junction

12.8.42 Measures including woodland scale planting, intermittent tree and shrub planting, ornamental shrubbery, scrub and wildflower grassland have been promoted to extend and enrich the areas of existing planting and improve its effectiveness in screening the Project.

Expressway Corridor Modifications

12.8.43 Measures similar to those for the Bridgewater Junction have been promoted but there are opportunities for the further enhancement of the existing roadside margins which have also been advocated. These include planting colonies of conspicuous wildflower species and nationally scarce wildflower which could thrive undisturbed on the relatively inaccessible roadside margins.

SJB & associated De-linking

12.8.44 Linear belts of woodland scale tree and shrub planting have been promoted to improve visual amenity and screen views of traffic.

12.9 Residual Effects

Assessment of Residual Effects

12.9.1 Residual effects have been considered as effects which cannot be mitigated; potential identified effects not fully mitigated and effects resulting from mitigation measures.

Effects which cannot be mitigated

12.9.2 Identified effects which cannot be mitigated principally relate to the New Bridge and there are a number of considerations:

a. The visual dominance, obstruction and intrusiveness of the bridge when viewed from close quarters;
b. The physical and visual intrusion into Wigg Island and the crossing of the Bridgewater Canal and St Helens Canal / Trans-Pennine Trail recreation routes;
c. The accumulated effect of lighting (deck lighting and traffic) where the bridge deck can be viewed along the alignment from vantage points and specific receptor viewpoints; and
d. The views of moving traffic which can be more intrusive than the static structure.

12.9.3 Some aspects of the above will also be true of other bridge structures but to a much lesser degree.

Potential identified effects not fully mitigated

12.9.4 The effect of lighting is the most prevalent aspect of the scheme which cannot be fully mitigated and is a consideration throughout the scheme.

12.9.5 The use of planting to screen the highway will also partially screen and filter the effect of lighting but full screening cannot be achieved and the effectiveness of planting will be in the long term so short and medium terms effects will prevail.

Effects resulting from mitigation measures

12.9.6 The introduction of screen planting will obstruct existing views but as this is a gradual change brought about as planting matures it is regarded as less intrusive than measures such as vertical noise attenuation barriers which in themselves may warrant screening.

Summary of residual effects in construction phase

12.9.7 Effects not capable of mitigation include:

a. The demolition of the existing sections of elevated highway; and
b. The construction of the New Bridge.

12.9.8 Residual visual effects of construction are considered to be **not significant** at the wider study area level.

12.9.9 At the intermediate study areas level the residual effects for visual change are summarised as:

a. **High positive** north of the estuary;
b. **High positive** for the estuary; and
c. **Low positive** south of the estuary.

12.9.10 The residual effects on the landscape are summarised as:

a. **High positive** north of the estuary;
b. **Moderate negative** for the estuary; and

c. **Moderate negative** south of the estuary.

12.9.11 At the local area level the residual effects of visual changes are summarised as:

a. North of the estuary: - **high negative** for Ditton Junction to Widnes Loops Junction; **low negative** for St Michaels Golf Course and Ditton Junction; and **moderate positive** around West Bank and Victoria Road;
b. For the estuary: - **high negative** for visitors to Wigg Island Community Park; **moderate negative** visitors to Spike Island, Catalyst Museum (vantage point), users of the Manchester Ship Canal and residents and occupiers in the Astmoor Road area; and
c. South of the estuary: - **moderate negative** around Bridgewater Junction and the Expressway Corridor.

Summary of residual effects in operational phase

12.9.12 Residual visual effects of the operational phase are considered to be **moderate positive** at the wider study area level.

12.9.13 At the intermediate study areas level the residual effects for visual change are summarised as:

a. **High positive** north of the estuary;
b. **High positive** for the New Bridge as a spectacle in the estuary for visitors to Spike Island and Wigg Island and the residents of the western fringe of West Bank; **moderate negative** for the intrusive effects of the New Bridge for visitors to Spike Island and Wigg Island and the residents of the western fringe of West Bank; and
c. **Low negative** for residents, occupiers and users of public realm spaces around Bridgewater Junction and the Expressway Corridor north of Lodge Lane, south of the estuary; **moderate positive** south of Lodge Lane Junction.

12.9.14 The residual effects on the landscape are summarised as:

a. **High positive** north of the estuary;
b. **High positive** (avoidance of saltmarshes) and **moderate negative** (physical impact) for the estuary; and
c. **Moderate positive** south of the estuary.

12.9.15 At the local area level the residual effects of visual changes are summarised as:

a. North of the estuary – **low positive** around St Michaels Golf Course and **moderate positive** in the remaining areas of this section;
b. For the estuary - **high negative** for visitors to Wigg Island, **moderate negative** for the remaining areas of this section; and
c. South of the estuary – **moderate negative**.

12.9.16 Any residual effects associated with the proposed mitigation measures would predominantly relate to the obstruction of existing views as screen planting matures and are considered to be of **low** residual significance.

Summary Tables

12.9.17 A summary of mitigation measures and residual effects for wider area receptors, intermediate receptors and receptors within the local study area is provided in the following tables.

Table 12.9.1 - Wider Area Receptors

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Construction Phase						
Long distance views of New Bridge as iconic structure	Populations in areas from which the New Bridge would be visible Importance: Low	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Short term Temporary Direct Low beneficial	Not significant at this scale.	Unable to mitigate.	Not significant at this scale.
Operation Phase						
Long distance views of New Bridge as iconic structure	Populations in areas from which the New Bridge would be visible Importance: Low	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Long term Permanent Direct and indirect High beneficial	Moderate positive	None proposed – important to view structure.	Moderate positive
Effect on landscape.	Landscape of Mersey Valley Character Area. Importance: Moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Long term Permanent Direct and indirect Moderate beneficial	Moderate positive.	Mitigation achieved through integration by design of structure and refinement of alignment.	Moderate positive

Table 12.9.2 - Intermediate Area Receptors, North of the Estuary (1)

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Construction Phase						
Visual change demolitions (middle distance views)	Residents, occupiers and views of public realm areas. Importance moderate (Low Ditton to Victoria Road)	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Short term Temporary Direct High beneficial	Moderate positive	Retention and protection of existing trees and shrubs where adjacent to demolitions and have visual benefit.	Moderate positive.
Visual change new construction.	Residents, occupiers and views of public realm areas. Importance moderate (Low Ditton to Victoria Road)	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative during construction. Positive upon completion. Short term Temporary Direct Moderate adverse.	Moderate negative during construction (high positive upon completion)	Completion of works and implementation of landscape scheme.	High positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Effects on landscape and townscape.	Landscape / townscape of South Widnes and northern margins of estuary. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative during construction. Positive upon completion. Short term. Temporary Direct High beneficial.	Moderate positive	Retention and protection of existing trees and shrubs where adjacent to demolitions.	High positive.
Effects on landscape and townscape. Removal of existing landscape features.	Landscape / townscape north of the estuary. Importance low	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative during construction. Positive upon completion. Short term.. Temporary Direct Moderate adverse.	Moderate adverse.	Replacement planting as part of landscape scheme.	Moderate positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Operation Phase						
Visual change	Speke Road to Ditton Junction. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Long term. Permanent. Direct. High beneficial.	High positive.	Reinforcement of existing screening.	High positive.
Visual change	Ditton Junction to Victoria Road. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	High positive.	Maintain landscape scheme screening function.	High positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual change.	Victoria Road to the Estuary margins. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	High positive.	Maintain landscape scheme screening function.	High positive.
Landscape change	Speke Road to Ditton Junction. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	High positive.	Maintain landscape scheme screening function.	High positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Landscape change	Ditton Junction to Victoria Road. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	High positive.	Maintain landscape scheme screening function.	High positive.
Landscape change.	Victoria Road to the Estuary margins. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	High positive.	Maintain landscape scheme screening function.	High positive.

Table 12.9.3 – Intermediate Area Receptors, The Mersey (2)

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Construction Phase						
Visual change new construction, New Bridge as a spectacle. (middle distance views)	Users of Spike Island and Wigg Island and the residents of the western fringe of West Bank. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Short term Temporary Direct High beneficial	High positive	Unable mitigate.	High positive.
Visual change new construction, Intrusive effects.	Users of Spike Island and Wigg Island and the residents of the western fringe of West Bank. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Low adverse.	Moderate negative	Unable mitigate.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Effects on landscape.	Landscape of the estuary margins, physical impact. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term. Temporary Direct Low adverse.	Low negative.	Unable to mitigate.	Moderate negative.
Effects on landscape	Landscape of the estuary margins, avoidance of saltmarshes. Importance high.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Short term. Temporary Direct High beneficial.	High positive.	Avoid saltmarshes.	High positive.
Visual and landscape effects.	Green Belt. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term. Temporary Direct Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual effects.	Cultural heritage. Importance low	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term. Temporary Direct Low adverse.	Low negative.	Unable to mitigate.	Low negative.
Operation Phase						
Visual change new construction, New Bridge as a spectacle. (middle distance views)	Users of Spike Island and Wigg Island and the residents of the western fringe of West Bank. Importance high.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive Long term. Permanent. Direct. High beneficial.	High positive.	Refinement of design of structural aspects and colour themes of New Bridge with visual integration of estuary margins achieved by landscape scheme.	High positive.
Visual change new construction, Intrusive effects.	Users of Spike Island and Wigg Island and the residents of the western fringe of West Bank. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Landscape change, physical impact	Estuary margins presence of the structure in the landscape. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.
Landscape change, physical impact.	Saltmarshes. Importance high.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	High positive.	Avoidance of saltmarshes.	High positive.
Night-time effect.	Effect on estuary. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Night-time effect.	Effect on estuary margins. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.
Visual change.	Green Belt landscape visual impact. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.
Landscape change.	Green Belt landscape physical impact. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Low negative.	Unable to mitigate.	Low negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual change.	Effect on Cultural Heritage, visual effect SJB Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. Moderate beneficial.	Moderate positive.	None proposed – important to view structure.	Moderate positive.
Visual change.	Effect on Cultural Heritage, visual effect Halton Castle as a vantage point. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. No effect.	High positive.	None proposed - function as vantage point not affected.	High positive.
Landscape change.	Effect on Cultural Heritage, physical effect. Importance high.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. No effect.	Not significant.	None proposed.	Not significant.

Table 12.9.4 – Intermediate Area Receptors, South of Estuary (3)

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Construction Phase					
Visual change new construction loss of screen planting. (middle distance views)	Residents, occupiers and users South of the Estuary and alongside the Expressway Corridor. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Retention and protection of existing trees and shrubs where they have a screening effect.	Low positive.
Effects on landscape, loss of tree and shrub cover.	Landscape of the Expressway Corridor. Importance moderate.	+ve or –ve: Negative. Timescale of Effect: Short term. Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Unable to mitigate in the construction phase.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Operation Phase					
Visual change around the Bridgewater Junction. (middle distance views)	Residents, occupiers and users South of the Estuary. Importance moderate.	+ve or –ve: Negative Timescale of Effect: Long term. Permanent or Temporary Permanent. Direct or Indirect Effect: Direct. Magnitude: Moderate adverse.	Moderate negative.	Maintain screening function of existing planting on the margins of the Project.	Low negative.
Visual change around Expressway Corridor, north of Lodge Lane Junction.	Residents, occupiers and users South of the Estuary and alongside the Expressway Corridor. Importance moderate.	+ve or –ve: Negative. Timescale of Effect: Long term. Permanent or Temporary Permanent. Direct or Indirect Effect: Direct. Magnitude: Moderate adverse.	Moderate negative.	Long term maintenance of the screening function of the landscape scheme.	Low negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual change around Expressway Corridor, south of Lodge Lane Junction.	Residents, occupiers and users South of the Estuary and alongside the Expressway Corridor. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Low negative.	Long term maintenance of the screening function of the landscape scheme.	Moderate positive.
Landscape change, effect on the Expressway Corridor, north of Lodge Lane Junction.	Designed and natural landscape of the Expressway Corridor. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.	Enhancement of the Expressway Corridor landscape in association with the Project.	Moderate positive.
Landscape change, effect on the Expressway Corridor, south of Lodge Lane Junction.	Designed and natural landscape of the Expressway Corridor. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Low negative.	Enhancement of the Expressway Corridor landscape in association with the Project.	Moderate positive.

Table 12.9.5 – Local Area Receptors, North of Estuary (1)

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Construction Phase					
Visual change demolitions.	Residents and occupiers around West Bank, Ditton Junction and Victoria Road. Importance moderate	+ve or –ve: Positive. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate beneficial.	Moderate positive.	Retention and protection of existing trees and shrubs where adjacent to demolitions and have visual benefit.	Moderate positive.
Visual change Ditton Junction to Widnes Loops Junction.	Residents and occupiers north of the estuary. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: High adverse.	High negative.	Unable to mitigate.	High negative.
Visual change St Michaels Golf Course and Ditton Junction.	Residents and occupiers surrounding the Golf Course and adjacent open space. Importance low	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Low adverse.	Low negative.	Protection and retention of existing trees and shrubs adjacent to construction works.	Low negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Operation Phase						
Visual change Around St Michaels Golf Course.	Surrounding residents, occupiers and public realm area users. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative Long term. Permanent. Direct. Low adverse.	Low negative.	Maintain screening function of existing planting on the margins of the Project.	Low positive.
Visual change around Ditton Junction.	Surrounding residents, occupiers and public realm area users. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. Moderate beneficial.	Moderate positive.	None proposed.	Moderate positive.
Visual change between Ditton Junction and Victoria Road.	Surrounding residents, occupiers and public realm area users. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	Moderate positive.	Maintain long term screening function of landscape scheme.	Moderate positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual change around Victoria Road.	Surrounding residents, occupiers and public realm area users. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. Moderate beneficial.	Moderate positive	Maintain open thoroughfare in any future redevelopment.	Moderate positive.
Visual change around Widnes Loops Junction / St Helens Canal	Users of Spike Island and the Trans-Pennine Trail. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	Moderate positive	Maintain screening function of woodland scale planting.	Moderate positive
Visual change around the crossing of St Helens Canal	Users of the Trans-Pennine Trail. Importance high.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual change around the SJB Link.	Communities of West Bank and Runcorn Old Town. Importance high.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Long term. Permanent. Direct. High beneficial.	Moderate positive.	None proposed.	Moderate positive.
Visual change Year One Effects. Around St Michaels Golf Course.	Surrounding residents, occupiers and public realm area users. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Medium term. Permanent. Direct. Moderate adverse.	Low negative.	Unable to mitigate.	Low negative.
Visual change Year One Effects. At Ditton Junction.	Surrounding residents, occupiers and public realm area users. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Medium term. Permanent. Direct. Moderate beneficial.	Moderate positive.	None proposed.	Moderate positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual change Year One Effects. Between Ditton Junction and Victoria Road.	Surrounding residents, occupiers and public realm area users. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Medium term. Permanent. Direct. High adverse.	High negative.	Implementation of landscape scheme.	High positive.
Visual change Year One Effects. At Victoria Road	Surrounding residents, occupiers and public realm area users. Importance moderate.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Medium term. Permanent. Direct. Moderate beneficial.	Moderate positive.	None proposed.	Moderate positive.
Visual change Year One Effects. Around the SJB Link.	Surrounding residents, occupiers and public realm area users. Importance high.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Positive. Medium term. Permanent. Direct. Moderate beneficial.	Moderate positive.	None proposed.	Moderate positive.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual change Night-time Effects.	Residents, occupiers and public realm throughout the north of the Estuary. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Low negative.	Unable to mitigate other than impact of lighting may be filtered by existing vegetation as landscape scheme matures.	Low negative.

Table 12.9.6 – Local Area Receptors, The Mersey (2)

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Construction Phase					
Visual change. Intrusive effects of construction of New Bridge.	Users of Spike Island leisure facilities, Catalyst Museum (vantage point) and Trans-Pennine Trail. Importance high	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.
Visual change. Intrusive effects of construction of New Bridge.	Visitors to Wigg Island Community Park. Importance high	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: High adverse.	High negative.	Unable to mitigate.	High negative.
Visual change. Intrusive effects of construction of New Bridge.	Users of the Manchester Ship Canal and residents and occupiers in the Astmoor Road area. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Operation Phase					
Visual change. Intrusive effects of New Bridge.	Users of Spike Island leisure facilities, Catalyst Museum (vantage point) and Trans-Pennine Trail. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.
Visual change. Intrusive effects of New Bridge.	Visitors to Wigg Island Community Park. Importance high	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: High adverse.	High negative.	Unable to mitigate.	High negative.
Visual change. Intrusive effects of New Bridge.	Users of the Manchester Ship Canal and residents and occupiers in the Astmoor Road area. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual change. Year One Effects of New Bridge.	Users of Spike Island leisure facilities, Catalyst Museum (vantage point) and Trans-Pennine Trail. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.
Visual change. Year One Effects of New Bridge.	Visitors to Wigg Island Community Park. Importance high	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct High adverse.	High negative.	Unable to mitigate.	High negative.
Visual change. Year One Effects of New Bridge.	Users of the Manchester Ship Canal and residents and occupiers in the Astmoor Road area. Importance moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Short term Temporary Direct Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Night-time effect.	Effect on estuary. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Moderate adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.
Night-time effect.	Effect on estuary margins. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Moderate negative.	Unable to mitigate.	Moderate negative.

Table 12.9.7 – Local Area Receptors, South of the Estuary (3)

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Construction Phase					
Visual change. Around Bridgewater Junction.	Residents, occupants and users of public realm areas around the junction. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Protect existing vegetation adjacent to the construction works.	Moderate negative.
Visual change. Around the Expressway Corridor, north of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Protect existing vegetation adjacent to the construction works.	Moderate negative.
Visual change. Around the Expressway Corridor, south of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Negative. Timescale of Effect: Short term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Low adverse.	Moderate negative.	Protect existing vegetation adjacent to the construction works.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Operation Phase					
Visual change. Around Bridgewater Junction.	Residents, occupants and users of public realm overlooking the junction. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Long term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Protect existing vegetation adjacent to the construction works.	Moderate negative.
Visual change. Around the outer areas of the local study corridor.	Residents, occupants and users of public realm overlooking the junction. Importance low	+ve or –ve: Negative. Timescale of Effect: Long term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Low adverse.	Low negative.	Protect existing vegetation adjacent to the construction works.	Low positive.
Visual change. Around the Expressway Corridor, north of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Negative. Timescale of Effect: Long term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Protect existing vegetation adjacent to the construction works.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**	**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual change. Around the Expressway Corridor, south of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Negative. Timescale of Effect: Long term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Protect existing vegetation adjacent to the construction works.	Moderate negative.
Visual change. Year One effects around Bridgewater Junction.	Residents, occupants and users of public realm areas around the junction. Importance moderate	+ve or –ve: Negative. Timescale of Effect: Medium term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: Moderate adverse.	Moderate negative.	Implementation of the landscape scheme.	Low negative.
Visual change. Year One effects around the Expressway Corridor, north of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Negative. Timescale of Effect: Medium term Permanent or Temporary Temporary Direct or Indirect Effect: Direct Magnitude: High adverse.	High negative	Implementation of the landscape scheme.	Moderate negative.

Effect	**Receptor and importance**	**Nature of Effect**		**Significance** (High, Moderate, Low and Positive/Negative)	**Mitigation & Enhancement Measures**	**Residual Significance** (High, Moderate, Low and Positive / Negative)
Visual change. Year One effects around the Expressway Corridor, south of Lodge Lane Junction.	Residents, occupants and users of public realm areas alongside the Expressway Corridor Importance moderate	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Medium term Temporary Direct Moderate adverse.	Moderate negative.	Implementation of the landscape scheme.	Low negative.
Night-time effect.	Residents, occupants and users of public realm areas alongside the Expressway Corridor. Importance low.	+ve or –ve: Timescale of Effect: Permanent or Temporary Direct or Indirect Effect: Magnitude:	Negative. Long term. Permanent. Direct. Low adverse.	Low negative.	As a screening effects of the landscape scheme becomes effective impact of lighting may be filtered through vegetation.	Low negative.

12.10 References

Ref. 1 Highways Agency, Design Manual for Roads and Bridges, Volume 10a Environmental Design

Ref. 2 Highways Agency, Design Manual for Roads and Bridges, Volume 11 Environmental Assessment

Ref. 3 The Landscape Institute and Institute of Environmental Management and Assessment, Guidelines for Landscape and Visual Impact Assessment (second edition).

Ref. 4 Countryside Commission, Countryside Character Volume 2 North West

Ref. 5 Halton Borough Council, Halton Unitary Development Plan, adopted 7th April 2005