

Appendix 10.3 Habitat Regulations Assessment Screening (April 2010)

West of England Partnership

Ashton Vale to Temple Meads and Bristol City
Centre Rapid Transit
Habitat Regulations Assessment Screening
April 2010

Halcrow Group Limited

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West of England Partnership
Ashton Vale to Temple Meads and Bristol City
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1 Context and Background

During the scoping process for the ‘Ashton Vale to Temple Meads and Bristol City Centre Rapid Transit’ Scheme (hereafter known as ‘the Scheme’) a response from Natural England dated 11th March 2009 stated: *“We welcome the recognition that the proposal will need to be subject to the Habitat Regulations Assessment process in accordance with the Habitats Directive and Regulations. The Competent Authority, ... are required to take guidance from Natural England. With this in mind, it would be helpful were the Environmental Statement to clearly set out any likely significant effects on internationally designated sites under a specific subject heading.”* It is therefore considered appropriate to formalise the screening process and confirm that no ‘likely significant effects’ (LSE) on any European sites would occur from the implementation of the Scheme

The Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna – the ‘Habitats Directive’ provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of interest to the EU in a favourable condition. This is implemented through a network of protected areas referred to as Natura 2000 sites.

Articles 6(3) and 6(4) of the Habitats Directive requires Appropriate Assessment of plans and projects likely to have a significant effect on a European site. This means that the effects of such plans/projects on Natura 2000 sites need to be assessed to ensure that the integrity of these sites is maintained. The Natura 2000 sites are of two types – Special Area of Conservation (SAC) and Special Protection Areas (SPA). Each Natura 2000 site has a number of qualifying features, for which conservation objectives have been developed. Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance) are included within a Habitats Regulations Assessment/Appropriate Assessment.

The purpose of Habitat Regulations Assessment (HRA) is to assess the impacts of a land-use plan or project, in combination with the effects of other plans and projects, against the conservation objectives of a European Site and to ascertain whether it would adversely affect the integrity¹ of that site. Where significant negative effects are identified, alternative options

¹ Integrity is described as the sites’ coherence, ecological structure and function across the whole area that enables it to sustain the habitat, complex of habitats and/or levels of populations of species for which it was classified, (ODPM, 2005).

should be examined to avoid any potential damaging effects. The scope of the HRA is dependent on the location, size and significance of the proposed plan or project and is first determined by screening.

Stages of Habitats Regulations Assessment (HRA)²	
<p>Stage 1 – Screening:</p> <p>This stage identifies the likely impacts upon a European Site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant. <i>Confirmation of no 'likely significant effects' (LSE) can effectively complete the HRA.</i></p> <p>Stage 2 – Appropriate Assessment:</p> <p>Where there are likely significant effects, this stage considers the impacts of the plan or project on the integrity of the relevant European Sites, either alone or in combination with other projects or plans, with respect to the sites' structure and function and their conservation objectives. Where there are adverse impacts, it also includes an assessment of the potential mitigation for those impacts.</p> <p>Stage 3 – Assessment of alternative solutions:</p> <p>Where adverse impacts are predicted, this stage examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of European Sites.</p> <p>Stage 4 – Assessment where no alternative solutions exist and where adverse impacts remain:</p> <p>This stage assesses compensatory measures where it is deemed that the project or plan should proceed for imperative reasons of overriding public interest (IROPI). The guidance does not deal with the assessment of IROPI.</p>	 <p>HRA</p>

The nearest European site to the proposed project is Avon Gorge Woodlands SAC, which is approximately 0.6km northwest of the Scheme. The Severn Estuary SPA, candidate SAC and Ramsar Site is approximately 6km northwest of the Scheme, Chew Valley Lake SPA is located approximately 10.5km south of the Scheme and North Somerset & Mendip Bats SAC is located approximately 11km southwest of the Scheme.

² *Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC 2002)*

2 European Sites – Baseline Conditions

Table 1 provides a summary of the baseline information on the interest features, sensitivities, vulnerabilities, condition assessments, conservation objectives and management plans for the European sites within 15km, based on data from Natural England and the Joint Nature Conservation Committee (JNCC). The table provides a broad indication of the types of impact that each site is likely to be susceptible to.

Table 1. SAC attributes within 15km of the Scheme.

Site	European Interest Features	Component SSSIs	Summary of Principle Vulnerabilities and Sensitivities†
Avon Gorge Woodlands SAC EU SAC Code UK0012734	<p><i>Tilio-Acerion forests of slopes, screes and ravines (primary reason for selection).</i> Avon Gorge is representative of <i>Tilio-Acerion</i> forests in south-west England on the limestone cliffs and screes of a large river gorge. It is important because of the high concentration of small-leaved lime <i>Tilia cordata</i>, compared with other sites in the region, the presence of rare whitebeams <i>Sorbus</i> spp., including two unique to the Avon Gorge (<i>S. bristoliensis</i> and <i>S. wilmottiana</i>), and other uncommon plants, such as green hellebore <i>Helleborus viridis</i>. Other characteristic species include soft shield-fern <i>Polystichum setiferum</i> and hart’s-tongue <i>Phyllitis scolopendrium</i>. Species-rich transitions to scrub and grasslands are associated with the woodland. Small groves of yew <i>Taxus baccata</i> also occur on some of the stonier situations.</p> <p><i>Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (not primary reason for selection).</i></p>	Avon Gorge	<p>The site is 152.35ha of woodland, cliffs, screes and pockets of calcareous grassland on both sides of the Avon Gorge. Ten of the seventeen SSSI units are currently in favourable condition (principally on the western bank), six are in unfavourable recovering condition (all on the eastern bank) and one is in unfavourable declining condition (due to inappropriate scrub control).</p> <p>Principle vulnerabilities of the site are set out below according to SSSI interest features:</p> <p>The key vulnerabilities on scree and ledge habitats are the control of grazing stock (too low will allow encroachment of scrub that will shade out smaller species and too high could cause damage), recreational use by walkers and rock climbers (can be damaged by frequent trampling and dislodgement of stones from ledges, but some use may beneficially restrict vegetation growth).</p> <p>Calcareous grassland is vulnerable to: inappropriate grazing management (without management it rapidly becomes dominated by stands of rank grasses,</p>

Site	European Interest Features	Component SSSIs	Summary of Principle Vulnerabilities and Sensitivities†
			<p>such as Tor-grass that lower the diversity of the site and then scrub over, however excess poaching should be avoided).</p> <p>Broadleaved semi-natural woodland is vulnerable to lack of management maintaining variations in the structure of the wood, overgrazing by deer, rabbits or livestock, colonisation by invasive species.</p> <p>All habitats. The habitats within this site are highly sensitive to inorganic fertilisers and pesticides, applications of which should be avoided both within the site itself and in adjacent surrounding areas. Herbicides may be useful in targeting certain invasive species, but should be used with extreme care. Access to this site, and any recreational activities within, may also need to be controlled.</p>
<p>Severn Estuary SPA EU SPA Code UK9015022</p>	<p>ARTICLE 4.1 QUALIFICATION (79/409/EEC) <i>Tundra Swan</i> <u>Cygnus columbianus bewickii</u>. Over winter the area regularly supports (Western Siberia/North-eastern & North-western Europe) 3.9% of the GB population. 5 year peak mean 1991/92-1995/96.</p> <p>ARTICLE 4.2 QUALIFICATION (79/409/EEC) <i>Gadwall</i> <u>Anas strepera</u>. Over winter the area regularly supports (North-western Europe) 0.9% of the population. 5 year peak mean 1991/92-1995/96.</p> <p><i>Greater white-fronted goose</i> <u>Anser albifrons albifrons</u>. Over winter the area regularly supports (North-western Siberia/North-eastern & Northwestern Europe) 0.4% of the population. 5 year peak mean 1991/92-1995/96.</p> <p><i>Dunlin</i> <u>Calidris alpina alpina</u>. Over winter the area regularly supports (Northern Siberia/Europe/Western Africa) 3.3% of the population. 5 year peak mean 1991/92-1995/96.</p> <p><i>Shelduck</i> <u>Tadorna tadorna</u>. Over winter the area regularly supports (North-western Europe) 1.1% of the population. 5 year peak mean</p>	<p>Severn Estuary</p>	<p>Area 24662.98ha. The conservation of the site features is dependent on the tidal regime. The range is the second highest in the world and the scouring of the seabed and strong tidal streams result in natural erosion of the habitats. The estuary is therefore vulnerable to large scale interference, including human actions. These include land-claim, aggregate extraction /dredging, physical developments such as barrage construction flood defences, pollution (industrial, oil spillage), eutrophication and tourism based activities and disturbance. These issues are being addressed through existing control measures and as part of the Severn Estuary Strategy.</p>

Site	European Interest Features	Component SSSIs	Summary of Principle Vulnerabilities and Sensitivities†
	<p>1991/92-1995/96.</p> <p>Redshank <i>Tringa totanus</i>. (Eastern Atlantic - wintering) 1.3% of the population. 5 year peak mean 1991/92-1995/96.</p> <p>ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS</p> <p>Over winter the area regularly supports 84317 waterfowl (5 year peak mean 01/04/1998) Including: <i>Cygnus columbianus bewickii</i>, <i>Anser albifrons albifrons</i>, <i>Tadorna tadorna</i>, <i>Anas strepera</i>, <i>Calidris alpina alpina</i>, <i>Tringa totanus</i>.</p>		
<p>Severn Estuary cSAC EU SAC Code UK0013030</p>	<p>Estuaries (primary reason for selection). Habitat occurrence description not yet available.</p> <p>Mudflats and sandflats not covered by seawater at low tide (primary reason for selection). Habitat occurrence description not yet available.</p> <p>Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) (primary reason for selection). Habitat occurrence description not yet available.</p> <p>Sea lamprey <i>Petromyzon marinus</i> (primary reason for selection). Species occurrence description not yet available.</p> <p>River lamprey <i>Lampetra fluviatilis</i> (primary reason for selection). Species occurrence description not yet available.</p> <p>Twaite shad <i>Alosa fallax</i> (primary reason for selection). Species occurrence description not yet available.</p> <p>Sandbanks which are slightly covered by sea water all the time (not a primary reason for selection)</p> <p>Reefs (not a primary reason for selection).</p>	<p>Severn Estuary</p>	<p>The cSAC covers 73715.4ha and its vulnerabilities are listed below in terms of relevant SSSI features:</p> <p>Rivers and streams: The rivers natural structure and form should be maintained to support a natural flow regime that will help conserve the geomorphological features of interest and provision of habitats. Other sensitivities are detrimental effects of artificial modifications, disconnection from the floodplain, over abstraction.</p> <p>Bank-side and aquatic vegetation is vulnerable to inappropriate management by cutting (timing and technique) or grazing (including poaching and stocking densities) and lack of consideration of associated floodplain habitats, shading of exposed riverine sediments by trees, inappropriate removal of large woody debris, uncontrolled invasive species.</p> <p>Water and sediment quality are essential to maintaining a healthy river system and vulnerable to pollution of the river from point and diffuse sources, including discharges of domestic and industrial effluent, and run-off from agriculture, forestry and urban land.</p> <p>Fish populations or other native animals or plants should be managed at a sustainable level, without manipulation of the river's natural capacity to support</p>

Site	European Interest Features	Component SSSIs	Summary of Principle Vulnerabilities and Sensitivities†
			<p>them or augmentation by excessive stocking. Where stocking is carried out it should be done such that it does not compromise the genetic integrity of natural populations, which can be a particular issue where existing fish populations have not previously been subject to stocking.</p> <p>Littoral sediments (mud and sand flats) are sensitive to maintenance of good water quality and sediment quality, and the sediment budget within the estuarine or coastal system should not be restricted by anthropogenic influences, especially coastal squeeze.</p> <p>The birds that use mud and sandflats for feeding and roosting are vulnerable to disturbance from human activities, for example, bait digging, dog walking and wildfowling. These activities can lead to reduced time spent feeding, or individuals being restricted to areas with a poor food supply.</p> <p>Littoral rock (rocky shores) are sensitive to maintenance of good water quality, turning of rocks for bait collection, but also dredging and pipe construction that can cause direct damage to rocky habitats located on the foreshore, and impacts of any anthropogenic structures which may deflect wave energy away from the foreshore.</p> <p>Coastal saltmarsh is vulnerable to reduced grazing or inappropriate/over grazing where they have been grazed in the past, coastal erosion as a result of coastal flood-defence works, rising sea-levels, variations in sediment deposition, and land claim for development.</p> <p>Floodplain and coastal grazing marsh. In order to maintain a species-rich sward, each year's growth of vegetation must be removed. Therefore they are sensitive to abandonment and inappropriate management, excessive fertiliser, reseeding, inappropriate management of drainage and eutrophication of water courses rank grasses and nettles.</p> <p>Seagrass (<i>Zostera</i>) beds are sensitive to water and sediment quality, as seagrass beds are sensitive to excessive nutrient enrichment, and sediment budget which</p>

Site	European Interest Features	Component SSSIs	Summary of Principle Vulnerabilities and Sensitivities†
			<p>should not be restricted by anthropogenic influences.</p> <p>All habitats. The habitats within this site are highly sensitive to inorganic fertilisers and pesticides, applications of which should be avoided both within the site itself and in adjacent surrounding areas. Herbicides may be useful in targeting certain invasive species, but should be used with extreme care. Access to this site, and any recreational activities within, may also need to be managed.</p>
<p>Severn Estuary Ramsar site Ramsar Information Sheet: UK11081</p>	<p>Ramsar criterion 1. Due to immense tidal range (second-largest in world), this affects both the physical environment and biological communities.</p> <p>Habitats Directive Annex I features present on the pSAC include: Sandbanks which are slightly covered by sea water all the time, Estuaries, Mudflats and sandflats not covered by seawater at low tide, and Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)</p> <p>Ramsar criterion 3. Due to unusual estuarine communities, reduced diversity and high productivity.</p> <p>Ramsar criterion 4. This site is important for the run of migratory fish between sea and river via estuary. Species include Salmon <i>Salmo salar</i>, sea trout <i>S. trutta</i>, sea lamprey <i>Petromyzon marinus</i>, river lamprey <i>Lampetra fluviatilis</i>, allis shad <i>Alosa alosa</i>, twaite shad <i>A. fallax</i>, and eel <i>Anguilla anguilla</i>. It is also of particular importance for migratory birds during spring and autumn.</p> <p>Ramsar criterion 8. The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon <i>Salmo salar</i>, sea trout <i>S. trutta</i>, sea lamprey <i>Petromyzon marinus</i>, river lamprey <i>Lampetra fluviatilis</i>, allis shad <i>Alosa alosa</i>, twaite shad <i>A. fallax</i>, and eel <i>Anguilla anguilla</i> use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery</p>	<p>Severn Estuary</p>	<p>24662.98 ha. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects are:</p> <p>Dredging (on-site, off-site and major impact);</p> <p>Erosion (on-site and major impact); and</p> <p>Recreational/tourism disturbance (unspecified) (on-site and off-site).</p>

Site	European Interest Features	Component SSSIs	Summary of Principle Vulnerabilities and Sensitivities†
	<p>ground for many fish species particularly allis shad <i>Alosa alosa</i> and twaite shad <i>A. fallax</i> which feed on mysid shrimps in the salt wedge.</p> <p>Ramsar criterion 5 Assemblages of international importance: Species with peak counts in winter: 70919 waterfowl (5 year peak mean 1998/99-2002/2003).</p> <p>Ramsar criterion 6 – species/populations occurring at levels of international importance. Species with peak counts in winter:</p> <p>Tundra swan, <i>Cygnus columbianus bewickii</i>, NW Europe 229 individuals, representing an average of 2.8% of the GB population (5 year peak mean 1998/9-2002/3).</p> <p>Greater white-fronted goose, <i>Anser albifrons albifrons</i>, NW Europe 2076 individuals, representing an average of 35.8% of the GB population (5 year peak mean for 1996/7-2000/01).</p> <p>Common shelduck, <i>Tadorna tadorna</i>, NW Europe 3223 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3).</p> <p>Gadwall, <i>Anas strepera strepera</i>, NW Europe 241 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3).</p> <p>Dunlin, <i>Calidris alpina alpina</i>, W Siberia/W Europe 25082 individuals, representing an average of 1.8% of the population (5 year peak mean 1998/9-2002/3).</p> <p>Common redshank, <i>Tringa totanus totanus</i>, 2616 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3).</p>		
Chew Valley Lake SPA EU SPA Code	<p>ARTICLE 4.2 QUALIFICATION (79/409/EEC) Shoveler <i>Anas clypeata</i> Over winter the area regularly supports: 1.3% of the population in north-western/central Europe. 5 year peak</p>	Chew Valley Lake	Chew Valley Lake SPA covers 575.73ha. Chew Valley Lake is a large freshwater reservoir. The lake supplies drinking water to the city of Bristol and surrounding area. Large numbers of people use the area for recreational activities including

Site	European Interest Features	Component SSSIs	Summary of Principle Vulnerabilities and Sensitivities†
UK9010041	mean 1991/92-1995/96.		trout fishing, sailing and walking. A zoning scheme minimises any adverse impacts on the wildlife of the area. The site is owned and managed by Bristol Water Plc.who have successfully implemented a nature conservation strategy for the site.
North Somerset & Mendip Bats SAC	<p><i>Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (primary reason for selection).</i></p> <p>The Cheddar complex and Wookey Hole areas support a wide range of semi-natural habitats including semi-natural dry grasslands. The principal community present is CG2 <i>Festuca ovina – Avenula pratensis</i> grassland which occurs on rock ledges and on steep slopes with shallow limestone soil, especially in the dry valleys and gorges and on the south-facing scarp of the Mendips. The site is also important for the large number of rare plants which are associated with Carboniferous limestone habitats. These include dwarf mouse-ear <i>Cerastium pumilum</i>, Cheddar pink <i>Dianthus gratianopolitanus</i> and rock stonecrop <i>Sedum forsterianum</i>, which occur on rocks, screes, cliffs and in open grassland. Transitions to and mosaics with limestone heath, calcareous screes, scrub and <i>Tilio-Acerion</i> forests are a particular feature of the Cheddar complex part of the site.</p> <p><i>Tilio-Acerion forests of slopes, screes and ravines (primary reason for selection).</i> The main block of <i>Tilio-Acerion</i> forest at Kings and Urchin’s Wood has developed over limestone which outcrops in parts of the site and forms a steep scarp to the south-east. Ash <i>Fraxinus excelsior</i> predominates in the canopy with small-leaved lime <i>Tilia cordata</i>, yew <i>Taxus baccata</i> and elm <i>Ulmus</i> spp., mostly formerly coppiced, but including some pollard limes. There is a rich ground flora including lily-of-the-valley <i>Convallaria majalis</i>, columbine <i>Aquilegia vulgaris</i>, angular Solomon’s-seal <i>Polygonatum odoratum</i> and purple</p>	Kings Wood and Urchin Wood	<p>The North Somerset and Mendip Bats SAC is a fragmented site covering a total of 561.19ha. The section within 15km of the Scheme is Kings Wood and Urchin Wood. The vulnerabilities of the European qualifying features within the Kings Wood and Urchin Wood SSSI are described below by feature:</p> <p>Calcareous grassland is sensitive to management, becoming dominated by stands of rank grasses and then scrub without management and appropriate level of grazing are critical.</p> <p>Chalk/limestone heath habitat is unstable and requires active management to prevent “shade out” of the characteristic species by scrub encroachment using appropriate grazing.</p> <p>Broadleaved semi-natural woodland is vulnerable to loss of woodland structural diversity without management to keep clearings open, fell, thinning or coppice areas and removal of non-native trees and shrubs. Planting can reduce local genetic character of the site so natural regeneration is preferred. This requires management of deer, rabbits and livestock. Invasive species, such as Rhododendron or Himalayan balsam are also a threat.</p> <p>Caves are sensitive systems which often suffer significant pressure from human activities, both above and below ground. It is important to manage the overlying land and catchment in a manner which takes account of potential consequences on the caves. Groundwater pollution from fertiliser, spreading of agricultural or industrial waste on land and dumping of rubbish or other waste in swallow holes or cavities are serious problems in some caves. Activities, such as pumping groundwater or diverting water courses, can affect the groundwater regime through cave systems and have serious effects on the dynamics of the</p>

Site	European Interest Features	Component SSSIs	Summary of Principle Vulnerabilities and Sensitivities†
	<p>gromwell <i>Lithospermum purpureocaeruleum</i>.</p> <p>Lesser horseshoe bat <i>Rhinolophus hipposideros</i> (primary reason for selection). The limestone caves of the Mendips provide a range of important hibernation sites for lesser horseshoe bat <i>Rhinolophus hipposideros</i> and greater horseshoe bat <i>Rhinolophus ferrumequinum</i>.</p> <p>Greater horseshoe bat <i>Rhinolophus ferrumequinum</i> (primary reason for selection). This site in south-west England is selected on the basis of the size of population represented (3% of the UK greater horseshoe bat <i>Rhinolophus ferrumequinum</i> population) and its good conservation of structure and function, having both maternity and hibernation sites. This site contains an exceptionally good range of the sites used by the population, comprising two maternity sites in lowland north Somerset and a variety of cave and mine hibernation sites in the Mendip Hills.</p> <p>Caves not open to the public (not a primary reason for selection).</p>		<p>system.</p> <p>Blocking of cave entrances can also have serious repercussions below ground in altering air flow with consequent effects on underground climate. For example, the growth of stalactites and stalagmites is dependent on water composition, air temperature and humidity. These are easily perturbed so that growth is altered or ceases. Activities that may vary the amount of light available within the cave should also be considered carefully. Quarrying can result in partial or complete destruction of caves, or can disrupt their underground or surface catchment.</p> <p>The habitats within this site are highly sensitive to inorganic fertilisers and pesticides, applications of which should be avoided both within the site itself and in adjacent surrounding areas. Herbicides may be useful in targeting certain invasive species, but should be used with extreme care. Access to this site, and any recreational activities within, may also need to be managed.</p>

† Summary based on data from:

JNCC SAC site summaries (www.jncc.gov.uk)

JNCC UK SPA data form (www.jncc.gov.uk)

JNCC Information Sheet on Ramsar Wetlands (RIS) (www.jncc.gov.uk)

NE conservation objectives for the European interests of the component SSSIs (for SACs only)

NE favourable condition tables for component SSSIs (www.natureonthemap.org.uk)

NE SSSI citations

3 Stage 1: Screening

3.1 Management of European Sites

The Scheme is not directly connected with or necessary to the management of any European sites.

3.2 Description of the Project

3.2.1 Spatial Scope and Physical Changes within the Project

The Scheme is a linear development and change in use along a narrow footprint. The proposals include providing a high quality public transport service between Long Ashton Park & Ride (P&R) and Bristol City Centre with key stops on route. The key features of the scheme include:

- Construction of a segregated, predominantly guided busway between Long Ashton P&R and the Museum of Bristol, including a parallel maintenance track which can be used by pedestrians and cyclists;
- A new bridge over the Portbury freight railway line;
- Refurbishment of Ashton Avenue Bridge over the River Avon with the addition of a cantilevered pedestrian and cycle bridge;
- Works to Vauxhall Bridge, a pedestrian bridge over the River Avon;
- Strengthening works to Prince Street Bridge over the Floating Harbour;
- Additional bus lanes and priority measures within Bristol City Centre; and
- Provision of 10 Rapid Transit stops.

The 903 P&R service between Broadmead and Long Ashton P&R would be replaced by a core Rapid Transit service. Services during the peak periods are proposed to run up to every six minutes (ten vehicles per hour) and every 12 minutes off peak (five vehicles per hour). The Scheme would also provide a segregated route for bus services to and from Nailsea, Clevedon and Weston-super-Mare. The total level of service proposed for the scheme would be up to one every four minutes in the peak periods (15 services per hour) and one every six minutes (ten services per hour) in the off-peak. Where new drainage systems are required these would be mitigated through sustainable systems such as swales, toe drains and wetland areas. Through Bristol city centre it is envisaged that existing surface water and highway drainage systems would be used, in general without modification.

Any effects of the project are unlikely to extend significantly (>1km) beyond the Scheme footprint boundaries.

3.2.2 Emissions and waste

The Scheme is forecast to reduce the number of vehicle trips with car travel and total vehicle delay on the network falling. The Scheme is forecast to move 3,200 car trips per day from highway to rapid transit and would use more environmentally friendly vehicles with low emissions. An air quality impact assessment for the Scheme (impacts to designated sites assessed at up to 200m from the Scheme) determined that, the predicted air quality impacts to vegetation (measured at 200m from the site at Ashton Court Site of Special Scientific Interest) to be insignificant. In addition regional air quality impacts have also been assessed as insignificant.

3.2.3 Duration of construction, operation and decommissioning

The Scheme would take approximately 2.5 years to construct, with construction due to start in 2014. This would include advanced works to protect sensitive sites (ecological, archaeological and landscape)

Information regarding the operational period and decommissioning of the Scheme are not currently available.

3.2.4 In Combination Projects and Plans

The Scheme would operate at a City level, promoting sustainable transport into the centre of Bristol. The Scheme is included within the Greater Bristol Strategic Transport Study (GBSTS). This was commissioned by the Government Office for the South West (GOSW) in partnership with the Highways Agency (HA) and the West of England authorities. The GBSTS developed a series of transport strategies for the sub-region for the period up to 2031. A Rapid Transit Network is one of these strategies. The others are a Greater Bristol Bus Network, The Bath Package, Weston-super-Mare Package Phase 1 and South Bristol Link.

Bristol City Football Club Stadium

In July 2009 a planning application was submitted for a new 30,000 seat stadium and associated development including housing, restaurants/bars, and a hotel on land at Ashton Vale and the former Alderman Moore's allotment site (immediately adjacent to the Scheme). At its meeting on 10 February 2010, Bristol City Council decided to grant permission for the development, subject to the applicant entering into a planning agreement to cover matters including: the travel plan; access proposals; car parking arrangements; and sustainable construction standards.

Wimpey Meridian Development

This involves the development of contemporary apartments and penthouses on Brunel Way adjacent to the Scheme. The apartments would all have allocated parking.

Whapping Wharf

This development site is located adjacent to the Scheme south of Prince Street Bridge. Full planning permission has already been granted for the public spaces and infrastructure of the development although detailed design is still underway prior to construction. Existing buildings on the Wharf have been demolished and the land is now ready for further site preparation. The site would become a mixed-use development including 625 homes, as well as local shops, cafes, restaurants, offices and a 150 bed four star hotel. The listed buildings and old jail gates on site would be retained and eventually restored as part of the new development. Plans also include a new pedestrian route from Southville, via Gaol Ferry Bridge, to the waterfront and a landscaped public square. There would be a new urban street, behind the Museum of Bristol, with a variety of retailers³.

3.3 Avon Gorge Woodlands SAC

3.3.1 Site Characteristics

Avon Gorge Woodlands SAC is designated for its *Tilio-Acerion* woodlands on limestone cliffs and screes and calcareous grasslands and scrublands. The conservation objectives for the European interest on the SSSI are to maintain the woodlands and grassland through appropriate management of grazing and recreational access. The majority of the site is currently in favourable or unfavourable recovering condition.

The features at Avon Gorge Woodlands SAC are potentially vulnerable to inappropriate grazing and scrub management, inappropriate levels of recreational access (too much or too little), inorganic fertilisers, pesticides and herbicides, and expansion of invasive species.

3.3.2 Significance of Potential Impacts

As the Scheme would involve development within a limited area only, (linear development from Aston Vale to Temple Meads and Bristol city centre), there would be no direct impacts on the SAC (land take, fragmentation or disturbance). However, there are potential indirect impacts on the Avon Gorge Woodlands SAC through:

- Deposition of dust; and
- Decline in water quality.

Construction may result in the creation of dust in air pathways. The movement of vehicles and other works during construction have the potential to damage vegetation indirectly through the creation of dust and subsequent decline in air quality. A coating of dust on vegetation could cause a reduction in photosynthesis and would be a negative and potentially

³ www.wappingwharf.co.uk/project-information.html

permanent impact. Even a temporary reduction in the ability of vegetation to photosynthesise can cause long-term damage or death. Construction dust could be expected to travel up to 150m from the construction footprint boundaries; the air quality assessment of the potential impacts of the Scheme assessed a distance of up to 200m from designated sites in accordance with DMRB Volume 11, Section 3, Part 1, HA 207/07. Therefore, due to the distance of the Scheme to Avon Gorge Woodlands SAC (approximately 0.6km) the potential for impacts is considered not significant.

There is connectivity between the Scheme and the SAC downstream along the tidal River Avon. Connectivity through hydrological pathways is considered unlikely since the SAC features are uphill from the river corridor (i.e. the SAC is on higher ground above the River Avon). In addition, potential water quality impacts would be mitigated within the Scheme design. Therefore, the potential for impacts from accidental spillages, release of contaminants or an increase in suspended solids are considered to be not significant. In combination with other projects there are no predicted cumulative effects.

3.4 Severn Estuary SPA, cSAC and Ramsar site

3.4.1 Characteristics

The Severn Estuary is designated as an SPA, candidate SAC and Ramsar site for its overwintering populations of wildfowl and wading bird species, internationally important assemblages of birds, estuary, mudflats and sandflats, Atlantic salt meadows, reefs, fish species including migratory species and breeding species, unusual estuarine communities, reduced diversity and high productivity. 95% of the area of SSSI units within the SAC are currently in favourable condition. Reasons for unfavourable condition include overgrazing, undergrazing, dredging, human disturbance, coastal squeeze and golf course construction.

The European features in the Severn Estuary are potentially vulnerable to declines in water quality, sediment quality, coastal squeeze and interruption in erosion and deposition processes.

3.4.2 Significance of Potential Impacts

As the Scheme would involve development within a limited area only, (linear development from Aston Vale to Bristol city centre), there will be no direct impacts on the SPA, pSAC and Ramsar site (land take, fragmentation or disturbance). However, there are potential indirect impacts on the Severn Estuary European sites through:

- Decline in water quality; and
- Disturbance to migratory fish species.

There is connectivity between the Scheme and the European sites downstream along the tidal River Avon. Connectivity through hydrological pathways is approximately 7km. Due to this distance and potential water quality impacts being mitigated within the Scheme design it

is considered that the potential for impacts from accidental spillages, release of contaminants or an increase in suspended solids are not significant. In combination with other projects there are no predicted cumulative effects.

3.5 Chew Valley Lake SPA

3.5.1 Characteristics

The qualifying feature at Chew Valley Lake SPA is the overwintering population of Shoveler ducks. The SSSI units within the SAC are currently in favourable condition however the European features in the Severn Estuary are potentially vulnerable to disturbance caused by recreational uses of the reservoir.

3.5.2 Significance of Potential Impacts

As the Scheme would involve development within a limited area only, (linear development from Aston Vale to Bristol city centre) and this site is approximately 10.5km from the Scheme there would be no direct impacts on the SPA (land take, fragmentation or disturbance). The Scheme is designed as transport infrastructure for the city of Bristol and, therefore, it is considered unlikely to influence visitor numbers at the SPA. In addition, due to the distance from the Scheme, there are no other potential indirect impacts on the SPA. In combination with other projects there are no predicted cumulative effects.

3.6 North Somerset & Mendip Bats SAC

3.6.1 Characteristics

The European features at North Somerset and Mendip Bats SAC are calcareous grassland and scrub, *Tilio-Acerion* woodlands, lesser and greater horseshoe bats and caves not open to the public. The nearest part of this SAC to the project is a woodland compartment, potentially vulnerable to inappropriate management, overgrazing and fertiliser, pesticide and herbicide impacts. There are thirteen units in the Kings Wood and Urchin Wood SSSI, of which five are in favourable condition, six are unfavourable recovering, one is unfavourable no change and one is unfavourable declining. Reasons for unfavourable condition include deer browsing and inappropriate woodland and forestry management.

3.6.2 Significance of Potential Impacts

As the Scheme would involve development within a limited area only, (linear development from Aston Vale to Bristol city centre) and this site is approximately 12.5km from the Scheme there would be no direct or indirect impacts on the SAC (land take, fragmentation or disturbance). In addition, detailed ecological surveys for the Scheme found no evidence for lesser or greater horseshoe bats using any features that would be impacted by the proposed scheme. In combination with other projects there are no predicted cumulative effects.

4 Conclusion

This screening assessment has concluded that the implementation of the Scheme between ‘Ashton Vale to Temple Meads and Bristol City Centre’, would have ‘no likely significant effects’ on any European Site (alone or in combination with other plans or projects). Therefore, a Stage II Appropriate Assessment of any effects under Regulation 48, 49 and 54 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) will not be required before the Secretary of State for Transport decides to give any consent, permission or other authorisation for this scheme.

References

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

Government Office for the South West (2006) *Greater Bristol Strategic Transport Study*.

Office of the Deputy Prime Minister (2005) *Planning Policy Statement 9, Biodiversity and Geological Conservation, Circular 06/2005*.