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# M4 Corridor around Newport

We want your views on our draft Plan which aims to address transport related problems on the M4 around Newport



Llywodraeth Cymru  
Welsh Government

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**M4 Corridor  
around Newport  
draft Plan**

**Consultation  
Document**

## Strategic Environmental Assessment Environmental Report

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## Glossary

The following terms are referred to in this Strategic Environmental Assessment (SEA) Report of the M4 Corridor around Newport draft Plan.

**Table (i): Glossary of Terms**

<b>AQMAs</b>	Air Quality Management Areas. Since 1997 local authorities in the UK have been carrying out a review and assessment of air quality in their area. The aim of the review is to assist authorities in carrying out their statutory duty to work towards meeting the national air quality objectives. If a local authority finds any places where the objectives are not likely to be achieved, it must declare an Air Quality Management Area there
<b>CBI</b>	The Confederation of British Industry. A UK business lobbying organisation, providing a voice for employers at a national and international level
<b>DfT</b>	Department for Transport. It works to support the UK transport network and plans and invests in transport infrastructure
<b>Do Minimum</b>	This is a scenario (sequence of future events) where intervention includes doing nothing above what is already planned or committed. In this case, it includes all recent network modifications (such as the Junction 24 improvement and the Variable Speed Limit system) and any committed schemes (such as the Junction 28/Bassaleg Roundabout/Pont Ebbw Roundabout improvement and the Steelworks Access Road)
<b>draft Plan</b>	This is the Welsh Government's preferred strategy to solve transport related problems affecting the M4 Corridor around Newport in South Wales. If implemented, the draft Plan would lead to a new motorway (Black Route) being built to the south of Newport, alongside some complementary highway management, walking and cycling initiatives. Assessments of the draft Plan compare it to reasonable alternatives, as well as the Do Minimum scenario
<b>EqIA</b>	Equality Impact Assessment. A way of examining and analysing services, policies and strategies that identify existing and potential impacts on certain groups of people, and sometimes individuals
<b>EU Directive</b>	An EU directive is a legislative act of the European Union, which requires member states to achieve the directive without dictating the means of how to achieve that result

<b>HIA</b>	Health Impact Assessment. A process that considers how the health and well-being of a population may be affected by a proposed action, be it a policy, programme, plan or a change to the organisation or delivery of a particular public service
<b>HRA</b>	Habitats Regulations Assessment. A process that considers the potential effects of plans and programmes on European Sites (protected habitats)
<b>LDP</b>	Local Development Plan. The required statutory development plan for each local planning authority area in Wales. This includes a vision, strategy, area wide policies for development types, land allocations, and where necessary policies and proposals for key areas of change and protection
<b>LNR</b>	Local Nature Reserves. A local site of importance for wildlife, geology, education or public enjoyment
<b>M4 CEM</b>	M4 Corridor Enhancement Measures. A Welsh Government initiative set up to explore and resolve issues of capacity, safety and resilience along the M4 corridor in South East Wales
<b>NAPPAs</b>	Noise Action Planning Priority Areas. Noise maps and associated plans are managed by the Welsh Government and local authorities to find where noise levels are high and help create noise action plans to address the issue
<b>Newport Unlimited</b>	The Urban Regeneration Company for Newport, working with public and private sectors to deliver physical change and support the economy of Newport.
<b>Reasonable Alternatives</b>	These are reasonable alternatives to the draft Plan, being other options that the Welsh Government considers could solve transport related problems affecting the M4 Corridor around Newport in South Wales. If implemented, the reasonable alternatives would lead to either a new dual carriageway (Red Route) being built to the south of Newport, or a motorway solution along a similar alignment (Purple Route) alongside some complementary highway management, walking and cycling initiatives.
<b>SAC</b>	Special Area of Conservation. Strictly protected sites with listed habitat types and species that are considered to be most in need of conservation at a European level (excluding birds)
<b>SAM</b>	Scheduled Ancient Monument. A registered monument considered to be of national importance by the Welsh Government
<b>Scheme / Project</b>	For individual schemes or projects, the appropriate level of appraisal is more detailed, quantitative and evidence-based <sup>1</sup>
<b>SEA</b>	Strategic Environmental Assessment. A process that provides for the high level protection of the environment, by ensuring the integration of environmental considerations into the preparation of plans and programmes and to contribute to the promotion of sustainable development and environmental protection

<sup>1</sup> Source: Welsh Transport Planning and Appraisal Guidance (WelTAG), June 2008

<b>SEWTA</b>	The South East Wales Transport Alliance is a consortium of 10 local authorities which prepares and co-ordinates regional transport policies, plans and programmes on behalf of its constituent councils
<b>SDR</b>	Southern Distributor Road. In this case, the A48 Southern Distributor Road, Newport
<b>SPA</b>	Special Protection Area. Strictly protected sites at a European level, classified for rare and vulnerable birds and for regularly occurring migratory species
<b>SSSI</b>	Sites of Special Scientific Interest. Legally protected sites for wildlife and geology conservation
<b>Strategy, Plan or Programme</b>	A strategy, plan or programme sets out broad objectives, identifies measures to achieve these and proposes a typically broad package of interventions to achieve the objectives. The appropriate level of appraisal is also broad, and at a strategy level, it may only be possible to undertake appraisal qualitatively <sup>1</sup>
<b>SWATS</b>	South Wales Area Traffic Study
<b>TEMPRO</b>	Trip End Model Presentation Program. Software used for transport planning purposes
<b>TEN-T</b>	Trans-European Transport Network
<b>TPOs</b>	Transport Planning Objectives
<b>TR111 Notice</b>	Once a preferred route of a transport scheme is announced, the Welsh Government serves a statutory TR111 notice on the local planning authorities requiring the line to be protected from development
<b>UDP</b>	Unitary Development Plan. It sets out a range of policies and proposals relating to future development, and deals with the use and conservation of land and buildings within local planning authorities. All UDPs are to be replaced by a Local Development Plan (LDP)
<b>WelTAG</b>	Welsh Transport Planning and Appraisal Guidance is a transport appraisal tool applicable to transport projects, plans and programmes in Wales. The Welsh Government requires that major transport initiatives seeking government funding are appraised with this guidance.
<b>WHIASU</b>	Wales Health Impact Assessment Support Unit



# 1 Introduction

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A non-technical summary of this document is available. Please read this document alongside the overarching M4 Corridor around Newport draft Plan Consultation Document<sup>2</sup>.

A draft Plan has been developed taking into account the extensive work undertaken as part of the M4 Corridor Enhancement Measures (CEM) Programme. The M4 CEM Programme was set up to explore and resolve issues of capacity, safety and resilience along the M4 Corridor around Newport, in South East Wales. It was based upon the ability to deliver and identify measures in phases to improve affordability.

As a result of on-going discussions with the UK Government there has been a significant change in the assessment of the affordability of a major enhancement of the M4. On 26 June 2013, Edwina Hart AM CStJ MBE, Minister for Economy, Science and Transport, published the following written statement:

*“Addressing the capacity and resilience issues on the M4 around Newport is the top transport challenge that we face in ensuring that Wales has an effective economic infrastructure which improves our competitiveness and access to jobs and services.*

*As a result of ongoing discussions with the UK Government there has been a significant change in the assessment of the affordability of a major enhancement of the M4.*

*Building on the extensive development and consultation work undertaken on M4 Corridor Enhancement Measures (CEM), we will be consulting formally over the summer with Natural Resources Wales in order to go out to public consultation this September with a finalised draft Plan and Strategic Environmental Assessment (SEA) Report.*

*If implemented, the draft Plan would lead to a motorway being built south of Newport.”*

The main element of the draft Plan is the provision of a section of three lane motorway between Junctions 23 and 29 on the south side of Newport. It is described on page 16 and shown as the Black Route in Figure 2 on page 22. The draft Plan would also include the following Complementary Measures:

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<sup>2</sup> The non-technical summary of this document and the draft Plan Consultation Document is available online at [www.m4newport.com](http://www.m4newport.com) or in paper copy (see Chapter 9)

Table 1 Complementary Measures for the draft Plan (Black Route)

<b>Complementary Measure</b>	<b>Description</b>
<b>Re-classify existing M4 between Magor and Castleton</b>	Re-classify the existing motorway as a trunk road, which could enable traffic management, safety and revised access measures. These could include modifications to interchanges at Magor and Castleton. Only certain classes of motorised vehicles can use motorways and they should have no traffic signals, intersections or property access. They are free of any ground level crossings with other roads, railways, or pedestrian paths, which are instead carried by overpasses and underpasses across the highway.
<b>M48 – B4245 Link</b>	New single carriageway link between the M48 and B4245. This would potentially provide relief to Junction 23A and to the local road network. It may also facilitate the introduction of a park and ride facility at Severn Tunnel Junction in the future.
<b>Provide cycle friendly infrastructure</b>	Promoting the use of cycling as an alternative to the car for journeys of up to three miles by providing new infrastructure or improving existing infrastructure.
<b>Provide walking friendly infrastructure</b>	Promoting the use of walking as an alternative to the car for journeys of up to three miles by providing new infrastructure or improving existing infrastructure.

The consultation document also provides information on two “reasonable alternatives” to the draft Plan and a “Do Minimum” which considers the consequences of doing nothing above what is already planned.

The main elements of the two reasonable alternatives are described on pages 17 to 19 and shown in Figure 2. They are the Red Route which is a dual carriageway and the Purple Route which is a three lane motorway. Both routes would also have complementary measures.

The draft Plan does not include public transport measures because the Welsh Government has commissioned a separate study and report on proposals to develop a metro system for South East Wales. The report will focus on how a metro system could support economic growth and regeneration at key locations across South East Wales.

The Welsh Government is seeking your views on the draft Plan and its reasonable alternatives, whose aims are to address transport related problems on the M4 Corridor around Newport, taking into account the responses to various assessments. We also want your views on the Do Minimum scenario and the associated assessments which are:

- Strategic Environmental Assessment (SEA);
- Habitats Regulations Assessment (HRA);
- Health Impact Assessment (HIA); and
- Equality Impact Assessment (EqIA).

These assessments consider the potential environmental, health and equality impacts of the draft Plan, its reasonable alternatives and the Do Minimum scenario. These are separate documents but are referred to in this draft Plan Consultation. As such, they will be reviewed and finalised to take into account and address any comments arising from the consultation.

Using the feedback received from the consultation, the Welsh Government will decide whether to adopt the draft Plan, with or without amendments, taking into account the responses to the associated assessments.

## 1.1 Purpose

This document provides the Strategic Environmental Assessment (SEA) Environmental Report, which is included in the draft Plan Consultation.

SEA is a process that provides for the high level protection of the environment, by ensuring the integration of environmental considerations in the preparation of strategies and plans and by contributing to the promotion of sustainable development and environmental protection.

Under the SEA Directive (2001/42/EC)<sup>3</sup>, SEA is a legal requirement for certain plans and programmes. In Wales, this is implemented through the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004<sup>4</sup> (referred to as the SEA Regulations in this report). Welsh Transport Planning and Appraisal Guidance (WelTAG)<sup>5</sup> Appendix E.2 also outlines how the appraisal of transport strategies, plans or programmes should take into account the SEA Regulations.

WelTAG describes the SEA process in terms of five main stages:

- Stage A: Setting the context and objectives of the plan, establishing the baseline and deciding on the scope;
- Stage B: Developing and refining alternatives and assessing effects;
- Stage C: Preparing an Environmental Report on the likely significant effects of the plan;
- Stage D: Consulting on the draft Plan and the Environmental Report; and
- Stage E: Monitoring the significant effects of implementing plan on the environment.

This document forms the Environmental Report as part of the SEA process and will be consulted on alongside the draft Plan and its other associated assessments (see Section 9).

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<sup>3</sup> Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment

<sup>4</sup> Environmental Assessment of Plans and Programmes (Wales) 2004 *SI 1633*

<sup>5</sup> Welsh Transport Planning and Appraisal Guidance, June 2008

## 1.2 Background

The M4 in South Wales forms part of the Trans-European Transport Network (TEN-T), which provides connections throughout Europe by road, rail, sea and air. The M4 plays a key strategic role in connecting South Wales with the rest of Europe, providing links to Ireland via the ports in South West Wales and England and mainland Europe to the east. It is a key east-west route being the main gateway into South Wales and also one of the most heavily used roads in Wales.

Providing a facility for transporting goods, linking people to jobs and employment sites as well as serving the Welsh tourism industry, the M4 is critical to the Welsh economy. Cardiff, Newport and Swansea have ambitious regeneration strategies and Monmouthshire County Council is developing areas around Junction 23A of the M4. Rhondda Cynon Taff has important gateways onto the motorway at Junctions 32 and 34. Bridgend is served by M4 Junctions 35 and 36. Neath Port Talbot straddles the motorway and gets important access from Junctions 38 to 43. Congestion on the M4 causing unreliable journey times and reduced service levels will therefore hinder economic development in South Wales.

The M4 between Junctions 28 and 24 was originally designed as the 'Newport Bypass' with further design amendments in the 1960s to include the first motorway tunnels to be built in the UK. The M4 Motorway between Magor and Castleton does not meet modern motorway design standards. This section of the M4 has many lane drops and lane gains, resulting in some two-lane sections, an intermittent hard shoulder and frequent junctions. It is often congested during weekday peak periods resulting in slow and unreliable journey times and stop-start conditions with incidents frequently causing delays.

This is why problems with congestion and unreliable journey times have been a fact of life on the M4 around Newport for many years. The motorway and surrounding highway network does not cope with sudden changes in demand or operation, for example as a result of accidents or extreme weather events. These issues are worse at times of peak travel (rush hour) and have worsened as the number of users on the network has increased.

The M4 Corridor around Newport is shown in Figure 1.

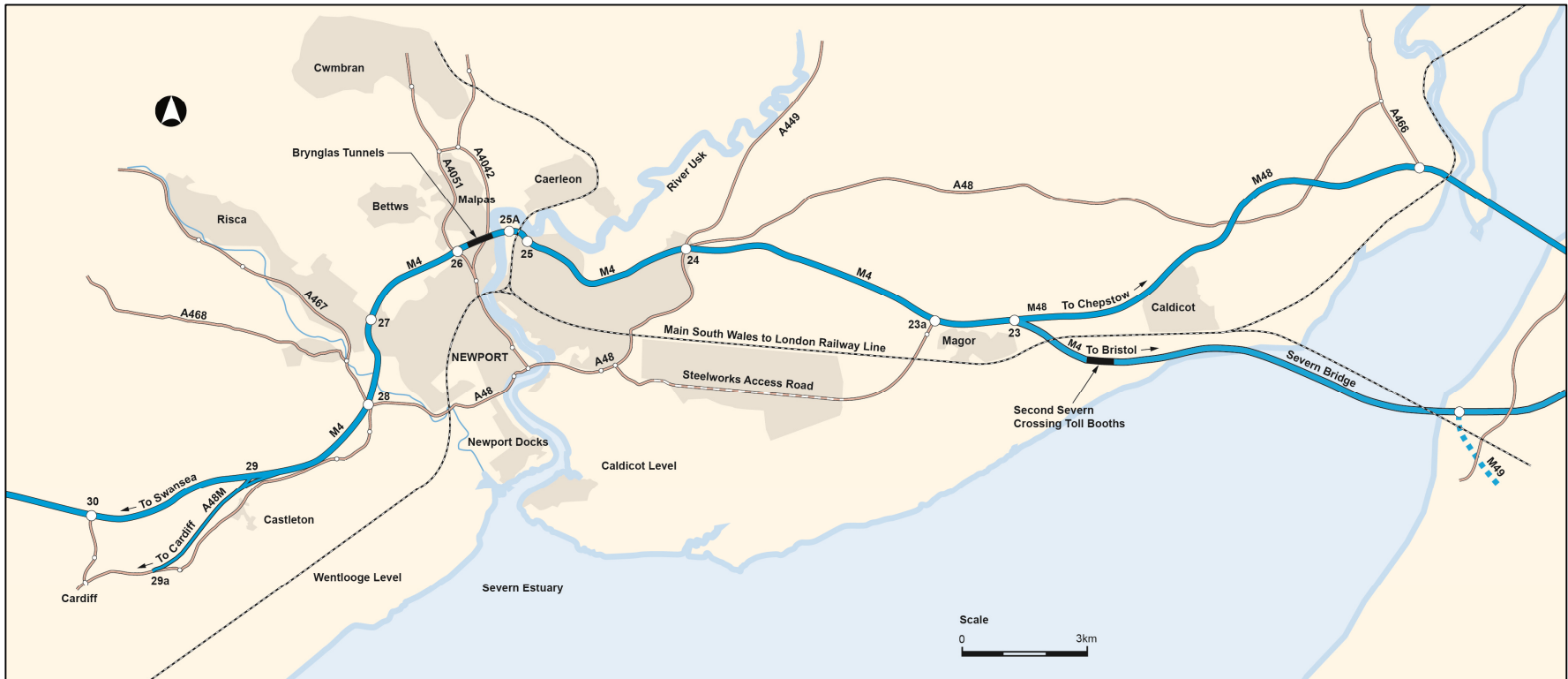


Figure 1 The Location of the M4 around Newport

## 2 Problems, Aims and Goals

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### 2.1 Relationship to M4 CEM Programme

The problems, goals and aims of the M4 CEM Programme were subject to dialogue during the early stages of the engagement process, with public and stakeholders.

17 problems were identified; which encompassed issues of capacity, (network) resilience, safety and sustainable development. It is considered that the problems have not changed since 2012.

15 goals were identified and each one aimed to address one or more of the problems. As the problems have not changed there was no need to revisit the goals.

### 2.2 Problems on the M4 Corridor around Newport

The 17 identified transport related problems are listed below.

As part of the M4 CEM Consultation, respondents were asked to prioritise up to four problems out of the full list. Problems 1, 5, 7 and 9 shown in bold italics were selected the most times by those who responded to the M4 CEM Consultation<sup>15</sup>.

#### Capacity

- 1. A greater volume of traffic uses the M4 around Newport than it was designed to accommodate, resulting in regular congestion at peak times over extended periods.***
2. The M4 around Newport is used as a convenient cross town connection for local traffic, with insufficient local road capacity.
3. HGVs do not operate efficiently on the motorway around Newport.
4. There is insufficient capacity through some of the Junctions (e.g. 3 lane capacity drops to 2 lane capacity).
- 5. The 2-lane Brynglas tunnels are a major capacity constraint.***
6. The M4 cannot cope with increased traffic from new developments.

#### Resilience

- 7. Difficulties maintaining adequate traffic flows on the M4 and alternative highway routes at times of temporary disruption; alternative routes are not able to cope with M4 traffic.***
8. The road and rail transport system in and around the M4 Corridor is at increasing risk of disruption due to extreme weather events.
- 9. When there are problems on the M4, there is severe disruption and congestion on the local and regional highway network.***

10. The M4 requires essential major maintenance within the next 5-10 years; this will involve prolonged lane and speed restrictions, thus increasing congestion problems.
11. There is insufficient advance information to inform travel decisions when there is a problem on the M4.

### Safety

12. The current accident rates on the M4 between Magor and Castleton are higher than average for UK motorways<sup>6</sup>.
13. The existing M4 is an inadequate standard compared to modern design standards.
14. Some people's driving behaviour leads to increased accidents (e.g. speeding, lane hogging, unlicensed drivers).

### Sustainable Development

15. There is a lack of adequate sustainable integrated transport alternatives for existing road users.
16. Traffic noise from the motorway and air quality is a problem for local residents in certain areas.
17. The existing transport network acts as a constraint to economic growth and adversely impacts the current economy.

## 2.3 Aims for the M4 Corridor around Newport

The aims of the Welsh Government for the M4 Corridor around Newport are to:

1. Make it easier and safer for people to access their homes, workplaces and services by walking, cycling, public transport or road.
2. Deliver a more efficient and sustainable transport network supporting and encouraging long-term prosperity in the region, across Wales, and enabling access to international markets.
3. To produce positive effects overall on people and the environment, making a positive contribution to the overarching Welsh Government goals to reduce greenhouse gas emissions and to making Wales more resilient to the effects of climate change.

The draft Plan aims to help to achieve or facilitate these aims as part of a wider transport strategy for South East Wales, as outlined within the Prioritised National Transport Plan<sup>7</sup>.

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<sup>6</sup> The Variable Speed Limit (VSL) system was introduced in June 2011 between Junctions 24 and 28, in order to improve safety conditions and traffic flow in the short term. The first year of operation has shown a reduction in accidents.

<sup>7</sup> National Transport Plan (2010) & Prioritised National Transport Plan (2011) Welsh Government

## 2.4 Goals of the M4 Corridor around Newport

The Welsh Government, with the help of others, identified 15 goals<sup>15</sup> for the M4 CEM Programme. These goals aim to address the identified transport related problems listed in section 3.2. For clarity goals are referred to as “Transport Planning Objectives” (TPOs) in WelTAG (see Glossary).

The 15 goals (listed below) provide a framework in which to appraise the relative performance at a strategic level of the draft Plan, the reasonable alternatives and the Do Minimum scenario.

As part of the M4 CEM Consultation respondents were asked to prioritise up to 4 goals out of the full 15. Goals 1, 4, 5 and 7 shown in bold italics were selected the most.

If the draft Plan (or any reasonable alternative to the draft Plan) is successful, its success will be measured by how well it achieves the following goals:

1. ***Safer, easier and more reliable travel east-west in South Wales.***
2. Improved transport connections within Wales and to England, the Republic of Ireland and the rest of Europe on all modes on the international transport network.
3. More effective and integrated use of alternatives to the M4, including other parts of the transport network and other modes of transport for local and strategic journeys around Newport.
4. ***Best possible use of the existing M4, local road network and other transport networks.***
5. ***More reliable journey times along the M4 Corridor.***
6. Increased level of choice for all people making journeys within the transport Corridor by all modes between Magor and Castleton, commensurate with demand for alternatives.
7. ***Improved safety on the M4 Corridor between Magor and Castleton.***
8. Improved air quality in areas next to the M4 around Newport.
9. Reduced disturbance to people from high noise levels, from all transport modes and traffic within the M4 Corridor.
10. Reduced greenhouse gas emissions per vehicle and/or person kilometre.
11. Improved travel experience into South Wales along the M4 Corridor.
12. An M4 attractive for strategic journeys that discourages local traffic use.
13. Improved traffic management in and around Newport on the M4 Corridor.
14. Easier access to local key services and residential and commercial centres.
15. A cultural shift in travel behaviour towards more sustainable choices.



## 2.5 Consequences of Doing Nothing

Analysis shows that in 2012 during peak periods (also known as ‘rush hour’), traffic flows reach 80% of capacity along sections of the M4 around Newport<sup>8</sup>. Once flows reach 80% of capacity, traffic can expect operational problems (frequent traffic jams). The more congested road conditions become, the greater the risk of incidents and accidents occurring. In the future, the situation is expected to deteriorate further.

Forecasts of future traffic volumes show that in the Do Minimum situation, traffic congestion will be severe on most links by 2020 and by 2035 the motorway around Newport will be heavily congested, with all sections between J23A and J29 experiencing flows above 100% of capacity during weekday peak periods<sup>9</sup>.

Congestion on the M4, particularly around Cardiff and Newport, is cited by the business community in South Wales as a barrier to economic growth. Where congestion increases, the cost of transport for businesses, commuters, consumers and economic performance can be affected. Increased congestion will also result in longer journey times for commuters, reducing the effective travel to work area.

In terms of the environment, local authorities in the UK work towards meeting the national air quality objectives and if a local authority finds any places where the objectives are not likely to be achieved, it must declare an Air Quality Management Area. Out of Newport’s seven Air Quality Management Areas (AQMAs), four are associated with the M4. Higher traffic volumes along the M4 are likely to contribute not only to poor air quality, but also noise pollution, compromising the amenity of neighbouring residential communities. Assuming no improvements to vehicle emissions technology, the increased flows and stop start conditions will give rise to more vehicle emissions along these routes. It is important to note that stop-start congested traffic can result in higher CO<sub>2</sub> emissions than free-flowing traffic. Alongside the motorway at Newport, there are also Noise Action Planning Priority Areas (NAPPAs), which investigate where noise levels are high and help create noise action plans to address the issue.

The AQMAs in Newport are available to view on the Newport City Council website<sup>10</sup>, whilst recently published Wales Noise Maps are being used to help the Welsh Government to develop and implement a noise action plan for Wales, which is due to be published later in 2013. These are also available on the Welsh Government website<sup>11</sup>.

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<sup>8</sup> Source: Arup analysis 2012

<sup>9</sup> Source: Arup analysis 2012

<sup>10</sup> See

[http://www.newport.gov.uk/\\_dc/index.cfm?fuseaction=environmentalhealth.homepage&contentid=cont446709](http://www.newport.gov.uk/_dc/index.cfm?fuseaction=environmentalhealth.homepage&contentid=cont446709)

<sup>11</sup> See <http://data.wales.gov.uk/apps/noise/>

## 2.6 Previous Work

Since 1991, much assessment and consultation has been undertaken to develop a preferred solution to the problems on the motorway around Newport. A summary of previous work is provided below and a more detailed history is documented in the M4 Corridor around Newport WelTAG Appraisal Report Stage 1 (Strategy Level)<sup>12</sup>.

For many years, concerns have been raised regarding the potential for delays on the motorway and trunk road network in South Wales.

In March 1989, the then Secretary of State for Wales commissioned the South Wales Area Traffic Study (SWATS) to review traffic patterns over part of the trunk road network in South Wales in order to identify problem areas and propose possible solutions. The SWATS Report (1990) identified the need for substantial improvement to the M4 to address a growing capacity issue on the motorway, in particular the section between Magor and Castleton.

As a consequence, a proposal for a relief road to the south of Newport (which became known as the 'M4 Relief Road', and later, the 'New M4 Project' as a new dual 3-lane motorway) was included in the Welsh Trunk Road Forward Programme in 1991. An M4 Relief Road Preferred Route was published in 1995 and amended in 1997.

In 2004, the then Minister for Economic Development and Transport reported on the outcome of his review of transport programmes, which were undertaken to ensure a strategic fit with: 'Wales: A Better Country' and the Wales Spatial Plan. One of the conclusions of the review was that additional capacity was still required on the M4 motorway in South East Wales, in order to reduce congestion, improve resilience and remove an obstacle to greater prosperity along the whole corridor through to Swansea and West Wales. In addition to widening the motorway north of Cardiff, the Minister announced proposals to develop a New M4 south of Newport between Magor and Castleton.

Following Ministerial Review in 2004, the New M4 Project was the subject of a thorough re-examination in order to ensure fit with policies at that time and to take account of physical and legislative changes. Three key activities were undertaken:

1. A re-examination of route corridors considering, in particular, the implications and consequences of legislative changes and physical developments within the original project study area;
2. A comprehensive review of the previously published M4 Relief Road Preferred Route; and
3. A Junction Strategy Review.

The conclusion of these studies confirmed the route to the south of Newport as the optimal solution to tackling the problems of congestion on the M4 corridor around Newport. Following the Preferred Route and Junction Strategy Review, a TR111<sup>13</sup>

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<sup>12</sup> Welsh Government, M4 Corridor around Newport, WelTAG Appraisal Report Stage 1 (Strategy Level), Arup, June 2013

<sup>13</sup> Once a preferred route is announced, Welsh Government serves a statutory notice (TR111) on the local planning authorities requiring the line to be protected from development. This is enacted

notice (April 2006) was published to protect a revised route corridor. A series of public exhibitions were held in April and May 2006 to explain the changes to the public and other stakeholders with an interest in transport in South Wales.

### 2.6.1 M4 Corridor Enhancement Measures (M4 CEM) Programme

A written statement in July 2009, by the then Deputy First Minister Ieuan Wyn Jones, announced that the New M4 was not affordable. The statement, however, accepted “*the need to urgently address safety and capacity issues on the existing route*” through the introduction of “*a range of measures*”.

The M4 Corridor Enhancement Measures (CEM) Programme<sup>14</sup> was therefore initiated by the Welsh Government and this aimed to create a package of measures to deal with resilience, safety and reliability issues within the M4 corridor between Magor and Castleton. Under the M4 CEM Programme, a long list of possible solutions was explored. Packages that combined public transport, highway and other travel solutions were identified for appraisal. These included widening of the M4 between Junctions 24 and 29 as well as improvement to the existing road network to the south of the city centre and a new dual carriageway all-purpose road to the south of Newport.

As part of the M4 CEM Programme, a comprehensive engagement process was launched in September 2010 culminating in a public consultation held between March and July 2012. During the engagement process, the Welsh Government and its project team engaged with both internal and external specialists and expert stakeholders. This process encompassed a diverse range of views and interests relating to transport in South Wales, as well as with people likely to be interested in and affected by any transport measures potentially adopted and implemented by Welsh Government. The consultation resulted in public support for the provision of an additional high quality road to the south of Newport<sup>15</sup>, supported by additional measures to address travel related problems within the M4 Corridor. These were referred to as Common Measures. They comprised a mix of network improvements, network management, demand management, alternative modes and smarter sustainable choices. The M4 CEM WelTAG Stage 1 (Strategy Level) Appraisal<sup>16</sup> concluded that the following measures were worthy of further consideration:

- A new dual carriageway route to the south of Newport (Red Route alternative to the draft Plan);
- Public transport enhancement; and
- Common measures.

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under Article 19 of The Town & Country Planning (Development Management Procedure) (Wales) Order 2012; SI 2012/801 (W110).

<sup>14</sup> Further details of the M4 CEM Programme and its evolution are available at [www.m4cem.com](http://www.m4cem.com).

<sup>15</sup> Welsh Government, M4 Corridor Enhancement Measures (M4 CEM), Participation Report, Arup, August 2013

<sup>16</sup> Welsh Government, M4 Corridor Enhancement Measures (M4 CEM), WelTAG Appraisal Report Stage 1 (Strategy Level), Arup, March 2013

## 2.6.2 M4 Corridor around Newport draft Plan

Recent initiatives, including discussions between the Welsh Government and HM Treasury/Department for Transport, as well as the work of the Silk Commission<sup>17</sup>, have created future potential funding opportunities for Welsh Government infrastructure projects. As a consequence, the decision was taken by the Welsh Government to further reconsider solutions to resolve transport related problems on the M4 around Newport.

Thus, in order to inform the strategy for the M4 Corridor around Newport, a further M4 Corridor around Newport WelTAG Stage 1 (Strategy Level) Appraisal<sup>18</sup> has been undertaken of options that include M4 CEM measures, provision of new motorway capacity routed to the south of Newport and complementary measures. The options considered within the WelTAG Appraisal were as follows:

1. A new section of 3-lane motorway to the south of Newport following the protected (TR111) route (Black Route);
2. A new dual 2-lane all-purpose road to the south of Newport following an alignment that would allow it to be constructed in phases (Red Route);
3. A new section of 3-lane motorway to the south of Newport along a similar alignment to the all-purpose road (Purple Route);
4. Public transport measures; and
5. Complementary measures.

The M4 Corridor around Newport WelTAG Stage 1 (Strategy Level) Appraisal concluded that a new section of 3-lane motorway to the south of Newport following a protected (TR111) route, in addition to complementary measures, would best achieve the goals and address the problems of the M4 Corridor around Newport, and should be progressed for further appraisal.

These options have subsequently formed the basis for the development of the draft Plan, which is described further in Section 2.

The M4 Corridor around Newport WelTAG Stage 1 (Strategy Level) Appraisal also acknowledged that public transport enhancement will contribute to some of the goals of the M4 Corridor around Newport. This draft however does not include public transport measures because the Welsh Government has commissioned a separate study and report on proposals to develop a metro system for South East Wales. That report will focus on how a metro system could support economic growth and regeneration at key locations across South East Wales.

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<sup>17</sup> The 'Silk' Commission on Devolution in Wales, which is reviewing the case for the devolution of fiscal powers and reviewing the powers of the National Assembly for Wales, due to report in Spring 2014.

<sup>18</sup> Welsh Government, M4 Corridor around Newport, WelTAG Appraisal Report Stage 1 (Strategy Level), Arup, June 2013.

## 3 The draft Plan

In recognising the range of the goals for the M4 Corridor around Newport, the draft Plan combines both highway infrastructure and other demand management solutions in identifying a preferred strategy.

**The draft Plan for the M4 Corridor around Newport (the preferred strategy) consists of:**

- **A new section of 3-lane motorway between Magor and Castleton to the south of Newport along the TR111 protected corridor of the Black Route; and**
- **Complementary Measures (see table 2, overleaf).**

**The reasonable alternatives to the draft Plan include:**

- **A dual 2-lane all-purpose road (Red Route); or**
- **A motorway solution along a similar alignment (Purple Route); in addition to**
- **Complementary Measures (see tables 3 and 4, pages 18 and 19).**

**The draft Plan and the reasonable alternatives have been assessed against the ‘Do Minimum’ scenario.** The Do Minimum scenario means doing nothing above what is already planned or committed.

The draft Plan (preferred strategy) and reasonable alternatives are described in more detail below and illustrated in Figure 2 on page 21.

### 3.1 The draft Plan (Preferred Strategy)

#### 3.1.1 Motorway following TR111 Protected Route – The Black Route and Complementary Measures

This draft Plan (preferred strategy) comprises the construction of a new 3-lane motorway mainly following the protected TR111 ‘Black Route’, between Junctions 23 and 29, including a new crossing of the River Usk south of Newport. The River Usk is designated as a Special Area of Conservation (SAC).

The TR111 route to the south of Newport has remained protected for planning purposes since April 2006. The alignment of this proposed new section of motorway has been developed following extensive consultation, investigation and analysis. The aim is to minimise the impact on the environment, whilst fully meeting current motorway design and safety standards. Minor changes to the alignment of the TR111 protected route could still be made, subject to further investigation, if this option is taken forward. This motorway solution would be delivered as one scheme.

If this draft Plan is adopted a junction strategy would be investigated as part of scheme’s development.

The alignment of the Black Route is shown in the context of local constraints on Figure 2 on page 21.

In addition to the new highway infrastructure, there are additional complementary measures that could assist in alleviating travel related problems within the M4 Corridor around Newport. The draft Plan’s complementary measures are as follows:

Table 2 Complementary Measures for the Black Route (Preferred Strategy)

Complementary Measure	Description
<b>Re-classify existing M4 between Magor and Castleton</b>	Re-classify the existing motorway as a trunk road, which could enable traffic management, safety and revised access measures. These could include modifications to interchanges at Magor and Castleton. Only certain classes of motorised vehicles can use motorways and they should have no traffic signals, intersections or property access. They are free of any ground level crossings with other roads, railways, or pedestrian paths, which are instead carried by overpasses and underpasses across the highway.
<b>M48 – B4245 Link</b>	New single carriageway link between the M48 and B4245. This would potentially provide relief to Junction 23A and to the local road network. It may also facilitate the introduction of a park and ride facility at Severn Tunnel Junction in the future.
<b>Provide cycle friendly infrastructure</b>	Promoting the use of cycling as an alternative to the car for journeys of up to three miles by providing new infrastructure or improving existing infrastructure.
<b>Provide walking friendly infrastructure</b>	Promoting the use of walking as an alternative to the car for journeys of up to three miles by providing new infrastructure or improving existing infrastructure.

### 3.2 Reasonable Alternatives to the draft Plan

#### 3.2.1 Dual 2-lane All-Purpose Road – The Red Route and Complementary Measures

This option involves the construction of an additional high quality road to the south of Newport, as a dual carriageway solution. The route aims to minimise negative impacts on local communities and the environment. As a dual carriageway on this corridor alignment, the road could be delivered in phases by tying into the existing road network in Newport. Delivery could thus be phased with availability of funding. However, the main benefits would only be realised when the route is complete.

This road will require a new crossing of the River Usk, which is designated as a Special Area of Conservation (SAC).

The alignment of the Red Route is further north compared to that of the Black Route and the impact on the Port of Newport operations may be less. However, the alignment would pass through and have significant impact upon the Newport Council’s Docks Way landfill site. The route runs close to the residential area,

Duffryn. There are also on-going and potential further development sites along this route.

The alignment of the Red Route is shown in the context of local constraints on Figure 2 on page 21.

In addition, the following complementary measures could assist the Red Route in alleviating travel related problems within the M4 Corridor around Newport:

Table 3 Complementary Measures for the Red Route (Reasonable Alternative)

Complementary Measure	Description
<b>M48 – B4245 Link</b>	New single carriageway link between the M48 and B4245. This would potentially provide relief to Junction 23A and to the local road network. It may also facilitate the introduction of a park and ride facility at Severn Tunnel Junction in the future.
<b>Provide cycle friendly infrastructure</b>	Promoting the use of cycling as an alternative to the car for journeys of up to three miles by providing new infrastructure or improving existing infrastructure.
<b>Provide walking friendly infrastructure</b>	Promoting the use of walking as an alternative to the car for journeys of up to three miles by providing new infrastructure or improving existing infrastructure.

### 3.2.2 Motorway along Alternative Alignment to the South of Newport – The Purple Route and Complementary Measures

In order to fully represent the highway options to the south of Newport, this option comprises a 3-lane motorway along a similar route to that which is proposed for the Red Route (dual 2-lane all-purpose road). A difference between the two routes being the purple route has a more northerly alignment to cross the northern end of the North Dock at the Port of Newport.

This new motorway will require a new crossing of the River Usk, which is designated as a Special Area of Conservation (SAC).

The alignment of the Purple Route is such that the impact on the Port of Newport is minimised. However, there could be significant impact upon the Newport Council’s Docks Way landfill site. The route runs close to the residential area, Duffryn. There are also on-going and potential further development sites along this route.

The alignment of the Purple Route is shown in the context of local constraints on Figure 2 on page 21.

In addition, the following complementary measures could assist the Purple Route in alleviating travel related problems within the M4 Corridor around Newport:

Table 4 Complementary Measures for the Purple Route (Reasonable Alternative)

Complementary Measure	Description
<b>Re-classify existing M4 between Magor and Castleton</b>	Re-classify the existing motorway as a trunk road, which could enable traffic management, safety and revised access measures. These could include modifications to interchanges at Magor and Castleton. Only certain classes of motorised vehicles can use motorways and they should have no traffic signals, intersections or property access. They are free of any ground level crossings with other roads, railways, or pedestrian paths, which are instead carried by overpasses and underpasses across the highway.
<b>M48 – B4245 Link</b>	New single carriageway link between the M48 and B4245. This would potentially provide relief to Junction 23A and to the local road network. It may also facilitate the introduction of a park and ride facility at Severn Tunnel Junction in the future.
<b>Provide cycle friendly infrastructure</b>	Promoting the use of cycling as an alternative to the car for journeys of up to three miles by providing new infrastructure or improving existing infrastructure.
<b>Provide walking friendly infrastructure</b>	Promoting the use of walking as an alternative to the car for journeys of up to three miles by providing new infrastructure or improving existing infrastructure.

### 3.3 Do Minimum Scenario

The Welsh Government is committed to continuing to improve transport in South Wales. Practical measures to make travel safer and easier on the M4 motorway around Newport have included replacing sections of steel central barriers with concrete barriers, the introduction of Variable Speed Limit systems and improvements to the roundabout at Junction 24 at Coldra.

The Do Minimum scenario means doing nothing above what is already planned or committed. This scenario therefore comprises minimum intervention but in this case does include a number of highway schemes, which are currently committed to be completed between 2020 and 2035 as follows:

#### Welsh Government Schemes:

- The recently opened Newport Steelworks Access Road Phases 1 and 2 (the former Llanwern Steelworks access road);
- Junction 28 roundabout, enlarged signalled gyratory scheme including associated improvements to the A467 Bassaleg roundabout and A48 Pont Ebbw; and
- A465 Heads of the Valleys Dualling (Gilwern to Hirwaun).

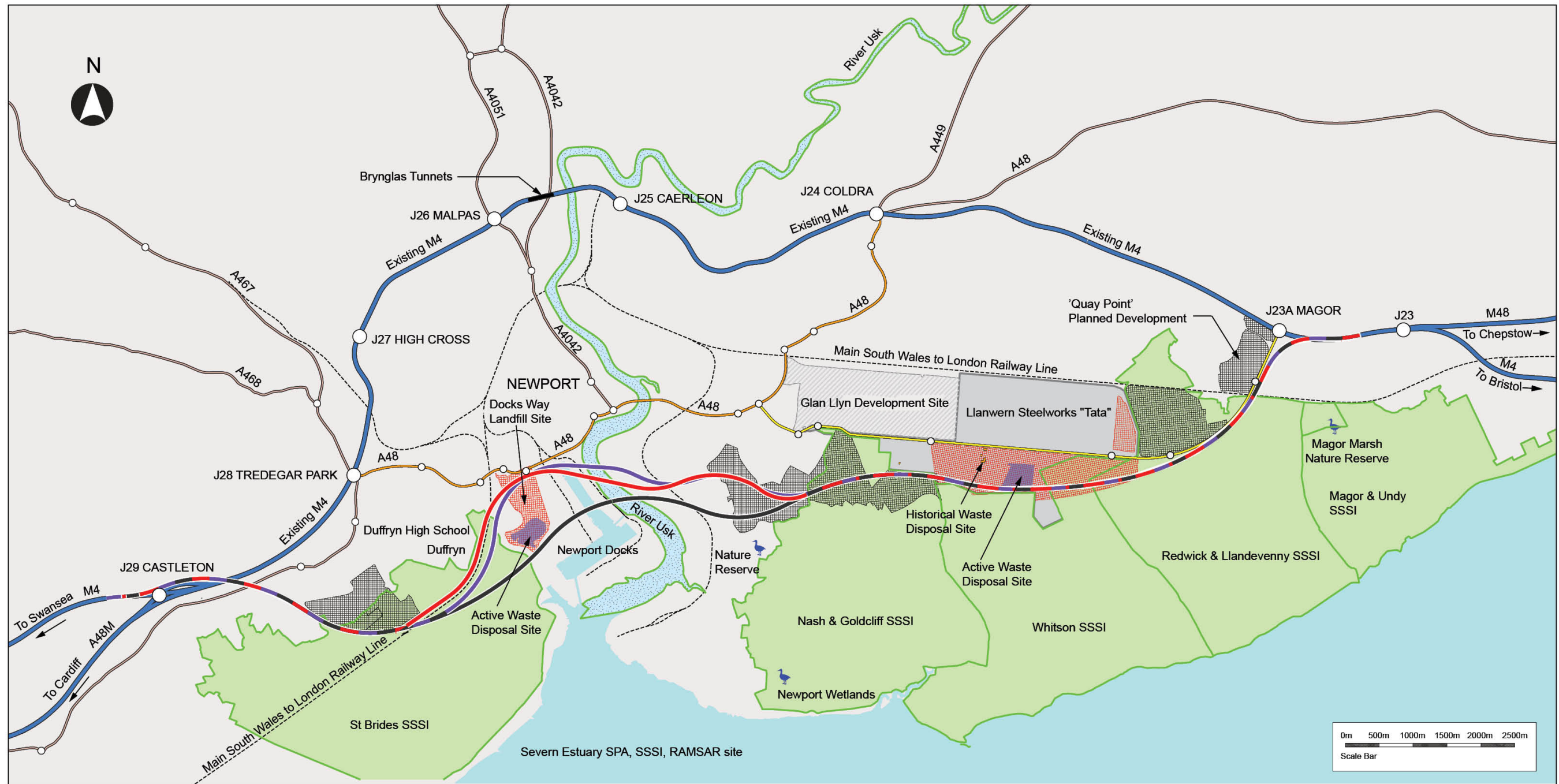
#### Newport City Council Scheme:

- Link through Newport Eastern Expansion Areas between Steelworks Access Road and A48 SDR (Cot Hill junction, signalised with full movements).



Alongside these schemes, the Do Minimum scenario also consists of a number of development proposals throughout South East Wales, which are committed through the planning process and are due to be completed at various stages to 2035.

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**Legend**

- Black Route (the main element of the draft Plan)
- Red Route (the main element to the 'reasonable alternative' to the draft Plan)
- Purple Route (the main element to the 'reasonable alternative' to the draft Plan)
- Employment Land Allocation from Newport Unitary Development Plan
- Newport Southern Distributor Road
- Steelworks Access Road
- Existing Railway Lines
- Sites of Special Scientific Interest (SSSI)
- River Usk SAC and SSSI

Figure 2 Black, Purple and Red Route shown within the local study area and main constraints around Newport

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## 4 Environmental Planning Context

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### 4.1 Introduction

The initial stages of this assessment of the strategic environmental impacts of the draft Plan (the assessment) involve setting the context and objectives, establishing the baseline and outlining the scope of the assessment.

The draft Plan and the SEA of the draft Plan, its reasonable alternatives and the Do Minimum scenario has been developed in the context of the previous assessment and consultation work undertaken.

### 4.2 Scoping

The purpose of the scoping stage is to ensure that the assessment addresses the relevant environmental issues of the draft Plan, and that the focus of the assessment fulfils the requirements of the statutory consultation bodies (in this case Natural Resources Wales, Cadw, Environment Agency England and Natural England). Scoping involves:

- Setting the broad scope in terms of the topic areas to be addressed, the spatial boundaries and the timescale for the assessment;
- Examining the relationship between the draft Plan and other plans and programmes to ensure that potential conflicts in terms the environmental objectives are identified early and can be addressed within the plan making process;
- Assembling data on the current and future state of the environment (baseline information) to identify existing environmental problems and opportunities. This ensures that the draft Plan addresses these issues where possible (or at least does not contribute to making these problems worse); and
- Formulating objectives that reflect and support other plans and programmes and respond to the key environmental issues identified from the baseline review.

An SEA Scoping Report was issued to the statutory consultation bodies in July 2013 and requested comments within a five week consultation period, in accordance with the SEA Regulations. The RSPB also requested a copy of the SEA Scoping Report and the Welsh Government provided the document, also requesting that any comments were received within the 5 week period from the original date of issue to the statutory consultation bodies.

Specifically, the scoping report posed the following questions:

1. Are there any specific policies, plans and programmes that will affect or influence environmental aspects of the draft Plan that we should address in our detailed review?
2. Do you agree that the approach to reviewing and updating the baseline data summarised for inclusion in the Environmental Report is appropriate, i.e. is it at the right level and coverage across social and environmental issues? Do we propose to cover the correct geographic area and issues?

3. Do you know of any additional relevant baseline data which is pertinent to the draft Plan SEA? Do you collect any information that could be used to enhance the completeness of baseline information?
4. Do you agree that the identified SEA objectives are appropriate?
5. Is the SEA process set out transparent and appropriate?
6. Are any specific organisations who should be contacted as part of the SEA Environmental Report consultation process?

The scoping responses have been considered in the preparation of this assessment, contributing to the analysis of key environmental issues, review of policies and plans and the environmental baseline. The proposed scope of the assessment of the draft Plan, in terms of the topics addressed, the spatial and temporal boundaries, have been reviewed during the assessment to ensure that they remain appropriate as the assessment progresses.

All scoping responses relevant to SEA are provided at Appendix A.

### 4.2.1 Environmental Topics

The broad scope of the SEA process is outlined in Section 1.1.

Consistent with the SEA for the National Transport Plan<sup>19</sup>, the topic areas listed in Schedule 2 of the SEA Regulations have been expanded to incorporate other key transport related issues. The topic areas in the assessment of the draft Plan are therefore as follows:

- Air quality;
- Climatic factors, including greenhouse gas emissions and adaptation to the effects of climate change;
- Noise and vibration;
- Biodiversity, fauna and flora;
- Population, including severance and accessibility;
- Human Health, including physical fitness, security and safety;
- Soil;
- Water, including quality, quantity and flood risk;
- Material assets, including resource efficiency and waste;
- Cultural heritage and the historic environment, including architectural and archaeological heritage;
- Landscape and townscape, including light pollution; and
- The inter-relationships of the above topics.

Due to the wide ranging effects of the transport sector across the range of environmental topics, it has not been possible to scope out any of the topics from the assessment process and the assessment of the draft Plan will place equal emphasis on all the topics listed above.

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<sup>19</sup> National Transport Plan SEA Statement (March 2010), Centre for Sustainability at TRL  
Available at: <http://wales.gov.uk/topics/transport/publications/ntpsea/?lang=en>

## 4.2.2 Spatial Scope

The objectives for the draft Plan specifically relate to the M4 Corridor around Newport, between Magor and Castleton. However, the spatial scope for the assessment has been defined as follows:

- Newport – the existing M4 motorway traverses through or around Newport, as do the highway infrastructure options of the draft Plan and its reasonable alternatives;
- Cardiff – the city is likely to experience indirect and direct effects of the construction and operation of the draft Plan or its reasonable alternatives;
- South Wales (Swansea, Neath Port Talbot, Bridgend, Caerphilly, Rhondda Cynon Taf, Merthyr Tydfil, Blaenau Gwent, Torfaen, Monmouthshire, Carmarthenshire, Pembrokeshire) – communities with access to the M4 corridor in South Wales are also likely to be affected to a greater or lesser extent as a result of the draft Plan; and
- Wales-England cross-border issues including North Bristol and South Gloucestershire – The draft Plan and its reasonable alternatives could have significant effects on the reliability of journey times between Cardiff/Newport and Bristol. The programme could also have indirect effects on rail travel between Cardiff/Newport and Bristol. This could affect access to employment, open space, services and facilities.

By the strategic nature of the draft Plan, the environmental effects could be experienced at a local, regional or national (Wales and the UK) geographic scale. As such, the extent of the assessment will be tailored as appropriate to reflect the potential varying scales of influence. However it is expected that the majority of significant environmental issues, and focus for the assessment of impacts, will be around the environmental study area shown in Figure 2. The area contains a range of environmental designations and other constraints including those of an international protected status.

## 4.2.3 Temporal Scope

In terms of temporal scope, the assessment has examined three timescales:

- Short term effects: effects expected in the next 0 - 4 years;
- Medium term effects: effects expected in the next 5- 9 years; and
- Long term effects: effects expected in the next 10+ years.

These have been chosen to reflect the varying timescales potentially associated some of the environmental effects caused by transport interventions.

## 4.3 Baseline Information Review

### 4.3.1 Approach

The SEA Regulations require a discussion of the ‘*relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme*’ (Annex 1 (b)). The baseline provides the reference point for predicting and monitoring the likely effects of the draft Plan, its reasonable alternatives and the Do Minimum scenario. In this context, the baseline means the prevailing characteristics of the current situation.

The baseline information includes a review of relevant policies, plans and programmes that contain a range of background data and information of relevance to the draft Plan. In addition, the baseline has drawn on the range of social, environmental and economic data collected to inform the M4 Corridor around Newport WeITAG Stage 1 appraisal process.

The policy context is provided in Section 4.3.2 and the key baseline information is provided in Sections 3.4 to 3.16 of Appendix C.

Issues identified as part of the baseline information can be positive or negative, and will help to identify enhancement opportunities as well as measures to minimise any detrimental impacts that an intervention might have.

### 4.3.2 Policy Context

A review of relevant policies, plans and programmes (PPPs) has been carried out to identify environmental objectives that may provide constraints or synergies with the draft Plan. The document review has included:

- International and EU legislation;
- National legislation and policy (UK and Wales specific matters); and
- Relevant Sub-Regional and Local plans.

The full review is provided at Appendix B, whilst a summary of all the documents that have been reviewed are provided in Table 5.

The review of policies, plans and programmes has identified environmental objectives that are of relevance to the draft Plan. It has also identified environmental problems or issues that could be addressed or affected by the draft Plan. The findings are summarised for each of the environmental topic areas, together with information about the current and future environmental baseline in Appendix C.



Table 5 Plans, programmes and policies that have been reviewed as part of the of baseline information

<b>Relevant Plans, Policies and Programmes</b>
<b>Transport</b>
<p><b>Towards a Sustainable Transport System: Supporting Economic Growth in a Low Carbon World (DfT) (2007)</b></p> <p><b>Technical Advice Note (TAN) 18 – Transport (2007)</b></p> <p><b>Smarter Choices: Wales (2007)</b></p> <p><b>The Wales Transport Strategy (WTS) (2008)</b></p> <p><b>UKT1 Carbon Reduction Strategy for Transport, Low Carbon Transport: A Greener Future, (2009)</b></p> <p><b>EU Directive 2009/28/EC Promotion of the use of energy from renewable sources (2009)</b></p> <p><b>South East Wales Regional Transport Plan (2009)</b></p> <p><b>National Transport Plan for Wales (2010)</b></p> <p><b>Prioritised National Transport Plan for Wales (2011)</b></p> <p><b>European Commission White Paper Roadmap to a Single European Transport Area (2011)</b></p> <p><b>A Walking and Cycling Action Plan for Wales (2009-2013)</b></p> <p><b>Draft Road Safety Delivery Plan Consultation, Welsh Government (2012)</b></p> <p><b>Planning Policy Wales (Edition 5) (2012)</b></p> <p><b>Active Travel (Wales) Bill The Future of Transport (2004) – UK white paper on transport (2013)</b></p> <p><b>Cardiff LDP Working Version No Status Policy KP8 Sustainable Transport (2013)</b></p> <p><b>Newport LDP Revised Deposit Plan Policy SP14 Transport Proposals (2013)</b></p> <p><b>Newport LDP Revised Deposit Plan Policy SP15 Integrated Transport (2013)</b></p>
<b>Air Quality</b>
<p><b>The Environment Act (1995)</b></p> <p><b>Air Quality (Amendment) (Wales) Regulations (2002)</b></p> <p><b>The National Emission Ceilings Regulations (2002)</b></p> <p><b>National Emission Ceilings Directive (2001/81/EC) amended by Council Directive 2006/105/EC (2006)</b></p> <p><b>Environment Strategy for Wales: Air Quality Policy (2006)</b></p> <p><b>The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)</b></p> <p><b>Air Quality and Climate Change: a UK perspective (2007)</b></p> <p><b>Programme of measures: UK national programme to combat acidification, eutrophication and ground level ozone (2007)</b></p> <p><b>Air Quality Action Plan for Newport (2008)</b></p> <p><b>Air Quality Action Plan for Cardiff (2009)</b></p> <p><b>Air Pollution: Action in a Changing Climate (March 2010)</b></p> <p><b>The Air Quality Standards (Wales) Regulations (2010)</b></p> <p><b>Local Air Quality Management Policy Guidance Wales (LAQM. PG09) and Addendum to Policy Guidance (LAQM. PG(09)) (2012)</b></p> <p><b>Planning Policy Wales (Edition 5) (2012)</b></p> <p><b>Gothenburg Protocol (Revised) (2012)</b></p> <p><b>Cardiff LDP Working Draft No Status Policy EN13 Air, Noise, Light Pollution and Contaminated Land (2013)</b></p> <p><b>Newport LDP Revised Deposit Plan Policy G4 General Development Principles – Highways and Accessibility (2013)</b></p> <p><b>Newport Local Development Plan, Revised Deposit Plan, Strategic Policy 14 Transport Proposals (June 2013)</b></p>

<b>Relevant Plans, Policies and Programmes</b>
<b>Climatic Factors, Including Greenhouse Gas Emissions and Adaptation to the Effects of Climate Change</b>
<p>Wales Changing Climate, Challenging Choices: The impacts of climate change in Wales from (2000 to 2080)</p> <p>UK Climate Change Programme: Tomorrow's Climate Today's Challenge (2006)</p> <p>Adapting to Climate Change in Europe – Options for EU Action (EC) (2007)</p> <p>Adapting to Climate Change in Europe – Options for EU Action – (EC, 2007)</p> <p>Climate for a transport change. TERM 2007: indicators tracking transport and environment in the European Union (EEA) (2008)</p> <p>Kyoto Protocol (1997) and Doha Amendment (2012)</p> <p>Climate Change Strategy for Wales 2010-2020</p> <p>European Commission's Action and Renewable Energy (CARE) Package Climate Change Act (2008)</p> <p>UKT1 Carbon Reduction Strategy for Transport, Low Carbon Transport: A Greener Future (2009)</p> <p>Adaption Delivery Plan: Climate Change Strategy for Wales (2010)</p> <p>Delivery Plan for Emission Reduction: Climate Change Strategy for Wales (2010)</p> <p>The Carbon Plan: Delivering our Low Carbon Future (2011)</p> <p>UK Government, The National Adaptation Programme: Making the country resilient to a changing climate (July 2013)</p> <p>Policy Statement: Preparing for a changing climate (2011)</p> <p>Climate Change Risk Assessment for Wales (2012)</p> <p>Cardiff LDP Working Draft No Status Policy KP15 Climate Change (2013)</p> <p>Newport LDP Revised Deposit Plan Objective 2 – Climate Change (2013)</p> <p>An EU Strategy on adaptation to climate change (2013)</p>
<b>Noise and Vibration</b>
<p>Technical Advice Note (TAN) 11 – Noise (1997)</p> <p>EU Directive 2002/49/EC relating to the Assessment and Management of Environmental Noise – The Environmental Noise Directive (2002)</p> <p>The Environmental Noise Directive (END) Noise Action Plan for Transport – Consultation Report and Plan (2009)</p> <p>The Environmental Noise (Wales) (Amendment) Regulations (2009)</p> <p>Environmental Noise Action Planning (Wales) 2011</p> <p>Cardiff Local Development Plan, Working Draft, No Status, Policy EN13: Air, Noise, Light Pollution and Contaminated Land Policy (June 2013)</p> <p>The Environmental Noise Directive (END) Noise Action Plan for Transport (2011)</p> <p>Planning Policy Wales (Edition 5) (2012)</p> <p>Cardiff LDP, Working Draft No Status Policy EN13 Air, Noise, Light Pollution and Contaminated Land (2013)</p>
<b>Biodiversity, Fauna and Flora</b>
<p>Ramsar Convention on wetlands of international importance especially as waterfowl habitat (1971)</p> <p>EU Directive 79/409/EEC on the Conservation of Wild Birds</p> <p>Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979)</p> <p>EU Directive 92/43/EEC - Habitats Directive</p> <p>Convention on Biological Diversity, Rio de Janeiro (1992)</p> <p>Environmental Protection Act 1995</p> <p>Countryside and Rights of Way Act 2000</p>

<b>Relevant Plans, Policies and Programmes</b>
<p>Woodland Trust – Space for Nature (2002)  Environmental Liability Directive 2004/35/EC  Trunk Road Estate Biodiversity Action Plan 2004-2014 (2004)  UK Forestry Standard: The Governments Approach to Sustainable Forestry (FC, 2004)  Ecological Connectivity, NRW (September 2006)  Natural Environment and Rural Communities Act 2006  TAN 5 – Nature Conservation and Planning (2009)  Woodland for Wales (WAG, 2009)  EU Directive 2009/147/EC- Birds Directive  The Conservation of Habitats and Species Regulations 2010 (as amended)  Wales Biodiversity Framework (Wales Biodiversity Partnership, 2010)  EU Biodiversity Strategy (EU, 2011)  UK BAP Post 2010 Biodiversity Framework (2012)  Planning Policy Wales (Edition 5, November 2012)  Newport Local Development Plan, Revised Deposit Plan (June 2013)  Strategic Objective: Conservation of the Natural Environment  Cardiff Local Development Plan, Working Draft, No Status, (June 2013)  Policy KP16 Natural Heritage</p>
<b>Soil</b>
<p>EC Thematic Strategy for Soil protection (2007)  Soil: a precious resource, Environment Agency (2007)  The Welsh Soils Action Plan (Consultation Draft) (2008)  Planning Policy Wales (Edition 5, November 2012)  Groundwater protection: Principles and practices (GP3) (November 2012)</p>
<b>Water, Including Quality, Quantity and Flood Risk</b>
<p>TAN 14 - Coastal Planning (1998)  EU Directive 2000/60/EC Establishing a Framework for the Community Action in the Field of Water Policy – The Water Framework Directive (2000)  Environment Agency Policy: Sustainable Urban Drainage Systems (2002)  TAN 15 - Development and Flood Risk (2004)  Cleaner Coasts, Healthier Seas: Working for a better marine environment 2005-2011 (EA, 2005)  A Better Environment, Healthier Fisheries: Better Fisheries for our nations 2006-2011 (EA, 2006)  EU Directive 2007/60/EC on the Assessment and Management of Flood Risks (2007)  Draft Strategy for Wales on Integrated Coastal Zone Management (ICZM) 2007  River Usk Catchment Abstraction Management Strategy (CAMS), 2007  Water Resources Strategy for England and Wales: ‘Water for People and the Environment’ (March 2009)  Flood Risk Regulations (2009)  Severn River Basin Management Plan (2009)  Cardiff Preliminary Flood Risk Assessment (2009)  Flood and Water Management Act 2010  The Severn Estuary Shoreline Management Plan Review (2010)  Welsh Government Flood Risk Management Community Engagement Toolkit (October 2011)  Welsh Government: National Strategy for Flood and Coastal Erosion Risk Management in Wales ( November 2011)</p>

<b>Relevant Plans, Policies and Programmes</b>
<p>Welsh Government 'Adapting to Climate Change: Guidance for Flood and Coastal Management Authorities in Wales (December 2011)</p> <p>Draft Severn Estuary Flood Risk Management Strategy (2011)</p> <p>Planning Policy Wales (Edition 5, November 2012)</p> <p>Environment Agency Wales Drought Plan (January 2012)</p> <p>Newport Draft Local Flood Risk Management Strategy (December 2012)</p> <p>Cardiff Draft Local Flood Risk Management Strategy (February 2013)</p> <p>Newport City Council Strategic Flood Consequences Assessment (SFCA) (March 2013)</p> <p>Cardiff Local Development Plan, Working Draft, No Status, (June 2013)</p> <p>Policy EN 10 Innovative Water Solutions</p> <p>Newport Local Development Plan, Revised Deposit Plan, (June 2013) Policy SP4 Water Resources</p> <p>Newport Local Development Plan, Revised Deposit Plan, (June 2013) Policy SP3 Flood Risk</p>
<b>Material Assets, including Resource Efficiency and Waste</b>
<p>EU Directive 99/31/EC - Waste to Landfill</p> <p>Minerals Planning Policy Wales (2000)</p> <p>Remediation of Contaminated Land (2001)</p> <p>TAN 21-Waste (2001)</p> <p>Minerals Technical Advice Note (MTAN) 1 - Aggregates (2004)</p> <p>South East Wales Regional Waste Plan (2004)</p> <p>Hidden Environment Agency Infrastructure (EA) (2007)</p> <p>EU Directive 2008/98/EC on waste (Waste Framework Directive) (2008)</p> <p>Towards Zero Waste: The Overarching Waste Strategy Document for Wales, 2010</p> <p>Report on the Thematic Strategy on waste prevention and recycling (Jan 2011)</p> <p>The Waste (England and Wales) Regulations (2011)</p> <p>Planning Policy Wales (Edition 5, November 2012)</p>
<b>Cultural Heritage and the Historic Environment, Including Architectural and Archaeological Heritage</b>
<p>Traffic Management in Historic Areas (Cadw) (2003)</p> <p>Wales Tourist Board - Cultural Tourism Strategy for Wales (2003)</p> <p>The Welsh Historic Environment: Position Statement 2007</p> <p>Planning Policy Wales (Edition 5, February 2012)</p> <p>Register of Landscapes of Historic Interest in Wales</p> <p>Newport Local Development Plan, Revised Deposit Plan (June 2013) Policy SP 9 Conservation and the Natural Environment</p> <p>Cardiff Local Development Plan, Working Draft, No Status, (June 2013) Policy KP17 Built Heritage</p>
<b>Landscape and Townscape, including Light Pollution</b>
<p>TAN 10 Tree Preservation Orders (1997)</p> <p>European Landscape Convention (Council of Europe) 2004</p> <p>Countryside and Rights of Way (CRoW) Act (2000)</p> <p>TAN 18 Transport (2007)</p> <p>TAN 5 Nature Conservation and Planning (2009)</p> <p>TAN 12 Design (2009)</p> <p>Planning Policy Wales (Edition 5) (2012)</p> <p>Cardiff Local Development Plan Working Version [No Status] (June 2013)</p> <p>Policy KP3(A): Green Belt and KP3(B) Settlement boundaries</p>

**Relevant Plans, Policies and Programmes**

**Cardiff Local Development Plan Working Version [No Status] (June 2013)  
Policy EN1 to EN2: Countryside Protection**

**Cardiff Local Development Plan Working Version [No Status] (June 2013)  
Policy EN3 to EN 9**

**Newport Local Development Plan, Revised Deposit Plan (June 2013)  
General Policies - GP6 General Development Principles – Quality of Design**

**Newport Local Development Plan, Revised Deposit Plan (June 2013) General  
Policies - GP7 General Development Principles – Environmental Protection  
and Public Health**

**Newport Local Development Plan, Revised Deposit Plan (June 2013)  
Environment – Built Environment CE2 Routeways, Corridors and Gateways**

**Newport Local Development Plan, Revised Deposit Plan (June 2013)  
Environment – Environmental Spaces and Corridors CE4**

**Newport Local Development Plan, Revised Deposit Plan (June 2013)  
Environment – The Natural Environment CE9 - CE10**

**Sustainable Development**

**The UN Millennium Declaration and Millennium Development Goals (2002)**

**World Summit on Sustainable Development - Earth Summit leading to the  
Johannesburg Plan of Implementation (2002)**

**Welsh Government Integration Tool (2002)**

**Making the Connections: Delivering better services in Wales (2004)**

**The Sustainable Development Action Plan (2004 – 2007)**

**Securing the Future – UK Government Sustainable Development Strategy  
(2005)**

**Cardiff Sustainable Development Policy Statement (2006)**

**People, Places, Futures - The Wales Spatial Plan (2008 update)**

**Environment Strategy for Wales (2006) and Environment Strategy Action  
Plan 2008 – 2011**

**EU Sustainable Development Strategy (2006, reviewed 2009)**

**Newport's Community Strategy 2010 – 2020**

**Mainstreaming sustainable development – The Government's vision and  
what this means in practice (2011)**

**Programme for Welsh Government (2011)**

**The Future We Want: Rio +20 Outcome Document (2012)**

**Draft Future Generations (Wales) Bill (2013/2014)**

**Newport Local Development Plan, Revised Deposit Plan, Policy SP1  
Sustainability (June 2013)**

**Cardiff Local Development Plan, Working Draft, No Status (June 2013)**

## 5 Methodology

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This chapter sets out the methodology and overall approach for the SEA, which will include the following:

- Scoping and Consultation;
- Identification of likely environmental effects;
- Assessment of significance of effects;
- Documentation of the assessment; and
- Limitations and uncertainties in the process.

### 5.1 Approach to the Strategic Environmental Assessment

The approach to the SEA has been to provide an expert judgement, based on a system of prediction and assessment, guided by the SEA Regulations<sup>20</sup>. Broadly, the assessment has included:

- Identifying the environmental effects of the M4 Corridor around Newport; and
- Assessing the effects for their significance.

It has also taken into account:

- A Practical Guide to the Strategic Environmental Assessment Directive<sup>21</sup>;
- The SEA of the National Transport Plan (NTP);
- Welsh Government, M4 Corridor around Newport, WelTAG Appraisal Report Stage 1 (Strategy Level), Arup, June 2013<sup>12</sup>;
- Consideration of the Options for the M4 Corridor around Newport with regard to the Requirements of the Habitats Regulations;
- Health Impact Assessment; and
- Other SEAs of Regional Transport Plans, the Wales Spatial Plan, the Wales Transport Strategy.

Taking account of these other assessments has helped in the determination of the effects which may result from the implementation of the draft Plan or reasonable alternatives cumulatively with the effects from other plans, programmes and projects.

### 5.2 Scoping and Consultation

For this SEA, the Welsh Government, as a responsible authority, consulted the statutory SEA consultees (Natural Resources Wales, Cadw, Natural England and the Environment Agency) on the proposed scope of the SEA of the M4 Corridor around Newport for a period of five weeks in July 2013. The responses received from the consultation have helped to inform this SEA Environmental Report (August 2013). The responses to the Scoping Report are presented in Appendix A.

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<sup>20</sup> The Environmental Assessment of Plans and Programmes (Wales) Regulations 2004

<sup>21</sup> ODP, 2005. A Practical Guide to the Strategic Environmental Assessment Directive. Office of the Deputy Prime Minister: London.

Should an M4 Corridor around Newport option be adopted, a statement will be made available to all consultees showing how the results of the SEA and consultation have been taken into account. This is known as the SEA Statement.

### 5.3 Identification of Likely Environmental Effects

#### 5.3.1 Potential Environmental Effects

The SEA of the NTP assessed the potential effects of all the NTP measures, including the ‘*Package of measures to deal with resilience, safety and reliability issues on the M4 around Newport*’. The likely significant effects identified in the NTP SEA Statement<sup>22</sup> - both during construction and operation - are summarised in Table 6. It is considered appropriate that these can be applied directly to the M4 Corridor around Newport as the latter contains a subset of the types of transport interventions and measures considered in the NTP.

Table 6 Assessment of Significant Effects

Indicator	Significant Effects
<b>Air Quality</b>	Changes in air quality; Air quality in areas directly affected by transport interventions; Project level effects.
<b>Greenhouse Gas Emissions</b>	Levels of greenhouse gas emissions.
<b>Climate Change Adaptation</b>	Flood risk and flooding events on the transport network; Project level effects.
<b>Noise and Vibration</b>	Noise levels related to transport; Project level effects.
<b>Biodiversity</b>	The impact of land take on the loss of/fragmentation of habitats; Direct disturbance of transport related activity for flora and fauna, loss of habitats function, disturbance to fauna resulting from noise and artificial light; Impact of non-native invasive species arriving in imported soil; Roadside casualties and indirect transport effects (such as runoff and accidental spill from drainage systems associated with transport networks); Project level effects.
<b>Population</b>	Access to key services; Transport related security; Community severance from transport; Project level effects.
<b>Human health</b>	Transport related impacts on human access to recreational or open space facilities; Accidents related to transport; Respiratory health; Effects relating to the use of active travel modes; Project level effects.

<sup>22</sup> National Transport Plan SEA Statement, March 2010

Indicator	Significant Effects
<b>Soil and Geology</b>	Transport effects on soil (loss, sealing, contamination), soil erosion (wind and water), compaction, introduction of noxious weeds in imported soil; Project level effects.
<b>Water</b>	Transport effects on water quality and water quantity; Changes to hydrological and hydrogeological regimes; Project level effects.
<b>Material Assets</b>	Levels of use of secondary and recycled aggregates; Condition of the transport infrastructure; Project level effects.
<b>Cultural Heritage</b>	Transport effects on historic sites and landscapes; Project level effects.
<b>Landscape and Townscape</b>	Transport effects on tranquillity and light pollution; Effects on landscapes and townscapes from transport; Project level effects.

## 5.4 Determining Significance

The significance of effects of the M4 Corridor around Newport have been assessed using expert judgement, founded on baseline environmental data and the likely predicted trends in the absence of the plan.

Issues for consideration within the assessment have been listed in Table 7. In order to assess the significance of effects, issues were used to develop a suite of significance criteria which are also comparable with those used in the SEA of the NTP.

The proposed significance criteria are described in Table 8 and are used to undertake the assessment, using a score system to denote positive, neutral or negative effects.

The assessment is supported by commentary on the nature of the effect, any uncertainties or assumptions made, and the need for monitoring and mitigation.

Table 7 Considerations to be used during the Assessment

Issues for Consideration	Details
<b>Type of Effect</b>	Positive or negative.
	Direct or indirect, primary or secondary.
	Cumulative.
	Temporary or permanent.
<b>Magnitude and Spatial Extent</b>	Where will it impact? Will it be within Newport, South Wales, Wales, or more widely?
	Will it cause trans-boundary issues and impact on adjacent areas or regionally, nationally or internationally?
	What is the geographical area and size of population likely to be affected?



Issues for Consideration	Details
<b>Vulnerability of Receptor</b>	Sensitivity of receptors.
	Special natural characteristics/areas or cultural heritage.
	Protected areas (nature conservation and cultural heritage).
	Relative importance of the site, whether it is a nationally or internationally important feature or of local significance.
<b>Timing and Duration of the Effect</b>	Short term – 0 – 4 years.
	Medium – 5 – 9 years.
	Long term -10+ years.

Table 8 Significance Criteria

Significance of Effect		Description of Effect
2	Major Positive	Likely to benefit a large part of the M4 Corridor around Newport or a large number of people and receptors. Option would have a major positive effect on the environment in its current form as it would resolve an existing issue or maximise opportunities. This type of effect may be considered <b>SIGNIFICANT</b> .
1	Minor Positive	The extent of predicted beneficial effects is likely to be limited to small areas within the M4 Corridor around Newport or small groups of people and receptors. Option would have a minor positive effect on the environment but is not considered to be significant.
0	Neutral	Option would have a neutral effect on the environment.
-1	Minor Negative	Minor negative effects are likely to be limited to small areas within the M4 Corridor around Newport, or limited to small groups of people and receptors. Option would have a minor adverse effect on the environment but is not considered to be significant.
-2	Major Negative	Likely to affect the whole, or large part of the M4 Corridor area. Also applies to significant effects on nationally or internationally important assets. The option would have a major adverse effect on the environment as it would substantially exacerbate existing problems. This type of effect may be considered to be <b>SIGNIFICANT</b> .
?	Uncertain	Effect of option on the environment is uncertain. This significance criterion is applied to effects where there is insufficient information to make a robust assessment. It is also applied to the assessment of options that can have both positive and negative effects and it is not clear whether the positive or negative effects outweigh each other.
N/A	Not Applicable	This is applied to objectives that are clearly not affected by the option being assessed.

## 6 Environmental Objectives

The environmental objectives for the M4 Corridor around Newport are set out in Table 9 alongside the Aims and Goals of the M4 Corridor around Newport. The environmental objectives are based on the National Transport Plan (NTP) SEA objectives<sup>23</sup> but adapted to provide a more local focus. The objectives cover all the topic areas listed in Schedule II of the SEA Regulations. These were evaluated against the policies, plans and programmes detailed in Table 5 and the environmental baseline data that has been collated in Appendix C.

Table 9 NTP SEA Objectives, Aims and Goals and Environmental Objectives of the M4 Corridor around Newport

<b>Obj No.</b>	<b>NTP SEA Objective<sup>23</sup></b>	<b>Aims and Goals of M4 Corridor around Newport</b>	<b>Environmental Objective of M4 Corridor around Newport</b>
<b>1</b>	Minimise transport related air pollution	Improved air quality in areas next to the existing M4 Corridor around Newport	Improved air quality in areas next to the existing M4 around Newport.
<b>2a</b>	Reduce transport related greenhouse gas emissions	Reduce greenhouse gas emissions per vehicle and/or person kilometre.	Reduce greenhouse gas emissions per vehicle and/or person kilometre.
<b>2b</b>	Ensure that adequate adaptation measures to climate change are in place	To produce positive effects overall on people and the environment, making a positive contribution to the overarching Welsh Government goals to reduce greenhouse gas emissions and to making Wales more resilient to the effects of climate change.	Ensure that effective adaptation measures to climate change are in place.
<b>3</b>	Minimise transport related noise and vibration	Reduce disturbance to people from high noise levels, from all transport modes and traffic within the M4 Corridor around Newport.	Reduce disturbance to people from high noise levels, from all transport modes and traffic within the existing M4 Corridor.
<b>4</b>	Ensure that biodiversity is valued, protected and enhanced	N/A	Ensure that biodiversity is protected, valued and enhanced.
<b>5</b>	Provide inclusive access to all services and facilities and reduce severance	Easier access to local key services and residential and commercial centres.	Improved access to all services and facilities and reduce severance.

<sup>23</sup> National Transport Plan Strategic Environmental Assessment Scoping Report, February 2009

<b>Obj No.</b>	<b>NTP SEA Objective<sup>23</sup></b>	<b>Aims and Goals of M4 Corridor around Newport</b>	<b>Environmental Objective of M4 Corridor around Newport</b>
<b>6</b>	Protect and promote everyone's physical and mental wellbeing and safety	Improved safety on the existing M4 Corridor around Newport between Magor and Castleton.	Protect and promote everyone's physical and mental wellbeing and safety.
<b>7</b>	Reduce transport related contamination and safeguard soil function, quality and quantity	N/A	Reduce transport related contamination and safeguard soil function, quality and quantity.
<b>8</b>	Minimise transport related effects on water quality, flood plains and areas of flood risk	N/A	Minimise transport related effects on surface and groundwater quality, flood plains and areas of flood risk.
<b>9</b>	Prudent and sustainable use of natural resources and energy	N/A	Ensure the prudent and sustainable use of natural resources and energy.
<b>10</b>	Ensure that diversity, local distinctiveness and cultural heritage are valued, protected, celebrated and enhanced	N/A	Ensure that diversity, local distinctiveness and cultural heritage are valued, protected, celebrated and enhanced.
<b>11</b>	Ensure that landscape and townscape is properly valued, conserved and enhanced	Improved travel experience into South Wales along the M4 Corridor around Newport.	Ensure that landscape and townscape is properly valued, conserved and enhanced.

## 6.1 Compatibility of Objectives

The compatibility of environmental objectives was tested to establish potential conflicts or tensions. The results of the compatibility assessment are summarised in Table 10.

Table 10 Compatibility Assessment of Environmental Objectives for M4 Corridor around Newport

<b>1 Air Quality</b>														
<b>2a Climatic Factors</b>	✓													
<b>2b Climatic Factors</b>	✓	✓												
<b>3 Noise</b>	✓	-	✓											
<b>4 Biodiversity</b>	✓	✓	✓	✓										
<b>5 Population</b>	-	?	-	✓	?									
<b>6 Human Health</b>	✓	✓	✓	✓	-	✓								
<b>7 Soil</b>	✓	✓	✓	-	✓	-	✓							
<b>8 Water</b>	✓	✓	✓	-	✓	✓	✓	✓						
<b>9 Material Assets</b>	✓	?	✓	-	✓	-	-	✓	✓					
<b>10 Cultural Heritage</b>	✓	?	?	-	-	?	✓	✓	?	-				
<b>11 Landscape &amp; Townscape</b>	✓	?	?	-	✓	?	✓	✓	?	✓	✓	✓		
<b>Environmental Objective</b>	<b>1 Air Quality</b>	<b>2a Climatic Factors</b>	<b>2b Climatic Factors</b>	<b>3 Noise</b>	<b>4 Biodiversity</b>	<b>5 Population</b>	<b>6 Human Health</b>	<b>7 Soil</b>	<b>8 Water</b>	<b>9 Material Assets</b>	<b>10 Cultural Heritage</b>	<b>11 Landscape and Townscape</b>		

✓	Compatible
✘	Incompatible
?	Uncertain
-	No Relationship

The majority of environmental objectives are considered to be either compatible or bear no relationship, which means that they can be achieved simultaneously without conflict.

However, there are a few areas where the environmental objectives exhibit potential conflicts. This is particularly related to the Environmental Objective 5 to “*provide inclusive access to all services and facilities and reduce severance*”, which could potentially conflict with Environmental Objectives 4, 10 and 11 to “*ensure that biodiversity is valued, protected and enhanced*”, to “*ensure that diversity, local distinctiveness and cultural heritage are valued, protected, celebrated and enhanced*”, and to “*ensure that landscape and townscape is properly valued, conserved and enhanced.*”

Compatibility between the landscape-related objective (Objective 11) and the climate change objective (Objective 2a) can also represent a challenge. The climate change objective refers to “*adequate adaptation measures to climate change*”, which could include the development of new, or enhancing existing infrastructure thus affecting landscapes. For the same reason, the climate change objective can be viewed as potentially incompatible with the objective to ensure the prudent and sustainable use of natural resources and energy (Objective 9) and the objective to protect and enhance cultural heritage (Objective 10). Similarly, potential flood storage and drainage schemes under the water objective (Objective 8) can potentially have significant effects on landscape, landscape processes and cultural heritage.

Levels of compatibility or conflict are difficult to assess. The extent to which there may be a conflict between these objectives will depend on the actual measures proposed to improve accessibility. For instance, proposals for providing additional infrastructure in areas that are designated for biodiversity or landscape, value could result in larger adverse effects on biodiversity and landscape compared to measures which make more efficient use of existing infrastructure.

Incompatibility between the environmental objectives can be addressed either by re-defining one or both of the objectives (to remove or reduce the degree of conflict) or by investigating a range of options for achieving one of the objectives so that the potential negative effect on the other varies.

## 6.2 Documentation of the Assessment

The assessment has been documented using the assessment table provided below in Table 11. A separate table has been populated for each indicator.

Table 11 Documentation of the Assessment

<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Permanence of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Comments / Explanation</b>
<b>e.g. Draft Plan – Black Route and its Complementary Measures</b>	<i>Nature of Effect including all issues for consideration</i>	<i>P: Permanent T: Temporary</i>	<i>L: Local R: Regional N: National</i>	<i>ST: Short Term; MT: Medium Term; LT: Long Term</i>	<i>Significance Criteria (colour coded) as above in Table 8</i>	

## 6.3 Mitigation

Mitigation measures must be considered during the preparation of plans and programmes to address effects identified in the SEA (ODPM, 2005; paragraph 5.B.19)<sup>21</sup>.

Mitigation can take a wide range of forms, including:

- Changes to the alternative concerned, or to the plan or programme as a whole;
- Changes to a specific proposal within the plan or programme;
- Inclusion of new provisions within the plan or programme;
- Technical measures to be applied during the implementation stage, e.g. buffer zones, application of design principles;
- Identifying issues to be addressed in project Environmental Impact Assessment;
- Proposals for changing other plans and programmes.

SEA is an iterative process, whereby effects are identified and amendments to proposals and/ or measures to prevent, reduce and offset significant adverse effects are considered within the assessment.

Where the assessment identifies the potential for significant adverse environmental effects, this environmental report either recommends changes or identifies mitigation measures that can help to prevent, reduce or offset those effects.

## 7 Assessment of Significant Effects

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### 7.1 Introduction

The SEA is set out in Tables 12 – 7.23.

Broadly, the assessment includes:

- Identifying the environmental effects of the M4 Corridor around Newport; and
- Assessing the effects for their significance.

An appraisal summary table has been prepared for each environmental indicator in Table 24. Each appraisal table considers mitigation in the form of high level prevention, reduction and offsetting measures. The full high level mitigation measures are presented in Table 26 in section 8.

Table 12 Air Quality Assessment

<b>Indicator: Air Quality</b>					
<b>Environmental Objective: Improved air quality in areas next to the existing M4 around Newport</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway would provide significant increased capacity in the highway network around Newport with the addition of six new lanes. It is predicted there would be a significant reduction in traffic on the existing M4; providing capacity to accommodate predicted trends of traffic increase in the long-term. Congestion would be reduced for a longer period than for a dual carriageway option.</p> <p>This reduction in traffic would reduce congestion and encourage free-flow conditions which would increase efficiency, thereby helping to reduce air pollution and improve air quality in Air Quality Management Areas.</p> <p>Reclassification of the existing M4 between Magor and Castleton and provision of a link to the B4245 would further encourage free-flowing conditions and enhance improvements in air quality.</p> <p>In the short to medium term, there would be a positive effect on air quality for residents adjacent to the existing M4. In the longer term traffic is predicted to increase, therefore resulting in reduced air quality. However technological improvements over this timescale to vehicle engines and exhausts are anticipated to aid reductions in emissions.</p> <p>Reclassification of the existing M4 would continue to provide benefit in the longer term as initial studies suggest the increased traffic and more long journeys are offset (either partially or wholly) by reduced emissions resulting from improved operating conditions.</p> <p>Provision of cycle-friendly and walking-friendly infrastructure, as complementary measures, would also aid reduction in vehicle traffic and consequently improve air quality if more local trips are made not using a car. The new link to the B4245 may also facilitate the introduction of a park and ride facility at Severn Tunnel Junction further reducing vehicle traffic and encouraging public transport use.</p> <p>The effects of air and dust pollution during construction are likely to affect those who live in close proximity to the Black Route. Modern construction</p>	L	LT	2	<p>Emissions from traffic using the new road would cause deterioration in local air quality along its route, although National Air Quality Standards would not be exceeded.</p> <p>With a significant proportion of the traffic diverted from the existing M4 using the new route it would enable free-flow conditions, reducing congestion, enhancing efficiency and thereby reducing vehicle emissions. This would represent a significant benefit over the Do Minimum approach for HGVs which are largely responsible for air quality issues on the existing M4.</p> <p>Junction strategies would need to be determined following project level design. In the context of this strategic assessment it is considered that changes in traffic flows for different locations of junctions would not be sufficient to lead to a significant cumulative effect.</p>



Indicator: Air Quality					
Environmental Objective: Improved air quality in areas next to the existing M4 around Newport					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	methods would aim to limit any impacts during this period. The Black Route is further from the Dyffryn residential area of Newport than the Red and Purple Routes.				
<b>Reasonable Alternative - Red Route and its Complementary Measures</b>	<p>A new dual carriageway would provide significant increased capacity in the highway network around Newport with the addition of four new lanes. It is predicted there could be up to a significant reduction in traffic on the existing M4; providing capacity to accommodate predicted trends of traffic increase in the short to medium term. In the long-term, the dual carriageway option is predicted to reach significant levels of congestion sooner than the motorway options thus achieving a reduced comparative benefit.</p> <p>This reduction in traffic would reduce congestion and encourage free-flow conditions which would increase efficiency, thereby helping to reduce air pollution and improve air quality in Air Quality Management Areas.</p> <p>Provision of a link to the B4245 would further encourage free-flowing conditions and enhance improvements in air quality.</p> <p>In the short to medium term, there would be a positive effect on air quality for residents adjacent to the existing M4. In the longer term, traffic is predicted to increase, therefore resulting in reduced air quality; however, technological improvements over this timescale to vehicle engines and exhausts are anticipated to aid reductions in emissions.</p> <p>Provision of cycle-friendly and walking-friendly infrastructure as complementary measures would also aid reduction in vehicle traffic and consequently improve air quality if more local trips are made not using a car. The new link to the B4245 may also facilitate the introduction of a park and ride facility at Severn Tunnel Junction further reducing vehicle traffic and encouraging public transport use.</p> <p>The effects of air and dust pollution during construction are likely to affect</p>	L	LT	1	<p>Emissions from traffic using the new road would cause deterioration in local air quality along its route although National Air Quality Standards would not be exceeded.</p> <p>With a significant proportion of the traffic diverted from the existing M4 using the new route it would enable free-flow conditions, reducing congestion, enhancing efficiency and thereby reducing vehicle emissions. This would represent a significant benefit over the Do Minimum approach for HGVs which are largely responsible for air quality issues on the existing M4.</p> <p>Junction strategies would need to be determined following project level design. In the context of this strategic assessment it is considered that changes in traffic flows for different locations of junctions would not be sufficient to lead to a significant cumulative effect.</p>

<b>Indicator: Air Quality</b> <b>Environmental Objective: Improved air quality in areas next to the existing M4 around Newport</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
	<p>those who live in close proximity to the Red Route. Modern construction methods would aim to limit any impacts during this period. The Red Route is closer to the Dyffryn residential area of Newport than the Black Route.</p>				
<b>Reasonable Alternative - Purple Route and its Complementary Measures</b>	<p>A new motorway would provide significant increased capacity in the highway network around Newport with the addition of six new lanes. It is predicted there could be up to a significant reduction in traffic on the existing M4; providing capacity to accommodate predicted trends of traffic increase in the long-term. Congestion would be reduced for a longer period than for a dual carriageway option.</p> <p>This reduction in traffic would reduce congestion and encourage free-flow conditions which would increase efficiency, thereby helping to reduce air pollution and improve air quality in Air Quality Management Areas.</p> <p>Reclassification of the existing M4 between Magor and Castleton and provision of a link to the B4245 would further encourage free-flowing conditions and enhance improvements in air quality.</p> <p>In the short to medium term, there would be a positive effect on air quality for residents adjacent to the existing M4. In the longer term, traffic is predicted to increase therefore resulting in reduced air quality; however technological improvements over this timescale to vehicle engines and exhausts are anticipated to aid reductions in emissions.</p> <p>Reclassification of the existing M4 would continue to provide benefit in the longer term as initial studies suggest the increased traffic and more long journeys are offset (either partially or wholly) by reduced emissions resulting from improved operating conditions.</p> <p>Provision of cycle-friendly and walking-friendly infrastructure as complementary measures would also aid reduction in vehicle traffic and consequently improve air quality if more local trips are made not using a car. The new link to the B4245 may also facilitate the introduction of a</p>	<p>L</p>	<p>LT</p>	<p>2</p>	<p>Emissions from traffic using the new road would cause deterioration in local air quality along its route although National Air Quality Standards would not be exceeded.</p> <p>With a significant proportion of the traffic diverted from the existing M4 using the new route it would enable free-flow conditions, reducing congestion, enhancing efficiency and thereby reducing vehicle emissions. This would represent a significant benefit over the Do Minimum approach for HGVs which are largely responsible for air quality issues on the existing M4.</p> <p>Junction strategies would need to be determined following project level design. In the context of this strategic assessment it is considered that changes in traffic flows for different locations of junctions would not be sufficient to lead to a significant cumulative effect.</p>

Indicator: Air Quality					
Environmental Objective: Improved air quality in areas next to the existing M4 around Newport					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>park and ride facility at Severn Tunnel Junction further reducing vehicle traffic and encouraging public transport use.</p> <p>The effects of air and dust pollution during construction are likely to affect those who live in close proximity to the Purple Route. Modern construction methods would aim to limit any impacts during this period. The Purple Route is closer to the Dyffryn residential area of Newport than the Red Route.</p>				
<b>Do Minimum Scenario</b>	<p>During peak periods, sections of the existing M4 experience traffic flows in excess of 80% of capacity. It is generally accepted that once hourly traffic flows reach about 80% some operational problems can be expected. Once flows reach above 90% traffic can expect severe operational problems over longer periods. This situation will be exacerbated by the forecast increase in traffic using the existing motorway around Newport.</p> <p>Increased traffic and congestion will result in poor vehicle efficiency and increased emissions leading to negative effects on air quality despite technological improvements to vehicle engines and exhausts. This may reverse reported improvements in AQMAs.</p> <p>Construction effects would be limited to scheduled improvements and maintenance and thus would not be significant.</p> <p>No complementary measures would be provided under the Do Minimum scenario.</p>	R	LT	- 1	<p>Conditions in the AQMAs would continue to deteriorate in the short to medium term. In the longer term, residents further from the existing M4 may experience decreasing air quality as local routes are subject to increasing traffic and congestion as traffic seeks to avoid congestion peaks on the M4.</p>

Table 13 Climatic Factors Assessment (Reduce greenhouse gas emissions per vehicle and/or person kilometre)

<b>Indicator: Climatic Factors</b> <b>Environmental Objective: Reduce greenhouse gas emissions per vehicle and/or person kilometre</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway would provide significant increased capacity in the highway network around Newport with the addition of six new lanes. It is predicted there could be up to a significant reduction in traffic on the existing M4; providing capacity to accommodate predicted trends of traffic increase in the long-term. Congestion would be reduced for a longer period than for a dual carriageway option.</p> <p>This reduction in traffic would reduce congestion and encourage free-flow conditions which would increase efficiency, thereby helping to reduce greenhouse gas emissions on the existing M4 Corridor.</p> <p>Reclassification of the existing M4 between Magor and Castleton and provision of a link to the B4245 would further encourage free-flowing conditions and enhance improvements in greenhouse gas emissions.</p> <p>In the short to medium term, there could be a reduction in greenhouse gas emissions. In the longer term, net traffic is predicted to increase therefore resulting in increased emissions of greenhouse gases. However, technological improvements over this timescale to vehicle engines and exhausts are anticipated to aid reductions in emissions but could be unlikely to counter net increase unless there was also a large scale shift to electric vehicles.</p> <p>Reclassification of the existing M4 would continue to provide benefits in the longer term as initial studies suggest increased traffic and more long journeys are offset (either partially or wholly) by reduced emissions resulting from improved operating conditions.</p> <p>Provision of cycle-friendly and walking-friendly infrastructure as complementary measures would also aid reduction in vehicle traffic and consequently reduce greenhouse gas emissions if more local trips are made not using a car. The new link to the B4245 may also facilitate the introduction of a park and ride facility at Severn Tunnel Junction further</p>	<p>L</p>	<p>LT</p>	<p>0</p>	<p>Emissions from traffic using the new road would contribute to greenhouse gas emissions, although the greater efficiency of vehicles on this route would improve emissions compared to the Do Minimum scenario.</p> <p>With a significant proportion of the traffic diverted from the existing M4 to the new route would enable free-flow conditions, enhancing efficiency and thereby reducing vehicle emissions. This would represent a significant benefit over the Do Minimum approach for HGVs which are largely responsible for greenhouse gas emissions on the existing M4.</p> <p>Junction strategies would need to be determined following project level design. In the context of this strategic assessment it is considered that changes in traffic flows for different locations of junctions would not be sufficient to lead to a significant cumulative effect.</p>

<b>Indicator: Climatic Factors</b> <b>Environmental Objective: Reduce greenhouse gas emissions per vehicle and/or person kilometre</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
	reducing vehicle emissions and encouraging public transport use.				
<b>Reasonable Alternative - Red Route and its Complementary Measures</b>	<p>A new dual carriageway would provide significant increased capacity in the highway network around Newport with the addition of four new lanes. It is predicted there could be up to a significant reduction in traffic on the existing M4; providing capacity to accommodate predicted trends of traffic increase in the short to medium term. In the long-term the dual carriageway option is predicted to reach significant levels of congestion sooner than the motorway options thus achieving a reduced comparative benefit.</p> <p>This reduction in traffic would reduce congestion and encourage free-flow conditions which would increase efficiency, thereby helping to reduce greenhouse gas emissions on the existing M4 Corridor.</p> <p>Provision of a new single carriageway link between the M48 and B4245 would further encourage free-flowing conditions and enhance improvements in greenhouse gas emissions.</p> <p>In the short to medium term, there could be a reduction in greenhouse gas emissions. In the longer term, net traffic is predicted to increase therefore resulting in increased emissions of greenhouse gases. However, technological improvements over this timescale to vehicle engines and exhausts are anticipated to aid reductions in emissions but could be unlikely to counter net increase unless there was also a large scale shift to electric vehicles.</p> <p>Provision of cycle-friendly and walking-friendly infrastructure as complementary measures would also aid reduction in vehicle traffic and consequently reduce greenhouse gas emissions if more local trips are made not using a car. The new link to the B4245 may also facilitate the</p>	L	LT	0	<p>Emissions from traffic using the new road would contribute to greenhouse gas emissions, although the greater efficiency of vehicles on this route would improve emissions compared to the Do Minimum scenario.</p> <p>With a significant proportion of the traffic diverted from the existing M4 to the new route would enable free-flow conditions, enhancing efficiency and thereby reducing vehicle emissions. This would represent a significant benefit over the Do Minimum approach for HGVs which are largely responsible for greenhouse gas emissions on the existing M4.</p> <p>Junction strategies would need to be determined following project level design. In the context of this strategic assessment it is considered that changes in traffic flows for different locations of junctions would not be sufficient to lead to a significant cumulative effect.</p>

<b>Indicator: Climatic Factors</b> <b>Environmental Objective: Reduce greenhouse gas emissions per vehicle and/or person kilometre</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
	introduction of a park and ride facility at Severn Tunnel Junction further reducing vehicle emissions and encouraging public transport use.				
<b>Reasonable Alternative - Purple Route and its Complementary Measures</b>	<p>A new motorway would provide significant increased capacity in the highway network around Newport with the addition of six new lanes. It is predicted there could be up to a significant reduction in traffic on the existing M4; providing capacity to accommodate predicted trends of traffic increase in the long-term. Congestion would be reduced for a longer period than for a dual carriageway option.</p> <p>This reduction in traffic would reduce congestion and encourage free-flow conditions which would increase efficiency, thereby helping to reduce greenhouse gas emissions on the existing M4 Corridor.</p> <p>Reclassification of the existing M4 between Magor and Castleton and provision of a link to the B4245 would further encourage free-flowing conditions and enhance improvements in greenhouse gas emissions.</p> <p>In the short to medium term, there could be a reduction in greenhouse gas emissions. In the longer term, net traffic is predicted to increase therefore resulting in increased emissions of greenhouse gases. However, technological improvements over this timescale to vehicle engines and exhausts are anticipated to aid reductions in emissions but could be unlikely to counter net increase unless there was also a large scale shift to electric vehicles.</p> <p>Reclassification of the existing M4 would continue to provide benefits in the longer term as initial studies suggest increased traffic and more long journeys are offset (either partially or wholly) by reduced emissions resulting from improved operating conditions.</p> <p>Provision of cycle-friendly and walking-friendly infrastructure as complementary measures would also aid reduction in vehicle traffic and</p>	L	LT	0	<p>Emissions from traffic using the new road would contribute to greenhouse gas emissions, although the greater efficiency of vehicles on this route would improve emissions compared to the Do Minimum scenario.</p> <p>With a significant proportion of the traffic diverted from the existing M4 to the new route would enable free-flow conditions, enhancing efficiency and thereby reducing vehicle emissions. This would represent a significant benefit over the Do Minimum approach for HGVs which are largely responsible for greenhouse gas emissions on the existing M4.</p> <p>Junction strategies would need to be determined following project level design. In the context of this strategic assessment it is considered that changes in traffic flows for different locations of junctions would not be sufficient to lead to a significant cumulative effect.</p>

<b>Indicator: Climatic Factors</b>					
<b>Environmental Objective: Reduce greenhouse gas emissions per vehicle and/or person kilometre</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
	<p>consequently reduce greenhouse gas emissions if more local trips are made not using a car. The new link to the B4245 may also facilitate the introduction of a park and ride facility at Severn Tunnel Junction further reducing vehicle emissions and encouraging public transport use.</p> <p>The effects of air and dust pollution during construction are likely to affect those who live in close proximity to the new route. Modern construction methods would aim to limit any impacts during this period.</p>				
<b>Do Minimum Scenario</b>	<p>Road transport carbon emissions have been increasing over the years and are likely to continue<sup>24</sup>. During peak periods sections of the existing M4 experience traffic flows in excess of 80% of capacity. It is generally accepted that once hourly traffic flows reach about 80% some operational problems can be expected. Once flows reach above 90% traffic can expect severe operational problems over longer periods<sup>25</sup>. This situation will be exacerbated by the predicted 32% increase<sup>26</sup> in traffic between J27 and J28 of the M4 by 2031.</p> <p>Increased traffic and congestion will result in poor vehicle efficiency and increased emissions, further contributing to greenhouse gas emissions despite technological improvements to vehicle engines and exhausts.</p> <p>Construction effects would be limited to scheduled improvements and maintenance and thus would not be significant.</p> <p>No complementary measures would be provided under the Do Minimum scenario.</p>	L	LT	- 1	Concentrations of greenhouse gases would continue to increase under the Do Minimum scenario as the duration and frequency of congestion peaks increases. In the longer term, cumulative adverse effects on adjacent road networks would raise congestion levels and increase contributions to greenhouse gases.

<sup>24</sup> [assets.dft.gov.uk/statistics/series/energy.../climatechangefactsheets.pdf](https://assets.dft.gov.uk/statistics/series/energy.../climatechangefactsheets.pdf)

<sup>25</sup> M4 CEM Consultation Document (2012), available at: [www.m4cem.com](http://www.m4cem.com)

<sup>26</sup> M4 CEM Consultation Document (2012), available at: [www.m4cem.com](http://www.m4cem.com)

Table 14 Climatic Factors Assessment (Ensure that effective adaptation measures to climate change are in place)

<b>Indicator: Climatic Factors</b>					
<b>Environmental Objective: Ensure that effective adaptation measures to climate change are in place</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport would require effective climate change adaptation measures to be incorporated. The risks of future climate hazards (e.g. hot dry summers, wet warm winters and more intense rainfall events) for the network would be assessed, incorporated into the design and the impact minimised.</p> <p>Increased rainfall and subsequent runoff would be mitigated by custom water treatment areas integrated along the new route. These would consist of Water Treatment Areas, or attenuation ponds, that would act as storage and dilution lagoons in-combination with reed bed systems to provide water treatment prior to release to local watercourses. Such areas would be designed with concomitant benefits for biodiversity and consideration of the landscape setting. The design of climate change adaptation measures would need to be considered as part of the detailed design of any future scheme.</p>	L	LT	1	Climate change will increase the likelihood and scale of deterioration or catastrophic failure of highways due to extreme weather events. A new road would need to consider the implications of climate change on the design, construction and maintenance of the highway and highway structures.
<b>Reasonable Alternative - Red Route and its Complementary Measures</b>	<p>A new dual carriageway to the south of Newport would enable adequate climate change adaption measures to be in incorporated, as the risks of the future climate hazards (e.g. hot dry summers, wet warm winters and more intense rainfall events) for the network could be assessed, incorporated into the design and the impact minimised.</p> <p>Increased rainfall and subsequent runoff would be mitigated by custom water treatment areas integrated along the new route. These would consist of Water Treatment Areas, or attenuation ponds, that would act as storage and dilution lagoons in-combination with reed bed systems to provide water treatment prior to release to local watercourses. Such areas would be designed with concomitant benefits for biodiversity and consideration of the landscape setting. The design of climate change adaptation measures would need to be considered as part of the detailed design of any future scheme.</p>	L	LT	1	Climate change will increase the likelihood and scale of deterioration or catastrophic failure of highways due to extreme weather events. A new road would need to consider the implications of climate change on the design, construction and maintenance of the highway and highway structures.



<b>Indicator: Climatic Factors</b>					
<b>Environmental Objective: Ensure that effective adaptation measures to climate change are in place</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
<b>Reasonable Alternative - Purple Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport would enable adequate climate change adaption measures to be incorporated, as the risks of the future climate hazards (e.g. hot dry summers, wet warm winters and more intense rainfall events) for the network could be assessed, incorporated into the design and the impact minimised.</p> <p>Increased rainfall and subsequent runoff would be mitigated by custom water treatment areas integrated along the new route. These would consist of Water Treatment Areas, or attenuation ponds, that would act as storage and dilution lagoons in-combination with reed bed systems to provide water treatment prior to release to local watercourses. Such areas would be designed with concomitant benefits for biodiversity and consideration of the landscape setting. The design of climate change adaptation measures would need to be considered as part of the detailed design of any future scheme.</p>	L	LT	1	Climate change will increase the likelihood and scale of deterioration or catastrophic failure of highways due to extreme weather events. A new road would need to consider the implications of climate change on the design, construction and maintenance of the highway and highway structures.
<b>Do Minimum Scenario</b>	<p>The existing M4 does not include climate change adaptation measures, nor are such measures included under the Do Minimum scenario.</p> <p>Further assessment would be required to identify whether it would be feasible to integrate effective climate change adaptation measures with the existing motorway; however, this is beyond the scope of this SEA.</p>	L	LT	- 1	The incorporation of climate change adaption measures, such as the management of runoff through more sustainable approaches, is difficult and costly to retrofit to existing motorway infrastructure.

Table 15 Noise and Vibration Assessment

<b>Indicator: Noise and Vibration</b>					
<b>Environmental Objective: Reduce disturbance to people from high noise levels, from all transport modes and traffic within the existing M4 Corridor.</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway would provide significant increased capacity in the highway network around Newport with the addition of six new lanes. It is predicted there could be up to a significant reduction in traffic on the existing M4; providing capacity to accommodate predicted trends of traffic increase in the long-term.</p> <p>This reduction in traffic on the existing M4 would subsequently reduce noise pollution and contribute to targets in relevant Noise Action Planning Priority Areas (NAPPA). In addition, reclassification of the existing M4 between Magor and Castleton, provision of cycle-friendly and walking-friendly infrastructure and provision of a link to the B4245, potentially incorporating a new park and ride facility at Severn Tunnel Junction, could also result in noise reduction through reduced traffic flows if more trips are made not using a car. However, even cumulatively these benefits are unlikely to significantly lower noise effects experienced by local residents due to their proximity to the existing infrastructure.</p> <p>New noise impacts would arise along the new motorway route, although there would be fewer and more distant receptors and mitigation would be part of project development. The Black Route is the most distant from the residential area of Dyffryn, Newport. It is therefore considered to have the least effect on noise generation when compared with the reasonable alternatives. The Black Route is considered to have a minor benefit overall as traffic is diverted away from residential receptors.</p>	L	LT	1	<p>The noise effects associated with this highway infrastructure option on both the existing M4 and the Black route would need to be assessed in further detail to establish the significance of any change on this indicator, and any impact on the NAPPAs between Magor and Castleton. This would be assessed as part of the EIA process of any future scheme.</p> <p>Junction strategies would need to be determined following project level design. In the context of this strategic assessment it is considered that changes in traffic flows for different locations of junctions would not be sufficient to lead to a significant cumulative effect.</p>
<b>Reasonable Alternative - Red Route and its Complementary Measures</b>	<p>A new dual carriageway would provide significant increased capacity in the highway network around Newport with the addition of four new lanes. It is predicted there could be up to a significant reduction in traffic on the existing M4; providing capacity to accommodate predicted trends of traffic increase in the short to medium term. In the long-term the dual carriageway option is predicted to reach significant levels of congestion</p>	L	LT	0	<p>The noise effects associated with this highway infrastructure option on both the existing M4 and proposed route would need to be assessed in further detail to establish the significance of any change on this indicator, and any impact on the NAPPAs between Magor and</p>

<b>Indicator: Noise and Vibration</b> <b>Environmental Objective: Reduce disturbance to people from high noise levels, from all transport modes and traffic within the existing M4 Corridor.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>sooner than the motorway options.</p> <p>This reduction in traffic on the existing M4 would subsequently reduce noise pollution and contribute to targets in relevant Noise Action Planning Priority Areas (NAPPA). In addition, provision of cycle-friendly and walking-friendly infrastructure and provision of a link to the B4245, potentially incorporating a new park and ride facility at Severn Tunnel Junction, could also result in noise reduction through reduced traffic flows if more trips are made not using a car. However, even cumulatively these benefits are unlikely to significantly lower noise effects experienced by local residents due to their proximity to the existing infrastructure.</p> <p>New noise impacts would arise along the new motorway route, although there would be fewer and more distant receptors and mitigation would be part of project development. The Red Route passes adjacent to the residential area of Dyffryn, Newport. It is therefore considered to have the greatest adverse effect on noise generation when compared with the draft Plan and Purple Route and provides no overall benefit compared to the Do Minimum scenario.</p>				<p>Castleton.</p> <p>Junction strategies would need to be determined following project level design. In the context of this strategic assessment it is considered that changes in traffic flows for different locations of junctions would not be sufficient to lead to a significant cumulative effect.</p>
<p><b>Reasonable Alternative - Purple Route and its Complementary Measures</b></p>	<p>A new motorway would provide significant increased capacity in the highway network around Newport with the addition of six new lanes. It is predicted there could be up to a significant reduction in traffic on the existing M4; providing capacity to accommodate predicted trends of traffic increase in the long-term.</p> <p>This reduction in traffic on the existing M4 would subsequently reduce noise pollution and contribute to targets in relevant Noise Action Planning Priority Areas (NAPPA). In addition, reclassification of the existing M4 between Magor and Castleton, provision of cycle-friendly and walking-friendly infrastructure and provision of a link to the B4245, potentially incorporating a new park and ride facility at Severn Tunnel Junction, could also result in noise reduction through reduced traffic flows if more</p>	L	LT	1	<p>The noise effects associated with this highway infrastructure option on both the existing M4 and proposed route would need to be assessed in further detail to establish the significance of any change on this indicator, and any impact on the NAPPAs between Magor and Castleton.</p> <p>Junction strategies would need to be determined following project level design. In the context of this strategic assessment it is considered that changes in traffic flows for different locations of junctions would not be</p>

<b>Indicator: Noise and Vibration</b> <b>Environmental Objective: Reduce disturbance to people from high noise levels, from all transport modes and traffic within the existing M4 Corridor.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>trips are made not using a car. However, even cumulatively these benefits are unlikely to significantly lower noise effects experienced by local residents due to their proximity to the existing infrastructure.</p> <p>New noise impacts would arise along the new motorway route, although there would be fewer and more distant receptors and mitigation would be part of project development. The Purple Route is located further from the residential area of Dyffryn, Newport. It is therefore considered to have a lesser effect on noise generation than the Red Route. The Purple Route is considered to have a minor benefit overall as traffic is diverted further from residential receptors than the Do Minimum scenario.</p>				sufficient to lead to a significant cumulative effect.
<b>Do Minimum Scenario</b>	<p>By 2031, traffic using the motorway around Newport is forecast to increase. Noise effects will continue to increase under current predictions with detrimental impacts on local residents and associated NAPPAs.</p> <p>In the longer term, cumulative adverse effects on adjacent road networks would raise congestion levels and increase noise effects into the wider Newport area.</p> <p>As traffic levels continue to increase, maintenance requirements will increase in duration and frequency, particularly in combination with predicted climate change effects. Additional noise effects would be associated with such maintenance works.</p>	L	LT	- 1	Noise nuisance would continue to increase under the Do Minimum scenario as traffic levels and congestion follow existing upward trends.

Table 16 Biodiversity, Fauna and Flora Assessment

<b>Indicator: Biodiversity, Fauna and Flora</b> <b>Environmental Objective: Ensure that biodiversity is protected, valued and enhanced.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport would cross the River Usk SAC and SSSI, which is an important wildlife corridor, an essential migration route and key breeding area for many nationally and internationally important species.</p> <p>The effects of constructing bridge piers in the River Usk SAC and SSSI, and any effects on the Severn Estuary European Marine Site, have been investigated through the Consideration of the Options for the M4 Corridor around Newport with regard to the Requirements of the Habitats Regulations. At this strategic stage the report concludes no significant adverse effect on the integrity of European Sites.</p> <p>The new road would also cross the Gwent Levels SSSIs: St Brides SSSI, Nash and Goldcliff SSSI, Whitson SSSI and the Redwick and Llandeenny SSSI (floodplain grazing marsh with a range of plants and invertebrates associated with the reens and ditches of the drainage system). To avoid severance of SSSI, where it cannot be avoided, the route has been located on SSSI land that is currently developed or areas of SSSI that are allocated for development in land use plans; namely, the Llanwern Waste Disposal site (parts of which are notified SSSI) and the Employment Land Allocation from the Newport Unitary Development Plan (UDP) respectively.</p> <p>The reen network that supports the notified plants and invertebrates is spread across the Gwent Levels. Despite the large scale of a new highway only a negligible length of reen would be affected when compared to the length of reens in the network. New reens would be constructed to offset losses from motorway development and any losses associated with mitigation measures; new reens would be constructed to Caldicot and Wentlooge Levels Internal Drainage Board (CWLIDB) standards and size. The length of reens to be offset would be determined through Environmental Impact Assessment (EIA) at project level but would aim to</p>	R	LT	-1	<p>Any adverse effects should be avoided where feasible and reduced by mitigating potential effects through sensitive design and construction elsewhere. If necessary, measures should be adopted to offset for residual adverse effects which cannot be avoided or further reduced. Compensation would be provided, if required, through the Habitats Regulations process.</p> <p>It should be noted that several developments are present within the SSSI; e.g. the Gwent Europark and the Llanwern Waste Disposal site.</p>

<b>Indicator: Biodiversity, Fauna and Flora</b> <b>Environmental Objective: Ensure that biodiversity is protected, valued and enhanced.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>enhance the baseline situation.</p> <p>Ecological functionality of aquatic habitats would be maintained by custom water treatment areas integrated along the new route. These would consist of Water Treatment Areas, or attenuation ponds, that would store, dilute and treat runoff from the highway before entering the local watercourse network. Treatment would be undertaken through a reedbed filtration system that would provide additional biodiversity enhancement across the SSSIs. The design of Water Treatment Areas would need to be considered as part of the detailed design of any future scheme.</p> <p>Wider-scale measures for the Gwent Levels would be considered involving active management to benefit notified interests and wider biodiversity thus providing enhancements to a nationally significant resource with great potential for improvement.</p> <p>Effects on wider habitats and species would be considered in further detail through EIA at the project level. Measures would be introduced into the design to facilitate animal movements, together with the provision of new areas of nature conservation interest to mitigate any loss. Measures to maintain connectivity, avoid fragmentation and avoid and reduce light pollution would be integrated at project level following determination of a more detailed baseline; particularly with respect to bats.</p> <p>Any scheme would be required to integrate necessary measures to avoid, reduce and offset in addition to delivering enhancements. The net benefit for biodiversity is considered to be positive in the long-term. However, considering the importance of the sites and features that may be affected the significance of effect has been determined as minor negative to account for any short to medium term effects.</p>				

<b>Indicator: Biodiversity, Fauna and Flora</b> <b>Environmental Objective: Ensure that biodiversity is protected, valued and enhanced.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
<b>Reasonable Alternative - Red Route and its Complementary Measures</b>	<p>A new dual carriageway to the south of Newport would cross the River Usk SAC and SSSI, which is an important wildlife corridor, an essential migration route and key breeding area for many nationally and internationally important species.</p> <p>The effects of constructing bridge piers in the River Usk SAC and SSSI, and any effects on the Severn Estuary European Marine Site, have been investigated through the Consideration of the Options for the M4 Corridor around Newport with regard to the Requirements of the Habitats Regulations. At this strategic stage the report concludes no significant adverse effect on the integrity of European Sites.</p> <p>The new road would also cross the Gwent Levels SSSIs: St Brides SSSI, Nash and Goldcliff SSSI, Whitson SSSI and the Redwick and Llandeenny SSSI (floodplain grazing marsh with a range of plants and invertebrates associated with the reens and ditches of the drainage system). To avoid severance of SSSI, where it cannot be avoided, the route has been located on SSSI land that is currently developed or areas of SSSI that are allocated for development in land use plans; namely, the Llanwern Waste Disposal site (parts of which are notified SSSI) and the Employment Land Allocation from the Newport Unitary Development Plan (UDP) respectively.</p> <p>The reen network that supports the notified plants and invertebrates is spread across the Gwent Levels. Despite the large scale of a new highway only a negligible length of reen would be affected when compared to the length of reens in the network. New reens would be constructed to offset losses from dual carriageway development and any losses associated with mitigation measures; new reens would be constructed to Caldicot and Wentlooge Levels Internal Drainage Board (CWLIDB) standards and size. The length of reens to be offset would be determined through Environmental Impact Assessment (EIA) at project level but would aim to</p>	R	LT	-1	<p>Any adverse effects should be avoided where feasible and reduced by mitigating potential effects through sensitive design and construction elsewhere. If necessary, measures should be adopted to offset for residual adverse effects which cannot be avoided or further reduced. Compensation would be provided, if required, through the Habitats Regulations process.</p> <p>It should be noted that several developments are present within the SSSI; e.g. the Gwent Europark and the Llanwern Waste Disposal site.</p>

<b>Indicator: Biodiversity, Fauna and Flora</b> <b>Environmental Objective: Ensure that biodiversity is protected, valued and enhanced.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>enhance the baseline situation.</p> <p>Ecological functionality of aquatic habitats would be maintained by custom water treatment areas integrated along the new route. These would consist of Water Treatment Areas, or attenuation ponds, that would store, dilute and treat runoff from the highway before entering the local watercourse network. Treatment would be undertaken through a reedbed filtration system that would provide additional biodiversity enhancement across the SSSIs. The design of Water Treatment Areas would need to be considered as part of the detailed design of any future scheme.</p> <p>Wider-scale measures for the Gwent Levels would be considered involving active management to benefit notified interests and wider biodiversity thus providing enhancements to a nationally significant resource with great potential for improvement.</p> <p>Effects on wider habitats and species would be considered in further detail through EIA at the project level. Measures would be introduced into the design to facilitate animal movements, together with the provision of new areas of nature conservation interest to mitigate any loss. Measures to maintain connectivity, avoid fragmentation and avoid and reduce light pollution would be integrated at project level following determination of a more detailed baseline; particularly with respect to bats.</p> <p>Any scheme would be required to integrate necessary measures to avoid, reduce and offset in addition to delivering enhancements. The net benefit for biodiversity is considered to be positive in the long-term. However, considering the importance of the sites and features that may be affected the significance of effect has been determined as minor negative to account for any short to medium term effects.</p>				



<b>Indicator: Biodiversity, Fauna and Flora</b> <b>Environmental Objective: Ensure that biodiversity is protected, valued and enhanced.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
<b>Reasonable Alternative - Purple Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport would cross the River Usk SAC and SSSI, which is an important wildlife corridor, an essential migration route and key breeding area for many nationally and internationally important species.</p> <p>The effects of constructing bridge piers in the River Usk SAC and SSSI, and any effects on the Severn Estuary European Marine Site, have been investigated through the Consideration of the Options for the M4 Corridor around Newport with regard to the Requirements of the Habitats Regulations. At this strategic stage the report concludes no significant adverse effect on the integrity of European Sites.</p> <p>The new road would also cross the Gwent Levels SSSIs: St Brides SSSI, Nash and Goldcliff SSSI, Whitson SSSI and the Redwick and Llandeenny SSSI (floodplain grazing marsh with a range of plants and invertebrates associated with the reens and ditches of the drainage system). To avoid severance of SSSI, where it cannot be avoided, the route has been located on SSSI land that is currently developed or areas of SSSI that are allocated for development in land use plans; namely, the Llanwern Waste Disposal site (parts of which are notified SSSI) and the Employment Land Allocation from the Newport Unitary Development Plan (UDP) respectively.</p> <p>The reen network that supports the notified plants and invertebrates is spread across the Gwent Levels. Despite the large scale of a new highway only a negligible length of reen would be affected when compared to the length of reens in the network. New reens would be constructed to offset losses from motorway development and any losses associated with mitigation measures; new reens would be constructed to Caldicot and Wentlooge Levels Internal Drainage Board (CWLIDB) standards and size. The length of reens to be offset would be determined through Environmental Impact Assessment (EIA) at project level but would aim to</p>	R	LT	-1	<p>Any adverse effects should be avoided where feasible and reduced by mitigating potential effects through sensitive design and construction elsewhere. If necessary, measures should be adopted to offset for residual adverse effects which cannot be avoided or further reduced. Compensation would be provided, if required, through the Habitats Regulations process.</p> <p>It should be noted that several developments are present within the SSSI; e.g. the Gwent Europark and the Llanwern Waste Disposal site.</p>

<b>Indicator: Biodiversity, Fauna and Flora</b> <b>Environmental Objective: Ensure that biodiversity is protected, valued and enhanced.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>enhance the baseline situation.</p> <p>Ecological functionality of aquatic habitats would be maintained by custom water treatment areas integrated along the new route. These would consist of Water Treatment Areas, or attenuation ponds, that would store, dilute and treat runoff from the highway before entering the local watercourse network. Treatment would be undertaken through a reedbed filtration system that would provide additional biodiversity enhancement across the SSSIs. The design of Water Treatment Areas would need to be considered as part of the detailed design of any future scheme.</p> <p>Wider-scale measures for the Gwent Levels would be considered involving active management to benefit notified interests and wider biodiversity thus providing enhancements to a nationally significant resource with great potential for improvement.</p> <p>Effects on wider habitats and species would be considered in further detail through EIA at the project level. Measures would be introduced into the design to facilitate animal movements, together with the provision of new areas of nature conservation interest to mitigate any loss. Measures to maintain connectivity, avoid fragmentation and avoid and reduce light pollution would be integrated at project level following determination of a more detailed baseline; particularly with respect to bats.</p> <p>Any scheme would be required to integrate necessary measures to avoid, reduce and offset in addition to delivering enhancements. The net benefit for biodiversity is considered to be positive in the long-term. However, considering the importance of the sites and features that may be affected the significance of effect has been determined as minor negative to account for any short to medium term effects.</p>				

<b>Indicator: Biodiversity, Fauna and Flora</b> <b>Environmental Objective: Ensure that biodiversity is protected, valued and enhanced.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
Do Minimum Scenario	<p>Under the Do Minimum scenario no additional land take is expected other than for any climate change mitigation as described in Table 14. With additional traffic capacity forecast and increased severity of weather events through climate change, the risk of pollution events associated with run off increases with time. This may be especially prevalent where the M4 currently crosses the River Usk SAC.</p> <p>By 2031, traffic using the motorway around Newport is forecast to increase; overcapacity is predicted to exacerbate greenhouse gas emissions with implications for biodiversity. Many reports, including the Welsh Government <i>Climate Change Strategy for Wales</i> and the Environment Agency <i>State of the Environment Report</i>, state that climate change will have severe consequences for biodiversity.</p> <p>Increased congestion leads to increased vehicle emissions and associated increases in the rate of acidification. Several habitats experience detrimental effects from acidification, most notably waterbodies and peatlands. This not only affects the related species, but causes peatlands to generate further greenhouse gas emissions. The Do Minimum scenario would contribute to the continued build-up of sulphur and nitrogen compounds, exacerbating a situation that is already destabilising several key habitats. In the longer term, it is anticipated that technological improvements would reduce such emissions and could reduce the effects on habitats and their associated species.</p> <p>Acidification following deposition of pollutants is a national issue. The significance of the Do Minimum scenario in contributing to the wider issue is not considered here as this is beyond the scope of the SEA. A neutral effect is therefore considered appropriate.</p> <p>The effect of air pollution and deposition with respect to prevailing conditions is considered for European sites in the Consideration of the Options for the M4 Corridor around Newport with regard to the</p>	L	LT	0	

<b>Indicator: Biodiversity, Fauna and Flora</b> <b>Environmental Objective: Ensure that biodiversity is protected, valued and enhanced.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	Requirements of the Habitats Regulations report.				

Table 17 Population Assessment

<b>Indicator: Population</b> <b>Environmental Objective: Improved access to all services and facilities and reduce severance.</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway would improve journey times and journey time reliability to benefit regional access to healthcare, training and education facilities and services. This will be particularly the case for longer distance trips to healthcare, or east-west journeys across South East Wales. The reduction in traffic volumes and congestion along the existing M4 around Newport would also help to improve local journeys in communities around Newport for shorter local trips to key services and facilities. However this may primarily benefit those with access to a private vehicle and therefore limit the beneficial effect.</p> <p>The complementary measures that support their respective highway options would bring a variety of benefits, with improvements to walking and cycling infrastructure, offering improved access to local services, facilities and employment, as well as improved access to public transport facilities for those reliant on public transport for local and regional travel.</p> <p>Whilst east-west transport connections would be enhanced, this measure may potentially create severance between communities located to the north and south of the new road, although there are few properties south of the Black Route. However, reduced congestion and re-classification of the existing motorway to trunk road might reduce issues of severance for communities located around the route of the existing M4 around Newport.</p> <p>The construction of the Black Route and implementation of its complementary measures is unlikely to reduce access to any property, facilities or services during construction works. Any required route diversions would aim to maintain effective access and connections.</p> <p>The implementation of the draft Plan would support regional economic development, through enhanced accessibility to employment centres and improving the movement of people and freight. This would lead to improved economic outcomes which might be considered to contribute to</p>	<p>R</p>	<p>LT</p>	<p>1</p>	<p>The draft Plan would aim to meet the needs of all groups of people. A Health Impact Assessment and Equality Impact Assessment and is being undertaken, which includes an appraisal of health, equality, diversity and human rights impacts of the Black Route and its complementary measures on the M4 Corridor around Newport.</p>

<b>Indicator: Population</b> <b>Environmental Objective: Improved access to all services and facilities and reduce severance.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>economic activity and improve social inclusion.</p> <p>Overall the effect on population would be positive due to benefits to accessibility and severance.</p>				
<b>Reasonable Alternative - Red Route and its Complementary Measures</b>	<p>A new dual carriageway would improve journey times and journey time reliability to benefit regional access to healthcare, training and education facilities and services. This will be particularly the case for longer distance trips to healthcare, or east-west journeys across South East Wales. The reduction in traffic volumes and congestion along the existing M4 around Newport would also help to improve local journeys in communities around Newport for shorter local trips to key services and facilities. However this may primarily benefit those with access to a private vehicle and therefore limit the beneficial effect.</p> <p>The complementary measures that support their respective highway options would bring a variety of benefits, with improvements to walking and cycling infrastructure, offering improved access to local services, facilities and employment, as well as improved access to public transport facilities for those reliant on public transport for local and regional travel.</p> <p>Whilst east-west transport connections would be enhanced, this measure may potentially create severance between communities located to the north and south of the new road, although there are few properties south of the Red Route. However, reduced congestion on the existing motorway might reduce issues of severance for communities located around the route of the existing M4 around Newport.</p> <p>The construction of the Red Route and implementation of its complementary measures is unlikely to reduce access to any property, facilities or services during construction works. Any required route diversions would aim to maintain effective access and connections.</p> <p>The implementation of the Red Route would support regional economic</p>	R	LT	1	<p>This reasonable alternative to the draft Plan would aim to meet the needs of all groups of people. A Health Impact Assessment and Equality Impact Assessment and is being undertaken, which includes an appraisal of health, equality, diversity and human rights impacts of the Red Route and its complementary measures on the M4 Corridor around Newport.</p>

<b>Indicator: Population</b> <b>Environmental Objective: Improved access to all services and facilities and reduce severance.</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
	<p>development, through enhanced accessibility to employment centres and improving the movement of people and freight. This would lead to improved economic outcomes which might be considered to contribute to economic activity and improve social inclusion.</p> <p>Overall the effect on population would be positive due to benefits to accessibility and severance.</p>				
<b>Reasonable Alternative - Purple Route and its Complementary Measures</b>	<p>A new motorway would improve journey times and journey time reliability to benefit regional access to healthcare, training and education facilities and services. This will be particularly the case for longer distance trips to healthcare, or east-west journeys across South East Wales. The reduction in traffic volumes and congestion along the existing M4 around Newport would also help to improve local journeys in communities around Newport for shorter local trips to key services and facilities. However this may primarily benefit those with access to a private vehicle and therefore limit the beneficial effect.</p> <p>The complementary measures that support their respective highway options would bring a variety of benefits, with improvements to walking and cycling infrastructure, offering improved access to local services, facilities and employment, as well as improved access to public transport facilities for those reliant on public transport for local and regional travel. Whilst east-west transport connections would be enhanced, this measure may potentially create severance between communities located to the north and south of the new road, although there are few properties south of the Purple Route. However, reduced congestion and re-classification of the existing motorway to trunk road might reduce issues of severance for communities located around the route of the existing M4 around Newport.</p> <p>The construction of the Purple Route and implementation of its complementary measures is unlikely to reduce access to any property, facilities or services during construction works. Any required route</p>	<p>R</p>	<p>LT</p>	<p>1</p>	<p>This reasonable alternative to the draft Plan would aim to meet the needs of all groups of people. A Health Impact Assessment and Equality Impact Assessment and is being undertaken, which includes an appraisal of health, equality, diversity and human rights impacts of the Purple Route and its complementary measures on the M4 Corridor around Newport.</p>

<b>Indicator: Population</b> <b>Environmental Objective: Improved access to all services and facilities and reduce severance.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>diversions would aim to maintain effective access and connections.</p> <p>The implementation of the Purple Route would support regional economic development, through enhanced accessibility to employment centres and improving the movement of people and freight. This would lead to improved economic outcomes which might be considered to contribute to economic activity and improve social inclusion.</p> <p>Overall the effect on population would be positive due to benefits to accessibility and severance.</p>				
<b>Do Minimum Scenario</b>	<p>During peak periods sections of the existing M4 experience traffic flows in excess of 80% of capacity. It is generally accepted that once hourly traffic flows reach about 80% some operational problems can be expected. Once flows reach above 90% traffic can expect severe operational problems over longer periods. This situation will be exacerbated by the forecasted increase in traffic using the motorway around Newport.</p> <p>The Do Minimum scenario would lead to continuing traffic congestion on the existing motorway which would impact on journey time reliability. This would adversely impact on access to services, facilities and employment opportunities for all those with access to a car, and who rely on public transport due to continued problems associated with motorway traffic diverting onto local roads to avoid peak congestion. The continuing problems would further hamper economic growth and prosperity in the region, restricting the movement of freight and people, particularly at peak periods.</p> <p>Access to services and facilities will become increasingly limited. The effects of congestion would be likely to impact on access to nearby transport networks. Any resultant congestion would increase severance of communities separated by increased traffic congestion on the motorway and local roads.</p>	R	LT	-1	



Table 18 Human Health Assessment

<b>Indicator: Human Health</b> <b>Environmental Objective: Protect and promote everyone’s physical and mental wellbeing and safety.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway would improve journey times and journey time reliability to benefit regional access to healthcare, training and education facilities and services. This will be particularly the case for longer distance trips to healthcare, or east-west journeys across South East Wales. The reduction in traffic volumes and congestion along the existing M4 around Newport would also help to improve local journeys in communities around Newport for shorter local trips to key services and facilities. However this may primarily benefit those with access to a private vehicle and therefore limit the beneficial effect.</p> <p>Complementary measures could bring improved access to facilities for those who rely on other transport modes; e.g. provision of additional cycling and walking infrastructure would help encourage healthy lifestyle choices, particularly for local trips, as well as supporting social interaction. Additionally, new linkages to public transport interchanges would also be likely to encourage local trips and as such benefit health and well-being.</p> <p>The Black Route would improve safety through diversion of traffic away from centres of population and by reducing traffic congestion and associated accidents and incidents. On completion, it is forecast that the total number of accidents on major roads in Newport would fall.</p> <p>The Black Route would help to reduce noise and air pollution along the route of the existing M4, where there are four AQMAs and higher than average noise levels. The reduction in exhaust pollutants through reduced congestion would decrease nitrogen dioxide levels which are associated with adverse effects on human health, thus there would be a positive effect on public health. However, noise and air quality would be expected to deteriorate in the area around the new road – although the surrounding area is less populated than the urban areas of Newport and thus the impact on human health in that area would be less.</p>	R	LT	1	<p>A Health Impact Assessment is being undertaken, which includes an appraisal of health impacts of the Black Route and its complementary measures on the M4 Corridor around Newport.</p>

<b>Indicator: Human Health</b> <b>Environmental Objective: Protect and promote everyone’s physical and mental wellbeing and safety.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>The Black Route would cross the River Usk SAC, SSSI and the Gwent Levels SSSI and thus care would be required during construction. The route potentially traverses former and current industrial areas, encountering contaminated soils and waters, which may pose potential risks to health and the environment. Mitigation/enhancement measures could help ensure that adverse impacts are compensated for.</p> <p>Ill health is often associated with economic deprivation. The construction of the Black Route and its complementary measures would aim to support regional economic development, through enhanced accessibility to employment centres and improvements in the movement of people and freight. This would lead to improved economic outcomes which might be considered to contribute to health and wellbeing.</p> <p>Although there is no direct link between journey time saving and health, a new motorway would improve the driver experience and reduce driver stress.</p> <p>The construction of the Black Route and implementation of its complementary measures is unlikely to reduce access to any property, facilities or services during works. Any required route diversions would aim to maintain effective access and connections.</p> <p>The impacts of air, noise and dust pollution during construction are likely to affect those who live in close proximity to the Black Route. Modern construction methods would aim to limit any impacts during this period.</p>				
Reasonable Alternative - Red Route and its Complementary Measures	<p>A new dual carriageway would improve journey times and journey time reliability to benefit access to healthcare, training and education facilities and services. However this may primarily benefit those with access to a private vehicle. Complementary measures could bring improved access to facilities for those who rely on other transport modes. Provision of additional cycling and walking infrastructure would help encourage healthy lifestyle choices, particularly for local trips, as well as supporting</p>	R	LT	1	A Health Impact Assessment is being undertaken, which includes an appraisal of health impacts of the Red Route and its complementary measures on the M4 Corridor around Newport.

<b>Indicator: Human Health</b> <b>Environmental Objective: Protect and promote everyone’s physical and mental wellbeing and safety.</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
	<p>social interaction and assisting in scene setting and place making. Additionally, new linkages to public transport interchanges would also be likely to encourage local trips and as such benefit health and well-being. The Red Route would improve safety through diversion of traffic away from centres of population and by reducing traffic congestion and associated impacts on accidents and incidents. On completion, it is forecast that the total number of accidents on major roads in Newport would fall.</p> <p>The Red Route would help to reduce noise and air pollution along the route of the existing M4, where there are four AQMAs and higher than average noise levels. The reduction in exhaust pollutants through reduced congestion would decrease nitrogen dioxide levels which are associated with adverse effects on human health, thus there would be a positive effect on public health. However, noise and air quality would be expected to deteriorate in the area around the new road – although the surrounding area is less populated than the urban areas of Newport and thus the impact on human health would be less.</p> <p>The Red Route potentially traverses former and current industrial areas, encountering contaminated soils and waters, which may pose potential risks to health and the environment. Mitigation/enhancement measures could help ensure that adverse impacts are compensated for.</p> <p>Ill health is often associated with economic deprivation. The construction of the Red Route and its complementary measures would aim to support regional economic development, through enhanced accessibility to employment centres and improvements in the movement of people and freight. This would lead to improved economic outcomes which might be considered to contribute to health and wellbeing.</p> <p>Although there is no direct link between journey time saving and health, a new motorway would improve the driver experience and reduce driver</p>				

<b>Indicator: Human Health</b> <b>Environmental Objective: Protect and promote everyone’s physical and mental wellbeing and safety.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>stress.</p> <p>The construction of the Red Route and implementation of its complementary measures is unlikely to reduce access to any property, facilities or services during or post construction works. Any required route diversions would aim to maintain effective access and connections. The impacts of air, noise and dust pollution during construction are likely to affect those who live in close proximity to the Red Route. Modern construction methods would aim to limit any impacts during this period.</p>				
<b>Reasonable Alternative - Purple Route and its Complementary Measures</b>	<p>A new motorway would improve journey times and journey time reliability to benefit access to healthcare, training and education facilities and services. However this may primarily benefit those with access to a private vehicle. Complementary measures could bring improved access to facilities for those who rely on other transport modes. Provision of additional cycling and walking infrastructure would help encourage healthy lifestyle choices, particularly for local trips, as well as supporting social interaction and assisting in scene setting and place making. Additionally, new linkages to public transport interchanges would also be likely to encourage local trips and as such benefit health and well-being.</p> <p>The Purple Route would improve safety by reducing traffic congestion and associated impacts on accidents and incidents. On completion, it is forecast that the total number of accidents on major roads in Newport would fall.</p> <p>The Purple Route would help to reduce noise and air pollution along the route of the existing M4, where there are four AQMAs and higher than average noise levels. The reduction in exhaust pollutants through reduced congestion would decrease nitrogen dioxide levels which are associated with adverse effects on human health, thus there would be a positive effect on public health. However, noise and air quality would be expected to deteriorate in the area around the new road – although the surrounding</p>	R	LT	1	<p>A Health Impact Assessment is being undertaken, which includes an appraisal of health impacts of the Purple Route and its complementary measures on the M4 Corridor around Newport.</p>

<b>Indicator: Human Health</b> <b>Environmental Objective: Protect and promote everyone’s physical and mental wellbeing and safety.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>area is less populated than the urban areas of Newport and thus the impact on human health would be less.</p> <p>The Purple Route potentially traverses former and current industrial areas, encountering contaminated soils and waters, which may pose potential risks to health and the environment. Mitigation/enhancement measures could help ensure that adverse impacts are compensated for.</p> <p>Ill health is often associated with economic deprivation. The construction of the Purple Route and its complementary measures would aim to support regional economic development, through enhanced accessibility to employment centres and improvements in the movement of people and freight. This would lead to improved economic outcomes which might be considered to contribute to health and wellbeing.</p> <p>Although there is no direct link between journey time saving and health, a new motorway would improve the driver experience and reduce driver stress.</p> <p>The construction of the Purple Route and implementation of its complementary measures is unlikely to reduce access to any property, facilities or services during or post construction works. Any required route diversions would aim to maintain effective access and connections. The impacts of air, noise and dust pollution during construction are likely to affect those who live in close proximity to the Purple Route. Modern construction methods would aim to limit any impacts during this period.</p>				
<b>Do Minimum Scenario</b>	<p>During peak periods sections of the existing M4 experience traffic flows in excess of 80% of capacity. It is generally accepted that once hourly traffic flows reach about 80% some operational problems can be expected. Once flows reach above 90% traffic can expect severe operational problems over longer periods. This situation will be exacerbated by the forecasted increase in traffic using the motorway around Newport.</p> <p>Access to services and facilities will become increasingly limited. The</p>	R	LT	-1	

<b>Indicator: Human Health</b> <b>Environmental Objective: Protect and promote everyone’s physical and mental wellbeing and safety.</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
	<p>effects of congestion would be likely to impact on access to nearby transport networks. Any resultant congestion would impact access to healthcare, training and education facilities and services.</p> <p>Traffic would not be diverted away from centres of population under the Do Minimum scenario and as congestion increases the risk of incidents and accidents becomes greater.</p> <p>Increased traffic and congestion will result in poor vehicle efficiency and increased emissions leading to negative effects on air quality and thus human health. In the longer term air quality will generally improve with technological improvements to vehicle engines and exhausts resulting in improvements to air quality but this is unlikely to be offset by the predicted increase in congestion. A Do Minimum scenario would be detrimental to the environment as it would not, for example, achieve any improvement in air quality or noise, meaning that the Welsh Government and Newport City Council would not be able to fulfil their statutory duties for managing local air quality under Part IV of the Environment Act 1995, to meet the EU limit values for pollutants for the four Air Quality Management Areas which were declared as a result of emissions from traffic on the M4 motorway.</p> <p>Noise effects will continue to increase under current predictions with detrimental impacts on local residents. As traffic levels continue to increase maintenance requirements will increase in duration and frequency, particularly in combination with predicted climate change effects; additional noise effects would be associated with such works further affecting human health.</p>				

Table 19 Soil and Geology Assessment

<b>Indicator: Soil and Geology</b> <b>Environmental Objective: Reduce transport related contamination and safeguard soil function, quality and quantity.</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport would require land take running through three distinctive topographical, geological and hydrogeological environments, including potentially contaminated sites within the central area of the scheme. Prior to mitigation this would contribute to adverse impacts on soil including erosion, contamination, degradation, compaction, sealing and loss.</p> <p>By counteracting congestion, and associated emission increases, the effects of localised soil acidification would be reduced under the draft Plan, in the short to medium term. In the longer term, further increased traffic levels may raise harmful emissions although initial studies suggest this would be offset by improved operating conditions and technological improvements.</p> <p>Route development enabled avoidance of the Dock's Way historic landfill site and active waste disposal site thus avoiding direct contamination effects. To avoid severance of SSSI, where it cannot be avoided, the route has been located on SSSI land that is currently developed or areas of SSSI that are allocated for development in land use plans. Consequently, the route passes through the historic and active areas of the authorised Llanwern Waste Disposal site south of the Queensway (parts of which are notified SSSI).</p> <p>Potential historic contamination may be encountered through Newport's industrial areas, but insufficient information is available at this strategic level and would be determined following detailed assessment at the project stage. Should remediation form part of any project level development, this would represent a significant benefit to the baseline situation with a more refined contamination baseline, potential for net clean-up and enhanced monitoring.</p> <p>Avoidance of the Dock's Way Landfill site results in the draft Plan</p>	<p>L</p>	<p>LT</p>	<p>-1</p>	<p>Any adverse effects should be reduced by mitigating potential effects through sensitive design and construction. If possible, measures should be taken to try to offset residual adverse effects which cannot be avoided or further reduced.</p> <p>A preliminary risk assessment to determine effects on contaminated sites would be undertaken at project level.</p>

<b>Indicator: Soil and Geology</b> <b>Environmental Objective: Reduce transport related contamination and safeguard soil function, quality and quantity.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	performing more favourably than the reasonable alternatives. However, on balance, a minor negative effect remains likely.				
<b>Reasonable Alternative - Red Route and its Complementary Measures</b>	<p>A new dual carriageway to the south of Newport would require land take running through three distinctive topographical, geological and hydrogeological environments, including potentially contaminated sites within the central area of the scheme. Prior to mitigation this would contribute to adverse impacts on soil including erosion, contamination, degradation, compaction, sealing and loss.</p> <p>By counteracting congestion, and associated emission increases, the effects of soil acidification would be reduced with the Red Route in the short to medium term. In the longer term further increased traffic levels may raise harmful emissions although initial studies suggest this would be offset by improved operating conditions and technological improvements.</p> <p>The Red Route crosses the north of the Dock's Way historic landfill site containing residual municipal waste. The Dock's Way active waste disposal site is avoided. The historic landfill area was closed and capped in 2006, but was not lined. NRW holds pollution containment performance concerns regarding this site. To avoid severance of SSSI, where it cannot be avoided, the route has been located on SSSI land that is currently developed or areas of SSSI that are allocated for development in land use plans. Consequently, the route passes through the historic and active areas of the authorised Llanwern Waste Disposal site south of the Queensway (parts of which are notified SSSI).</p> <p>Potential historic contamination may be encountered through Newport's industrial areas, but insufficient information is available at this strategic level and would be determined following detailed assessment at the project stage. Should remediation form part of any project level development, this</p>	L	LT	-1	<p>Any adverse effects should be reduced by mitigating potential effects through sensitive design and construction. If possible, measures should be taken to try to offset residual adverse effects which cannot be avoided or further reduced.</p> <p>A preliminary risk assessment to determine effects on contaminated sites would be undertaken at project level.</p>



<b>Indicator: Soil and Geology</b> <b>Environmental Objective: Reduce transport related contamination and safeguard soil function, quality and quantity.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>would represent a significant benefit to the baseline situation with a more refined contamination baseline, potential for net clean-up and enhanced monitoring.</p> <p>As remediation is likely, but extensive, at this strategic stage the effect has been assessed as minor negative.</p>				
<b>Reasonable Alternative - Purple Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport would require land take running through three distinctive topographical, geological and hydrogeological environments, including potentially contaminated sites within the central area of the scheme. Prior to mitigation this would contribute to adverse impacts on soil including erosion, contamination, degradation, compaction, sealing and loss.</p> <p>By counteracting congestion, and associated emission increases, the effects of localised soil acidification would be reduced with the Purple Route, in the short to medium term. In the longer term, further increased traffic levels may raise harmful emissions although initial studies suggest this would be offset by improved operating conditions and technological improvements.</p> <p>The Purple route crosses the north of the Dock's Way historic landfill site containing residual municipal waste. The Dock's Way active waste disposal site is avoided. The historic landfill area was closed and capped in 2006, but was not lined. NRW hold pollution containment performance concerns regarding this site. To avoid severance of SSSI, where it cannot be avoided, the route has been located on SSSI land that is currently developed or areas of SSSI that are allocated for development in land use plans. Consequently, the route passes through the historic and active areas of the authorised Llanwern Waste Disposal site south of the Queensway (parts of which are notified SSSI).</p> <p>Potential historic contamination may be encountered through Newport's industrial areas, but insufficient information is available at this strategic</p>	L	LT	-1	<p>Any adverse effects should be reduced by mitigating potential effects through sensitive design and construction. If possible, measures should be taken to try to offset residual adverse effects which cannot be avoided or further reduced.</p> <p>A preliminary risk assessment to determine effects on contaminated sites would be undertaken at project level.</p>

<b>Indicator: Soil and Geology</b> <b>Environmental Objective: Reduce transport related contamination and safeguard soil function, quality and quantity.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>level and would be determined following detailed assessment at the project stage. Should remediation form part of any project level development, this would represent a significant benefit to the baseline situation with a more refined contamination baseline, potential for net clean-up and enhanced monitoring.</p> <p>As remediation is likely, but extensive, at this strategic stage the effect has been assessed as minor negative.</p>				
<b>Do Minimum Scenario</b>	<p>Under the Do Minimum scenario, land take would not be required and any additional commissioned work for road maintenance is likely to be within the existing motorway boundary.</p> <p>During peak periods sections of the existing M4 experience traffic flows in excess of 80% of capacity. It is generally accepted that once hourly traffic flows reach about 80% some operational problems can be expected. Once flows reach above 90% traffic can expect severe operational problems over longer periods<sup>27</sup>. This situation will be exacerbated by the forecast increase in traffic using the motorway around Newport.</p> <p>Increased congestion leads to increased vehicle emissions and associated increases in the rate of acidification. The Do Minimum scenario would contribute to the continued build-up of sulphur and nitrogen compounds, exacerbating a situation that is already destabilising soils across Wales. In the longer term, it is anticipated that technological improvements would reduce such emissions and therefore reduce the effects on soils.</p>	L	LT	0	

<sup>27</sup> M4 CEM Consultation Document (2012), available at: [www.m4cem.com](http://www.m4cem.com)

Table 20 Water Assessment

<b>Indicator: Water</b> <b>Environmental Objective: Minimise transport related effects on surface and groundwater quality, flood plains and areas of flood risk.</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport could lead to negative effects on water quality and aquatic habitats due to highway runoff and pollution from accidental spillages via drainage systems associated with the highway. Water quality is vital to the species and habitats of the River Usk SAC and SSSI and relevant Gwent Levels SSSIs.</p> <p>Climate change is predicted to incur hot dry summers, wet warm winters and more intense rainfall events; these could have implications for flood risk due to increased runoff through the introduction of impermeable infrastructure.</p> <p>Increased rainfall and subsequent runoff would be mitigated by custom water treatment areas integrated along the new route. These would consist of Water Treatment Areas, or attenuation ponds, which would act to store and dilute excess runoff from drainage systems. Water Treatment Areas would incorporate reed bed filtration systems to provide water treatment prior to release to local watercourses. The quality of water passing from the reedbed systems would be expected to meet Water Framework Directive requirements; this would be assessed in greater detail during the EIA process at project level. Water treatment areas would be designed with concomitant benefits for biodiversity and consideration of the landscape setting. The design of water treatment areas would need to be considered as part of the detailed design of any future scheme.</p> <p>Surface water runoff would be controlled as near to source as possible using sustainable drainage systems (e.g. SUDS). This would involve a range of techniques (e.g. soakaways, infiltration trenches, grassed swales, etc.) and integrate with the water treatment areas. Such measures are considered at this strategic stage to maintain surface and groundwater quality.</p> <p>New reens are proposed to offset losses from motorway development and</p>	<p>R</p>	<p>LT</p>	<p>-1</p>	<p>Any adverse effects should be avoided where feasible and reduced by mitigating potential effects through sensitive design and construction elsewhere. If necessary, measures should be adopted to offset for residual adverse effects which cannot be avoided or further reduced.</p> <p>Measures would be integrated, where required, to ensure compliance with the Water Framework Directive and inclusive of flood mitigation works to ensure existing flood risk is not exacerbated.</p>

<b>Indicator: Water</b> <b>Environmental Objective: Minimise transport related effects on surface and groundwater quality, flood plains and areas of flood risk.</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
	<p>any losses associated with mitigation measures. New reens would be constructed to Caldicot and Wentlooge Levels Internal Drainage Board (CWLIDB) standards and size; the length of reens to be offset would be determined through Environmental Impact Assessment (EIA) at project level. Incorporation of new reens would increase additional storage capacity and could be incorporated into the sustainable drainage system if required.</p> <p>Wider-scale measures for the Gwent Levels would be considered involving enhanced management of the Gwent Levels which would improve and enhance the reen network progressing Water Framework Directive objectives.</p> <p>During construction water quality would be tightly controlled through current best practice (CIRIA and EA: Pollution Prevention Guidance) to avoid detrimental effects on local water resources.</p> <p>The main bridge crossing at the River Usk would be designed to provide an acceptable and limited upstream water level rise during periods of flood. Effects would differ depending on whether bridge piers were in the river or on the river bank; this would be determined at project level and cannot be assessed in detail at this strategic stage.</p> <p>The proposed route is predominantly within Flood Risk Zone C1: served by significant infrastructure, including flood defences. The relevant area from the TAN 15 Development Advice Map is included within Appendix C. There is no alternative Zone A or Zone B route within the proposed Corridor around Newport. A Flood Consequences Assessment would be undertaken upon adoption of a Plan.</p>				
<b>Reasonable Alternative - Red Route and its Complementary Measures</b>	<p>A new dual carriageway to the south of Newport could lead to negative effects on water quality and aquatic habitats due to highway runoff and pollution from accidental spillages via drainage systems associated with the highway. Water quality is vital to the species and habitats of the River</p>	<p>R</p>	<p>LT</p>	<p>-1</p>	<p>Any adverse effects should be avoided where feasible and reduced by mitigating potential effects through sensitive design and construction elsewhere. If necessary,</p>

<b>Indicator: Water</b> <b>Environmental Objective: Minimise transport related effects on surface and groundwater quality, flood plains and areas of flood risk.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>Usk SAC and SSSI and relevant Gwent Levels SSSIs.</p> <p>Climate change is predicted to incur hot dry summers, wet warm winters and more intense rainfall events; these could have implications for flood risk due to increased runoff through the introduction of impermeable infrastructure.</p> <p>Increased rainfall and subsequent runoff would be mitigated by custom water treatment areas integrated along the new route. These would consist of Water Treatment Areas, or attenuation ponds, which would act to store and dilute excess runoff from drainage systems. Water Treatment Areas would incorporate reed bed filtration systems to provide water treatment prior to release to local watercourses. The quality of water passing from the reedbed systems would be expected to meet Water Framework Directive requirements; this would be assessed in greater detail during the EIA process at project level. Water treatment areas would be designed with concomitant benefits for biodiversity and consideration of the landscape setting. The design of water treatment areas would need to be considered as part of the detailed design of any future scheme.</p> <p>Surface water runoff would be controlled as near to source as possible using sustainable drainage systems (e.g. SUDS). This would involve a range of techniques (e.g. soakaways, infiltration trenches, grassed swales, etc.) and integrate with the water treatment areas. Such measures are considered at this strategic stage to maintain surface and groundwater quality.</p> <p>New reens are proposed to offset losses from dual carriageway development and any losses associated with mitigation measures. New reens would be constructed to Caldicot and Wentlooge Levels Internal Drainage Board (CWLIDB) standards and size; the length of reens to be offset would be determined through Environmental Impact Assessment (EIA) at project level. Incorporation of new reens would increase</p>				<p>measures should be adopted to offset for residual adverse effects which cannot be avoided or further reduced.</p> <p>Measures would be integrated, where required, to ensure compliance with the Water Framework Directive and inclusive of flood mitigation works to ensure existing flood risk is not exacerbated.</p>

<b>Indicator: Water</b> <b>Environmental Objective: Minimise transport related effects on surface and groundwater quality, flood plains and areas of flood risk.</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
	<p>additional storage capacity and could be incorporated into the sustainable drainage system if required.</p> <p>Wider-scale measures for the Gwent Levels would be considered involving enhanced management of the Gwent Levels which would improve and enhance the reed network progressing Water Framework Directive objectives.</p> <p>During construction water quality would be tightly controlled through current best practice (CIRIA and EA: Pollution Prevention Guidance) to avoid detrimental effects on local water resources.</p> <p>The main bridge crossing at the River Usk would be designed to provide an acceptable and limited upstream water level rise during periods of flood. Effects would differ depending on whether bridge piers were in the river or on the river bank; this would be determined at project level and cannot be assessed in detail at this strategic stage.</p> <p>The proposed route is predominantly within Flood Risk Zone C1: served by significant infrastructure, including flood defences. The relevant area from the TAN 15 Development Advice Map is included within Appendix C. There is no alternative Zone A or Zone B route within the proposed Corridor around Newport. A Flood Consequences Assessment would be undertaken upon adoption of a Plan.</p>				
<b>Reasonable Alternative - Purple Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport could lead to negative effects on water quality and aquatic habitats due to highway runoff and pollution from accidental spillages via drainage systems associated with the highway. Water quality is vital to the species and habitats of the River Usk SAC and SSSI and relevant Gwent Levels SSSIs.</p> <p>Climate change is predicted to incur hot dry summers, wet warm winters and more intense rainfall events; these could have implications for flood risk due to increased runoff through the introduction of impermeable infrastructure.</p>	<p>R</p>	<p>LT</p>	<p>-1</p>	<p>Any adverse effects should be avoided where feasible and reduced by mitigating potential effects through sensitive design and construction elsewhere. If necessary, measures should be adopted to offset for residual adverse effects which cannot be avoided or further reduced.</p> <p>Measures would be integrated, where required, to ensure compliance with the Water</p>

<b>Indicator: Water</b> <b>Environmental Objective: Minimise transport related effects on surface and groundwater quality, flood plains and areas of flood risk.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>Increased rainfall and subsequent runoff would be mitigated by custom water treatment areas integrated along the new route. These would consist of Water Treatment Areas, or attenuation ponds, which would act to store and dilute excess runoff from drainage systems. Water Treatment Areas would incorporate reed bed filtration systems to provide water treatment prior to release to local watercourses. The quality of water passing from the reedbed systems would be expected to meet Water Framework Directive requirements; this would be assessed in greater detail during the EIA process at project level. Water treatment areas would be designed with concomitant benefits for biodiversity and consideration of the landscape setting. The design of water treatment areas would need to be considered as part of the detailed design of any future scheme.</p> <p>Surface water runoff would be controlled as near to source as possible using sustainable drainage systems (e.g. SUDS). This would involve a range of techniques (e.g. soakaways, infiltration trenches, grassed swales, etc.) and integrate with the water treatment areas. Such measures are considered at this strategic stage to maintain surface and groundwater quality.</p> <p>New reens are proposed to offset losses from motorway development and any losses associated with mitigation measures. New reens would be constructed to Caldicot and Wentlooge Levels Internal Drainage Board (CWLIDB) standards and size; the length of reens to be offset would be determined through Environmental Impact Assessment (EIA) at project level. Incorporation of new reens would increase additional storage capacity and could be incorporated into the sustainable drainage system if required.</p> <p>Wider-scale measures for the Gwent Levels would be considered involving enhanced management of the Gwent Levels which would improve and enhance the reen network progressing Water Framework</p>				Framework Directive and inclusive of flood mitigation works to ensure existing flood risk is not exacerbated.

<b>Indicator: Water</b> <b>Environmental Objective: Minimise transport related effects on surface and groundwater quality, flood plains and areas of flood risk.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>Directive objectives.</p> <p>During construction water quality would be tightly controlled through current best practice (CIRIA and EA: Pollution Prevention Guidance) to avoid detrimental effects on local water resources.</p> <p>The main bridge crossing at the River Usk would be designed to provide an acceptable and limited upstream water level rise during periods of flood. Effects would differ depending on whether bridge piers were in the river or on the river bank; this would be determined at project level and cannot be assessed in detail at this strategic stage.</p> <p>The proposed route is predominantly within Flood Risk Zone C1: served by significant infrastructure, including flood defences. The relevant area from the TAN 15 Development Advice Map is included within Appendix C. There is no alternative Zone A or Zone B route within the proposed Corridor around Newport. A Flood Consequences Assessment would be undertaken upon adoption of a Plan.</p>				
Do Minimum Scenario	<p>In the short to medium term, no significant change would occur under the Do Minimum scenario.</p> <p>In the longer term, the risk to water quality and flood risk are predicted to change in response to climate change and increasing levels of congestion leading to increased deposition of pollutants. Climate change would result in heavier, more prolonged rainfall events that would generate increased runoff for which there are no proposed adaptation measures.</p> <p>Under the future baseline of increased congestion, any runoff produced would be of reduced water quality and subsequently affect any hydrological linkages.</p> <p>Consequently, there is a risk that Water Framework Directive objectives could be undermined in the longer term in addition to potential flood risk. A minor negative effect is therefore considered reasonable.</p>	L	LT	-1	Retrofitting measures to climate-proof the existing M4 route would be difficult and costly and would be beyond the scope of this SEA and the Do Minimum scenario.



Table 21 Material Assets Assessment

<b>Indicator: Material Assets</b> <b>Environmental Objective: Prudent and sustainable use of natural resources and energy.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport would consume natural resources and energy, as well as generate waste during construction. Conversely, less congestion would result in better fuel efficiency of the vehicles using the roads. This is especially prudent for heavy goods vehicles (HGVs) that could avoid the steep gradients of the existing M4thereby reducing fuel consumption rates and reduce actual fuel used. This would result in a more sustainable use of energy.</p> <p>The new road would have long term energy requirements and would consume energy through network services, such as street lights, lit signs, traffic lights, illuminated bollards and Intelligent Transport Systems, including electronic signing and communications equipment. Where practical, energy consuming elements on the network would be avoided and microrenewable sources considered, where feasible, e.g. solar or wind power. Where this is not possible, energy efficient components should be considered and consumption should be monitored.</p> <p>The long term benefits for the sustainable use of natural resources and energy following the consumption of materials during construction is considered to warrant a minor negative effect.</p>	N	LT	-1	<p>Consideration should be given to how materials are sourced and how the generation of waste is managed.</p> <p>The waste hierarchy should be applied and the use of secondary, recycled and/or locally sourced materials should be considered.</p>
<b>Reasonable Alternative - Red Route and its Complementary Measures</b>	<p>A new dual carriageway to the south of Newport would consume natural resources and energy, as well as generate waste during construction. Conversely, less congestion would result in better fuel efficiency of the vehicles using the roads. This is especially prudent for heavy goods vehicles (HGVs) that could avoid the steep gradients of the existing M4thereby reducing fuel consumption rates and reduce actual fuel used. This would result in a more sustainable use of energy.</p> <p>The new road would have long term energy requirements and would consume energy through network services, such as street lights, lit signs, traffic lights, illuminated bollards and Intelligent Transport Systems,</p>	N	LT	-1	<p>Consideration should be given to how materials are sourced and how the generation of waste is managed.</p> <p>The waste hierarchy should be applied and the use of secondary, recycled and/or locally sourced materials should be considered.</p>

<b>Indicator: Material Assets</b> <b>Environmental Objective: Prudent and sustainable use of natural resources and energy.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	<p>including electronic signing and communications equipment. Where practical, energy consuming elements on the network would be avoided and microrenewable sources considered, where feasible, e.g. solar or wind power. Where this is not possible, energy efficient components should be considered and consumption should be monitored.</p> <p>The long term benefits for the sustainable use of natural resources and energy following the consumption of materials during construction is considered to warrant a minor negative effect.</p>				
<b>Reasonable Alternative - Purple Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport would consume natural resources and energy, as well as generate waste during construction. Conversely, less congestion would result in better fuel efficiency of the vehicles using the roads. This is especially prudent for heavy goods vehicles (HGVs) that could avoid the steep gradients of the existing M4thereby reducing fuel consumption rates and reduce actual fuel used. This would result in a more sustainable use of energy.</p> <p>The new road would have long term energy requirements and would consume energy through network services, such as street lights, lit signs, traffic lights, illuminated bollards and Intelligent Transport Systems, including electronic signing and communications equipment. Where practical, energy consuming elements on the network would be avoided and microrenewable sources considered, where feasible, e.g. solar or wind power. Where this is not possible, energy efficient components should be considered and consumption should be monitored.</p> <p>The long term benefits for the sustainable use of natural resources and energy following the consumption of materials during construction is considered to warrant a minor negative effect.</p>	N	LT	-1	<p>Consideration should be given to how materials are sourced and how the generation of waste is managed.</p> <p>The waste hierarchy should be applied and the use of secondary, recycled and/or locally sourced materials should be considered.</p>

<b>Indicator: Material Assets</b> <b>Environmental Objective: Prudent and sustainable use of natural resources and energy.</b>					
<b>M4 Corridor around Newport</b>	<b>Nature of Effect</b>	<b>Spatial Scale of Effect</b>	<b>Temporal Scale of Effect</b>	<b>Significance of the Effect</b>	<b>Additional Comments</b>
	<b>Nature of Effect including all issues for consideration</b>	<b>L/R/N</b>	<b>ST/MT/LT</b>	<b>Significance Criteria (colour coded)</b>	
<b>Do Minimum Scenario</b>	The existing M4 route would continue to utilise energy in line with the current baseline. Consumption of natural resources is not predicted to change in the short-term beyond resources required for current maintenance and planned works.  As overcapacity of the existing network continues, maintenance requirements will increase with a subsequent increase in demand for natural resources; this is predicted both in terms of frequency and quantity.	R	LT	0	There are no current plans to improve sustainability on the existing M4.

Table 22 Cultural Heritage Assessment

<b>Indicator: Cultural Heritage</b> <b>Environmental Objective: Ensure that diversity, local distinctiveness and cultural heritage are valued, protected, celebrated and enhanced.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
<b>Draft Plan - Black Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport would cross the Gwent Levels Historic Landscape and affect land with significant archaeological sensitivity.</p> <p>The Black Route is routed furthest away from the historic Newport Transporter Bridge and compared to the other reasonable alternatives would have the least effect on this Grade I listed structure. In addition, the Grade II listed Magor Vicarage could be affected by the proposed route.</p> <p>An ASIDOHL would be undertaken during the Environmental Impact Assessment process.</p> <p>Due to the scale and location of the works, the significance of the effect on Cultural Heritage would be major negative.</p>	L	LT	-2	Any new infrastructure should avoid and reduce, if possible, significant adverse effects to cultural heritage.
<b>Reasonable Alternative - Red Route and its Complementary Measures</b>	<p>A new dual carriageway to the south of Newport would cross the Gwent Levels Historic Landscape and affect land with significant archaeological sensitivity.</p> <p>The alignment of the Red Route would affect the visual setting of the historic Newport Transporter Bridge (Grade I listed structure). In addition, the Grade II listed Magor Vicarage could be affected by the proposed route.</p> <p>An ASIDOHL would be undertaken during the Environmental Impact Assessment process.</p> <p>Due to the scale and location of the works, the significance of the effect on Cultural Heritage would be major negative.</p>	L	LT	-2	Any new infrastructure should avoid and reduce, if possible, significant adverse effects to cultural heritage.
<b>Reasonable Alternative - Purple Route and its Complementary Measures</b>	<p>A new motorway to the south of Newport would cross the Gwent Levels Historic Landscape and affect land with significant archaeological sensitivity.</p> <p>The alignment of the Purple Route could affect the visual setting of the historic Newport Transporter Bridge (Grade I listed structure). In</p>	L	LT	-2	Any new infrastructure should avoid and reduce, if possible, significant adverse effects to cultural heritage.

<b>Indicator: Cultural Heritage</b> <b>Environmental Objective: Ensure that diversity, local distinctiveness and cultural heritage are valued, protected, celebrated and enhanced.</b>					
M4 Corridor around Newport	Nature of Effect	Spatial Scale of Effect	Temporal Scale of Effect	Significance of the Effect	Additional Comments
	Nature of Effect including all issues for consideration	L/R/N	ST/MT/LT	Significance Criteria (colour coded)	
	addition, the Grade II listed Magor Vicarage could be affected by the proposed route. An ASIDOHL would be undertaken during the Environmental Impact Assessment process. Due to the scale and location of the works, the significance of the effect on Cultural Heritage would be major negative.				
Do Minimum Scenario	The Do Minimum scenario would not result in any changes to existing diversity, local distinctiveness and cultural heritage values.	L	LT	0	

Table 23 Landscape and Townscape Assessment

<p align="center"><b>Indicator: Landscape and Townscape</b>  <b>Environmental Objective: Ensure that landscape and townscape is properly valued, conserved and enhanced.</b></p>					
<p><b>M4 Corridor around Newport</b></p>	<p><b>Nature of Effect</b></p>	<p><b>Spatial Scale of Effect</b></p>	<p><b>Temporal Scale of Effect</b></p>	<p><b>Significance of the Effect</b></p>	<p><b>Additional Comments</b></p>
	<p><b>Nature of Effect including all issues for consideration</b></p>	<p><b>L/R/N</b></p>	<p><b>ST/MT/LT</b></p>	<p><b>Significance Criteria (colour coded)</b></p>	
<p><b>Draft Plan - Black Route and its Complementary Measures</b></p>	<p>A new motorway to the south of Newport would cross the River Usk and the Gwent Levels and introduce significant new infrastructure into the landscape. The landscape of the route corridor is sensitive to change due to visual, cultural and ecological components; particularly due to the relatively flat topography. A new road would likely contribute to loss of tranquillity in the Gwent levels.</p> <p>Landscaping measures in the form of earthworks, planting and structural form will partially mitigate the effects of a new motorway although this is likely to be more successful in areas with more fluctuating topography. Proposals would include reinforcement and reinstatement of existing landscape features, mainly hedgerows, to screen the road and create interest for road users.</p> <p>Due to the scale and new location of the works, the significance of the effect on landscape is considered to be major negative.</p>	<p>L</p>	<p>LT</p>	<p align="center">-2</p>	<p>A full landscape strategy would be required through the EIA process to integrate the new road into its setting. It is important that details such as planting, walls and fences reflect local native species, construction methods and materials, to preserve local character and sense of place and to help integrate the road with local landscape. This would be addressed at the detailed design stage.</p>
<p><b>Reasonable Alternative - Red Route and its Complementary Measures</b></p>	<p>A new dual carriageway to the south of Newport would cross the River Usk and the Gwent Levels and introduce significant new infrastructure into the landscape. The landscape of the route corridor is sensitive to change due to visual, cultural and ecological components; particularly due to the relatively flat topography. A new road would likely contribute to loss of tranquillity in the Gwent levels.</p> <p>Landscaping measures in the form of earthworks, planting and structural form will partially mitigate the effects of a new motorway although this is likely to be more successful in areas with more fluctuating topography. Proposals would include reinforcement and reinstatement of existing landscape features, mainly hedgerows, to screen the road and create interest for road users.</p> <p>Due to the scale and new location of the works, the significance of the effect on landscape is considered to be major negative.</p>	<p>L</p>	<p>LT</p>	<p align="center">-2</p>	<p>A full landscape strategy would be required through the EIA process to integrate the new road into its setting. It is important that details such as planting, walls and fences reflect local native species, construction methods and materials, to preserve local character and sense of place and to help integrate the road with local landscape. This would be addressed at the detailed design stage.</p>

<p align="center"><b>Indicator: Landscape and Townscape</b>  <b>Environmental Objective: Ensure that landscape and townscape is properly valued, conserved and enhanced.</b></p>					
<p><b>M4 Corridor around Newport</b></p>	<p><b>Nature of Effect</b></p>	<p><b>Spatial Scale of Effect</b></p>	<p><b>Temporal Scale of Effect</b></p>	<p><b>Significance of the Effect</b></p>	<p><b>Additional Comments</b></p>
	<p><b>Nature of Effect including all issues for consideration</b></p>	<p><b>L/R/N</b></p>	<p><b>ST/MT/LT</b></p>	<p><b>Significance Criteria (colour coded)</b></p>	
<p><b>Reasonable Alternative - Purple Route and its Complementary Measures</b></p>	<p>A new motorway to the south of Newport would cross the River Usk and the Gwent Levels and introduce significant new infrastructure into the landscape. The landscape of the route corridor is sensitive to change due to visual, cultural and ecological components; particularly due to the relatively flat topography. A new road would likely contribute to loss of tranquillity in the Gwent levels.</p> <p>Landscaping measures in the form of earthworks, planting and structural form will partially mitigate the effects of a new motorway although this is likely to be more successful in areas with more fluctuating topography. Proposals would include reinforcement and reinstatement of existing landscape features, mainly hedgerows, to screen the road and create interest for road users.</p> <p>Due to the scale and new location of the works, the significance of the effect on landscape is considered to be major negative.</p>	<p>L</p>	<p>LT</p>	<p align="center">-2</p>	<p>A full landscape strategy would be required through the EIA process to integrate the new road into its setting. It is important that details such as planting, walls and fences reflect local native species, construction methods and materials, to preserve local character and sense of place and to help integrate the road with local landscape. This would be addressed at the detailed design stage.</p>
<p><b>Do Minimum Scenario</b></p>	<p>The Do Minimum scenario would not result in any changes to existing landscape and townscape values.</p>	<p>L</p>	<p>LT</p>	<p align="center">0</p>	

Table 24 Comparative Summary of Significant Effects

SEA Indicator	Appraisal of draft Plan, Reasonable Alternatives and the Do Minimum Scenario			
	Draft Plan – Black Route and its Complementary Measures	Reasonable Alternative – Red Route and its Complementary Measures	Reasonable Alternative – Purple Route and its Complementary Measures	Do Minimum Scenario
Air Quality	2	1	2	-1
Climatic Factors - Greenhouse Gas Reduction	0	0	0	-1
Climatic Factors - Adaption Measures	1	1	1	-1
Noise	1	0	1	-1
Biodiversity	-1	-1	-1	0
Population	1	1	1	-1
Human Health	1	1	1	-1
Soil	-1	-1	-1	0
Water	-1	-1	-1	-1
Material Assets	-1	-1	-1	0
Cultural Heritage	-2	-2	-2	0



SEA Indicator	Appraisal of draft Plan, Reasonable Alternatives and the Do Minimum Scenario			
	Draft Plan – Black Route and its Complementary Measures	Reasonable Alternative – Red Route and its Complementary Measures	Reasonable Alternative – Purple Route and its Complementary Measures	Do Minimum Scenario
Landscape and Townscape	-2	-2	-2	0

Table 25 Significance Criteria

Significance of Effect	Description of Effect
2 Major Positive	Likely to benefit a large part of the M4 Corridor around Newport or a large number of people and receptors. Option would have a major positive effect on the environment in its current form as it would resolve an existing issue or maximise opportunities. This type of effect may be considered <b>SIGNIFICANT</b> .
1 Minor Positive	The extent of predicted beneficial effects is likely to be limited to small areas within the M4 Corridor around Newport or small groups of people and receptors. Option would have a minor positive effect on the environment but is not considered to be significant.
0 Neutral	Option would have a neutral effect on the environment.
-1 Minor Negative	Minor negative effects are likely to be limited to small areas within the M4 Corridor around Newport, or limited to small groups of people and receptors. Option would have a minor adverse effect on the environment but is not considered to be significant.
-2 Major Negative	Likely to affect the whole, or large part of the M4 Corridor area. Also applies to significant effects on nationally or internationally important assets. The option would have a major adverse effect on the environment as it would substantially exacerbate existing problems. This type of effect may be considered to be <b>SIGNIFICANT</b> .
? Unknown	Effect of option on the environment is uncertain. This significance criterion is applied to effects where there is insufficient information to make a robust assessment. It is also applied to the assessment of options that can have both positive and negative effects and it is not clear whether the positive or negative effects outweigh each other.
N/A Not Applicable	This is applied to objectives that are clearly not affected by the option being assessed.

## 7.2 Cumulative Assessment of the draft Plan and its Reasonable Alternatives with other Policies, Plans and Programmes

The SEA Regulations require the consideration of cumulative effects of a plan or programme with other policies, plans and programmes. For this SEA, cumulative effects of the draft Plan have been considered with the following plans and programmes:

- The National Transport Plan (NTP);
- The South East Wales Regional Transport Plan (RTP); and
- The Wales Spatial Plan (WSP).

### 7.2.1 The National Transport Plan (NTP)

The SEA of the NTP assessed the potential effects of all the NTP measures, including the draft Plan, under the ‘*Package of measures to deal with resilience, safety and reliability issues on the M4 around Newport*’. Cumulative effects of the draft Plan with other interventions in the NTP have therefore already been identified. In particular, the following corridor-related effects on the east-west corridor in south Wales were identified in Section 5.3 of the NTP SEA:

*“The proposals to dual sections of the A465 Heads of the Valleys Road could result in traffic using this route as an alternative to the M4 which coupled with the proposed package of measures to improve the efficiency of the M4 in South East Wales could result in increased long distance traffic flows through this corridor. The electrification of the Great Western Mainline would provide an improved long-distance alternative, whilst improvements proposed for local rail services provide opportunities to reduce commuting related car use in this corridor.”*

The SEA of the draft Plan has not identified any reason to alter these conclusions and has not identified any additional cumulative effects with the NTP.

### 7.2.2 South East Wales Regional Transport Plan (RTP)

The NTP SEA considered the cumulative effects of the NTP with the Welsh RTPs; these were expected to be primarily as a result of the construction and operation of transport infrastructure, and forecast as local effects rather than being significant at an all-Wales level.

The draft Plan, or a Reasonable alternative, is expected to have the following interactions with the South East Wales RTP:

#### **Air Quality and Noise**

Although the South East Wales RTP was considered unlikely on its own to significantly improve local air quality and noise sufficiently across the area, integration with the draft Plan, or a Reasonable alternative, is likely to bring added benefit. Following current trends the Do Minimum scenario is likely to contribute to poor air quality and increasing noise nuisance.

#### **Greenhouse Gas Emissions**

Complementary measures in the draft Plan, or a reasonable alternative, and interventions in the RTP, which result in increased use of public transport,

walking and cycling and reduced congestion are likely to have combined positive effects on reducing CO<sub>2</sub> emissions from transport. However, the significance of this outcome will be dependent on the extent of the desired modal shift to more sustainable modes of transport. Conversely, under the Do Minimum scenario greenhouse gas emissions would continue to escalate as congestion peaks become more frequent and prolonged thus undoing predicted benefits from the RTP.

### **Biodiversity**

The RTP identified a risk that biodiversity could be adversely affected by the loss of road verges across South East Wales, due to the construction of new transport infrastructure. The draft Plan, or a reasonable alternative, has been assessed to have a minor negative effect in the short term but is expected to provide an overall positive effect in the long term as mitigation measures and enhancements mature. This may counteract loss from the RTP. The Do Minimum scenario may increase acidification risks to habitats in the long term, although this is unlikely to significantly affect biodiversity cumulatively with the RTP.

### **Health and Wellbeing**

Interventions within the RTP encourage more active modes of travel, i.e. through increasing provision of cycle routes. These were forecast as likely to have a significant positive effect on this SEA objective. In addition, interventions within the RTP which aim to improve road safety are also forecast as likely to have significant positive effects on this SEA objective. Cumulatively with the minor positive effects predicted to result from the draft Plan, or a reasonable alternative, the plans should contribute additional positive effects. Under the Do Minimum scenario the significant positive effects forecast for the RTP would be undermined by the minor negative effects derived in this SEA.

### **7.2.3 The Wales Spatial Plan 2008 Update (WSP)**

The draft Plan and reasonable alternatives support the integration of transport planning with spatial planning under the WSP. This should help to secure some of the environmental benefits expected of the WSP, particularly those related to the 'Building Sustainable Communities' and 'Achieving Sustainable Accessibility' elements of the WSP by increasing accessibility to services and mitigating the effects of climate change.

Adverse effects on air quality and greenhouse gas emissions were predicted for the WSP in relation to increased levels of housing and employment development, although other elements of the WSP were designed to offset such adverse effects. For the South East Wales region of the WSP, potentially adverse effects were identified for climatic factors, air quality, and biodiversity. The final Area Strategy for South East Wales also observed that '*measures to alleviate congestion and investment to tackle bottlenecks are important elements in the area's competitiveness*'.

The draft Plan, or a reasonable alternative, is expected to assist in the mitigation of effects on air quality and climatic factors. The draft Plan, or a reasonable alternative, has been assessed to have a minor negative effect in the short term but is expected to provide an overall positive effect in the long term as mitigation measures and enhancements mature. This may counteract any loss forecast by the WSP.

The Do Minimum scenario would be expected to combine with the WSP to produce cumulative negative effects on air quality and greenhouse gases; hence adoption of the previous statement to alleviate congestion. The Do Minimum scenario would not provide any additional benefit to the forecast loss in biodiversity.

### 7.3 Potential Cross-Boundary and Trans-Boundary Effects of the M4 Corridor around Newport

A requirement of the SEA Regulations is to determine whether a plan or programme is likely to result in significant environmental effects in areas outside the area covered by the plan or programme. Taking forward the draft Plan, or a reasonable alternative, has the potential to have effects on transport conditions outside of Wales. For example, reduced congestion on the M4 around Newport could change traffic flows in England on the M4, M5, M50 and A40. Conversely, the Do Minimum scenario is forecast to increase congestion causing more trans-boundary delays. However, these effects are related to changed traffic flows outside Wales rather than to specific cross-boundary environmental effects. The changes are not anticipated to result in any new significant environmental effects outside Wales.

### 7.4 Limitations and Uncertainties

Uncertainties were encountered surrounding the following:

- Uncertainty as to the success in achieving behavioural changes to result in a modal shift to more sustainable modes of travel;
- Uncertainty surrounding the changes in air quality and noise nuisance associated with the different measures. Dependent on the net impact, there may or may not be an improvement to the current AQMAs and to the NAPPAs between Magor and Castleton;
- Insufficient information is available at this strategic stage to identify and evaluate the risk and extent of contaminated land that the draft Plan, or a reasonable alternative, may cross. Such information would be determined at project level;
- At this strategic stage, the detail required to undertake an informed assessment of water level effects on the bridge crossing of the River Usk is not available;
- The efficacy of certain measures to avoid, prevent or reduce environmental effects remains uncertain at the strategic level, particularly regarding landscape;
- Insufficient information is available at this strategic stage to identify and evaluate the risk to biodiversity that the draft Plan, or a reasonable alternative, may pose. Such information would be determined at project level following collation of a more detailed baseline.

## 8 Mitigation

Mitigation measures have been explored in the assessment of potential likely significant environmental effects of the draft Plan, or a reasonable alternative. The environmental effects of the draft Plan, or a reasonable alternative, could be mitigated through interventions at various scales and decision points. For example, some national/international issues, such as reducing greenhouse gas emissions, require concerted policy interventions across Wales and the UK and cannot be addressed by the draft Plan, or a reasonable alternative, alone. Conversely, some of the localised environmental effects may be avoided or reduced by taking actions at the design and construction stage of individual transport measures (at a project level).

It is likely that some of the mitigation measures may be delivered by parties other than the Welsh Government. Indeed, several levels of administrative jurisdictions and stakeholders may be involved, particularly through links to planning activities associated with the Wales Spatial Plan. The co-operation of these other interests is needed to ensure that the mitigation and enhancement measures are successfully implemented. Monitoring will play a key role in determining whether mitigation measures have been implemented and how successful they have been at addressing any potential adverse effects.

The mitigation measures and recommendations explored for the draft Plan, or a reasonable alternative, that could be considered by the Welsh Government, have been identified through this assessment and are included in Table 26. These are largely based on the SEA Environmental Report for the National Transport Plan<sup>28</sup> but have been modified where necessary. Much of the mitigation presented below would be delivered at project level. It should be noted that additional mitigation and refinement of the options below would likely be undertaken at the detailed project level.

Table 26 Recommended Mitigation and Enhancements

Environmental Topic	Mitigation / Enhancement Measures
Air Quality	<ul style="list-style-type: none"> <li>• Implement emissions control during construction and maintenance activities;</li> <li>• Work in partnership with local authorities towards the delivery of the National Air Quality Strategy;</li> <li>• Air Quality Assessments to estimate total air pollution concentrations;</li> <li>• Support measures to encourage alternative travel modes and smarter sustainable choices combined with measures to curb and ultimately reduce greenhouse gas emissions from transport. E.g. complementary measures including: provision of cycle-friendly and walking-friendly infrastructure and a link to the B4245 which may facilitate introduction of a park-and-ride facility at Severn Tunnel Junction encouraging public transport use;</li> <li>• Consider air pollution when developing speed management strategies, heavy goods vehicle (HGV) management plans, event management plans and weather management plans for the study area. Reclassification of the existing M4, should a motorway be adopted, would facilitate</li> </ul>

<sup>28</sup> Welsh Government (July 2010), National Transport Plan SEA Environmental Report, available at: <http://wales.gov.uk/consultations/transport/ntp/?lang=en&status=closed>

Environmental Topic	Mitigation / Enhancement Measures
	introduction of such measures; <ul style="list-style-type: none"> <li>• Work to develop and evaluate traffic management systems which reduce vehicle emissions.</li> </ul>
<b>Climatic Factors – Greenhouse Gas Emissions</b>	<ul style="list-style-type: none"> <li>• Support measures to encourage alternative travel modes and smarter sustainable choices combined with measures to curb and ultimately reduce greenhouse gas emissions from transport. E.g. complementary measures including: provision of cycle-friendly and walking-friendly infrastructure and a link to the B4245 which may facilitate introduction of a park-and-ride facility at Severn Tunnel Junction encouraging public transport use;</li> <li>• Consider greenhouse gas emissions when developing speed management strategies, heavy goods vehicle (HGV) management plans, event management plans and weather management plans for the study area. Reclassification of the existing M4, should a motorway be adopted, would facilitate introduction of such measures;</li> <li>• Consider air pollution and greenhouse gas emissions when promoting the long term phased introduction of Electric Vehicle Infrastructure in Wales.</li> <li>• Use of energy efficient network services such as street lights, lit signs, traffic lights, illuminated bollards and Intelligent Transport Systems including electronic signing and communications equipment;</li> <li>• Use of energy efficient technologies when tackling traffic congestion, including microrenewables where feasible;</li> <li>• Encourage shift to renewable energy to supply network services.</li> </ul>
<b>Climatic Factors – Climate Change Adaption</b>	<ul style="list-style-type: none"> <li>• Consider the implications of climate change on the design, construction and maintenance of the highway and highway structures, taking into account increased rainfall and warmer summer temperatures. For example, new roads should be equipped with appropriate sustainable drainage systems (i.e. SUDS);</li> <li>• Integrate custom attenuation ponds as ‘Water Treatment Areas’ with due consideration to benefiting biodiversity and landscape. These would be designed to store and dilute runoff in-combination with treatment via a reedbed filtration system prior to release to local watercourses. Any water released from drainage systems and attenuation ponds would be required to meet the requirements of the Water Framework Directive;</li> <li>• Use porous surfaces on areas of hard surfaces to reduce the risk of flooding and encourage infiltration.</li> </ul>
<b>Noise and Vibration</b>	<ul style="list-style-type: none"> <li>• Identify any properties subject to noise levels that would cause them to qualify under the Noise Insulation Regulations;</li> <li>• Use low noise surfaces to reduce noise pollution, particularly in areas close to population and in sensitive areas;</li> <li>• Use noise barriers, bunds and secondary glazing to screen noise sensitive properties where necessary;</li> <li>• Improve performance of noise control during construction and maintenance activities;</li> <li>• Manage temporary residual noise effects, i.e. where construction activities may still exceed noise level criteria</li> </ul>

Environmental Topic	Mitigation / Enhancement Measures
	<p>despite the use of best working practices;</p> <ul style="list-style-type: none"> <li>• Consider noise nuisance when developing speed management strategies, heavy goods vehicle (HGV) management plans and event management plans.</li> </ul>
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>• Ensure that any mitigation measures identified in the Habitats Regulations Appraisal are integrated at the project design stage;</li> <li>• Production of a Construction Environmental Management Plan (CEMP) through the Environmental Impact Assessment process;</li> <li>• Sensitive planning/timing of any construction and maintenance work to help reduce adverse impacts on biodiversity e.g. clearance of vegetation during the winter to avoid bird breeding season;</li> <li>• Provision of species-specific mitigation measures, such as mammal fencing and crossings. Ensure continued connectivity for commuting and foraging bats using mitigation agreed with statutory consultees;</li> <li>• Incorporation of actions to deliver the Trunk Road Estate Biodiversity Action Plan (BAP) where possible;</li> <li>• Obtain protected species licences and undertake necessary surveys to acquire these licences;</li> <li>• Measures should avoid and reduce any negative effects on biodiversity during construction, maintenance and operation phases;</li> <li>• Produce a Lighting Strategy through the EIA process to avoid and reduce effects on biodiversity features, in particular bats;</li> <li>• Project mitigation should aim to deliver environmental enhancement where possible;</li> <li>• Consider wider-scale enhancement of the Gwent Levels through active management to benefit notified interests, wider biodiversity and water quality;</li> <li>• Encourage methods of winter salting practices, which minimise the impact on biodiversity;</li> <li>• Integrate custom attenuation ponds as ‘Water Treatment Areas’ with due consideration to benefiting biodiversity and landscape. These would be designed to store and dilute runoff in-combination with treatment via a reedbed filtration system prior to release to local watercourses. Any water released from drainage systems and attenuation ponds would be required to meet the requirements of the Water Framework Directive;</li> <li>• Removal of protected species from scheme footprints and relocation to alternative areas prior to construction;</li> <li>• Include appropriate monitoring of mitigation measures in consultation with relevant authorities.</li> </ul>
<b>Population</b>	<ul style="list-style-type: none"> <li>• Improve walking and cycling facilities through the complementary measures i.e. provision of cycle-friendly and walking-friendly infrastructure;</li> <li>• Walking and cycling friendly infrastructure should be safe and should address any community severance issues where practicable;</li> <li>• Highway infrastructure options should ensure that severance of footpaths and other rights of way do not reduce the accessibility of open space and recreation</li> </ul>

Environmental Topic	Mitigation / Enhancement Measures
	opportunities.
<b>Human Health</b>	<ul style="list-style-type: none"> <li>• Encouragement of more ‘active’ travel modes through the complementary measures, including walking and cycling, to increase physical fitness and personal health;</li> <li>• Adoption of air quality and noise mitigation measures.</li> </ul>
<b>Soils and Geology</b>	<ul style="list-style-type: none"> <li>• Any construction work should follow a code of practice, which minimises adverse effects on soils, including erosion, contamination, degradation, compaction, sealing and loss;</li> <li>• Incorporate Good Practice Guide for Handling Soils into maintenance and construction protocols;</li> <li>• Encourage methods of winter salting practices, which minimise the impact on soils;</li> <li>• Construction Environmental Management Plans (CEMP) should ensure that adverse effects on soils are minimised during the construction process and that soils supporting valuable habitats should be reinstated at the end of construction;</li> <li>• Undertake a preliminary risk assessment to determine effects on contaminated sites;</li> <li>• Identify where remediation would be required and remediate soils, where required, in accordance with best practice.</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• Construction Environmental Management Plans (CEMP) should ensure that adverse impacts on water resources are minimised during the construction process;</li> <li>• Consider the implications of climate change on the design, construction and maintenance of the highway and highway structures, taking into account increased rainfall and warmer summer temperatures. For example, new roads should be equipped with appropriate sustainable drainage systems (i.e. SUDS to avoid pollution to groundwater and surface water);</li> <li>• Integrate custom attenuation ponds as ‘Water Treatment Areas’ with due consideration to benefiting biodiversity and landscape. These would be designed to store and dilute runoff in-combination with treatment via a reedbed filtration system prior to release to local watercourses. Any water released from drainage systems and attenuation ponds would be required to meet the requirements of the Water Framework Directive;</li> <li>• Highway drainage should incorporate petrol interceptors and should control the discharge of run-off directly into watercourses through, for example, attenuation ponds;</li> <li>• Where site compounds are required, locate these away from surface water features and watercourses;</li> <li>• Provide better information for the handling of road spillages to ensure that when they do occur, drainage facilities are managed in the most appropriate way;</li> <li>• Encourage methods of winter salting practices, which minimise the impact on water quality;</li> <li>• Particular attention should be paid to possible effects which could affect the integrity of freshwater and marine European sites designated under the Habitats Directive;</li> <li>• Mitigate potential impacts due to spillages and release of</li> </ul>



<b>Environmental Topic</b>	<b>Mitigation / Enhancement Measures</b>
	<p>silt developing an emergency pollution incident response plan and ensure correct storage of oil and chemicals and careful refuelling of plant during construction;</p> <ul style="list-style-type: none"> <li>• Implement Maintenance Environmental Management Plans (MEMPs) to avoid adverse impacts and, where possible, deliver environmental gains, such as improvements to water resources;</li> <li>• Where highway infrastructure is located within sensitive water environments, fully sealed drainage channels should be considered to prevent any potential pollution of groundwater;</li> <li>• A Flood Consequences Assessment would be undertaken at the project level.</li> </ul>
<b>Material Assets</b>	<ul style="list-style-type: none"> <li>• The design and construction of highway infrastructure should consider the implementation of the waste hierarchy and avoid, reduce, reuse and recycle waste through administration of a Waste Management Plan;</li> <li>• Use sustainable construction methods such as reusing or recycling all excavated material on site, where possible, minimising waste;</li> <li>• Import of materials for road construction and structures would be minimised. Local suppliers would be encouraged and local lorry movements minimised. Deliveries would be timed to avoid peak periods on the existing highway network;</li> <li>• Substitute carbon intensive materials with less carbon intensive ones where practicable;</li> <li>• Identify appropriate maintenance procedures which aim to maximise resource and energy efficiency and aim to use sustainability sourced local, recycled and/or secondary materials;</li> <li>• Minimise movement of materials on local roads or prevent through careful programming.</li> </ul>
<b>Cultural Heritage</b>	<ul style="list-style-type: none"> <li>• Use sensitive design and construction techniques in areas of historical importance;</li> <li>• Work in partnership with relevant highways and cultural heritage consultees to avoid and minimise potential impacts;</li> <li>• Adopt design principles for highway works being carried out in areas of historical importance;</li> <li>• Conduct site surveys and recording of the key archaeological features;</li> <li>• Ensure minor works avoid damage to heritage assets;</li> <li>• An ASIDOHL would be undertaken at project level to further identify effects on heritage landscape and identify detailed mitigation where possible.</li> </ul>
<b>Landscape and Townscape</b>	<ul style="list-style-type: none"> <li>• Identify measures to integrate schemes into the surrounding landscape and reduce visual impact on properties;</li> <li>• Mitigate effects on the landscape through sensitive scheme design and construction integrating roads sympathetically into the landscape;</li> <li>• Produce a Lighting Strategy through the EIA process to minimise light pollution;</li> <li>• Signage and lighting should, where possible, avoid urbanisation of rural areas. Ideally areas of the scheme</li> </ul>

Environmental Topic	Mitigation / Enhancement Measures
	<p>across the Gwent Levels would not be lit. Reflective signs should be used in preference to illuminated signs, and visibility splays should be minimised where possible whilst maintaining compliance with motorway design standards;</p> <ul style="list-style-type: none"><li>• New planting should link existing planting and enhance the visual appearance of the existing highway. Where trees have been removed on the grounds of their location affecting safety, replacement trees should be planted in an acceptable nearby location;</li><li>• Project assessments should determine how the schemes fit into the landscape, and propose measures that will retain, improve and protect characteristic features and landscape patterns such as veteran trees and field boundaries;</li><li>• Produce a Landscape Strategy through the EIA process detailing monitoring and maintenance periods to ensure the establishment of new planting.</li></ul>

## 9 Potential Monitoring of Significant Effects

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### 9.1 Potential Monitoring of Significant Environmental Effects

The consideration of monitoring of strategic environmental effects of the draft Plan, or a reasonable alternative, has taken into account the need to meet the requirements of the SEA Regulations. The SEA has identified both significant negative and positive effects. The assessment has also identified some areas of uncertainty over the significance of some of the predicted effects. Monitoring has therefore been considered to cover these effects as well. Some monitoring would be more appropriate at a project level.

The SEA has identified the likely benefits in monitoring any environmental effects arising from the draft Plan, or a reasonable alternative. These should be considered, and where appropriate expanded upon, at project level, including:

- Identifying when action should be taken to reduce or offset any potential environmental effects;
- Enhancing understanding of how the baseline is changing across South East Wales;
- Tracking whether the draft Plan, or a reasonable alternative, has had any unforeseen environmental effects; and
- Providing baseline data for future Environmental Impact Assessments.

Where possible, the draft Plan, or a reasonable alternative, should make use of existing monitoring arrangements to obtain required information. Such sources include, but are not limited to, the following:

- Monitoring of the implementation of the National Transport Plan (NTP)<sup>29</sup>;
- Monitoring by Newport City Council (NCC), for example, NCC operates two automatic air quality monitoring sites with “real-time” analysers that constantly monitor pollutants<sup>30</sup>;
- Monitoring by other agencies e.g. flooding by NRW;
- Monitoring by the Atomic Energy Agency for the National Air Quality Emissions Inventory;
- Welsh Government Environmental Noise Directive (END) noise mapping;
- Welsh Government Trunk Road Estate Biodiversity Action Plan monitoring;
- Natural Resources Wales water quality monitoring;
- Natural Resources Wales SSSI and European Site monitoring;
- Caldicot and Wentlooge Levels Internal Drainage Board monitoring.

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<sup>29</sup> Welsh Government, Monitoring of the National Transport Plan, available at: <http://wales.gov.uk/topics/statistics/headlines/transport2012/120327/?lang=en>

<sup>30</sup> Newport City Council Air Pollution Monitoring, available at: [http://www.newport.gov.uk/\\_dc/index.cfm?fuseaction=environmentalhealth.homepage&contentid=cont446705](http://www.newport.gov.uk/_dc/index.cfm?fuseaction=environmentalhealth.homepage&contentid=cont446705)

## 9.2 Potential Significant Environmental Effects to be Monitored

The potential significant effects proposed for monitoring, which have been predicted to arise from the draft Plan, or a reasonable alternative, have been summarised in Table 27 and are based on the updated SEA assessment for the National Transport Plan<sup>31</sup>.

Table 27 Potential Significant Effects to Monitor

Environmental Topic	Potential Effects to be Monitored
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>• Changes in air quality;</li> <li>• Air quality in areas directly affected by transport options;</li> <li>• Project level effects (through project level monitoring arrangements);</li> <li>• Traffic volumes and congestion.</li> </ul>
<b>Climatic Factors – Greenhouse Gas Emissions</b>	<ul style="list-style-type: none"> <li>• Greenhouse gas emissions from different transport modes;</li> <li>• ‘Modal shift’ to walking and cycling;</li> <li>• Traffic volumes and congestion.</li> </ul>
<b>Climatic Factors – Climate Change Adaption</b>	<ul style="list-style-type: none"> <li>• Flood risk and flooding events on the transport network;</li> <li>• Project level effects (through project level monitoring arrangements).</li> </ul>
<b>Noise and Vibration</b>	<ul style="list-style-type: none"> <li>• Noise levels related to transport;</li> <li>• Project level effects (through project level monitoring arrangements).</li> </ul>
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>• Transport effects on biodiversity, including disturbance of species and habitats;</li> <li>• Project level effects (through project level monitoring arrangements).</li> </ul>
<b>Population</b>	<ul style="list-style-type: none"> <li>• Access to key services;</li> <li>• Community severance;</li> <li>• Levels of walking and cycling as alternative ‘short-distance’ commuting methods;</li> <li>• Project level effects (through project level monitoring arrangements).</li> </ul>
<b>Human Health</b>	<ul style="list-style-type: none"> <li>• Accidents related to transport;</li> <li>• Respiratory health related to air quality;</li> <li>• Levels of walking and cycling as alternative ‘short-distance’ commuting methods;</li> <li>• Project level effects (through project level monitoring arrangements).</li> </ul>
<b>Soils and Geology</b>	<ul style="list-style-type: none"> <li>• Transport effects on soil (loss, sealing, contamination);</li> <li>• Contaminated land;</li> <li>• Project level effects (through project level monitoring arrangements);</li> <li>• Ground water in areas of contaminated land potentially affected by the scheme.</li> </ul>

<sup>31</sup> Welsh Government (March 2010), National Transport Plan SEA Statement, available at: <http://wales.gov.uk/topics/transport/publications/ntpsea/?lang=en>

<b>Environmental Topic</b>	<b>Potential Effects to be Monitored</b>
<b>Water</b>	<ul style="list-style-type: none"> <li>• Transport effects on water quality;</li> <li>• Project level effects (through project level monitoring arrangements);</li> <li>• Water quality in watercourses receiving highway run off from the proposed highway.</li> </ul>
<b>Material Assets</b>	<ul style="list-style-type: none"> <li>• Levels of use of secondary and recycled aggregates in the construction of possible new transport infrastructure;</li> <li>• Condition of the transport infrastructure;</li> <li>• Consumption of energy through network services such as street lights;</li> <li>• Project level effects (through project level monitoring arrangements).</li> </ul>
<b>Cultural Heritage</b>	<ul style="list-style-type: none"> <li>• Transport effects on historic sites and landscapes;</li> <li>• Project level effects (through project level monitoring arrangements).</li> </ul>
<b>Landscape and Townscape</b>	<ul style="list-style-type: none"> <li>• Transport effects on tranquillity and light pollution;</li> <li>• Effects on landscapes and townscapes from transport;</li> <li>• Project level effects (through project level monitoring arrangements).</li> </ul>

Welsh Government, or its partner bodies, should consider other specific monitoring, in particular to pick up aspects not covered by the above, when preparing the SEA Statement.

Should the draft Plan or a reasonable alternative be adopted the potential significant effects to be monitored and the proposed monitoring arrangements will be reviewed, considering consultee comments, and full details presented in the SEA Statement.

## 10 Summary and Next Steps

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### 10.1 Summary

This report has provided a strategic environmental assessment of the M4 Corridor around Newport draft Plan, two reasonable alternatives and the Do Minimum scenario.

The draft Plan can be seen to have performed in a complex way against the Environmental Objectives assessed in the SEA, with some potentially positive and some potentially negative impacts identified.

The comments received on this SEA Environmental Report will be given consideration and taken into account in an SEA Statement. If the draft Plan is adopted, an SEA Statement will be published in accordance with the SEA Regulations. The purpose of the SEA Statement is to outline how the environmental assessment and associated consultation on the draft Plan influence the decision making process.

The SEA Statement will include a monitoring strategy to allow the effects of any of the options progressed from the draft Plan, should it be adopted (with or without amendments) to be tested against the predicted effects, enabling significant problems to be identified and addressed. Monitoring of certain effects might be more appropriate at a scheme (project) level.

Should the draft Plan progress to project level, an Environmental Impact Assessment would be prepared to assess possible effects on the environment against a more informed baseline and greater scheme detail.

## 11 How to Respond and Further Information

Please respond to this Consultation by using the Consultation Response Form that accompanies this document. This can be completed and sent to the address shown below:

***'FREEPOST M4 CONSULTATION'***

Alternatively, you can respond electronically via the following website links:

- [www.wales.gov.uk/consultations](http://www.wales.gov.uk/consultations) under Transport; or
- [www.m4newport.com](http://www.m4newport.com)

At [www.m4newport.com](http://www.m4newport.com) you can also find further information about the draft Plan and its development.

**This Consultation runs for 12 weeks, commencing on 23 September 2013 and closes on 16 December 2013.**

The draft Plan Consultation Document, all draft Plan assessments, and the Response Form are available to download online at [www.m4newport.com](http://www.m4newport.com) and are available to view or to take away as paper copies at the following deposit points during the consultation period, as well as at public drop-in exhibitions:

- Caldicot One Stop Shop, NP26 5DB;
- Castleton Village Hall, CF3 2UW;
- Liswerry Post Office, NP19 0JX;
- Magor Post Office, NP26 3EP;
- Newport Central Library, NP20 1PA;
- Newport Information Station, NP20 4AX; and
- Welsh Government, Cathays Park, Cardiff CF10 3NQ.

Documents are also available at public drop-in exhibitions (see the draft Plan Consultation Document or [www.m4newport.com](http://www.m4newport.com) for details):

Sufficient quantities of the consultation documents will be made available at each of the public drop-in exhibitions, where additional copies may also be requested for delivery.

Large print versions of this document are made available on request.

**For further information please contact Allan Pitt (Communications Manager) via:**

- ***Email: [m4newport@arup.com](mailto:m4newport@arup.com);***
- ***Telephone: 029 20473727; or***
- ***Mail: Allan Pitt, Arup, 4 Pierhead Street, Cardiff CF10 4QP.***

A Non-Technical Summary of the Environmental Report is also available.

## **Appendix A**

### **SEA Scoping Responses**



# **Natural Resources Wales Scoping Response**

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Martin Bates  
Project Director  
Infrastructure Projects Unit  
Transport  
Department for Economy, Science and Transport  
Welsh Government  
Cathays Park  
**CARDIFF**  
CF10 3NQ

16 August 2013

Dear Mr Bates,

**SCOPING REPORT- STRATEGIC ENVIRONMENTAL ASSESSMENT: M4  
CORRIDOR AROUND NEWPORT.**

Thank you for giving the Strategic Assessment Team in the Governance and Communications Directorate in Natural Resources Wales the opportunity to comment on the SEA scoping report for the M4 Corridor around Newport. Our comments are made in the context of our responsibilities under the Environmental Assessment of Plans and Programmes (Wales) Regulations and as advisers to Welsh Government on the natural heritage and resources of Wales and its coastal waters. It is not the role of the Strategic Assessment Team to comment on Equality Impact Assessments and Health Impact Assessments and separate responses will be sent to these documents from Natural Resources Wales.

From 1 April 2013 Natural Resources Wales brought together the work of the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales, as well as some functions of Welsh Government. Our purpose is to ensure that the natural resources of Wales are sustainably maintained, enhanced and used, now and in the future.

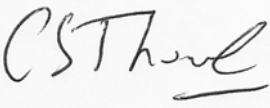
Our specific comments on the scoping document are contained within Annex 1 to this letter. Our key points follow below.

## Key Points.

- We welcome the intention for the Environmental Report to take account of comments received by consultation bodies in response to this scoping report. It is however, disappointing that consultation on this scoping report has not undertaken more widely. Section 3 of the CLG/Welsh Government 'Practical Guide to the Strategic Environmental Assessment Directive' suggests 'consultation with the public at earlier stages (e.g. when considering the scope of the Environmental Report) can provide useful information and public and stakeholder opinions on issues relevant to the plan or programme and the SEA. This can also help to avoid issues arising later which might delay the preparation of the plan or programme'.
- We would welcome the provision of further consideration of both air quality and deposition of air borne pollutants issues, from both the motorway and local roads. We would particularly welcome information on nitrogen deposition, nitrogen oxide concentrations and sulphur dioxide concentrations and deposition within 200 metres of the outer edge of the M4 itself and its feeder roads and junctions.
- The SEA Directive and process requires consideration of 'secondary, cumulative, synergistic, short, medium and long term permanent and temporary, positive and negative effects' on the environment. We would therefore suggest that, as an integral part of the proposals, junction strategies and likely induced and ancillary development arising out of any junction proposals (including engineering of and replacement of landfill facilities), should be included within this strategic assessment process and should not be deferred down to the project level. The aim of this assessment process should be to consider the likely effects (positive and negative) of the proposals as a whole.
- Further consideration should be given within the strategic assessment process to flood hazard, and risk, not only in the context of the proposed M4 improvements but also in terms of induced or deferred flood hazard and risk to other areas (See Annex 2 to this letter)

Should you have any queries regarding these comments, please do not hesitate to contact Alison Brown at our Maes y Ffynnon office in Bangor.

Yours sincerely



**Clive Thomas**  
**Head of Governance & Communications**

Cc: [Simon.i.power@arup.com](mailto:Simon.i.power@arup.com)

## **Annex 1: Scoping Report- Strategic Environmental Assessment: M4 Corridor around Newport.**

**1.1:** We welcome the intention for the Environmental Report to take account of comments received by consultation bodies in response to this scoping report. It is however, disappointing that consultation on this scoping report has not undertaken more widely. Section 3 of the CLG/Welsh Government 'Practical Guide to the Strategic Environmental Assessment Directive' suggests 'consultation with the public at earlier stages (e.g. when considering the scope of the Environmental Report) can provide useful information and public and stakeholder opinions on issues relevant to the plan or programme and the SEA. This can also help to avoid issues arising later which might delay the preparation of the plan or programme'.

**1.2:** We note that the context for the proposals under scrutiny arises from studies undertaken in 1990 (SWATS Report) and 2004. Whilst the need to address the challenges of congestion on the M4 around Newport are accepted, Natural Resources Wales would suggest that this SEA scoping document should incorporate further information on these studies and in particular, those originating from the Ministerial Review in 2004, which examined route corridors and which 'confirmed the route to the South of Newport as the optimal solution to tackling problems of congestion on the M4 corridor around Newport'. We would suggest that consideration of these earlier studies within this scoping document would be helpful given the conclusions in the CEM WelTAG Stage 1 (Strategy Level) Appraisal during 2012 did not originally include consideration of the 'new motorway capacity routed to the south of Newport' and that this option has only recently been re-introduced, subject to recent discussions between Welsh Government and HM Treasury and Department for Transport

### **1.3.1:**

**Capacity.** Further information would be welcomed regarding the periodicity of traffic volume excess on the M4 around Newport. For example, does the excess volume (beyond design) occur at certain times of day and/or during the year or is the exceedence 'constant'. Further information would also be welcomed on the location, nature and magnitude of 'new development' traffic.

**Resilience.** Further information would be welcomed regarding the nature, frequency and timing of 'disruption due to severe weather events'.

**Sustainable Development.** Further information would be welcomed on 'traffic noise' from both the motorway and local roads. Similarly, further information on air quality and deposition of air borne pollutants from both the motorway and local roads would be welcomed. We would particularly welcome information on nitrogen deposition, nitrogen oxide concentrations and sulphur dioxide concentrations and deposition within 200 metres of the M4 itself and feeder roads and junctions. We note that AQMAs identified in Figure 1.3 of this scoping report do not necessarily relate to the M4 itself but to areas on local roads. It is also noted that AQMAs associated with the M4 itself appear to be associated with junctions (J26, J26). Clarification would therefore welcome further information as to whether air quality

issues in these AQMAs are associated with congestion at given times of the day/week/year and/or whether the air quality issues are 'constant'.

### **1.3.2:**

**TPO2:** We note the reference to the need for improved transport connections with the Republic of Ireland. Further information on the levels of traffic (existing and projected) using the M4 at Newport as a means of accessing/exiting the Irish Republic would be welcomed.

**TPO8:** See comments above on sustainable development.

**1.3.3:** See comments above on 1.2.

**1.3.4:** Clarification would be welcomed as to what might be meant by 'minor changes' to the alignment of the TR111 protected route.

**1.3.5:** Reference should be made to the River Usk's status as a SSSI and to all other nature conservation designations which may be affected, either directly or indirectly, by the proposals. In particular, given the proximity to the Severn Estuary SAC/SPA/Ramsar and the presence of migratory and mobile species associated with both the estuary and the River Usk, consideration will need to be given to sites which are hydrologically linked to the River Usk.

Consideration should be given to potential effects related to increased light pollution and loss of tranquillity.

The SEA Directive and process requires consideration of 'secondary, cumulative, synergistic, short, medium and long term permanent and temporary, positive and negative effects' on the environment. We would therefore suggest that, as an integral part of the proposals, junction strategies and likely induced and ancillary development arising out of the proposals, should be included within this strategic assessment process and should not be deferred down to the project level. The aim of this assessment process should be to consider the likely effects (positive and negative) of the proposals as a whole.

**1.3.6:** See comments above on 1.3.5 regarding the need to consider junction strategies within this strategic assessment process.

**1.3.8** Complementary measures are explained in Section 1.3.8 and in Table 1.1. We would wish to be fully consulted on these complementary measures to ensure that any adverse impacts are avoided or acceptably mitigated for. We would have concerns as to their impact on SSSIs and SACs.

### **SEA Section 1.4 Consequences of Do Nothing**

The title given is 'consequences of doing nothing', however should this sub title read 'consequences of do minimum' to reflect the contents of the following paragraphs?

**1.4:** See comments above on 1.3.1 regarding traffic flows and capacity and air quality. We would stress that, whilst the information on AQMA's is, of course, highly important, these designations relate to human health and do not reflect all potential adverse effects on the environment. It is not necessarily the volume of emissions that is of concern and significance but the type of emissions, deposition rates and the sensitivity of the receiving environment. Potential effects to the environment should also be considered in the context of prevailing conditions and the particular contribution from road traffic to that baseline.

**2.1:** See comments above on 1.3.5 and 1.3.6. The SEA Directive and process requires consideration of 'secondary, cumulative, synergistic, short, medium and long term permanent and temporary, positive and negative effects' on the environment. We would therefore suggest that, as an integral part of the proposals, junction strategies and likely induced and ancillary development arising out of the proposals, should be included within this strategic assessment process and should not be deferred down to the project level.

**2.2.2:** Reference should be made to the Conservation of Habitats and Species Regulations 2010 (as amended). Natural Resources Wales welcomes the intention to undertake Habitats Regulations Assessment on the M4 proposals and looks forward to commenting on the forthcoming HRA screening (Test of Significance) in due course. Given the proximity of the proposals to the Severn Estuary SAC/SPA/Ramsar and the presence of migratory and mobile species associated with both the estuary and the River Usk SAC, it is suggested that consideration will need to be given in the HRA process to potential effects on European Sites and associated features of interest which are hydrologically linked to the River Usk.

**3:** We welcome the intention for the Environmental Report to take account of comments received by consultation bodies in response to this scoping report.

**3.1:** The development of SEA objectives is not a statutory requirement of the SEA process but is a commonly used methodological tool. We have no issue in principle with the proposed spatial scope of the assessment however, clarification would be welcomed as to whether 'international' issues will also be considered, particularly in light of the reference to the importance of the M4 to the Irish Republic in section 1.3.2 of this report.

The temporal nature of proposals is also outlined within this report (short term 0-4 years, medium term 5-9 years and long term 10+ years). We would also direct you to topical/sectoral assessment requirements, which may reflect a different time-span for assessment than provided by this scoping report. For example, a flood consequence assessment would consider climate change factors over the lifetime of development and assess risks and consequences over 75 years for different flood events.

In terms of temporal scope, clarification would be welcomed as to whether these scales include construction phases as well as operation phases.

## **Flood Risk Management Matters**

- Flood risk management matters should be considered at both the strategic level and at the project development stages. Information generated as part of Local Flood Risk Management Strategies and Strategic Flood Consequence Assessments may also be of use.
- In the identification of issues and significant effects, it is suggested a precautionary approach should be undertaken i.e. where any preferred route option is directed away from areas of high flood risk hazard and only subsequently considered in areas of risk where the management of risks and consequences of flooding have been demonstrated as acceptable over the lifetime of the development (as part of a flood consequence assessment).
- From a flood risk management perspective, baseline data should assess information on flood risk, including the flood maps, Development Advice Maps (DAM's) and NAFRA datasets. All of this information should be considered as part of the baseline data to ensure that the risk of flooding and the effects upon receptors are given due consideration within the options appraisal. The Welsh Assembly Government's development advice maps (DAMS) and supporting information should be considered at the strategic level and inform the identification of key issues and significant effects in Table 3.3 of the SEA scoping report.
- At the project level, we will normally provide advice on the scope of a flood consequence assessment, on request. A checklist is enclosed (Annex 2) to assist in the preparation of a flood consequence assessment, which will, where appropriate, inform any necessary mitigation and/or compensatory measures. Additional information and advice may also be obtained from us in providing a greater level of detail of coastal flooding predictions and the impacts of climate change. Should you require advice on the scope of an assessment please contact our Flood Risk Analysis Technical Specialist, Mr Gary Purnell (Tel. 02920 245 022; E-mail/E-bost: [gary.purnell@naturalresourceswales.gov.uk](mailto:gary.purnell@naturalresourceswales.gov.uk) / [gary.purnell@cyfoethnaturiolcymru.gov.uk](mailto:gary.purnell@cyfoethnaturiolcymru.gov.uk)).
- With regard to tidal flood risk, existing infrastructure, mainly to the south of the Newport area is protected against tidal inundation (to a standard of service). In assessing the risks and potential consequences of flooding, the application of climate change factors may result in or indicate tidal breach/overtopping of the sea defences. In proposing a new motorway and associated works, you should assess the risks of flooding using breach/failure of the existing defences, which mainly comprise of embankments and wave return walls in certain exposed areas, including Caldicot Levels. This could also have an impact on the effective conveyance of fluvial flood flows from the north that discharge into the extensive reën network on the Caldicot Levels (south of the proposed route), which ultimately discharge into the Severn Estuary.

We would be concerned as to the impact of flooding, its risks and consequences on people, property and natural heritage in the area between the new carriageway and the coastline; and on the road scheme itself. In meeting the

success criteria, the outcomes of a detailed flood consequence assessment must demonstrate that the risks and consequences of flooding to and/or from the infrastructure are managed down to an acceptable level. The assessment must be compliant with Planning Policy (PPW, TAN14 and TAN15). As part of this criteria, your assessment must also demonstrate that there are no unacceptable risks to third parties and whereby flooding is not increased elsewhere.

- We also refer you to the report “Environment Agency Wales - Managing flood risk on the Severn Estuary – South East Wales” dated January 2011. This “aspires” to maintain the existing flood defences along the coastline over the next 100 years to keep pace with climate change. It is important that these sea defences are not relied upon in the Scheme design because it cannot be guaranteed that the aspirations in this Strategy will be implemented in the future. Such aspirations are dependent on the economy, our priorities for providing flood defence infrastructure throughout Wales and future funding available to construct such schemes.
- Drainage Issues: The potential effects of additional hard-standing and positive drainage systems on local watercourses and drainage reens for the Preferred Option should be assessed. Any infrastructure improvements within the Caldicot levels are likely to impact upon the unique drainage system that exists within this area and should be considered a more sensitive receptor. Any proposals for infilling of reens will require compensatory measures for the loss of storm water storage and habitat.
- Consideration should be given to ensure that structures such as outfalls and footpaths, access and open space arrangements are maintained in perpetuity.
- Additional information on flood risk and drainage may also be obtained from the lead local flood authorities and Internal Drainage Board. We note that the Caldicot and Wentloog Internal Drainage Board have been consulted as part of the Scoping Report consultation.

#### **Water Management: Matters relating to Water Resources**

- We would suggest request that an updated water features survey be provided, reviewed and agreed as part of this assessment process.
- At the project stage, should there be a requirement to abstract or impound water before, during or following the project then there are likely to be constraints added to any Licence issued. This could affect the amount of water available and the times when water may be abstracted. It is therefore suggested that these issue be considered at this strategic stage of the proposed development
- At the project stage, it is the applicant’s responsibility to ensure their proposal will not adversely affect any nearby water features (wells, boreholes, springs, streams or ponds) in the area, including licensed and unlicensed abstractions. It is therefore suggested that, at the strategic stage, consideration needs to be given to potential effects on water features and users. Details regarding existing abstractions can be requested from [atiteam@naturalresourceswales.gov.uk](mailto:atiteam@naturalresourceswales.gov.uk).
- We recommend that the local water authorities are consulted on the proposals to ensure the proposals will not impact on public water supplies.



- It is possible that unlicensed abstractions exist within the vicinity, particularly for domestic and/or agricultural use, which we are not necessarily aware of. It is the responsibility of the applicant to locate these abstractions. The locations of private domestic sources may be held by a local authority.

### **Water Management: Matters relating to Water Quality**

- Transport schemes may produce priority hazardous substances such as cadmium, zinc, copper, mineral oils and organic pollutants. The Water Framework Directive (WFD) prevents the deterioration in the status of water bodies. All bodies of surface water and groundwater are to achieve good status by 2015; and discharges of priority hazardous substances (the most toxic substances discharged to waters) must cease by 2020. The Severn River Basin Management Plan (RBMP) requires the restoration and enhancement of water bodies to prevent deterioration and to promote recovery of water bodies. The baseline condition for 'Water Quality' should include both surface and ground waters.

The River Usk (tidally influenced) is of moderate ecological status and it is hoped that this River will achieve good ecological status by 2027. You should be aware that a stretch of the Monks Ditch fails WFD standards. Any potential adverse impacts from surface water runoff, which enters the rean system, should be included within this assessment process and, at project level, must be offset. Currently, the groundwater bodies are classified as being good chemical and quantitative status.

We recommend, therefore that information is provided in the draft Plan and SEA to explain how this scheme relates to the Water Framework Directive (WFD), which includes WFD objectives, classifications and trends. Given the requirements of the WFD and classification of groundwater bodies, the draft Plan should ensure that it does not have any detrimental effect on the status of water bodies.

Where Plans propose projects that are likely to cause deterioration or failure to meet Good Ecological Status/Good Ecological Potential (GES/GEP) then this effect should be identified through SEA. Alternative options or mitigation should also be considered to avoid impacts to WFD objectives.

Where a scheme is considered to only have temporary impacts, but there is uncertainty over this judgement, then outcomes should be revisited post-scheme to assess if deterioration or failure to achieve GES/GEP did occur.

If unanticipated deterioration or failure to achieve GES/GEP does occur then the following principles should be followed:

- A plan must be in place and agreed with us for the scheme to be retrospectively mitigated so that the water body is restored to at least the status from which it deteriorated, and/or to address the impact that limits the achievement of GES/GEP;

- This plan should set out realistic and feasible programme of measures, costs and commitments in order to address the identified water body impacts.
- Surface water run-off should be controlled as near to its source as possible through a sustainable drainage approach to surface water management (SUDS). SUDS involve a range of techniques including soakaways, infiltration trenches, permeable pavements, grassed swales, green roofs, ponds and wetlands. SUDS offer significant advantages over conventional piped drainage systems in reducing flood risk by attenuating the rate and quantity of surface water run-off from a site, promoting groundwater recharge absorbing diffuse pollutants and improving water quality. Ponds, reedbeds and seasonally flooded grasslands could be particularly attractive features within public open. The variety of SUDS techniques available means that virtually any development should be able to include a scheme based around these principles and also provides multiple benefits, reducing costs and maintenance needs. Wherever possible the use of Sustainable Drainage Systems should be sought, although this may not prove suitable where there is a contamination issue. In addition, opportunities to enhance biodiversity should be sought and incorporated into drainage options. The roles and responsibilities associated with maintenance matters must also be addressed.

#### **Matters Relating to Biodiversity**

- A transport scheme has the potential to damage biodiversity (species and habitats) though the amount of land-take required for potential routes and mitigation/compensatory measures.
- There is also the potential to cause habitat fragmentation, which may cause disruption to green corridors and means of access for mammals (for example, otters and badgers which travel under a road; and bats that fly over a route).
- The construction phase may present challenges such as in-channel works which could create potential pollution issues and disruption to migrating fish. It is important that these issues are identified within this assessment process and subsequent to this, appropriate measures devised to mitigate adverse effects on the river and associated aquatic life and 'mobile' species.

#### **Matters Relating to Contamination**

- Transport infrastructure works have the potential to cause harm to soils. Soils and contamination issues should therefore be considered.
- We would request that any preliminary risk assessment (PRA) and any subsequent detailed assessment consider the impact on existing sites, including;
  - i. Areas of landfilling to the south of Llanwern Steelworks
  - ii. Historic Landfills in the area around Newport Docks and the banks of the River Usk.
  - iii. Historic Landfill (the Sloblands) at the Alphasteel site on the east of the Usk.

The impact to and from regulated facilities and waste operations should be considered;

- iv. Docksway Landfill, both the closed Phase 1 and Operational Phase 2.
- v. SIMS metals operations in the Docks.
- vi. Llanwern Southside of Queensway Landfill.

### **Matters relating to Waste Management**

- o With respect to waste arisings and disposal, we would suggest that a waste management strategy/plan for the proposals is produced and that consideration of waste issues be included within this assessment process.

### **Table 3.1:**

We note from comments made in Section 3.2 of this scoping report that plans, policies and programmes considered for 'review' for the M4 CEM programme correspond to those included within the amended Wales Transport Plan SEA. Given the length of time since the Transport Plan SEA was undertaken, we would recommend the consideration of the following additional PPPs within the review for this assessment.

### **All Topics**

- o Planning Policy Wales, Edition 5, November 2012
- o Environment Act 1995

### **Climate Factors and Water**

- o Welsh Government 'Adapting to Climate Change: Guidance for Flood and Coastal Management Authorities in Wales', December 2011.

### **Water: Matters relating to Water Resources**

- o Water Resources Strategy for England and Wales: 'Water for People and the Environment' sets out the long term, strategic framework for the way we believe water resources should be managed to 2050 and beyond. This Strategy describes the pressures on water resources across England and Wales and provides details of what we expect to consider when planning new projects.
- o Water Resources Strategy for Wales.' (currently in development) This Strategy describes the pressures on water resources in Wales and provides details of what we would expect to be considered when planning new projects.
- o 'Environment Agency Wales Drought Plan'. This document describes the restrictions on water that could have an impact on a project. e.

*The above two strategies and plan can be found on the legacy Environment Agency Wales website)*

- o It should also be noted the Usk Catchment Abstraction Management Strategy is currently being updated with the outcomes of the Habitats Directive Review of Consents. The updated Strategy will be made available on our Natural

Resources Wales website. This Strategy provides information relating to water availability in the Usk catchment.

#### **Water: Matters relating to Flood Risk**

- We note that consideration is being given to relevant Local Development Plans (LDPs) and would suggest that this consideration should include reference to their supporting documents in the form of Strategic Flood Consequence Assessments (SFCAs).
- Reference should be made to the Newport County Local Flood Risk Management Strategy and to relevant flood and water level management plans in operation in the Gwent Levels.
- Flood & Water Management Act 2010
- Flood Risk Regulations 2009
- Water Resources Act 1991
- Land Drainage Act 1994
- Welsh Government National Strategy for Flood & Coastal Erosion Risk Management in Wales November 2011 and its Summary April 2012
- Welsh Government Local Flood Risk Management Strategies; Local Strategy November 2011
- Welsh Government Flood Risk Management; Community Engagement Toolkit October 2011
- Welsh Government Guidance for the Transfer of Ordinary Watercourse Regulatory Powers for Lead Local Flood Authorities in Wales (including the Appendices) February 2012
- Environment Agency - National Coastal Erosion Risk Mapping Project

#### **Water and Soil - Land affected by Contamination and Groundwater Protection**

- 'Guiding Principles for Dealing with Contaminated Land'. The Guiding Principles are a package of three documents providing generic guidance to help clarify roles and responsibilities; encourage good practice to promote compliance with the requirements, or avoid the need for regulation; guide customers to guidance and advice in other documents.
- 'Groundwater Protection: Principles and Practice (2012)' which is an update to our previous reference to 'Groundwater Protection: Policy and Practice (2008)'.

We would also suggest that you review the above two documents not only at the project implementation level, but also at a strategic level (as part of the SEA) because the principles should be adopted.

#### **Cultural Heritage**

Reference should be made to the Register of Landscapes of Historic Importance in Wales.

## **Landscape and Townscape.**

Reference should be made to the 2007 Tranquility studies undertaken by the Countryside Council for Wales on behalf of Welsh Government.

### **Table 3.2: Proposed SEA Objectives**

#### **No 1: Minimise transport related air pollution.**

We welcome this objective in principle but would recommend it is strengthened to include reference to both air pollution and deposition. The aims and goals should also consider not only air quality next to the existing M4 corridor but include those areas affected by emissions from the M4 corridor (both air quality and deposition). Clarification is required as to what is understood by 'air quality' in this objective (see comments on 1.3.1 and 1.4) and what is meant by 'next to the existing M4'.

#### **2B: Adaptation Measures to Climate Change.**

We welcome the principle of seeking adaptation measures however, it is suggested that these measures should, in the light of uncertainty and given the proposed routes to the south of Newport, aim to be more than 'adequate'.

#### **4: Biodiversity.**

Objectives should be strengthened to include consideration of ecological function and connectivity. It is disappointing to note that biodiversity issues have not been included within the M4 Corridor Aims and Goals given that the proposals may offer the opportunity to improve, restore and enhance biodiversity and ecological function.

#### **7: Soils**

See comments above on 1.3.1. It is disappointing to note that soil and soil function issues have not been included within the M4 Corridor 'Aims and Goals' given that the proposals may offer the opportunity to improve, restore and enhance the soil resource. We would further recommend that the Objective to 'reduce transport related contamination and safeguard soil quality and quantity' be strengthened to account for the potential for development to affect contaminated sites and land affected by historic contamination.

#### **8: Transport.**

Whilst we agree, in principle with Objective 8, it is suggested that it is strengthened to specifically include both surface and groundwater quality.

### **Table 3.3:**

**Water:** We would request that the significant effects considered under the heading of 'water' be expanded to include both water quantity as well as quality. We would further request that 'changes to hydrological regimes' should be expanded to include changes to both 'hydrological and hydrogeological regimes'. Pressures on water features as well as water resources should be considered within this assessment process.

**Air Quality:** Clarification is required as to what is meant by 'project level effects'. Natural Resources Wales would welcome the opportunity to discuss methodologies

and parameters for the assessment of air quality and deposition of air borne pollutants associated with the proposals at the earliest possible opportunity.

**Climate Change Adaption:** We request that under the heading of Climate Change Adaption, the impact of the transport infrastructure on flooding to other receptors (i.e. drainage) should also be considered as a (potential) significant effect. We would be interested to know how the Scheme will adapt to the impacts of climate change, a key long term outcome of the Wales Transport Strategy and delivered through the National Transport Plan; including;

- making transport infrastructure climate proof
- Increase flood defences where necessary
- Raise awareness about its effects

In considering the nature of effects, the consequences of a flood event for the development, over its lifetime, will need to be demonstrated as manageable down to an acceptable level, including its effects on existing development elsewhere.

As part of a Flood Consequence Assessment (FCA), the period over which climate change is considered needs to be specified. This is commonly known as the 'lifetime of development'. We recommend the following timescales are used:

- Residential dwellings – 100 years (fits within the current PAG and is supported by the PPS25 Practice Guide, Paragraph 3.88),
- All other development types – 75 years (fits within the current PAG).

### **SEA Topic - Soil**

In considering transport effects on soil, we request you to undertake a preliminary risk assessment (PRA), which is agreed with us and allowing a reasonable timescale for review. Any remediation and engineering solutions proposed will need to prevent adverse risks to controlled waters and ecological impacts.

### **Dockway Landfill.**

The three route options proposed to the South of Newport all have the potential to affect the Dockways Landfill Site. This landfill is regulated by Natural Resources Wales under two Environmental Permits, one for the closed landfill area to the south of the existing A48 southern distributor road and the other for the operational landfill. Any proposals for route alignment and construction within the site's boundaries would present significant engineering challenges and detailed technical assessment at the project level and the requirements to undertake such assessments and remedial engineering works must be considered within this strategic environmental assessment process, including the potential need for alternative landfill facilities. The proposed development could affect many aspects of the management of the closed landfill area and operational land fill area. Potential issues include, but are not limited to, landfill gas collection and use, leachate retention and collection, stability of the existing landfill cells, contamination of local groundwater and the long term effects on the continued operation of the installation and managed enclosure. Similarly, if the proposals require construction work in the vicinity of either landfill site then relevant assessments and consideration will need to be given in respect of local ground conditions that may affect landfill stability

**3.6.1:** We would suggest that the term ‘in combination’ relates to the HRA process and is not appropriate in the context of SEA. It is also suggested that, in addition to transport plans, cumulative effects should be considered in relation to plans and programmes which would induce or contribute to increased traffic flow in the area including relevant Local Development Plans

### **SEA Section 3.8 Monitoring of Significant Effects**

We would expect the significant effects identified in the Environmental Report (ER), both positive and negative to be monitored, as required by the SEA Regulations. This is necessary to identify when action should be taken to reduce or offset any potential environmental effects and unseen environmental effects as a result of the Scheme.

We also suggest that any monitoring of this Scheme should be linked to high level objectives and targets, which may then act as a catalyst for monitoring of the Gwent Levels at a strategic scale.

### **Annex 2: Scoping Report- Strategic Environmental Assessment: M4 Corridor around Newport. FULL Flood Consequence Assessment (FCA).**



### **CHECKLIST: FULL Flood Consequence Assessment (FCA)**

**Information and action for the enquirer (applicant/consultant/agent)**

This checklist is intended to help you prepare your FCA. It documents our advice to you on the scope of your FCA.

Please complete and send this checklist to us with any draft or completed FCA you wish to receive our advice on, as it will help us be as effective as we can be in responding to you.

**Any omission may delay our response or result in your FCA not demonstrating that the risk and consequences of flooding can be managed.**

If this checklist is being used without having received our scoping advice, please tick here

*Please note that a comprehensive submission will enable a better understanding but will not necessarily mean the risks and consequences of flooding could be manageable in line with TAN15.*

*We reserve the right to request further information in future if it is needed to establish the risk and consequences of flooding.*

**For  
internal  
use**

Initial enquiry	
Date	9 July 2013
Method (e.g. phone)	Formal Consultation
Contact name	Mr Simon Power, Arup
Contact address	4 Pierhead Street, Capital Waterside, Cardiff. CF10 4QP
Contact email address	<a href="mailto:simon-j.power@arup.com">simon-j.power@arup.com</a>
Telephone number	02920 266593
Site address	M4 Corridor around Newport
OS grid reference/NGR	ST371 859
Development proposal	Provision of a new M4 corridor around Newport
Relevant Bodies (LPAs)	Welsh Government Transport Division, Newport City Council and Monmouthshire County Council
Other/notes to help scoping	<ul style="list-style-type: none"> <li>• Welsh Government: M4 Corridor Enhancement Measures. WelTAG Appraisal Report Stage 1 (Strategy Level). March 2013. Ove Arup and Partners Limited.</li> <li>• M4 Corridor Around Newport WelTAG Appraisal report Stage 1 (Strategy Level). 24 June 2013. Ove Arup and Partners Limited.</li> <li>• Welsh Government: M4 Corridor around Newport. Strategic Environmental Assessment (SEA) Scoping. 9 July 2013. Ove Arup and Partners Limited.</li> </ul>



## Full FCA checklist

### Full FCA elements

This checklist for a full FCA is based on the technical requirements for assessing flooding consequences in section A1.17 of TAN15. **They are summarised below, but you should also refer to the full descriptions in TAN15.**

**Hydraulic modelling may need to be carried out as part of your submission.** *Natural Resources Wales does not currently have specific guidance on its website with respect to modelling. In the interim we recommend you refer to the modelling best practice guidance available on the Environment Agency's website at: <http://intranet.ea.gov/policies/environmentalwork/29629.aspx>.*

We take a risk based approach to reviewing any modelling work.

Cross ref. to A1.17 of TAN15	Element description	For use by Natural Resources Wales only. Scoping advice: evidence needed? Yes/No (and why)	For use by enquirer (applicant/consultant/agent) If no evidence included, why?	Notes
1	Location plan showing all sources of flooding	Yes - from both Tidal and Fluvial sources		
2	Levels survey of existing and proposed development to Ordnance Datum (Newlyn)	Yes		
3	Standard and condition of flood alleviation measures already in place, and an assessment of the performance of the defences under flooding conditions	The Caldicot Levels are protected by Sea Defences which are below the requisite 1 in 200 year (0.5% AEP) standard of protection in places for tidal defences e.g. Chapel Farm. These defences must be assessed to establish the flood risks should the defences overtop/breach which must consider climate change predictions.		
4	Access/evacuation plan	Yes – This would cover measures to close the road in the event of a flood occurring to the carriageway.		
5	Assessment of potential flood sources (rivers, tidal, coastal, groundwater, surface water, or combination, etc)	Yes – See (1) above		

6	A plan of the site showing any existing information on extent and depth of flood events or on flood predictions	Yes – Any historic information relating to flooding in the area of the proposed M4 Corridor will be useful.		
7	A plan and description of any structures which may influence local hydraulics	Any control structures e.g. sluices/penstocks and culverts which are affected by the scheme.		
8	Assessment of probability and trends of flooding (extent, depths, routes, etc)	Yes – This would be obtained by detailed modelling e.g. ISIS TuFlow		
9	Cross-sections of the proposed development relative to the source of flooding	Useful to indicate relationship between the new highway, the existing topography of the Caldicot Levels and pre/post development flood levels.		
10	Assessment of likely rate or speed and duration of flooding	The detailed modelling should establish these criteria.		
11	Assessment of implications of drains/sewers (existing/proposed) during flood events	Yes		
12	Volume of water displaced and runoff from the site following development	Yes - It is assumed that the new highway will be constructed on an embankment. This may create a barrier to flood waters moving north from a tidal breach and vice versa for fluvial flows moving south into the existing and extensive reen network on the Caldicot Levels. Surface water runoff will need to be assessed so that it does not increase flooding to the reen network and properties in this area.		
13	Assessment of impact of any displaced water elsewhere	Yes – See (12) above.		
14	Assessment of impact on fluvial and coastal morphology	Yes – There may be a requirement under the Water Framework Directive to assess impacts to the fluvial environment through which the highway crosses. It is likely that this will be covered in other strategic reports.		
15	Assessment of the impacts of climate change for the	Yes – We recommend that 100 years of climate change is applied		

	design life of proposed development	to sea level rise predictions for the 1 in 200 year (0.5% AEP) tidal flood event. This includes 20% on fluvial flood flows and 30% for rainfall intensity when designing surface water systems		
16	Assessment of residual risks after construction of defences (e.g. maintenance)	Yes		
17	Clear and comprehensive summary	Yes		
	<p><b>Hydraulic model and modelling report -</b></p> <p><b>If Natural Resources Wales hydraulic model used, please submit model control sheet.</b></p> <p><b>Please ensure all material has been submitted (to avoid delays in obtaining information) and indicate how the model has been submitted e.g. CD.</b></p>	We currently have no detailed modelling to support Tidal and Fluvial scenarios for the Caldicot Levels.		
	<b>Any additional elements</b>	<i>Advise what they are and why they are needed:</i>		

**Does your FCA satisfy the following acceptability criteria in TAN15?**

Appendix 1 Paragraph A1.12, A1.14 and A1.15

<b>Have you ensured.....</b>	<b>Note space for use by enquirer (applicant/ consultant/ agent)</b>
Flood defences must be shown by the developer to be structurally adequate, particularly under extreme overtopping conditions (i.e. that flood with a probability of occurrence of 0.1%)	
The cost of future maintenance for all new/approved flood mitigation measures, including defences, must be accepted by the developer and agreed with Natural Resources Wales	
The developer must ensure that future occupiers of the development are aware of the flooding risks and consequences	
Effective flood warnings are provided at the site	
Escape/evacuation routes are shown by the developer to be operational under all conditions	
Flood emergency plans and procedures produced by the developer must be in place	
The development is designed by the developer to allow the occupier the facility for rapid movement of goods/possessions to areas away from the floodwaters	
Development is designed to minimise structural damage during a flooding event and is flood proofed to enable it to be returned to its prime use quickly in the aftermath of the flood	
No flooding elsewhere	
Development is designed to be flood free during the indicative threshold frequency for the type of development	
Development is assessed against the indicative tolerable conditions under extreme flooding conditions	

# Natural England Scoping Response

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Date: 19 August 2013  
Our ref: 91518  
Your ref: -



Martin W Bates  
Project Director  
Infrastructure Projects Unit  
Transport  
Department for Economy, Science and Transport  
Welsh Government

Customer Services  
Hornbeam House  
Crewe Business Park  
Electra Way  
Crewe  
Cheshire  
CW1 6GJ

T 0300 060 3900

**BY EMAIL ONLY**  
martin.bates@wales.gsi.gov.uk

Dear Mr Bates

**M4 Corridor around Newport  
Scoping Report – Strategic Environmental Assessment, Health Impact and Equality Impact  
Assessment**

Thank you for your consultation on the above which was received by Natural England on 09 July 2013.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

We have considered the proposed scope for the Strategic Environmental Assessment, but we have not considered the information provided regarding health or equality impacts assessments as these topics are outside Natural England's remit.

**Strategic Environmental Assessment (SEA)**

We note that the proposed works are located entirely within Wales. Based on the information provided and a brief discussion with a Natural Resources Wales adviser, it does not appear likely that significant environmental effects resulting from these works would be experienced within England. However we are grateful that Department has brought the proposed works to our attention and would wish to be re-consulted should the SEA and/or HRA highlight any potential cross boundary effects on the natural environment that Natural England should be aware of, for example, impacts on the Severn Estuary European Site.

Notwithstanding the above, we note from the scoping report that part of the proposed works are located within a Site of Special Scientific Interest and close to a number of others. Furthermore, the proposed works are adjacent to the River Usk, which has been designated at a European as well as a national level as a Special Area of Conservation.

Natural England does not hold detailed information about these or other SSSIs or European designations within Wales, although we understand those identified in the SEA scoping report are likely to be particularly sensitive to changes in hydrology and water quality. We would therefore refer you to Natural Resources Wales, which will be able to advise the Department for Economy, Science and Transport on the qualifying features and conservation objectives for the SSSIs and SAC and

will also be best placed to advise on other natural assets that might be affected by the proposed works.

We would be happy to comment further should the need arise but if in the meantime you have any queries please do not hesitate to contact us.

For any queries relating to the specific advice in this letter only please contact Amanda Grundy on 0300 060 1454. For any new consultations, or to provide further information on this consultation please send your correspondences to [consultations@naturalengland.org.uk](mailto:consultations@naturalengland.org.uk).

We really value your feedback to help us improve the service we offer. We have attached a feedback form to this letter and welcome any comments you might have about our service.

Yours sincerely

Amanda Grundy  
Lead Adviser, Sustainable Land Use

## Environment Agency (England) Scoping Response

Email received: Thu 15/08/2013 15:58

This email is to confirm my telephone call this afternoon regarding Environment Agency comments on the SEA Scoping Report and the Health Impact Assessment for the proposed improvements to the M4 corridor around Newport in Wales.

The Environment Agency has no comment to make on the two documents referred to above.

Please accept our apologies for not having replied sooner but this statement will still meet your deadline of Friday 16<sup>th</sup> August 2013.

**Regards**

**Paul King**

**Advisor & Acting Team Leader  
Partnership and Strategic Overview (P&SO) Team, West of England  
Flood & Coastal Risk Management, Wessex Area**



## Cadw Scoping Response

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Email Received: 11/09/2013

Cadw has been consulted on a scoping report associated with the proposed M4 Corridor around Newport. Cadw, Welsh Government's historic environment service, is a statutory consultee on the SEA. Cadw also functions as the archaeological advisors to Welsh Government Transport.

Cadw has been asked to comment on a scoping report which sets out how the assessment for the Strategic Environmental Assessment, Equality Impact Assessment and Health Impact Assessment will be undertaken. It is Cadw's view, given its remit, that its comments shall focus on the content of the Strategic Environmental Assessment and it will defer to other organisations to comment upon the quality of the Equality Impact Assessment and the Health Impact Assessment. Cadw has been asked to provide an opinion on the adequacy of the scoping report.

Section 4 of the SEA Scoping Report set out six specific and helpful questions to help focus consultation responses.

**1. Are there any specific policies, plans and programmes that will affect or influence environmental aspects of the draft Plan that we should address in our detailed review?**

There have been changes to the policy framework since the previous scheme proposals were developed.

Cadw is engaged in the development of a new Heritage Bill for Wales. A dedicated bill team has been formed and our initial proposals are currently the subject of a public consultation (The future of our past: A consultation on proposals for the historic environment of Wales) that will end on 11th October 2013. The consultation sets out the Welsh Government's policy and legislation proposals to improve the protection of the historic environment of Wales and promote its sustainable management. It also outlines options and proposals for changes to the delivery of historic environment services on the national, regional and local level. The Bill is part of a wider Welsh Government legislative programme, which also includes provision for the natural environment and planning. All three pieces of this legislation are interlinked and throughout the development of these Bills, the legislative teams will work closely to ensure a cohesive and joined-up approach.

The consultation responses will be subjected to analysis and consideration before substantive recommendations are made to Cadw's Minister. The provisions of the Bill will be informed by the detailed consideration of the consultation responses. The Welsh Government intends to introduce the Bill into the National Assembly for Wales before the end of this Assembly term. Cadw therefore advises that the exact impact of the Heritage Bill on the proposed development is unknown at this stage and that the project team should keep abreast of developments with this fast developing area of Cadw's work.

Cadw published its Conservation principles for the sustainable management of

the historic environment in Wales in 2011. In this document, Cadw set out its logical approach for making decisions about all aspects of the historic environment and the six conservation principles set out within inform Cadw's approach to the protection and management of the historic environment. The section entitled Integrating conservation with other interests will be of particular pertinence.

Chapters 10 and 11 of the Highways Agency's Design Manual for Roads and Bridges, which covers matters relating to cultural heritage, have been updated in the intervening period.

The Local Development Plans for Cardiff, Newport and Monmouthshire are in different stages of adoption.

**2. Do you agree that the approach to reviewing and updating the baseline data summarised for inclusion in the Environmental Report is appropriate, i.e. is it at the right level and coverage across social and environmental issues? Do we propose to cover the correct geographic areas and issues?**

It is Cadw's opinion that the approach to reviewing and updating the baseline data summarised for inclusion in the Environmental Report as presented in section 3.3 of the SEA Scoping Report is appropriate and adequate for purpose. The approach is correctly pitched and clearly articulated. Given the significance and potential impact of the proposed development, it is Cadw's opinion that the proposal will effect the wider historic environment and that the geographic area from which the baseline data is collected should be wider than just the footprint of the proposed development, being designed to specifically include all those historic environment assets, whether designated or not and their settings, that are affected. Cadw agrees that the correct issues have been identified.

Cadw advises that the Welsh Government's transport consultants should check to determine whether the existing Historic Landscape Assessment used the ASIDOHL2 methodology or its predecessor. There are significant differences between the two versions of the methodology and if the HLA was undertaken using the earlier version it should be revised using the newer version.

**3. Do you know of any additional relevant baseline data which is pertinent to the draft Plan SEA? Do you collect any information that could be used to enhance the completeness of baseline information?**

The Cultural Heritage chapter for the Environmental Statement for the previous M4 scheme was curtailed in 2008 before it was fully completed. However, the work underpinning this chapter on archaeology, the built heritage and the historic landscape all remains valid, and these reports would have been appendices to the Environment Statement. Cadw advises that this information requires collating for ease of access.

The date at which the previous appointed archaeological sub-contractor ceased to collect data needs to be identified so that a small data-gathering exercise can be undertaken to bring this work up to date and not duplicate work already undertaken. For example an important piece of work that was completed subsequent to the previous exercise was the comprehensive LiDAR survey of

the Gwent Levels. Similarly, academic volumes of pertinence are known to be in preparation for publication, for example on the Gwent Levels in the Bronze Age. Such volumes may contain new data relevant to the draft Plan SEA. There may also be relevant data in work undertaken on the Severn Tidal Power assessment project.

One of Cadw's statutory duties is to maintain and enhance the schedule of ancient monuments of national importance. Cadw advises that it has an active scheduling enhancement programme in progress and that it is funding the four Welsh Archaeological Trusts to undertake threat-related scheduling enhancement projects on its behalf across Wales. One significant output from these projects is the recommendation to Cadw to assess sites for scheduling as monuments of national importance. Sites accepted for scheduling receive legal protection. Cadw currently has active scheduling enhancement projects focusing on medieval and post-medieval themes and there is a strong possibility that scheduling proposals may be recommended for Cadw's consideration within the proposed development area and its immediate vicinity.

**4. Do you agree that the identified SEA objectives are appropriate?**

Cadw agrees that the identified SEA objectives, particularly Nos. 10 and 11, are appropriate and are competently phrased.

**5. Is the SEA process set out transparent and appropriate?**

Cadw agrees that the SEA process as set out in the Scoping Report is transparent and appropriate. It follows appropriate published regulations and guidance. The approach used, including its successive stages, is outlined.

**6. Are there any specific organisations who should be contacted as part of the SEA Environmental Report consultation process?**

Cadw advises that Glamorgan-Gwent Archaeological Trust and the Royal Commission on the Ancient and Historical Monuments for Wales should be contacted as part of the SEA Environmental Report consultation process. Both organisations maintain considerable databases of information relating to the proposed development area, and both also have roles within the planning system.

In summary, Cadw confirms that it is content with the standard and adequacy of the content of the SEA Scoping Report.

If I can be of any further help, please do not hesitate to contact me.

Many thanks,

Jon

Jonathan Berry

Senior Inspector of Ancient Monuments and Archaeology | Uwch-arolygydd

Henebion ac Archaeoleg

Historic Environment Branch / Cangen Amgylchedd Hanesyddol

## **Appendix B**

### **Review of Relevant Plans, Policies and Programmes**

## **Appendix B - Review of Relevant Plans, Policies and Programmes**

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## Review of Policies, Plans and Programmes

### 1. Transport

International - EU	
<b>EU Directive 2009/28/EC Promotion of the use of energy from renewable sources</b>	
The directive aims to promote increased use of energy from renewable energy sources, together with energy savings and increased energy efficiency.	
Objectives and Requirements	Implications for the draft Plan
Member states should aim to ensure that the share of energy from renewable sources in all forms of transport in 2020 is at least 10% of the final consumption of energy in transport in that Member State.	The draft Plan will consider the role of renewable energy in transport and the scope to achieve greater energy savings and efficiencies. This is likely to be more appropriate at a project level. Affected issues: transport, climatic factors, landscape

**European Commission White Paper - Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system (EC, 2011)**

Updating the 2001 White Paper, this takes a global look at developments in the transport sector, at its future challenges and at the policy initiatives that need to be considered. The Commission’s vision of future transport is presented in Part 2. Key measures to achieve it are outlined in Part 3, summarised in Annex I, and described in more detail in the accompanying working document.

The 2050 vision includes:

- Growing Transport and supporting mobility while reaching the 60% emission reduction target
- An efficient core network for multimodal intercity travel and transport
- A global level-playing field for long-distance travel and intercontinental freight
- Ten Goals for a competitive and resource efficient transport system: benchmarks for achieving the 60% GHG emission reduction target.

**Objectives and Requirements**

Implementing the above vision requires an efficient framework for transport users and operators, an early deployment of new technologies and the development of adequate infrastructure.

The White Paper includes actions and suggested initiatives under the following themes:

- A single European Transport Area;
- Innovating the future – technology and behaviours;
- Modern infrastructure, smart pricing and funding.

**Implications for the draft Plan**

The draft Plan has been developed in line within an efficient framework for transport users and operation and the development of adequate infrastructure. The draft Plan aims to enhance the trans-European highway network, whilst the capacity to utilise modern construction methods, as well as funding models for delivery are likely to be more appropriate at a project level.

Affected issues: population, health and wellbeing, climatic factors

**National –UK and Wales**

**Towards a Sustainable Transport System: Supporting Economic Growth in a Low Carbon World (DfT, 2007)**

This discussion document responds to the reports of Eddington and Stern, and looks at how we can translate their recommendations into our policy-making process over the short, medium and long term.

**Objectives and Requirements**

This document has three aims. Firstly, it describes how the Government is responding to the recommendations made in the Eddington study to improve transport’s contribution to economic growth and productivity, and how it is ensuring that transport will play its part in delivering the overall level of reductions in carbon emissions recommended by the Stern Review of the Economics of Climate Change. Secondly, it sets out the Department for Transport’s ambitious policy and investment plans for the period to 2013-14. And finally, it proposes a new approach to longer term transport strategy, building on the model recommended by Sir Rod Eddington, and explains how we will engage with passengers, users, the transport industry and other stakeholders as we develop and implement that process.

**Implications for the draft Plan**

The draft Plan will build, where possible, upon recommendations of the report in order to encourage more sustainable transport systems. The draft Plan will help to reduce traffic congestion along a key east-west route and thus aims to improve transport’s contribution to economic growth and productivity, and play its part in delivering the overall level of reductions in carbon emissions.

Affected issues: transport, climatic factors



## Technical Advice Note (TAN) 18 – Transport (2007)

This advice note is designed to complement the policy on transport contained in Planning Policy Wales. It promotes the objectives for better integration between planning and transport across different transport modes. It also provides practical advice on how development plans and decisions on new developments can help to achieve these objectives.

Welsh Government wishes to extend choice in transport and secure accessibility and mobility in ways which support sustainable development by encouraging the development of an integrated transport system which is safe, efficient, clean and fair. This will be achieved by:

- Integration within and between different types of transport;
- Integration with land use planning;
- Integration with the environment; and
- Integration with policies for education, health and wealth creation.

### Objectives and Requirements

Integration between land use planning and transport: Land use planning can help to achieve Welsh Government’s objectives for integrated transport planning through:

- Reducing the need to travel by locating development where there is good access by public transport, walking and cycling;
- Locating development near other related uses to encourage multi-purpose trips;
- Ensuring that new development includes appropriate pedestrian, cycling, public;
- Transport, and traffic management provision;
- Promoting cycling and walking;
- Supporting the provision of high quality public transport;

### Implications for draft Plan

The draft Plan will contribute to the objectives of TAN 18 by:

- Providing cycle and walking friendly infrastructure;
- Supporting traffic management measures; and
- Mitigation of environmental impacts, particularly at the project level.

Affected issues: health & well-being, population, air quality, noise

<ul style="list-style-type: none"> <li>• Supporting traffic management measures; and</li> <li>• Supporting necessary transport infrastructure improvements.</li> <li>• Mitigation of environmental impacts: The potential for adverse impacts associated with transport infrastructure projects, on the natural, historic and built environment should be minimised. Wherever possible new routes should follow existing gradients, using existing landforms and landscape features to reduce noise and visual impact, subject to safety environmental and economic considerations. Transport schemes should where necessary provide mitigation measures to minimise the impacts caused by the construction and operation of transport infrastructure. Such mitigation measures should be secured by the use of planning conditions.</li> </ul>	
<b>Smarter Choices: Wales (Feb 2007)</b>	
<p>Smarter Choices refers to a variety of methods and initiatives which reduce the negative impacts of travel on congestion, the environment and health. The guide illustrates a variety of initiatives to promote more sustainable travel patterns and modal shift; and explains how they can be used to solve transport and environmental problems.</p>	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>The objectives of the guidance are to assist in identifying Smarter Choice techniques that can positively influence travel behaviour. They include:</p> <ul style="list-style-type: none"> <li>• Giving people better and more focused information about their travel options;</li> <li>• Marketing sustainable travel options more effectively, to</li> </ul>	<p>The measures contained within the draft Plan may incorporate technology that provides people with better and more focused information about their travel options to harness facilities that reduce the need to travel and market sustainable travel options more effectively.</p> <p>Affected issues: population, transport</p>

<p>encourage their use;</p> <ul style="list-style-type: none"> <li>• Making improvements to the way that services are organised to ensure they appeal to particular groups of potential customers;</li> <li>• Targeting transport advice and series to particular groups of the population;</li> <li>• Harnessing technology and facilities that reduce the need to travel.</li> </ul>	
<p><b>The Wales Transport Strategy (WTS, 2008)</b></p>	
<p>The WTS provides the detailed blueprint for the development of a transport system in Wales which supports WG objectives. The goal of “<i>One Wales: Connecting the nation</i>” is to promote sustainable transport networks that safeguard the environment while strengthening our country’s economic and social life. The WTS identifies a series of high-level outcomes and sets out the steps to their delivery.</p>	
<p><b>Objectives and Requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<p>The strategic priorities of the WTS are:</p> <ul style="list-style-type: none"> <li>• Reducing greenhouse gas emissions and other environmental impacts from transport;</li> <li>• Integrating local transport;</li> <li>• Improving access between key settlements and sites;</li> <li>• Enhancing international connectivity; and</li> <li>• Increasing safety and security.</li> </ul>	<p>The draft Plan will be closely aligned to the WTS priorities. In particular, the draft Plan will aim to improve access between key settlements and sites, support safer travel east-west in South Wales, enhance international connectivity and aim to reduce or limit greenhouse gas emissions and other environmental impacts from transport.</p> <p>Affected issues: air quality, climatic factors; biodiversity, health and wellbeing</p>

**UKT1 Carbon Reduction Strategy for Transport, Low Carbon Transport: A Greener Future(July 2009)**

The strategy published by the Department for Transport proposes measures to reduce carbon in transport by supporting a shift to new technologies and fuels; promoting lower carbon transport choices; and using market-based measures to encourage a shift to lower carbon transport.

**Objectives and Requirements**

The strategy sets out the need for transport to contribute to reducing emissions, and the actions needed to take to achieve this now, and the work that will be needed to take forward in the period to 2022.

The aims of the strategy include:

- Making vehicles on our roads to be more energy-efficient;
- Cleaner technology in public transport;
- Make public transport an accessible, attractive, low carbon and easy-to-use option for individuals and business by better coordination and integration of different public services;
- To create Sustainable Travel Towns;
- Improve travel information; and
- Factoring carbon costs into the prices we pay for transport.

**Implications for the draft Plan**

The draft Plan will contribute to reducing carbon emissions by reducing congestion. The walking and cycling complementary measures will encourage more sustainable travel, particularly for local trips.

Affected issues: transport, climatic factors

**National Transport Plan (2010) and Prioritised National Transport Plan (2011)**

This sets out the strategic priorities for Wales for the period up to 2015 and beyond. This Plan details the approach to putting transport onto a carbon reduction pathway, whilst at the same time ensuring that it can continue to support sustainable economic development and social inclusion.

**Objectives and Requirements**

The objectives of the plan are to improve sustainable transport options in Wales through encouraging alternative modes of transport such as cycling and public travel.

The plan aims to invest in transport in Wales to tackle poverty and assist economic growth.

**Implications for the draft Plan**

The draft Plan considers the commitments and objectives of the NTP and responds directly to the priority to improve the M4 between Magor and Castleton. The draft Plan will provide a package of highway infrastructure improvements alongside complementary measures including encourage alternative modes of transport such as providing cycle friendly infrastructure and walking friendly infrastructure.

Affected issues: transport, climatic factors, health and well-being, population

## A Walking and Cycling Action Plan for Wales (2009-2013)

This Action Plan brings together all the key initiatives which the Welsh Government and its key partners will undertake in support of walking and cycling in Wales. A key aim of the Plan is to help secure a change in behaviour - so that more people, young and old, walk and cycle more often.

### Objectives and Requirements

The key objectives outlined in the plan are to:

- Improve the health and well-being of Wales through increased physical activity;
- Improve the local environment for walkers and cyclists;
- Encourage sustainable travel to combat climate change;
- Increase levels of walking and cycling through promotion of facilities; and
- Ensure that walking and cycling are prioritised in policies, guidance and funding.

### Implications for draft Plan

The draft Plan aims to contribute to the objectives of the Action Plan by providing cycle friendly and walking friendly infrastructure as part of its complementary measures.

Affected issues: population, human health.

## Sewta Regional Transport Plan (2010)

The South East Wales Regional Transport Plan (RTP) is a 15-year plan intended to provide a regional framework for transport provision under the Wales Transport Strategy (WTS) and a prioritised, five-year capital programme of regional and local transport interventions. The plan includes:

- a strategic framework, setting out the issues, analysis, vision, aims, and policies
- an implementation programme identifying actions, proposals and a five year programme
- a monitoring and review mechanism

### Objectives and requirements

The main objective of the RTP is to bring a regional focus to the implementation of the Wales Transport Strategy and further the aspirations of the Wales Spatial Plan.

The plan sets out a 15 year long term strategy up to 2025 and a programme of projects for the first five years to enable the delivery of the overall strategy and to achieve a modern, accessible, integrated and sustainable transport system for south east Wales.

The identified priorities of the RTP are:

- To improve access for all to services, facilities and employment, particularly by walking, cycling and public transport.
- To increase the proportions of trips undertaken by walking, cycling and public transport.
- To minimise demand on the transport system.
- To develop an efficient, safe and reliable transport system, with

### Implications for draft Plan

The draft Plan aims to support the priorities and objectives of the RTP by improving access for all to services, facilities and employment. For instance, the draft Plan aims to:

- improve access to local key services and residential and commercial centres;
- provide cycle and walking friendly infrastructure as part of its complementary measures;
- provide safer, easier and more reliable travel east-west in South Wales;
- provide a transport system that encourages healthy and active lifestyles; and
- to reduce significantly the emission of greenhouse gases and the impact of the transport system on local communities.

<p>improved transport links between the 14 key settlements in South East Wales, and between South East Wales and to the rest of Wales, the UK and Europe.</p> <ul style="list-style-type: none"> <li>• To provide a transport system that encourages healthy and active lifestyles.</li> <li>• To reduce significantly the emission of greenhouse gases and the impact of the transport system on local communities.</li> <li>• To ensure developments are accessible by sustainable transport and to make sustainable transport and travel planning an integral component of regeneration schemes.</li> <li>• To make better use of the existing transport system.</li> </ul> <p>The objectives of the plan are for long term transport planning. The objectives are to tackle transport issues by addressing the following five key issues to improve transport:</p> <ul style="list-style-type: none"> <li>• Safety and security;</li> <li>• Connectivity and Accessibility;</li> <li>• Quality and Efficiency;</li> <li>• Environment;</li> <li>• Land use and Regeneration.</li> </ul>	<p>Affected issues: transport, land use, safety and security, connectivity and accessibility.</p>
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<b>Draft Road Safety Delivery Plan (Consultation), Welsh Government 2012</b>	
The consultation report concerns the Welsh Government's strategic approach to road safety to 2020, and the actions they believe will best support road casualty reduction.	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
The plan aims for an improvement in safety on Welsh roads and to achieve a reduction in the number of people killed and seriously injured.	<p>The draft Plan takes into account the aspiration for zero fatalities in achieving improved road safety in South Wales. The draft Plan will provide measures that support the realisation of safer travel east-west in South Wales.</p> <p>Affected issues: population, transport.</p>
<b>Planning Policy Wales (Edition 5, November 2012)</b>	
Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government, and provides the policy framework for the effective preparation of local planning authorities' development plans. PPW is material to decisions on individual planning applications. They will be considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals.	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>PPW sets out the requirements for a Local Development Plan and within its policy guidance, it sets out objectives for transport in land use planning. The key objectives for transport include:</p> <ul style="list-style-type: none"> <li>• Reducing the need to travel, especially by private car, by locating</li> </ul>	The draft Plan considers the transport objectives set out in the Planning Policy Wales by aiming to improve accessibility, particularly by walking and cycling as part of its complementary measures, and ensuring that transport is accessible to all groups of people.

<p>development where there is good access by public transport, walking and cycling;</p> <ul style="list-style-type: none"> <li>• Locating development near other related uses to encourage multi-purpose trips and reduce the length of journeys;</li> <li>• Improving accessibility by walking, cycling and public transport;</li> <li>• Ensuring that transport is accessible to all, taking into account the needs of disabled and other less mobile people;</li> </ul>	<p>Affected issues: population, human health.</p>
<p><b>Active Travel (Wales) Bill (2013)</b></p>	
<p>The Active Travel (Wales) Bill was laid in the National Assembly for Wales on the 18 February 2013. The Bill is intended to enable more people to walk and cycle and generally travel by non-motorised transport.</p>	
<p><b>Objectives and Requirements</b></p>	<p><b>Implications for the draft Plan</b></p>
<p>Specifically, the Bill makes provision:</p> <ul style="list-style-type: none"> <li>• for approved maps of existing active travel routes and related facilities;</li> <li>• for approved integrated network maps of the new and improved active travel routes and related facilities needed to create an integrated network of active travel routes and related facilities;</li> <li>• requiring local authorities to have regard to integrated network maps in preparing transport policies and to make continuous improvement in the range and quality of active travel routes and related facilities; and</li> <li>• requiring the Welsh Ministers and local authorities, in constructing and improving highways, to have regard to the desirability of enhancing the provision made for walking and cycling.</li> </ul>	<p>The draft Plan aims to encourage walking and cycling so that more people can experience the health benefits, Wales can reduce our greenhouse gas emissions, and can help address poverty and disadvantage. At the same time, the Welsh Government wants to help the economy to grow, and to take steps that will unlock sustainable economic growth.</p> <p>Affected issues: transport, climatic factors, health and wellbeing.</p>

<b>Regional</b>	
<b>Cardiff Local Development Plan Working Version [No Status] Policy KP8 Sustainable Transport (June 2013)</b>	
This policy promotes sustainable transport solutions integrated with transport services and infrastructure.	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>Transport proposals should:</p> <ul style="list-style-type: none"> <li>• Minimise travel demand and dependence on the car;</li> <li>• Enable and maximise use of sustainable and active modes of transport;</li> <li>• Integrate travel modes;</li> <li>• Provide for people with special access and mobility requirements;</li> <li>• Improve safety for all travellers;</li> <li>• Maintain and improve the efficiency and reliability of the transport network;</li> <li>• Support the movement of freight by rail or water; and</li> <li>• Manage freight movements by road and minimise their impacts.</li> </ul>	<p>The draft Plan has considered this emerging policy and should help to support it by improving safety for all travellers, improving freight movements by road, and integrating travel modes by walking and cycling.</p> <p>Affected issue: transport.</p>

**Newport Local Development Plan Revised Deposit Plan (June 2013) Policy SP14 Transport**

The provision of a choice of transport modes is important in achieving sustainable development, as is the integration of all modes of transportation.

**Objectives and Requirements**

Transport proposals will be supported where they:

- Improve road safety;
- Improve the quality of life of residents;
- Assist the local economy;
- Assist urban regeneration; and
- Relieve traffic congestion in the long term.

**Implications for draft Plan**

The draft Plan has considered this emerging policy and should help to support it by improving road safety, supporting the local economy, relieving traffic congestion in the long term, and assisting urban regeneration.

Affected issue: transport.

## Newport Local Development Plan Revised Deposit Plan (June 2013) Policy SP15 Integrated Transport

Integrated Transport is one of the main principles of the Welsh Government's National Transport Plan (NTP) and is seen as a major way of encouraging a more effective use of the transport system.

### Objectives and Requirements

Integrated transport will be implemented in line with SEWTA Regional Transport Plan, including:

- A co-ordinated pedestrian network;
- Implementation of the cycling strategy;
- Innovative forms of public transport such as bus priority and enhancement of rail routes; and
- Interchange between bus, bicycle and car to enable sustainable use of the countryside.

### Implications for draft Plan

The draft Plan has considered this emerging policy and should help to support it by providing cycle and walking friendly infrastructure as part of its complementary measures.

Affected issue: transport.

## 2. Air Quality

International – EU	
<b>Gothenburg Protocol (Revised, 2012)</b>	
<p>The Protocol sets emission ceilings for 2020 for four pollutants: sulphur, NOx, VOCs and ammonia. Between 2005 and 2020 the EU member states must jointly cut their emissions of sulphur dioxide by 59%, nitrogen oxides by 42%, ammonia by 6%, volatile organic compounds by 28% and particles by 22%. Negotiations were guided by a similar scientific assessment and scenario analysis as was the case for the 1999 protocol.</p>	
Objectives and Requirements	Implications for draft Plan
<p>The objective of the Protocol is to control and reduce emissions of sulphur, nitrogen oxides, ammonia and volatile organic compounds that are caused by anthropogenic activities and are likely to cause adverse effects on human health, natural ecosystems, materials and crops, due to acidification, eutrophication or ground-level ozone.</p>	<p>The draft Plan will help to reduce pollutant emissions and incorporate transport options with highway infrastructure and complementary walking and cycling measures that aim to reduce traffic congestion and local trips made by car. One of the Transport Planning Objectives for the draft Plan is improved air quality in areas next to the M4 around Newport and reduced greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air quality, health and wellbeing</p>
<b>National Emission Ceilings Directive (2001/81/EC) amended by Council Directive 2006/105/EC (currently under revision)</b>	
<p>The Directive sets upper limits for each Member State for the total emissions in 2010 of the four pollutants responsible for acidification, eutrophication and ground level ozone pollution (sulphur dioxide,</p>	

<p>nitrogen oxides, volatile organic compounds and ammonia), but leaves it largely to the Member States to decide which measures, in addition to Community legislation for specific source categories, to take in order to comply.</p>	
<p><b>Objectives and Requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<p>The substantive objective of the directive is to reach the national ceilings by 2010 and in later years (Article 4). In addition the directive requires the Member States to draft and report National Programmes and to report emissions and projections to the Commission and the European Environment Agency. These additional obligations serve as important measures to be taken by Member States to ensure that the ceilings are met by 2020.</p>	<p>The draft Plan will help to contribute to reaching towards the limits proposed in the Directive to improve air quality in urban areas. One of the Transport Planning Objectives for the draft Plan is improved air quality in areas next to the M4 around Newport and reduced greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air quality, health and wellbeing</p>

## National – UK and Wales

### The Environment Act 1995

Part IV of the Environment Act sets out air quality protection and requirements in England, Scotland and Wales.

#### Objectives and Requirements

The Act includes:

- designations for Air Quality Management Areas;
- production and implementation of air quality strategies;
- Powers of Local Authorities and Environment Agency; and
- The Act requires local authorities in the UK to review air quality in their area and designate Air Quality Management Areas (AQMAs) if improvements are necessary. Where an AQMA is designated, local authorities are also required to work towards the Strategy's objectives prescribed in regulations for that purpose. An air quality action plan describing the pollution reduction measures must then be put in place. These plans contribute to the achievement of air quality limit values at local level.

#### Implications for draft Plan

By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.

Affected issues: air quality, health and wellbeing

### Air Quality (Amendment) (Wales) Regulations 2002

Air Quality (Wales) (Amendment) Regulations 2002, provide the statutory basis for the air quality objectives under the system of local air quality management. The regulations are derived from European Directives and prescribe the dates for meeting air quality objectives.



Objectives and Requirements	Implications for draft Plan
Air quality objectives are set for benzene, carbon monoxide and lead reduction.	<p>By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air quality, health and wellbeing</p>
<b>The National Emission Ceilings Regulations 2002</b>	
The regulations transpose the National Emission Ceilings Directive (2001/81/EC) in to UK law.	
Objectives and Requirements	Implications for draft Plan
The objective of the regulations are to impose limits on the emissions of sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia so that they do not exceed the amounts specified in the Schedule.	<p>By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air quality, health and wellbeing</p>

**Environment Strategy for Wales 2006: Air Quality Policy**

The Environment Strategy for Wales, 2006 includes an air quality policy which has been developed by reviewing trends and projections, identifying challenges for PM10, PM2.5, NO and NO2 and identifying critical loads and exceedences for air pollutants. The policy includes an action plan that sets out potential measures and levels to comply with by 2010, 2015 and 2020.

<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>The main objectives are to reduce air pollution and increase life expectancy taking into account the most vulnerable and ecological protection. Specific measures relating to transport which are identified include:</p> <ul style="list-style-type: none"> <li>• low emission zones</li> <li>• anti-congestion measures</li> <li>• local traffic management plans</li> </ul> <p>The number of residents living within an AQMA is increasing year on year.</p>	<p>By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air quality and human health</p>

**The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (July 2007)**

The UK Government and Devolved Administration’s national ambient air quality strategy containing objectives and standards for improving air quality.

<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>The Strategy:</p> <ul style="list-style-type: none"> <li>• sets out a way forward for work and planning on air quality issues;</li> <li>• sets out the air quality standards and objectives;</li> <li>• introduces a new policy for tackling fine particles;</li> <li>• identifies potential new policies which could give further health benefits and move closer towards meeting the Strategy’s objectives.</li> </ul>	<p>By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air quality, health and wellbeing</p>
<p><b>Air Quality and Climate Change: a UK perspective (2007)</b></p>	
<p>This report by the Air Quality Expert Group (AQEG) looks at the scientific background to interactions and synergies between air quality and climate change from the perspective of policy measures developed to address both or either, focussing on the UK and Europe in the period to 2022.</p>	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>The report sought to answer questions related to the impact of climate change on air quality, the impact of air quality on climate change, the impact of climate change policies on air quality and vice versa and finally relating to future research requirements. Recommendations highlighted the need to consider the linkages between climate change and air quality mitigation /improvement measures in policy development and to concentrate on measures that result in benefits for both air quality and climate.</p>	<p>By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air quality, climate change; health and wellbeing</p>

**Programme of measures: UK national programme to combat acidification, eutrophication and ground level ozone (February 2007)**

The report outlines the measures that are being taken in the UK to meet the obligations of the National Emission Ceilings Directive (2001/81/EC). The report records national policies that are relevant to meeting the ceilings, and identifies some of the regional and local measures that improve air quality.

The report considers the contribution that each sector of the UK economy has made to reducing emissions, and the air quality effect is set in the context of the contributions that these sectors make to greenhouse gas emissions, and to the UK climate change programme.

**Objectives and Requirements**

The report highlights that a number of additional policy measures would, if implemented, generate significant additional benefits to society (net of additional costs), public health, the environment, and help move the UK closer to our air quality objectives by eliminating a significant number of areas of exceedance.

**Implications for draft Plan**

By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.

Affected issues: air quality, health and wellbeing.

**Air pollution: Action in a changing Climate (March 2010)**

The report highlights the additional health benefits that can be achieved through closer integration of air quality and climate change policies in future.

**Objectives and Requirements**

The publication includes the following key messages:

**Implications for draft Plan**

By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four

<ul style="list-style-type: none"> <li>• Air pollution often originates from the same activities that contribute to climate change (notably transport and electricity generation) so it makes sense to consider how the linkages between air quality and climate change policy areas can be managed to best effect.</li> <li>• The UK's commitment to build a Low Carbon Economy by 2050 will reduce air pollution but the choices made to get there will affect the extent of air quality improvements. Optimizing climate policy decisions to account for air pollution could yield additional benefits of approximately £24 billion by 2050.</li> <li>• Air quality/climate change co-benefits can be realised through actions such as promoting low-carbon vehicles and renewable sources of energy that do not involve combustion. At the same time, actions that tackle climate change but damage air quality must be avoided.</li> <li>• Action will be needed at international, EU, national, regional and local levels to make sure air quality and climate change policies are integrated to maximise the co-benefits of tackling both air pollution and climate change together and ensure ambitious but realistic air quality targets are set for the future.</li> </ul>	<p>AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air quality, health and wellbeing</p>
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### The Air Quality Standards (Wales) Regulations 2010

The Regulations implement Directive 2008/50/EC on ambient air quality and cleaner air for Europe and Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air. These Regulations replace the Air Quality Standards (Wales) Regulations 2007.

#### Objectives and Requirements

These regulations bring into law in Wales the limits set out in the EU Directives.

#### Implications for draft Plan

By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs which currently exceed the limits set out in the air quality standards regulations, and reduce greenhouse gas emissions per vehicle and/or person kilometre.

Affected issues: air quality, health and wellbeing

### Local Air Quality Management Policy Guidance Wales (LAQM. PG09) and Addendum to Policy Guidance (LAQM. PG(09)) 2012

The guidance explains the background to air quality management; the principles of review and assessment; and recommendations and suggestions on how to take forward local air quality strategies for use by local authorities.

#### Objectives and Requirements

The Policy Guidance provides an overview of the local air quality management system and the various considerations that local authorities should bear in mind as well as Practice Guidance on some

#### Implications for draft Plan

By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or

<p>of the more effective and ambitious measures that local authorities can pursue.</p> <p>The Policy guidance provides a strategy and framework of how air quality is to be managed.</p>	<p>person kilometre.</p> <p>Affected issues: air quality, health and wellbeing</p>
<p><b>Planning Policy Wales (Edition 5, November 2012)</b></p>	
<p>Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government, and provides the policy framework for the effective preparation of local planning authorities' development plans. PPW is material to decisions on individual planning applications. They will be considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals.</p>	
<p><b>Objectives and Requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<p>PPW sets out the requirements for a Local Development Plan and within its policy guidance, it sets out objectives for air quality in Chapter 13 Minimising and Managing Environmental Risks and Pollution. The key objectives for air quality include:</p> <ul style="list-style-type: none"> <li>• improving the quality of air; and</li> <li>• periodically review air quality in relation to the seven regulated pollutants.</li> </ul>	<p>By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air, health and wellbeing</p>

<b>Regional</b>	
<b>Air Quality Action Plan for Newport 2008</b>	
Seven Air Quality Management Areas (AQMAs) were declared in Newport in 2005 due to assessments of air quality undertaken by the local authority during the local air quality management regime indicated levels of nitrogen dioxide above the annual mean nitrogen dioxide objective. A further two AQMAs have been declared following 2005. A major contributor to the levels of pollution was found to be road traffic.	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
Sets out strategies and measures to improve air quality in the Newport area and aims to inform the development of the south east Wales Regional Transport Plan and focus transport planning measures that improve air quality in the area.	By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.
<b>Air Quality Action Plan for Cardiff 2009</b>	
There are currently five AQMAs declared across Cardiff, an air quality action plan has been produced which includes measures to improve air quality in these areas. A major contributor to the levels of pollution was found to be road traffic through the local air quality management regime undertaken by Cardiff County Council.	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
Sets out strategies and measures to improve air quality in the Cardiff area and aims to inform the development of the south east Wales	By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four



Regional Transport Plan and focus transport planning measures that improve air quality in the area.	AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.  Affected issues: air, health and wellbeing
<b>Cardiff Local Development Plan, Working Draft, No Status, Policy EN13: Air, Noise, Light Pollution and Contaminated Land Policy (June 2013)</b>	
Developments that would generate unacceptable levels of air, noise or light pollution are appropriately located and controlled.	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
Development will not be permitted where it would cause or result in unacceptable harm to health, local amenity, the character and quality of the countryside, or interests of nature conservation, landscape or built heritage importance because of air, noise, light pollution or the presence of unacceptable levels of land contamination	By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.  Affected issues: air, health and wellbeing
<b>Newport Local Development Plan, Revised Deposit Plan, Policy GP4 General Development Principles – Highways and Accessibility (June 2013)</b>	
Development proposals should be designed to avoid or reduce transport severance, noise and air pollution.	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
The policy advocates that highway developments proposals should be	By reducing traffic congestion, the draft Plan aims to improve air

<p>designed to avoid air pollution.</p>	<p>quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air, health and wellbeing</p>
<p><b>Newport Local Development Plan, Revised Deposit Plan, Strategic Policy 14 Transport Proposals (June 2013)</b></p>	
<p>As transport is a contributor to atmospheric pollution, it is therefore essential that the use of more energy efficient modes of transport is encouraged.</p>	
<p><b>Objectives and Requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<p>The policy advocates that transport proposals will be supported where they result in improvement in the quality of the life of residents and other environmental improvements including air quality, noise reduction, and sustainable drainage and enhanced biodiversity.</p>	<p>By reducing traffic congestion, the draft Plan aims to improve air quality in areas next to the M4 around Newport, including four AQMAs, and reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: air, health and wellbeing</p>

### 3. Climatic Factors, Including Greenhouse Gas Emissions and Adaptation to the Effects of Climate Change

International - EU	
<b>Adapting to Climate Change in Europe – Options for EU Action – (EC, 2007)</b>	
This EC Green Paper sets out how Europe should respond and adapt to the changing climate.	
Objectives and Requirements	Implications for draft Plan
<p>The Green Paper considers response based around four pillars:</p> <ul style="list-style-type: none"> <li>• Early action in the EU;</li> <li>• Integrating adaptation into EU external actions;</li> <li>• Reducing uncertainty by expanding the knowledge base through integrated climate research; and</li> <li>• Involving European society, business and public sector in the preparation of coordinated and comprehensive adaptation strategies.</li> </ul>	<p>By reducing traffic congestion, and encouraging local trips to be made by walking and cycling, the draft Plan aims to achieve one of its objectives in reducing greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: climatic factors, air quality, health and wellbeing</p>
<b>Climate for a transport change. TERM 2007: indicators tracking transport and environment in the European Union (EEA, 2008)</b>	
This report represents a summary of selected issues from the European Environment Agency Transport and Environment Reporting Mechanism (EEATERM) set of transport and environment integration indicators.	

<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>The objective of this report is to indicate some of the main challenges to reducing the environmental impacts of transport and to make suggestions to improve the environmental performance of the transport system as a whole. The report examines the issues centred on transport and climate change that need to be addressed in the coming years. These issues are derived partly from the policy questions that form the backbone of TERM and partly from other on-going work at EEA. As with previous TERM reports, this report evaluates the indicator trends with respect to progress towards existing objectives and targets from EU policy documents and various transport and environmental directives.</p>	<p>By reducing traffic congestion, and encouraging local trips to be made by walking and cycling, the draft Plan aims to achieve one of its objectives in reducing greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: climatic factors; air quality, health and wellbeing</p>

### **Kyoto Protocol (1997) and Doha Amendment (2012)**

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change, which **commits** its Parties by setting internationally binding emission reduction targets.

#### **Objectives and Requirements**

The first reporting period ended in 2012, but in the Doha amendment for the second commitment period, Parties committed to reduce GHG emissions by at least 18 percent below 1990 levels in the eight-year period from 2013 to 2020. The UK has committed to reducing emissions to 80% of 1990 levels by 2020.

#### **Implications for draft Plan**

Increasing road capacity is likely to increase absolute carbon emissions in due course. Therefore, it will be important for the draft Plan to mitigate these effects as much as possible, for example, by encouraging local trips to be made by walking and cycling. The draft Plan aims has an objective of reducing greenhouse gas emissions per vehicle and/or person kilometre.

Affected issues: climatic factors, air quality, health and wellbeing

## Adapting to Climate Change in Europe – Options for EU Action – (EC, 2007)

This EC Green Paper sets out how Europe should respond and adapt to the changing climate.

### Objectives and Requirements

The Green Paper considers response based around four pillars:

- Early action in the EU;
- Integrating adaptation into EU external actions;
- Reducing uncertainty by expanding the knowledge base through integrated climate research; and
- Involving European society, business and public sector in the preparation of coordinated and comprehensive adaptation strategies.

### Implications for draft Plan

The draft Plan should factor in the need to adapt to a changing climate, ensuring that new infrastructure is design to cope with more extreme weather events.

Affected issues: climatic factors, air quality, health and wellbeing, soil, water, biodiversity

## European Commission's Climate Action and Renewable Energy (CARE) package

In January 2007 the European Commission proposed a comprehensive set of measures to establish a new energy policy for Europe which addresses these challenges in an integrated way and seeks to make the European economy a model for sustainable development. These measures were endorsed two months later by EU heads of state and government. The EU is committed to achieving the following ambitious targets by the year 2020:

- Cutting greenhouse gas emissions by at least 20% of 1990 levels in order to start transforming Europe into a highly energy-efficient, low-carbon economy
- Scaling up this emissions reduction to 30% provided developed countries commit to making comparable emission cuts under a new international climate agreement due to be concluded by the end of 2009
- Cutting energy consumption by 20% of projected 2020 levels through a major improvement in energy efficiency
- Increasing the share of energy provided by renewable energy sources such as wind, solar and biomass to 20%.

The CARE package implements the commitments on reducing emissions and increasing renewable energy.

Objectives and Requirements	Implications for draft Plan
<p>The main elements of the package are:</p> <ul style="list-style-type: none"> <li>• A revision and strengthening of the EU's pioneering Emissions Trading System (EU ETS), which covers power plants and energy-intensive industry sectors that are collectively responsible for some 40% of the EU's total emissions. Emissions will be reduced through a progressive cut in the number of emission allowances granted to 21% below 2005 levels by 2020;</li> <li>• Binding national targets for overall emissions from the economic sectors not covered by the EU ETS, such as transport (except aviation), agriculture, waste and housing. The proposed targets,</li> </ul>	<p>By reducing traffic congestion, and encouraging local trips to be made by walking and cycling, the draft Plan aims to achieve one of its objectives in reducing greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: transport, climatic factors, air quality, health and wellbeing</p>

differentiated according to Member States' wealth, range from a reduction of 20% to an increase of 20%. Overall they would reduce EU emissions from these sectors to 10% below 2005 levels by 2020;

- Binding national targets for renewable energy to ensure the EU reaches its 20% target by 2020. This proposal also sets out sustainability criteria that all biofuels would have to meet in order to be counted towards Member States' 10% targets; and
- A legislative proposal to promote the safe and environmentally sound use of so called carbon capture and geological storage (CCS) technologies, which have the potential to remove most of the carbon emissions from fossil fuel use in power.



## An EU Strategy on adaptation to climate change (2013)

The strategy takes account of global climate change impacts, such as disruptions to supply chains or impaired access to raw materials, energy and food supplies, and their repercussions on the EU.

### Objectives and Requirements

The strategy focuses on three key objectives:

- Promoting action by Member States: The Commission will encourage all Member States to adopt comprehensive adaptation strategies (currently 15 have strategies) and will provide funding to help them build up their adaptation capacities and take action. It will also support adaptation in cities by launching a voluntary commitment based on the Covenant of Mayors initiative.
- 'Climate-proofing' action at EU level by further promoting adaptation in key vulnerable sectors such as agriculture, fisheries and cohesion policy, ensuring that Europe's infrastructure is made more resilient, and promoting the use of insurance against natural and man-made disasters.
- Better informed decision-making by addressing gaps in knowledge about adaptation and further developing the European climate adaptation platform (Climate-ADAPT) as the 'one-stop shop' for adaptation information in Europe.

### Implications for draft Plan

The draft Plan should factor in the need to adapt to a changing climate, ensuring that new infrastructure is design to cope with more extreme weather events.

Affected issues: climatic factors, air quality, health and wellbeing, soil, water, biodiversity

<b>National – UK and Wales</b>	
<b>UK Climate Change Act 2008</b>	
The UK Government is committed to addressing both the causes and consequences of climate change and has therefore passed a Climate Change Act	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>It creates a new approach to managing and responding to climate change in the UK through:</p> <ul style="list-style-type: none"> <li>• Setting ambitious targets (80% CO2 reduction on 1990 levels by 2050);</li> <li>• Taking powers to help achieve them;</li> <li>• Strengthening the institutional framework; and</li> <li>• Enhancing the UK’s ability to adapt to the impact of climate change and establishing clear and regular accountability to the UK Parliament and devolved legislatures.</li> </ul>	<p>Increasing road capacity is likely to increase absolute carbon emissions in due course. Therefore, it will be important for the draft Plan to mitigate these effects as much as possible, for example, by encouraging local trips to be made by walking and cycling. The draft Plan has an objective to reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: climatic factors; air quality, health and wellbeing</p>

**DfT Carbon Reduction Strategy for Transport, Low Carbon Transport: A Greener Future (July 2009)**

The Strategy set out the actions the Government are taking to deliver cuts in emissions in line with meeting obligations under carbon budgets to 2022. The strategy promotes supporting a shift to new technologies and fuels; promoting lower carbon transport choices and using market-based measures to encourage a shift to lower carbon transport.

**Objectives and Requirements**

The objectives set out for low carbon transport involve delivering efficiency in combustion engines and ultra-low emission vehicles through sustainable biofuels and technology.

The aims of the strategy include making public transport more accessible, attractive and low carbon; promoting integration of transport modes; promoting other sustainable modes; promoting change through better information.

**Implications for draft Plan**

Increasing road capacity is likely to increase absolute carbon emissions in due course. Therefore, it will be important for the draft Plan to mitigate these effects as much as possible, for example, by encouraging local trips to be made by walking and cycling. The draft Plan has an objective to reduce greenhouse gas emissions per vehicle and/or person kilometre.

Affected issues: climatic factors, transport, air quality, health and wellbeing

**The Carbon Plan: Delivering our Low Carbon Future (2011)**

The Carbon Plan sets out the Government's plans for achieving the emissions reductions committed to in the first four carbon budgets, on a pathway consistent with meeting the 2050 target (as set out in the Climate Change Act).

**Objectives and Requirements**

The Carbon Plan sets targets for the Government's first four carbon budgets to 2027. It aims to achieve a 50% reduction in carbon

**Implications for draft Plan**

Increasing road capacity is likely to increase absolute carbon emissions in due course. Therefore, it will be important for the draft Plan to

<p>emissions by this time, from a 1990 baseline. It sets plans for the following sectors:</p> <ul style="list-style-type: none"><li>• Buildings;</li><li>• Transport;</li><li>• Industry;</li><li>• Secure, low carbon electricity;</li><li>• Agriculture, forestry and land management; and</li><li>• Waste and resource efficiency.</li></ul> <p>It also describes how the UK government will work with the EU and Devolved Administrations</p>	<p>mitigate these effects as much as possible, for example, by encouraging local trips to be made by walking and cycling. The draft Plan has an objective to reduce greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Consideration should also be given to the embodied carbon</p> <p>Affected issues: climatic factors, transport, air quality, health and wellbeing</p>
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## UK Climate Change Programme: Tomorrow's Climate Today's Challenge (2006)

The UK's climate change programme sets out the Government's and the devolved administrations' approaches to the challenge of climate change. The programme sets out the Government's commitments both at international and domestic levels to meet the challenge of climate change. It also sets out their approach to strengthening the role that individuals can play. Also it outlines how it will encourage individuals as citizens, consumers, motorists and business people to take the action needed to help meet the goals.

### Objectives and Requirements

The devolved administrations are committed to making an equitable contribution to efforts aimed at meeting the UK's Kyoto target, moving towards the UK's national goal of 20% below 1990 levels by 2010 and putting the UK on a path towards a 60 per cent reduction in carbon dioxide emissions by 2050.

### Implications for draft Plan

Increasing road capacity is likely to increase absolute carbon emissions in due course. Therefore, it will be important for the draft Plan to mitigate these effects as much as possible, for example, by encouraging local trips to be made by walking and cycling. The draft Plan aims has an objective of reducing greenhouse gas emissions per vehicle and/or person kilometre.

Affected issues: climatic factors; air quality, health and wellbeing

### Objectives and Requirements

Summary of Conclusions:

- There is still time to avoid the worst impacts of climate change, if we take strong action now.
- Climate change could have very serious impacts on growth and development.
- The costs of stabilising the climate are significant but manageable; delay would be dangerous and much more costly.

### Implications for draft Plan

By reducing traffic congestion, and encouraging local trips to be made by walking and cycling, the draft Plan aims to achieve one of its objectives in reducing greenhouse gas emissions per vehicle and/or person kilometre.

Affected issues: climatic factors; air quality, health and wellbeing

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|---|--|
| <ul style="list-style-type: none"><li>• Action on climate change is required across all countries, and it need not cap the aspirations for growth of rich or poor countries.</li><li>• A range of options exists to cut emissions; strong, deliberate policy action is required to motivate their take-up.</li><li>• Climate change demands an international response, based on a shared understanding of long-term goals and agreement on frameworks for action.</li><li>• Key elements of future international frameworks should include:<ul style="list-style-type: none"><li>• Emissions trading;</li><li>• Technology cooperation;</li><li>• Action to reduce deforestation;</li><li>• Adaptation.</li></ul></li></ul> |  |
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**UK Government, The National Adaptation Programme: Making the country resilient to a changing climate (July 2013)**

The National Adaptation Programme (NAP) contains a register of actions which includes all the actions agreed in the programme so far. It also aligns risks identified in the Climate Change Risk Assessment to actions being undertaken or to be undertaken and the timescales according to each theme.

The NAP looks at issues including the built environment; infrastructure; healthy and resilient communities; agriculture and forestry; natural environment; and business and local government. It looks most closely at the most urgent risks.

**Objectives and Requirements**

The vision set out in the NAP, is for a “society which makes timely, far-sighted and well-informed decisions to address the risks and opportunities posed by a changing climate.”

In terms of infrastructure, the vision is for “an infrastructure network that is resilient to today’s natural hazards and prepared for the future changing climate”

**Implications for draft Plan**

The draft Plan should factor in the need to adapt to a changing climate, ensuring that new infrastructure is design to cope with more extreme weather events.

Affected issues: climatic factors, air quality, health and wellbeing, soil, water, biodiversity

## Climate Change Strategy for Wales 2010-2020

The strategy sets out how greenhouse gas emissions will be reduced in Wales. It sets out a delivery plan of how to tackle the causes and consequences of climate change.

### Objectives and Requirements

Current and future actions and targets set out in the strategy include:

- Reduce greenhouse gas emissions by 3% per year from 2011 in areas of devolved competence, against a baseline of average emissions between 2006-10;
- Achieve at least a 40% reduction in greenhouse gas emissions in Wales by 2020 against a 1990 baseline; and
- The 3% target will include all 'direct' greenhouse gas emissions in Wales except those from heavy industry and power generation, but including emissions from electricity use in Wales by end-user.

### Implications for draft Plan

By reducing traffic congestion, and encouraging local trips to be made by walking and cycling, the draft Plan aims to achieve one of its objectives in reducing greenhouse gas emissions per vehicle and/or person kilometre.

Affected issues: climatic factors; air quality



## Delivery Plan for Emission Reduction: Climate Change Strategy for Wales (2010)

The Plan sets out the plans and programmes that have been planned and are already underway for the reduction of emissions. It also highlights the key UK and EU policies and wider sectoral contributions which play an important part in helping deliver greenhouse gas emission reduction target.

### Objectives and Requirements

A number of interventions are provided to support transport emissions reduction. These are:

- WT1 - Sustainable Travel Centres.
- WT2 - Smarter Choices.
- WT3 - Travel planning and provision of personalised travel information.
- WT4 - Developing a series of strategic modal interchanges.
- WT5 - Promotion of eco-driving.
- WT6 - Promotion and support for walking and cycling.
- WT7 - Investment in rail services.
- WT8 - Investment in buses.
- WT9 - Improving traffic management on the strategic road network.
- WT10 - Supporting the freight industry to reduce emissions.
- WT11 - Alternative fuels infrastructure.

### Implications for draft Plan

By reducing traffic congestion, and encouraging local trips to be made by walking and cycling, the draft Plan aims to achieve one of its objectives in reducing greenhouse gas emissions per vehicle and/or person kilometre.

Affected issues: climatic factors; air quality, health and wellbeing

## Wales Changing Climate, Challenging Choices: The impacts of climate change in Wales from 2000 to 2080 (2000)

This report describes a scoping study of the possible impacts on Wales of climate change over the next 100 years. It combines consideration of the probable change in climate, expert opinion on the consequences of the changes in climate.

### Objectives and Requirements

The paper recommends the following policies are needed to help adaptation to climate change:

- The Assembly need to ensure climate change is considered as a component of sustainability;
- The Assembly need to develop economically viable strategies which recognise the interactions between climate change, agriculture, conservation and water resources;
- The Assembly need to take account of the potential impacts of climate change in revising planning guidance, particularly in areas susceptible to flooding;
- Regulators need to ensure that the water and power utilities place sufficient emphasis on measures to assist adaptation to climate change;
- Government needs to clarify the responsibilities for flood defence which are distributed between a range of bodies;
- The Assembly and Welsh organisations need to ensure that Welsh issues are fully incorporated into UK wide research on climate change impacts;
- Organisations need to consider how corporate strategic plans should be informed by a wider range of issues than currently,

### Implications for draft Plan

The draft Plan should factor in the need to adapt to a changing climate, ensuring that new infrastructure is design to cope with more extreme weather events.

Affected issues: climatic factors, air quality, health and wellbeing, soil, water, biodiversity

<p>due to the high degree of interaction between sectors which climate change will highlight; and</p> <ul style="list-style-type: none"> <li>• Business needs to consider the opportunities as well as the threats offered by climate change.</li> </ul>	
<p><b>Adaption Delivery Plan: Climate Change Strategy for Wales (Oct 2010)</b></p>	
<p>The Adaptation Delivery Plan describes the actions that will fulfill the objectives of the Adaptation Framework. The Delivery Plan addresses strategic actions and actions about; the natural environment; infrastructure; communities; health; and business and tourism.</p>	
<p><b>Objectives and Requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<p>The Plan sets out 24 actions to deliver the climate change adaptation framework. The actions address the following categories:</p> <ul style="list-style-type: none"> <li>• Strategic actions;</li> <li>• Natural environment;</li> <li>• Infrastructure;</li> <li>• Communities;</li> <li>• Health; and</li> <li>• Business and tourism.</li> </ul>	<p>The draft Plan should factor in the need to adapt to a changing climate, ensuring that new infrastructure is design to cope with more extreme weather events.</p> <p>Affected issues: climatic factors; air quality, health and wellbeing, natural environment, population</p>
<p><b>Policy Statement: Preparing for a changing climate (Oct 2011)</b></p>	
<p>The policy statement sets out the challenge of a changing climate and how Welsh Government proposed to respond to climate change. The statement sets out how Welsh Government will implement adaptation provisions of the Climate Change Act 2008.</p>	

<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>The policy sets out the Welsh Government’s response to climate change. It requires preparedness’ for climate change by Local Authorities to implement adaptation measures and assess the risks and opportunities posed by climate change.</p>	<p>The draft Plan should factor in the need to adapt to a changing climate, ensuring that new infrastructure is design to cope with more extreme weather events.</p> <p>Affected issues: climatic factors, air quality, health and wellbeing, soil, water, biodiversity</p>
<p><b>Climate Change Risk Assessment for Wales (2012)</b></p>	
<p>The report draws together and presents evidence from individual CCRA UK sector reports and recent research literature. The findings are presented for different possible future scenarios and include an indication of confidence in the results and areas where there are evidence gaps. The assessment is based on the UK Climate Projections which were published in 2009 (UKCP09).</p>	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>Summary of findings:</p> <ul style="list-style-type: none"> <li>• From the results, the potentially most significant risks for Wales from climate change appear to be:</li> <li>• Increases in hot-weather related death and illness;</li> <li>• Changes in soil conditions, biodiversity and landscape due to warmer, drier summers;</li> <li>• Reductions in river flows and water availability during the summer, affecting water supplies and the natural environment;</li> <li>• Increases in flooding on the coast and inland, affecting people, property and infrastructure;</li> </ul>	<p>The draft Plan should factor in the need to adapt to a changing climate, ensuring that new infrastructure is design to cope with more extreme weather events.</p> <p>Affected issues: climatic factors; air quality, health and wellbeing, population, water, soil, biodiversity</p>

<ul style="list-style-type: none"><li>• Changes in coastal evolution including erosion and coastal squeeze, affecting beaches, intertidal areas and other coastal features;</li><li>• Changes in species including a decline in native species, changes in migration patterns and increases in alien and invasive species; and</li><li>• Increases in the risk of pests and diseases affecting agriculture and forestry. The risk to livestock is a particular concern.</li></ul>	
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<b>Regional</b>	
<b>KP15 Climate Change Policy (Cardiff LDP Working Draft No Status, June 2013)</b>	
This policy is in relation to respecting Cardiff's environment and responding to climate change.	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>To mitigate against the effects of climate change and adapt to its impacts, development proposals should take into account the following factors:</p> <ul style="list-style-type: none"> <li>• Reducing carbon emissions;</li> <li>• Protecting and increasing carbon sinks;</li> <li>• Adapting to the implications of climate change at both a strategic and detailed design level;</li> <li>• Promoting energy efficiency and increasing the supply of renewable energy; and</li> <li>• Avoiding unnecessary flood risk by assessing the implications of development proposals within areas susceptible to flooding and preventing development that unacceptably increases risk.</li> </ul>	<p>By reducing traffic congestion, and encouraging local trips to be made by walking and cycling, the draft Plan aims to achieve one of its objectives in reducing greenhouse gas emissions per vehicle and/or person kilometre.</p> <p>Affected issues: climate change, air quality, health and wellbeing, flood risk</p>

## Cardiff Carbon Lite Action Plan (2010)

This is an Action Plan to secure change in the city to address the challenge of climate change, signed up to by partners in the Cardiff Vision Forum. It covers both mitigation and adaptation.

### Objectives and Requirements

### Implications for draft Plan

The action plan covers the following priorities:

1. **Engagement** - building the commitment of key partners and engaging all of the Cardiff community.
2. **Buildings** - reducing energy use in existing and new buildings across the city.
3. **Waste management** – reducing waste produced by the city and increasing recycling and composting.
4. **Transport** – reducing the need to travel and car use, and increasing the use of sustainable and active travel modes.
5. **Energy supply** – increasing the percentage of renewable energy in the total energy supply mix.

**Objective 2 – Climate Change (Newport LDP Revised Deposit Plan, June 2013)**

Tackling climate change is a key objective of the Newport LDP.

**Objectives and Requirements**

To ensure that development and land uses in Newport make a positive contribution to minimising, adapting to or mitigating against the causes and impacts of climate change, by incorporating the principles of sustainable design, changes to travel behaviour, managing the risks and consequences of flooding, and improving efficiency in the use of energy, waste and water.

**Implications for draft Plan**

By reducing traffic congestion, and encouraging local trips to be made by walking and cycling, the draft Plan aims to achieve one of its objectives in reducing greenhouse gas emissions per vehicle and/or person kilometre.  
  
Affected issues: climate change, flood risk, waste and water



## 4. Noise and Vibration

International – EU	
<b>EU Directive 2002/49/EC relating to the Assessment and Management of Environmental Noise– The Environmental Noise Directive (2002)</b>	
The aim of the Environmental Noise Directive (END) is to define a common approach across the European Union with the intention of avoiding, preventing or reducing on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise.	
Objectives and Requirements	Implications for draft Plan
<p>This will involve:</p> <ul style="list-style-type: none"> <li>• Informing the public about environmental noise and its effects;</li> <li>• Preparing of strategic noise maps for: large urban areas (referred to as 'agglomerations' in the END and in this document), major roads, major railways and major airports as defined in the END; and</li> <li>• Preparing action plans based on the results of the noise mapping exercise. Such plans will aim to manage and reduce environmental noise where necessary, and preserve environmental noise quality where it is good.</li> </ul>	<p>The draft Plan aims to reduce noise pollution by reducing traffic congestion, encouraging local trips to be made by walking and cycling, and reducing the volume of traffic travelling along the route of the existing M4 where there are more receptors.</p> <p>Affected issues: noise and vibration, health and wellbeing</p>

**The Environmental Noise Directive (END) Noise Action Plan for Transport – Consultation Report and Plan (2009)**

The aim of the Environmental Noise Directive (END) is to define a common approach across the European Union with the intention of avoiding, preventing or reducing on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. The END Action Plan for Transport is a consultation report of the progress and direction of the Assembly Government for meeting the END details.

**Objectives and Requirements**

There are 4 action plans drafted to meet the requirements of END:

- Roads Action Plan (covers the road network inside agglomerations and major roads outside agglomerations),
- Railways Action Plan (covers the railways inside agglomerations and Major railways outside agglomerations)
- An agglomeration Action plan for Cardiff and Vale of Glamorgan
- An agglomeration Action plan for Swansea/Neath Port Talbot.

The Welsh Ministers are required to draw up an Action Plan in 2008, 2013 and every five years thereafter, based on the results of the noise mapping. The Regulations also require the Action Plans to be reviewed and revised if necessary from time to time and whenever a major development occurs affecting the existing noise situation. The END lists the minimum requirements for the content of each Action Plan

Summaries of the action plans must be reported back to the Commission by 18 January 2009. The draft Action Plans have been prepared and will be subject to an 8 week consultation commencing 5 November 2008.

**Implications for draft Plan**

To comply with the high level objectives of the END, i.e. to avoid, reduce and mitigate environmental noise.

Affected issues: noise and vibration

## National – UK and Wales

### TAN 11 – Noise (1997)

This note provides advice on how the planning system can be used to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business. It outlines some of the main considerations which local planning authorities should take into account in drawing-up development plan policies and when determining planning applications for development which will either generate noise or be exposed to existing noise sources.

#### Objectives and Requirements

- Where it is particularly difficult to separate noise sensitive development from noisy activities, plans should contain an indication of any general policies which the local planning authority proposes to apply in respect of conditions or planning obligations.
- Local planning authorities must ensure that noise generating development does not cause an unacceptable degree of disturbance.
- Noise characteristics and levels can vary substantially according to their source and the type of activity involved. Sudden impulses, irregular noise or noise which contains a distinguishable continuous tone will require special consideration.
- Local planning authorities should consider whether proposals for new noise-sensitive development would be incompatible with existing activities, taking into account the likely level of noise

#### Implications for draft Plan

The draft Plan aims to reduce noise pollution by reducing traffic congestion, encouraging local trips to be made by walking and cycling, and reducing the volume of traffic travelling along the route of the existing M4 where there are more receptors.

Affected issues: health and wellbeing, noise and vibration

<p>exposure at the time of the application and any increase that may reasonably be expected in the foreseeable future.</p> <ul style="list-style-type: none"> <li>Measures introduced to control the source of, or limit exposure to, noise should be proportionate and reasonable.</li> </ul>	
<p><b>Environmental Noise (Wales) Regulations (amendment) 2009</b></p>	
<p>The Regulations implement the provisions of the Directive 2002/49/EC of the European Parliament relating to the assessment and management of environmental noise from transport and industry.</p>	
<p>Objectives and Requirements</p>	<p>Implications for darft Plan</p>
<p>The Regulations require the control of transport and industrial noise through a comprehensive assessment of environmental noise. The Regulations aim to help identify whether there are any people unnecessarily exposed to high noise levels, suffering accordingly and causing a cost to society; and what areas of relative quiet we might or could have, thus enabling us to develop measures to protect them and not have the noise environment inadvertently eroded.</p> <p>The objective of the regulations is to ensure that policies are developed to enable strategic noise management to be carried out. The regulations also require noise mapping and action planning process to be implemented on a five-year rolling programme.</p>	<p>The draft Plan aims to reduce noise pollution by reducing traffic congestion, encouraging local trips to be made by walking and cycling, and reducing the volume of traffic travelling along the route of the existing M4 where there are more receptors.</p> <p>Affected issues: noise and vibration, health and wellbeing</p>

**Environmental Noise Action Planning (Wales) (2011):**

- **Cardiff and the Vale of Glamorgan Agglomeration Action Plan**
- **Railway Action Plan for Wales**
- **Roads Action Plan for Wales**

Action plans prepared in response to the requirements under the EU Noise Directive, to produce strategic noise maps for road, rail, and for agglomerations. The Action Plans aim to reduce noise (where necessary) and maintain environmental noise quality where it is good.

**Objectives and Requirements**

Prevent and reduce environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and to preserve environmental noise quality where it is good.

**Implications draft Plan**

The draft Plan aims to reduce noise pollution by reducing traffic congestion, encouraging local trips to be made by walking and cycling, and reducing the volume of traffic travelling along the route of the existing M4 where there are more receptors.

Affected issues: noise and vibration, health and wellbeing

**Noise Action Planning Priority Areas (NAPPAs) for road traffic noise and railways in Wales**

**- Noise action planning priority areas - Roads and Railways (South East Wales)**

The NAPPA for South East Wales identifies the most important areas affected by noise according to the strategic noise maps.

**Objectives and Requirements**

The NAPPA for South East Wales shows the areas of highest exposure to noise levels. The NAPPA ensures that noise impacts are managed in the priority areas identified.

**Implications for draft Plan**

To determine if the draft Plan is in a high priority area and if any special measures should be applied or if mitigation should be coordinated with any existing noise management plans.

Supposing the scheme is not within a designated priority area there would remain a duty to meet the general objectives of END and other legislation, i.e. to avoid, reduce and mitigate environmental noise resulting from the programme

Affected issues: noise and vibration

**Planning Policy Wales Edition 5 (2012)**

**Objectives and Requirements**

The Planning Policy document states that: ‘Development plan policies should have regard to any relevant Noise Action Plan, including the

**Implications for draft Plan**

The draft Plan aims to reduce noise pollution by reducing traffic congestion, encouraging local trips to be made by walking and cycling, and reducing the volume of traffic travelling along the route of the

<p>need to protect urban ‘quiet areas’ against an increase in noise.’</p>	<p>existing M4 where there are more receptors. In addition, the draft Plan should consider Noise Action Plans if applicable to the scheme location and coordinate with any existing noise management plans.</p> <p>Affected issues: noise and vibration, health and wellbeing</p>
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**Cardiff Local Development Plan, Working Draft, No Status, Policy EN13: Air, Noise, Light Pollution and Contaminated Land Policy (June 2013)**

Developments that would generate unacceptable levels of air, noise or light pollution are appropriately located and controlled.

<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>Development will not be permitted where it would cause or result in unacceptable harm to health, local amenity, the character and quality of the countryside, or interests of nature conservation, landscape or built heritage importance because of air, noise, light pollution or the presence of unacceptable levels of land contamination</p>	<p>The draft Plan aims to reduce noise pollution by reducing traffic congestion, encouraging local trips to be made by walking and cycling, and reducing the volume of traffic travelling along the route of the existing M4 where there are more receptors.</p> <p>Affected issues: noise</p>

## 5. Biodiversity, Fauna and Flora

International – EU	
Ramsar Convention on wetlands of international importance especially as waterfowl habitat (1971)	
<p>The Ramsar Convention provides a framework for the conservation of wetlands and their resources. 146 parties signed the convention with 1469 wetland sites, totalling 128.9 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance.</p> <p>The Mission Statement: "The Convention's mission is the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world".</p>	
Objectives and requirements	Implications for the draft Plan
<p>Contracting Parties make a commitment to:</p> <ul style="list-style-type: none"> <li>• Designate at least one site that meets the Ramsar criteria for inclusion in the List of Wetlands of International Importance;</li> <li>• Protect the ecological character of listed sites;</li> <li>• Include wetland conservation within their national land-use planning;</li> <li>• Establish nature reserves on wetlands and promote wetland training; and</li> <li>• Consult with other Contracting Parties about the implementation of the Convention.</li> </ul>	<p>The draft Plan has been subject to Habitats Regulations Assessment (HRA), and aims to reduce the impacts of traffic on nearby wetlands and enhance and restore wetland habitats where possible. This will be considered in more detail at project level should the draft Plan be adopted.</p> <p>Affected issues: biodiversity</p>



### **EU Directive 79/409/EEC on the Conservation of Wild Birds**

Directive 1979 and its amending acts aim at providing long-term protection and conservation of all bird species naturally living in the wild within the European territory of the Member States (except Greenland).

#### **Objectives and requirements**

Imposes duty on Member States to sustain populations of naturally occurring wild birds by sustaining areas of habitats in order to maintain populations at ecologically and scientifically sound levels.

#### **Implications for draft Plan**

The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on European sites and environmental designations including SSSIs, SACs, SPAs, Ramsar and LNRs.

Avoiding and/or reducing habitat fragmentation will be considered in more detail at project level should the draft Plan be adopted.

Affected issues: biodiversity

### **Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979)**

The Bonn Convention aims to improve the status of all threatened migratory species through national action and international Agreements between states within the range of particular groups of species.

Objectives and requirements	Implications for draft Plan
<p>To conserve/restore habitats and control other factors that might endanger the listed migratory birds. Implemented in the UK through the Wildlife and Countryside Act (1981, as amended) and supplemented by parts of the CRoW Act 2000.</p>	<p>The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan’s potential impacts, at a strategy level, on European sites and environmental designations including SSSIs, SACs, SPAs, Ramsar and LNRs.</p> <p>Affected issues: biodiversity</p>
<p><b>Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)</b></p>	
<p>The convention aims:</p> <ul style="list-style-type: none"> <li>• To conserve wild flora, fauna and natural habitats;</li> <li>• To promote co-operation between States; and</li> <li>• To give particular attention to endangered and vulnerable species, including endangered and vulnerable migratory species.</li> </ul> <p>Appendices provide detailed information on species and habitats protected under the convention.</p>	
Objectives and requirements	Implications for draft Plan
<p>Obligations for contracting parties: conservation of wild flora and fauna and all natural habitats in general. Implemented in the UK</p>	<p>The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with</p>

through the Wildlife and Countryside Act (1981, as amended)	biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on European sites and environmental designations including SSSIs, SACs, SPAs, Ramsar and LNRs.  Affected issues: biodiversity
<b>EU Directive 92/43/EEC - Habitats Directive</b>	
The aim of this Directive is to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of the Member States to which the Treaty applies. Measures taken pursuant to this Directive are to be designed to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest.	
<b>Objectives and requirements</b>	<b>Implications for draft Plan</b>
<p>The objectives of the Directive are summarised in the following Articles:</p> <ul style="list-style-type: none"> <li>• Article 3.1: Maintain or restore in a favourable condition designated natural habitat types, and habitats of designated species listed in Annexes I and II respectively of the Directive.</li> <li>• Article 6.2: Take appropriate steps to avoid degrading or destroying natural habitats within SACs, and avoid disturbance of designated species insofar as this would result in further decline in numbers or the loss of habitat that maintains the species.</li> <li>• Article 6.3: Any plan or project not directly concerned with the management of a designated site (SAC/SPA), but which is likely to have a significant impact on it (individually or in combination with other projects), should undergo assessment of its implications</li> </ul>	<p>The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on European sites and environmental designations including SSSIs, SACs, SPAs, Ramsar and LNRs.</p> <p>Affected issues: biodiversity and geodiversity, soil, landscape</p>

<p>for the conservation objectives of the site.</p> <ul style="list-style-type: none"> <li>• Article 6.4: If the project must proceed in the public interest and in spite of negative conservation impacts, including social or economic reasons, compensatory measures must be provided for. The Article provides limited scope for development in designated areas. It is only acceptable on grounds of human health and safety (but not economic development) if it affects habitats supporting protected species.</li> <li>• Article 10: Linear structures such as rivers/streams, hedgerows, field boundaries, ponds, etc., that enable movement and migration of species should be preserved.</li> </ul>	
<p><b>Convention on Biological Diversity, Rio de Janeiro (1992)</b></p>	
<p>The convention is designed to conserve biological diversity, ensure the sustainable use of this diversity and share the benefits generated by the use of genetic resources.</p>	
<p><b>Objectives and requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<p>Each Contracting Party should (Article 6a):</p> <ul style="list-style-type: none"> <li>• Develop national strategies for the conservation and sustainable use of biological diversity; and</li> <li>• Integrate the conservation and sustainable use of biological diversity into relevant sectoral and cross-sectoral plans, programmes and policies.</li> </ul>	<p>The draft Plan will aim to facilitate the protection and enhancement of biodiversity. The draft Plan will consider the objectives of national conservation strategies as stated in the UK Biodiversity Action Plan at a project level, should the draft Plan be adopted.</p> <p>Affected issues: biodiversity</p>

<b>Environmental Protection Act 1995</b>	
This act brings in a system of integrated pollution control for the disposal of wastes to land, water and air.	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>The parts of the Act that have a bearing on agriculture are:</p> <ul style="list-style-type: none"> <li>• Part I establishes integrated pollution control and gives Local Authorities new powers to control air pollution from a range of prescribed processes;</li> <li>• Part II improves the rules on waste disposal; and</li> <li>• Part III covers statutory nuisances and clean air.</li> </ul>	<p>By reducing traffic congestion, and encouraging local trips to be made by walking and cycling, the draft Plan aims to achieve one of its objectives in reducing greenhouse gas emissions per vehicle and/or person kilometre. Waste control will be explored in detail at a project level, should the draft Plan be adopted.</p> <p>Affected issues: biodiversity</p>
<b>Countryside and Rights of Way Act 2000</b>	
It provides for public access on foot to areas of open land comprising mountain, moor, heath, down, and registered common land; amends the law relating to public rights of way; increases protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation; and provides for better management of Areas of Outstanding Natural Beauty.	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
<p>The Act provides the following:</p> <ul style="list-style-type: none"> <li>• A new right of public access on foot to areas of open land comprising mountain, moor, heath, down, and registered common</li> </ul>	<p>The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with biodiversity, as well as relevant SEA criteria. Such appraisal has</p>

<p>land, and contains provisions for extending the right to coastal land.</p> <ul style="list-style-type: none"> <li>• Safeguards which take into account the needs of landowners and occupiers, and of other interests, including wildlife.</li> <li>• The Act improves the rights of way legislation by encouraging the creation of new routes and clarifying uncertainties about existing rights.</li> <li>• Places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.</li> </ul>	<p>considered the draft Plan's potential impacts, at a strategy level, on European sites and environmental designations including SSSIs, SACs, SPAs, Ramsar and LNRs.</p> <p>Affected issues: biodiversity</p>
<p><b>Environmental Liability Directive 2004/35/EC</b></p>	
<p>The European Union (EU) establishes a common framework for liability with a view to preventing and remedying damage to animals, plants, natural habitats and water resources, and damage affecting the land. The liability scheme applies to certain specified occupational activities and to other activities in cases where the operator is at fault or negligent. The public authorities are also responsible for ensuring that the operators responsible take or finance the necessary preventive or remedial measures themselves</p>	
<p><b>Objectives and Requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<p>The Directive establishes a framework for environmental liability based on the "polluter pays" principle, with a view to preventing and remedying environmental damage. Under the terms of the Directive, environmental damage is defined as:</p> <ul style="list-style-type: none"> <li>• direct or indirect damage to the aquatic environment covered by</li> </ul>	<p>The draft Plan has been subject to Habitats Regulations Assessment (HRA), and will consider avoiding direct or indirect damage to the water environment, habitats, species and contamination to land, in more detail at a project level should the draft Plan be adopted.</p>

<p>Community water management legislation;</p> <ul style="list-style-type: none"> <li>• direct or indirect damage to species and natural habitats protected at Community level by the 1979 "Birds" Directive or by the 1992 "Habitats" Directive;</li> <li>• direct or indirect contamination of the land which creates a significant risk to human health.</li> </ul>	<p>Affected issue: biodiversity</p>
<p><b>Directive 2009/147/EC- Birds Directive</b></p>	
<p>The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. It sets broad objectives for a wide range of activities, although the precise legal mechanisms for their achievement are at the discretion of each Member State</p>	
<p><b>Objectives and Requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<ul style="list-style-type: none"> <li>• The maintenance of the populations of all wild bird species across their natural range (Article 2) with the encouragement of various activities to that end (Article 3).</li> <li>• The identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex I of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance (Article 4). (Together with Special Areas of Conservation designated under the Habitats Directive, SPAs form a network of European protected areas known as Natura 2000).</li> <li>• The establishment of a general scheme of protection for all wild birds (Article 5).</li> </ul>	<p>The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on European sites and environmental designations including SSSIs, SACs, SPAs, Ramsar and LNRs.</p> <p>Affected issues: biodiversity</p>

## EU Biodiversity Strategy (EU, 2011)

The strategy sets out an approach to tackling biodiversity and ecosystem degradation and loss by 2020.

### Objectives and requirements

The targets of the Strategy are to enforce EU laws protecting birds and habitats

- maintaining and improving ecosystems - restoring at least 15% of areas that have been damaged
- getting farming and forestry to help improve biodiversity
- ensuring sustainable use of fisheries resources by reducing catches to scientifically determined limits by 2015 - 88% of the EU's fish stocks are currently over-exploited or are significantly depleted
- combating alien species that invade habitats - and currently threaten 22% of the EU's indigenous species
- stepping up the EU's contribution to preventing global biodiversity loss

### Implications for draft Plan

Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on European sites and environmental designations including SSSIs, SACs, SPAs, Ramsar and LNRs.

Maintaining and improving ecosystems will be considered in more detail at project level should the draft Plan be adopted.

Affected issues: biodiversity



## National – UK and Wales

### Woodland Trust – Space for Nature (2002)

Promoting landscape scale action for conservation of woodland biodiversity.

#### Objectives and requirements

A series of measures to assess opportunities for future action relevant to :

- All habitats and species;
- Existing habitats and habitat creation;
- Landscapes and individual sites.

#### Implications for draft Plan

The draft Plan is unlikely to significantly affect areas of woodland. Any required mitigation measures associated with protecting and/or enhancing woodland landscape and habitat will be considered in more detail at project level, should the draft Plan be adopted.

Affected issues: biodiversity, landscape, health and wellbeing, soil

### Trunk Road Estate Biodiversity Action Plan 2004-2014 (2004)

The Trunk Road Estate Biodiversity Action Plan (TREBAP) was developed by the Welsh Government Transport Directorate (now Transport Wales) to contribute to the National Assembly's duty under the Countryside & Rights of Way (CroW) Act 2000 to have regard for the conservation and enhancement of the habitats and species of principal importance in Wales. It was launched in January 2004.

Objectives and requirements	Implications for draft Plan
<ul style="list-style-type: none"> <li>• To set practical and realistic actions for the period 2004 – 2014</li> <li>• Link with other relevant Biodiversity Action Plan targets for habitats and species</li> <li>• Increase awareness of Transport Wales’ staff, its environmental partners and the general public, of the biodiversity interest of the trunk road and motorway network</li> <li>• Encourage the use, and dissemination, of best practice for biodiversity in the management and development of the trunk road and motorway network</li> <li>• Reflect the requirements of the Assembly’s Sustainable Development Scheme (Learning to Live Differently) and Action Plan where relevant.</li> </ul>	<p>The draft Plan has been subject to engagement and consultation with a range of transport bodies, organisations and the public in the development of Habitats Regulations Assessment (HRA), appraisal of the draft Plan against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with biodiversity, as well as relevant SEA criteria.</p> <p>Affected issues: biodiversity, flora and fauna.</p>
<b>UK Forestry Standard: The Governments Approach to Sustainable Forestry (FC, 2004)</b>	
<p>The purpose of the strategy is to set standards for the sustainable management of all forests and woodlands in the UK. The standard is linked to the developing international protocols for sustainable forestry. It is used in the UK for the development of forest monitoring and is the basis from which the UK Woodland Assurance Standard was developed.</p>	
Objectives and requirements	Implications for draft Plan
<p>Requirements of sustainable forest management:</p> <ul style="list-style-type: none"> <li>• Forest soil condition is stable or improving;</li> <li>• Water quality is protected or improved, water yields are maintained above any critical level and water discharge patterns</li> </ul>	<p>The draft Plan is unlikely to affect areas of forest. Any required mitigation measures to protect and enhance forests will be considered in more detail at project level, should the draft Plan be adopted.</p>

<p>are disturbed only when unavoidable;</p> <ul style="list-style-type: none"> <li>• The values of forests as sinks and stores of carbon are recognised;</li> <li>• The supply of timber and other forest produce for industrial uses is available at levels indicated in long term forecasts;</li> <li>• Biodiversity in and around woods and forests is conserved and enhanced;</li> <li>• Safe and efficient practices are promoted;</li> <li>• Opportunities are enhanced for: rural development, access and recreation, quality of life, increased awareness and participation, community involvement, skills training; and</li> <li>• Important heritage features are protected and landscape quality is enhanced.</li> </ul>	<p>Affected issues: biodiversity, landscape, health and wellbeing, soil</p>
<p><b>Ecological Connectivity, NRW (September 2006)</b></p>	
<p>NRW has provided an opening statement on the concept of ecological connectivity and its application in Wales. It sets out an approach to make protected sites functionally connected to each other and with the wider countryside, and presents maps showing examples of potential ecological connections.</p>	
<p><b>Objectives and requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<p>The Statement requires Natural Resources Wales to:</p> <ul style="list-style-type: none"> <li>• Endorse the principle of ecological connectivity in CCW, in both terrestrial and marine environments.</li> <li>• Approve continued work in this area and development of the draft maps of potential connectivity.</li> <li>• Consider how spatial targeting may be done in order to promote ecological connectivity.</li> </ul>	<p>The draft Plan assessments have considered the importance of habitat connectivity as part of its appraisal process associated with biodiversity. This has considered how transport measures can potentially impact upon nature conservation. The draft Plan aims to avoid habitat fragmentation and will maintain wildlife corridors wherever possible. Potential mitigation measures will be considered in more detail at project level should the draft Plan be adopted.</p> <p>Affected issues: biodiversity</p>

## Natural Environment and Rural Communities Act 2006

Section 42 of the Natural Environment and Rural Communities Act (2006) requires the National Assembly for Wales in consultation with The Countryside Council for Wales to publish, review, revise and act on lists of organisms of principal importance in Wales. This list is known as the Section 42 (S42) list of species and habitats of principal importance in Wales.

### Objectives and Requirements

WBP have produced biodiversity checklists for local authority and public authority staff in Wales. The checklists will assist public and local authorities to take account of biodiversity in their operational activities and will help organisations to remain legal under the NERC Act (2006) Biodiversity Duty, Habitats Regulations and other biodiversity related legislation. In addition, the implementation of the checklists and guidance will help build towards the biodiversity outcomes contained in the Environment Strategy for Wales. 504 of the UK priority species occur in Wales and a further 53 species recognised as Welsh priorities go to make up a list of 557 species of principal importance in Wales with an additional 4 groups/assemblages of species.

Of the UK's 65 priority habitats, 51 occur in Wales. An additional 3 marine habitats not on the UK list but identified as a priority in Wales are included on the Section 42 list, making a total of 54 priority habitats in Wales. The combined list of species and habitats is referred to as the Section 42 list for Wales.

### Implications for draft Plan

The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on European sites and environmental designations including SSSIs, SACs, SPAs, Ramsar and LNRs. The draft Plan will consider biodiversity checklists in more detail at project level, should the draft Plan be adopted.

Affected issues: biodiversity

## Woodland for Wales (WAG, 2009)

Sets out the National Assembly's strategy for trees and woodlands in Wales. It presents a vision for forestry and woodland policy over the next 50 years and sets a direction for the way in which trees and woodlands will contribute to a sustainable future for the people of Wales, The strategy explains how we shall address these challenges through woodland policy.

### Objectives and requirements

Sets the vision “Wales will be known for its high-quality woodlands that enhance the landscape, are appropriate to local conditions and have a diverse mixture of species and habitats”. To deliver the vision, this strategy is framed around “Welsh Woodlands and trees” which delivers four strategic themes:

- Responding the climate change
- Woodlands for people
- A competitive and integrated forest sector
- Environmental quality

### Implications for draft Plan

The draft Plan is unlikely to significantly affect areas of woodland. Any required mitigation measures associated with protecting and/or enhancing woodland landscape and habitat will be considered in more detail at project level, should the draft Plan be adopted.

Affected issues: biodiversity, landscape, health and wellbeing, soil

## TAN 5 – Nature Conservation and Planning (2009)

The advice note provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation.

### Objectives and Requirements

In summary the TAN 5 2009 provides advice for local planning authorities on:

- The key principles of positive planning for nature conservation;
- Nature conservation and Local Development Plans;
- Nature conservation in development management procedures;
- Development affecting protected internationally and nationally designated sites and habitats;
- Development affecting protected and priority habitats and species.

### Implications for draft Plan

The draft Plan assessments have considered nature conservation at a strategy level. The draft Plan will aim to protect and enhance priority habitats listed, but this will be considered in more detail at project level, should the draft Plan be adopted.

Affected issues: biodiversity

**The Conservation of Habitats and Species Regulations 2010 (as amended)**

Implements the Habitats Directive in Wales. The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

<b>Objectives and requirements</b>	<b>Implications for draft Plan</b>
Sets out the identification and protection requirements for protected sites and habitats.	<p>The draft Plan has been subject to Habitats Regulations Assessment (HRA), and aims to ensure minimal or reduced effects on European Sites and species. Potential mitigation measures will be considered in more detail at project level, should the draft Plan be adopted.</p> <p>Affected issues: biodiversity</p>

**Wales Biodiversity Framework (Wales Biodiversity Partnership, 2010)**

The Framework is designed to facilitate and underpin the achievement of eight of the Environment Strategy outcomes. This document has been created by the WBP as a first-step guide to:

- Identifying the key practical, policy and legislative drivers for protecting restoring and enhancing biodiversity in Wales;
- Outlining the mechanisms for promoting positive action;
- Explaining the roles & remit of those responsible for undertaking biodiversity action; and
- Providing links to the tools and information to help maintain and improve biodiversity in Wales.

Objectives and requirements	Implications for draft Plan
<p>The Framework will deliver the following outcomes:</p> <ul style="list-style-type: none"> <li>• A more co-ordinated, effective and integrated approach to Biodiversity conservation and enhancement across Wales;</li> <li>• Actions for Biodiversity as set out in the Environment Strategy will be implemented;</li> <li>• Clear leadership and key biodiversity drivers for Wales identified;</li> <li>• Clarity of roles and responsibilities and clear mechanisms for reporting and monitoring progress;</li> <li>• Increased opportunities for a wider range of individuals/stakeholders to become involved;</li> <li>• Increased and more widespread awareness of biodiversity and how everyone can play their part in protecting and enhancing it;</li> <li>• Improved access to biodiversity information and more effective communication between everyone involved in biodiversity conservation and enhancement;</li> <li>• An increase in collaborative working for example on landscape scale projects;</li> <li>• More efficient and creative use of existing and of untapped resources; and</li> <li>• Smaller ecological footprint for WBP.</li> </ul>	<p>The draft Plan has been subject to engagement and consultation with environmental bodies and organisations in the development of Habitats Regulations Assessment (HRA), appraisal of the draft Plan against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with biodiversity, as well as relevant SEA criteria.</p> <p>Affected issues: biodiversity, landscape, soil</p>



## UK BAP Post 2010 Biodiversity Framework (2012)

The UK Post-2010 Biodiversity Framework covers the period 2011 – 2020. It forms the UK Government’s response to the new strategic plan of the United Nations Convention on Biological Diversity (CBD), published in 2010 at the CBD meeting in Nagoya, Japan. This includes 5 internationally agreed strategic goals and supporting targets to be achieved by 2020.

### Objectives and Requirements

The purpose of this UK Biodiversity Framework is to set a broad enabling structure for action across the UK between now and 2020.

The strategic goals set out in the framework include:

- Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society;
- Goal B: Reduce the direct pressures on biodiversity and promote sustainable use;
- Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity;
- Goal D: Enhance the benefits to all from biodiversity and ecosystem services;
- Goal E: Enhance implementation through participatory planning, knowledge management and capacity building.

### Implications for draft Plan

The draft Plan assessments have considered biodiversity impacts at a strategy level. The draft Plan will aim to protect and enhance priority habitats listed, but this will be considered in more detail at project level, should the draft Plan be adopted.

Affected issues: biodiversity

**Planning Policy Wales (Edition 5, November 2012)**

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government, and provides the policy framework for the effective preparation of local planning authorities' development plans. PPW is material to decisions on individual planning applications. They will be considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals.

**Objectives and Requirements**

PPW sets out the requirements for a Local Development Plan and within its policy guidance, it sets out objectives for biodiversity in Chapter 5 Conserving and Improving Natural Heritage and the Coast.

The Welsh Government's objectives for the conservation and improvement of the natural heritage are to:

- promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats;
- ensure that action in Wales contributes to meeting international responsibilities and obligations for the natural environment;
- ensure that statutorily designated sites are properly protected and managed;
- safeguard protected species, and to
- promote the functions and benefits of soils, and in particular their function as a carbon store.

**Implications for draft Plan**

The draft Plan assessments have considered biodiversity impacts at a strategy level. The draft Plan will aim to protect and enhance priority habitats listed, but this will be considered in more detail at project level, should the draft Plan be adopted.

Affected issues: biodiversity

<b>Regional</b>	
<b>Newport Local Development Plan, Revised Deposit Plan (June 2013) Strategic Objective: Conservation of the Natural Environment</b>	
<b>Newport LDP seeks to maintain and enhance the natural environment in the Newport area.</b>	
<b>Objectives and Requirements</b>	<b>Implications for draft Plan</b>
To protect and enhance the quality of the natural environment, including landscape, protected habitats and species of principal importance for biodiversity in Wales (regardless of greenfield or brownfield status) and the protection of controlled waters.	<p>The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with biodiversity, as well as relevant SEA criteria. The protection and enhancement in the quality of the natural environment will be considered in more detail at project level, should the draft Plan be adopted.</p> <p>Affected issues: biodiversity</p>

**Cardiff Local Development Plan, Working Draft, No Status, (June 2013) Policy KP16 Natural Heritage**

The emerging Cardiff LDP seeks to maintain and enhance the natural environment in the Cardiff area.

**Objectives and Requirements**

Cardiff’s distinctive natural heritage that has significant value and/or quality for informal recreation, amenity, biodiversity/ecological connectivity, landscape, heritage, climate change roles, and sustainable drainage will be protected from inappropriate development and a priority for positive management and enhancement where this does not create unacceptable conflicts. Particular elements include:

- The city’s parks, open spaces and allotments;
- The character and quality of landscape and the city’s setting;
- The strategically important river valleys of the Ely, Taff, Nant Fawr and Rhymney;
- The core strategic recreational routes;
- Enhance biodiversity
- The city’s undeveloped countryside and coastline;
- Biodiversity interests including designated sites and the connectivity of priority habitats, and species; and
- Trees, woodlands and hedgerows that make positive contributions to the character and appearance of the city.

**Implications for draft Plan**

The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with biodiversity, as well as relevant SEA criteria.. Potential mitigation measures will be considered in more detail at project level, should the draft Plan be adopted.

Affected issues: biodiversity

## 6. Soil

International – EU	
<b>EC Thematic Strategy for Soil protection 2007</b>	
<p>The European Commission’s Thematic Strategy for Soil Protection consists of a Communication from the Commission to the other European Institutions, a proposal for a framework Directive (a European law), and an Impact Assessment. It explains why further action is needed to ensure a high level of soil protection sets the overall objective of the Strategy and explains what kind of measures must be taken. It establishes a ten-year work programme for the European Commission.</p> <p>The proposal for a framework Directive (COM (2006) 232) sets out common principles for protecting soils across the EU. Within this common framework, the EU Member States will be in a position to decide how best to protect soil and how use it in a sustainable way on their own territory.</p>	
Objectives and Requirements	Implications for draft Plan
<p>The objectives of the Thematic Strategy are to:</p> <ul style="list-style-type: none"> <li>• establish common principles for the protection and sustainable use of soils;</li> <li>• prevent threats to soils, and mitigate the effects of those threats;</li> <li>• preserve soil function within the context of sustainable use; and</li> <li>• restore degraded and contaminated soils to approved levels of functionality.</li> </ul>	<p>The draft Plan has considered the requirements for land take and the need to address issues of contaminated land. The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with soils, as well as relevant SEA criteria.</p> <p>The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, the protection of soils by avoiding or minimising processes of erosion, loss of organic matter, soil compaction, salinisation, landslides and contamination. The draft Plan would also consider potential mitigation measures from development in more detail at project level.</p> <p>Affected issues: soil, material assets, biodiversity, flora and fauna</p>

## National –UK and Wales

### Soil: A Precious Resource (2007)

This document identifies Environmental Agency’s priorities for soil protection, sets out the EA’s role and describes future relevant actions.

#### Objectives and Requirements

Among the overarching objectives of the EA in relation to soil protection are:

- Raising awareness of the importance of soil as natural resource that requires the same level of protection as water and air;
- Emphasise the environmental importance of the links between soil, air and water and taking this into account when managing soil;
- Sustainable soil management; and
- Prevention of soil pollution.

#### Implications for draft Plan

The draft Plan has considered the requirements for land take and the need to address issues of contaminated land. The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with soils, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, the protection of soils and sustainable soil management. The draft Plan would also consider potential mitigation measures from development in more detail at project level.

Affected issues: soil, biodiversity

### The Welsh Soils Action Plan (Consultation Draft, 2008)

As one of the commitments from the Environment Strategy for Wales, the Welsh Government is developing a Welsh Soils Action Plan. This identifies the priority threats to Welsh soils as:

- Climate Change
- Soil Sealing

- Contamination, including Acidification and Eutrophication
- Soil Erosion
- Degradation of Soil Structure
- Decline in Organic Matter
- Soil Loss to Extraction

**Objectives and Requirements**

**Implications for draft Plan**

The aim of the Welsh Soils Action plan is to ensure that soil is managed to safeguard its ability to support biodiversity, store carbon and provide other important ecosystem services.

The objective of the consultation document is to assess that all the correct actions have been addressed and all have been considered.

The draft Plan has considered the requirements for land take and the need to address issues of contaminated land. The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with soils, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, the protection of soils by avoiding or minimising processes of erosion, loss of organic matter, soil compaction, salinisation, landslides and contamination. The draft Plan would also consider potential mitigation measures from development in more detail at project level.  
Affected issues: soil, biodiversity.

**Planning Policy Wales (Edition 5, November 2012)**

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government, and provides the policy framework for the effective preparation of local planning authorities' development plans. PPW is material to decisions on individual planning applications. They will be considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals.

Objectives and Requirements	Implications for draft Plan
<p>PPW sets out the requirements for a Local Development Plan and within its policy guidance, it sets out objectives for soils in Chapter 13 Minimising and Managing Environment Risks and Pollution.</p> <p>The Welsh Government's objectives are to:</p> <ul style="list-style-type: none"> <li>• maximise environmental protection for people, natural and cultural resources, property and infrastructure; and</li> <li>• prevent or manage pollution and promote good environmental practice.</li> </ul>	<p>The draft Plan has considered the requirements for land take and the need to address issues of contaminated land. The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with soils, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, the protection of soils and sustainable soil management. The draft Plan would also consider potential mitigation measures from development in more detail at project level.</p> <p>Affected issues: soil, biodiversity</p>



**Groundwater protection: Principles and practices (GP3) (November 2012)**

Groundwater is important. It supplies about one third of drinking water in England and up to 10% in Wales. In drier parts of England it provides up to 70% of fresh drinking water. It also supports numerous private supplies, rivers and wetlands. Pollution and demands for water puts groundwater under pressure.

**Objectives and requirements**

GP3 aims to help anyone interested in groundwater and those whose activities may impact on groundwater or could do so to:

- find out more about what groundwater is and where it's found;
- learn about the legislation Environment Agency use to protect, manage and improve it; and
- see the Environment Agency's position on various activities which can impact groundwater.

**Implications for draft Plan**

The draft Plan has considered the requirements for land take and the need to address issues of contaminated land. The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with soils, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, the protection of soils and sustainable soil management. The draft Plan would also consider potential mitigation measures from development in more detail at project level.

Affected issues: soil, biodiversity

## 7. Water, Including Quality, Quantity and Flood Risk

International - EU	
<b>EU Directive 2000/60/EC Establishing a Framework for the Community Action in the Field of Water Policy – The Water Framework Directive</b>	
Requires all Member States to achieve “good ecological status” of inland water bodies by 2015, and limits the quantity of groundwater abstraction to that portion of overall recharge not needed by ecology.	
Objectives and requirements	Implications for draft Plan
To achieve “good ecological status” of inland water bodies by 2015. Requires Member States to manage the effects on the ecological quality of water which result from changes to the physical characteristics of water bodies. It requires action in those cases where these pressures have an ecological impact which will interfere with delivery of the Water Framework Directive objectives.	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WeITAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, the protection of water quality and quantity, as well as flood risk. The draft Plan would also consider potential mitigation measures from development in more detail at project level.</p> <p>Affected issues: water.</p>

## EU Directive 2007/60/EC on the Assessment and Management of Flood Risks

This Directive requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk. This Directive also reinforces the rights of the public to access this information and to have a say in the planning process.

### Objectives and requirements

The purpose of the Directive is to establish a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in the Community. Key articles refer to the need to:

- Undertake preliminary flood risk assessment;
- Prepare flood hazard maps and flood risk maps;
- Prepare flood management plans
- Coordinate with the EC Directive on information and consultation 2000/60/EC

### Implications for the draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, adequate preparations for flood risk/consequences assessment and planning. The draft Plan would also consider potential mitigation measures from development in more detail at project level.

Affected issues: water, material assets, health, biodiversity, cultural heritage, landscape .

## National - UK and Wales

### TAN 14 - Coastal Planning (1998)

This advice note sets out how coastal issues should be considered in land use planning.

#### Objectives and requirements

The requirements include:

- It is important to recognise that on-shore development can often have an impact; off-shore: this is particularly so adjacent to a candidate marine Special Area of Conservation (SAC).
- Key issues: Planning considerations will vary depending on the nature of the coastline, but there are a number of specific issues in relation to the coastal zone that the planning system should address. These are, in terms of:
- Proposals for Development: the nature of the ground conditions and physical processes, and the potential need for remedial and defence works; likely effects on physical and biological processes along the coast; the potential effects on mineral, water and conservation resources; as well as high-quality agricultural land; and any potential visual impact from both land and sea; and
- Nature and landscape conservation: the role of physical and biological processes in creating, maintaining and altering features of nature and landscape conservation value; the effects of statutory and other nature and landscape conservation policies in the coastal zone, which may not always be contiguous with the low water

#### Implications for draft Plan

The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with protected landscapes, water and biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on the natural environment, including SACs, nature and landscape, including coastal habitats. The draft Plan will consider coastal planning issues in more detail at project level, should the draft Plan be adopted.

Affected issues: biodiversity and geodiversity, soil, water, landscape

mark; and the importance of the integrity and special features of Marine Nature Reserves, candidate marine SACs and coastal SACs, Special Protection Areas and Ramsar sites. EC Directives relevant to planning in the coastal zone should always be borne in mind.

Some coast-specific considerations will need to be incorporated into the planning framework by local planning authorities. These include:

- On-shore: the risks to any form of development associated with the physical processes and problem ground conditions; the likely impact of any development on the geomorphological processes and features, and on the important features of the littoral and sub-littoral zones; and
- Off-shore, in the intertidal zone, and the maritime fringe, the sediment budget of the physical system; and the sensitivity of the overall coastal environment to natural change or human influences.

Consideration of these issues will allow local planning authorities to reflect variations in physical and biological conditions along their stretches of coastline instead of adopting a blanket approach to coastal planning. It will also enable them to consider the effects, including cumulative effects, of development proposals upon sites of nature and landscape conservation interest.

**Environment Agency Policy: Sustainable Urban Drainage Systems (2002)**

Policy guidance on design and implementation of Sustainable Urban Drainage (SuDS) systems.

**Objectives and requirements**

A wide range of technical advice and guidance on SUDS from the UK environment agencies. The guidance provides a more sustainable approach to run-off and aims to protect the water environment from polluting activities and materials and reduce the risk of flooding.

**Implications for draft Plan**

The draft Plan would consider potential flood risk mitigation measures such as sustainable drainage schemes in more detail at a project level, should it be adopted.

Affected issues: water and flood risk

## TAN 15 - Development and Flood Risk (2004)

This advice note on development and flood risk relates to sustainability principles (section 2.2 PPW), and provides a framework within which risks arising from both river and coastal flooding, and from additional run-off from development in any location, can be assessed.

### Objectives and requirements

Aims:

- Direct new development away from those areas which are at high risk of flooding; and
- Where development has to be considered in high risk areas (zone C) only those developments which can be justified on the basis of the tests outlined in section 6 and section 7 are located within such areas.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of flood risk. The draft Plan would also consider potential mitigation measures such as sustainable drainage schemes and climate change proof materials from development in more detail at a project level.

Affected issues: water, climatic factors, material assets

**Cleaner Coasts, Healthier Seas: Working for a better marine environment 2005-2011 (EA, 2005)**

The marine strategy sets out what the EA are doing to protect the marine environment and their vision for the future.

**Objectives and requirements**

Priorities include:

- Promoting sustainable development, to get results for people, businesses and wildlife;
- Integrating management between the land and sea;
- Efficiently regulating our coasts and seas; and
- Making sure that we value our coastal and marine environment.

**Implications for draft Plan**

The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on the natural environment, including water habitats. The draft Plan will consider how to protect and enhance the marine environment in more detail at project level, should the draft Plan be adopted.

Affected issues: water and flood risk, biodiversity.



**A Better Environment, Healthier Fisheries: Better Fisheries for our nations 2006-2011 (EA, 2006)**

This sets the strategy for fisheries in England and Wales. The aim is enable fisheries to play a greater role in England and Wales to encourage more people to help us protect and improve the environment and to help fishing contribute more to society.

**Objectives and requirements**

Objectives by 2011 are to:

- Improve fish stocks and create a better environment for wildlife and people;
- Provide more chances for more people to fish and help fisheries to perform better; and
- Help sustainable fisheries boost the local economy.

**Implications for draft Plan**

The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on the natural environment, including water habitats. The draft Plan will consider how to protect and enhance fish stocks in more detail at project level, should the draft Plan be adopted.

Affected issues: water and flood risk, biodiversity.

## Draft Strategy for Wales on Integrated Coastal Zone Management (ICZM) 2007

This strategy provides a vision for the sustainable management of the Welsh coast. It aims to provide a management framework to facilitate integrated working on the coast by the different interests involved in managing our coastal assets – with the aim of helping them ensure that these assets are maintained and enhanced for the benefit of present and future generations.

### Objectives and requirements

The ICZM key objectives for the next four years are as follows:

- To ensure that the ICZM process in Wales is accepted as an integral part of delivering sustainable development; with adequate resources for the task; and effective participation by all stakeholders;
- To help ensure that all sectors and organisations successfully integrate ICZM management principles into the development of relevant policies;
- Work towards a better system of planning and management of the Welsh coast;
- Develop a sound knowledge base about the coastal zone which is readily accessible and underpins decision-making;
- Help ensure that stakeholders are well informed of the natural processes and human impacts affecting the coast and of the value of the coast to everyone;
- Secure effective linkages to the ICZM process in adjacent countries; and
- Regularly monitor progress on ICZM and report the results.

### Implications for draft Plan

The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with protected landscapes, water and biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on maintaining, improving and enhancing coastal assets of Wales. The draft Plan will consider coastal planning issues in more detail at project level, should the draft Plan be adopted.

Affected issues: biodiversity and geodiversity, landscape, economy, water and flood risk

**Water Resources Strategy for England and Wales: ‘Water for People and the Environment’ (March 2009)**

The Strategy sets out the long term, strategic framework for the way water resources should be managed to 2050 and beyond. This Strategy describes the pressures on water resources across England and Wales and provides details of what to consider when planning new projects.

**Objectives and requirements**

The Strategy is designed to achieve the following aims:

- The Environment Agency is able to manage water resources and protect the water environment in the face of climate change.
- Create and provide a better water environment e.g. species and habitats that depend on water are restored, protected, improved and valued.
- Sustainable planning and managing water resources - Good water management contributes to sustainable development by supporting people and the economy in an improved environment
- Water and the water environment are valued - People value water and enjoy their water environment and understand how it contributes to their quality of life.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WeITAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of usk catcheeffects on water environment and flood risk.

Affected issues: water and flood risk

## Flood Risk Regulations (2009)

Flood Risk Regulations implement the requirements of the European Floods Directive which aims to provide a consistent approach to managing flood risk across Europe.

### Objectives and requirements

The approach consists of a six year cycle of planning based on a four stage process of:

- Undertaking a Preliminary Flood Risk Assessment (PFRA);
- Identifying flood risk areas;
- Preparing flood hazard and risk maps; and
- Preparing flood risk management plans.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of flood risk.

Affected issues: water and flood risk

## Flood and Water Management Act 2010

The Act provides for better, more comprehensive management of flood risk for people, homes and businesses, helps safeguard community groups from unaffordable rises in surface water drainage charges, and protects water supplies to the consumer.

### Objectives and requirements

Flood and Water Management Act (2010) helps safeguard the environment from unaffordable rises in surface water drainage charges and protects water supplies. This legislation provides an overarching framework which allows different organisations to work together and develop a shared understanding of the most suitable solutions to surface water flooding problems. The Flood and Water Management Act places a duty on all flood risk management authorities to co-operate with each other. The act also provides lead local flood authorities and the Environment Agency with a power to request information required in connection with their flood risk management functions. The Flood and Water Management Act 2010 amends the Reservoirs Act (1975) which ensures reservoirs are built and operate safely and legally.

### Implications for draft Plan

The draft Plan has been subject to Habitats Regulations Assessment (HRA), appraisal against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and biodiversity, as well as relevant SEA criteria. Such appraisal has considered the draft Plan's potential impacts, at a strategy level, on the natural environment, including water habitats. The draft Plan will consider how to protect and enhance the marine environment in more detail at project level, should the draft Plan be adopted.

Affected issues: water and flood risk, biodiversity

## Welsh Government Flood Risk Management Community Engagement Toolkit (October 2011)

This toolkit provides best practice for community involvement in flood and coastal erosion risk management. It provides good practice guidance which has been pulled together from the three pilot three pilot flood alleviation studies that have been implemented in Prestatyn, Barry and Pwllheli and a sample of the European Regional Development Funded Programme Schemes.

### Objectives and requirements

The purpose of the toolkit is:

- to assist those responsible for flood risk management schemes or those who may be involved in wider flood risk management activity; and
- provide guidance on how to approach community engagement and partnership working

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of flood risk. The draft Plan would also consider potential mitigation measures associated with flood and coastal erosion risk from development in more detail at a project level.

Affected issues: water and flood risk

**Welsh Government: National Strategy for Flood and Coastal Erosion Risk Management in Wales ( November 2011)**

The National Strategy provides a national framework and overarching principles for flood risk management in Wales.

<b>Objectives and requirements</b>	<b>Implications for draft Plan</b>
<p>The National Strategy contains four overarching objectives for managing flood and coastal erosion risk:</p> <ul style="list-style-type: none"> <li>• Reducing the consequences for individuals, communities, businesses and the environment from flooding and coastal erosion;</li> <li>• Raising awareness of and engaging people on flood and coastal erosion risk;</li> <li>• Providing an effective and sustained response to flood and coastal erosion events; and</li> <li>• Prioritising investment in the most at risk communities.</li> </ul>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of flood risk. The draft Plan would also consider potential mitigation measures associated with flood and coastal erosion risk from development in more detail at a project level.</p> <p>Affected issues: water and flood risk</p>

**Welsh Government ‘Adapting to Climate Change: Guidance for Flood and Coastal Management Authorities in Wales (December 2011)**

The document comprises guidance prepared by the Environment Agency to assist risk management authorities in Wales to adapt to climate change.

**Objectives and requirements**

The document aims to ensure that an economically credible appraisal, that considers the uncertainties of climate change, is made to support Welsh Government investment decisions.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of flood risk. The draft Plan would also consider potential mitigation measures associated with flood and coastal erosion risk from development in more detail at a project level.

Affected issues: water and flood risk



**Planning Policy Wales (Edition 5, November 2012)**

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government, and provides the policy framework for the effective preparation of local planning authorities' development plans. PPW is material to decisions on individual planning applications. They will be considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals.

**Objectives and Requirements**

PPW sets out the requirements for a Local Development Plan and within its policy guidance, it sets out objectives for water and flood risk in Chapter 13 Minimising and Managing Environment Risks and Pollution.

The Welsh Government's objectives are to:

- maximise environmental protection for people, natural and cultural resources, property and infrastructure; and
- prevent or manage pollution and promote good environmental practice.

Meeting the Welsh Government's objectives for sustainable development requires action through the planning system to move away from flood defence and the mitigation of the consequences of new development in areas of flood hazard towards a more positive avoidance of development in areas defined as being of flood hazard.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of flood risk.

Affected issues: water and flood risk

## Environment Agency Wales Drought Plan (January 2012)

This drought plan provides a flexible framework for dealing with different drought events and is an operational manual for the Head Office Environment Agency drought team. It sets out the measures that the Head Office drought team will take to plan for and manage droughts.

### Objectives and requirements

The Plan ensures that the EA takes the necessary decisions and actions to:

- explain how EA will gather information on the drought situation in England and Wales to advise senior management and government on the prospects and possible actions;
- ensure consistency in the way EA co-ordinate drought management activities in England and Wales.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment on the water environment.

Affected issues: water and flood risk

<b>Regional</b>	
<b>River Usk Catchment Abstraction Management Strategy (CAMS), 2007<sup>1</sup></b>	
<b>Objectives and requirements</b>	<b>Implications for draft Plan</b>
<p>This strategy sets out how much water is available in the River Usk catchment and the proposed options for managing this water now and in the future.</p>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of water resources and water efficiency. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.</p> <p>Affected issues: water and flood risk.</p>

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<sup>1</sup> It should be noted that the Usk Catchment Abstraction Management Strategy is currently being updated with the outcomes of the Habitats Directive Review of Consents.

## Severn River Basin Management Plan (2009)

Implementing the Water Framework Directive, this plan focuses on the protection, improvement and sustainable use of the water environment. It details the pressures facing the water environment in the Severn River Basin District, and the actions that will address them. Prepared under the Water Framework Directive, and is the first of a series of six-year planning cycles.

### Objectives and requirements

Objectives and requirements: Protection, improvement and sustainable use of the water environment in the Severn River Basin. Identifies key water management issues and waterbody quality objectives around the Newport area.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of protection, improvement and sustainable use of the water environment. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: water and flood risk.

### Cardiff Preliminary Flood Risk Assessment (2009)

The assessment provides an evidence base with which to identify areas of significant flood risk (Flood Risk Areas) from local sources such as surface runoff, groundwater and ordinary watercourses.

#### Objectives and requirements

The Preliminary Flood Risk Assessment involves:

- Collecting information from relevant organisations regarding past and potential future floods within the study area;
- Assembling the information into the PFRA report; and
- Reviewing and amending, if necessary, the existing EAW Flood Risk Area.

#### Implications for draft Plan

Flood risk when climate change is factored in could pose a more serious risk to proposed infrastructure improvements nearer coastal areas. The draft Plan would consider potential flood risk mitigation measures and shoreline management in more detail at a project level.

Affected issues: water and flood risk

## The Severn Estuary Shoreline Management Plan Review (2010)

The Shoreline Management Plan is a non–statutory document, containing draft policies proposing how the shoreline around the Severn Estuary should be managed over the next 100 years.

### Objectives and requirements

Includes high level policy approaches to shoreline management around the Gwent Levels and River Usk.

### Implications for draft Plan

Existing infrastructure south of the Newport area is protected against tidal inundation. Flood risk when climate change is factored in could pose a more serious risk to proposed infrastructure improvements nearer coastal areas. The draft Plan would consider potential flood risk mitigation measures and shoreline management in more detail at a project level.

Affected issues: water and flood risk

## Draft Severn Estuary Flood Risk Management Strategy (2011)

The Strategy is the Environment Agency's long term plan to manage tidal flood risks in the Severn Estuary.

### Objectives and requirements

- i. To define a 100 year plan of investment for flood
- ii. To prioritise other flood risk management measures such as providing advice to utility companies to protect critical infrastructure, development control advice and flood warning investment
- iii. To decide where to create new inter-tidal wildlife habitats to compensate for losses of habitat caused by rising sea levels.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of flood risk. The draft Plan would also consider potential mitigation measures such as sustainable drainage schemes and climate change proof materials from development in more detail at a project level.

Affected issues: water and flood risk

## Newport Draft Local Flood Risk Management Strategy (December 2012)

This high level strategy aims to provide a framework for the development of specific measures, and decision making, associated with managing local flood risk and coastal erosion in Newport.

### Objectives and Requirements

The Strategy aims include:

- Reducing the consequences for individuals, communities, businesses and the environment from flooding and coastal erosion;
- Raising awareness of, and engaging people in the response to, flood and coastal erosion risk;
- Providing an effective and sustained response to flood and coastal erosion events; and
- Prioritising investment in the most at risk communities.

### Implications for draft Plan

Existing infrastructure south of the Newport area is protected against tidal inundation. Flood risk when climate change is factored in could pose a more serious risk to proposed infrastructure improvements nearer coastal areas. The draft Plan would consider potential flood risk mitigation measures in more detail at a project level.

Affected issues: water and flood risk



## Cardiff Draft Local Flood Risk Management Strategy (February 2013)

The Strategy details the roles and responsibilities of the organisations in Cardiff which contribute to managing flood risk in Cardiff, as well as how Cardiff City Council are working to reduce the consequences of flooding.

### Objectives and Requirements

Cardiff Council have taken the national objectives and built in their own objectives to deliver a proactive strategy that will go beyond the statutory requirements and that will:

- Ensure a clear understanding of the risks of flooding and erosion, nationally and locally, so that investment in risk management can be prioritised more effectively;
- Set out clear and consistent plans for risk management so that communities and businesses can make informed decisions about the management of the residual risk;
- Encourage innovative management of flood and coastal erosion risks, taking account of the needs of communities and the environment;
- Form links between the local flood risk management strategy and local spatial planning;
- Ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond properly to flood warnings; and
- Help communities to recover more quickly and effectively after incidents.

### Implications for draft Plan

Flood risk when climate change is factored in could pose a more serious risk to proposed infrastructure improvements nearer coastal areas. The draft Plan would consider potential flood risk mitigation measures in more detail at a project level.

Affected issues: water and flood risk

**Newport City Council Strategic Flood Consequences Assessment (SFCA) (March 2013)**

A Stage 3 SFCA is required if sites assessed within Stage 2 SFCA are unable to satisfy the requirements of the Justification Test within Technical Advice Note 15 (TAN 15) with respect to flood consequences. A total of eight sites were identified for inclusion within the Stage 3.

**Objectives and Requirements**

The purpose of the Stage 3 SFCA is to provide a more detailed analysis of flooding mechanisms and consequences. The assessment is in line with TAN 15 acceptability criteria for both residential and commercial/industrial development based on flood conditions during the 200yr tidal event.

**Implications for draft Plan**

Existing infrastructure south of the Newport area is protected against tidal inundation. Flood risk when climate change is factored in could pose a more serious risk to proposed infrastructure improvements nearer coastal areas. The draft Plan would consider potential flood risk mitigation measures in more detail at a project level.

Affected issues: water and flood risk

**Cardiff Local Development Plan, Working Draft, No Status, (June 2013) Policy EN 10 Innovative Water Solutions**

Cardiff LDP recognises that increasing pressures on urban drainage systems and challenges of water management highlight the need to redress the balance of the water cycle.

**Objectives and Requirements**

Development should demonstrate the incorporation of water sensitive urban design solutions (the process of integrating water cycle management with the built environment through planning and urban design). To include the management of:

- i. Water demand and supply;
- ii. Waste water and pollution;
- iii. Rainfall and runoff;
- iv. Watercourses and water resource;
- v. Flooding; and
- vi. Water pathways.

**Implications of draft Plan**

The draft Plan would consider water sensitive design solutions and potential mitigation measures in more detail at a project level, should it be adopted.

Affected issues: water and flood risk

**Newport Local Development Plan, Revised Deposit Plan, (June 2013) Policy SP4 Water Resources**

Sustainability is an overriding objective of the Plan with conservation and enhancement of water resources being a main element.

**Objectives and Requirements**

Development proposals should minimise water consumption, protect water quality during and after construction and result in no net increase in surface water run-off through the sustainable management of water resources by:

- The use of sustainable drainage systems;
- Ensuring developments are appropriately located and phased so that there is capacity in the waste water sewerage and water supply as well as the protection of water quality.

**Implications of the draft Plan**

The draft Plan would consider the protection of water quality and the use of sustainable management of water resources in more detail at a project level, should it be adopted.

Affected issues: water

**Newport Local Development Plan, Revised Deposit Plan, (June 2013) Policy SP3 Flood Risk**

Flood risk management is a clear consideration for the LDP due to Newport's coastal location, the River Usk and the complex reed systems on the Gwent Levels. The tidal limit of the Usk extends beyond Newport's boundary making tidal and fluvial flood risk a key concern for a high proportion of the Authority area.

**Objectives and Requirements**

Development will only be permitted in flood risk areas in accordance with national guidance where appropriate a detailed technical assessment will be required to ensure that the development is designed to cope with the threat and consequences of flooding.

**Implications for draft Plan**

The draft Plan has considered flood risk at a strategy level and would consider flood risk in more detail at a project level, should it be adopted.

Affected issues: water and flooding

## 8. Material Assets, including Resource Efficiency and Waste

International - EU	
<b>EU Directive 99/31/EC - Waste to Landfill</b>	
<p>The Directive aims at reducing the amount of waste landfilled, to promote recycling and recovery and to establish high standards of landfill practice across the EU and, through the harmonisation of standards, to prevent the shipping of waste from one Country to another. The objective of the Directive is to prevent or reduce as far as possible negative effects on the environment from the land-filling of waste, by introducing stringent technical requirements for waste and landfills.</p> <p>The Directive also intends to prevent or reduce the adverse effects of the landfill of waste on the environment, in particular on surface water, groundwater, soil, air and human health. It defines the different categories of waste (municipal waste, hazardous waste, non-hazardous waste and inert waste) and applies to all landfills, defined as waste disposal sites for the deposit of waste onto or into land.</p>	
Objectives and requirements	Implications for draft Plan
<p>Reduction of the amount of biodegradable municipal waste sent to landfill to 75% of the total generated in 1995 by 2006, 50% by 2009 and 35% by 2016.</p>	<p>The draft Plan has considered waste at a strategy level and will take into account the reduction targets, in particular when considering the management of biodegradable municipal waste (BMW), in more detail at the project level, should the draft Plan be adopted.</p> <p>Affected issues: material assets</p>

## EU Directive 2008/98/EC on waste (Waste Framework Directive)

The Directive sets the basic concepts and definitions related to waste management, such as definitions of waste, recycling, recovery. National waste policy must implement this legislation and the waste hierarchy set out in this Directive.

### Objectives and Requirements

The requirements of the Directive are that EU member must ensure that waste is managed:

- without endangering human health and harming the environment, and in particular without risk to water, air, soil, plants or animals;
- without causing a nuisance through noise or odours; and
- without adversely affecting the countryside or places of special interest.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with waste, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of waste. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: human health, biodiversity

## National – UK and Wales

### Minerals Planning Policy Wales (2000)

Mineral Planning Policy Wales sets out the land use planning policy guidance of WAG in relation to mineral extraction and related development in Wales, which includes all minerals and substances in, on or under land, extracted either by underground or surface working. Policy guidance for marine aggregates is not included in this minerals planning policy guidance.

#### Objectives and requirements

The key principles are to:

- Provide mineral resources to meet society's needs and to safeguard resources from sterilisation;
- Protect areas of importance to natural or built heritage;
- Limit the environmental impact of mineral extraction;
- Achieve high standard restoration and beneficial after-use; and
- Encourage efficient and appropriate use of minerals and the re-use and recycling of suitable materials.

#### Implications for draft Plan

The draft Plan has considered material assets at a strategy level and will take into account sustainable mineral extraction in more detail at the project level, should the draft Plan be adopted.

Affected issues: biodiversity and geodiversity, cultural heritage, landscape, soil, economy.



## Remediation of Contaminated Land (2001)

This document is the Welsh Government guidance to enforcing authorities under Part IIA of the Environmental Protection Act 1990. The document addresses the definition, identification and remediation of contaminated land, liability for remediation and recovery of the costs of remediation.

### Objectives and requirements

No specific objectives are set in the guidance. Those responsible for contaminating land will be required to ensure that the land is cleaned up, even if the contamination was lawful when it took place. Where the original polluter cannot be found after “reasonable enquiry”, liability will fall on the current owner/occupier of the land.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with soils, waste and contaminated land, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of remediation of contaminated land, if necessary. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: soil, water, biodiversity

## TAN 21-Waste (2001)

This guidance note provides advice about how the land use planning system should contribute to sustainable waste resource management. With its commitments to sustainable development, the Assembly has a desire to address waste issues and develop sustainable methods of waste resource management.

### Objectives and requirements

Construction and demolition waste: The re-use and recycling of construction and demolition waste not only implements the objective of minimising waste but reduces the demand for primary resources, the extraction of which incurs environmental costs.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with waste, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of waste and re-use and recycling of materials. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: material assets

## Minerals Technical Advice Note (MTAN) 1 - Aggregates (2004)

This Minerals Technical Advice Note (Wales) sets out detailed advice on the mechanisms for delivering the policy for aggregates extraction by mineral planning authorities and the aggregates industry. The overarching objective in planning for aggregates provision is to ensure supply is managed in a sustainable way so that the best balance between environmental, economic and social considerations is struck, while making sure that the environmental and amenity impacts of any necessary extraction are kept to a level that avoids causing demonstrable harm to interests of acknowledged importance.

### Objectives and requirements

Aims:  
To provide mineral resources to meet society's needs by maximising the use of secondary and recycled materials and mineral waste where practicable.

### Implications for draft Plan

The draft Plan has considered material assets at a strategy level and will take into account the use of recycled/secondary materials in new developments in more detail at the project level, should the draft Plan be adopted.

Affected issues: material assets, geodiversity

## Hidden Infrastructure (EA 2007)

“Hidden infrastructure” outlines the issues faced in providing adequate water supply, waste management, waste water treatment and flood protection for new and existing developments. Westminster Government, the Welsh Government, local government, water companies, waste management businesses, developers, the Environment Agency and individuals are all part of the solution.

“Hidden infrastructure” is the evidence that supports the Environment Agency’s policy paper, which presents our new ideas to make sure growth in England and Wales is sustainable, and has the environmental services it needs. The principles apply everywhere, but are more urgent in areas that have or are expecting high levels of growth.

### Objectives and requirements

Aims:

- Build in the right place. Planning authorities and developers need to make sure that new development is away from the floodplain and away from areas where water quality is already threatened wherever possible. There are already over 4.5 million people at risk of flooding in England and Wales, and this number should not grow.
- Reduce demand. Every home and business needs to reduce the amount of water it uses, and the amount of waste water and solid waste it produces. This will extend the life of existing infrastructure, save money and help cope with climate change. It can make a big difference. For example water metering reduces the amount of water people use by an average 10 to 15 per cent.
- Increase capacity by building new infrastructure and extending old. Increasing reservoir storage, for example, will help to

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with waste and water, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of water supply, waste management, waste water treatment and flood protection. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: material assets

<p>balance water resources in the area. Building additional sewage treatment works will ensure that dirty water does not pollute our rivers and coasts. Overall, providing sewage treatment for the new housing.</p>	
<p><b>Towards Zero Waste: The Overarching Waste Strategy Document for Wales, 2010</b></p>	
<p>The strategy document outlines the actions needed in order to reach the aim of becoming a high recycling nation by 2025 and a zero waste one planet nation by 2050.</p>	
<p><b>Objectives and Requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<p>The principle objective of the strategy is to achieve as sustainable future through zero waste by achieving a reduction of 1.5per cent of waste every year until 2050.</p> <p>It also aims to set out a long term framework for resource efficiency and waste management between now and 2050.</p>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with waste, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of waste reduction. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.</p> <p>Affected issues: material assets</p>

**Report on the Thematic Strategy on waste prevention and recycling (Jan 2011)**

The report reviews the progress of the objectives set out in the Communication on the Thematic Strategy on the prevention and recycling of waste, 2005. It includes a summary of the main actions taken by the Commission, the main available statistics on waste generation and management, a summary of the main forthcoming challenges and recommendations for future actions.

**Objectives and Requirements**

The findings of the report have found that the Strategy has played an important role in guiding policy development; in the improvement and simplification of legislation; the diffusion of key concepts such as the waste hierarchy; life-cycle thinking, on setting focus on waste prevention; and on setting new European collection and recycling targets.

The report outlines further improvement requirement to meet the Strategy objectives, which include:

- Improving waste knowledge base
- Proper implementation and enforcement of the existing EU waste acquis;
- Improvement in EU minimum collection and recycling targets; and
- Improving the competitiveness of EU recycling industries.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with waste, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of the waste hierarchy and life-cycle thinking. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: material assets

## The Waste (England and Wales) Regulations 2011

### Objectives and requirements

The regulations:

- implement the revised Waste Framework Directive and;
- require businesses to confirm that they have applied the waste management hierarchy when transferring waste and to include a declaration on their waste transfer note or consignment note;
- require a new permit waste hierarchy permit condition and where appropriate a condition relating to mixing of hazardous waste
- introduce a two-tier system for waste carrier and broker registration, which includes those who carry their own waste, and introduces a new concept of a waste dealer;
- make amendments to hazardous waste controls and definition;
- exclude some categories of waste from waste controls, notably animal by-products whilst include a small number of radioactive waste materials.

### Implications of draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with waste, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of waste. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

**Planning Policy Wales (Edition 5, November 2012)**

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government, and provides the policy framework for the effective preparation of local planning authorities' development plans. PPW is material to decisions on individual planning applications. They will be considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals.

**Objectives and Requirements**

PPW sets out the requirements for a Local Development Plan and within its policy guidance, it sets out objectives for managing waste and protecting natural resources.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with water and flood risk, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of flood risk.

Affected issues: water and flood risk



**Regional – UK and Wales**

**South East Wales Regional Waste Plan (2004)**

Long-term strategic waste management strategy and land-use planning framework for the sustainable management of wastes and recovery of resources in South East Wales.

**Objectives and Requirements**

The Regional Waste Plan implements the national strategy and meets the obligations of in the EU Waste Directives.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with waste, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of the waste hierarchy and life-cycle thinking. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: material assets

## 9. Cultural Heritage and the historic environment, including architectural and archaeological heritage

<b>National - UK and Wales</b>	
<b>Traffic Management in Historic Areas (Cadw, 2003)</b>	
This guidance outlines ways in which traffic engineering and highway improvements can be sensitively designed in historic areas.	
<b>Objectives and requirements</b>	<b>Implications for draft Plan</b>
Consideration is given to traffic management, footways and carriageways, materials, signing and street furniture, lighting, access and traffic calming.	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with heritage, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of the protection and enhancement of historic assets in Wales. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.</p> <p>Affected issues: cultural heritage</p>

## Wales Tourist Board - Cultural Tourism Strategy for Wales (2003)

The purpose of this strategy and the associated Action Plan is to produce a framework for action by Wales Tourist Board and its partners to develop Wales' potential as a cultural tourism destination. The uniqueness of Wales' history, language and way of life are distinctive tourism assets which help differentiate Wales from the other countries of the UK.

### Objectives and requirements

- Improving visitor accessibility to Welsh culture;
- Improving the quality of the visitor experience;
- Raising the profile of Wales as a cultural tourism destination; and
- Understanding the characteristics and needs of the cultural tourist.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) criteria associated with heritage and Welsh language, as well as relevant Equality Impact Assessment and SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of culture and tourism. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: economy, cultural and engineering heritage

## The Welsh Historic Environment: Position Statement 2007

This report again highlights the work undertaken by the Welsh Government's historic environment service, Cadw; the Assembly Government Sponsored Body, the Royal Commission on the Ancient and Historical Monuments of Wales; and the Assembly Government's advisory bodies for ancient monuments and historic buildings.

### Objectives and requirements

Using data collected in the financial year 2006–07 or the calendar year 2007 (unless otherwise stated), this statement will enable the Cymru Hanesyddol/Historic Wales partnership and other historic environment organizations to begin to monitor trends, changes and improvements in the protection, conservation and promotion of the historic environment.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with heritage, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of the protection and enhancement of historic assets in Wales. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: cultural heritage

## Planning Policy Wales (Edition 5, February 2012)

Planning Policy Wales sets out the land use planning policies of the Welsh Government, and provides the policy framework for the effective preparation of local planning authorities' development plans. Planning Policy Wales is material to decisions on individual planning applications. They will be considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals.

### Objectives and Requirements

The Planning Policy sets out the requirements for a local development plan. Within the policy guidance, it sets out objectives for transport in land use planning. The key objectives for cultural heritage include:

- preserve or enhance the historic environment, recognising its contribution to economic vitality and culture, civic pride and the quality of life, and its importance as a resource for future generations; and specifically to
- protect archaeological remains, which are a finite and non-renewable resource, part of the historical and cultural identity of Wales, and valuable both for their own sake and for their role in education, leisure and the economy, particularly tourism;
- ensure that the character of historic buildings is safeguarded from alterations, extensions or demolition that would compromise a building's special architectural and historic interest; and to
- ensure that conservation areas are protected or enhanced, while at the same time remaining alive and prosperous, avoiding unnecessarily detailed controls over businesses and householders.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with heritage, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of the protection and enhancement of historic assets in Wales. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: conserving the historic environment.

## Register of Landscapes of Historic Interest in Wales

In partnership with Cadw and the International Council of Monuments and Sites (ICOMOS UK) CCW has compiled a Register of Landscapes of Historic Interest in Wales.

The Register comes in two volumes and describes 58 landscapes in Wales that are of outstanding or special historic interest.

### Objectives

The document highlights 58 different types of landscapes ranging from former industrial centres to ancient rural settlements.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with heritage, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of the avoidance and/or protection of Landscapes of Historic Interests. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: conserving the historic environment.

**Regional**

**Newport Local Development Plan, Revised Deposit Plan (June 2013) Policy SP 9 Conservation and the Natural Environment**

Newport LDP recognises that Newport has a rich diversity of natural and historic sites which are recognised at the international, national and local level.

**Objectives and Requirements**

The conservation, enhancement and management of recognised sites within the natural, historic and built environment will be sought in all proposals.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with heritage, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of the protection and enhancement of cultural heritage and the historic built environment. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: cultural heritage.

**Cardiff Local Development Plan, Working Draft, No Status, (June 2013) Policy KP17 Built Heritage**

This Policy affords strategic policy protection for Cardiff's historic environment as required by legislation and PPW

**Objectives and Requirements**

Cardiff's distinctive heritage assets will be protected, managed and enhanced. Particular elements include:

- i) The character and setting of the city's Scheduled Ancient Monuments;
- ii) The character and setting of the city's Listed Buildings;
- iii) The character and setting of the city's Registered Historic Parks, Gardens and Landscapes;
- iv) The character and setting of the city's Conservation Areas;
- v) The character and setting of the city's Locally Listed Buildings; and
- vi) (vi) Other features of local interest that positively contribute to the distinctiveness of the city.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with heritage, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of the protection and enhancement of cultural heritage and the historic built environment. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: cultural heritage.



## 10. Landscape and townscape, including light pollution

International – EU	
European Landscape Convention (Council of Europe) 2004	
<p>The European Landscape Convention (ELC) was developed by the Council for Europe and came into force in 2004. The aims of the convention are to promote European landscape protection, management and planning and to organise European co-operation on landscape issues. Nations that sign the Convention agree to take action to raise the standing given to landscape in public policy. Signed by the UK Government in February 2006, the ELC became binding from March 2007.</p>	
Objectives and requirements	Implications for draft Plan
<p>The ELC sets out four general measures and five specific measures:</p> <p>General measures:</p> <ul style="list-style-type: none"> <li>• To recognise landscapes in law as an essential component of people’s surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity;</li> <li>• To establish and implement landscape policies aimed at landscape protection management and planning through the adoption of specific measures as outlined below;</li> <li>• To establish procedures for the participation of the general public, local and regional authorities, and other parties with an interest in the definition and implementation of landscape policies;</li> </ul>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with landscape, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of landscape protection. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.</p> <p>Affected issues: landscape, cultural heritage, biodiversity and geodiversity</p>

- To integrate landscape into its regional and town planning policies and in its cultural, environmental, agricultural, social and economic policies, as well as in any other policies with possible direct or indirect impact on landscape.

Specific measures:

- Awareness-raising: involves increasing awareness among civil society, private organisations and public authorities of the values of landscape, their role and the changes to them;
- Training and education: involves promoting: training for specialists in landscape appraisal and operations, multidisciplinary training programmes in landscape policy, protection, management and planning; and school and university courses.
- Identification and assessment: involves mobilising the interested parties with a view to improving knowledge of the landscape and guiding the landscape identification and assessment procedures through exchanges of experiences and methodology. Each Party should identify its own landscapes, analyse their characteristics and the forces and pressures transforming them, take note of change and assess the identified landscapes;
  - Landscape quality objectives: involves framing landscape quality objectives for the identified landscapes; and
- Implementation: involves introducing instruments aimed at protecting, managing and/or planning the landscape.

## National – UK and Wales

### Countryside and Rights of Way Act (CRoW) (2000)

The CRoW Act extends the public's ability to enjoy the countryside whilst also providing safeguards for landowners and occupiers.

The Act contains measures to improve public access to the open countryside and registered common land while recognising the legitimate interests of land owners; amends the law relating to rights of way and amends the law relating to nature conservation by strengthening protection for Sites of Special Scientific Interest through tougher penalties and providing extra powers for the prosecution of wildlife crime.

#### Objectives and requirements

The Act is split into five main parts:

Part I: Access to the Countryside gives greater freedom for people to explore open countryside. It contains provisions to introduce a new statutory right of access, includes powers to extend the right to coastal land by order, and enables landowners voluntarily to dedicate irrevocably any land to public access.

Part II: Public Rights of Way and Road Traffic introduces improvements to the legislation governing the rights of way system. It includes measures for the strategic planning of rights of way networks, to improve the administration and management of rights of way, and to promote increased access and for a new category of right of way.

Part III: Provisions for the Enforcement of Wildlife legislation

#### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with landscape, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of countryside and rights of way. The draft Plan would also consider potential effects on public access to open countryside and where possible public rights of way will be preserved and enhanced in more detail at a project level.

Affected issues: population, access, nature conservation, biodiversity and geodiversity

introduces improved protection and management of SSSIs. It includes new and enhanced powers for the conservation agencies. Public bodies will be under a statutory duty to further the conservation and enhancement of SSSIs, both in carrying out their operations and exercising their decision-making functions.

Part IV: Areas of Outstanding Natural Beauty - introduces provisions to allow the better management and protection of Areas of Outstanding Natural Beauty (AONBs) and requires relevant authorities to have regard to the purpose of conserving and enhancing the AONB.

Part V: Miscellaneous and supplementary - a duty is placed on highway authorities and national park authorities to establish local access forums and to have regard to forums' views in reaching decisions.

## Planning Policy Wales: Edition 5 (February 2012)

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government.

### Objectives and requirements

PPW sets out the requirements for a Local Development Plan and within its policy guidance, it sets out objectives for biodiversity in Chapter 5 Conserving and Improving Natural Heritage and the Coast.

The Welsh Government's objectives for the conservation and improvement of the natural heritage are to:

- promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats;
- ensure that action in Wales contributes to meeting international responsibilities and obligations for the natural environment;
- ensure that statutorily designated sites are properly protected and managed;
- safeguard protected species, and to
- promote the functions and benefits of soils, and in particular their function as a carbon store.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with landscape, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of landscape protection and enhancement. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: land use, landscape, conservation

## Technical Advice Notes (TANs)

Planning Policy Wales (PPW) is supplemented by a series of Technical Advice Notes (TANs).

### Objectives and requirements

In addition to the policy objective and principles outlined in PPW, key supporting Technical Advice Notes for consideration include:

TAN 5: Nature Conservation and Planning provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation.

TAN 10: Tree Preservation Orders provides advices on considering the scope of Tree Preservation Orders (TPOs), the work that can be carried out on protected trees, and consideration of need for TPOs.

TAN 12: Design provides advice on good design.

TAN 18: Transport describes how to integrate land use and transport planning and explains how transport impacts should be assessed and mitigated. Measures to conserve the landscape include CCW's LANDMAP information system. LANDMAP is the formally adopted approach for landscape assessments in Wales; an internet database and application devised by the Countryside Council for Wales (CCW) and the Wales Landscape Partnership Group. It is an important information resource which describes and evaluates aspects of the landscape and provides the basis of a consistent Wales-wide approach to landscape assessment. The

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with landscape, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of landscape protection and enhancement. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: land use, landscape, conservation

information available through LANDMAP is structured in five Evaluation Aspect Layers (EALs) which include Geological Landscape; Landscape Habitat; Visual and Sensory; Historic Landscape; and Cultural Landscape. It is considered that the four EALs establishing geological, habitat, historic and cultural characteristics highly influence the identification of the visual and sensory aspects of a landscape.

## Regional

### Cardiff Local Development Plan Working Version [No Status] (June 2013) Policy KP3(A): Green Belt and KP3(B) Settlement boundaries

Policy KP3 (A) and KP3 (B) seek to strategically manage the future built form of Cardiff's urban area.

#### Objectives and Requirements

KP3 (A) Green Belt: In order to strategically manage the urban form of Cardiff and to protect the setting of the urban area, a Green Belt is proposed on land North of the M4 as shown on the Proposals Map. Within this area development which prejudices the open nature of this land will not be permitted. Positive biodiversity, landscape, climate change mitigation and informal recreational management and enhancement measures will be encouraged in this area to further enhance the long term role of the area as a key natural resource benefitting the city.

KP3 (B) Settlement boundaries: In order to strategically manage the spatial growth of Cardiff, settlement boundaries are proposed as shown on the Proposals Map. In all areas outside the defined settlement boundaries, otherwise referred to as countryside, there will be a corresponding presumption against inappropriate development.

#### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with landscape, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of landscape protection and enhancement. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: townscape, landscape



**Cardiff Local Development Plan Working Version [No Status] (June 2013) Policy EN1 to EN2: Countryside Protection**

The countryside in Cardiff is land located outside the settlement boundaries as identified on the LDP Proposals Map. Cardiff's countryside is a valuable and finite resource which is under pressure from all kinds of development.

**Objectives and requirements**

EN1: Countryside protection - The aim of this Policy is to ensure that development within the countryside is strictly controlled to protect and enhance Cardiff's natural heritage and setting. It further seeks to manage and enhance this rich asset in order to maintain Cardiff's unique distinctiveness whilst helping to mitigate against climate change and also aims to ensure that those uses that do not need to be located in the countryside will be resisted.

EN2: Conversion, extension and replacement buildings in the countryside - The aim of this Policy is to ensure that conversions, extensions and replacement of buildings in the countryside conserve the character and quality of Cardiff's countryside and natural heritage value, without being unduly restrictive.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with landscape, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of landscape protection and enhancement. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: landscape

**Cardiff Local Development Plan Working Version [No Status] (June 2013) Policy EN3 to EN 9**

Policies set out below protect different character types and features of the natural environment.

Objectives and requirements	Implications for draft Plan
<p>EN3: Landscape protection - The aim of this Policy is to ensure that those features of the landscape that contribute to its character, value, distinctiveness, sense of place, and quality, with particular priority given to SLAs (as identified on the Proposals Map) are protected from inappropriate development</p> <p>EN4: River valleys - The Policy provides a planning framework within which the Council can protect, promote and enhance the river corridors</p> <p>EN5: Local nature reserves and non-statutory sites of nature conservation and geological importance – EN5 will contribute to the protection and enhancement of Biodiversity interests in accordance with Policy EN6 and will work towards delivering the Plan’s objective of protecting and enhancing features of Cardiff’s natural environment and heritage.</p> <p>EN6: Ecological networks and features of importance for biodiversity - This Policy aims to protect Cardiff’s ecological networks and landscape features that are important for biodiversity.</p> <p>EN7: Priority habitats and species - This Policy is in accordance with the aims and objectives of the Plan by protecting and</p>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with landscape, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of landscape protection and enhancement. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.</p> <p>Affected issues: landscape</p>

<p>enhancing the features of Cardiff's natural heritage, including its biodiversity and abundance of wildlife habitats and native species.</p> <p>EN8: Trees, woodlands and hedgerows - The purpose of the Policy is to protect trees, woodlands and hedgerows with natural heritage or amenity value.</p>	
<p><b>Newport Local Development Plan, Revised Deposit Plan (June 2013) General Policies - GP6 General Development Principles – Quality of Design</b></p>	
<p>This Plan seeks to achieve high quality design in all forms of development.</p>	
<p><b>Objectives and requirements</b></p>	<p><b>Implications for draft Plan</b></p>
<p>Good quality design will be sought in all forms of Development. The aim is to create a safe, accessible, attractive and convenient environment. In considering development proposals the following fundamental design principles should be addressed:</p> <ul style="list-style-type: none"> <li>i) context of the site;</li> <li>ii) access, permeability and layout;</li> <li>iii) preservation and enhancement;</li> <li>iv) scale and form of development;</li> <li>v) materials and detailing; and</li> <li>vi) sustainability.</li> </ul>	<p>The draft plan will need to ensure new development is of good quality design, appropriately connecting to the surrounding context, reflecting the scale of adjacent townscape.</p> <p>Affected issues: townscape</p>

**Newport Local Development Plan, Revised Deposit Plan (June 2013) General Policies - GP7 General Development Principles – Environmental Protection and Public Health**

The conservation and enhancement of the environment and quality of life are important aims of the Plan.

<b>Objectives and requirements</b>	<b>Implications for draft Plan</b>
<p>Development will not be permitted which would cause or result in unacceptable harm to health because of land contamination, dust, instability or subsidence, air, heat, noise or light pollution, flooding, water pollution, or any other identified risk to environment, local amenity or public health and safety.</p>	<p>The draft plan will aim to ensure works are completed in an environmentally sensitive manner to avoid negative effects on designated sites. If night time working is required in environmentally sensitive areas, then a lighting scheme and specific design will be required to control/ prevent light spill. This would be developed at a scheme level of appraisal.</p> <p>Affected issues: light pollution, townscape</p>

**Newport Local Development Plan, Revised Deposit Plan (June 2013) Environment – Built Environment CE2 Routeways, Corridors and Gateways**

The Plan aims to protect and enhance the appearance and connectivity of existing and future main route corridors and gateways into the city.

**Objectives and requirements**

The impression gained from main routes is important, having economic development as well as environmental implications. It is important that

- development proposals that are located or highly visible along these routes seek
- to improve the general environment and help create attractive routeways into the
- City. The type of enhancement will vary depending on the routeway in question
- and may involve landscaping improvements, which will also help create wildlife
- corridors, or built forms of development such as shop front improvements.

Proposals along main routeways or gateway sites should enhance biodiversity and wildlife connectivity through the use of appropriate species. Similarly, consideration of other links for pedestrians and cyclists should be designed into proposals to encourage the connectivity of the wider road, cycle and footpath network.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with landscape, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of landscape protection and enhancement. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: townscape, landscape

**Newport Local Development Plan, Revised Deposit Plan (June 2013) Environment – Environmental Spaces and Corridors CE4**

Environmental Spaces and corridors form a valuable part of Newport’s green infrastructure provision

**Objectives and requirements**

To safeguard green infrastructure resources Environmental Spaces should be protected from severance as the value of isolated areas is much less in wildlife and amenity terms than if the areas are linked.

**Implications for draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WeITAG) environmental criteria associated with landscape, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of landscape protection and enhancement. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.

Affected issues: townscape, landscape

**Newport Local Development Plan, Revised Deposit Plan (June 2013) Environment – The Natural Environment CE9 - CE10**

The strategy of the Plan clearly promotes a brownfield preference to development. This seeks to assist in the protection of sensitive areas including those of nature conservation.

<b>Objectives and requirements</b>	<b>Implications for draft Plan</b>
<p>CE9: Locally designated nature conservation and geological sites – This policy protects locally designated nature conservation and geological sites from significant adverse effects.</p> <p>CE10: Coastal zone – This policy safeguards the coast from direct or indirect impacts from developments.</p>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) environmental criteria associated with landscape, as well as relevant SEA criteria. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of landscape protection and enhancement. The draft Plan would also consider potential mitigation measures from development in more detail at a project level.</p> <p>Affected issues: townscape, landscape</p>

## 11. Sustainable Development

International and EU	
The UN Millennium Declaration and Millennium Development Goals (2002)	
All 191 UN member states set out eight millennium development goals which should be met by 2015.	
Objectives and requirements	Implications for draft Plan
<ul style="list-style-type: none"> <li>• Eradicate extreme poverty and hunger;</li> <li>• Achieve universal primary education;</li> <li>• Promote gender equality and empower;</li> <li>• Reduce child mortality;</li> <li>• Improve maternal health;</li> <li>• Combat HIV/Aids, malaria and other diseases;</li> <li>• Ensure environmental Sustainability (“We must tackle, issues of climate change, preserving biodiversity, managing our forests and water resources, and reducing the impacts of natural and man-made disasters”); and</li> <li>• Develop a global partnership for development.</li> </ul>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan have been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of social inclusion, deprivation, equality, health and environmental sustainability. The aims of the draft Plan support those the UN Millennium Declaration and Millennium Development Goals and are to:</p> <ul style="list-style-type: none"> <li>• Make it easier and safer for people to access their homes, workplaces and services by walking, cycling, public transport or road.</li> <li>• Deliver a more efficient and sustainable transport network supporting and encouraging long-term prosperity in the region, across Wales, and enabling access to international markets.</li> <li>• To produce positive effects overall on people and the environment, making a positive contribution to the overarching Welsh Government</li> </ul>



	<p>goals to reduce greenhouse gas emissions and to making Wales more resilient to the effects of climate change.</p> <p>Affected issues: all.</p>
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**World Summit on Sustainable Development - Earth Summit leading to the Johannesburg Plan of Implementation (Johannesburg, 2002)**

The Johannesburg Summit 2002 – the World Summit on Sustainable Development – aimed to address difficult challenges, including improving people's lives and conserving our natural resources in a world that is growing in population, with ever-increasing demands for food, water, shelter, sanitation, energy, health services and economic security.

<b>Objectives and requirements</b>	<b>Implications for draft Plan</b>
<p>Selected Objectives</p> <ul style="list-style-type: none"> <li>• Integration of the economic, social and environmental dimensions of sustainable development in a balanced manner (Promotion of greater resource efficiency, waste reduction, renewable energy and significant reduction in the loss of biodiversity by 2010);</li> <li>• Strengthening of the implementation of Agenda 21;</li> <li>• Enhancing participation and effective involvement of civil society and other relevant stakeholders in the implementation of Agenda 21; and</li> <li>• Strengthening capacities for sustainable development at all levels, including the local level, in particular those of developing countries.</li> </ul>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of social inclusion, deprivation, equality, health and environmental sustainability. The aims of the draft Plan encompass themes of sustainable development and are to:</p> <ul style="list-style-type: none"> <li>• Make it easier and safer for people to access their homes, workplaces and services by walking, cycling, public transport or road.</li> <li>• Deliver a more efficient and sustainable transport network supporting and encouraging long-term prosperity in the region, across Wales, and enabling access to international markets.</li> </ul>

	<ul style="list-style-type: none"> <li>To produce positive effects overall on people and the environment, making a positive contribution to the overarching Welsh Government goals to reduce greenhouse gas emissions and to making Wales more resilient to the effects of climate change.</li> </ul> <p>Affected issues: all</p>
<b>The Future We Want: Rio +20 Outcome Document (2012)</b>	
<p>This is the outcome of the 2012 Earth Summit on Sustainable Development. It reaffirms all the principles of the Rio Declaration on Environment and Development.</p>	
<b>Objectives and requirements</b>	<b>Implications for draft Plan</b>
<p>This document recognises that poverty eradication is the greatest global challenge. It also sets out the other overarching objectives of and essential requirements for sustainable development:</p> <ul style="list-style-type: none"> <li>changing unsustainable and promoting sustainable patterns of consumption and production; and</li> <li>protecting and managing the natural resource base of economic and social development.</li> </ul>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of economic, social and environmental sustainability.</p> <p>Affected issues: all</p>

## EU Sustainable Development Strategy (2006, reviewed 2009)

This document sets out a single coherent strategy on how the EU will meet long-standing commitments to sustainable development. This document presents a renewed version of the 2001 EU Sustainable Development Strategy (SDS). The aim of the SDS is to identify and develop actions to enable the EU to achieve continuous improvement of quality of life both for current and for future generations, through the creation of sustainable communities able to manage and use resources efficiently and to tap the ecological and social innovation potential of the economy, ensuring prosperity, environmental protection and social cohesion.

### Objectives and requirements

The key objectives of the strategy are:

- Environmental protection;
- Social equity and cohesion;
- Economic prosperity; and
- Meeting our international responsibilities.

The guiding principles are:

- Promotion and protection of fundamental rights;
- Solidarity within and between generations;
- Open and democratic society;
- Involvement of citizens;
- Involvement of businesses and social partners;
- Policy coherence and governance;
- Policy integration;
- Use best available knowledge;
- Precautionary principle; and
- Making polluters pay.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of economic prosperity, social equity and cohesion, and environmental sustainability.

Affected issues: all

## National - UK and Wales

### Securing the Future – UK Government Sustainable Development Strategy (2005)

This strategy aims to promote sustainable development. It contains: five principles (with a more explicit focus on environmental limits); four agreed priorities (sustainable consumption and production, climate change, natural resource production and sustainable communities); and a new indicator set with new indicators such as on wellbeing.

#### Objectives and requirements

The aims of the strategy are:

- Living within environmental limits;
- Ensuring a strong, healthy and just society;

These aims should be achieved by the means of:

- Achieving a sustainable economy;
- Promoting good governance; and
- Using sound science responsibly.

#### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. Whilst feasibility, deliverability, acceptability and risk have been considered as part of the development of the draft Plan, should it be adopted, it will consider governance at a scheme level.

Affected issues: all

## Mainstreaming sustainable development – The Government’s vision and what this means in practice (2011)

This is a refreshed vision and the commitments in it build on the principles that underpinned the UK’s 2005 SD strategy.

### Objectives and requirements

The strategy sets government commitments in relation to:

- The Green Economy;
- Climate Change;
- Protecting and enhancing the natural environment; and
- Fairness and Improving wellbeing;
- It also sets out some of the means by which to achieve these aims.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of climate change, social inclusion, health and environmental sustainability. It will be important to consider opportunities for positively contributing towards sustainable development.

Affected issues: all

## The Sustainable Development Action Plan 2004 – 2007 (2004)

### Starting to Live Differently - The Sustainable Development Scheme – SDS (2004)

The National Assembly for Wales is required to set up a scheme stating how it will promote sustainable development which has to be accompanied by an annual progress report. Both documents implement this requirement. They are intended to contribute to the fulfilments of international commitments, to form part of the framework for sustainable development strategy of the UK and to ensure progress is kept under review.

The Wales Sustainable Development Action Plan provides an outline of how the Welsh Government (WG) will implement its Sustainable Development scheme *Starting to Live Differently*. The Plan stands as a formal addition to the WG strategic agenda *Programme for Government (2011)*, and is intended to complement the Wales Spatial Plan. Ultimately, the Action Plan aims to fulfil commitments to international sustainable development networks, and review progress towards achieving sustainable development in Wales. It is divided into four areas reflecting the key issues Wales is facing: living differently, leadership and delivery, making our money talk, measuring progress.

The Sustainable Development Scheme is divided into five sections: the duty, definition of sustainable development, vision, principles, fulfilling the duty.

#### Objectives and requirements

SD Action Plan contains several sections outlining actions regarding climate change, communities, the natural environment, supporting businesses and sustainable production, reducing consumption and leadership and delivery. Examples are:

- Implementing the Energy Efficiency Plan across of sectors;
- Ensuring that lighting for trunk roads employs renewable technologies to deliver at least 20% energy saving; and
- To take action on diffuse pollution to comply with the EU Water Framework Directive.

#### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of economic, social and environmental sustainability.

Affected issues: all

- The Plan identifies four areas in which the WG aim to make adjustments to current practice:
- Living differently - by increasing our reliance on renewable energy, increasing energy efficiency, and investigating new energy sources; reducing natural resource use, reducing consumption and increasing waste minimisation and recycling; and protecting and enhancing the biophysical environment;
- Leadership and delivery - mainstreaming sustainable development into the policies and practices of the WAG; encouraging global discussion to learn and teach best practice; and building sustainable development into education systems;
- Making our money talk - using the buying power of the WAG to promote sustainable development through procurement practices; incorporating sustainable development into the terms and conditions of WAG funding agreements; and
- Measuring progress - measuring Wales'' progress towards sustainable development through headline indicators.
- The SDS sets out the following objectives:
- To promote a diverse, competitive, high added value economy;
- To take action on social justice that tackles poverty, poor health;
- To take action in our built and natural environment strengthening Wales'' cultural identity (by i.e. promoting biodiversity, minimising waste generation, energy, water
- and transport demands, respecting environmental limits and applying the precautionary principle);
- To create a place which values its children and where young

<p>people want to live;</p> <ul style="list-style-type: none"><li>• To support people to live healthy and independent lives;</li><li>• To value everyone in society and promoting equality of opportunity;</li><li>• To promote openness, partnership and participation; and</li><li>• To contribute to sustainable development at a global level as well as locally and taking account of the global impacts of decisions made in Wales.</li></ul>	
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**Programme for Welsh Government (2011)**

This is the Programme for Government of the Welsh Government 2011. It sets out Wales' account of sustainable development, with emphasis on social, economic and environmental well-being for people and communities and embodies values of fairness and social justice. The Programme will reflect this commitment to sustainability and fairness so that sustainable development is the central organising principle.

**Objectives and requirements**

It is hoped that over time the data will help to monitor progress towards sustainable development in Wales.

**Implications for draft Plan**

It is hoped that over time the data will help to monitor progress towards sustainable development in Wales.

## Welsh Government Integration Tool (2002)

The WAG Integration Tool has been designed for use in developing policies and evaluating policies and projects during their development and delivery. The Tool should stimulate discussion and thinking regarding sustainable development, equality and social inclusion; thereby ensuring that policies and projects give due consideration to the aims and values of the WAG.

### Objectives and requirements

The key objectives are stated as:

- Developing the learning country;
- Improving health and care services;
- Creating a modern economy;
- Fostering a sense of identity;
- Supporting rural Wales;
- Creating strong communities;
- Enhancing where we live;
- Promoting ICT; and
- Making it happen.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of economic, social and environmental sustainability.

Affected issues: economy, population, social fabric, sustainable development

## Making the Connections: Delivering better services in Wales (2004)

This strategy outlines a vision for delivering public services in Wales to achieve a prosperous, sustainable, bilingual, healthier and better-educated Wales. Joint working is vital to deliver public services of top quality: they must be responsive to the needs of individuals and communities, delivered efficiently and driven by a commitment to equality and social justice.

### Objectives and requirements

The strategy is based on four principles:

- Citizens at the centre;
- Equality and social justice;
- Working together; and
- Value for money.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of equality, health and economic sustainability.

In addition, the Making the Connections: Delivering better services in Wales (2004) will help to shape the SEA assessment criteria.

Affected issues: all

## People, Places, Futures - The Wales Spatial Plan (2008 update)

The Welsh Spatial Plan sets out a strategic and integrated agenda for the next 20 years by outlining issues and opportunities across different sectors and areas. Moreover, it defines several key themes as part of a national framework to create sustainable communities.

### Objectives and requirements

Objectives:

- Manage the environment comprehensively so that it contributes to sustainable development including maintaining soil carbon, reducing contamination, managing diffuse pollution sources to water, protecting landscapes and enhancing habitats;
- Decouple growth of waste from economic growth; waste should be dealt with near the source according to the waste hierarchy;
- Reduce Wales' contribution to climate change by promoting renewable energy, increasing energy efficiency in industry, housing and transport and protecting existing soil carbon sinks.
- Work to help the environment, economy and society to adapt to climate change's potential impacts including flood risk;
- Achieving sustainable accessibility;
- Reconnect people with labour markets and improve skills;
- Achieve a critical mass of population and business activity in key economic areas;
- Attract and retain well-educated and skilled migrants, as well as attracting back young people born in Wales, responding to demographic trends; and
- Improve regional collaboration between education and training institutions and employers.

### Implications for draft Plan

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of social, economic and environmental sustainability.

In addition, the People, Places, Futures - The Wales Spatial Plan (2008 update) will help to shape the SEA assessment criteria.

Affected issues: biodiversity and geodiversity, soil, water, material assets, climatic factors, accessibility, economy, health and wellbeing, population, social fabric, sustainable development

## Environment Strategy for Wales (2006) and Environment Strategy Action Plan 2008 – 2011

This is the Welsh Government's long-term strategy for the environment of Wales. The purpose of the strategy is to provide the framework within which to achieve an environment that is clean, healthy, biologically diverse and valued by the people of Wales. The strategy focuses on five environmental themes: addressing climate change; sustainable resource use; distinctive biodiversity, landscapes and seascapes; our local environment; and environmental hazards.

The Environment Strategy Action Plan 2008 – 2011 builds on the significant work that has been undertaken to progress the Environment Strategy since May 2006, driven by the first Environment Strategy Action Plan and legislative obligations, policies and programmes.

Objectives and requirements	Implications for draft Plan
<p>Addressing climate change:</p> <ul style="list-style-type: none"> <li>• Minimise greenhouse gas emissions; and</li> <li>• Improve resilience to the impacts of climate change.</li> <li>• Sustainable use of resources:</li> <li>• Minimise amount of waste generated; universal acceptance of principle of reduce, re-use and recycle; reduce waste going to landfill;</li> <li>• Design products for minimal waste and high resource use efficiency;</li> <li>• Manage water resources sustainably without causing environmental damage;</li> <li>• Increase water efficiency and maintain water quality;</li> <li>• Manage soil resources to safeguard its ability to support life;</li> <li>• Minimise environmental impact of extracting minerals and aggregates; and</li> <li>• Use alternative materials or recycled aggregates where possible.</li> <li>• Distinctive biodiversity, landscapes and seascapes:</li> <li>• Halt the loss of biodiversity, and begin to see recovery; improve</li> </ul>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of:</p> <ul style="list-style-type: none"> <li>• Resource efficiency;</li> <li>• Climate change mitigation and adaptation;</li> <li>• Protection of soils as carbon stores;</li> <li>• Potential carbon offsetting for new developments;</li> <li>• Flood risk;</li> <li>• Diffusing water pollution (run-off);</li> <li>• Reducing air pollution;</li> <li>• Loss of biodiversity, fragmentation of habitats;</li> <li>• Changes to landscape character; and</li> <li>• Inter-linkages between these issues.</li> </ul>

<p>biodiversity in wider environment through appropriate management;</p> <ul style="list-style-type: none"> <li>• Improve condition of SSSI sites;</li> <li>• Manage our seas to support clean and healthy ecosystems that are biologically diverse and productive; and</li> <li>• Maintain and enhance quality and diversity of landscape and seascape character.</li> <li>• Our local environment:</li> <li>• Built environment reflects local distinctiveness and supports strong communities; easy and equitable access to open space; widespread and equitable access to the countryside;</li> <li>• New buildings in Wales to meet high environmental quality standards; maintain historic building stock to high standards;</li> <li>• Minimise environmental nuisances such as litter, graffiti, noise pollution;</li> <li>• Increasing numbers of people choose to walk or cycle for transportation; and</li> <li>• Manage risk of flooding from rivers and the sea, and how to adapt to that risk.</li> <li>• Environmental hazards:</li> <li>• Reduce air pollution; undertake remedial action on identified contaminated land;</li> <li>• Maintain and enhance quality of water sources;</li> <li>• Understand and manage diffuse pollution sources; and</li> <li>• Minimise the risk posed by exposure to chemicals.</li> </ul>	<p>In addition, the Environment Strategy for Wales (2006) and Environment Strategy Action Plan 2008 – 2011 will help to shape the SEA assessment criteria.</p> <p>Affected issues: climatic factors, water, air quality, landscape, biodiversity and geodiversity, flora and fauna, material assets</p>
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### **Draft Future Generations (Wales) Bill (2013/2014)**

The Future Generations (Wales) Bill (previously the Sustainable Development Bill) will help tackle the generational challenges Wales faces in a more joined up and integrated way – ensuring Welsh Public services make key decisions with the long term wellbeing of Wales in mind.

#### **Objectives and requirements**

The aim of the Bill is to develop strong, cohesive communities which flourish and in which families can have a decent standard of living now and foresee the same for their children and grandchildren. The Bill provides a clear focus on the challenge the public service is seeking to address, and ensure that decisions recognise the connections between social justice, economic prosperity and the management of natural resources, both now and over the long term.

#### **Implications for the draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level

## Regional and Local

### Newport's Community Strategy 2010 – 2020

The Community Strategy contains the Local Service Board's (LSB) vision for improving Newport over the next ten years. It is the overarching strategy for the city. It is a living document, which has and will continue to be shaped through consultation with citizens and groups across the city.

#### Objectives and requirements

#### Implications for the draft Plan

##### To be a prosperous and thriving city

- Newport has a prosperous and thriving economy
- More people in Newport participate in the local economy
- Newport reduces its carbon emissions and resource consumption
- Newport is a distinctive and vibrant city

##### To have a better quality of life

- People in Newport are healthy and thriving
- Children in Newport have the best start in life
- Children and young people in Newport succeed in school or work
- Adults in Newport are successful and realise their potential

##### To have vibrant and safe communities

- People in Newport are healthy and thriving
- Children in Newport have the best start in life
- Children and young people in Newport succeed in school or work
- Adults in Newport are successful and realise their potential

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of economic, social and environmental sustainability.

In addition, the Newport's Community Strategy 2010 – 2020 will help to shape the SEA assessment criteria.

Affected issues: all



<p><b>To deliver better public services</b></p> <ul style="list-style-type: none"> <li>• Public services in Newport work together</li> <li>• People in Newport have better access to services</li> <li>• People in Newport receive better services and are confident in systems</li> </ul>	
<p><b>Newport Local Development Plan, Revised Deposit Plan, Policy SP1 Sustainability (June 2013)</b></p>	
<p>This policy provides an overarching framework that places sustainability at the heart of the Plan.</p>	
<p><b>Objectives and requirements</b></p>	<p><b>Implications for the draft Plan</b></p>
<ul style="list-style-type: none"> <li>• Proposals will be required to make a positive contribution to sustainable development by concentrating development in sustainable locations on brownfield land. They would be assessed on: Conserving, enhancing and linking green infrastructure, protecting and enhancing the built and natural environment;</li> <li>• Conserving and ensuring the efficient use of resources such as water and minerals;</li> <li>• Encouraging economic diversification and in particular improving the vitality and viability of city centre and district areas.</li> </ul>	<p>The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of economic, social and environmental sustainability.</p> <p>In addition, the Newport Local Development Plan, Revised Deposit Plan, Policy SP1 Sustainability (June 2013) will help to shape the SEA assessment criteria.</p> <p>Affected issues: biodiversity, economy, resources</p>

## Cardiff Sustainable Development Policy Statement (2006)

This short policy statement sets out how sustainable development is a central guiding principle for all of the Council's activities.

### Objectives and Requirements

#### There are six guiding principles:

- Living within Environmental Limits
- Ensuring a Strong, Healthy, Safe and Just Society
- Achieving a Sustainable Economy
- Promoting Good Governance
- Using Sound Science Responsibly
- Integrated and Long Term Policy

### Implications for the draft Plan

Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of economic, social and environmental sustainability.

In addition, the Cardiff Sustainable Development Policy Statement (2006) will help to shape the SEA assessment criteria.

Affected issues: all

**Cardiff Local Development Plan, Working Draft, No Status (June 2013)**

The emerging Cardiff LDP sets the framework for land use and planning decisions in the Cardiff area. Sustainability is a key theme within the Cardiff LDP.

**Objectives and Requirements**

Covers a wide range of environmental protection objectives at the relevant local level, including landscape, biodiversity, and cultural heritage.

**Implications for the draft Plan**

The draft Plan has been subject to appraisal, at a strategic level, against Welsh Transport Planning and Appraisal Guidance (WelTAG) economic, social and environmental criteria, as well as relevant SEA criteria. Furthermore, an Equality Impact Assessment and Health Impact Assessment of the draft Plan has been undertaken to consider the wider impacts of its options on society. The options progressed from the draft Plan, should it be adopted, will consider at a scheme level, more detailed assessment of economic, social and environmental sustainability.

In addition, the Cardiff Local Development Plan, Working Draft, No Status (June 2013) will help to shape the SEA assessment criteria.

Affected issues: all

## Appendix C

### Review of Baseline Information

## **Appendix C - Review of Baseline Information**

## Transport

### Relationship with other Plans and Programmes

The draft Plan, its reasonable alternatives and their respective complementary measures aim to reduce traffic congestion, improve journey time reliability and resilience on the highway network. This would contribute to improved movement of freight and people, while also indirectly contributing to carbon reduction and sustainability objectives. The complementary measures could bring improvements to walking and cycling infrastructure and accessibility to public transport.

The draft Plan aligns to a number of transport related PPPs that are summarised in Table 3.1 and explored further in Appendix B.

### Baseline Information (Current State)

#### Public Transport

The public transport network within Newport is largely served by bus services, whereas within Cardiff there is a bus and urban rail network. Outside of the two cities, radial rail services and express bus services provide links to surrounding communities. All are served well by pedestrian infrastructure, although segregated cycling infrastructure largely comprises recreation and leisure routes. The key elements of the public transport network are broadly summarised as follows:

#### **Cardiff bus network:**

At present within Cardiff, there are a number of radial bus routes travelling to and from the central area, with frequent services (every 20 minutes or less) to Ely, Pentrebane, Llandaff, Gabalfa, Rhiwbina, Thornhill, Cyncoed, Pentwyn, and Llanrumney. There are some orbital routes with a much lower frequency (>1 hour), such that the service would not generally be attractive to users wishing to travel 'orbitally' to connect with radial routes. Some journeys on 12/13 route provide cross-city services (between Ely and Tremorfa), however, the majority of cross-city journeys involve a transfer between services in the central area. Route 11 crosses the city centre to Cardiff Bay or Sports Village. The BayCar (Route 6) connects the northern and southern ends of Cardiff's central area (Cathays Park to Cardiff Bay).

The city of Cardiff was designated as a Sustainable Travel Centre in 2009 under the Welsh Government's Sustainable Travel Centre Initiative. As part of this initiative, and linked to the Council's establishment of a 'bus priority hub/bus box' around the central area, bus priority measures have been introduced throughout the city centre, which have led to a reduction in bus journey times. The Council is currently working on proposals for the development of a transport interchange incorporating a remodelling of the existing bus station linked to enhanced connectivity with Cardiff Central Railway Station and good interchange with local and regional bus, coach and train services.

**Cardiff railway network:** Radial commuter rail routes provide train services for communities within and outside Cardiff. Cardiff, Valley Lines services run to/from Treherbert, Aberdare, Merthyr Tydfil, and Rhymney/Caerphilly, and Penarth/Barry/Vale of Glamorgan to the south-west, Maesteg to the west, and Ebbw Vale to the east. The key city centre destinations for these rail services are Cardiff Central and Cardiff Queen Street Stations, both of which offer significant interchange opportunity. To a lesser extent Cardiff Bay and other Cardiff stations represent destinations.

The South Wales Mainline (SWML) east-west route carries intercity, local commuter and cross-country passenger services, as well as a significant number of freight trains.

Valley Lines also carry coal supplies to Aberthaw Power Station via the Vale of Glamorgan, from Hirwaun, north of Aberdare, and from Cwmbargoed off the Rhymney Valley Line rail line (via Cardiff). Freight trains also operate on the relief lines alongside the SWML and on a number of freight only routes, mainly serving the docks and industrial activity to the south of Cardiff centre.

**Newport bus network:** Newport bus services are all routed radially from the central area (with most services connecting to the bus station south-west of Newport Bridge). The higher frequency services (with headway of 20 minutes or less) connect the central area with High Cross, Bettws, Malpas, St Julian's / Caerleon, Ringland, Corporation Road, and Cardiff Road. There are other low frequency services to other areas of Newport such as Duffryn, and Pillgwenlly. There are no cross-city services and this necessitates transfer between services for cross-city travel (e.g. Malpas to Ringland).

There are a number of express bus services at 10-15 minute headway from areas to the north and to the west (Tredegar, Blackwood, and Blaenavon).

Bus services between Newport and Cardiff consist of the X30 and 30, which both run at 20 minute intervals Monday – Saturday during daytime hours, from Cardiff Rail/Bus Station to Newport Train Station and Bus Station. The 30 service routes via the A48 through Rumney, Castleton, and Cleppa Park and enters the Newport urban area via M4 Junction 28 at Tredegar Park. The X30 Service is an express bus service between the bus stations of Cardiff and Newport routed via Gabalfa in Cardiff, the A48(M) and M4, entering Newport at M4 Junction 26 via Malpas Road. The X30 express service between Newport and Cardiff takes approximately 30 minutes, 20 minutes faster than the 30 Service.

Newport County Council (NCC) continues to provide many public transport routes that fill in the gaps left by the local bus operators. These have seen an approximate 5% increase in usage during the last 12 months<sup>1</sup>. NCC continues to support community transport and now has over 500 members of their NewLink Community Transport Scheme<sup>2</sup>, a service to help those residents of Newport who are unable to use local bus services either because of disability or because they live too far away from the regular bus service. This enables access to all parts of Newport for less mobile members of the community. Efforts are being made to improve both public and community transport by increasing availability and looking at alternative and innovative modes of operation.

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<sup>1</sup> <http://www.newportbus.co.uk>

<sup>2</sup> NewLink Community Transport Scheme, available at:

<http://www.newport.gov.uk/dc/index.cfm?fuseaction=transport.publictransport&contentid=cont075689>

**Newport railway network:** Railway routes in Newport generally provide east-west services, all of which travel on the main lines through to Cardiff, giving a typical PM peak period service of approximately nine trains (per hour) eastbound between Cardiff and Newport, comprising two First Great Western (FGW) High Speed Trains, two FGW Cardiff to Bristol (and onwards) 'local' stopping trains, one Arriva Trains Wales (ATW) Ebbw Vale train (which does not call at Newport), three longer distance ATW trains to Manchester and Holyhead and Cheltenham and one Cross Country train to Nottingham. Westbound services are similar to those serving eastbound destinations.

There is a connection from the South Wales Mainline (SWML) to North Wales, the Midlands and north of England/Scotland via the Shrewsbury / Abergavenny line to the east of Newport Station. Trains from Ebbw Vale travel via Rogerstone Station (just north-west of Newport) directly to Cardiff and currently do not serve Newport directly (although a trial rapid bus link between Rogerstone Station and Newport Station commenced in early 2012). Freight trains also operate throughout the Newport area, on the SWML (generally the relief lines), the Abergavenny line, and also on several freight-only routes in and around Newport.

## Car Share

The South East Wales Transport Alliance has funded a web-based car share scheme<sup>3</sup> which aims to match people who wish to car share through a secure website registration process. The service is free to use and has been built and designed for every possible user.

## Cycling

The recent opening of the Sustrans Connect2 network from Newport to Caerleon provides an opportunity to improve sustainable transport options for the residents of Newport. This will accompany the Newport-Monmouth and Brecon Canal as an important cycle route for the area. Newport City Council has also introduced cycle hire schemes to encourage families and beginners to take up cycling as an active pastime, which provides an opportunity to improve health and wellbeing for all sections of the community.

## Highway Network Capacity

Around 43% of journeys made on the M4 involve trips of less than 20 miles from start to finish<sup>4</sup>. This would typically equate to a journey made between western Cardiff and eastern Newport.

The most trafficked section of the M4 between Magor and Castleton is between J26 and J27. On a typical day in 2012, around 104,000 vehicles used this section. By 2035, traffic using the M4 between J26 and J27 is forecast to rise to 140,000 (a 34% increase)<sup>5</sup>.

During peak periods, traffic flows exceed 80% of capacity along some stretches. It is generally accepted that once hourly traffic flows reach about 80% some

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<sup>3</sup> Sewta carshare, available at: <http://www.sewtacarshare.com/welcome.asp?lang=en&uxi=&cr=check>

<sup>4</sup> Welsh Government (2013), draft Plan Consultation Document, available at: [www.m4newport.com](http://www.m4newport.com)

<sup>5</sup> Welsh Government (2013), draft Plan Consultation Document, available at: [www.m4newport.com](http://www.m4newport.com)



operational problems can be expected. Once flows reach above 90% traffic can expect severe operational problems over longer periods<sup>6</sup>.

Unlike modern motorways, the section between Magor and Castleton has many lane drops and lane gains, resulting in some two-lane sections, an intermittent hard shoulder and frequent junctions, which adds to problems of congestion. The sub-standard inclines on the motorway slow down heavy vehicles and therefore increases congestion further, especially at peak times.

Congestion and capacity issues experienced on the M4, particularly at the Brynglas Tunnels and Malpas Road were identified as concerns as a result of the M4 CEM Public Consultation<sup>7</sup>. Another prevailing concern identified by respondents to the M4 CEM Consultation was the lack of resilience on the highway network around Newport and in particular its inability to react to an accident or incident.

## Road Freight

The amount of road freight (tonnes lifted) to and from Wales has increased over the period 1990-2006. The M4 Corridor is part of the Trans-European Transport Networks (TENT-T) which plays an important role in long-distance transport, particularly road freight. There is also a Trunk 'A' road network within South Wales connecting to the Valleys and West Wales. Road freight has previously failed to secure adequate consideration in local transport planning. Road freight lifted to/from and within Wales from the origin destination of Newport and Monmouthshire in 2006 was 3,813,000 tonnes<sup>8</sup>.

## Trends and Future Baseline

The proportion of people travelling in from outside Newport has increased. The numbers of commuters travelling into Newport is much higher than residents travelling out to work, illustrating the importance Newport has to the surrounding region. The majority of people in Newport drive to work by car or van. Newport does, however, have the second highest proportion of people commuting to work by public transport in Wales<sup>9</sup>.

The Welsh Government's priorities for delivering improvements in sustainable travel and improved public transport in the period to 2015 are set out in the prioritised National Transport Plan<sup>10</sup>. They include improvements to the Valley Lines rail network, which will increase the frequency of services possible from Pontypridd, Rhymney, Caerphilly, Maesteg and the Vale of Glamorgan line from Bridgend to Cardiff, enabling increased rail journey opportunities to the network beyond, including Newport, Bristol and beyond.

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<sup>6</sup> Welsh Government (2013), draft Plan Consultation Document, available at: [www.m4newport.com](http://www.m4newport.com)

<sup>7</sup> Welsh Government, M4 Corridor Enhancement Measures (M4 CEM), Participation Report, Arup, August 2013

<sup>8</sup> Welsh Government (2008), The Wales Freight Strategy, available at:  
<http://wales.gov.uk/deet/publications/transport/wfs/wfsfulle.pdf?lang=en>

<sup>9</sup> 2011 Census data

<sup>10</sup> Prioritised National Transport Plan, December 2011

The Welsh Government has welcomed the announcement by the Secretary of State for Transport, in July 2012, that the Great Western Main Line to Swansea and the Valley Lines network will be electrified during the investment period 2014-2019.

## Data Gaps and Uncertainties

There is limited information available on the use of different modes of transport that distribute freight on the transport network. Whilst this information would be useful, it does not adversely affect the appraisal process at this strategy level.

## Key Issues

- A lack of capacity on the road network could hinder the delivery of future developments, for example, additional housing, essential services, commercial and industrial spaces, in South East Wales;
- The more congested road conditions become, the greater the risk of incidents and accidents occurring;
- Increasing numbers of vehicles are likely to lead to an increase in associated environmental impacts, including air pollution, transport related noise and greenhouse gas emissions;
- Freight movements on the M4 lead to a number of issues, including motorway lane conflicts and the adverse environmental impact of Heavy Goods Vehicles stop-starting in congested traffic conditions (leading to increased air/noise pollution, emissions and waste of resources);
- Necessary maintenance of transport assets, as well as new infrastructure, can give rise to a variety of environmental impacts;
- For a significant number of journeys on the M4 between Magor and Castleton, there are no convenient public transport alternatives;
- There is a reliance on the private car;
- There is a need to encourage modal shift to more sustainable modes of travel in order to bring positive environmental and human health impacts (e.g. reductions in obesity, improvement in air quality and reductions in noise).

## Air Quality

### Relationship with other Plans and Programmes

Several regional and local plans and policies have been published setting out air quality principles in Wales which are of relevance to the draft Plan, its reasonable alternatives and the complementary measures. Air quality is recognised as a particular issue of concern along the existing M4 corridor around Newport, where there are a number of AQMAs. Relevant PPPs are summarised in Table 3.1 and discussed in detail at Appendix B.

### Baseline Information (Current State)

Part IV of the Environment Act, 1995, places a statutory duty on local authorities to periodically review and assess the air quality within their area. The concept of Local Air Quality Management (LAQM) and the process of 'review and assessment' was established in the 1997 National Air Quality Strategy (NAQS).

As part of the National Air Quality Strategy (2007)<sup>11</sup>, Air Quality Management Areas (AQMAs) are required where air pollution levels are high enough to be a potential health risk and it is acknowledged that traffic emissions contribute to towards air pollution. Newport has a total of nine AQMAs which were declared because assessments of air quality predicted that the annual mean objective for nitrogen oxide (NO<sub>x</sub>) was not likely to be met by the target date of December 2005. Four of these are located adjacent to the M4 around Newport, at:

- Shaftesbury/Cridau;
- St Julians;
- Royal Oak Hill (Buckland Cottage); and
- Glasllwch.

The main air pollutant impacting the AQMAs identified above is from road traffic on the M4<sup>12</sup> with the greatest contribution to NO<sub>x</sub> concentrations from HGVs. When combined, emissions from the two classes of HGVs are responsible for around 70% of the NO<sub>x</sub> concentration at the closest receptor location in each AQMA. This is significant, given that HGV traffic makes up only approximately 12% of traffic on the M4 motorway. In comparison, car traffic makes up approximately 75% of the traffic on the M4, however the contribution to NO<sub>x</sub> concentrations is around 15%. LGV traffic, which only forms around 13% of all traffic, contributes to the NO<sub>x</sub> concentrations at a similar level to car traffic. Throughout the day, the greatest contribution to emissions is largely due to articulated HGVs. The contribution from cars is also significant during the AM and PM peaks<sup>13</sup>.

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<sup>11</sup> Department for Environment, Food and Rural Affairs, The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Volume 1, available at: <http://www.defra.gov.uk/publications/files/pb12654-air-quality-strategy-vol1-070712.pdf>

<sup>12</sup> Newport City Council (2008), Air Quality Action Plan for Newport, available at: <http://www.newport.gov.uk/stellent/groups/public/documents/form/cont454907.pdf>

<sup>13</sup> Welsh Government (2012), Consultation Document – M4 Corridor Enhancement Measures Magor to Castleton (M4 CEM) Easing the Flow, available at: <http://www.m4cem.com/downloads/reports/to%20email%20Consultation%20Document%20REV%20B%20-%20E.pdf>

The potential risk for air quality and pollution to worsen as a result of future road developments was mentioned by a number of respondents to the M4 CEM Consultation<sup>14</sup>.

## Trends and Future Baseline

The Local Air Quality Management Progress Report (2010)<sup>15</sup> published by Newport City Council, presents monitoring results during 2009. The results represent a trend of significant improvement in air quality particularly in the AQMAs since 2008. This reverses the trend seen in the three years leading up to 2009. These trends are further explained in the Newport Air Quality Action Plan (2008)<sup>16</sup>.

## Data Gaps and Uncertainties

Recent air quality data for Newport is not readily available for concentrations of air pollutants such as NO<sup>2</sup> and SO<sup>2</sup>. The most recent available data is from 2009. Whilst this information would be useful, it does not adversely affect the appraisal process at this strategy level.

## Key Issues

- Increased traffic congestion on the existing M4 could increase emissions, subsequently bringing impacts on the environment and health of the local population. Ambient air quality is already a problem in Newport, and the continuing rise of road traffic is of concern;
- The vast majority of AQMAs in Newport are focused on emissions of NO<sub>x</sub> primarily from road transport sources<sup>16</sup>. Increasing traffic volumes on the M4 could impact on the health of residential areas within the AQMAs;
- Generally, vehicle emissions from light goods vehicles are lower than from heavy goods vehicles<sup>17</sup>. However, transporting goods of a particular weight or volume by light goods vehicles will require more vehicles than when using heavy goods vehicles;
- Emissions from buses, particularly emissions of NO<sub>x</sub> and PM, are significantly higher than those from petrol and diesel cars<sup>18</sup>, although modal shift could help to reduce overall transport related emissions;
- The uptake of public transport, alternative travel modes and smarter sustainable choices could encourage some modal shift and reduce reliance on the private vehicle, which in turn would help to improve air quality. Behavioural change is difficult to encourage in the short to medium term.

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<sup>14</sup> Welsh Government, M4 Corridor Enhancement Measures (M4 CEM), Participation Report, Arup, August 2013

<sup>15</sup> Newport City Council (2010) Local Air Quality Management Progress Report, available from <http://www.newport.gov.uk/dc/index.cfm?fuseaction=environmentalhealth.homepage&contentid=cont446719>

<sup>16</sup> Welsh Air Quality Forum (2008), Air pollution in Wales 2007, available at: <http://www.welshairquality.co.uk/index.php>

<sup>17</sup> <http://ec.europa.eu/environment/air/transport/road.htm>

<sup>18</sup> <http://www.air-quality.org.uk>

# **Climatic Factors, including Greenhouse Gas Emissions and Adaptation to the Effects of Climatic Change**

## **Relationship with other Plans and Programmes**

Climate change and adaptation to its effects form a key element of many plans and policy statements at the national, regional and local levels. The draft Plan, its reasonable objectives and their respective complementary measures could bring a reduction in greenhouse gases, through reducing traffic congestion and its associated stop-start traffic conditions. Relevant PPPs are summarised in Table 3.1 and the relationship with the draft Plan is explored in more detail at Appendix B.

## **Baseline Information (Current State)**

It has been assessed in Wales that transport contributes the highest level of emissions.<sup>19</sup>

Newport City Council's per capita emissions of CO<sub>2</sub> were 12.5 tonnes in 2005, which was higher than the Welsh average of 9.0 tonnes.<sup>20</sup> This could have implications for climate change and human health. In Newport, transport accounts for 20% of greenhouse gases emissions, which is broadly equivalent to the national average<sup>21</sup>.

Regional and local transport consumption statistics indicate that road transport accounts for approximately 16% of the total CO<sub>2</sub> emissions in Wales<sup>22</sup>. Passenger cars are estimated to account for more than 60 per cent of the carbon emitted by transport activities. Road traffic is the third biggest source of CO<sub>2</sub> in Wales and is likely to increase due to increased numbers of vehicles and greater annual distances travelled.

### **Climate Change adaptation**

The UK Climate Change Risk Assessment (2012)<sup>23</sup> analysis indicates that the transport sector will be at risk of climate change, notably some road and railways are at significant risk of flooding and scouring of road and rail bridges. Biodiversity and ecosystems are important for climate regulation and human wellbeing. A number of European, nationally and locally designated habitats and species are located within the Newport area and in close proximity to the M4 Corridor around Newport (see Figure 2.1).

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<sup>19</sup> Department for Environment, Food and Rural Affairs (2009), Adopting to climate change – UK Climate Projections 2009, available at: <http://www.defra.gov.uk/publications/files/pb13274-uk-climate-projections-090617.pdf>

<sup>20</sup> Newport City Council (2008), Sustainability Appraisal/Strategic Environmental Assessment: Draft Scoping Report, available at: <http://www.newport.gov.uk/stellent/groups/public/documents/report/cont298361.pdf>

<sup>21</sup> Transport Statistics, DfT, UK transport greenhouse gas emissions Factsheets, available at: <http://assets.dft.gov.uk/statistics/series/energy-and-environment/climatechange/factsheets.pdf>

<sup>22</sup> [www.assemblywales.org/carbon\\_reduction\\_by\\_transport\\_e.pdf](http://www.assemblywales.org/carbon_reduction_by_transport_e.pdf)

<sup>23</sup> HM Government (2012), UK Climate Change Risk Assessment: Government Report, available at: <http://www.defra.gov.uk/publications/files/pb13698-climate-risk-assessment.pdf>

A transport system that is adapting to the impacts of climate change is a key long-term outcome of the Wales Transport Strategy (2008)<sup>24</sup> delivered at a national level through the National Transport Plan (2010)<sup>25</sup>. Adaptation measures to climate change for transport sector include:

- Making transport infrastructure ‘climate change proof’;
- Increase flood defences where necessary; and
- Raise awareness about effects.

Mitigation measures associated with climate change for the transport sector include;

- Reducing the need for travel;
- Encouraging modal shift through offering more sustainable modes of travel supported by behavioural change initiatives;
- Using sustainable bio-fuels, Liquid Petroleum Gas (LPG) and hybrids; and
- Raising awareness.

Objective 2 of the Newport LDP Revised Deposit Plan (June 2013)<sup>26</sup> aims to ensure that development and land uses in Newport make a positive contribution to minimising, adapting or mitigating against the causes and impacts of climate change, by incorporating the principles of sustainable design, changes to travel behaviour, managing the risks and consequences of flooding, and improving efficiency in the use of energy, waste and water. The Revised Deposit Plan notes that transport is a major source of greenhouse gases, and seeks to change travel behaviour by minimising the need to travel and enable journeys that do need to be made to be done so in as sustainable a way as possible.

## Trends and Future Baseline

- Risks from flooding will be exacerbated in the longer term by the effects of climate change in Wales from an increase in rainfall;
- The Newport area and the M4 corridor could be potentially affected by increasing future flooding;
- Annual temperatures are projected to increase in by Wales by 2050;<sup>27</sup>
- Road transport carbon emissions have been increasing the over years and is likely to continue<sup>28</sup>.

<sup>24</sup> Welsh Government (2008), Wales Transport Strategy, available at: <http://new.wales.gov.uk/deet/publications/transport/wts/wtstrategy/wtspdfloen.pdf?lang=en>

<sup>25</sup> Welsh Government (2010), National Transport Plan, available at: <http://wales.gov.uk/docs/det/publications/100329ntpen.pdf>

<sup>26</sup> [http://www.newport.gov.uk/\\_dc/index.cfm?fuseaction=planning.ldap](http://www.newport.gov.uk/_dc/index.cfm?fuseaction=planning.ldap)

<sup>27</sup> Department for Environment, Food and Rural Affairs (2009), Adopting to climate change – UK Climate Projections 2009, available at: <http://www.defra.gov.uk/publications/files/pb13274-uk-climate-projections-090617.pdf>

<sup>28</sup> [assets.dft.gov.uk/statistics/series/energy.../climatechangefactsheets.pdf](https://assets.dft.gov.uk/statistics/series/energy.../climatechangefactsheets.pdf)

## Data Gaps and Uncertainties

To assess the effects of transport on climate change more accurately, it would be beneficial to obtain more detailed information about the composition of greenhouse gas emissions from transport (e.g. private road traffic, petrol/diesel cars, public transport, aviation), as well as emissions per capita. Industry wide inconsistency in methodologies used to measure and report GHG emissions prevents the compilation of a comprehensive picture of GHG emissions in Wales and as part of UK. In addition, further information on how transport infrastructure in Wales might be affected by climate change would be useful but is not currently available. Whilst this information would be useful, it does not adversely affect the appraisal process at this strategy level.

## Key Issues

- Despite the overall national decline, emissions of carbon dioxide (CO<sub>2</sub>) from road transport is increasing;
- There is a need to reduce reliance on fossil fuels in the transport sector;
- The transport sector will be at risk from the effects of climate change, notably road and railways could be at significant risk of flooding and scouring of road and rail bridges in the longer term;
- The incorporation of climate change adaption measures, such as the management of routine runoff through more sustainable approaches, is difficult and costly to retrofit to existing infrastructure;
- When a new transport facility or service becomes available the users of the transport system can alter their transport mode/route/time of travel. This can attribute to changes in greenhouse gas emissions.

Climate change can affect transport in various ways. It can lead to;

- Increased risk of flooding from storm surges, rivers or overflowing combined sewers;
- Increased likelihood of deterioration or failure of highway infrastructure due to extreme weather events;
- Increased frequency of extreme weather events such as landslides can cause damage to infrastructure and changes in road safety; and
- Replacement of private car use by more sustainable modes of travel is largely dependent on a range of factors including behavioural change.

## Noise and Vibration

### Relationships with other Plans and Programmes

There are a number of policies and plans that seek to control the impact of noise caused by transport. The draft Plan, its reasonable alternatives and their respective complementary measures could reduce noise associated with traffic along the existing motorway, bringing benefits to human health in areas where noise levels are currently high. Whilst there are fewer receptors along the alignment of the potential new routes, policies and plans would aim to control any significant adverse effects of noise that might arise as a result of their implementation. The relationship with relevant PPPs is summarised in Table 3.1 and explored in more detail at Appendix B.

### Baseline Information (Current State)

Road traffic is one of the main causes of background noise and almost everyone is exposed to it<sup>29</sup>. Noise from roads can come from construction or maintenance operations, as well as general use by vehicles. Around 60% of the population are regularly exposed to high road noise levels with 30% affected by it<sup>30</sup>. This is further examined in National Transport Plan Strategic Environmental Assessment Environmental Report (2009)<sup>31</sup> which provides a detailed noise study of Wales.

Recently published Wales Noise Mapping is being used to help the Welsh Government to develop and implement a noise action plan for Wales, which is due to be published later in 2013. They currently show that for roads, for areas adjacent to the M4, noise levels exceed 55 decibels<sup>32</sup>.

There are nine Noise Action Planning Priority Areas (NAPPAs) identified along the M4 corridor between Magor and Castleton, which exceed average noise levels<sup>33</sup>.

A road also has the potential to cause nuisance and physical damage through vibration. Vibration disturbance can happen during the construction, operation or maintenance of a road. Vibration can be transmitted through the air or through the ground. Airborne vibration from traffic can be produced by the engines or exhausts of road vehicles. Ground-borne vibration is produced by the interaction between rolling wheels and the road surface.

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<sup>29</sup> <http://wales.gov.uk/topics/environmentcountryside/epq/noiseandnuisance/environmentalnoise/roadtraffic/?lang=en>

<sup>30</sup> Department for Environment, Food and Rural Affairs, e-Digest of Environmental Statistics, available at: <http://archive.defra.gov.uk/evidence/statistics/environment/index.htm>

<sup>31</sup> Welsh Government (2009), National Transport Plan Strategic Environmental Assessment Environmental Report, available at: <http://wales.gov.uk/docs/det/consultation/090806ntpenvreport.pdf>

<sup>32</sup> <http://data.wales.gov.uk/apps/noise/>

<sup>33</sup>

<http://wales.gov.uk/topics/environmentcountryside/epq/noiseandnuisance/environmentalnoise/noisemonitoringmapping/?lang=en>



Noise pollution was discussed as a problem by participants to the M4 CEM Consultation. Many of these comments came from residents living in the areas of Newport immediately adjacent to the M4 motorway. In addition to the comments made on existing noise pollution, others anticipated more in the future and requested mitigating measures in the event of further development<sup>34</sup>.

## Trends and Future Baseline

- With the likely rise in traffic levels it is expected that noise levels will increase along the existing motorway.
- Noise from road works is also likely to increase with increasing capacity and maintenance needs.

## Data Gaps and Uncertainties

No data is currently available providing information regarding vibration caused by roads around Newport. Since transport can cause vibration in close proximity to busy roads or railways, additional information on this subject would be beneficial. Newport specific data (including detailed information on the nine NAPPAs between Magor and Castleton) is also not readily available. In both cases, whilst this information would be useful, it does not adversely affect the appraisal process at this strategy level.

## Key Issues

- Transport noise, including noise from road works and maintenance, remains a problem for communities around the M4, particularly in the Brynglas area of Newport<sup>35</sup>;
- Noise can cause annoyance, disturb tranquillity, interrupt conversation, disturb sleep and, in extreme conditions, cause physical damage to those affected.

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<sup>34</sup> Welsh Government, M4 Corridor Enhancement Measures (M4 CEM), Participation Report, Arup, August 2013

<sup>35</sup> <http://www.ipetitions.com/petition/newport-oppose-550m-plans-of-new-brynglas-tunnel/signatures>

## Biodiversity, Fauna and Flora

### Relationship with other Plans and Programmes

Any major infrastructure project has the potential to impact on biodiversity, fauna and flora and a number of national, regional and local PPPs seek to ensure adequate consideration is given to this impact with appropriate assessments undertaken and mitigation measures proposed where potential adverse impacts are identified. The PPPs of most relevance to this topic area are summarised in Table 3.1 with the relationship between the draft Plan and PPPs explored in more detail at Appendix B.

### Baseline Information (Current State)

The Newport area contains several designated sites including European Special Protection Areas (SPAs), Special Areas of Conservation (SAC), and Ramsar sites. These have been designated due to the importance of the habitats for birds and regular migratory species in order they are conserved. The main sites within close proximity to the draft Plan and its reasonable alternatives are described below.

1. **The River Usk SAC & SSSI:** Many rare, threatened and declining species and habitats are associated with the river, including:

Habitats: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation;

Species: Salmon; Sea trout; Sea lamprey; Brook lamprey; River lamprey; Allis shad; Twaite shad; Bullhead; Otter.

2. **Severn Estuary Ramsar, SAC and SPA:** The estuary is internationally important for the following habitats and species:

Habitats: Sandbanks which are slightly covered by sea water all the time; Estuaries; Mudflats and sandflats not covered by seawater at low tide; Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)

Species: Salmon; Sea trout; Sea lamprey; River lamprey; Allis shad; Twaite shad; Eel; Tundra swan; Greater white-fronted goose; Common shelduck; Gadwall; Dunlin; Common redshank; Bewick's Swan (SPA)

The Newport area also contains 11 Sites of Special Scientific Interest (SSSIs), designated under the Wildlife & Countryside Act 1981. They are afforded protection against potential damage and harm. - The **Gwent Levels** makes up 6 of the SSSIs – Magor Marsh SSSI, Redwick and Llandeenny SSSI, Whitson SSSI, Nash and Goldcliff SSSI, St Brides SSSI and Rumney & Peterstone SSSI. In addition, parts of these designated sites are included within the Newport Wetlands National Nature Reserves (NNR), which is also an RSPB reserve.

The reens and ditches within the Gwent Levels are host to a wide range of aquatic plants, including many rare or scarce species that in turn support a wide variety of other wildlife. The ditches are carefully constructed so that the system drains by gravity. There is a diverse community of insects and other invertebrates inhabiting the reens and ditches. The Gwent Levels have also recently been found to be an important site for the shrill carder bee.

There are three Country Parks (Caldicot Castle, Sirhowy Valley and Tredegar House) and nine Local Nature Reserves around Newport and are sites of interest.

River Ebbw Site of Importance for Nature Conservation (SINC) is situated nearby with resident populations of sea/river/brook lamprey, sturgeon, allis/twaite shad, Atlantic salmon, grayling, common goby, bullhead, bleak, smelt, brown trout or sea trout. The watercourse is used as a regular migratory route by anadromous species. Adjacent semi-natural wetland, grassland and woodland habitats are part of the wider river corridor. In addition breeding birds and otters are known to use the River Ebbw SINC.

Nearby SAC's designated for protected bat species are located nearby. Usk Bat SAC is internationally designated for Lesser Horseshoe bats. Wye Valley and Forest of Dean Bats SAC is internationally designated for both Lesser Horseshoe bats and Greater Horseshoe bats.

### **Threats to non-designated habitats and species**

In summary, the potential threats to non-designated habitats and species include:

- There are various important, declining, and scarce species within the River Usk, The Severn Estuary, Coastal Saltmarsh habitats, Upland Mixed Ash Woodland, Wet Woodland, Riverine Habitats, Mudflats, Reedbeds, Neutral Grasslands, Coastal and Floodplain Grazing Marsh.
- Threats to these habitats include: land claim for agriculture and industry; continuous threat of all development; introduction of non-native species; lack of appropriate management; pollution including nutrient enrichment and heavy metals; climatic change and atmospheric pollution; development in catchments.
- The habitats represented on common lands are very varied, but include some important areas of semi-improved grassland, marshy grasslands, bracken and heathland. Most of the Levels commons are included within the Gwent Levels SSSIs, whilst others elsewhere are being considered as Sites of Importance for Nature Conservation (SINCs). The habitats of the larger commons were surveyed and documented in 1994, however, there remains no general consensus as to how these areas should be managed or regulated.

## **Trends and Future Baseline**

The National Transport Plan Environmental Report<sup>36</sup> highlights the trends in biodiversity and designated sites in Wales which are summarised below:

- There has been an overall increase in designated areas in Wales however the conditions of SSSIs have been declining;
- Woodland coverage has increased steadily and BAP species in stable conditions have increased since 2002;
- The percentage of BAP species in increasing or declining conditions have remained the same.

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<sup>36</sup> <http://wales.gov.uk/consultations/transport/ntp/?lang=en&status=closed>

## Data Gaps and Uncertainties

This assessment would benefit from more transport specific baseline information, such as the degree of habitat severance/fragmentation attributable to transport projects, the percentage of the transport network in active management for wildlife, and the extent of road kill in Wales. This data is currently unavailable and whilst this information would be useful, it does not adversely affect the appraisal process at this strategy level.

## Key Issues

- Located to the south of Newport are areas of largely undeveloped or agricultural land. Significant proportions of this, like the Caldicot levels, and the habitats and species they contain, are legally protected. The River Severn and its Estuary are also protected by law.
- Some of the identified SACs, SPAs and SSSIs are in unfavourable condition – the draft Plan could potentially attribute to the poor condition of the designated areas if appropriate mitigation measures are not in place;
- Potential acidification of soils and vegetation resulting from transport emissions;
- The impact of land take required to deliver the draft Plan on the loss of/fragmentation of habitats;
- Direct disturbance of transport-related activity for flora and fauna and loss of habitats function;
- Disturbance to fauna resulting from noise and artificial light from introduced traffic;
- Impact of non-native invasive species arriving in imported soil during the construction works;
- The impact of highway infrastructure on roadside casualties;
- Indirect transport effects such as routine runoff and accidental spillage from highway drainage systems associated with transport networks; and
- The loss of biodiversity is often irreversible.

## Population

### Relationship with other Plans and Programmes

The draft Plan, its reasonable alternatives and their respective complementary measures have the potential to impact on various elements of the local and regional population. The potential reduction in traffic congestion and thus improved journey time reliability could improve accessibility to services, facilities and employment opportunities, whilst more broadly improving the movement of people and freight across the region and beyond. Transport is recognised as having a role to play in the provision of equitable access to services and facilities and the complementary measures could improve walking and cycling infrastructure and links to public transport, improving access for those without access to a car.

The draft Plan complies with a number of PPPs of relevance as summarised in Table 3.1 and the explored in more detail at Appendix B.

### Baseline Information (Current State)

Census data shows that 91.5% of the Newport population in 2011 were born in the UK compared to 94.6% in Wales as a whole. Newport also has a lower proportion of residents who consider they have a Welsh identity; 55.5% for Newport compared to an average of 57.5% across Wales. Moreover, in 2011 86.9% of the Newport population had no Welsh language skills whereas the average is 73.3% across Wales.<sup>37</sup>

The level of economically active persons in Newport aged between 16-74 in 2011 was 67.5%<sup>38</sup> which was higher than the Wales average of 65.8%. The unemployment rate as a whole for Newport in March 2013 was 9.8% compared to 8.3% in Wales.<sup>39</sup>

In Newport, neighbourhoods with some of the country's highest levels of social deprivation sit next to some of those with the greatest affluence. The Welsh Index of Multiple Deprivation (WIMD) is the official measure of deprivation of small areas in Wales. The WIMD 2011<sup>40</sup> is made up of eight separate kinds of deprivation: income, employment, health, education, housing, access to services, environment and community safety. A total of 16% of the Lower Super Output Areas (LSOA) in Newport fall within the 10% most deprived LSOAs in Wales, and 56% of LSOAs fall within the 50% most deprived LSOAs in Wales.

Newport has a labour catchment area that includes 479,000 people living within 30 minutes' drive and 1.6 million people, over a third of the population of Wales, living within an hour of the city.<sup>41</sup> In 2008, 31,400 people commuted to work in the city making Newport which make it the second biggest destination for commuters in Wales after Cardiff.<sup>42</sup>

<sup>37</sup> Office of National Statistics, Census 2001 & Census 2011

<sup>38</sup> Office of National Statistics, Census 2011

<sup>39</sup> Office of National Statistics, Annual Population Survey (Apr 2012-Mar 2013)

<sup>40</sup> Welsh Government, Welsh Index of Multiple Deprivation 2011

<sup>41</sup> One Newport, Newport's Community Strategy 2010-2020. Feeling good about Newport

<sup>42</sup> One Newport, Newport's Community Strategy 2010-2020. Feeling good about Newport

Problems with transport contribute to social exclusion by preventing people from participating in work or learning, or accessing healthcare, food shopping and other local activities. As advocated by the UK Social Exclusion Unit<sup>43</sup>, the problems are understood to largely affect access to:

- **Work:** Two out of five jobseekers say lack of transport is a barrier to getting a job.
- **Learning:** Nearly half of 16–18-year-old students say they find their transport costs hard to meet.
- **Health:** Over a 12-month period, 1.4 million people miss, turn down or choose not to seek medical help because of transport problems.
- **Food:** 16% of people without cars find access to supermarkets hard, compared with 6% of people with cars.
- **Social activities:** 18% of non-car owners find seeing friends and family difficult because of transport problems, compared with 8% of people with access to a car.

## Trends and Future Baseline

Key trends in respect of population include:

- The population of Newport is projected to increase by 6.3% from 2008 to mid-2023 according to Welsh Government forecasts.<sup>44</sup>
- The life expectancy in Newport is projected to increase from 79.7 years in 2008/09 to 82.3% in 2022/23.<sup>45</sup>
- The proportion of households in Great Britain without access to a car fell from 30% in 1995/97 to 25% in 2012.<sup>46</sup>

## Data Gaps and Uncertainties

There were no significant data gaps for the population indicator.

## Key Issues

- An increase in population could lead to higher demand for transportation of both passengers and freight;
- The projected increase in the proportion of older people in the population may place additional demand on public transport and/or accessibility initiatives;
- Although car ownership has increased and access to private vehicles is comparatively high to Welsh and UK averages, a significant proportion of the population relies on the provision of alternative modes of travel.

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<sup>43</sup> Social Exclusion Unit – Making the Connections: Report on Transport and Social Exclusion

<sup>44</sup> Welsh Government, Local Authority Population Projections for Wales (2008-based)

<sup>45</sup> Welsh Government, Local Authority Population Projections for Wales (2008-based)

<sup>46</sup> Department for Transport, National Travel Survey: 2012

## Human Health

### Relationship with other Plans and Programmes

The draft Plan, its reasonable alternatives and their respective complementary measures have the potential to impact on human health as a reduction in traffic congestion and diversion of traffic away from centres of population could bring improvements to noise and air quality in populated areas. Furthermore, the safety of the population in terms of incidents and accidents could also be improved. In particular, the reasonable alternatives to the draft Plan propose highway routes that pass in close proximity to the population of Duffryn and therefore could impact on those areas through increased air and noise pollution.

There are a number of strategies and PPPs that seek to reduce transport related effects on health and seek improvements to air quality and safety wherever possible. Relevant PPPs are summarised in Table 3.1 and the relationship with the draft Plan is explored in more detail at Appendix B.

### Baseline Information (Current State)

In 2011, the population of Newport was 145,736, which is a 6.4% rise from the 2001 figure<sup>47</sup>. The population of Newport in 2011 was 51% female and 49% male<sup>48</sup>. The age structure of Newport was broadly similar to Wales as a whole with 16.3% of Newport resident aged 65 and over compared to 18.3% for Wales as a whole. Moreover, 2011 census data found that 20.8% of Newport residents are living with long term limiting illness<sup>49</sup> compared to 22.7% at a Wales level. As life expectancy grows, the incidence of limiting long term illness is likely to increase with age.

Poor air quality can impact on people's health. The main source of air pollution within Newport is traffic emissions, primarily from the M4 motorway that crosses the City area from east to west. The motorway traverses through several residential areas, notably St Julian's, Brynglas, Crindau, Glasllwch and High Cross. Newport has a total of nine Air Quality Management Areas (AQMAs), which are declared because assessments of air quality predict that the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) is not likely to be met. Four of the AQMAs have been declared as a result of emissions from traffic on the M4 motorway (Shaftesbury/Crindau, St Julians, Royal Oak Hill, and Glasllwch). The major contributor to the pollution in these areas was found to be road traffic<sup>50</sup>.

Road traffic is a predominant source of noise. In areas adjacent to the M4, noise levels can exceed 55 decibels<sup>51</sup>. There are seven Noise Action Planning Priority Areas (NAPPAs) identified along the M4 corridor between Magor and Castleton, which exceed average noise levels.

Operating conditions on the motorway around Newport have been continually monitored over many years. This has shown that due to design deficiencies and

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<sup>47</sup> Office of National Statistics, Census 2001 & Census 2011

<sup>48</sup> Office of National Statistics, Census 2011

<sup>49</sup> Based on Census responses which indicated that health issues either limited day-to-day activities 'a lot' or 'a little'

<sup>50</sup> [www.newport.gov.uk](http://www.newport.gov.uk)

<sup>51</sup> <http://data.wales.gov.uk/apps/noise/>

very high levels of demand, particularly during peak periods, the motorway has displayed a relatively poor safety record with the rate of accidents exceeding the average for UK motorways. This has stimulated the Welsh Government into introducing initiatives aimed at improving safety, including the provision of a concrete central barrier and the introduction of variable speed limits. Recent monitoring has shown that these initiatives have been effective in reducing the numbers of accidents occurring on the motorway around Newport. The National Transport Plan for Wales provides information on traffic incidents in Wales. In summary, Wales has experienced a reduction in people killed or seriously injured in road accidents since 2001. Child fatalities have also fallen with a 71% reduction in child fatalities on the road.

The overall health status of the people in Newport is generally comparable to that in the rest of Wales. Currently in Newport, the prevalence of obesity, coronary heart disease, strokes and respiratory disease are marginally lower than the Welsh average, but are still high compared to the rest of the UK. The number of deaths from cancer is following the national trend and reducing slightly<sup>52</sup>.

Newport lies within the area of the Aneurin Bevan Health Board, which covers the local authority areas of Caerphilly, Blaenau Gwent, Torfaen, Monmouthshire and Newport. The Aneurin Bevan Health Board provides an overview of the local health context among the population in this area. The overview provided in the latest demography profile (2009) includes the following key points in relation to health of the local population<sup>53</sup>.

- The under 75 age standardised mortality rate has dropped by 16% between 1998 and 2007. However it remains slightly higher than the average Wales rate.
- The greatest causes of death in people under 75 are cancer, circulatory disease and respiratory disease, accounting for 39%, 28% and 9% of approximately 2,200 deaths respectively during 2007<sup>54</sup>.
- Within the area there are areas of deprivation, particularly the valley areas of Caerphilly, Blaenau Gwent and Torfaen.
- 88 of the 369 Lower Super Output Areas in the Aneurin Bevan area (24%) are among the most deprived in Wales, with 72 (20%) in the least deprived fifth. However, within the less deprived areas there are often pockets of hidden deprivation.
- Current projections see a rise in the older population (75 years and over) of Aneurin Bevan residents from 45,000 (8% of the total population) to 82,000 (13% of the total population) in 2031.
- The increase in the number of older people is likely to cause a rise in chronic conditions such as circulatory and respiratory diseases and cancers.

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<sup>52</sup> Health, Social Care and Wellbeing Strategy 2011-2014. Newport's Healthy Future, Newport City Council Aneurin Bevan Local Health Board, One Newport, Healthy Newport.

<sup>53</sup> Aneurin Bevan – Local Health Board – Demography Profile (2009) available online at: <http://www.wales.nhs.uk/sitesplus/922/page/49938>

<sup>54</sup> Office for National Statistics, Annual District Deaths Extract (Cited in Aneurin Bevan – Local Health Board Demography Profile 2009).



- The relative (and absolute) increase in economically dependent and in some cases care-dependent populations will pose particular challenges to communities.

## Trends and Future Baseline

The key trends in respect of human health are:

- The crime rate is higher in Newport than average, although crime and anti-social behaviour has been decreasing<sup>55</sup>.
- There has been positive progress in reducing accidents on the motorway around Newport following the introduction of a number of safety measures. Child road casualties and more generally, casualties by all types of road users, have significantly decreased since 1999;
- Trunk roads are the most significant source of noise pollution in the Newport area, with the M4 making the most significant contribution.
- Air quality and noise in the areas around the existing M4 could continue to worsen through increased traffic volumes and therefore congestion.

## Data Gaps and Uncertainties

There were no significant data gaps for this indicator.

## Key Issues

The key issues in respect of human health, physical fitness, security and safety are:

- Living in an area with noise nuisance and high air pollution can potentially have negative health effects.
- Reduced congestion on the highway network could improve transport safety by reducing accidents.
- The use of public transport has positive health benefits as most trips involve a walk or cycle to or from the public transport.
- The risk to public safety and fear of attack can deter vulnerable groups from using public transport and this risk can be improved through good quality walking and cycling infrastructure.

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<sup>55</sup> Newport's Community Strategy 2010-2020. Feeling Good about Newport. One Newport

## Soils and Geology

### Relationship with other Plans and Programmes

The draft Plan, its reasonable alternatives and their respective complementary measures have the potential to bring impacts on soils and geology, particularly during the construction process and through water run-off during operation of the road. There are a number of PPPs at the national and local levels which seek to identify priority protection areas, minimise impact and mitigate where an impact is identified. These are summarised in Table 3.1 and the relationship with the draft Plan is explored in more detail at Appendix B.

### Baseline Information (Current State)

Soil is an extremely important biological habitat and gene reserve. Soil flora and fauna are essential to many soil processes and properties. Soils retain and release clean water within our water catchments and buffering, filtering, transforming and storing contaminants. Over 90% of our drinking water flows through or over the soil<sup>56</sup>.

The geology of the area around Newport varies with location and can be subdivided into three distinct areas:

- The Devonian age hills around Castleton in the west covered with superficial head and morainic drift deposits.
- The alluvial Levels in the central area (Gwent Levels) which include fluvial alluvium, estuarine alluvium, river terrace deposits, overlying the Mercia Mudstone Group (formerly Keuper Marl)
- The Carboniferous age hills around Magor in the east, covered with superficial head and morainic drift.

The solid geology of the area has given rise to two distinct soil types:

- On the Levels, soils are poorly drained grey clays, with a variable depth of loamy topsoil above the clay. The areas along the Ebbw and Usk rivers and on the levels to the south-west of Magor are classified as having high soil vulnerability.
- On the higher ground, sandy and loamy soils predominate, which are well drained, if occasionally stony and shallow. At Castleton the soils are classified as intermediate to high soil vulnerability. At Magor the soils are classified as intermediate vulnerability.

The majority of soils in the Newport area are brown soils. The banks of the River Usk, River Ebbw and Monk's Ditch have a long history of industrial development. The presence of heavy industries, particularly during years of little environmental concern, has led to large areas of made ground containing a variety of elevated concentrations of metals and hydrocarbons. Site investigations for locations allocated for development have indicated this contamination, yet despite concentrations being elevated, current information does not suggest that they warrant remedial action under Part IIA of the Environmental Protection Act 1990

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<sup>56</sup> Welsh Government (2008), The Welsh Soils Action Plan.

(EPA). However, issues of contamination will be addressed through detailed design.

Sims Metal Management is a 36 acre recycling centre in Newport located on Newport Dock (Alexandra Dock) with access to the A48 and M4, the railway network and deep sea destinations. The scrap metal merchant services include end of life vehicle depollution, factory clearance, scrap metal and abandoned car collections, rolonof and skip hire.

There are several historical and authorised landfill sites located near to the proposed routes:

- Newport uses Docks Way Landfill Site to dispose of Residual Municipal waste. The site is operated by the Local Authority and has a Household Waste Recycling Centre on site. The northern part of the site was closed and capped in 2006 and contains municipal refuse. It was never lined and it was known that the Environment Agency had/has concerns about the pollution containment performance of the site;
- Solutia UK Ltd. has a site situated on Corporation Road, Newport which had contaminated land from past activities. The location was subjected to a manufacture onsite of chemical solutions made in a mercury house and these activities left a legacy of soil contamination. A historical landfill site is situated on site which contains both inert and industrial waste; Sloblands East of Alphasteel is an authorised landfill site situated on Newport Road;
- Llanwern Landfill - South Side of Queensway operated by Tata Steel Ltd is an authorised landfill site; and
- Llanwern Steelworks Land adjacent to 1-3 blast furnaces is designated as a historical landfill which contains both industrial and liquids/sludge waste.

There are several sites within Newport that have been contaminated in the past, but have since had the contamination addressed and are now remediated to a standard that is suitable for use<sup>57</sup>.

Wales nationally is affected by soil acidification and Newport is particularly vulnerable from industry and transport and their release of sulphur and nitrogen compounds into the atmosphere<sup>58</sup>.

## Trends and Future Baseline

Soil acidification is likely to rise from traffic growth if not counteracted by pollution control measures.

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<sup>57</sup> Newport City Council (2002), Contaminated Land Strategy

<sup>58</sup> Welsh Assembly Government (WAG), A living and working environment for Wales: the state of the Welsh Environment 2003, available at <http://www.wales.gov.uk/subienviroment/topics-e.htm>

## Data Gaps and Uncertainties

There is limited available data on soils in Newport and associated impacts from transport emissions. The assessment would benefit from more transport related indicators, such as soil loss and contamination due to emissions (air and water) and accidental spillages from transport and through new transport infrastructure development. However, this data was not available and does not adversely affect the appraisal process at this strategy level.

## Key Issues

- New transport infrastructure is likely to require land take and could result in soil sealing, degradation and loss of soil;
- Potential historic contamination;
- Potential contamination due to accidental spillages from transport and through new transport infrastructure and major construction;
- Potential contamination due to increases in acidification from transport emissions.
- Potential degradation of soil structure from compaction and surface capping.
- Potential increased soil erosion (wind and water); and
- Introduction of noxious weeds in imported soil during the construction process.

## **Water, including Quality, Quantity and Flood Risk**

### **Relationship with other Plans and Programmes**

The draft Plan, its reasonable alternatives and their respective complementary measures have the potential to impact on water quality and flood risk, primarily through increased surface water run-off from a new road. This could subsequently lead to a number of indirect impacts on water quality.

There are a number of PPPs at the national and local level that seek to manage the water environment, reducing flood risk and minimising impact on water quality from development. These are summarised in Table 3.1 and the relationship with the draft Plan is explored in more detail at Appendix B.

### **Baseline Information (Current State)**

#### **Water Quality and Quantity**

The River Usk (tidally influenced) has a Water Framework Directive (WFD) classification of moderate ecological status and it is hoped that this River will achieve good ecological status by 2027. Within the River Usk (SAC) water quality is good throughout the main river, except for the localised enrichment from sewage discharges, the effects of which, along with the more significant water abstractions, may harm water quality. The Core Management Plan for River Usk SAC (2008)<sup>59</sup> aims to maintain, or where necessary restore the river to high ecological status.

The local aquifers will seldom produce large quantities of water for abstraction, but are important both for local supplies and for base flow of the region's rivers. A permeable layer of bedrock capable of supporting water supplies at a local scale underlies Caerleon and Cwmbran and a low permeable layer of bedrock which may store limited amounts of groundwater underlies Newport.

There are groundwater vulnerability zones within the Newport area and along the M4 Corridor that are designated Minor Aquifer Intermediate, Minor Aquifer High, Major Aquifer Low and Major Aquifer Intermediate. These are zones which are vulnerable to the risk of contamination from any activities that might cause pollution in the area, the closer the activity, the greater the risk. The groundwater bodies are classified as having a 'good' chemical and quantitative status.

The water quantity and quality within the six Gwent Level SSSIs is important in maintaining the biological interest of the area. Water levels should be maintained as high in summer months. If the water levels drop too far, the wide range of plants and animals associated with the ditches are unable to complete their lifecycle. As water is kept in the system over summer, any pollution that enters the ditches at that time will remain until the boards are removed and the system is flushed by the winter rains.

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<sup>59</sup> [www.wyeuskfoundation.org](http://www.wyeuskfoundation.org)

## Flood Risk

The Wye and Usk Catchment Flood Management Plan (2010)<sup>60</sup> divides the catchments into seven distinct sub-areas which have similar physical characteristics, sources of flooding and level of risk. The following sub-areas are close to Newport and the M4 Corridor;

- **Newport** – The sub-area is an urban area, including Newport and Caerleon. The area has a high population density and is a centre for employment and urban growth. Flood risk is associated with tidally influenced flooding from the River Usk, River Ebbw, Monk's Ditch and tributaries running through Newport. There is also risk of surface water and localised sewer flooding. Flood risk is very high and is expected to increase significantly into the future.
- **The Levels** - A mainly rural area with a few small scattered settlements. The levels are low lying and protected from tidal inundation by sea walls, however there remains a risk of inundation from breaches or overtopping of the sea walls. The main community in this area is Magor, only parts of which are susceptible to flooding. Magor is also influenced by the Malpas Brook, which is not part of the levels, but has a fluvial flood risk. The levels are drained by a number of small streams. Flood risk is mainly from these small streams which are tidally influenced. Surface water ponding is an issue due to the flat topography, which is below sea level in places. Flood risk is low but is expected to rise significantly in the future, in relation to the size of the area.
- **Torfaen** - A mostly rural, lowland area, but includes some higher ground upstream and the communities of Cwmbran, Pontypool and Ponthir. The River Lwyd and lower River Usk drain the area.
- The River Lwyd is tidally influenced as far as Caerleon and the catchment responds quickly to rainfall due to steep, impermeable upper reaches. Flood risk is mainly from river flooding, tidally influenced river flooding and sewer flooding. Surface water flooding is an issue in Cwmbran. Flood risk is moderate but is expected to rise significantly into the future. Densely populated and a great deal of strategically important infrastructure could be at risk.

The Gwent Levels and Newport Docks are located in Zone C1 of the Development Advice Map (DAM)<sup>61</sup> as shown in figure below. Zone C1 are areas of the floodplain which are developed and served by significant infrastructure, including flood defences. The River Usk and Severn Estuary are situated in Zone C2 of the Development Advice Map as shown in figure below. Zone C2 are areas of the floodplain without significant flood defence infrastructure.

The Environment Agency's flood maps<sup>62</sup> indicate that the Gwent Levels and Newport Docks are situated in areas that are unlikely to flood except in extreme conditions. The chance of flooding each year is 0.5% (1 in 200) or less.

<sup>60</sup> <http://www.environment-agency.gov.uk/research/planning/64223.aspx>

<sup>61</sup> <http://data.wales.gov.uk/apps/floodmapping/>

<sup>62</sup> [http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=\\_e](http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e)



TAN 15 Development and Flood Risk  
Development Advice Map







## Trends and Future Baseline

- In relation to transport the river water quality has been consistently good;
- Water pollution incidents attributable to transport may increase from increasing traffic trends.

## Data Gaps and Uncertainties

Recent data on the impact of transport on water quality, flooding and water pollution incidents in Newport was not available. Whilst this information would be useful, it does not adversely affect the appraisal process at this strategy level.

## Key Issues

- The main pressures on freshwater resources in relation to transport and transport infrastructure are from routine run-off, soil erosion, acidification, and climate change<sup>63</sup>;
- Pollution to receiving watercourses caused by accidental spillages from highway drainage systems;
- Risks to aquatic habitats such as eutrophication through routine runoff and pollution caused by accidental spillages from highway drainage systems;
- Impact of winter maintenance operations where salt from the road could enter receiving watercourses;
- The transport system is likely to be more vulnerable to flooding as the effects of climate change are felt and flooding can lead to major destruction of both properties and infrastructure;
- Potential water acidification caused by increased transport emissions to air;
- Potential for increased flood risk due to transport infrastructure with large areas of impermeable surfaces generating run off;
- Location of transport infrastructure in flood plains and areas of flood risk;
- Potential changes to the water table;
- Potential changes to hydrological regimes; and
- The use of recycled materials will be a key consideration.

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<sup>63</sup> Welsh Government (2008), StatsWales statistical website, available at:  
[http://www.statswales.wales.gov.uk/ReportFolders/ReportFolders.aspx?CS\\_referer=&CS\\_ChosenLang=en](http://www.statswales.wales.gov.uk/ReportFolders/ReportFolders.aspx?CS_referer=&CS_ChosenLang=en)

## **Material Assets, including Resource Efficiency and Waste**

### **Relationship with other Plans and Programmes**

PPPs at the national and local level seek waste minimisation and resource management. These PPPs are summarised in Table 3.1 and the relationship with the draft Plan is explored in more detail at Appendix B.

### **Baseline Information (Current State)**

The resource efficiency for Wales and use of renewable energy is highlighted in the Wales National Transport Plan Environmental Report (2010)<sup>64</sup>. In summary, only 2.6% of electricity is generated from renewable resources in Wales and resource efficiency is low in terms of ecological footprint per person.

In Wales 5% of all permitted reserves of primary aggregates are situated at least partly within SSSIs which could be adversely affected by extraction<sup>65</sup>.

### **Trends and Future Baseline**

In relation to the current state of Wales as provided in the National Transport Plan (2010)<sup>66</sup>, the ecological footprint in area units per person is increasing. However there has been an increase in generation of electricity from renewables in Wales.

Article 4 of the revised EU Waste Framework Directive (Directive 2008/98/EC) sets out five steps for dealing with waste, ranked according to environmental impact – the ‘waste hierarchy’. Businesses and public bodies now have a duty to apply the waste hierarchy when making decisions about their waste<sup>67</sup>.

### **Data Gaps and Uncertainties**

- Relevant information on resource efficiency and renewable sources for Newport is limited, with little information available.
- Limited recent information was identified regarding the generation of waste or the use of secondary and recycled materials in transport projects in Wales.
- Other transport related baseline information, such as the number and percentage of low emission vehicles in Wales or the number and extent of initiatives promoting/using alternative energy (e.g. solar powered parking meters) would be useful to assess environmental effects of transport on material assets more thoroughly.

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<sup>64</sup> <http://wales.gov.uk/consultations/transport/ntp/?lang=en&status=closed>

<sup>65</sup> Welsh Assembly Government (WAG) (2003a), A living and working environment for Wales: the state of the Welsh Environment 2003, available at <http://www.wales.gov.uk/subienvironment/topics-e.htm>

<sup>66</sup> Welsh Government (2010), National Transport Plan, available at: <http://wales.gov.uk/docs/det/publications/100329ntpen.pdf>

<sup>67</sup> [http://wales.gov.uk/topics/environmentcountryside/epq/waste\\_recycling/publication/hierarchyguide/?lang=en](http://wales.gov.uk/topics/environmentcountryside/epq/waste_recycling/publication/hierarchyguide/?lang=en)

Whilst this additional information would be useful, it does not adversely affect the appraisal process at this strategy level.

## Key Issues

- The transport sector uses a high proportion of fossil fuels. The promotion of more resource efficient vehicles utilising hybrid, Liquid Petroleum Gas (LPG), Compressed Natural Gas (CNG) or sustainable bio-fuels requires support from the market and may require a behavioural change;
- The construction of new infrastructure could have an impact on the use of natural resources. Both the construction of new infrastructure and the maintenance of existing infrastructure may give rise to the extraction of aggregates, which can lead to a number of environmental effects, such as loss of biodiversity, increase in traffic, and air quality amongst others;
- New infrastructure and the maintenance of existing infrastructure requires the consumption of natural resources and energy;
- Long term energy requirements associated and consumption of energy through network services such as street lights, lit signs, traffic lights, illuminated bollards and Intelligent Transport Systems including electronic signing and communications equipment; and
- The need to manage generation of waste during construction.

## **Cultural Heritage and the Historic Environment, including Architectural and Archaeological Heritage**

### **Relationship with other Plans and Programmes**

The M4 Corridor around Newport includes historical assets. There are a number of PPPs at the national and local levels which are relevant to the draft Plan and these are summarised in Table 3.1. The relationship with these PPPs is explored further in Appendix B.

### **Baseline Information (Current State)**

Newport has a rich and diverse archaeological resource. The Gwent Levels have been recognised as a Landscape of Outstanding Historic Interest<sup>68</sup>.

The adopted Newport Unitary Development Plan<sup>69</sup> also designates four non-statutory Archaeologically Sensitive Areas (ASAs) within the County Borough which are summarised below:

- The Gwent Levels - The current landscape may include Roman elements. The Gwent Levels are important for many reasons, including landscape, nature conservation, archaeology and quiet enjoyment. They extend from Chepstow to Cardiff and are a reclaimed marshland, which has been exploited by humans for at least 6000 years. At times the area was relatively dry and was settled, whilst in other periods it was inundated by the sea and the former settlements were covered by alluvial deposits. There is therefore a series of historic landscapes in this area, of which only the latest can currently be observed.
- Caerleon – This historic town contains Roman remains which are of European importance. The fortress of Isca was established circa AD 74 and was one of only three permanent bases of the Roman legions in Britain.
- Lower Machen - The discovery of pieces of classical columns and extensive industrial activity to the south of the village, in small scale excavations, have indicated that an important Roman site lies under the present village of Lower Machen.
- Newport - The pre-Norman settlement of Newport appears to have been in the vicinity of the church of St Woolos and the first castle was built in this area. By the time that Newport became a separate lordship in AD 1317, the centre of settlement appears to have moved to the bridge and it was here that a new castle was built. The settlement by the bridge was relatively compact and probably possessed defences.

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<sup>68</sup> Register of Landscapes of Outstanding Historic Interest in Wales<sup>68</sup>, a document jointly produced by ICOMOS, CADW and the Countryside Council for Wales.

<sup>69</sup> Newport City Council (2006), Newport Unitary Development Plan 1996 – 2011 Adopted Plan, available at: <http://www.newport.gov.uk/dc/index.cfm?fuseaction=planning.udp>

These archaeologically sensitive areas are also designated in the Newport LDP Revised Deposit Plan (June 2013)<sup>70</sup>**Error! Bookmark not defined.**. The LDP also lists over 400 Listed Buildings, 15 Conservation Areas and 10 Historic Parks and Gardens, including Tredegar House and Beechwood Park.<sup>71</sup>

The Schedule of Ancient Monuments (SAM)<sup>72</sup> identifies monuments of national importance. Newport currently has 67 Scheduled Ancient Monuments within its boundary.<sup>73</sup> The County Borough also has over 1400 archaeological sites recorded on the Regional Sites and Monuments Record (SMR) curated by the Curatorial Division of the Glamorgan Gwent Archaeological Trust (GGAT).

## Trends and Future Baseline

There has been a rise in the number of Scheduled of Ancient Monuments (SAM) in Wales which are stable or improved.

## Data Gaps and Uncertainties

There were no significant data gaps for cultural heritage and the historic environment.

## Key Issues

Transport has the potential to affect historic sites directly and indirectly:

- Direct effects – loss of or damage to cultural assets, archaeological sites and architecture due to new infrastructure or improvement of infrastructure; and
- Indirect effects – drainage of adjacent sites, landscaping works, noise, vibration and air pollution can potentially lead to loss or damage, visual intrusion and effects on setting, character and local distinctiveness.

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<sup>70</sup> See <http://www.newport.gov.uk/dc/index.cfm?fuseaction=planning.ldap>

<sup>71</sup> See <http://www.newport.gov.uk/dc/index.cfm?fuseaction=planning.ldap>

<sup>72</sup> See <http://cadw.wales.gov.uk/historicenvironment/protection/monuments/?lang=en>

<sup>73</sup> See - <http://www.newport.gov.uk/dc/index.cfm?fuseaction=planning.conservations&contentid=CONT295611>

## Landscape and Townscape, including Light Pollution

### Relationship with other Plans and Programmes

The addition of any new infrastructure in the landscape has the potential to bring impacts and specific elements of the draft Plan (e.g. street lighting) could bring further direct impacts on the landscape.

PPPs containing landscape based policies of relevance to the draft Plan are summarised in Table 3.1 and the relationship with the draft Plan is explored in more detail at Appendix B.

### Baseline Information (Current State)

Although the suburbs of Newport are subject to intensive agricultural use, the townscape of Newport reflects the industrial past particularly that of the nineteenth century when Newport grew to its industrial prominence. Much of the town's heritage rests upon this dynamic period in its history, particularly in the central areas. Recreation and access to open spaces is important in terms of social and health benefits. There are various public rights of way within reasonable walking distance of the existing M4 motorway.

The Newport LDP Revised Deposit Plan (June 2013)<sup>74</sup>*Error! Bookmark not defined.* proposes the designation of several non-statutory Landscape Character Areas (SLAs) (Policy SP8). The Special Landscape Areas have been designated on the basis of the LANDMAP assessment process. The LANDMAP information resource is compiled and managed by the Countryside Council for Wales and is a nationally recognised resource for landscape assessment. Within Special Landscape Areas, priority will be given to landscape conservation and enhancement. The designation of a SLA does not preclude development, but any proposals must demonstrate that they have been designed to respect the valued characteristics of the recognised landscape. The proposed SLAs are:

- North of Bettws;
- West of Rhiwderin;
- Wentlooge Levels;
- River Usk;
- Caldicot Levels;
- Wentwood; and
- Tredegar Park.<sup>75</sup>

The most relevant draft SLAs to the draft Plan include<sup>75</sup>*Error! Bookmark not defined.*:

**The Wentlooge Levels:** Part of an extensive tract of low lying, reclaimed marsh and wetlands that extends from Cardiff to Chepstow. Rarely rising above 10

<sup>74</sup> See [http://www.newport.gov.uk/\\_dc/index.cfm?fuseaction=planning.ldap](http://www.newport.gov.uk/_dc/index.cfm?fuseaction=planning.ldap)

<sup>75</sup> Newport City Council (2012), Newport Local Development Plan 2011-2026 Special Landscape Area Topic Paper, available at: <http://www.newport.gov.uk/stellent/groups/public/documents/report/cont644611.pdf>

metres AOD they form a large, open expanse of primarily pastoral agricultural land. Having been subject to reclamation work since Roman times, a key landscape feature is the distinctive pattern of drainage ditches or reens. Their pattern reflects the differing periods of reclamation. The importance of the landscape is reflected not only in its designation as a Site of Special Scientific Interest but also its inclusion on the Register of Landscapes of Outstanding Historic Interest in Wales.

**The River Usk:** A strongly linear feature until it opens out around Caerleon, the primary element being the tidal River Usk. The proposed boundary follows that of the SSSI/SAC designation, effectively the top of the river bank. Where the river leaves the city to the north there are areas of playing fields and open space that do not justify inclusion with the proposed SLA boundary. At Caerleon, the boundary takes into account the important historic and cultural landscape features that underpin the importance both of the town and its setting. It also includes the floodplain that provides the visual landscape link between the river and the town whose development has been influenced by this location.

**The Caldicot Levels:** The extensive area of reclaimed marsh and wetlands that extends from Cardiff to Chepstow. Reaching up to 10 metres AOD, the area is characterised by its network of drainage ditches (reens) which vary in form and character. The eastern edge of the SLA is characterised by a regular, rectilinear pattern, whereas around Whiston and Caldicott the pattern is more sinuous. The main visual detractors to the SLA are the interface with the Llanwern Steelworks site on its northern boundary and the cluster of overhead power lines that focus upon Uskmouth power station. The SLA also covers the intertidal zone on the seaward side of the sea wall. This includes the Welsh Grounds an extensive area of mudflats exposed at low tide. The interrelationship of the intertidal zone to the inland area is focused upon the protective sea wall. At Goldcliff, the development of the RSPB reserve had amended the landscape pattern but has increased biodiversity in this part of the area. This is reflected in its recent designation as a National Nature Reserve.

**Tredegar Park:** The primary landscape features relate to the wider parkland and the historic hill fort at the Gaer. A disruptive element is introduced by the existing M4 motorway which effectively splits the parkland in half. The main tree avenue remains, and this provides the visual link across the motorway corridor. The hill fort at the Gaer, which is 91 metres AOD, provides a visually distinctive feature when entering Newport from the west. This prominent open space feature belies the intensity of housing behind it. Whilst generally open in character, there are areas of woodland encroaching onto the area. The wider parkland to the north is characterised by the formal tree avenue extending up to Dyffryn Court area, some 110 metres AOD. The area is given over to agriculture and is interspersed with a number of woodland blocks; one of which, Gwen y Cleppa includes a Scheduled Ancient Monument site.

## Trends and Future Baseline

- In terms of landscape and townscape, in recent years the townscape has undergone regeneration to improve the city to create a better environment for people to live, work and visit. The townscape and surrounding landscape has experienced new development which has prompted new roads and conversion of agricultural land into urban land uses.

## Data Gaps and Uncertainties

Data on light pollution caused by roads in Newport was unavailable. Whilst this information would be useful, it does not adversely affect the appraisal process at this strategy level.

## Key Issues

- New transport infrastructure can potentially have negative effects on landscape and townscape character if not appropriately designed;
- Transport and transport infrastructure has the potential to contribute to a loss of tranquillity;
- The potential for increased light pollution from the measures forming the draft Plan could cause loss of tranquillity.



## **Sustainable Development**

### **Relationship with other Plans and Programmes**

There are several policy documents at the UK and national (Wales) level that stress the importance of sustainable development. There is now a general presumption in favour of sustainable development within PPPs and this is being reflected at the local level through emerging LDPs. Those PPPs of relevance to sustainability are summarised in Table 3.1 and the relationship between these and the draft Plan is explored in more detail at Appendix B.

It is the duty of the Welsh Government to consider the role and importance of sustainability as indicated by the Welsh Government's extensive legislation programme on sustainable development (see below).

### **Baseline Information (Current State)**

The Futures Generations (Wales) Bill (2013) (previously the Sustainable Development Bill) aims to help address the generational challenges Wales faces in a more joined up and integrated way; ensuring Welsh public services make key decisions with the long term wellbeing of Wales in mind.

The One Wales, One Planet Sustainable Development Scheme (May 2009) aims to embed sustainable development as the central organising principle of the Welsh Government. The document sets out principles in achieving a sustainable economy, society and the wellbeing of communities.

The Sustainable Development Indicators for Wales (2012)<sup>76</sup> outline that sustainable development in Wales is based on the following key indicators:

- sustainable resource use;
- sustaining the environment;
- a sustainable economy;
- a sustainable society; and
- the wellbeing of Wales.

Newport City Council set out their definition of sustainable development as:

- conserving our unique natural environment in Newport;
- reducing, reusing, and recycling the waste we produce;
- fairness and justice for everybody who lives in the city or comes here to visit;
- smarter council services that make the best use of public money; and
- a happier, healthier Newport now, and for the generations to come<sup>77</sup>.

Sustainable development is currently being promoted through the regeneration of Newport by providing improved environmental, social and economic conditions.

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<sup>76</sup> Welsh Government (2012) The Sustainable Development Indicators for Wales, available at: <http://wales.gov.uk/topics/statistics/headlines/sustaindev/?lang=en>

<sup>77</sup> Newport City Council (2012) *Planet Newport*, available at <http://www.newport.gov.uk/dc/index.cfm?fuseaction=planetnewport.homepage>

In particular, the Newport LDP: Revised Deposit Plan (June 2013)<sup>78</sup>**Error! Bookmark not defined.** outlines how sustainable development has been integral to the regeneration of previously developed brownfield land and new housing around the city. The regeneration of Newport has also led to the design of minimisation of car-based transport by providing a more compact form of development in the city centre. This aims to contribute to healthy living and greater access to the city centre.

Many respondents to the M4 CEM Consultation suggested that poor roads were having an adverse impact on the Welsh economy and in some cases compared Welsh road infrastructure unfavourably with other areas perceived to be economic competitors. Newport Unlimited stated in their response to the M4 CEM Consultation that their “*discussion internally and with business make it clear that infrastructure investment is required to facilitate economic recovery and growth needs to be delivered quickly.*”<sup>79</sup>

## Trends and Future Baseline

The One Wales, One Planet Sustainable Development Annual Report 2011-2012<sup>80</sup> provides an assessment of progress on sustainable development measured by the Sustainable Development Indicators (as indicated above). The latest sustainable development figures were published in August 2012, and show that Wales has increased its economic output, driven up its renewable energy production, recycled and composted more of its waste and improved the way in which it manages water. However there has not been any significant change or improvement in public transport use, cycling and walking, health inequality, employment, ecological impacts on air pollution, air quality, greenhouse gases and conservation of ecological habitats.

The number of trips per person per year in Wales by walking and cycling has decreased between 1995/01 and 2009/10. The number of trips per person per year in Wales by private motor vehicles has decreased since 2005/06, although there was a small increase between 2007/08 and 2009/10. For all modes in Wales, the number of trips per person per year has remained around 1,000 between 1995/01 and 2009/10<sup>81</sup>.

## Data Gaps and Uncertainties

Monitoring data for sustainable indicators was not available for Newport City Council. Whilst this information would be useful, it does not adversely affect the appraisal process at this strategy level.

## Key Issues

- Sustainable transport options should be considered in regeneration initiatives and sustainability principles, in order to help improve traffic conditions, address reliance on cars and provide wider economic benefits.

<sup>78</sup> See [http://www.newport.gov.uk/\\_dc/index.cfm?fuseaction=planning.ldap](http://www.newport.gov.uk/_dc/index.cfm?fuseaction=planning.ldap)

<sup>79</sup> Welsh Government, M4 Corridor Enhancement Measures (M4 CEM), Participation Report, Arup, August 2013

<sup>80</sup> Welsh Government (2012) One Wales: One Planet – The Sustainable Development Annual Report 2011 – 2012, available at: <http://wales.gov.uk/docs/desh/publications/121121susdevannualreporten.pdf>

<sup>81</sup> [assets.dft.gov.uk/statistics](http://assets.dft.gov.uk/statistics)

- Traffic congestion can impact adversely on sustainable development by its effect on environmental, social and economic conditions. Measures to reduce traffic congestion are likely to have an overall positive impact on sustainable development.