Welsh Government

**M4 Corridor Around Newport**

**The Plan**

**Health Impact Assessment**

July 2014
Contents

Glossary i

Non-Technical Executive Summary 1

1 Introduction 7
  1.1 Purpose 9
  1.2 Background 10

2 Problems, Aims and Objectives 13
  2.1 Problems on the M4 Corridor around Newport 13
  2.2 Aims for the M4 Corridor around Newport 14
  2.3 Objectives of the M4 Corridor around Newport 15

3 Previous Health Impact Assessment 16

4 What is Health Impact Assessment? 18
  4.1 Introduction 18
  4.2 Definitions of HIA 19
  4.3 Determinants of Health and Vulnerable Groups 19

5 Health and Well-Being Context 23
  5.1 Population 23
  5.2 Wealth and Deprivation 23
  5.3 Health 24

6 HIA Scoping & Consultation 26
  6.1 Screening and Scope of the HIA 26
  6.2 HIA Scoping 27
  6.3 Consultation on the draft Plan 27
  6.4 Consultation responses to the draft Plan HIA 27
  6.5 HIA Workshop 30
  6.6 Summary 37

7 HIA Appraisal 38

8 Action Plan 48

Tables

Table 1 Complementary Measures
Table 2 M4 CEM HIA Consultees

| Issue 1 | July 2014 |
Table 3  M4 Corridor around Newport draft Plan HIA Workshop
Table 4  Health and Well-Being Determinants and Checklist
Table 5  Interaction between WelTAG Criteria and Health
Table 6  WelTAG Appraisal Guidance
Table 7  HIA Appraisal of the Plan
Table 8  HIA Appraisal of the Do Minimum Scenario
Table 9  HIA Appraisal Comparative Summary
Table 10  Action Plan

Figures

Figure 1 Location and Strategic Importance of the M4 around Newport, Magor to Castleton
Figure 2  Black Route shown within the local study area and main constraints around Newport
Figure 3  WHIASU guidance: how a proposal may impact on different groups of people
Large print versions of this document are made available on request. Please contact Allan Pitt via:
- Email: m4newport@arup.com;
- Telephone: 029 20473727; or
- Mail: Allan Pitt, Arup, 4 Pierhead Street, Cardiff CF10 4QP.

## Glossary

The following terms are referred to in this Health Impact Assessment (HIA).

| **Adopted Plan** | This is the Welsh Government’s adopted strategy to solve transport related problems affecting the M4 Corridor around Newport in South Wales – a new section of motorway between Magor and Castleton to the south of Newport and complementary measures:
- Reclassification of the existing motorway between Magor and Castleton – as a trunk road could enable traffic management, safety and revised access arrangements;
- A connection between the M4, M48 and B4245 – would provide relief to Junction 23A and to the local road network. It would also provide improved access to proposed park and ride facilities at Severn Tunnel Junction;
- 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; and
- 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. |
| **AQMAs** | 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 |
| **Black Route** | The Black Route and its complementary measures form the Welsh Government’s preferred strategy to address transport related problems on the M4 Corridor around Newport. This comprises the construction of a new three-lane section of motorway mainly following the protected TR111 ‘Black Route’, between Junctions 23 and 29 (Magor to Castleton), including a new crossing of the River Usk south of Newport. 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 |
| **Complementary Measures (of the Plan)** | In addition to the new section of motorway as published in the Plan, there are additional complementary measures that could assist in alleviating travel related problems on the M4 Corridor around Newport:
- Re-classify existing M4 between Magor and Castleton;
- M4 / M48 / B4245 Connection;
- Provide cycle friendly infrastructure; and
- Provide walking friendly infrastructure. |
<p>| <strong>Do Minimum / Do Minimum Scenario</strong> | 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, the Variable Speed Limit system and the Steelworks Access Road (A4810)) and any committed schemes (such as the Junction 28/Bassaleg Roundabout/Pont Ebbw Roundabout improvement) |
| <strong>draft Plan</strong> | The Welsh Government initially outlined its preferred strategy to solve transport related problems affecting the M4 Corridor around Newport in South Wales in its draft Plan published in September 2013. This was published for public consultation, alongside associated environmental, health and equality assessments of the draft Plan, which compared it to two Reasonable Alternatives, as well as a Do Minimum Scenario |
| <strong>Existing M4</strong> | The term ‘existing M4’ or ‘existing motorway’ is used to define the M4 around Newport, J23 to J29 (Magor to Castleton) |
| <strong>GDP</strong> | Gross Domestic Product |
| <strong>HIA</strong> | 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. HIA is a mandatory requirement of transport appraisal |
| | A HIA Report formed part of the draft Plan Consultation and has been updated to take into account comments received from the Wales Health Impact Assessment Support Unit (WHIASU) and others |
| | A strategy level HIA is published alongside the Plan for the M4 Corridor around Newport |
| <strong>Junction Strategy</strong> | A Junction Strategy would be developed at a scheme level of appraisal to inform a Preferred Route |
| | For the M4 Corridor around Newport, this would consider alignment options in the vicinity of Newport Docks, as well as potential arrangements at Magor and Castleton if the existing M4 is reclassified |
| <strong>LSOA</strong> | Lower Super Output Area. An Office for National Statistics defined geography containing between 1,000 and 3,000 people |
| <strong>M4 CEM</strong> | 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 |
| <strong>NAPPAs</strong> | 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 |
| | NAPPAs have been superseded by ‘Priority Areas’ in the ‘Welsh Government Noise Action Plan’; published 2013. Relevant extant documents make reference to NAPPAs; consequently, the term NAPPA is used within this document in preference to Priority Area |
| <strong>PHW</strong> | Public Health Wales aims to give people power to protect and improve health and wellbeing and reduce inequalities by informing, advising and speaking up for them. PHW provides an expert public health resource as part of the NHS in Wales |
| <strong>Preferred Route</strong> | The Welsh Government may decide to announce a Preferred Route for the main element of the Plan, a new section of motorway to the south of Newport, which would protect the corridor for planning purposes |
| Preferred Strategy | The Welsh Government’s preferred strategy is a package of measures aimed at achieving identified objectives and addressing transport related problems affecting the M4 Corridor around Newport in South Wales. The Welsh Government has published its preferred strategy within its Plan for the M4 Corridor around Newport. When implemented, the Plan will lead to a new three-lane section of motorway being built to the south of Newport, alongside some complementary measures that include highway management, walking and cycling initiatives |
| Reasonable Alternatives | Reasonable Alternatives were presented as part of the draft Plan, being other options that the Welsh Government considers could solve the transport related problems affecting the M4 Corridor around Newport in South Wales. The Reasonable Alternatives were outlined in the draft Plan, and included 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 |
| SAC | 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) |
| Scheme / Project | For individual schemes or projects, the appropriate level of appraisal is more detailed, quantitative and evidence-based. The proposed new section of motorway that forms the main element of the Plan, at a strategy level of detail, will now be progressed as a scheme / project |
| SEA | 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 |
| SEWTA | The South East Wales Transport Alliance was a consortium of 10 local authorities which prepared and co-ordinated regional transport policies, plans and programmes on behalf of its constituent councils |
| SDR | Southern Distributor Road. In this case, the A48 Southern Distributor Road, Newport |
| SHRA | Strategic Habitats Regulations Assessment. A process that considers the potential effects of plans and programmes on European sites (protected habitats). A document ‘Consideration of the Options for the M4 Corridor around Newport in relation to the requirements of the Habitats Regulations’ formed part of the draft Plan Consultation. A Strategic Habitats Regulations Assessment has been prepared that takes into account comments from Natural Resources Wales, and others, and is published alongside the Plan for the M4 Corridor around Newport |
| SSSI | Sites of Special Scientific Interest. Legally protected sites for wildlife and geology conservation |
| Strategy, Plan or Programme | 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. The Welsh Government’s preferred strategy to address transport related problems on the M4 Corridor around Newport is outlined in the Plan |
| TEN-T | Trans-European Transport Network |
| TPOs | Transport Planning Objectives |
| TR111 Notice | 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 |</p>
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WelTAG</td>
<td>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</td>
</tr>
<tr>
<td>WHIASU</td>
<td>Wales Health Impact Assessment Support Unit</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
<tr>
<td>WIMD</td>
<td>Welsh Index of Multiple Deprivation</td>
</tr>
</tbody>
</table>
Non-Technical Executive Summary

This section of the report provides a non-technical summary of the Health Impact Assessment (HIA) of the M4 Corridor around Newport Plan.

The Welsh Government’s preferred strategy to solving transport related problems on the M4 Corridor around Newport was published in its draft Plan in September 2013. The Plan has been developed taking into account the extensive work undertaken on the draft Plan, which built on the results of the M4 Corridor Enhancement Measures (CEM) Programme and other relevant development work that has been undertaken since the 1990s1.

The Welsh Government’s preferred strategy for the M4 Corridor around Newport comprises a three-lane motorway being built between Junctions 23 and 29 south of Newport, alongside complementary highway, walking and cycling measures.

The Plan will lead to the construction of a new three-lane section of motorway to the south of Newport, mainly following a ‘Black Route’, between Magor and Castleton, including a new crossing of the River Usk. A junction strategy will be investigated as part of scheme design. In addition to the new highway infrastructure, the Welsh Government recognises that there are additional complementary measures that could assist in alleviating travel related problems around Newport. The Plan’s complementary measures include:

- **Re-classify existing M4 between Magor and Castleton**
  Reclassification of the existing motorway as a trunk road could enable traffic management, safety and revised access arrangements.

- **M4 / M48 / B4245 connection**
  A connection between the M4, M48 and B4245 would provide relief to Junction 23A and to the local road network. It would also provide improved access to proposed park and ride facilities at Severn Tunnel Junction.

- **Provide cycle friendly infrastructure**
  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.

- **Provide walking friendly infrastructure**
  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 details of the complementary measures will be developed as part of scheme development.

---

1 See [www.m4newport.com](http://www.m4newport.com) and [www.m4cem.com](http://www.m4cem.com) for more information
Health and well-being context

The population and health status of Newport are considered in various strategies as outlined in Section 5 of this report. In summary:

- In 2011, the population of Newport was 145,736 which is a 6.4% rise from the 2001 figure\(^2\);
- The proportion of the Newport population aged over 65 in 2011 was 16.1% which is slightly lower than the proportion for Wales as a whole, which was 18.3%. The proportion of children aged 0-15 years old in Newport was 20.2%, which is a higher proportion than at a Wales level (16.1% in 2011)\(^3\);
- Most recent figures indicate that 78.5% of Newport residents considered their health to be either ‘very good’ or ‘good’ which is higher than the average for Wales (77.7%);
- According to Newport’s Community Strategy, Newport has a labour catchment population of 479,000 people living within 30 minutes’ drive; and 1.6 million people, over a third of the population of Wales, live within one hour of the city;
- In 2011, 69,800 people commuted to work in the city from various parts of Wales and England. Focusing on Wales commuters specifically, Newport is the second biggest destination after Cardiff\(^4\);
- For the period January-December 2013, 26.4% of the residents of Newport aged 16-64 were economically inactive compared to 25% for Wales\(^5\). The Claimant Count Rate supports these figures; the percentage of people aged between 16 and 64 claiming the Job Seeker’s Allowance (JSA) benefit is 3.4% across Wales, whilst in Newport it is 5%\(^6\); and
- Newport has a total of nine Air Quality Management Areas (AQMAs), which were declared because assessments of air quality predicted that the annual mean objective for nitrogen dioxide (NO\(_2\)) was not likely to be met. Four of the AQMAs have been declared as a result of emissions from traffic on the M4 motorway.

Health Impact Assessment

Welsh Transport Planning and Appraisal Guidance (WelTAG) states that HIA is a mandatory requirement of transport appraisal. As a result, the Welsh Government has undertaken HIA as part of the development of the M4 Corridor around Newport Plan. **HIA is an iterative process and further HIA may be required as schemes are progressed from the Plan**, in order to avoid, reduce and, if possible, remedy any identified adverse impacts on health.

---

\(^2\) Office for National Statistics, Census 2001 & Census 2011  
\(^3\) Office for National Statistics, Census 2011  
\(^6\) Office for National Statistics, Claimant Count 2014
The draft Plan and its associated HIA underwent a period of consultation from 23 September to 16 December 2013. In total 1,816 unique formal responses to the consultation were received. Comments on the HIA are summarised below:

- Some stated that they support or were satisfied with the HIA, with most of these noting that the assessment, including the list of stakeholders, was comprehensive;
- Several respondents suggested they do not have the expertise to comment on the assessment;
- Some stakeholders agreed with aspects of the assessment, while many offered suggestions;
- A number of stakeholders offered no support or opposition of the assessment;
- The HIA, or aspects of it, was challenged by a number of stakeholders with some suggesting it was inadequate and insufficient;
- Some stakeholders were particularly concerned about a lack of detail within the HIA and suggested more information and data should be included;
- Several stakeholders sought clarification on particular issues. Some suggested the assessment was too general;
- Some suggested the assessment should include more detail about environmental health data, crash risk and severity;
- A number of stakeholders expressed concerns that alternatives to a new road have not been taken into account and that benefits to health can be better accessed through alternatives such as increased use of public transport;
- The public health benefits of walking and cycling were highlighted;
- Some stakeholders expressed particular concerns about the assessment’s claim that air quality would improve and health benefits resulting from this; and
- Some respondents discussed the potential forms of mitigation available and the impact that they may or may not have.

A HIA Workshop was also undertaken with invited stakeholders during November 2013. Those invited (see Section 3 of the main report) were considered by the Welsh Government to represent relevant and appropriate organisations to help shape the current HIA. Comments received included:

- The methodology is “gold standard”;
- The level of information included in the assessments are appropriate but that the strategic nature of the HIA may be frustrating for some people who want more detail in order to make informed comments;
- Some quantitative information would be useful as part of the HIA;
- The role of technology might be considered in making vehicles more sustainable; and
- The HIA will only be valuable if the Action Plan, discussed later in this report, is practically implemented.
Appraisal

The assessment of the Plan and Do Minimum Scenario (doing nothing above what is already planned or committed) is provided in Section 6.6 of this report.

In summary, the Plan would be expected to provide positive impacts on the population and health, whereas without the Plan the current situation would worsen.

Appraisal of the Plan outlines that:

- The Plan would improve accessibility to health, care, training and education facilities and services. However this may primarily benefit those with access to a private vehicle. The peak for rush hour is spreading, which means that people may travel to work earlier or later, which impacts on personal time and compromises the work/life balance. If journey times are improved and journey time reliability is increased, there could be more time for leisure and recreation, which brings health and wellbeing benefits. Complementary measures could bring improved access to facilities for those who rely on other transport modes through improved walking and cycling infrastructure and linkages to public transport interchanges. This would be likely to encourage local trips to be made by such modes and as such benefit health and wellbeing.

- The new section of motorway 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. 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. The impacts of air, noise and dust pollution during construction are likely to affect those who live in close proximity to the new section of motorway. The new section of motorway would also partly pass through contaminated land which may lead to health impacts during construction. Modern construction methods would aim to limit any impacts.

- The Plan would improve transport safety largely 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.

- The Usk crossing structure is likely to be attractive to vulnerable people with severe mental health problems. Mitigation would include no provision of pedestrian access in order to prevent suicide attempts.

- The new section of motorway would cross the River Usk Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) and the Gwent Levels and would be likely to impact adversely on the landscape. There could be a negative impact on health as a result from the actual or perceived loss in physical space and/or quality of recreational amenity use of these areas. There may also be a psychological impact from construction activities and possible impact on property values and perceived quality of life.

- There will be a psychological impact when the new section of motorway is opened in terms of actual and perceived benefits to the economy.
Appraisal of the Do Minimum Scenario outlines that:

- Traffic conditions are expected to deteriorate and stop/start driving conditions would create an adverse travel experience, leading to higher levels of driver stress. Increased congestion would also exacerbate the risk of incidents and accidents occurring.

- The 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.

- Ill health is often associated with economic deprivation. Congestion on the M4 between junctions 24 and 29 is already thought to be impacting on business performance and the level of congestion is expected to increase. Cardiff and Newport have ambitious regeneration strategies and Monmouthshire is developing areas around Junction 23A of the M4. Traffic congestion on the M4 could hamper these plans and impact negatively on regional economic development. 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 and consumers and economic performance can be affected.

- Increased congestion would adversely impact on the movement of commuters. The M4 is heavily used by commuters and there are already significant movements of commuters between Wales and England over the Severn Crossings. Increased congestion would result in higher journey times for commuters, reducing the effective travel to work area.

A comparison of the Plan and the Do Minimum Scenario appraisal is shown below:

<table>
<thead>
<tr>
<th>WelTAG Criteria</th>
<th>Appraisal of Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The Plan</td>
</tr>
<tr>
<td>Lifestyle/capacity affecting health</td>
<td>(+)</td>
</tr>
<tr>
<td>Social and Community Influences affecting health</td>
<td>(+)</td>
</tr>
<tr>
<td>Living Conditions</td>
<td>(+)</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>(++)</td>
</tr>
<tr>
<td>Services (access to and quality of)</td>
<td>(++)</td>
</tr>
<tr>
<td>Socio-economic, cultural and environmental</td>
<td>(++)</td>
</tr>
</tbody>
</table>
Action Plan

Section 7 of this report outlines potential actions that the Welsh Government will consider as part of the Plan and its progression, to ensure that the results of this HIA are taken into account and monitored appropriately. The actions include:

- Use of modern construction methods and appropriate management and mitigation of potential noise, air and dust pollution impacts during construction;
- Identify and adopt mitigation measures to limit potential adverse environmental impacts on the Gwent Levels;
- Consider health issues as part of the development of a junction strategy;
- Ensure safe working practices during construction;
- Consider measures to enhance the safety of users;
- Consider measures to ensure the safety of vulnerable groups and people with mental health problems;
- Appropriate diversions to any highway or pedestrian/cycle/equestrian route, if required, during construction works that might obstruct an existing route;
- Appropriate measures to maintain or enhance highway or pedestrian/cycle/equestrian routes, if appropriate;
- Work with stakeholders and local communities to identify appropriate pedestrian and cycling infrastructure issues, potential improvements and new connections;
- Ensure appropriate mitigation measures are identified to enhance the environment and offset any adverse impacts on cultural and historical identity;
- Identify opportunities to address cultural needs as part of scheme development;
- Ensure the procurement process associated with any option targets local recruitment and training;
- Seek sustainable sourcing of materials and minimise site waste; and
- Prepare a monitoring and evaluation plan.

The remaining sections of this report provide the full Health Impact Assessment of the M4 Corridor around Newport Plan.
1 Introduction

This Health Impact Assessment (HIA) has been prepared in support of the M4 Corridor around Newport Plan, the Welsh Government’s adopted strategy to solving transport related problems around Newport.

The Plan has been developed taking into account the extensive work undertaken as part of the M4 Corridor Enhancement Measures (CEM) Programme and the M4 Corridor around Newport draft Plan. This HIA for the Plan builds upon the results of the M4 CEM and draft Plan HIAs. These are available to view at www.m4cem.com and www.m4newport.com respectively.

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 CSJ 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 Welsh Government’s preferred strategy was published in its draft Plan in September 2013, and in recognising the range of the objectives for the M4 Corridor around Newport, the Welsh Government intends to adopt a Plan for the M4 Corridor around Newport, which combines both highway infrastructure and other demand management solutions in identifying its preferred strategy.
The Welsh Government’s preferred strategy for the M4 Corridor around Newport consists of:

- A new three-lane section of motorway between Magor and Castleton to the south of Newport along the TR111 protected corridor of the Black Route; and
- Complementary Measures (see table 1).

The Welsh Government’s preferred strategy comprises the construction of a new three-lane section of 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 the 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.

A junction strategy will be investigated as part of scheme’s development.

In addition to the new highway infrastructure, the Welsh Government recognises that there are additional complementary measures that could assist in alleviating travel related problems within the M4 Corridor around Newport. The Plan’s complementary measures are as shown in Table 1.

The location of the M4 Corridor around Newport is shown in its strategic context in Figure 1 and the alignment of the Black Route is shown in the context of local constraints in Figure 2.

### Table 1 Complementary Measures

<table>
<thead>
<tr>
<th>Complementary Measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-classify existing M4 between Magor and Castleton</td>
<td>Reclassification of the existing motorway as a trunk road could enable traffic management, safety and revised access arrangements.</td>
</tr>
<tr>
<td>M4 / M48 / B4245 connection</td>
<td>A connection between the M4, M48 and B4245 would provide relief to Junction 23A and to the local road network. It would also provide improved access to proposed park and ride facilities at Severn Tunnel Junction.</td>
</tr>
<tr>
<td>Provide cycle friendly infrastructure</td>
<td>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.</td>
</tr>
<tr>
<td>Provide walking friendly infrastructure</td>
<td>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.</td>
</tr>
</tbody>
</table>
The details of the above complementary measures will be developed as part of scheme development. They aim to maximise opportunities to complement the regional transport system, including proposals for the Cardiff Capital Region Metro.

Alongside this HIA the Welsh Government has also prepared the following associated assessments, which consider the potential environmental and equality impacts of the Plan and the Do Minimum Scenario:

- Equality Impact Assessment (EqIA);
- Strategic Environmental Assessment (SEA); and
- Strategic Habitats Regulations Assessment (SHRA).

A Consultation Participation Report has also been produced, which summarises the engagement and consultation process undertaken.

1.1 Purpose

This document provides the HIA Report in support of the Plan.

As a strategy or programme, the Welsh Government considers that an HIA of the M4 Corridor around Newport Plan is required. This report provides the HIA for the transport measures that form the Plan for the M4 Corridor around Newport. The completion of an HIA is a mandatory requirement of WelTAG. This report has been prepared in accordance with new guidance on the HIA process that has been prepared by Wales Health Impact Assessment Support Unit (WHIASU) in conjunction with Public Health Wales and Cardiff University entitled, “Health Impact Assessment: A Practical Guide”.

The WHIASU was consulted on the proposed scope of the HIA and provided comments and advice on the preparation of the HIA. Public Health Wales also provided a scoping response. The responses received as part of the scoping exercise have informed the scope and methodology of this assessment of the Plan along with comments received during the draft Plan public consultation which ran for a period of 12 weeks between September and December 2013.
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.

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, especially 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 and have worsened as the number of users on the network has increased.
Figure 1 Location and Strategic Importance of the M4 around Newport, Magor to Castleton
Figure 2  Black Route shown within the local study area and main constraints around Newport
2 Problems, Aims and Objectives

The problems, aims and objectives of the Plan were subject to dialogue during the early stages of the engagement process, with public and stakeholders.

Seventeen problems are identified; which encompass issues of capacity, network resilience, safety and sustainable development.

Three aims are identified as part of a wider transport strategy for South East Wales.

Fifteen objectives are identified and each one aims to address one or more of the problems.

2.1 Problems on the M4 Corridor around Newport

The 17 identified transport related problems are listed below:

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.

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.

2.2 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 objectives to reduce greenhouse gas emissions and to making Wales more resilient to the effects of climate change.

This 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.

---

8 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.

2.3 Objectives of the M4 Corridor around Newport

The Welsh Government, with the help of others, identified 15 objectives for the M4 Corridor around Newport. These objectives aim to address the identified transport-related problems listed in section 2.2. For clarity, objectives are referred to as “Transport Planning Objectives” (TPOs) in WelTAG (see Glossary).

The 15 objectives (listed below) have provided a framework in which to appraise the relative performance at a strategic level Plan and the Do Minimum Scenario.

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.
3 Previous Health Impact Assessment

This HIA has been prepared in order to support the Welsh Government in their decision to adopt the Plan for the M4 Corridor around Newport. Prior to this HIA a great deal of previous HIA work had been undertaken as follows:

- Consultation and HIA as part of the M4 CEM Programme; and
- Consultation and HIA as part of the M4 Corridor around Newport draft Plan.

This previous work has included dialogue and deliberative sessions both with internal and external specialists and expert stakeholders, encompassing local health boards, local authorities and other organisations with an interest in the likely health and community impacts of transport measures on the M4 Corridor around Newport. This input has helped and influenced the development of a Plan.

The Welsh Government consulted with WHIASU on its approach to assessment and reporting. A scoping report for the HIA was issued to WHIASU for comment on M4 CEM options, including an additional high quality road to the south of Newport, in September 2012. WHIASU provided comments on the proposed scope for the HIA in October 2012. Following WHIASU advice and guidance, telephone interviews on the potential health effects of the M4 CEM measures were undertaken with health professionals and other local stakeholders. Stakeholders were identified with the assistance of WHIASU. The consultees contacted for interview are shown in Table 2.

### Table 2 M4 CEM HIA Consultees

<table>
<thead>
<tr>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aneurin Bevan Health Board</td>
</tr>
<tr>
<td>Countryside Council for Wales</td>
</tr>
<tr>
<td>House of Commons</td>
</tr>
<tr>
<td>National Assembly for Wales</td>
</tr>
<tr>
<td>Newport City Council</td>
</tr>
<tr>
<td>Newport Local Public Health Team</td>
</tr>
<tr>
<td>Newport, Gwent Association of Voluntary Organisations (GAVO)</td>
</tr>
<tr>
<td>Public Health Wales (PHW)</td>
</tr>
<tr>
<td>Wales Health Impact Assessment Support Unit (WHIASU)</td>
</tr>
</tbody>
</table>

A number of the identified stakeholders (above) declined to take part or were unavailable for the telephone interviews as part of the M4 CEM options HIA. In total three telephone interviews were undertaken, including:

- Health and Wellbeing representative from the Countryside Council for Wales;
- MP for Newport West; and
- Public health consultant representing both Public Health Wales and the Aneurin Bevan Health Board.
As part of the M4 Corridor around Newport draft Plan Consultation a HIA workshop was held with invited stakeholders on 12th November 2013. Those invited were considered by the Welsh Government to represent relevant and appropriate organisations to help shape the HIA for the then draft Plan. Attendees at the workshop are shown in Table 3.

**Table 3  M4 Corridor around Newport draft Plan HIA Workshop**

<table>
<thead>
<tr>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wales Health Impact Assessment Support Unit</td>
</tr>
<tr>
<td>Public Health Wales</td>
</tr>
<tr>
<td>Newport Public Health Team</td>
</tr>
<tr>
<td>Newport City Council Environmental Health</td>
</tr>
<tr>
<td>Newport City Council Planning</td>
</tr>
<tr>
<td>Rhondda Cynon Taff County Borough Council Transport</td>
</tr>
<tr>
<td>Cardiff Council Transport</td>
</tr>
<tr>
<td>Monmouthshire County Council Transport</td>
</tr>
</tbody>
</table>

**Apologies**

<table>
<thead>
<tr>
<th>Apologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aneurin Bevan Local Health Board</td>
</tr>
<tr>
<td>Hywel Dda Local Health Board</td>
</tr>
<tr>
<td>Health and Wellbeing – Gwent Association of Voluntary Organisations</td>
</tr>
</tbody>
</table>

A presentation was given outlining the background to the M4 Corridor around Newport draft Plan, how it built on work undertaken for the M4 CEM Programme, and the draft Plan Consultation process. The attendees were then taken through the adopted HIA methodology, appraisal criteria and the assessment of the draft Plan, its Reasonable Alternatives and the Do Minimum Scenario.

Two tasks were undertaken during the workshop that provided attendees with the opportunity to provide comment on:

1. The methodology adopted to undertake the HIA; and
2. The appraisal undertaken.

Wider comments and questions were also taken on wider issues associated with the draft Plan and its appraisal.

The comments received during both the M4 CEM Programme and the draft Plan consultation has informed the development of, and HIA of, the Plan.
4 What is Health Impact Assessment?

4.1 Introduction

The WHIASU guidance refers to HIA as 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. The guidance states that,

“Within HIA, health is understood as a positive concept which encompasses mental, physical and social well-being. It is difficult to understand the concept of health as something distinct from the ways in which we live and the society of which we are a part. This implies two things - firstly, that health means different things to different people living in particular times and places and secondly, that health outcomes, however we may understand and/or measure them, are shaped by wider social and economic processes.”

The best known definition of the social model of health is one that was produced by the World Health Organisation (WHO) in 1948 which stated that:

“Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948).

The WHIASU guidance notes that health is shaped by wider social processes; and policies, programmes and projects are likely to be important opportunities or threats to the health of individuals, groups, communities and whole populations. Whilst the availability and quality of health services are likely to be important, the quality and distribution of social and economic resources are likely to be more important to the health of a population. Figure 3 provides an illustration of how a proposal may impact different groups of people in different ways.

Figure 3 WHIASU guidance: how a proposal may impact on different groups of people

---

WHIASU advises that some impacts on health determinants may be direct, obvious and/or international, whilst others may be indirect, difficult to identify and unintentional. HIA tries to anticipate and mitigate for these effects.

4.2 Definitions of HIA

The European Centre for Health Policy (1999) Gothenburg Consensus is the most widely accepted definition of HIA. This defines HIA as:

“A combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population”.


‘...a process through which evidence (of different kinds), interests, values and meanings are brought into dialogue between relevant stakeholders (politicians, professionals and citizens) in order imaginatively to understand and anticipate the effects of change on health and health inequalities in a given population’.

The consideration of health impacts is becoming an increasingly important aspect of any new proposal, programme or project in the UK. The purpose of carrying out a HIA is to assess the potential impacts to human health from a policy, programme or project and then to use this information to influence the decision making process. This should help to maximise the positive health outcomes and minimise the negative health outcomes of a proposal. However, WHIASU note that HIA is a tool to support decision making, but is not, in itself, the means of making a decision on whether a policy, proposal or programme should proceed.

4.3 Determinants of Health and Vulnerable Groups

WHIASU advise that HIA is a systematic, objective, flexible and practical way of assessing both the potential positive and negative impacts of a proposal on health and well-being. It can suggest ways in which opportunities for health gain can be maximized and risks to health minimised. HIA looks at health in its broadest sense, using the wider determinants of health as a framework. The health and well-being determinants checklist provided in Appendix 1 of the WHIASU guidance is reproduced in Table 4.
### Table 4 Health and Well-Being Determinants and Checklist

<table>
<thead>
<tr>
<th>1. Lifestyles</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diet</td>
<td>Sexual activity</td>
</tr>
<tr>
<td>Physical activity</td>
<td>Other risk-taking activity</td>
</tr>
<tr>
<td>Use of alcohol, cigarettes, non-prescribed drugs</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Social and community influences on health</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Family organisation and roles</td>
<td>Social isolation</td>
</tr>
<tr>
<td>Citizen power and influence</td>
<td>Peer pressure</td>
</tr>
<tr>
<td>Social support and social networks</td>
<td>Community identity</td>
</tr>
<tr>
<td>Neighbourliness</td>
<td>Cultural and spiritual ethos</td>
</tr>
<tr>
<td>Sense of belonging</td>
<td>Racism</td>
</tr>
<tr>
<td>Local pride</td>
<td>Other social exclusion</td>
</tr>
<tr>
<td>Divisions in the community</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Living/environmental conditions affecting health</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Built environment</td>
<td>Green space</td>
</tr>
<tr>
<td>Neighbourhood design</td>
<td>Community safety</td>
</tr>
<tr>
<td>Housing</td>
<td>Smell/odour</td>
</tr>
<tr>
<td>Indoor environment</td>
<td>Waste disposal</td>
</tr>
<tr>
<td>Noise</td>
<td>Road hazards</td>
</tr>
<tr>
<td>Air and water quality</td>
<td>Injury hazards</td>
</tr>
<tr>
<td>Attractiveness of area</td>
<td>Quality and safety of play areas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Economic conditions affecting health</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment</td>
<td>Type of employment</td>
</tr>
<tr>
<td>Income</td>
<td>Workplace conditions</td>
</tr>
<tr>
<td>Economic activity</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Access and quality of services</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical services</td>
<td>Public amenities</td>
</tr>
<tr>
<td>Other caring services</td>
<td>Transport including parking</td>
</tr>
<tr>
<td>Careers advice</td>
<td>Education and training</td>
</tr>
<tr>
<td>Shops and commercial services</td>
<td>Information technology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Macro-economic, environmental and sustainability factors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Government policies</td>
<td>Biological diversity</td>
</tr>
<tr>
<td>Gross Domestic Product</td>
<td>Climate</td>
</tr>
<tr>
<td>Economic development</td>
<td></td>
</tr>
</tbody>
</table>
WelTAG considers the interaction between factors that determine health and WelTAG criteria. These are listed in Table 5. Although the health determinants listed in WelTAG and the WHIASU guidelines are not identical, they are broadly similar. As the HIA for the M4 Newport Plan is being prepared in accordance with WelTAG requirements, the criteria listed in WelTAG have been used for the appraisal summary tables for the HIA.

Paragraph 9.2.6 of WelTAG states that the interactions between health determinants and the WelTAG criteria show how WelTAG performs the HIA, thus negating the need to generate new analysis.

Table 5  Interaction between WelTAG Criteria and Health

<table>
<thead>
<tr>
<th>Factors that determine health</th>
<th>WelTAG appraisal criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individuals lifestyle/capacities affecting health</strong></td>
<td>Physical Fitness</td>
</tr>
<tr>
<td>Smoking, nutrition and healthy eating, physical activity, alcohol/drug misuse, sexual health, propensity to use health and care services, skills and knowledge, training and education</td>
<td></td>
</tr>
<tr>
<td><strong>Social and community influences affecting health</strong></td>
<td>Social Inclusion Heritage</td>
</tr>
<tr>
<td>Family: structure and function, parenting. Community: social support mechanisms, social networks, neighbourliness, peer pressure, community divisions, degree of isolation, historical identity, cultural and spiritual ethos.</td>
<td></td>
</tr>
<tr>
<td><strong>Living conditions</strong></td>
<td>Noise</td>
</tr>
<tr>
<td>Built environment, civic design and planning, housing, noise, smell, air and water quality, physical view and outlook, public safety, waste disposal, road hazards, injury hazards, safe play spaces.</td>
<td>Local Air Quality</td>
</tr>
<tr>
<td><strong>Working conditions</strong></td>
<td>Economic Activity and Location Impacts (EALI)</td>
</tr>
<tr>
<td>Employment, workplace conditions, occupation, income.</td>
<td></td>
</tr>
<tr>
<td><strong>Services (access to and quality of)</strong></td>
<td>Permeability</td>
</tr>
<tr>
<td>Medical services, caring services, careers advice and counselling, shops and commercial services, public amenities, transport, education and other services. Access to information technology.</td>
<td>Transport Economic Efficiency (TEE)</td>
</tr>
<tr>
<td><strong>Socio-economic, cultural and environmental Sustainability factors</strong></td>
<td>Biodiversity</td>
</tr>
<tr>
<td>Biological diversity, efficient use of resources, pollution, diversity/local distinctiveness, climate. Macro-economic factors: political climate, GDP, economic development, policy climate.</td>
<td>Greenhouse Gas Emissions</td>
</tr>
</tbody>
</table>
HIA highlights the uneven way in which health impacts may be distributed across a population and seeks to address existing health inequalities as well as avoiding the creation of new ones. This HIA aims to determine how and to what extent the M4 Corridor around Newport Plan, affects different social and demographic groups and associated potential health implications at a strategy level. The assessment aims to determine the most appropriate actions necessary to address any impacts and remove adverse effects. HIA can also identify any gaps in the options and highlight any positive impacts that may come from them. These could then be maximised.

In addition to the general adult population, the guideline target groups for HIA listed by WHIASU are:

**Age related groups:**
- Children and young people; and
- Older people.

**Income related groups:**
- People on low income;
- Economically inactive;
- Unemployed/workless; and
- People who are unable to work due to ill health.

**Groups who suffer discrimination or other social disadvantage:**
- People with physical or learning disabilities/difficulties;
- Refugee groups;
- People seeking asylum;
- Travellers;
- Single parent families;
- Lesbian and gay and transgender people;
- Black and minority ethnic groups; and
- Religious groups.

**Geographical groups:**
- People living in areas known to exhibit poor economic and/or health indicators;
- People living in isolated/over-populated areas; and
- People unable to access services and facilities.
5 Health and Well-Being Context

Newport City Council and the Aneurin Bevan Local Health Board have prepared a health, social care and well-being strategy for Newport for the period 2011-2014\textsuperscript{12}, One Newport has also prepared a community strategy for the period 2010-2020\textsuperscript{13}, which is a single integrated plan to bring together Newport’s Community Strategy; Health, Social Care and Wellbeing Strategy; Children and Young People’s Plan; Community Safety Plan; and Prosperous Newport Plan. The population and health status of Newport are considered in these strategies and the latest data is summarised below.

5.1 Population

In 2011, the population of Newport was 145,736 which is a 6.4% rise from the 2001 figure\textsuperscript{14}. The population of Newport in 2011 was 51% female and 49% male with 89.9% of people from a white background and 10.1% of people from a non-white background. Newport has the second largest number of people from a non-white background in Wales, second to Cardiff only. This equates to Newport having a higher proportion of people from a non-white background than for Wales as a whole (Newport 10.1%, Wales 4.3% in 2011\textsuperscript{15}).

The proportion of the Newport population aged over 65 in 2011 was 16.1% which is slightly lower than the proportion for Wales as a whole, which was 18.3%. The proportion of children aged 0-15 years old in Newport was 20.2%, which is a higher proportion than at a Wales level (16.1% in 2011)\textsuperscript{16}. For Newport this represents a 2.3% fall in the proportion of the population aged 0-15 years old from 2001 figures\textsuperscript{17}.

Most recent figures indicate that 78.5% of Newport residents considered their health to be either ‘very good’ or ‘good’ which is higher than the average for Wales (77.7%). A total of 20.8% of the Newport population are living with a long-term activity-limiting illness, which is slightly lower than the Wales average of 22.7%. Moreover, 11.4% of the Newport population are unpaid carers; this is slightly lower than the Wales average of 12.1%\textsuperscript{18}.

5.2 Wealth and Deprivation

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 Wales Index of Multiple Deprivation (WIMD) is the official measure of deprivation of small areas in Wales.

\textsuperscript{12} Health, Social Care and Wellbeing Strategy 2011-2014. Newport’s Healthy Future, Newport City Council Aneurin Bevin Local Health Board, One Newport, Healthy Newport.
\textsuperscript{13} Newport’s Community Strategy 2010-2020. Feeling Good about Newport. One Newport
\textsuperscript{14} Office for National Statistics, Census 2001 & Census 2011
\textsuperscript{15} Office for National Statistics, Census 2011
\textsuperscript{16} Office for National Statistics, Census 2011
\textsuperscript{17} Office for National Statistics, Census 2001
\textsuperscript{18} Office for National Statistics, Census 2011
The WIMD 2011 is made up of eight separate kinds of deprivation: income, employment, health, education, housing, access to services, environment and community safety. For Newport, 16% of the Lower Super Output Areas (LSOA) fall within the 10% most deprived LSOAs in Wales, and 44% of LSOAs fall within the 50% most deprived LSOAs in Wales.\(^{19}\)

According to Newport’s Community Strategy, Newport has a labour catchment population of 479,000 people living within 30 minutes’ drive; and 1.6 million people, over a third of the population of Wales, live within one hour of the city.

In 2011, 69,800 people commuted to work in the city from various parts of Wales and England. Focusing on Wales commuters specifically, Newport is the second biggest, destination, after Cardiff.\(^{20}\)

For the period January-December 2013, 26.4% of the residents of Newport aged 16-64 were economically inactive compared to 25% for Wales\(^{21}\). The Claimant Count Rate supports these figures; the percentage of people aged between 16 and 64 claiming the Job Seeker’s Allowance (JSA) benefit is 3.4% across Wales, whilst in Newport it is 5%.\(^{22}\)

5.3 Health

Poor air quality can impact on people’s health. The main source of air pollution within Newport is from traffic emissions, and primarily from the M4 motorway that crosses the City area from east to west. The motorway cuts 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 were declared because assessments of air quality predicted that the annual mean objective for nitrogen dioxide (NO\(_2\)) was 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.

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.

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

\(^{19}\) Stats Wales, Wales Index of Multiple Deprivation 2011
\(^{21}\) Office for National Statistics, Annual Population Survey 2011
\(^{22}\) Office for National Statistics, Claimant Count 2014
latest demography profile (2009) includes the following key points in relation to health of the local population:

- The under 75 age standardised mortality rate has decreased 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;
- Within the area covered by Aneurin Bevan Health Board there are areas of deprivation, particularly the valley areas of Caerphilly, Blaenau Gwent and Torfaen;
- Eighty eight of the 369 LSOAs in the 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 may cause a rise in chronic conditions such as circulatory and respiratory diseases, and cancer; and
- The relative (and absolute) increase in economically dependent and in some cases care-dependent populations will pose particular challenges to local communities.

---

6  HIA Scoping & Consultation

6.1  Screening and Scope of the HIA

WelTAG states that HIA is a mandatory requirement of transport appraisal. As a result, the Welsh Government acknowledges that HIA is required for the M4 Corridor around Newport Plan.

The HIA has been developed to be proportionate to the strategic level of the Plan. As such, the appropriate level of appraisal is broad and at a strategy level with appraisal undertaken qualitatively at this stage.

HIA is an iterative process. This document forms a high level appraisal of the Plan against the Do Minimum Scenario (doing nothing above what is already planned or committed). Further HIA may be required as the Plan moves to the scheme level in order to avoid, reduce and, if possible, remedy any potential significant adverse impacts.

The geographical extent of the HIA specifically refers to the M4 Corridor around Newport.

At this strategy level of appraisal; short, medium and long term timescales have been considered in terms of the potential impacts of the options on the population.

The impact of possible measures on health and well-being has been considered with reference to relevant WelTAG criteria. An evidence base has been prepared as part of the WelTAG appraisal of the options. It provides a summary of baseline conditions as well as an appraisal of social, economic and environmental criteria. This evidence base has informed the preparation of this HIA.

As recommended by WelTAG, an HIA appraisal summary table has been prepared for the Plan to qualitatively assess the potential effects on health and well-being. Each measure has been assessed using a seven scale colour coding system technique that is adopted in WelTAG, shown in Table 6.

| Table 6 WelTAG Appraisal Guidance |
|-----------------|-----------------|
| Large Positive Impact | (+++) |
| Moderate Positive Impact | (++) |
| Slight Positive Impact | (+) |
| No (or Minimal) Impact | (0) |
| Slight Negative Impact | (-) |
| Moderate Negative Impact | (--) |
| Large Negative Impact | (---) |
6.2 **HIA Scoping**

A scoping report was prepared in relation to the HIA and was made available to the WHIASU for comment, for a five week period commencing 9 July 2013. This outlined the Welsh Government’s proposed approach to undertaking HIA.

The relevant responses received as part of the scoping exercise have been considered in defining the scope and methodology of this assessment of the Plan.

6.3 **Consultation on the draft Plan**

The draft Plan underwent a period of consultation from 23 September to 16 December 2013. The Welsh Government’s consultation document provided an overview of the draft Plan, its Reasonable Alternatives and a Do Minimum Scenario. In addition to the draft Plan consultation document, a number of environmental, health and equality based assessments of the draft Plan were produced, including a HIA of the draft Plan.

Consultation documents and response forms were made available to the public at public events, Newport libraries, other Document Deposit Centres, and at the M4 Newport website www.m4newport.com.

In total, 1,816 unique formal responses to the consultation were received. In order to inform this HIA, we have summarised relevant responses below. These have been presented as general comments made on the options of relevance to the HIA and specific comments made in relation to the HIA which accompanied the draft Plan.

A separate Consultation Participation Report has been produced that provides a summary of the engagement process and consultation responses received. This should be read in order to understand the wider consultation process.

6.4 **Consultation responses to the draft Plan HIA**

6.4.1 **Analysis of representations from key stakeholders**

A small number of stakeholders provided comments on the draft Plan HIA. Some stakeholders, including South Wales Trunk Road Agency and Public Health Wales agree with aspects of the assessment, while many offer suggestions. A number of stakeholders offered no support or opposition of the assessment. The HIA, or aspects of it, is challenged by a number of stakeholders, including CTC Cymru, Public Health Wales and Sustrans Cymru with some suggesting it is inadequate and insufficient. Some stakeholders were particularly concerned about a lack of detail within the draft Plan HIA and suggested more information and data should be included.

Several stakeholders sought clarification on particular issues. For example, Public Health Wales asked for further information on which communities would be
affected by severance and degradation in air quality. As well as suggesting the assessment should include more detail about environmental health data, crash risk and severity, Public Health Wales also sought more defined timescales and direct engagement with affected residents.

Public Health Wales commented that the assessment is too general, recommending a further HIA is carried out at scheme level. NHS Wales Health Impact Assessment Support Unit welcomed that the assessment would be updated with comments from the stakeholder workshop and the consultation.

A number of stakeholders expressed concerns that alternatives to a new road have not been taken into account in the assessment. These stakeholders suggested benefits to health can be better accessed through alternatives such as increased use of public transport.

A few stakeholders commented on the complementary measure of providing more walking and cycling infrastructure in relation to the draft Plan HIA. The public health benefits of walking and cycling were highlighted by some stakeholders, with the Campaign for Better Transport suggesting more detail of these complementary measures is needed in the HIA.

Some stakeholders, including transport organisations, public sector and community organisations and town and community councils, raised concerns about aspects of the draft Plan HIA, often disagreeing with its conclusions due to the scoring of certain criteria. Stakeholders expressed particular concern about the assessment’s claim that air quality would improve and the health benefits resulting from this. Several stakeholders, including Sustrans Cymru and Newport City Council, suggested the assessment fails to consider the increase in car use stimulated by a new road and the subsequent increase in pollutants, which they believe would reduce or eliminate any improvements to air quality.

Sustrans Cymru expressed concern that even though the draft Plan HIA acknowledged there would be changes in levels of air quality and noise pollution, the health benefits are scored positively. Newport City Council expressed concerns that there is a lack of detail regarding possible junctions along the route, suggesting the location of junctions can play a crucial role in local air quality. They suggested further assessment is required in regards to this issue and if needed, mitigation measures should be included.

Newport City Council expressed concern over the possible impacts construction could have on local air quality.

Newport City Council also made comments on contaminated land within the construction area. They highlighted the danger of re-using material recovered from contaminated sites and suggested a thorough human health and environmental risk assessment of this material before its re-use.

NHS Wales Health Impact Assessment Support Unit stated that they consider the assessment to be too general and that they would like further and more detailed assessment to be carried out as the project progresses, in line with the WelTAG requirements.
6.4.2 Analysis of representations from members of the public and other organisations

About 15 respondents stated that they support or are satisfied with the draft Plan HIA, with most of these noting that the assessment, including the list of stakeholders, is comprehensive. A few suggested that the assessment is so comprehensive that it could be challenging for readers to determine the main points. Several respondents suggested that they do not have the expertise to comment on the assessment.

About five respondents suggested the assessment is unconvincing, biased or irrelevant to the project. One respondent observed that some negative aspects mentioned in the draft Plan HIA do not appear in the consultation document.

A large number of respondents did not provide an overall opinion on the draft Plan HIA. One respondent had no interest in an assessment of potential impacts on health. A handful of respondents stated that they did not read the assessment.

Some respondents challenged the assumptions and justifications used in the assessment. For example, a few respondents observed that the assessment focuses solely on physical health and not the broader issue of well-being. Some respondents argued that the scope of the assessment is too narrow, as it confines health benefits to those related to journey times or because it does not consider secondary health impacts resulting from potential impacts on wetlands and other habitats and the curtailment of recreation use this could entail. A few respondents disputed the assessment’s figures or projections, mainly those regarding air quality and emissions. These concerns led some respondents to state they oppose the assessment. One respondent expressed confusion as to whether the assessment is complete.

Several comments related to the criteria used in the assessment. One respondent suggested that the impact on health that could result from a loss of recreational amenity use, and enjoyment of biodiversity and green spaces, particularly within the Gwent Levels, are not considered as criteria. A small number of respondents remarked that the health impacts of reduced car use or an increase in other modes of transportation – such as cycling – were not sufficiently discussed. A few respondents suggested the assessment does not pay regard to mental health, while a few others believe that the health impacts from a reduced quality of life that could result from the project are not mentioned.

Some respondents argued that the assessment is not complete without additional information, such as information about noise – and mitigation of noise – during construction and operational phases of the project, and about air quality. A few respondents suggested specific details they would like the assessment to include, such as a list of the communities and vulnerable groups that would experience negative health impacts, and the inclusion of all viable alternatives.

A few respondents argued that the assessment should be re-run. One respondent asked whether other Welsh Government schemes have Health Impact Assessments.

A small number of respondents discussed the potential forms of mitigation available and the impact that they may or may not have. One respondent asserted
that mitigation measures are needed because of the potential impact the project would have on air quality. Another respondent doubted that mitigation efforts to provide cycling and walking routes would have an impact on health, claiming few people would have an incentive to use them.

6.5 HIA Workshop

A HIA Workshop was undertaken with invited stakeholders at the Urdd Hall, Cardiff, on 12 November 2013. Those invited were considered by the Welsh Government to represent relevant and appropriate organisations to help shape the HIA of the draft Plan to address transport related problems on the M4 Corridor around Newport (see Section 3 for more information).

During the workshop, two primary tasks were undertaken and these provided the stakeholders with the opportunity to provide comments on:

1. The methodology adopted to undertake the HIA; and
2. The appraisal undertaken for each of the health impact and Welsh Transport Planning and Appraisal Guidance criteria associated with health.

6.5.1 Comments on HIA methodology

As part of the first task of the workshop, attendees were invited to provide and discuss comments associated with the methodology adopted to undertake the HIA. A summary of the issues is provided below.

- **Timing of the workshop:**
  
  It was suggested that the workshop could have been held before the launch of the draft Plan consultation, in order to help shape the HIA Report consultation document. It was discussed that the Welsh Government undertook a scoping exercise with the WHIASU in order to agree the methodology for the HIA, and it was considered by the Welsh Government that a public consultation, with a comprehensive publicity campaign would provide for a wide range of stakeholders and public to help shape the HIA, which is an iterative process. It was appreciated that the HIA workshop would complement the public consultation and the timing afforded attendees with sufficient time to respond formally to the draft Plan consultation (ending 16 December 2013).

- **Stakeholder representation:**
  
  It was suggested that the workshop might have invited residents who could be affected by the draft Plan. It was discussed that at this strategic level, many people could be affected by a new road to the south of Newport and the complementary measures. It was also acknowledged that the public consultation offers a specific but open question on the HIA, whilst the drop-in exhibitions allow for face-to-face engagement on particular issues or queries with the project team.

  It was agreed that the workshop should be targeted at professionals who can comment on the methodology and assessment undertaken in a focused environment, whilst the presence of council officers ensures that there is representation of local authorities and their associated communities. It was
noted that the relevant attendees will promote the draft Plan consultation to the Newport citizen’s panel and encourage their engagement with the consultation. It was highlighted that the next public drop-in exhibitions were being held on 25 and 26 November 2013 at the Newport Centre.

An attendee identified that they represented ‘Mechanie’, which is a group of representatives of protected characteristics with health and equality interests. It was agreed that specific engagement with this group would be explored by means of an Equality Impact Assessment workshop.

- **Level of available information:**

  It was suggested that some quantitative information would be useful as part of the HIA to identify the numbers of people and properties potentially affected adversely, or who might benefit from the scheme. It was clarified that this is a strategic level document and an appropriately proportionate level of detail has been applied to the appraisal. It was noted that more quantitative detail could be provided at a scheme level when there would be a Preferred Route of a new section of motorway, if the draft Plan is adopted.

- **Quality of the methodology:**

  Attendees suggested that the methodology is “gold standard”. It was agreed however, that the HIA will only be valuable if the Action Plan is practically implemented. It was agreed that the Action Plan should help inform scheme level design, mitigation measures and monitoring plans. Further HIA should be undertaken at a scheme level to build on this Action Plan and address any adverse impacts identified by the HIA process.

- **Status of complementary measures:**

  An attendee also representing the South East Wales Transport Alliance identified that the group has consulted on plans for a B4245 link, and the draft Plan Consultation Document also refers to a similar link as a complementary measure. Clarification was sought as to whether they are the same proposal. In response, the Welsh Government confirmed that this complementary measure seeks to provide a road link between the M48 and the B4245 to benefit users of the local road network and provide relief to Junction 23A. This measure was supported by residents to the east of Newport during previous stakeholder engagement on M4 improvements, including the 2006 public exhibitions held on the M4 Relief Road Preferred Route and Junction Strategy. It was agreed that the development of the complementary measures, at a scheme level, would build on any relevant responses to the draft Plan consultation. The Welsh Government suggested that it would welcome specific engagement with the South East Wales Transport Alliance on the development of a B4245 link at the appropriate time, should the draft Plan be adopted.
6.5.2 Comments on HIA appraisal

As part of the second task of the workshop, attendees were invited to provide and discuss comments associated with the appraisal undertaken for the HIA. A summary of the issues is provided below.

- **Points of clarification:**
  Attendees outlined a need to make clear throughout the appraisal where impacts relate to the proposed new road and the potential re-classification of the existing M4 as sometimes this was unclear, particularly when referring generally to ‘the M4’.

- **Level of information provided:**
  Attendees agreed that the level of information included in the assessments are appropriate but that the strategic nature of the HIA may be frustrating for some people who want more detail in order to make informed comments. Some attendees suggested that the assessments could change at a scheme level, should more information be available to inform the assessment. It was appreciated that a more detailed level of information would be appropriate at a scheme level, when further HIA may be undertaken, should the draft Plan be adopted.

- ** Accordance with guidance:**
  Attendees suggested that the HIA is in accordance with appropriate guidance from WHIASU and WelTAG. Some attendees suggested that the draft Plan HIA is of a very high quality and hoped that the implementation of the Action Plan is addressed to the same “gold standard” as in which the HIA has been undertaken. Further clarity was requested in relation to how the scoring has been determined.

- ** Scope of assessment:**
  Some attendees sought clarification on the geographic area to which the HIA applies. It was suggested that it is important to explore the specific impacts of the draft Plan on both the existing M4 and the new section of motorway corridor. It was agreed that the HIA does address this and that the South East Wales wide approach is suitable at this stage.

- **Assessment conclusions:**
  Some attendees sought further analysis in relation to the identification of specific groups and/or geographical areas affected, recognising a potential impact on these groups and areas even if it’s not quantifiable at the strategic level.

- **Consultation:**
  Attendees suggested that it is challenging to engage with the appropriate people on HIA, but that the workshop invited a rounded group of relevant organisations that is sufficient and appropriate to discuss the HIA. It was specifically noted that the lack of engagement and attendance to the workshop by Aneurin Bevan Health Board was disappointing, as they are the key organisation that delivers healthcare services in this area. It was also suggested
that the invite list to the workshop may have included the police, although they may be more engaged on matters of equality and wellbeing.

- **The role of technological advances:**

  It was discussed by some attendees that the role of technology might be significant in making vehicles more sustainable and thus reducing emissions, air and noise pollution in the future. It was advised that this might be something to consider in the assessment undertaken because by taking emerging technologies into account, there may not be any problems in these areas in the longer term.

- **Comments associated with the appraisal of the draft Plan against HIA lifestyle criteria:**

  The provision of a new road will encourage more driving than walking, which makes the complementary measures of walking and cycling important elements of the draft Plan in terms of delivering health benefits.

  The commitments in relation to walking and cycling as complimentary measures are vague and the assessment would benefit from more certain commitment. It was suggested for example that this may include a route alongside the road and the example of the Church Village bypass in Rhondda Cynon Taff was given.

  Should the existing M4 be reclassified, there could be more crossings across the road, benefiting local accessibility, pedestrian and cycling. There may also be scope to introduce park and ride facilities, which would also provide benefits.

  Monitoring will be key as the effects of a scheme will only develop once it is implemented. It will be important to monitor the actual results of the intervention and then react accordingly with additional mitigation measures if required.

  If journey times are improved and journey time reliability is increased, there will be more time for leisure and recreation, which brings health and wellbeing benefits.

  The issues associated with severance to the south of Newport will be important to understand at a scheme level.

  The peak for rush hour is spreading so people are going to work earlier or later, which impacts on personal time and compromises the work/life balance.

  The scoring for these criteria is considered to be correct as minor positive benefits likely.

- **Comments associated with the appraisal of the draft Plan against HIA social and community criteria:**

  A lot of people that are born in Newport tend to stay and reside within Newport, often moving within the same authority area. An issue is that the GP catchment area is Newport-wide, meaning that the many people that choose to keep the same doctor then travel further from their address for appointments.

  In terms of spirituality, there will be impacts with increased accessibility for Somali Muslims who predominantly travel from Newport to Cardiff to access
places of worship. Christians mainly travel on Sunday mornings to places of worship and locally, when there is generally less traffic on the roads. Most Muslims in Newport tend to walk to their local places of worship, so there will be little effect on their travel unless the complementary measures are of benefit to their routes for walking.

There are no authorised traveller sites in Newport, which is a popular stop-off destination for the many travellers who use this popular and strategic east-west route. It may be that travellers will bypass Newport if the new road is implemented with few junctions. The construction of the scheme is likely to attract many travellers during works, as they generally seek this type of work. The Action Plan should consider how to provide for travellers in this case.

It is considered that there may be scope to change the scoring of these criteria to neutral.

Severance was raised due to the linear nature of the routes and in particular ensuring that routes do not affect access to the Gwent Levels as important recreational areas during construction and operation.

- **Comments associated with the appraisal of the draft Plan against HIA living conditions criteria:**

  There will be a significant psychological impact as a new section of motorway will have an important impact in sending a message that Wales is open for business. However, the impact will vary between construction and operation, with the benefits being most realised once the new road is open.

  A new section of motorway will be positive for the regeneration of Newport and its key economic areas including Llanwern and Celtic Springs.

  The potential air quality impacts during construction of any new road need to be referenced in the assessment.

  The assessment makes specific reference to the population of Duffryn and it was considered a similar reference needs to be made in relation to the settlement of Magor.

  The crossing of the Usk bridge structure is likely to be attractive to vulnerable people with severe mental health problems, in terms of suicide. The location of the structure is likely to mean that any person that jumps from the bridge will have a high risk of death and be carried by the strong tide with reduced chance of recovery. The Action Plan should encourage limited pedestrian accessibility to the structure in order to prevent this potential issue.

  The main issue in terms of scoring afforded to the criteria is the economic benefits compared to any environmental dis-benefits. It is considered that the scoring of criteria is correct, although there may be scope to increase it to a greater positive if it leads to greater economic benefits and regeneration of Newport, depending on the junction strategy adopted at scheme level. However, in light of the likely impact on the environment, the minor positive scoring may be appropriate.

  Concerns were raised in relation to the fact that the proposed routes pass through a number of historical or operational waste disposal sites. It was felt that these could bring risks during construction through the disturbance of materials and potential air quality issues through release of dust as well as
potential contamination issues through the movement of material across the site from these former waste sites.

The assessment recognises the potential impact of noise but does not recognise that noise can travel and may therefore affect a wider geography. This was felt to be a particular concern due to the relatively flat nature of the area.

- **Comments associated with the appraisal of the draft Plan against HIA working conditions criteria:**

  The Newport population has significant mental health problems compared to other local authority areas, largely due to low incomes and poor economic conditions linked to the recent recession. It is considered that the scheme will have great benefit to the local and regional economy. Therefore the scoring of these criteria should increase to major positive.

  The assessment should acknowledge the risks associated with working on potentially contaminated sites.

  It was outlined that junctions on major road links often develop into strategic hubs for employment clusters and this should be considered during the junction strategy.

  The assessment should give consideration to businesses currently located along the M4 and the potential impact on these companies who currently benefit from the strategic location. The Celtic Manor was given as an example.

- **Comments associated with the appraisal of the draft Plan against HIA services (access to) criteria:**

  There is a concern that the new route may not provide good links to the planned critical care centre to the north of Newport, unless a suitable junction strategy is developed. This is associated with the increased likelihood of serious road traffic accidents to the south of Newport if this route is provided.

  Reduced traffic congestion and improved journey time reliability will be some of the benefits of this scheme. This will help improve access to healthcare facilities and improve appointment attendance records at health services.

  Community severance is an unknown impact until the junction strategy and scheme level of detail is available. With this uncertainty, the scoring of criteria is appropriate but could be increased as a major positive if addressed in a beneficial manner.

  Community transport services and school travel is disrupted when there is congestion, and severely disrupted when there is an accident or incident. The scheme will remove these problems.

  The nature of the localised school catchment areas mean that increased strategic travel as result of the scheme would not increase accessibility to schools. However, the improved traffic conditions would benefit parents’ driver stress and wellbeing.

  If the reclassification of the existing M4 meant that access to Carleon could be improved, then there would be major benefits to accessibility to the north of Newport.
The potential for a park and ride scheme or areas for car sharers along the existing M4 was discussed, offering benefits for those commuting, particularly across the bridge.

- **Comments associated with the appraisal of the draft Plan against HIA socio-economic and environmental criteria:**

Incorporating flora and fauna as part of the construction works will be important to improving driver conditions and the environmental benefits of the scheme.

The new section of motorway will deliver significant travel time savings and have agglomeration benefits.

The impact on Site of Special Scientific Interest (SSSI) and SAC designations will be negative. In particular, the scheme level design of the River Usk crossing will be important to reducing impact on the River Usk SAC. These impacts might reduce the scoring of criteria to minor positive only, although the economic benefits could outweigh this environmental negative.

Technological advances are important to consider in the sustainability of vehicles and associated likely reduced impact of motorway transport on emissions, air and noise quality.

Consideration should be given to a junction strategy that brings greatest socio-economic benefit while minimising the health and well-being impacts of those that may be next to the junction. It was suggested that the area around the Docks would be suitable in terms of supporting the future of the Docks, providing a direct link to Usk Way and the City Centre, the availability of land in that area and the fact that the area doesn’t and is unlikely to support residential receptors.

- **Comments associated with the assessment of the Reasonable Alternatives and Do Minimum Scenario:**

The Red Route has less capacity as a dual carriageway and so would have less benefit to South Wales, with less resilience provided at peak times. There would also be limited benefit to the north of Newport as this option would not see the existing M4 reclassified with potential associated enhancements to junctions.

The potential impact on the landfill site in Newport would be significant if the Red or Purple Route were progressed. The cost and risks would be high as an alternative site would need to be found and the extent of contamination is largely unknown.

The Red and Purple Routes are located closer to properties and communities in Newport, which would suffer increased noise and air pollution.

The Black Route navigates away from the urban centre of Newport and thus avoids the communities that suffer the highest levels of deprivation, which is a benefit of this route.
6.6 Summary

The HIA in support of the Plan as presented in section 7 has been undertaken in line with the scoping responses received. Where possible the assessment has also considered and reflected comments received on the HIA for the draft Plan as detailed in section 6.4.

Where comments have not been reflected in this assessment it is likely that these relate to scheme level HIA and should therefore be considered in subsequent versions of the HIA when undertaken for the detailed scheme design.
7 HIA Appraisal

This strategy level assessment of potential impacts on health is provided in an appraisal summary table. Table 7 provides an appraisal of the Plan, whilst Table 8 provides an appraisal of the Do Minimum Scenario (doing nothing above what is already planned or committed). Table 9 provides a comparison of the appraisals.

As set out in Section 5, HIA is an iterative process. This document forms a strategy level HIA of the M4 Corridor around Newport, and an appropriate qualitative appraisal has been undertaken that builds on previous relevant HIA and responses received during consultation. Further and more detailed scheme level HIA may be undertaken as part of the detailed design stage.

The assessment has focussed on the target groups identified in Section 4, assessing the likely change to these groups with the Plan being implemented.

Table 7 HIA Appraisal of the Plan

<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>Assessment</th>
<th>Distribution</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lifestyle / capacity affecting health</strong></td>
<td>The Plan would improve accessibility to health, care, training and education facilities and services. However this may primarily benefit those with access to a private vehicle. The peak for rush hour is spreading, which means that people may travel to work earlier or later, which impacts on personal time and compromises the work/life balance. If journey times are improved and journey time reliability is increased, there could be more time for leisure and recreation, which brings health and wellbeing benefits. Complementary measures could bring improved access to facilities for those who rely on other transport modes through improved walking and cycling infrastructure and linkages to public transport interchanges. This would be likely to encourage local trips to be made by such modes and as such benefit health and well-being.</td>
<td>General population with access to a car</td>
<td>(+)</td>
</tr>
</tbody>
</table>
### Assessment Criteria

<table>
<thead>
<tr>
<th>Social and community: influences affecting health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family: structure and function, parenting</td>
</tr>
<tr>
<td>Community: social support mechanisms, social networks, neighbourliness, peer pressure, community divisions, degree of isolation, historical identity, cultural and spiritual ethos.</td>
</tr>
</tbody>
</table>

### Distribution

- General population, Geographical groups

### Significance

(+)
<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>Assessment</th>
<th>Distribution</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Living conditions</strong></td>
<td>The new section of motorway 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. 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. The impacts of air, noise and dust pollution during construction are likely to affect those who live in close proximity to the new section of motorway. The new section of motorway would also partly pass through contaminated land. Modern construction methods would aim to limit any impacts. The Plan would improve transport safety largely 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. The crossing of the Usk bridge structure is likely to be attractive to vulnerable people with severe mental health problems. Mitigation would include no provision of pedestrian access in order to prevent suicide attempts. The new section of motorway would cross the River Usk SAC and SSSI and the Gwent Levels and would be likely to impact adversely on the landscape. There could be a negative impact on health as a result from the actual or perceived loss in physical space and/or quality of recreational amenity use of these areas. There may also be a psychological impact from construction activities and possible impact on property values and perceived quality of life. This may be positive or negative depending on proximity to the route and stage of the project. There will be a psychological impact when the new section of motorway is opened in terms of actual and perceived benefits to the economy.</td>
<td>General population, Geographical groups (specifically communities located along the route of the existing M4 between Magor and Castleton, and the new road)</td>
<td>(+)</td>
</tr>
</tbody>
</table>
Ill health is often associated with economic deprivation. Key stakeholders have suggested that the Newport population has significant mental health problems compared to other local authority areas, largely due to low incomes and poor economic conditions linked to the recent recession.

It is considered that the scheme will have great benefit to the local and regional economy. The construction of the new section of motorway 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.

The provision of junctions on major road links can provide opportunities for economic development.

Journey times and journey time reliability will improve for businesses located north and south of Newport.

Risks associated with working on potentially contaminated sites would be mitigated through modern construction techniques.
<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>Assessment</th>
<th>Distribution</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services (access to and quality)</td>
<td>Community transport services and school travel is disrupted when there is congestion, and severely disrupted when there is an accident or incident on the M4 around Newport. A new section of motorway would improve journey times and journey time reliability to benefit access to services and community facilities. This will help improve access to healthcare facilities and improve appointment attendance at health services. Whilst east-west transport connections would be enhanced by the provision of a new section of motorway, the reclassification of the existing M4 will aim to improve access to the north of Newport. The junction strategy will aim to improve access to healthcare facilities and provide good access from the new section of motorway to the critical care centre (currently planned to the north of Newport). The new section of motorway and its complementary measures are 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. Existing access will be maintained or enhanced where possible. A new section of motorway would improve the driver experience and help to reduce driver stress.</td>
<td>General population, Geographical groups</td>
<td>(++</td>
</tr>
<tr>
<td>Assessment Criteria</td>
<td>Assessment</td>
<td>Distribution</td>
<td>Significance</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Socio-economic, cultural and environmental</td>
<td>The Plan would deliver significant travel time savings and reliability benefits for businesses and commuters, leading to lower production costs and contributing to the competitiveness of transport dependent business in Wales. Improved accessibility within South Wales and to areas of England would lead to significant agglomeration benefits and higher productivity and/or employment in some sectors. The junction strategy will aim to provide opportunities for economic development and support the regeneration of Newport. Consideration will be given to a junction strategy that brings greatest socio-economic benefit while minimising the health and well-being impacts of those that may reside or work adjacent or near to a proposed junction. The reclassification of the existing M4 will aim to improve accessibility to the north of Newport and provide positive economic and tourism benefits, particularly to Caerleon. The new section of motorway would help to reduce congestion, which should help reduce vehicle emissions. However it is not clear whether the additional road capacity would lead to an overall increase in emissions in the long term. The new section of motorway 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. Incorporating flora and fauna as part of the construction works will be important to improving driver conditions and the environmental benefits of the scheme. Technological advances will be important to consider in the sustainability of vehicles and associated likely reduced impact of motorway transport on emissions, air and noise quality in the longer term.</td>
<td>General population, Geographical groups, Income related groups</td>
<td>(+++)</td>
</tr>
<tr>
<td>Assessment Criteria</td>
<td>Assessment</td>
<td>Distribution</td>
<td>Significance</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>Lifestyle/capacity affecting health</strong></td>
<td>No impact is likely to arise from the Do Minimum Scenario.</td>
<td>General population with access to a car</td>
<td>(0)</td>
</tr>
<tr>
<td>Smoking, nutrition, healthy eating,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>physical activity, alcohol/drug misuse,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sexual health, propensity to use health and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>care services, skills and knowledge,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>training and education.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Social and Community Influences affecting</strong></td>
<td>Travel conditions on the M4 are forecast to worsen over time, reducing</td>
<td>General population, Geographical groups</td>
<td>(-)</td>
</tr>
<tr>
<td><strong>health</strong></td>
<td>accessibility on the transport network.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increased congestion on the M4 could lead to severe disruption and congestion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>on the local and regional highway network, with significant delays and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>adverse effects on local roads being used as diversions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This would impact on local social networks, issues of severance and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>reduced accessibility.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment Criteria</td>
<td>Assessment</td>
<td>Distribution</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>------------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td><strong>Living Conditions</strong>&lt;br&gt;Built environment, civic design and planning, housing, noise, smell, air and water quality, physical view and outlook, public safety, waste disposal, road hazards, injury hazards, safe play spaces.</td>
<td>Traffic conditions are expected to deteriorate and stop/start driving conditions would create an adverse travel experience, leading to higher levels of driver stress. Increased congestion would also exacerbate the risk of incidents and accidents occurring. The 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.</td>
<td>General population, Geographical groups (specifically communities located along the route of the existing M4 between Magor and Castleton, and the new road)</td>
<td>(-)</td>
</tr>
<tr>
<td><strong>Working Conditions</strong>&lt;br&gt;Employment, workplace conditions, occupation, income.</td>
<td>Ill health is often associated with economic deprivation. Congestion on the M4 between junctions 24 and 29 is already thought to be impacting on business performance and the level of congestion is expected to increase. Cardiff and Newport have ambitious regeneration strategies and Monmouthshire is developing areas around Junction 23A of the M4. Traffic congestion on the M4 could hamper these plans and impact negatively on regional economic development. Congestion on the M4, particularly around Cardiff and Newport, is sighted by the business community in South Wales as a barrier to economic growth. Where congestion increases, the cost of transport for businesses, commuters and consumers and economic performance can be affected. Increased congestion would adversely impact on the movement of commuters. The M4 is heavily used by commuters and there are already significant movements of commuters between Wales and England over the Severn Crossings. Increased congestion would result in higher journey times for commuters, reducing the effective travel to work area.</td>
<td>General population, Income related groups</td>
<td>(-)</td>
</tr>
<tr>
<td>Assessment Criteria</td>
<td>Assessment</td>
<td>Distribution</td>
<td>Significance</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>Services (access to and quality)</strong> Medical services, caring services, careers advice and counselling, shops and commercial services, public amenities, transport, education and other services. Access to information technology.</td>
<td>Travel conditions on the M4 are forecast to worsen over time, reducing accessibility and journey time reliability on the transport network, to all services. Increased congestion on the M4 may lead to severe disruption and congestion on the local and regional highway network, with significant delays and adverse effects on local roads being used as diversions. This would impact on local social networks, issues of severance and reduced accessibility.</td>
<td>General population, Geographical groups</td>
<td>(-)</td>
</tr>
<tr>
<td><strong>Socio-economic, cultural and environmental</strong> Sustainability factors: biological diversity, efficient use of resources, pollution, diversity/local distinctiveness, climate Macro-economic factors: political climate, GDP, economic development, policy climate</td>
<td>Increased traffic congestion on the M4 would impact negatively on regional economic development. Where congestion increases, the cost of transport for businesses, commuters and consumers; and economic performance could be affected. Increased congestion would result in higher journey times for commuters, reducing the effective travel to work area. 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 conditions would worsen in areas surrounding the existing M4. Furthermore, traffic conditions are expected to deteriorate and slow-moving, stop/start driving conditions could lead to higher CO2 emissions than free-flowing traffic. Technological advances will be important to consider in the sustainability of vehicles and associated likely reduced impact of motorway transport on emissions, air and noise quality in the longer term.</td>
<td>General population, Geographical groups, Income related groups</td>
<td>(--)</td>
</tr>
<tr>
<td>WelTAG Criteria</td>
<td>Appraisal of Measures</td>
<td>The Plan</td>
<td>Do Minimum Scenario</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>------------------------------</td>
<td>----------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Lifestyle/capacity affecting health</td>
<td>(+)</td>
<td></td>
<td>(0)</td>
</tr>
<tr>
<td>Social and Community Influences affecting health</td>
<td>(+)</td>
<td></td>
<td>(-)</td>
</tr>
<tr>
<td>Living Conditions</td>
<td>(+)</td>
<td></td>
<td>(-)</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>(++)</td>
<td></td>
<td>(-)</td>
</tr>
<tr>
<td>Services (access to and quality of)</td>
<td>(++)</td>
<td></td>
<td>(-)</td>
</tr>
<tr>
<td>Socio-economic, cultural and environmental</td>
<td>(++)</td>
<td></td>
<td>(-)</td>
</tr>
</tbody>
</table>
### Action Plan

Table 10 provides an overview of potential actions that the Welsh Government will consider as part of scheme development that would be progressed as part of its Plan for the M4 Corridor around Newport. The actions outlined below aim to enhance the possible beneficial impacts and/or limit any potential adverse impacts on health as a result of the Plan being implemented.

Further and more detailed assessment of the potential impacts on health will be carried out as part of scheme level appraisal, in line with the requirements of WelTAG. This Action Plan will help to inform this further HIA for any schemes that are progressed as part of the Plan.

Most of the actions are relevant to a scheme level of appraisal, whilst monitoring would be proposed and/or undertaken by the Welsh Government as part of the potential detailed design, construction and operation of schemes.

#### Table 10  Action Plan

<table>
<thead>
<tr>
<th>Actions to be considered</th>
<th>Rationale</th>
<th>Relevant HIA Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use modern construction methods and appropriate management and mitigation of potential noise, air and dust pollution impacts during construction</strong></td>
<td>Reduce possible adverse impacts of construction on the population.</td>
<td>Living Conditions</td>
</tr>
<tr>
<td><strong>Identify and adopt mitigation measures to limit potential adverse environmental impacts on the Gwent Levels</strong></td>
<td>Reduce potential psychological impact of identified likely effects on the Gwent Levels.</td>
<td>Living Conditions</td>
</tr>
<tr>
<td><strong>Consider health issues as part of the development of a junction strategy</strong></td>
<td>Maximise socio-economic benefits from the positive impacts associated with the regeneration of Newport and its development areas. Minimising the health and well-being impacts of those that may reside or work alongside a motorway junction. Provide access to critical care facilities from the new section of motorway. Maximise potential psychological impact of the economic benefits.</td>
<td>Working Conditions Social and community influences affecting health</td>
</tr>
<tr>
<td><strong>Ensure safe working practices during construction</strong></td>
<td>Ensure the safety of workers and the community during construction. Mitigate risks of working with contaminated land.</td>
<td>Working Conditions Living Conditions</td>
</tr>
<tr>
<td>Actions to be considered</td>
<td>Rationale</td>
<td>Relevant HIA Criteria</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td>Consider measures to enhance the safety of users</td>
<td>Improve the safety of road users and pedestrians.</td>
<td>Living Conditions</td>
</tr>
<tr>
<td>Consider measures to ensure the safety of vulnerable groups and people with mental health problems</td>
<td>Ensure and improve the safety of road users and pedestrians. Provide for those with mental health problems.</td>
<td>Social and community influences affecting health</td>
</tr>
<tr>
<td>Appropriate diversions to any highway or pedestrian/cycle/equestrian route should be made, if required, during construction works that might obstruct an existing route</td>
<td>To maintain access to properties, facilities and services during construction.</td>
<td>Services (access to and quality)</td>
</tr>
<tr>
<td>Appropriate measures should be introduced to maintain or enhance any highway or pedestrian/cycle/equestrian route, if appropriate</td>
<td>To maintain access to properties, facilities and services by all modes of transport.</td>
<td>Services (access to and quality)</td>
</tr>
<tr>
<td>Work with stakeholders and local communities to identify appropriate pedestrian and cycling infrastructure issues, potential improvements and new connections</td>
<td>To ensure that the benefits of the complementary measures are maximised. To reduce impacts on severance and improve local accessibility. To encourage modal shift for local trips. To maximise health and wellbeing benefits.</td>
<td>Services (access to and quality) Lifestyle/capacity affecting health</td>
</tr>
<tr>
<td>Ensure appropriate mitigation measures are identified to enhance the environment and offset any adverse impacts on cultural and historical identity</td>
<td>Incorporating flora and fauna as part of the scheme could improve driver conditions and provide environmental benefits. To ensure that technological advances are considered as to the sustainability of vehicles and associated likely reduced impact of transport on emissions, air and noise quality in the longer term. Offset any adverse impacts of development on the landscape and cultural heritage.</td>
<td>Social and community influences affecting health</td>
</tr>
<tr>
<td>Actions to be considered</td>
<td>Rationale</td>
<td>Relevant HIA Criteria</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Identify opportunities to address cultural needs as part of scheme development</strong></td>
<td>To ensure that vulnerable groups benefit from improved access to community facilities and services including healthcare and places of worship. To provide for travellers who may be attracted to the local area during construction works.</td>
<td>Social and community influences affecting health</td>
</tr>
<tr>
<td><strong>Ensure the procurement process associated with any option targets local recruitment and training (during construction and maintenance activities)</strong></td>
<td>Improve local opportunities and access to employment and training.</td>
<td>Working conditions, Lifestyle/capacity affecting health</td>
</tr>
<tr>
<td><strong>Seek sustainable sourcing of materials and minimise site waste (during construction and maintenance activities)</strong></td>
<td>To support local suppliers and businesses. To limit carbon production and promote sustainability.</td>
<td>Socio-economic, cultural and environmental</td>
</tr>
<tr>
<td><strong>Prepare a Monitoring and Evaluation Plan</strong></td>
<td>To outline and undertake monitoring of impacts and effects associated with schemes progressed through the Plan.</td>
<td>All</td>
</tr>
</tbody>
</table>