

Adran Seilwaith yr Economi
Department for Economic Infrastructure



Llywodraeth Cymru
Welsh Government

**THE LONDON TO FISHGUARD TRUNK ROAD (A40) (PENBLEWIN TO
REDSTONE CROSS IMPROVEMENT AND DE-TRUNKING) ORDER 202-**

**THE LONDON TO FISHGUARD TRUNK ROAD (A40) (PENBLEWIN TO
REDSTONE CROSS IMPROVEMENT) (SDE ROADS) ORDER 202-**

**THE WELSH MINISTERS (THE LONDON TO FISHGUARD TRUNK ROAD
(A40) (PENBLEWIN TO REDSTONE CROSS IMPROVEMENT)))
COMPULSORY PURCHASE ORDER 202-**

STATEMENT OF CASE – PART B – STATEMENT OF NEED

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WELSH GOVERNMENT, CHIEF WITNESS

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1. Scope and Purpose of this Proof of Evidence

1.1 My Proof of Evidence provides an overview of the A40 Penblewin to Redstone Cross Improvements Scheme (hereby referred to as “the Scheme”) and its development. It also sets out the Welsh Government’s reasons for proposing that the published draft Orders should be made (subject to various suggested modifications).

1.2 My Proof of Evidence is presented in the following structure:

1. Personal Statement
2. Scope and Purpose of this Proof of Evidence
3. Background
4. The Published Draft Orders and Supporting Documentation
5. The Case for the Published Proposals
6. Objectives of the Scheme
7. Description of the Scheme
8. Environmental Appraisal and Mitigation
9. De-trunking Proposals
10. Sustainable Development
11. Construction
12. Land Acquisition and Compensation
13. Summary of Support, Objections and Representations
14. Conclusion
15. Declaration
16. List of Evidence.

1.3 I will rely on the following expert witnesses to cover their respective specialist fields:

- a) Philip Thiele BEng (Hons) MRes CEng MICE (Traffic and Economics) (WG 1.2)
- b) Geraint Jones MEng CEng MICE (Engineering) (WG 1.3)
- c) Andrew Sumner CMLI (Environment) (WG 1.4)
- d) Chloe Delgery MSc MPhil CEnv MCIEEM (Ecology) (WG 1.5)

- e) James Bellinger BSc, MSc, CEnv, CSci, MIAQM (Air Quality) (WG 1.6)
- f) Peter Mumford BSc BMus MIOA (Noise) (WG 1.7)
- g) John Davies MBE BSc MRTPI (Planning & Sustainable Development) (WG 1.8).

1.4 I will also rely on the following proof of evidence which is contained within an appendix in Andrew Sumner's proof of evidence:

- h) Mr Tony Kernon BSc(Hons), MRICS, FBIAC (Agriculture)

2. Background

- 2.1 My evidence will cover the development work undertaken along the A40 between 2001 and January 2019 at which time a commission was awarded to progress the Scheme. Appendix B, Figure 1 outlines a summary of the development work undertaken during this period, which is described in more detail below. Geraint Jones covers the development of the Scheme after January 2019 in his proof of evidence (WG 1.3.2).
- 2.2 In November 2001, the National Assembly for Wales published the Transport Framework for Wales¹. This outlined that the east-west transport corridor in West Wales had been the subject of a multi-modal study in the 1990s, which concluded that the A40 west of St Clears was in need of improvements.
- 2.3 The multi-modal study considered public transport improvements including rail, bus, freight and integrated bus and rail. However, it was concluded that the costs associated with enhanced passenger services were likely to exceed revenue, thus requiring an operating subsidy. It was also acknowledged that improvements to public transport would not reduce the amount of traffic on the A40 Trunk Road.
- 2.4 The multi-modal study, therefore, steered the decision to pursue road-based enhancements on the A40.
- 2.5 In March 2002, the Trunk Road Forward Programme (TRFP)² (Doc. 4.01.44) was published which included the A40 West of St Clears. The TRFP stated:

‘Improvement of the A40 trunk road, whether it be to single or dual carriageway standard, is beneficial in economic terms. Improvement to

¹ The National Assembly for Wales, The Transport Framework for Wales, (November 2001)

² Welsh Assembly Government, Trunk Road Forward Programme 2002

the road would not affect the number of people travelling on public transport significantly...

The A40 in West Wales forms the lowest standard section of the Trans European Road Network (TEN-T) in the United Kingdom and there are major problems associated with upgrading the freight carrying capacity of rail in this area which means that significant improvement in the foreseeable future is not viable...

We are therefore satisfied that improvement to the A40 between St Clears and Haverfordwest is needed and that economic benefits will accrue. Upgrading the road to dual carriageway standard is likely to be justified but before a decision is finally made, we need more information on the environmental implications associated with alternative standards.'

2.6 A Route Options Report (ROR) (Doc. 4.02.01 and 4.02.02) was commissioned subsequently to explore single and dual carriageway options.

2.7 In relation to the section of road between Redstone Cross Junction and Penblewin Roundabout, 3 single carriageway options and 2 dual carriageway options were considered:

- a) Single Carriageway Option 1 – passes south of properties at Blackmoor Hill, provides a junction for these properties at far eastern end of the Scheme with 600m overtaking in each direction.
- b) Single Carriageway Option 2 – move the road away from the residential properties at Blackmoor Hill, followed by a northern bypass of Redstone Cross Junction, no overtaking opportunities.
- c) Single Carriageway Option 3 – minor re-alignment and improvement of existing A40 including single lane dualling at the Redstone Cross Junction and widening the approaches.

- d) Dual Carriageway Option 1 – passing south of Blackmoor Hill with overbridge at Redstone Cross (properties on the southern side of existing A40 would need to be acquired).
- e) Dual Carriageway Option 2 – runs to the north of properties at Blackmoor Hill, crossing the existing road midway between Blackmoor Hill and Redstone Cross.

2.8 Whilst this development work preceded the WeITAG 2008³, each of the options were appraised using the Scottish Transport Appraisal Guidance (STAG)⁴ appraisal process, which included consideration on the impact on the environment, the economics of the options and transport planning benefits. The results were presented in an appraisal summary table included in Appendix B of the ROR, which should be referred to for further information about the selection of options for further appraisal at that time.

2.9 The ROR concluded that a number of route options should be discarded for reasons including:

- a) cost;
- b) major adverse environmental impact (woodland habitat); and
- c) not addressing the identified overtaking and severance problems.

2.10 A roundabout junction was not considered appropriate from a traffic flow / turning movement consideration or in view of the likely demolition to property required and the delay to traffic flow introduced.

2.11 Other routes that performed better in addressing the problems balanced with their likely economic, social and environmental impacts, were taken

³ Welsh Assembly Government, Welsh Transport Planning and Appraisal Guidance 2008, (June 2008)

⁴ The Scottish Government, Scottish Transport Appraisal Guidance 2008, (June 2008)

forward for further consideration in a Technical Appraisal Report (TAR)⁵ (Doc. 4.02.03), which was subsequently undertaken.

2.12 In July 2013, Edwina Hart AM CStJ MBE, Minister for Economy, Science and Transport, published a written statement outlining her priorities for Transport. The statement included the following:

“Improving the A40 has been identified as a priority by the Haven Waterway Enterprise Zone Board and I intend to undertake further development of previously proposed improvements.”

2.13 The Welsh Government then commissioned a further study in 2015, which updated work completed previously. The 2015 study further considered the need for the A40 improvements and appraised a number of options using WelTAG 2008 guidance. This included options at Redstone Cross Junction⁶.

2.14 The 2015 study reconfirmed that the main problems with the section of the A40 between St Clears and Haverfordwest include:

- a) Limited overtaking opportunities (particularly eastbound), which leads to poor journey time reliability and driver frustration risky manoeuvres and collision incidents;
- b) Inconsistency in the level of overtaking provision between the eastbound and westbound directions with currently a total of 5.5km in the westbound direction and 3.2km in the eastbound;
- c) Where overtaking provision does exist, it is currently not spread along the length of the A40 such that there are long lengths in each direction with no opportunity for overtaking;
- d) Convoys of heavy goods vehicles from the ferry ports and slow-moving agricultural vehicles both of which contribute to periods of

⁵ Welsh Assembly Government, A40 West of St Clears – Technical Appraisal Report, (February 2004)

⁶ <https://gov.wales/sites/default/files/publications/2017-09/a40-st-clears-to-haverfordwest-study-design-options-report-volume-1.pdf>

- platooning and journey time unreliability when combined with limited overtaking opportunity;
- e) Slow moving traffic during the summer tourist seasons causing platooning and journey time unreliability when combined with limited overtaking opportunity;
 - f) Substandard sections of existing road;
 - g) A mix of traffic types including local motorists, HGVs, agricultural vehicles, strategic travellers and tourists on the same road;
 - h) Numerous side road junctions and the high number of direct accesses to property and fields; and
 - i) There are seasonal spikes in traffic volumes on the A40 and indeed the A477 during the summer months

2.15 The 2015 study included an Economic Activity and Location Impacts (EALI) Report. This report explained whilst the A40 may be seen as an important local issue, it is unlikely that a conventional Transport Economic Efficiency (TEE) analysis would generate a positive Net Present Value (NPV) and Benefit-Cost Ratio (BCR) for a Scheme of this nature given the relatively low traffic volumes. The report clarified that EALI Guidance states that:

“It is important to recognise that perceptions of problems with the transport system by users, operators, the public at large and politicians can be equally as important as problems that can be quantified through analysis of data”.

2.16 Reflecting the data presented for the economy in this report, the 2015 study found:

- a) The South West Wales region has lagged behind the other areas in Wales in terms of productivity;
- b) Pembrokeshire was disproportionately impacted by the recession and is lagging behind the rest of Wales in terms of its recovery;
- c) The south-east and south-west of the County, particularly the industrial towns of Pembroke Dock and Milford Haven, have the

lowest levels of attainment reflecting the wider socio-economic profiles of these areas;

- d) The absence of higher education establishments in Pembrokeshire means that prospective students have to leave the County to study; and
- e) Pembrokeshire is perhaps not receiving an equitable share of foreign direct investment projects and this may, in part be due to perceptions of, or the reality of, its peripheral location which is exacerbated by the current standard of the A40.

2.17 The 2015 study also explained that:

- a) A common theme to emerge during a consultation process was that Pembrokeshire is perceived to be 'far away' and that this is deterring inward investment, the development of the travel-to-work market within the Swansea Bay City Region, tourism and population retention;
- b) The evidence collected through the baselining, consultation and business survey in 2015 suggests that the main impact of improving the Pembrokeshire road network would be to tackle the perception of remoteness;
- c) Road improvements could support Pembrokeshire in attracting additional inward investment to the area and would assist Pembrokeshire in tackling perception-related issues facing the area.

2.18 In February 2017, the Welsh Government appointed Carillion to develop a solution to address the transport related problems along the A40 between Llanddewi Velfrey and Penblewin Roundabout. Carillion were supported by Arup and RML as technical and environmental advisors respectively.

2.19 A further study from 2017 resulted in the completion of a WelTAG Stage 3 report in accordance with WelTAG 2017 guidance, focusing on the A40 Llanddewi Velfrey to Penblewin Improvements. Draft Orders and a

supporting Environmental Statement (ES) were published for the A40 Llanddewi Velfrey to Penblewin Scheme in July 2019. The scheme was subject to a Public Local Inquiry in March 2020.

2.20 As part of the A40 Llanddewi Velfrey to Penblewin Improvements study, a public information exhibition was held in 2018 alongside a stakeholder engagement exercise. Attendees were invited to share their thoughts on the potential extension of the proposed Llanddewi Velfrey to Penblewin Scheme to include the section to Redstone Cross Junction. A total of 51 responses submitted via completed comment forms supported such a need whilst only 4 comments expressed some reservations / concerns about the Redstone Cross Junction proposal to be included as part of the Scheme.

2.21 In August 2018 the Cabinet Secretary for Economy and Transport, Ken Skates AM, confirmed in writing to the HM Senior Coroner as part of this response to the inquest into the death of a driver joining the A40 at Redstone Cross Junction⁷, that:

“there is a risk of future deaths at this location unless appropriate action is taken... Preliminary investigations have begun to develop further overtaking opportunities & safety improvements along the length of the A40. This includes improvements at Redstone Cross. These additional A40 improvements are included in the update of the National Transport Finance Plan (NTFP)”⁸.

2.22 Carillion entered liquidation in January 2018. The Welsh Government subsequently appointed Arup, supported by RML, to continue the development of the design up to publication of draft Orders and to support the Welsh Government through the Statutory process.

⁷ <https://www.judiciary.uk/wp-content/uploads/2018/09/2018-0242-Response-by-Welsh-Government.pdf>

⁸ <https://beta.gov.wales/sites/default/files/publications/2017-12/national-transport-finance-plan-2017-update.pdf>

- 2.23 Further to this, Arup (supported by RML) was instructed by the Welsh Government in January 2019 to develop a solution to address the transport-related problems along the A40 between Penblewin Roundabout and Redstone Cross Junction. Supporting the Penblewin Roundabout and Redstone Cross Junction Scheme is this WelTAG Study.
- 2.24 The problems and objectives are compatible with those from the A40 Llanddewi Velfrey to Penblewin Improvements. The concern for safety between Penblewin Roundabout and Redstone Cross Junction is particularly of significance for this Scheme, with particular concern for safety at the Redstone Cross Junction.
- 2.25 Although the design development and consideration of the Schemes are being undertaken separately, in the event of positive recommendation, the Welsh Government is minded to deliver both this Scheme and the A40 Llanddewi Velfrey to Penblewin Improvements as one scheme during construction.
- 2.26 As detailed in the Contract Notice (Doc.4.02.12), this Scheme is related to a programme financed by the European Union.⁹ Capital costs for the Scheme will be funded jointly by the Welsh Government and the European Regional Development Fund (ERDF). A Business Case for the Scheme has been accepted by the Welsh European Funding Office (WEFO) who have confirmed that ERDF funding for the Scheme is secure despite the UK's withdrawal from the European Union. The Welsh Government's intention is that capital costs will be shared, with the allocation of funding being approximately one-third Welsh Government and two-thirds ERDF.

⁹ Contact Notice (Doc. 4.02.12) Section II.2.13

3. The Published draft Orders and Supporting Documentation

- 3.1 Draft Orders set out the necessary rights and land needed for the Welsh Government to implement the Scheme.
- 3.2 The Environmental Statement identifies the main environmental effects of the Scheme and describes the proposed measures to avoid, remedy or reduce effects and provide environmental enhancement where practicable.
- 3.3 Table 1 below lists the published draft Orders and Environmental Reports.

Table 1: Published draft Orders and Environmental Reports

Title	Background Legislation	Publication Date	End of Objection / Comment Period
The London to Fishguard Trunk Road (A40) (Penblewin to Redstone Cross Improvement and De-trunking) Order 202- The “Line Order” (Doc. 2.01.01)	Highways Act 1980; Sections 10 and 12 (Doc. 4.01.03)	29 July 2020	9 September 2020
The London to Fishguard Trunk Road (A40) (Penblewin to Redstone Cross Improvement) (Side Roads) Order 202- The “Side Roads Order” or “SRO” (Doc. 2.02.01)	Highways Act 1980; Sections 12, 14, 125 and 268	29 July 2020	9 September 2020

Title	Background Legislation	Publication Date	End of Objection / Comment Period
<p>The Welsh Ministers (The London to Fishguard Trunk Road (A40) (Penblewin to Redstone Cross Improvement)) Compulsory Purchase Order 202-</p> <p>The “Compulsory Purchase Order” or “CPO”</p> <p>(Doc. 2.03.01)</p>	<p>Highways Act 1980; Sections 239, 240, 246 and 250</p> <p>as extended and supplemented by:</p> <p>Acquisition of Land Act 1981; Sections 2 and 19(3), and Schedule 2, Part 1 (paragraphs (1)(1)(b), (3) and (4))</p> <p>(Doc. 4.01.04)</p>	<p>5 August 2020</p>	<p>9 September 2020</p>
<p>Environmental Statement</p> <p>The “ES”</p> <p>(Doc. 3.01.01)</p>	<p>European Council (EC) Directive 2011/92/EU, as amended by Directive 2014/52/EU, as applied by section 105A of the Highways Act 1980, as amended by The Highways (Assessment of Environmental Effects) Regulations 1999 and The Highways (Environmental Impact Assessment) Regulations 2007 and the Environmental Impact Assessment (Miscellaneous Amendments relating to Harbours, Highways and Transport) Regulations 2017.</p>	<p>29 July 2020</p>	<p>9 September 2020</p>
<p>Statement to Inform an Appropriate Assessment</p> <p>The “SIAA”</p> <p>(Doc. 4.6.12)</p>	<p>Conservation of Habitats and Species Regulations 2010, Regulations 84 & 61 which implements EC Directive (92/43/EEC)</p>	<p>29 July 2020</p>	<p>9 September 2020</p>

- 3.4 The following Public Notices accompanying the draft Orders and supporting environmental reports were issued:
- a) a Public Notice announcing the publication of the draft Line Order and the draft Side Road Order on 29 July 2020 (Doc. 2.04.01);
 - b) a Public Notice announcing the publication of the draft Compulsory Purchase Order on 5 August 2020 (Doc. 2.04.05); and
 - c) a Public Notice announcing the publication of the Environmental Statement and SIAA on 29 July 2020 (Doc. 2.04.03).
- 3.5 The following documents were also issued:
- a) an Explanatory Statement for the draft Line and Side Roads Order, published on 29 July 2020 (Doc. 2.06.01); and
 - b) a Statement of Reasons for the draft Compulsory Purchase Order, published on 5 August 2020 (Doc. 2.06.02).
- 3.6 The Outline Statement of the Welsh Government's Principal Submission to be put forward at the Public Local Inquiry (PLI) was issued on 28 September 2020 (WG 1.0.1).
- 3.7 Documents referred to in this, and the other proofs of evidence are available online on the A40 Public Local Inquiry Website; the address for which is provided below. Hard copies will also be made available for inspection at the Public Local Inquiry venue.

Welsh: www.a40prc-publicinquiry.co.uk/cy

English: www.a40prc-publicinquiry.co.uk

Modifications

- 3.8 Following discussions with affected landowners and those with interests in the land, modifications to the published draft Side Roads Order and draft Compulsory Purchase Order are proposed. These modifications relate to changes in ownership and minor design detail amendments.

Evidence to explain the changes will be presented at the Public Local Inquiry by Geraint Jones (WG 1.5.2).

Public Local Inquiry

- 3.9 The Welsh Government gave notice of its intention to hold this Public Local Inquiry (PLI) to all objectors on 25 September 2020. A public notice announcing details of the PLI will be published on the 14 October 2020. A Procedural Note, outlining how the Inspector wishes to run the Inquiry, has been published and is available on the PLI website.
- 3.10 The stated purpose of the PLI is to consider the objections, representations and support to the Published Scheme. It is then for the independent Inspector to report his findings to the Welsh Ministers, giving his findings of fact, conclusions and recommendations.

4. The Case for the Published Proposals

- 4.1 The A40 is a route of national and international strategic importance forming part of the Trans-European Transport Network (T-ENT). At a regional and local level, it serves the county town of Haverfordwest, the tourist economy of central and north Pembrokeshire, the port of Fishguard and the industrial town of Milford Haven to the south.
- 4.2 The Haven Waterway Enterprise Zone in Pembrokeshire is based uniquely on potential and new energy sites, building on the area's established industry base. Around 20% of the UK's energy supplies are received via Pembrokeshire, and the Zone remains an attractive location for energy companies with its excellent access to energy infrastructure and established supply chain. The Zone is also gaining a marine energy focus, given its deep-sea port facilities combined with marine conditions suited to wave and tidal stream technologies, plus the benefit of electricity grid access.
- 4.3 Alongside work in the established energy and tourism sectors, life sciences, ICT and manufacturing firms are being targeted in the Haven Waterway Enterprise Zone. These require good access and connections to the transport network to assist the movement of labour and goods accordingly.
- 4.4 Despite this, the section of the A40 between St Clears and Haverfordwest is a relatively poor-quality route.
- 4.5 The Welsh Transport Appraisal Guidance (WeITAG) study (Doc. 4.03.03, 4.3.04, 4.3.07, 4.3.08) identified a range of actual and perceived problems to be addressed on the A40 between Penblewin Roundabout and Redstone Cross Junction, which were:
1. The A40 Redstone Cross Junction is below modern design standards. Poor visibility and sub-standard junction layout can lead to severe road accidents.

2. Limited overtaking opportunities lead to poor journey time reliability and driver frustration.
 3. Occasional convoys of heavy goods vehicles from the ferry ports and slow-moving agricultural vehicles can contribute to periods of platooning and journey time unreliability, which is exacerbated with limited overtaking opportunities.
 4. Seasonal variations in traffic volumes along the A40, especially during the summer months can lead to slow-moving traffic, causing journey time unreliability, which is exacerbated with limited overtaking opportunities.
 5. There are many side road junctions and direct accesses to properties and agricultural fields off the A40, which can contribute to operational problems along the road.
 6. A mix of traffic types using the road can contribute to journey time unreliability and driver frustration, risky manoeuvres and collision incidents.
 7. A lack of strategic public transport connectivity in Pembrokeshire generally means there is a dependence on the private car for inter-urban connections.
- 4.6 The Scheme seeks to address the problems as far as practicable whilst also taking into account wider social, cultural, economic and cultural considerations.

5. Objectives of the Scheme

5.1 The Scheme objectives are:

- O1** To enhance network resilience and improve accessibility along the east-west transport corridor to key employment, community and tourism destinations.
- O2** To improve prosperity and provide better access to the county town of Haverfordwest, the Haven Enterprise Zone and the West Wales ports at Fishguard, Milford Haven and Pembroke Dock.
- O3** To reduce community severance and provide health and amenity benefits.
- O4** To improve the Redstone Cross Junction safety (including perceived safety) and reduce the number and severity of collisions.
- O5** To promote active travel by cycling, horse riding and walking to provide opportunities for healthy lifestyles.
- O6** To deliver a Scheme that promotes social inclusion and integrates with the local transport network to better connect local communities to key transport hubs.
- O7** Deliver a project that is sustainable in a globally responsible Wales, taking steps to reduce or offset waste and carbon.
- O8** Give due consideration to the impact of transport on the environment and provide enhancement when practicable.

5.2 In accordance with Welsh Transport Appraisal Guidance (WeTAG 2017), an objective-led approach has been adopted. This means that a Scheme's inception starts by identifying problems and opportunities and defining what is to be achieved.

5.3 The objectives have taken account of particular drivers, issues and opportunities identified through a review of relevant legislation, policy,

guidance and the social / cultural, environmental and economic position within the study area and wider region.

- 5.4 The objectives, therefore, respond to the identified problems, aiming to help address them, as well as respond to the strategic issues identified in national and local policy and programmes, e.g. the need to improve connectivity to the Enterprise Zone and City Region.
- 5.5 In developing the objectives, a review was undertaken against the well-being goals as presented within the Well-being of Future Generations (Wales) Act 2015 (WFGA 2015) (Doc. 4.01.10), helping to ensure that the Scheme objectives align to the wider sustainable development principle of the Welsh Government, and take into account the needs of Wales' future generations. The Sustainable Development Report considers the Scheme's alignment with the Welsh Government's well-being objectives and concludes that overall the Scheme would align to the sustainable development principle. It is considered that the Scheme would result in opportunities to help achieve the well-being objectives, thus aligning positively to its cross-cutting strategies, contributing to the well-being goals, and helping Welsh Ministers satisfy their duties and obligations under the 2015 Act.
- 5.6 Specifically, it is considered that the Scheme would have direct contributions to 9 well-being objectives, albeit 1 of these there would only be some contributions. It is considered that for the well-being objective 'drive sustainable growth and combat climate change', the Scheme would drive sustainable growth overall however there would be some adverse impacts upon climate change, as a result of increased greenhouse gas (GHG) emissions. The SDR does identify some indirect, minor contributions to the remaining 3 well-being objectives.
- 5.7 It is further considered that the Scheme would perform positively against all but 2 of the Scheme-specific objectives, and as such, is expected to contribute positively to the well-being objectives and goals overall.

- 5.8 For example, it is considered that the Scheme would provide a high-quality road built to modern standards, which would replace what is considered to be the lowest standard section of TEN-T in the UK, thus contributing to delivering modern and connected infrastructure, one of the well-being objectives.
- 5.9 The Scheme would also improve journey time reliability, particularly at times of incidents and delays, and seeks to improve a key piece of infrastructure for future generations in Pembrokeshire, the wider region and those visiting from elsewhere. This would improve the accessibility of the region which would, for example, provide benefits for tourism as well as the economy in terms of improved access to the Haven Waterway Enterprise Zone.
- 5.10 This would help to build resilient communities and help to promote and protect Wales' place in the world. The Scheme would also contribute to improving access to health and care facilities, thus contributing to the delivery of quality health and care services fit for the future. These improvements would also help contribute to the well-being objectives: support people and businesses to drive prosperity, tackle regional inequality, and promote fair work.
- 5.11 The Scheme would also provide the opportunity for there to be improved active travel connectivity via proposed enhancements along the de-trunked A40 as well as the overbridge which would reduce conflicts between vehicles and WCHRs when crossing the proposed A40. It is considered that the overall improvement in active travel connectivity through the Scheme could lead to an increase in physical activity within the local area. The Scheme gives the chance for there to be introduced complementary active travel measures and would also help improve conditions for local bus services and connections by car to railway stations via the A40. These improvements for active travel and connectivity to and for public transport would provide benefits to several of the well-being objectives, most specifically, building healthier

communities and better environments, promoting good health and well-being and supporting people and businesses to drive prosperity.

5.12 The Scheme would provide improvements to safety, helping contribute to promoting good health and well-being as well as building healthier communities. Historical accident data between 2008 and 2018 shows that the observed proportion of accidents on the A40 between Penblewin Roundabout and Redstone Cross Junction in the 'killed or seriously injured' category (44.4%) is higher than the WebTAG average default proportion (18.1%). The accident analysis has shown that the severity of accidents on this section of the A40 is particularly skewed towards fatalities, with the likelihood of a fatality around 8 times higher than observations on roads of similar standard throughout Great Britain. Of the 9 personal injury accidents recorded over the 10-year period, 2 of these accidents resulted in fatalities, and another two accidents resulted in serious casualties. This is presented within the Initial Traffic and Accident Data Report (Doc. 4.05.01).

5.13 Redstone Cross has been identified as a particular accident blackspot with a cluster of collisions recorded at this location. It has also been identified that the majority of non-cluster incidents (67%) occurred due to vehicles veering onto the opposite side of the carriageway. This indicates that issues may exist with the current road layout, resulting in drivers veering into opposing traffic. This type of movement and associated accident is often associated with a lack of safe overtaking opportunities, driver frustration and risk taking.

5.14 Over a 60-year period, the Scheme would result in a saving of 18 accidents with 28 less casualties. Of these 28 casualties, forecasts indicate that there would be one less fatality, three less casualties with serious injuries and a reduction of 24 casualties with slight injury severity. This was forecast by COBA-LT software and is covered in further detail by the expert evidence of Philip Thiele (Traffic & Economics) (WG 1.2.2). Within the evidence of Philip Thiele, it is

explained that there are some limitations from the use of COBA-LT software and that analysis is very conservative as it understates the number of fatalities that would be saved by the Scheme.

- 5.15 The Traffic Forecasting Report (Doc. 4.05.03) also records that in the design year (2037) annual average daily traffic passing between Penblewin Roundabout and Redstone Cross is forecast to reduce by 82% as a result of the Scheme. The Scheme's offline nature, the improved standard of junction at Redstone Cross, the lack of direct accesses onto the Trunk Road and the provision of improved overtaking opportunities would reduce the likelihood of collisions through risky manoeuvres. As a consequence, the types of severe accidents that are associated with the current road configuration would be mitigated.
- 5.16 The A40 between Robeston Wathen and Slebech Park has already been upgraded to the Wide Single (WS) 2+1 standard proposed for this Scheme. Sections that have been upgraded to WS2+1 standard provide more safe overtaking opportunities than single carriageway roads. This results in a lower accident rate on WS2+1 roads. Between Haverfordwest and St Clears the accident rate for WS2+1 roads with 50 / 60mph speed limit is 54% lower than the equivalent accident rate for single carriageway roads with the same speed limit. Appendix B Figure 2 shows a cross-section drawing of a WS2+1 highway configuration.
- 5.17 It is considered that the Scheme would make some minor contributions to the achievement of the following well-being objectives: 'support young people to make the most of their potential'; 'build ambition and encourage learning for life'; and 'equip everyone with the right skills for a changing world'. Whilst contributions to these objectives would be no more than tangential, the Scheme's impact would nonetheless be positive and would not hinder the Welsh Government's ability to meet its well-being objectives. It is considered that the Scheme would overall contribute to 'driving sustainable growth' however, it is accepted that it

would not contribute directly to combatting climate change due to the increase in GHG overall.

5.18 The WelTAG Stage 3 Impact Assessment (Doc. 4.03.08) and Stage Report (Doc. 4.03.07) (WelTAG Stage 3 reports) confirm that the Scheme would contribute positively to the following Scheme objectives:

- a) To enhance network resilience and improve accessibility along the east-west transport corridor to key employment, community and tourism destinations.
- b) To improve prosperity and provide better access to the county town of Haverfordwest, the Haven Enterprise Zone and the West Wales ports at Fishguard, Milford Haven and Pembroke Dock.
- c) To reduce community severance and provide health and amenity benefits.
- d) To reduce the number and severity of collisions.
- e) To promote active travel by cycling, horse riding and walking to provide opportunities for healthy lifestyles.
- f) To deliver a scheme that promotes social inclusion and integrates with the local transport network to better connect local communities to key transport hubs.

5.19 The 2 objectives that the Scheme would not contribute positively to relate to reducing or offsetting waste and carbon, and the environmental impact of the Scheme. This is largely because of the construction vehicle emissions as well as the environmental impacts associated with the construction of the Scheme, such as the impacts on landscape.

5.20 Appraisal against the WelTAG impact areas focus on the four pillars of sustainable development, those being: economic; social; cultural; and environmental impacts. Overall, an assessment carried out within the WelTAG Stage 3 reports demonstrates that the Scheme would perform well against the majority of social, cultural and economic criteria. This includes providing benefits to safety, commuting, journey quality and access to services.

- 5.21 Whilst the Scheme is considered to contribute to improved air quality and the water environment, it is acknowledged that there would be some adverse environmental impacts including upon GHG, landscape and biodiversity.
- 5.22 A full environmental impact assessment of the Scheme is provided within the ES, and further expert evidence is presented within the statement of Andrew Summer (WG 1.4.2).
- 5.23 The ES has informed the WelTAG Stage 3 reports and the Sustainable Development Report for the published Scheme. The Sustainable Development Report considers how the Scheme aligns with the Well-being of Future Generations (Wales) Act (2015) (WFG Act) (Doc. 4.01.10) and its sustainable development principle. This document concludes that the Scheme has been designed and developed considering the 5 ways of working advocated in the WFG Act, whilst its outcomes would help the Welsh Government contribute positively to most of its well-being objectives, and by extension contribute positively overall to the well-being goals.
- 5.24 John Davies builds on the Sustainable Development Report in his evidence (WG 1.8.2) to examine further the extent to which the Scheme has been developed in accordance with the sustainable development principle and its contribution to the well-being objectives.
- 5.25 John Davies concludes in his proof of evidence (WG 1.8.2) that the Scheme has been identified and developed in accordance with the 5 ways of working set out in Section 5(2) of the WFG Act and hence the Welsh Government has acted in accordance with the sustainable development principle as defined in the Act.

6. Description of the Scheme

- 6.1 The Scheme would comprise a WS2+1 carriageway cross-section, which provides 2 lanes in one direction to allow overtaking, and 1 lane provided in the opposite direction. The overtaking lane is provided in the westbound direction.
- 6.2 The Scheme would also provide the construction of a new westbound junction at Redstone Cross and improved active travel links along the existing A40 which would be de-trunked.
- 6.3 The Scheme includes a proposed improvement section of Trunk Road over a total length of 1.8km. The redundant sections of the existing A40 road between Penblewin Roundabout and Redstone Cross Junction would be reclassified and cease to be a Trunk Road, reverting to the local authority.
- 6.4 The Scheme would commence approximately 550 metres west of the existing Redstone Cross Junction (Chainage (Ch) 0+000.), where the existing ascending A40 passes Sodston Lodge. The Scheme would leave the line of the existing A40 at Sodston Lodge and draw gradually to the south. At approximately Ch0+400 the road would cross a small wooded watercourse on an embankment up to 4 metres high. It would then begin to descend on a gentle gradient for about 1km, entering a cutting up to 7 metres deep through the Redstone ridge at Ch 0+500. To the north side of the Scheme would be properties at Redstone Cross Junction and to the south the Blaenmarlais Care Home. The B4313 Redstone Road would cross the A40 on a proposed bridge at Ch.0+570 and then join the de-trunked A40 on the east side of Redstone Cross Junction. The de-trunked existing A40 road would be a local road extending from Redstone Cross Junction to Penblewin Roundabout.
- 6.5 From Ch. 0+570 to Ch 0+800 the Scheme, still descending, would transition from cutting to embankment and continue the gentle left-hand curve to cross a small watercourse at around Ch. 0+860. Here the

Scheme would gradually transfer from cutting to embankment to cross lower-lying land occupied by woodland. The embankment would continue eastwards, crossing a further 2 minor watercourses, with the Scheme entering a shallow right-hand bend which would continue to Ch.1+450. At Ch+400 the embankment would cease, and the Scheme would continue east in a cutting up to 8m deep as it commences the climb towards Penblewin Roundabout at Ch. 1+760, which is roughly at ground level.

Overbridge for the B4313 Redstone Road (Narberth to Bethesda)

- 6.6 The proposed bridge would carry the B4313 Redstone Road across the proposed Trunk Road (Ch. 0+570), which at that point would be in a cutting up to 7m deep. The bridge would be sufficiently wide to carry the existing road with hardened verges to be consistent with the existing road width. The bridge would be a single span structure with abutments, constructed from concrete with precast concrete beams.

Penblewin Roundabout

- 6.7 The existing 4-arm Penblewin Roundabout would be replaced with an enlarged 6-arm roundabout. An enlarged roundabout has previously been proposed as part of the Llanddewi Velfrey to Penblewin Improvement scheme, which forms a separate set of draft Orders. The roundabout would provide connectivity between the proposed Scheme, the Llanddewi Velfrey to Penblewin Improvement scheme, and the A478 running north/south. The reconfigured Penblewin Roundabout would provide access to the De-trunked A40 (part of the Scheme) and the Penblewin Rest Area (as part of the Llanddewi Velfrey to Penblewin Improvement scheme).

Design speed and traffic flows

The Design Speed of the proposed Trunk Road is 100kph and would be subject to the national speed limit (60mph). Side Roads would be subject

to a 40mph speed restriction. This would be in keeping with the existing local road network.

Non-motorised Users

- 6.8 Taking into account the mitigation measures during construction and the proposed operational enhancements, no significant adverse effects are predicted upon Public Rights of Way; cycle routes and other routes used by WCHR; overbridges and underbridges; community severance; and de-trunking.
- 6.9 During construction, the existing A40, together with most local roads crossing the Scheme or linking to it, would remain open under traffic management where required, except for some overnight weekend road and lane closures during works such as utility diversions and tie-in works. A local diversion would also likely be required along the B4313 in order to enable construction of the overbridge. It is anticipated that bus services would continue to use the road network as they do at present, following any diversionary routes where necessary. Bus stops would be relocated as part of any diversion where the works affect stops at Redstone Cross Junction.
- 6.10 Following the completion of the construction works, the majority of traffic is forecast to utilise the new section of A40 which would provide an improved section of Trunk Road with safe overtaking opportunities. The existing A40 would be de-trunked and, given the reduction in traffic along this route, would be more attractive to WCHR users. The de-trunked road and the new overbridge would also provide wider connectivity into the PRow network which currently stops at the A40. The overbridge would also provide a new, safe crossing facility for this section of the A40 for motorised vehicles and WCHR, improving on the current junction arrangement / crossing facilities.
- 6.11 Further evidence on this matter is provided by Andrew Sumner (Doc. WG 1.4.2).

Traffic and Economics

- 6.12 The Scheme is one part of a wider set of improvements along the A40 Trunk Road between St Clears and Haverfordwest, which forms part of the Trans European Road Network (TEN-T). It would remove 82% of traffic between Penblewin Roundabout and Redstone Cross Junction, which would bring safety, health and amenity benefits to the community as a result of reduced severance caused by the high volume of traffic flows.
- 6.13 Analysis of the issues on this section of the A40 which have been undertaken does not capture the impact of slow-moving HGVs, agricultural vehicles, campervans or towing vehicles on other road users. Observations confirm that road users on the existing A40 are, at times, held up behind slow-moving vehicles and the occurrence of this would become more frequent as travel demand rises in future.
- 6.14 Strategic traffic travelling along the A40 via the Scheme would benefit from faster journey times and better journey time reliability. Additional overtaking opportunities would provide a more consistent driver experience along the A40. The Scheme would therefore improve journey quality and reduce driver frustration and stress.
- 6.15 WS2+1 roads are safer than S2 roads, which means the Scheme would result in a reduction in the number of accidents. Section 5.14 provides information relating to the forecasted accident savings from the Scheme.
- 6.16 The standard assessment for the calculation of the cost of the Scheme compared with its benefit provides a low cost-benefit ratio (BCR) of 0.27, and this is not the principal motivation behind the Welsh Government's case for the Scheme since this does not indicate a strong case in terms of value for money. The Welsh Government, in any event, regards the ratio as a conservative estimate on the basis that several additional benefits that would be likely to arise are not captured and also that the BCR is particularly sensitive to small changes in the assumptions

adopted for the Scheme. A key consideration, therefore, is that the economic appraisal is only one aspect of the overall case for investment, which is why it needs to be balanced against other environmental and social costs and benefits. The economic case should therefore, be considered in the context of the overall Scheme objectives.

6.17 Further details are outlined in the Proof of Evidence of Philip Thiele (WG 1.2.1) who addresses both the issues of Traffic and Economics. He concludes on balance that there is a good overall case for the Scheme.

7. Environmental Appraisal and Mitigation

- 7.1 The assessment of environmental impacts and effects of the Scheme, including consideration of the construction phase, are reported in detail in the Environmental Statement (ES) (Doc. 3.01.01) together with the proposed mitigation measures. A Record of Determination, which outlined the process undertaken for determining whether an Environmental Impact Assessment (EIA) is required and is included within Appendix 4.1 of the ES (Doc. 3.04.02).
- 7.2 A Non-Technical Summary (NTS) of the EIA is included as a free-standing document (Doc. 4.03.01). This describes the environmental matters in easy-to-use language.
- 7.3 Further details of the environmental engagement as well as the process of assessing the effects on the different aspects of the environment, the proposals for suitable mitigation, and the overall conclusion of the effects of the Scheme will be described in more detail in Andrew Sumner's Proof of Evidence (WG 1.4.2).
- 7.4 The Welsh Government recognises its duty under Section 6 of the Environment (Wales) Act 2016 (Doc. 4.01.05) to *“seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales and in so doing promote the resilience of ecosystems, so far as it is consistent with the proper exercise of those functions.”*
- 7.5 In the course of designing the Scheme, the project team has endeavoured to avoid impacts on ecological receptors through the alignment and where this has not been possible, measures have been included within the design to reduce the scale and significance of the effects on those receptors. Following the publication of draft Orders, the project team has further consulted with Natural Resources Wales (NRW) to ensure that NRW have confidence in the effectiveness of the measures being provided.

7.6 Having consulted with (NRW), a protected species conservation strategy has been developed. This sets out changes to the design of mitigation measures which would be provided as part of the Scheme design if the orders are made. Such matters will be detailed by Chloe Delgery (WG 1.5.2).

Geology and soils

7.7 An assessment of geology and soils has been undertaken, taking into account geology, geological features, mineral resources and land contamination. There are two known quarries within the Scheme area, therefore there is the potential for unknown historical quarrying and infilled land to be encountered which could be a source of contamination. Ground investigations on Site have identified a slight risk of land contamination.

7.8 Chapter 6 of the ES concludes that no significant effects are anticipated to affect geology as a result of the Scheme during construction or operation.

7.9 During construction, all effects have been classed as neutral or slight adverse. The ES identified that there is potential for unknown historical quarrying and infilled land to be encountered. Ground investigations have identified a slight risk of land contamination. Environmental management best practice would be applied on Site and would include the adoption of a watching brief for identification of potential land contamination. Appropriate measures would be taken to limit any potential risk to construction workers, and controlled water should contaminated land be discovered.

7.10 During operation, all effects have been classed as neutral, slight adverse or neutral / slight beneficial.

7.11 The ES identifies a neutral / slight beneficial effect through the potential for rock exposures to be formed through cuttings along the Scheme which could provide areas of geological interest.

Road drainage and the water environment

- 7.12 The water environment for the Scheme consists of surface watercourses including a number of unnamed tributaries and ponds, the underlying groundwater and associated groundwater dependant features. An assessment of the potential effects of the Scheme upon the water environment, which considered effects upon water quality, water quantity and flood risk was undertaken.
- 7.13 Chapter 7 of the ES concludes that no significant effects are anticipated to effect water quality, water quantity or flood risk as a result of the Scheme during construction or operation.
- 7.14 During construction, all effects have been classed as neutral or slight adverse. The Scheme would have a slight adverse impact upon surface water quantity at the unnamed tributary of Afon Marlais (watercourse ID8) and also upon groundwater resources.
- 7.15 During operation, all effects on the water environment have been classed as neutral or slight adverse. Mitigation measures would be implemented in line with best practice guidelines, including for the design of outfalls, and culverts would be implemented for all structures. The Scheme would have a slight adverse impact upon surface water quantity and a neutral/slight adverse impact upon groundwater.
- 7.16 Ongoing monitoring is proposed to confirm the mitigation, drainage and treatment measures incorporated into the design has been effective.
- 7.17 The forecast reduction in traffic on the existing A40 provides a potential benefit to the water environment in that the current drainage network is believed to discharge directly to local watercourses. Therefore, there will be a beneficial impact upon the water quality of road run-off discharged from the existing highway directly into local watercourses. With embedded treatment measures in the proposed Scheme, the overall pollutant load entering watercourses will be reduced.

Nature Conservation

- 7.18 An assessment has taken place to consider protected sites; habitats; and species of fauna and flora.
- 7.19 Chapter 8 of the ES concludes that there are some significant effects upon biodiversity as a result of the Scheme.
- 7.20 During construction, all effects upon biodiversity have been classed as negligible or minor adverse, with the exception of the woodlands and hedgerows which would be moderate adverse. The loss of habitat during construction would be offset by the landscape planting. However, as planting would mostly be limited to towards the end of the construction period, there would be a temporary reduction in planting during construction and while the planting becomes established. The impact upon habitat within the four watercourses being culverted would be minor adverse.
- 7.21 The effects on roosting bats and foraging and commuting bats during construction have also been considered within the ES. There would be a minor adverse impact upon internationally important foraging and commuting Annex II species, with a minor adverse impact upon locally important assemblage of foraging and commuting bat species. There would also be a minor adverse impact on dormice, otters, barn owls and spotted flycatchers as a result of the construction of the Scheme.
- 7.22 There would be no adverse impacts on the integrity of any internationally or nationally designated sites.
- 7.23 During operation, there would also be no adverse effects on the integrity of any internationally or nationally designated sites.
- 7.24 There would be a negligible beneficial impact upon roosting bats during the operational phase, however, there would be a negligible adverse impact upon foraging and commuting bats.

7.25 There would be a minor adverse impact upon dormice, barn owls and spotted flycatchers during the operational phase, whilst there would be neutral impacts upon otters, breeding birds, badgers, reptiles and Section 7 species.

7.26 There would be a moderate beneficial impact as a result of the Scheme due to the incorporation of 6-ha of species-rich grassland. The currently improved and poor semi-improved grassland fields used for cattle production would be replaced with wildflower grassland mixes on the verges of the new road. Some of this would comprise pollinator strips which would benefit pollinator species and other invertebrates.

Landscape and visual

7.27 The Scheme occupies part of a prominent ridge and plateau with steep scarp slopes that surround the head of the Afon Marlais and Lampeter Vale. The ridge and plateau are dissected by steep-sided valleys that drain into both Taf and Cleddau rivers. The surrounding area has an undulating topography with numerous river valleys, often with wooded slopes. Pembrokeshire hedge-banks, hedgerows with trees and blocks of woodland cross the landscape and a network of narrow lanes connects villages, single dwellings and rural settlements.

7.28 Chapter 9 of the ES concludes that during construction, the Scheme would have a slight adverse effect upon three landscape character areas of Narberth, Llanddewi Velfrey Ridge and Lampeter Velfrey Slopes. The effect would reduce as the proposed landscape mitigation measures become established.

7.29 A visual impact assessment of 190 residential properties has been carried out, and it is anticipated that there would be initial significant adverse impacts upon 11 properties.

7.30 During the operational phase, there would be a minor adverse impact upon the Landscape Character Area of Narberth Rural, but by Year-15, the development of landscape mitigation, banks, extensive tree and

shrub planting, and noise barriers that would also serve to assist in screening views. There would be a neutral impact overall across the study area. By year 15, adverse impacts would be reduced to 4 residential properties.

Archaeology and cultural heritage

- 7.31 A number of heritage features have been identified within the 3km study area including Scheduled Ancient Monuments, Listed Buildings, field systems and bridges. Geophysical surveys also identified a number of areas that could potentially contain buried archaeology.
- 7.32 Chapter 10 of the ES considers the direct and indirect impacts of the Scheme on cultural heritage assets including buried archaeological features, historic buildings and historic landscapes. A number of heritage features have been identified within the 3km study area including Scheduled Ancient Monuments, Listed Buildings, field systems and bridges. Geophysical surveys also identified a number of areas that could potentially contain buried archaeology.
- 7.33 The construction effects on various heritage assets within the study area have been identified as neutral. The exceptions are the Toll road between St Clears and Canaston Bridge, circular features, a Lane on the Tithe Map and Blaen Marlais house and barn which are classed as having a neutral or slight significance of effect, the field system and circular cropmark which are identified as having a slight effect and a standing building which is identified as having a slight or moderate significance of effect.
- 7.34 There is also a high possibility that intrusive works on the Scheme may uncover previously unrecognised archaeological deposits. As a mitigation measure, an archaeological evaluation programme is planned, which will involve recording existing archaeological remains and trenching.

7.35 During operation, no significant effects have been identified for the setting of designated historical assets. The majority of designated sites (scheduled ancient monuments and listed buildings) identified within the 3km buffer zone would have no views of the Scheme due to hills and increased distance.

7.36 The Redstone Cross Barrow Group would experience an improvement as traffic on the Trunk Road would be moved further away from the barrows.

Community Effects

7.37 The assessment of community and private assets includes effects on community facilities, including doctor surgeries, hospitals, aged people homes, schools, shops, post offices, places of worship, parks, play areas and other public open space and sports centres. It also assesses effects on private and commercial assets, including private property and associated land take, commercial property and development land.

7.38 Chapter 11 of the ES considers the effects on community and private assets.

7.39 During construction, no doctor surgeries, hospitals, schools, shops, post offices, places of worship, parks, play areas, tourist and visitor attractions, community halls or development land would be directly affected by construction or operation. Any effects would be indirect due to any traffic congestion caused by temporary traffic management or local amendments to road layouts. The impact has been classed as minor and temporary upon these facilities.

7.40 It is considered that the effects upon the Blaenmarlais Care Home would be moderate adverse during construction due to the restricted accessibility owing to the minor alterations to access off Redstone Road; and also the impacts upon air quality and noise due to the increased proximity to the proposed A40. These impacts would be mitigated through good construction practice, with access for emergency vehicles

maintained at all times. Access during operation would be similar to the existing situation.

7.41 The effects upon residential property range from moderate beneficial to slight adverse; with Redstone Farm, The Old Farmhouse, Redstone Cottages, Number 1 Blackmoor Hill and Blackmoor Hill Farmhouse either benefiting from the Scheme or a neutral effect. There would be a neutral or slight adverse effect upon Sodston Lodge and residential properties 260m south of the A40 (RP6 except for RP4 and RP5). It is anticipated that the impacts upon Penblewin Farmhouse would be slight adverse. No residential properties would require demolition.

7.42 For commercial properties, only one property (Revelation Clothing Limited) has been identified as potentially being directly affected during construction with effects assessed as neutral or slight adverse. Other commercial properties would only be potentially impacted by temporary traffic management.

7.43 The Scheme would have some beneficial impacts on residential property; including a moderate beneficial effect on Redstone Farm and The Old Farmhouse as these would be located further away from the strategic A40 route and would benefit from improved active travel connectivity. Redstone Cottages and Number 1 Blackmoor Hill and Blackmoor Farmhouse could also have neutral or slight beneficial effects as a result of the Scheme.

7.44 During operation, tourist attractions such as the Oakwood and Bluestone visitor attractions would benefit from the improved journey time reliability.

Agricultural Assessment

7.45 The assessment examined the potential effects on agricultural land resources and farm businesses. In assessing land resources, the agricultural land was measured on a scale according to its quality and therefore its sensitivity to effects. The assessment of farm businesses considered the physical effects, including land loss, severance, the

potential effects on the movement of livestock, field accesses, drainage and the use of farm buildings, as well as the longer-term consideration of whether the land could continue to be of beneficial agricultural use.

7.46 Chapter 12 considers the effects on agricultural land resources and farm businesses.

7.47 The Scheme would result in the loss of 11.8ha of mostly subgrade 3b (moderate quality agricultural land) land, which would result in a minor adverse impact upon agricultural land resources. None of this land has been classed as of the best and most versatile agricultural quality.

7.48 A total of 5 farm units would lose land to the Scheme, which would cause moderate or minor changes to their day-to-day land management. None would be rendered unviable. The effects in all cases have been considered to be of minor adverse significance.

7.49 During construction, access to land is expected to be maintained for all but 1 field. Established construction practices would be undertaken to ensure no agricultural weeds or diseases would be spread between farms; whilst mitigation measures would be in place to reduce the impact of crop loss.

7.50 During operation, no agricultural enterprises would be significantly adversely affected by operational impacts.

Air Quality

7.51 A detailed air quality assessment was undertaken to establish the potential effects of the Scheme on local and regional air quality. Annual mean levels of nitrogen dioxide and particulate matter (PM10) were measured near to multiple sensitive receptors, such as schools and houses, and were then compared to the predicted levels they will change to if the Scheme were built and traffic consequently altered.

7.52 Chapter 13 sets out the effects of the Scheme upon air quality.

7.53 During construction, dust and particulate emissions would be temporary. There would be no significant effects of construction on air quality with the mitigations proposed.

7.54 During operation, there would be no significant effect on assessed receptors in the opening year (2022).

7.55 The Scheme would result in the movement of the main A40 traffic away from the existing road alignment, which would provide a benefit to local air quality for receptors on the exiting alignment of the A40.

Noise and Vibration

7.56 A noise and vibration assessment was undertaken to determine the significance of temporary and permanent effects of noise and vibration during the construction and operation phases. The dominant noise source is road traffic from the existing A40.

7.57 Chapter 14 of the ES assesses the effects of the Scheme upon noise and vibration.

7.58 During construction, various receptors have been assessed as not significant. It is anticipated that there would be significant effects at one or more of the construction stages for Redstone Cottages, Blaenmarlais Care Home, Redstone Cottage and Penblewin Farm. It is considered that mitigation might, in some cases reduce the impact from significant to not significant at 1 or more of the properties.

7.59 Where the construction noise would seriously affect properties for a substantial period of time, and no other form of mitigation would be reasonably practicable, noise insulation could be considered.

7.60 The assessment of vibration effects during construction would be not significant for all receptors.

7.61 During operation, there would be no significant effects from operational noise. For properties where the realigned A40 would be closer than the

existing A40, adverse likely significant effects have been avoided by the inclusion of landscape / noise mitigation (landscaped bunds) and between the Scheme and the properties.

All Travellers

- 7.62 The assessment of all travellers includes vehicle travellers and walkers, cyclists and horse riders (WCHR). The potential effects are considered on Public Rights of Way, Cycle routes and other WCHR routes, public highways, overbridges and underbridges, public transport and bus stops, community severance, driver stress and de-trunking.
- 7.63 Within the study area, the presence of PRow is sparse with only 2 links available to WCHR. A footpath runs north-south following agricultural land boundaries and currently terminates on the existing A40 east of Blackmoor Hill Farm. Access to the footpath via the A40 is currently unattractive, with no pedestrian footways in an eastbound or westbound direction, providing no wider connectivity. A bridleway runs west-east to the south of the Scheme between the A478 and B4313. The route is clearly signed at both intersections.
- 7.64 Chapter 15 of the ES considers the effects on both vehicle travellers as well as walkers, cyclists and horse riders (WCHR).
- 7.65 No significant effects have been identified during construction or operation upon Public Rights of Way; cycle routes and other routes used by WCHR; public highways; overbridges and underbridges; public transport and bus stops; community severance; driver stress; and de-trunking.
- 7.66 During construction, the existing A40, together with most local roads crossing the Scheme or linking to it, would remain open under traffic management where required, except for some overnight weekend road and lane closures during works such as utility diversions and tie-in works. A local diversion would also likely be required along the B4313 in order to enable construction of the overbridge. It is anticipated that bus

services would continue to use the road network as they do at present, following any diversionary routes where necessary. Bus stops would be relocated as part of any diversion where the works effect stops at Redstone Cross Junction.

7.67 Following the completion of the construction works, the majority of traffic is forecast to utilise the new section of A40 which would provide an improved section of Trunk Road with safe overtaking opportunities. The existing A40 would be de-trunked and given the reduction in traffic along this route, would be more attractive to WCHR users. The de-trunked road and the new overbridge would also provide wider connectivity into the PRow network which currently stops at the A40. The overbridge would also provide a new, safe crossing facility for this section of the A40 for vehicle traffic and WCHR, improving on the current junction arrangement / crossing facilities.

Materials

7.68 The construction of the Scheme will require the use of material resources and the generation and management of waste. The assessment has taken into account the types and quantities of materials and waste associated with the construction and operation of the Scheme, their storage and the management of the waste streams.

7.69 Chapter 16 of the ES sets out the effects from the use of material assets on their sources and availability and from the generation and management of waste resulting from the Scheme.

7.70 A moderate adverse significance of effect remains for material assets and the generation and management of waste due to the relatively fixed volume of imported material assets that would be required for the Scheme. Established construction practice measures however, do provide a potential for reductions in these effects, whilst controlling and limiting the significance to no greater than the levels that have been assessed.

7.71 During operation, no significant effects have been identified.

Population and Human Health

7.72 The population and human health assessment examines how the Scheme may influence public health and well-being in the areas surrounding the Scheme and includes the distribution of impacts within different social groups where possible.

7.73 Chapter 17 sets out the effects on public health and well-being in the areas surrounding the Scheme through environmental and socio-economic pathways.

7.74 During construction, temporary minor adverse effects have been identified as a result of construction noise (increasing to moderate adverse for those people who are likely to spend more time in one place and experience increased exposure) and effects on air quality. There would also be minor adverse health effects as a result of construction activities making active travel a less desirable option during this time. It is also anticipated that minor adverse health effects would be felt as a result of reduced mobility for certain people as a result of the perception of reduced road safety during construction.

7.75 During operation, no adverse health effects have been identified. As a result of the Scheme, there would be minor beneficial effects upon health from improved: access to open space and nature; access to work and training; and participation in active travel.

Climate Change

7.76 Chapter 18 of the ES sets out the effects of the Scheme on climate change. Three assessments have been undertaken, as follows:

- a) a Greenhouse Gas (GHG) emissions assessment which quantifies the potential impact of GHG on the Scheme and identifies mitigation;

- b) a Climate Change Resilience (CCR) assessment which evaluates the effectiveness and feasibility of adaptation measures integrated into the Scheme; and
- c) an In-combination Climate Change Impact (ICCI) assessment, which evaluates the combined effect of the Scheme and potential climate change impacts on the environment during construction and operation.

7.77 The GHG emissions for the Scheme have been quantified and comprise of three components:

- a) Construction (embodied) – includes Materials, Plant and Transport emissions because of the construction of the Scheme;
- b) Operational – emissions resulting from consumption of energy in all network assets;
- c) User – change in vehicular emissions because of the Scheme.

7.78 Construction and operational GHG emissions are discussed by Geraint Jones in his Proof of Evidence (WG 1.3.2). User GHG emissions are discussed by Philip Thiele in in his Proof of Evidence (WG 1.2.2). John Davies discusses the Welsh Government's wider policies for combating GHG emissions, and steps taken by the Welsh Government to reduce GHG emissions, in his Proof of Evidence (WG 1.8.2).

7.79 The Welsh Government has legislated to introduce carbon budgets, which places a restriction on the total amount of GHG emitted over a 5-year period. The Scheme would be constructed during Carbon Budget 2 (2021-2025). Whilst Carbon Budget 2 is yet to be published, the budgets for each emissions sector can be reasonably assumed if they have the same cross-sector proportions as Carbon Budget 1¹⁰. The Welsh Government's Carbon Budget for the period 2016-2020 (Carbon Budget

¹⁰ Carbon Budget 2 figures have been estimated using Figure 3 of the Prosperity for All: A Low Carbon Wales (Doc. 4.01.24)

1) and assumed Carbon Budget for the period 2021-2025 (Carbon Budget 2) are outlined in Table 2.

Table 2: The Welsh Government Carbon Budgets

Sector	Carbon Budget 1 (2016 – 2020) MtCO₂e	Carbon Budget 2 (2021 - 2025) MtCO₂e
Industry	72.6	63.3
Transport	31.9	27.8

7.80 The GHG emissions assessment identified that, over a 60-year appraisal period, the total emissions from the construction, operation and use of the road are expected to increase by 1.0% when compared to the Do Minimum scenario.

7.81 The capital carbon emissions represent 1.1% of the total for the appraisal period. Emissions during construction are mainly from the embodied carbon in construction materials and emissions on site from plant, equipment and vehicles. Emissions from vehicles account for the majority of user Greenhouse Gas (GHG) emissions (98.9%).

7.82 The construction GHG emissions are 0.0083 MtCO₂e. Construction phase GHG emissions is considered to be within the Industry sector¹¹. The user GHG emissions for the Scheme are 0.7032MtCO₂e. User phase GHG emissions is considered to be within the Transport Sector¹⁰. This is a slight reduction in user emissions when compared to the existing scenario (the Do-Minimum scenario) for the same Carbon Budget 2 period (0.7046MtCO₂e).

7.83 Table 3 outlines the percentage of Carbon Budget 2 that the Scheme would use. The table shows that the Scheme would require 0.013% of the Industry & Emissions Sector Carbon Budget 2. The Scheme would

¹¹ As defined in Prosperity for All: A Low Carbon Wales (Doc 4.01.24)

use 0.21% of the Transport Emissions Sector, which is the same percentage that would be used in the Do Minimum Scenario.

Table 3: Lifetime assessed GHG emissions and calculated percentage of Welsh CB2 Budget (2021-2025)

GHG Emissions	Relevant Sector	Do Minimum (the existing scenario) MtCO2e	% of CB2 budget	Do Something (the proposed Scheme) MtCO2e	% of CB2 budget
Construction	Industry & Business Emissions	n/a	n/a	0.0083	0.013%
User (over 60-year appraisal period)	Transport Emissions	0.7046	0.21%	0.7032	0.21%

7.84 The net increase in GHG emissions is not considered to have a material impact on the ability of the Welsh Government to meet its carbon reduction targets and will not give rise to a significant effect.

7.85 The CCR and ICCI assessments did not identify any significant risks associated with climate change. Potential risks associated with flooding are addressed through mitigation measures embedded within the design.

7.86 In order to mitigate GHG emissions as much as possible, opportunities for carbon reduction have been considered where possible. An example is the proposal to minimise extents of lighting in the Scheme. This proposal is described in more detail by Geraint Jones in his Proof of Evidence (1.3.2). Carbon reduction would be fully taken into account as the design progresses and future mitigation measures have been considered, such as using local suppliers during construction to reduce the carbon impact of transporting materials to Site. The declaration of a climate emergency by the Welsh Government on 29 April 2019 has been

succeeded by a range of statements from the Welsh Government supporting the continuing developments in road transport, combatting climate change and extending active travel. Announcements have been made from the Welsh Government authorising continued road development on the A55¹², the A465 (Sections 5 and 6)¹³ and on the A487 Dyfi Bridge¹⁴ schemes. This Scheme has also been progressed further with Ken Skates having granted ministerial approval for the publication of draft Orders (approval given on July 2020) and agreement to hold a Public Local Inquiry (approval given on September 2020).

7.87 Whilst the evidence of John Davies (Doc 1.8.2) lists many of the initiatives being taken by the Welsh Government, it is also important to recognise other local developments being taken. Pembrokeshire County Council for example are supporting, as lead participant, the development of the Milford Haven: Energy Kingdom project¹⁵. In June 2020, approval was given by the Welsh Government and the UK government to the business case for a £60m Pembroke Dock Marine project, which includes the testing of marine energy devices and the development of floating wind technologies¹⁶.

Cumulative Effects

7.88 An assessment of cumulative effects is required due to the potential for separate effects of more than one project to incur a significant effect on receptors. This includes the potential effect associated with the construction and operation of the proposed A40 Llanddewi Velfrey to Penblewin scheme to be constructed over a similar period of time. Two principal types of cumulative effects are considered:

- a) interrelationships between effects generated by the Scheme, and

¹² <https://gov.wales/30m-a55-scheme-moving-ahead>

¹³ <https://gov.wales/written-statement-a465-section-5-and-6-appointment-preferred-bidder>

¹⁴ <https://gov.wales/go-ahead-new-dyfi-bridge>

¹⁵ <https://gtr.ukri.org/projects?ref=105848>

¹⁶ <https://www.swanseabaycitydeal.wales/news/green-light-for-60-million-pembrokeshire-marine-energy-project/>

b) the interaction of effects of the Scheme with other developments.

7.89 For the impact of interrelationships, the assessment identifies a 'modest' effect, based on the extent and complexity of the receptors. For the impact of in combination, a total of 9 'shortlisted' projects were identified, and these included a range of land uses, with residential and the separate A40 scheme. The concurrent A40 scheme represents the most potential for a significant in-combination impact, with the majority of receptors likely to be affected.

7.90 Chapter 19 sets out the potential impact of cumulative effects as a result of the Scheme.

7.91 The assessment identifies the potential for moderate adverse significant effects to occur. The Pre-CEMP and REAC set out measures to manage the potential for and to minimise the potential for cumulative effects.

7.92 Further explanation of this is given by Andrew Sumner (WG 1.4.2).

8. Improvements to the existing A40 (to be de-trunked)

8.1 The Line and De-trunking Order Plan (Doc. 2.01.03) shows the extents of the existing A40 Trunk Road that would be de-trunked. This means that the ownership and maintenance responsibilities of the existing A40 Trunk Road (that remains) would be transferred from the Welsh Government to the local highway authority, Pembrokeshire County Council. As such, the road would no longer be classified as a Trunk Road.

8.2 The forecast 82% reduction in traffic between Penblewin Roundabout and Redstone Cross Junction with the Scheme in place (Doc 4.05.03), provides opportunities to amend the highway layout.

8.3 Geraint Jones describes the proposed improvements to the existing A40 in his evidence (WG 1.3.2). The Active Travel and De-trunking Proposals Report (Doc. 4.04.07) outlines the concept layout for the proposals.

- 8.4 The Welsh Government sees the proposed improvements enabled by the de-trunking of the existing A40 to be complementary to the Scheme and draft Orders. The proposed improvements comply with the requirements of the Active Travel Act and the Well-being of Future Generations (Wales) Act 2015.
- 8.5 The improvement works do not form part of the draft Orders, and no land take is necessary within the CPO for the proposals.
- 8.6 Whilst the works do not form part of the draft Orders, the Welsh Government's commitment to delivering the proposed Active Travel & de-trunking works is evidenced by the published Contract Notice for the Scheme. (Doc 4.02.12). The Contract Notice has been drafted on the basis of the Scheme being delivered concurrently with the Llanddewi Velfrey to Penblewin scheme and includes the short description:
- “The scheme will also include a package of Active Travel and De-trunking works to the old A40 carriageway.”¹⁷*
- 8.7 PCC has recently undertaken a WelTAG Stage 2 study focusing upon sustainable travel within Narberth. There are opportunities for a possible scheme resulting from this study to be complementary to the Active Travel and de-trunking proposals for the Scheme.
- 8.8 PCC aspire to develop and enhance east-west walking and cycling facilities between Haverfordwest and Blackpool Mill (near Bluestone Resort), and between Narberth to Canaston Bridge. The Active Travel and De-trunking proposals discussed in this section would be complementary to these aspirations.
- 8.9 The details of the proposed improvements to the existing A40 enabled by the de-trunking will be explored further with PCC.

¹⁷ Section II.1.4 of the Contract Notice (Doc 4.02.12)

9. Sustainable Development

- 9.1 The development of the Scheme has considered the requirements of the WFGA 2015, and a Sustainable Development Report (Doc. 4.03.09) has been published.
- 9.2 The Sustainable Development Report (Doc. 4.03.09) examines the extent to which the selection and development of the Scheme adhered to the sustainable development principle set out in the WFGA 2015, concluding that the selection and design of the Scheme did accord with the 5 ways of working. The report also shows how the Scheme would contribute positively to the Welsh Government's well-being objectives set out within the Well-being Statement 2017 and by extension to the delivery of the 7 well-being goals of the WFGA 2015. Further details are provided in the Planning and Sustainable Development Proof of Evidence prepared by John Davies (WG 1.8.2).
- 9.3 Specifically, it is considered that the Scheme would have direct contributions to 9 well-being objectives, albeit one of these there would only be some contributions. It is considered that for the well-being objective 'drive sustainable growth and combat climate change', the Scheme would drive sustainable growth overall however there would be some adverse impacts upon climate change, as a result of increased GHG emissions. The SDR does identify some indirect, minor contributions to the remaining 3 well-being objectives.
- 9.4 In summary, it is considered that the Scheme would provide a high-quality road built to modern standards, which would replace what is considered to be the lowest standard section of TEN-T in the UK, thus contributing to delivering modern and connected infrastructure, 1 of the well-being objectives.
- 9.5 The Scheme would also improve journey time reliability, particularly at times of incidents and delays, and seeks to improve a key piece of

infrastructure for future generations in Pembrokeshire, the wider region and those visiting from elsewhere.

- 9.6 It is considered that the overall improvement in active travel connectivity through the Scheme could lead to an increase in physical activity within the local area. The Scheme proposes complementary active travel measures and would help improve conditions for local bus services and connections by car to railway stations via the A40.
- 9.7 These improvements would help contribute to the well-being objectives: support people and businesses to drive prosperity, tackle regional inequality, and promote fair work.
- 9.8 The Scheme would provide improvements to safety, helping contribute to a healthier Wales. As detailed in paragraph 5.12 of my evidence, historical accident data between 2008 and 2018 shows that the observed proportion of accidents on the A40 between Penblewin Roundabout and Redstone Cross Junction in the 'killed or seriously injured' category (44.4%) is higher than the WebTAG average default proportion (18.1%). Further information on accident analysis is presented within the Initial Traffic and Accident Data Report (Doc. 4.05.01).
- 9.9 Redstone Cross Junction has been identified as a particular accident blackspot with a cluster of collisions recorded at this location. It has also been identified that the majority of non-cluster incidents (67%) occurred due to vehicles veering onto the opposite side of the carriageway. This indicates that issues may exist with the current road layout, resulting in drivers veering into opposing traffic. This type of movement and associated accident is often associated with a lack of safe overtaking opportunities, driver frustration and risk taking. Section 5.14 provides information relating to the forecasted accident savings from the Scheme.
- 9.10 Paragraph 5.15 and 5.16 provide details relating to the forecasted reduction in daily traffic between Penblewin Roundabout and Redstone

Cross Junction, and commentary relating to safety comparisons between different road types.

9.11 The Scheme would also provide improved active travel connectivity via proposed enhancements along the de-trunked A40 as well as the overbridge which would reduce conflict between vehicles and WCHR's (walkers, cyclists, horse riders) when crossing the proposed A40.

9.12 The WeITAG Stage 3 Impact Assessment and Stage Report (WeITAG Stage 3 reports) (Doc. 4.03.08 and 4.03.07) confirm that the Scheme would contribute positively to the following Scheme objectives:

- a) To enhance network resilience and improve accessibility along the east-west transport corridor to key employment, community and tourism destinations.
- b) To improve prosperity and provide better access to the county town of Haverfordwest, the Haven Enterprise Zone and the West Wales ports at Fishguard, Milford Haven and Pembroke Dock.
- c) To reduce community severance and provide health and amenity benefits.
- d) To reduce the number and severity of collisions.
- e) To promote active travel by cycling, horse riding and walking to provide opportunities for healthy lifestyles.
- f) To deliver a Scheme that promotes social inclusion and integrates with the local transport network to better connect local communities to key transport hubs.

9.13 The 2 objectives that the Scheme would not contribute positively to relate to reducing or offsetting waste and carbon, and the environmental impact of the Scheme. This is because of the construction vehicle emissions, which outweigh the user emissions savings, as well as the environmental impacts associated with the construction of the Scheme, such as the impacts on landscape.

- 9.14 Appraisal against the WelTAG impact areas focus on the 4 pillars of sustainable development, those being: economic; social; cultural; and environmental impacts. Overall, an assessment carried out within the WelTAG Stage 3 reports demonstrates that the Scheme would perform well against the majority of social, cultural and economic criteria. This includes providing benefits to safety, commuting, journey quality and access to services.
- 9.15 Whilst the Scheme is considered to contribute to improved air quality and the water environment, it is acknowledged that there would be some adverse environmental impacts including upon GHG, landscape and biodiversity.
- 9.16 A full environmental impact assessment of the Scheme is provided within the Environmental Statement, and further expert evidence is presented within the statement of Andrew Summer.
- 9.17 The Environmental Statement has informed the WelTAG Stage 3 reports and the Sustainable Development Report for the published Scheme. The Sustainable Development Report considers how the Scheme aligns with the Well-being of Future Generations (Wales) Act (2015) (WFG Act) (Doc. 4.01.10) and its sustainable development principle. That document concludes that the Scheme has been designed and developed considering the 5 ways of working advocated in the WFG Act, whilst its outcomes would help the Welsh Government contribute positively to most of its well-being objectives, and by extension contribute positively overall to the well-being goals.
- 9.18 A response has recently been received from Cadw as to the draft Orders (R0028). The response is positive in respect of the Scheme and the methodology and approach of the contractors who have carried out the assessments. In particular, the improvement to the site of the Redstone Barrow Group has been welcomed. CADW also confirms the assessments made as to the very slight effect of the Scheme upon listed buildings and registered gardens and parks.

10. Construction

- 10.1 Subject to the satisfactory completion of the statutory procedures, a Design and Build (D&B) contractor would be procured for the detailed design and construction of the Scheme. Construction is expected to take approximately 18 months commencing in Summer 2021 with completion at the end of 2022.
- 10.2 A Construction and Buildability Report (Doc. 4.04.09) has been prepared which provides an outline construction methodology for the Scheme, including phasing / sequencing diagrams at key interface locations.
- 10.3 As detailed in Andrew Sumner's evidence, the ES identifies the need for an Environmental Co-ordinator (ECO) during construction and sets out the key role and responsibilities of that position. It also states that the ECO would be supported by an Environmental Clerk of Works and by the Contractor's Site Environmental Manager. There would, therefore, be at least three employees focused on environmental management during the construction of the Scheme.
- 10.4 An integrated Health, Safety and Environmental Management Plan would be prepared for the Scheme to manage: general issues; health & safety issues; and environmental issues during the construction works. At this time, during the pre-construction phase, the environmental section of the plan has been prepared. This document is referred to as the Pre-Construction Environmental Management Plan (Pre-CEMP) and is contained in Appendix 2.2 of the ES (Doc. 3.02.03).
- 10.5 As detailed in Andrew Sumner's evidence, the Pre-CEMP helps not only to record environmental risks and identify how they would be managed during the construction period but also provides a framework to ensure that all parties are aware of their responsibilities, including the Welsh Government. It also serves to help ensure the requirements of the ES and the Project Commitments Register are met.

- 10.6 Although these commitments are non-statutory, the Welsh Government treats them as binding. The contractor would be responsible for the implementation of the Management Plan(s) and ensuring that all members of the project team, including subcontractors, comply with the stated procedures and commitments. The Welsh Government's Employer's Agent also has a responsibility for ensuring compliance with these commitments.
- 10.7 The Pre-CEMP identifies potential construction impacts and proposed mitigation for subjects such as noise, vibration, dust, water, archaeology, ecology, waste management, pollution control and emergency procedures. The Pre-CEMP would be updated prior to commencement of the construction phase and periodically throughout the construction phase. Andrew Sumner will provide further detail on the preparation and content of the Pre-CEMP in his evidence.
- 10.8 Maximising the community benefit of major infrastructure schemes is a key requirement of the Welsh Government. The contract to be awarded for the detailed design and construction of the Scheme would include requirements for Community Benefits, and the appointed contractor would be required to maximise the impact of public spending in the local communities during construction. This would include targets for recruitment, provision for training, apprenticeships and education, and use of a local supply chain.
- 10.9 Further details on the construction aspects of the Scheme will be detailed in the Engineering Proof of Evidence of Geraint Jones (WG 1.3.2).

11. Land Acquisition and Compensation

- 11.1 Relevant to the draft CPO (Doc 2.03.01) is the need also to act in accordance with the Human Rights Act 1998 (Doc. 4.01.22) and take into consideration The National Assembly for Wales Revised Circular on Compulsory Purchase Orders (NAFWC 14/2004) (Doc. 4.01.60). A CPO

should only be made where there is a compelling case in the public interest. An acquiring authority, including Welsh Ministers, should be sure that the purposes for which it is making a CPO sufficiently justify interfering with the human rights of those with an interest in the land affected, having regard, in particular, to the provisions of Article 1 of The First Protocol to the European Convention on Human Rights and, in the case of a dwelling, Article 8 of the Convention.

11.2 The Welsh Government considers that there is a compelling case for the Scheme and that the public interest necessitates permanent and temporary acquisition of land and rights.

11.3 The land and rights to be acquired as shown in the draft CPO are the minimum necessary to construct, mitigate, operate and maintain the proposed Scheme. Land required temporarily for the construction of the Scheme has been identified separately in the Welsh Government letters (Doc. 2.05.09) which accompanied the publication of the draft CPO. Geraint Jones identifies in his evidence (WG 1.3.2) why certain land is required permanently and temporarily during the construction period. Andrew Sumner explains in his evidence (WG 1.4.2) why land is required for essential environmental mitigation.

11.4 The provisions of the Acquisition of Land Act 1981 (Doc. 4.01.04) would apply as explained in the Public Notice relating to the publication of the draft CPO (Doc. 2.04.05).

11.5 The new length of Trunk Road would run through predominantly agricultural land and would require approximately 13.6 hectares of land in total (including temporary land for construction). This would reduce to a permanent 12.8 hectares during operation.

11.6 The Scheme does not require the demolition of any buildings.

11.7 As part of the engagement with those affected by the draft CPO, the Welsh Government has already provided information on proposed access arrangements and boundary treatments to various landowner's

tenants and/or their Agents. Modifications to the draft Orders are being proposed, with agreement being sought from those affected. Liaison with those affected by the draft CPO will continue. The Welsh Government are open to discussions with affected parties in relation to matters of accommodation works and will continue to do so during detailed design and construction.

11.8 Whilst some of the objections relate in part to entitlement and compensation, particular aspects of entitlement to and quantum of compensation are not for consideration at the PLI. These matters would be dealt with if the Welsh Ministers, after considering the Inspector's Report, decide to make the Orders, and serve Notices to Treat and Enter onto land. Compensation would then be negotiated by the Valuation Office Agency, which acts on behalf of the Welsh Government. If agreement could not be reached, affected parties could refer their case to the Upper Tribunal (Lands Chamber) for determination.

12. Summary of Support, Objections and Representations

12.1 The publication of draft Orders provided the opportunity for any person or organisation to object, support, or suggest alternatives to the Scheme. In summary, at the time of submitting evidence:

- a) 3 unique correspondence letters or emails have been received that clearly express support for the Scheme;
- b) 6 unique correspondence letters or emails have been received that clearly express that the respondents do not object to the Scheme;
- c) 22 unique objections to the Scheme have been received, of which 8 have been classed as being from statutory objectors; and;
- d) 3 objections have since been withdrawn by the respective consultees.

Support

12.2 3 unique correspondence letters or emails have been received that clearly express support for the Scheme. Of these, 2 appear to have been written on behalf of individuals, and one on behalf of an organisation (Pembrokeshire County Council.)

12.3 One of these representations of support expressed their appreciation for the public engagement carried out throughout the development of the Scheme.

Objections

12.4 22 unique objections to the Scheme have been received. Whilst a deadline of 9 September 2020 was identified for the receipt of support or objection statement, responses submitted after this date have been accepted by the Welsh Government. Of the unique objections, 8 were identified as statutory objectors, either statutory consultees or those named in the draft CPO.

- 12.5 Of these objections, 3 were identified as being from a company or organisation. These were Dŵr Cymru Welsh Water (DCWW) Pembrokeshire Friends of the Earth, and Revelation Clothing.
- 12.6 The Welsh Government has taken into account all objections and has provided a notification of receipt. Written replies would be issued to all respondents to the points raised. The written responses provide clarification where it appeared that there may be any misunderstanding and/or set out the Welsh Government's position on the points raised.
- 12.7 At the time of writing, 3 objections have been withdrawn by the respective individual or organisation based on the written response provided by the Welsh Government. This includes the objection originally received from DCWW.
- 12.8 Copies of letters of support and objections have been made available to the Inspector and will be available for all to view as part of the Inquiry Library.
- 12.9 Whilst not exhaustive, the following issue types have been raised:
- a) Objections relating to the existing speed limit along Redstone Road;
 - b) Objections relating to the proposed layout of the Redstone Cross Junction;
 - c) Objections relating to the impact of the Scheme on the environment, wildlife, agricultural land, carbon and changes to climate;
 - d) Objections relating to the cost of the Scheme and that the Welsh Government money should instead be invested in public transport, active travel measurements and/or elsewhere on the highway network;
 - e) Objections relating to the need for the Scheme;
 - f) Objections relating to the proposed shared use of an underpass;
 - g) Objections relating to details in the draft CPO documents
 - h) Objections relating to the necessity of certain plots of land for the Scheme

- i) Objections relating to safety concerns joining the A40 from Jacob's park
- j) Objections based on the negative effects on local businesses / passing trade.

13. Declaration

13.1 My Proof of Evidence includes all facts which I regard as being relevant to the opinions which I have expressed, and the Inquiry's attention has been drawn to any matter which would affect the validity of that opinion.

13.2 I believe the facts I have stated in this Proof of Evidence are true and that the opinions expressed are correct.

13.3 I understand my duty to the Inquiry to assist it with matters within my expertise and believe that I have complied with that duty.

Appendix A - List of Deposit Documents – Public Local Inquiry Library.

Please note that the Public Local Inquiry Library will be continually updated between issue of this Appendix and the end of the Public Local Inquiry. Electronic copies are available on the Inquiry website:

Welsh - www.a40prc-publicinquiry.co.uk/cy

English - www.a40prc-publicinquiry.co.uk

1. List of Evidence

Document Number	Description
WG 1.0.	Outline Statement of Case
WG 1.1	Nathan Duke (Chief Witness)
WG 1.1.1	Part A – Policy Statement Statement of the Welsh Government’s Reasons for Proposing that the Published draft Orders should be made.
WG 1.1.2	Part B – Statement of Need Statement of the Welsh Government’s Reasons for Proposing that the Published draft Orders should be made.
WG 1.1.3	Part C – Summary Statement Statement of the Welsh Government’s Reasons for Proposing that the Published draft Orders should be made.
WG 1.2	Philip Thiele (Traffic & Economics)
WG 1.2.1	Summary of Traffic & Economics Proof of Evidence
WG 1.2.2	Traffic & Economics Proof of Evidence
WG 1.2.3	Traffic & Economics Proof of Evidence - Appendices
WG 1.3	Geraint Jones (Engineering)
WG 1.3.1	Summary of Engineering Proof of Evidence
WG 1.3.2	Engineering Proof of Evidence
WG 1.3.3	Engineering Proof of Evidence - Appendices
WG 1.4	Andrew Sumner (Environment)
WG 1.4.1	Summary of Environmental Proof of Evidence
WG 1.4.2	Environmental Proof of Evidence
WG 1.4.3	Environmental Proof of Evidence - Appendices
WG 1.5	Chloe Delgery (Ecology)
WG 1.5.1	Summary of Ecology Proof of Evidence
WG 1.5.2	Ecology Proof of Evidence
WG 1.5.3	Ecology Proof of Evidence - Appendices
WG 1.6	Mr James Bellinger (Air Quality)
WG 1.6.1	Summary of Air Quality Proof of Evidence
WG 1.6.2	Air Quality Proof of Evidence
WG 1.7	Peter Mumford (Noise)
WG 1.7.1	Summary of Noise Proof of Evidence
WG 1.7.2	Noise Proof of Evidence
WG 1.7.3	Noise Proof of Evidence - Appendices

WG 1.8	John Davies (Planning & Sustainable Development)
WG 1.8.1	Summary of Planning & Sustainable Development Proof of Evidence
WG 1.8.2	Planning & Sustainable Development Proof of Evidence

2. Draft Orders

Draft Orders	
Document Number	Description
Doc. 2.01	Draft Line and De-trunking Order
2.01.01	Draft Line Order
2.01.02	Draft Line Order - Cover Sheet
2.01.03	Draft Line Order - Plan
Doc. 2.02	Draft Side Roads Order
2.02.01	Draft Side Roads Order
2.02.02	Draft Side Roads Order - Cover Sheet
2.02.03	Draft Side Roads Order - Key plan
2.02.04	Draft Side Roads Order - Site Plan
2.02.05	Draft Side Roads Order - Schedule
Doc. 2.03	Draft Compulsory Purchase Order
2.03.01	Draft Compulsory Purchase Order
2.03.02	Draft Compulsory Purchase Order - Cover Sheet
2.03.03	Draft Compulsory Purchase Order - Key plan
2.03.04	Draft Compulsory Purchase Order - Site Plan
2.03.05	Draft Compulsory Purchase Order - Schedule
Doc. 2.04	Public Notices
2.04.01	Public Notice - Line & Side Road Order
2.04.02	Public Notice - Notice of Determination
2.04.03	Public Notice - Notice of ES & SIAA
2.04.04	Public Notice - Public Exhibition Notice
2.04.05	Public Notice - CPO Public Notice
2.04.06	Public Notice - CPO Site Notice

Draft Orders	
Document Number	Description
Doc. 2.05	Letters
2.05.01	Letter - 100 Metre Letter Drop
2.05.02	Letter - Line and Side Road Order
2.05.03	Letter - Deposit Points
2.05.04	Letter - Statutory Bodies
2.05.05	Letter - Non-Statutory Bodies
2.05.06	Letter - CPO Letter (Table 1 with No Essential Licence)
2.05.07	Letter - CPO Deposit Points
2.05.08	Letter - Agents & Solicitors
2.05.09	Letter - (Table 1 with Essential Licence)
2.05.10	Letter - CPO Mortgagees
2.05.11	Letter - Table 2 Interests
Doc. 2.06	Ancillary Documents
2.06.01	Ancillary Documents - Explanatory Statement
2.06.02	Ancillary Documents - Statement of Reasons
2.06.03	Ancillary Documents - Land Referencing Site Plan
2.06.04	Ancillary Documents - Land Referencing Schedule

3. Environmental Statement

Environmental Statement	
Document Number	Description
3.01.01	Chapter 1 – Introduction - Technical Assessment Report
3.01.02	Chapter 1 - Figures
3.01.03	Chapter 1 - Appendices
3.02.01	Chapter 2 – The Project - Technical Assessment Report
3.02.02	Chapter 2 - Figures
3.02.03	Chapter 2 - Appendices
3.03.01	Chapter 3 – Alternatives Considered - Technical Assessment Report
3.03.02	Chapter 3 - Appendices
3.04.01	Chapter 4 – Methodology - Technical Assessment Report
3.04.02	Chapter 4 - Appendices
3.05.01	Chapter 5 – Legislation and Policy Context - Technical Assessment Report
3.06.01	Chapter 6 – Geology and Soils - Technical Assessment Report
3.06.02	Chapter 6 – Figures
3.06.03	Chapter 6 – Appendices
3.07.01	Chapter 7 – Road Drainage and Water Environment - Technical Assessment Report
3.07.02	Chapter 7 – Figures
3.07.03	Chapter 7 – Appendices
3.08.01	Chapter 8 – Nature Conservation - Technical Assessment Report
3.08.02	Chapter 8 - Figures
3.08.03	Chapter 8 - Appendices
3.09.01	Chapter 9 – Landscape and Visual - Technical Assessment Report
3.09.02	Chapter 9 – Figures
3.09.03	Chapter 9 – Appendices

Environmental Statement	
Document Number	Description
3.10.01	Chapter 10 – Archaeology and Cultural Heritage - Technical Assessment Report
3.10.02	Chapter 10 – Figures
3.10.03	Chapter 10 – Appendices
3.11.01	Chapter 11 – Community Effects - Technical Assessment Report
3.11.02	Chapter 11 – Figures
3.12.01	Chapter 12 – Agricultural Assessment - Technical Assessment Report
3.12.02	Chapter 12 – Figures
3.12.03	Chapter 12 – Appendices
3.13.01	Chapter 13 – Air Quality - Technical Assessment Report
3.13.02	Chapter 13 – Figures
3.13.03	Chapter 13 – Appendices
3.14.01	Chapter 14 – Noise and Vibration -Technical Assessment Report
3.14.02	Chapter 14 – Figures
3.14.03	Chapter 14 - Appendices
3.15.01	Chapter 15 – All Travellers - Technical Assessment Report
3.15.02	Chapter 15 – Figures
3.15.03	Chapter 15 – Appendices
3.16.01	Chapter 16 – Materials - Technical Assessment Report
3.16.02	Chapter 16 – Figures
3.17.01	Chapter 17 – Population and Human Health - Technical Assessment Report
3.17.02	Chapter 17 – Appendices
3.17.03	Chapter 17 – Figures
3.18.01	Chapter 18 - Technical Assessment Report
3.18.02	Chapter 18 - Appendices
3.19.01	Chapter 19 – Cumulative Effects - Technical Assessment

Environmental Statement	
Document Number	Description
	Report
3.19.02	Chapter 19 – Figures
3.19.03	Chapter 19 – Appendices
3.20.01	Chapter 20 – Management of Environmental Effects
3.21.01	Chapter 21 - Conclusions

4.01 Policy and Legislation

Policy and Legislation	
Document Number	Description
4.01.01	National Assembly for Wales (Transfer of Functions) Order 1999 (SI 1999/672)
4.01.02	Government of Wales Act 2006
4.01.03	Highways Act 1980
4.01.04	Acquisition of Land Act 1981
4.01.05	Environment (Wales) Act 2016
4.01.06	Report to Prevent Future Deaths (Coroner's Report of fatal collision at Redstone Cross in 2018)
4.01.07	Welsh Government, National Natural Resources Policy
4.01.08	NRW, South West Wales Area Statement Summary of Key Themes
4.01.09	Historic Environment (Wales) Act 2016
4.01.10	Well-being of Future Generations (Wales) Act 2015
4.01.11	Welsh Transport Appraisal Guidance 2017 (WelTAG)
4.01.12	Welsh Transport Appraisal Guidance 2008 (WelTAG)
4.01.13	Active Travel (Wales) Act 2013
4.01.14	Active Travel Action Plan for Wales 2016
4.01.15	Climate Change Act 2008
4.01.16	Explanatory Memorandum for the Environment (Wales) Act Environment (Wales) Act 2016 Explanatory Note
4.01.17	Welsh Government (2019) What is the Welsh Government doing to tackle climate change?
4.01.18	Natural Environment and Rural Communities Act 2006
4.01.19	UK Government Rural Strategy, July 2004 (Defra, 2004).
4.01.20	Wildlife and Countryside Act 1981
4.01.21	Countryside and Rights of Way (CRoW) Act 2000
4.01.22	Human Rights Act 1998
4.01.23	Prosperity for All: A Climate Conscious Wales 2019

Policy and Legislation	
Document Number	Description
4.01.24	Prosperity for All: A Low Carbon Wales 2019
4.01.25	Green Corridors on the Welsh Government Trunk Road and Motorway Network 2018
4.01.26	Trunk Road Estate Biodiversity Action Plan (TREBAP) 2004-2014
4.01.27	National Transport Finance Plan for Wales 2018
4.01.28	National Transport Plan 2010 (subsequently updated 2017 and 2018)
4.01.29	Wales Transport Strategy 2008
4.01.30	Planning Policy Wales (Edition 10) 2018
4.01.31	Road Safety Framework for Wales 2013
4.01.32	Review of the Road Safety Framework for Wales 2018
4.01.33	Prosperity for All: The National Strategy 2017
4.01.34	Prosperity for All: the national strategy (well-being statement) 2017
4.01.35	Prosperity for All: Economic Action Plan 2017
4.01.36	Technical Advice Note 24: The Historic Environment 2017 (TAN 24)
4.01.37	Taking Wales Forward 2016-2021
4.01.38	Technical Advice Note 23: Economic Development 2014 (TAN 23)
4.01.39	Wales Infrastructure Investment Plan 2012
4.01.40	Wales Infrastructure Investment Plan – Project Pipeline Update 2019
4.01.41	Economic Renewal, A New Direction 2010
4.01.42	Technical Advice Note 5: Nature Conservation and Planning 2009 (TAN 5)
4.01.43	One Wales: One Planet 2009
4.01.44	Trunk Road Forward Programme, 2002, 2004 and 2008
4.01.45	The Wales Spatial Plan Update 2008

Policy and Legislation	
Document Number	Description
4.01.46	Planning (Wales) Act 2015
4.01.47	Draft National Development Framework 2019
4.01.48	One Wales: Connecting the Nation – The Wales Transport Strategy 2008
4.01.49	Technical Advice Note 18: Transport 2007 (TAN 18)
4.01.50	Environment Strategy for Wales 2006
4.01.51	Not used
4.01.52	Wales – A Vibrant Economy 2005
4.01.53	Technical Advice Note 15: Development and Flood Risk 2004 (TAN 15)
4.01.54	Technical Advice Note 11 Noise 1997 (TAN 11)
4.01.55	Joint Transport Plan for South West Wales 2015-2020
4.01.56	Pembrokeshire County Council Supplementary Planning Guidance (SPG), Development Sites, Dec 2016
4.01.57	Pembrokeshire Destination Management Plan 2020
4.01.58	Pembrokeshire County Council Local Development Plan 2013
4.01.59	Pembrokeshire Coast National Park Local Development Plan 2010
4.01.60	National Assembly for Wales Revised Circular on Compulsory Purchase Orders NAFWC14/2004
4.01.61	Design Manual for Roads and Bridges DMRB
4.01.62	The Pembrokeshire Well-being Plan 2018
4.01.63	Not used
4.01.64	Learning to Live Differently
4.01.65	Written Statement by Lesley Griffiths, Minister for Environment, Energy and Rural Affairs declaring a climate change emergency 29 April 2019
4.01.66	Written Statement by Lesley Griffiths Minister (as above) accepting advice of Climate Change Committee on GHG

Policy and Legislation	
Document Number	Description
	reductions in Wales
4.01.67	Welsh Government Draft Budget Proposals 2020-21
4.01.68	Welsh Government Draft Budget Proposals 2020-21 Narrative
4.01.69	WebTAG
4.01.70	Natural Resources Wales Well-being Statement
4.01.71	Environmental Protection Act 1990
4.01.72	Control of Pollution Act 1974
4.01.73	Government of Wales Act 1998
4.01.74	The Pembrokeshire Coast National Park Authority's 2017/2018 Corporate Plan
4.01.75	The Highways (Inquiries Procedure) Rules 1994
4.01.76	The Compulsory Purchase by Ministers (Inquiries Procedure) (Wales) Rules 2010
4.01.77	Town and Country Planning (General Development Procedure) Order 1995
4.01.78	State of Natural Resources Report (interim) 2019
4.01.79	Well-being Statement 2017
4.01.80	Not used
4.01.81	Pembrokeshire County Council Deposit Local Development Plan 2
4.01.82	Pembrokeshire Coast National Park Authority Local Development Plan 2
4.01.83	Letter from Cabinet Secretary for Economy and Transport RE inquest of death at Redstone Cross
4.01.84	Building Better Places - The Planning System Delivering Resilient and Brighter Futures
4.01.85	The Highways (Assessment of Environmental Effects) Regulations 1999
4.01.86	The Highways (Environmental Impact Assessment)

Policy and Legislation	
Document Number	Description
	Regulations 2007
4.01.87	Environmental Impact Assessment (Miscellaneous Amendments Relating to Harbours, Highways and Transport) Regulations 2017
4.01.88	Technical Advice Note 6: Planning for Sustainable Rural Communities
4.01.89	National Transport Finance Plan for Wales 2015
4.01.90	National Transport Finance Plan for Wales 2017

4.02 Scheme Development

Scheme Development	
Document Number	Description
4.02.01	Route Options Report 2004 (ROR) - A40 West of St Clears Volume 1
4.02.02	Route Options Report 2004 (ROR) - A40 West of St Clears Volume 2
4.02.03	Welsh Assembly Government A40 West of St Clears – Technical Appraisal Report, (February 2004)
4.02.04	Welsh Assembly Government A40 West of St Clears – Stage 2 Environmental Assessment Report (2004)
4.02.05	Welsh Assembly Government A40 West of St Clears – Stage 1 Scheme Assessment Report (2004)
4.02.06	Welsh Assembly Government, [A40 West of St Clears] Addendum to the Technical Appraisal Report, (2006)
4.02.07	Statement of Results from Public Consultation 2006
4.02.08	Preferred Route TR111 Plan
4.02.09	Stage 2 Layout 358432-MMD-00-XX-DR-C-0008
4.02.10	Welsh Government A40 St Clears to Haverfordwest Study, Design Options Report, (June 2015)
4.02.11	A40 St Clears to Haverfordwest, Economic Activity & Location Impacts (EALI) Study
4.02.12	Scheme Contract Notice

4.03 Scheme Reports

Scheme Reports	
Document Number	Description
4.03.01	Non-Technical Summary (NTS) of the Environmental Statement
4.03.02	Stage 3 Scheme Assessment Report
4.03.03	WelTAG Stage 1 & 2 Report
4.03.04	WelTAG Stage 1 & 2 Impact Assessment Report
4.03.05	Not used
4.03.06	Not used
4.03.07	WelTAG Stage 3 Report
4.03.08	WelTAG Stage 3 Impact Assessment Report
4.03.09	Sustainable Development Report (SDR)
4.03.10	Not used
4.03.11	Not used
4.03.12	DCFW Report Dec 2019
4.03.13	DCFW Report Feb 2020
4.03.14	DCFW Report April 2020
4.03.15	Not used
4.03.16	DCFW Report July 2020

4.04 Engineering Reports

Engineering Reports	
Document Number	Description
4.04.01	Design Options Report
4.04.02	Alignment and Junctions Strategy Report
4.04.03	Departures from Standard Report
4.04.04	Drainage Strategy Report
4.04.05	Stage 1 Road Safety Audit
4.04.06	Stage 1 Road Safety Audit - Designers Response
4.04.07	Active Travel and Detrunking Proposals
4.04.08	Geotechnical Design Report (GDR)
4.04.09	Construction and Buildability Report
4.04.10	Statutory Authorities Works Report
4.04.11	Road Lighting Strategy

4.05 Traffic and Economic Reports

Traffic and Economics Reports	
Document Number	Description
4.05.01	The Initial Traffic and Accident Data Report
4.05.02	The Local Model Validation Report
4.05.03	Traffic Forecasting Report
4.05.04	Traffic Data Collection Report
4.05.05	Economic Assessment Report

4.06 Environmental Reports

Environmental Documents	
Document Number	Description
4.06.1	World Health Organization Environmental Noise Guidelines for the European Region
4.06.2	Jones K 2012. Tranquillity: An Overview. ECRD Report 1207. Environmental Research and Consultancy Department, Civil Aviation Authority
4.06.3	Natural Resources Wales 2016. The State of Natural Resources Report (SoNaRR): Assessment of the Sustainable Management of Natural Resources
4.06.4	The Ramsar Convention
4.06.5	The Eels (England and Wales) Regulations 2009
4.06.6	The National Parks and Access to the Countryside Act 1949 (as amended)
4.06.7	The Protection of Badgers Act 1992
4.06.8	The Hedgerow Regulations 1997
4.06.9	The Wild Mammals (Protection) Act 2016
4.06.10	Conservation of Habitats and Species Regulations 2017 (as amended)
4.06.11	Not used
4.06.12	Statement to Inform an Appropriate Assessment (SIAA)
4.06.13	Assessment of the Implications on European Sites (AIES)
4.06.14	Aldridge H. (1986). Kinematics and aerodynamics of the greater horseshoe bat, <i>Rhinolophus ferrumequinum</i> , in horizontal flight at various flight speeds. <i>Journal of Experimental Biology</i> 126: 479-497
4.06.15	BCT. (2012). <i>Bat Surveys: Good Practice Guidelines</i> (Second ed.). London: Bat Conservation Trust.
4.06.16	Berthinussen A, Altringham J (2012). Do Bat Gantries and Underpasses Help Bats Cross Roads Safely? <i>PLoS ONE</i>

Environmental Documents	
Document Number	Description
	7(6): e38775. https://doi.org/10.1371/journal.pone.0038775
4.06.17	Berthinussen A, Altringham J (2015). WC1060 Development of a cost effective method for monitoring the effectiveness of mitigation for bats crossing linear transport infrastructure. DEFRA Science and Research Projects.
4.06.18	Berthinussen A, Altringham J (2017). Bats and Linear Infrastructure: A summary of DEFRA research project WC1060 by Br Anna Berthinussen and Professor John Altringham. Natural Resources Wales, Badgor.
4.06.19	Catherine Bickmore Associates. (2003). Review of Work Carried out on the Trunk Road Network in Wales for Bats. Cardiff: Welsh Government & Countryside Council for Wales.
4.06.20	Not Used
4.06.21	CIEEM. (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Winchester: Chartered Institute of Ecology and Environmental Management.
4.06.22	not used - now a footnote
4.06.23	Davies, J. (2019). Effectiveness of mitigation of the impacts of a new road on horseshoe bats <i>Rhinolophus ferrumequinum</i> in Wales, UK. Conservation Evidence 16, 17 – 23.
4.06.24	Not Used
4.06.25	European Commission. (1992, 07 22). Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora. Official Journal L., 206, 009-0050.
4.06.26	Not Used
4.06.27	JNCC. (2012). UK Post-2010 Biodiveristy Framework. Peterborough: Joint Nature Conservation Committee and

Environmental Documents	
Document Number	Description
	Defra on behalf of the Four Countries' Biodiversity Group.
4.06.28	Limpens, H., Twisk, P., & Veenbaas, G. (2005). Bats and Road Construction. Delft, The Netherlands: Rijkswaterstaat.
4.06.29	Not Used
4.06.30	Pembrokeshire Biodiversity Partnership. (2011). A Local Biodiversity Action Plan for Pembrokeshire. Haverfordwest: Pembrokeshire County Council.
4.06.31	Not Used
4.06.32	Not Used
4.06.33	Not Used
4.06.34	EIA Directive EC2014/52/EU
4.06.35	The Environmental Impact Assessment (Miscellaneous Amendments Relating to Harbours, Highways and Transport) Regulations 2017
4.06.36	Wales Action Plan for Pollenators (2013)
4.06.37	Not Used
4.06.38	The State of the Roads in Wales Welsh Government October 2019
4.06.39	Noise and Soundscape Action Plan
4.06.40	The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
4.06.41	Highways England - Design Manual for Roads and Bridges Volume 11
4.06.42	Institute of Air Quality Management (IAQM) Assessment of dust from demolition and construction 2014
4.06.43	Institute of Air Quality Management (IAQM) Environment Protection UK Guidance on land-use planning and development control
4.06.44	Interim Advice Note 170/12 v3 Updated air quality advice on the assessment of future Nox

Environmental Documents	
Document Number	Description
4.06.45	Local Air Quality Management Technical Guidance TG16 2016
4.06.46	Cadw Letter - no objection
4.06.47	Protected Species Conservation Strategy Report
4.06.48	Design Intent Statement
4.06.49	Guidance for Pollution Prevention
4.06.50	Predictive Agricultural Land Classification Map (Wales) Version 2.0 - Guidance Note

Appendix B – Figures

Figure 1 The Scheme

Figure 2 Typical WS2+1 Carriageway cross-section

Figure 1 Timeline of Development Work for the Scheme

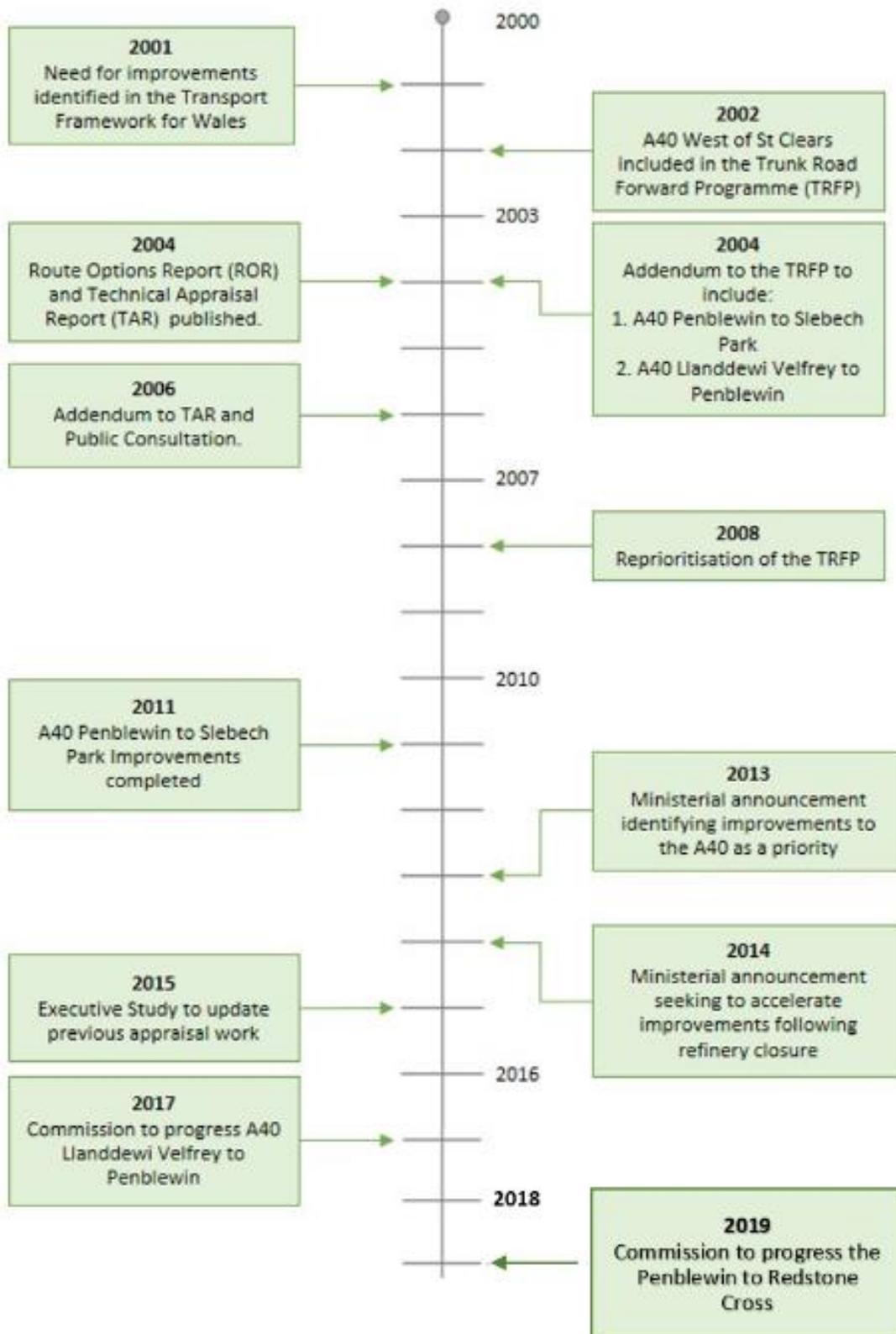


Figure 2: Typical WS2+1 carriageway cross-section

