

## 13 Health and wellbeing

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### 13.1 Introduction

13.1.1 This chapter sets out the assessment of likely significant effects relating to health and wellbeing arising from the construction and operation of the proposed development.

13.1.2 The health and wellbeing assessment applies a broad definition of health, encompassing physical and mental wellbeing and quality of life. This understanding of health is captured in the World Health Organisation (WHO) definition:

*“Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity”.*

13.1.3 The health and wellbeing assessment is based on the identification of ‘health determinants’ i.e. the social, economic and environmental factors that can influence the health and wellbeing of the population. It assess the beneficial and adverse health and wellbeing effects associated with changes to health determinants resulting from the proposed development.

13.1.4 The assessment predominantly focuses on the population and local communities in areas surrounding the site and follows the study areas of other relevant topics, including landscape and visual (Chapter 9), noise (Chapter 10), socio-economics (Chapter 12) and air quality (Chapter 14).

### 13.2 Review of proposed development

13.2.1 The aspects of the proposed development relevant to the health assessment will be similar to other topics which inform the assessment. Further detail is provided in these chapters, but notable aspects of the design relevant to health include:

- Potential employment and training opportunities during construction and operation;
- Impact on access and transport during construction and operation;
- Impacts on existing Public Rights of Way (PRoW) and recreational network of the local area during construction and operation; and
- Noise, air quality and visual impacts on neighbourhood amenity during construction and operation.

## 13.3 Legislation, policy context and guidance

### Policy context

#### Wellbeing of Future Generations (Wales) Act 2015

13.3.1 This legislation sets a requirement for public bodies to consider improving social, economic, environmental and cultural well-being of Wales. There are seven well-being goals in relation to these objectives, including ‘a healthier Wales’. This aims to create a society which maximises people’s physical and mental wellbeing. It seeks to create:

- a compassionate nation;
- an active nation;
- place making and designing-in community health and wellbeing that supports health communities; and
- seamless, preventative organisations and services that benefit health.

#### Planning policy Wales (2021)<sup>1</sup>

13.3.2 The Planning Policy for Wales aims to deliver the vision set out in the Wellbeing of Future Generations Act. A key planning principle as part of this document is to facilitate accessible and healthy environments, which includes creating high quality and inclusive environments in which people can live, work, travel and play.

#### Neath Port Talbot CBC Local Development Plan (2011-2026)

13.3.3 Strategic Policy SP2 Health includes the development of sustainable, safe and confident communities. It includes a commitment to improve accessibility within and between communities to encourage active travel and the provision of new employment opportunities.

#### Powys Local Development Plan (2011-2026)

13.3.4 The Powys Local Development plan does not have specific policies related to health but has a broad overarching theme to support healthy communities. It has a specific objective to promote development that supports community wellbeing and cohesion, including encouraging healthy lifestyles.

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<sup>1</sup> Welsh Government. Planning Policy Wales, 2021. Available at: [https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11\\_0.pdf](https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf)

## Relevant guidance

### **Wales Health Impact Assessment Support Unit (WHIASU) Health Impact Assessment – A practical guide (2011)**

- 13.3.5 The WHIASU Guidance describes the process and methods used to undertake a health assessment and provides resources to support the assessment. It includes checklists for identifying the health determinants and vulnerable groups relevant to the health assessment being undertaken. This checklist has been used to inform the health determinants assessed in this chapter.

### **Rapid Health Impact Assessment Tool, National Health Service (NHS) London Healthy Urban Development (Unit) (2017)**

- 13.3.6 HUDU work with local and national organisations across the UK on behalf of the NHS to enable health and planning sectors to work together. The HUDU tool is designed to assess the likely health impacts of development plans and proposals and identifies those determinants of health which are likely to be influenced by a specific development proposal.

### **IMPACT Urban Health Impact Assessment methodology, Liverpool University (2015)**

- 13.3.7 The IMPACT methodology sets out a process for assessing health effects and improving health outcomes.

## 13.4 Scoping and consultation

### Scoping

- 13.4.1 The Scoping Report sets out the approach taken for the health and wellbeing assessment. This was submitted to Neath Port Talbot County Borough Council and Powys County Council in September 2019.
- 13.4.2 Table 13.1 sets out the comments received in the Scoping Opinion related to the health and wellbeing assessment.

**Table 13.1: Response to scoping opinion**

Scoping opinion clause	Response
Ensure relevant assessments within the ES are cross-referred to in the assessment.	Relevant assessments have been referred to throughout the health assessment.
Consider the impact of the increase in use of the rail link and the impact this has on communities the route passes through.	This has been considered throughout the assessment. The baseline study area extends to include those areas along the rail link and where relevant, impacts on these communities are considered in the assessment.

## Consultation

- 13.4.3 No further consultation comments were received during the preparation of the health assessment.

## 13.5 Methodology

### Overview

- 13.5.1 The health and wellbeing assessment is based on the identification of ‘health determinants’, i.e. the social, economic and environmental factors that can influence the health and wellbeing of a population. The assessment assesses the beneficial and adverse health effects associated with changes to health determinants resulting from the proposed development.
- 13.5.2 The study area for the health and wellbeing assessment is based on the spatial distribution of the environmental and socio-economic impacts of the proposed development and the location of sensitive receptors. It predominantly focuses on local communities surrounding the site and along the branch line, and also follows the study areas of other topics, such as transport, noise and socio-economics.
- 13.5.3 There is no established or widely accepted framework for assessing the significant health effects of a development proposal. The health assessment methodology is however based on a review of evidence, linking changes in health determinants to potential health outcomes.

### Methodology for establishing baseline conditions

- 13.5.4 The baseline consists of a community profile of the area surrounding the site. This is summarised in Section 13.7 and set out fully in Appendix 13A.
- 13.5.5 Using publicly available data, the community profile presents a summary of the demographic, social and health characteristics of the population. Sources include Office of National Statistics (ONS) census and mid-year data, Public Health the Welsh Index of Multiple

Deprivation (WIMD) 2019, StatsWales, NHS Wales Informatic Services and the Public Health Wales Observatory.

- 13.5.6 The community profile provides an overview of the population's resilience to health effects, and the prevalence and distribution of vulnerable sub-groups who may be more sensitive to changes in health determinants (e.g. deprived communities, people with existing health problems or disabilities, older people and children).

### Methodology for evidence review

- 13.5.7 Publicly available literature has been reviewed to identify evidence linking health determinants with health outcomes, including government publications, research papers and peer-reviewed journal articles.

- 13.5.8 The full evidence review is set out in Appendix 13B and forms the basis of the qualitative assessment of health effects of the proposed development that is set out in Section 13.8.

### Assessment methodology

- 13.5.9 Once the community profile and evidence review have been established, the assessment is undertaken in the following stages:

#### Assessment of effects

- 13.5.10 A qualitative assessment of the likely significant health effects is undertaken based on the level of exposure of the population to changes in health determinants.
- 13.5.11 A review of the health determinants set out in the WHIASU guidance was undertaken and the following health determinants are assessed in this chapter:
- Social capital<sup>2</sup>;
  - Transport and connectivity;
  - Open space and nature;
  - Neighbourhood quality (covering air quality, noise and visual amenity);
  - Climate change; and
  - Employment and economy.
- 13.5.12 The assessment identifies potential impacts related to the different stages of development (i.e. construction and operation) and identifies whether these would result in changes to health determinants that

<sup>2</sup> The ONS (2015) defines social capital as: '*social connections and all the benefits they generate. Social capital is also associated with civic participation, civic-minded attitudes and values which are important for people to cooperate, such as tolerance or trust.*' (Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/measuringnationalwellbeing/2015-01-29>)

would be beneficial or adverse, direct or indirect and long-term or temporary. It also takes into account any mitigation measures embedded into the design of the proposed development.

**13.5.13** The approach for defining significance considers:

- the magnitude of the impact on a health determinant; and
- the size and sensitivity of the population exposed to the impact.

**13.5.14** Most potential health effects cannot be reliably quantified because there are currently no robust or scientifically widely agreed upon methods for quantifying them, or because the types of data required cannot realistically be obtained. It is possible in theory to quantify health effects from increased exposure of a large population to noise and air emissions. However, given the relatively short duration of impacts and small number of people likely to be exposed, it would not be possible to identify a statistically significant effect. Therefore, a quantitative assessment of health effects was scoped out.

**Magnitude**

**13.5.15** The magnitude of an impact relates to its severity and/or scale. Magnitude is determined by professional judgement, based on defined assessment criteria (Table 13.2). The characteristics of an impact (i.e. whether direct or indirect, secondary or cumulative, short, medium or long-term, permanent or temporary, reversible or irreversible) is assessed and the magnitude classified as high, medium, low or very low. The assessment of magnitude also considers the nature of potential health outcomes associated with the change, e.g. effects on physical or mental health conditions, quality of life, or comfort.

**Table 13.2: Methodology for assessing magnitude of impact**

Magnitude	Guidelines
High	<p>A substantial change to a health determinant, with two or more of the following characteristics:</p> <ul style="list-style-type: none"> <li>• assessed as ‘major’ by relevant environmental topics (where applicable<sup>3</sup>);</li> <li>• likely to be perceived by the population as a major change;</li> <li>• has the potential to affect the occurrence of acute or chronic mental or physical illness;</li> <li>• long term duration or permanent.</li> </ul>
Medium	<p>A moderate change to a health determinant, with two or more of the following characteristics:</p> <ul style="list-style-type: none"> <li>• assessed as ‘moderate’ by relevant environmental topics (where applicable<sup>3</sup>);</li> </ul>

<sup>3</sup> Other EIA topics’ assessment results are not always relevant to the health assessment. For example, a ‘major’ effect on an individual receptor would not necessarily constitute a major change to a health determinant that would affect the population as a whole. Professional judgement is required when using information from other topics in the health assessment.

	<ul style="list-style-type: none"> <li>likely to be perceived by the population as a moderate change;</li> <li>has the potential to improve / reduce mental wellbeing or quality of life, exacerbate / alleviate symptoms of existing illness, or cause nuisance impacts;</li> <li>medium to long-term duration.</li> </ul>
Low	<p>A minor change to a health determinant, with two or more of the following characteristics:</p> <ul style="list-style-type: none"> <li>assessed as ‘minor’ by relevant environmental topics (where applicable<sup>3</sup>);</li> <li>likely to be perceived by the population as a minor change;</li> <li>has the potential to lower or raise wellbeing in terms of levels of comfort and contentment (for example in relation to noise, odour, or visual amenity);</li> <li>short to medium term duration.</li> </ul>
Negligible	<p>A ‘negligible’ magnitude of impact is likely to be perceptible and localised. It may have the potential to lower or raise wellbeing in terms of levels of comfort and contentment.</p>

## Population exposure

**13.5.16** The level of population exposure is defined by a combination of two factors: the size of the population exposed to an impact and its vulnerability to health effects. The size of the exposed population is judged on a scale of high, medium, low and very low, dependent on geographical area and number of people exposed. The vulnerability of the population is also judged on a scale of high, medium, low and very low based on indicators of the health and social status of the population (**Table 13.3**). More vulnerable populations include those with higher levels of social deprivation or relatively poor health status.

**Table 13.3: Guidelines for the assessment of population exposure and vulnerability**

Rating	Guidelines	
	Population exposure	Population vulnerability
High	A high level of exposure would occur over a wide geographical area and/or be likely to affect a large number of people (e.g. over 500).	Affected population includes a higher than national average proportion of vulnerable or disadvantaged groups (such as children or older people) who are more likely to experience adverse health effects as a result of the impact in question.
Medium	A medium level of exposure would occur over a relatively localised area and/or be likely to affect a moderate-large number of people (e.g. 100-500).	Affected population includes an average or close to average proportion of vulnerable or disadvantaged groups who are more likely to experience adverse health effects as a result of the impact in question.
Low	A low level of exposure would cover a small, local area and/or affect a small number of people (e.g. fewer than 100).	Affected population includes a below average proportion of vulnerable or disadvantaged groups who are more likely to experience adverse health effects as a result of the impact in question.

Very low	A very low level of exposure would affect a small number of individuals.	Not applicable (no population is considered)
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13.5.17 Population exposure and population vulnerability are then combined to give an overall judgement on population sensitivity, on a scale of high, medium, low or very low (**Table 13.4**).

**Table 13.4: Population sensitivity matrix**

Population exposure	Population vulnerability			
	High	Medium	Low	Very low
High	High	High	Medium	Low
Medium	High	Medium	Low	Low
Low	Medium	Low	Low	Very low
Very low	Low	Low	Very low	Very low

**Significance criteria**

13.5.18 To determine overall significance of impact, the assessment matrix provided in **Table 13.5** was used. This classifies significance of health impacts as major, moderate, minor or negligible. For the purpose of the EIA, a significant impact is defined as any health impacts **identified as moderate and above**.

**Table 13.5: Significance of impact**

Magnitude of impact	Population sensitivity			
	High	Medium	Low	Very low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Minor
Low	Moderate	Minor	Minor	Minor
Very low	Minor	Minor	Negligible	Negligible

**Mitigation**

13.5.19 If required, a description of further measures to be incorporated to reduce the adverse and/or enhance the beneficial effects of the proposed development on health determinants is described.

**Design mitigation**

13.5.20 A number of mitigation measures incorporated into the design are relevant to the health assessment including:

- A Construction Traffic Management Plan (CTMP) including traffic measures such as such as safe access routes, correct signage and wayfinding;



- Noise barriers (2m high on the northern and southern sides of the test track and 3m high along the southern perimeter of the washery facility and sidings);
- A landscape bund on the eastern side of the track;
- Mitigation planting to screen the site and minimise visual impact;
- Train carriages to be unlit during any night-time operations; and
- Positioning taller features (overhead line equipment and trains) furthest back from the embankment and planting to ensure screening is most effective.

13.5.21 Further measures are described in the relevant environmental topic chapters.

### Assumed construction practices

13.5.22 An outline construction environmental management plan (CEMP) has been prepared for the proposed development (Appendix 3A). Construction practices relevant to the health assessment include:

- Construction activity will typically be confined to 08.00-18.00 hours, Monday to Friday and 08.00-13.00 hours on Saturdays.
- Where working is required outside of the above hours for safety or engineering practicability reasons, the works to be carried out during these extended hours will be discussed and agreed with the local Environmental Health Officer in advance of the works commencing
- Minimising the emissions of dust and particulate matter through prevention or reducing at source;
- Locate dusty and noisy activities away from receptors as far as possible;
- Ensure all vehicles and machinery are switched off when not in use; and
- Develop and implement a stakeholder communication plan.

13.5.23 Further measures are described in the relevant environmental topic chapters.

## 13.6 Limitations and assumptions

13.6.1 The assessment draws on the assessment outputs from other disciplines within the ES (traffic and transport (Chapter 5), landscape and visual (Chapter 9), noise (Chapter 10), socio-economics (Chapter 12) and air quality (Chapter 14)) that are relevant to the health determinants considered in the health assessment.

- 13.6.2** The assessment considers the residual impacts identified by the above disciplines, that is, after mitigation measures, such as landscape planting, have been taken into account. It also assumes that any mitigation outlined by these topics would be effective. The findings from these assessments inform the judgements made within the assessment.
- 13.6.3** Literature and baseline data used in the health assessment is limited to readily available public and published sources.
- 13.6.4** The health assessment identifies the impacts on the determinants of health, but there is less certainty regarding the resulting health effects of that impact as it is often dependent on a range of other factors. For example, the proposed development may improve opportunities for active travel, but the uptake of those opportunities by the population is less certain due to the individual choices people make.

## 13.7 Baseline Environment

A detailed description of the community profile is set out in Appendix 13A. The key findings are set out below.

- 13.7.1** Data related to population, health and wellbeing is provided at a variety of scales. Where possible, the lowest scale is used. The following study areas are used throughout the baseline:
- Local authority level: Powys and Neath Port Talbot (NPT);
  - Ward level: Aber Craf and Tawe Uchaf (Powys) and Onllywyn and Seven Sisters (NPT); and
  - Lower Super Output Area (see **Table 13.6**).

**Table 13.6: LSOAs within the study area**

LSOAs in proximity to the proposed development	
Aber Craf – W01000426	Tawe-Uchaf – W0100496
Aberdualis – W0100887	Ynyscedwyn – W0100502
Crynant – W0100918	Ystradgynlais 1 – W0100504
Onllywn – W01000944	Ystradgynlais 2 – W0100505
Seven Sisters – W0100965	

- 13.7.2** At the local authority level, NPT has a population of 142,906 and Powys has a population of 132,447<sup>4</sup>. Both areas have high elderly populations, with 21% of NPT and 27% of Powys aged 65 and over, compared with 18% across Wales.

<sup>4</sup> Office for National Statistics (ONS), 2018. Mid-year population estimates. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates>

- 13.7.3** In terms of ethnicity, data from the 2011 Census shows that between 98% and 100% of residents in the LSOAs in proximity to the proposed development identify as white ethnicity<sup>5</sup>.
- 13.7.4** The Welsh Index of Multiple Deprivation (2019) (WIMD)<sup>6</sup> provides a measure of relative deprivation across Wales. **Table 13.7** shows the overall deprivation rank for the LSOAs in proximity to the proposed development. It indicates that generally the areas around the site are not very deprived, with the exception of Ystradgynlais 1 which is considered to be one the most deprived areas in Wales.

**Table 13.7: WIMD 2019 deprivation scores**

LSOA	WIMD – overall deprivation		WIMD – health deprivation	
	WIMD Score <sup>1</sup>	WIMD Rank <sup>2</sup>	WIMD Score <sup>1</sup>	WIMD Rank <sup>2</sup>
Aber Craf	950	4	616	4
Aberdualis	735	4	700	4
Crynant	1206	5	948	4
Onllywn	508	3	398	3
Seven Sisters	552	3	432	3
Tawe-Uchaf	847	4	955	4
Ynyscedwyn	1198	5	895	4
Ystradgynlais 1	117	1	105	1
Ystradgynlais 2	821	4	711	4

<sup>1</sup>Where 1 is most deprived and 1909 is the least deprived

<sup>2</sup>Where 1 is most deprived 10% of LSOAs and 5 is the least deprived 50%

- 13.7.5** **Table 13.7** also shows Ystradgynlais 1 to be one of the most deprived areas of Wales in terms of health deprivation, whereas the other LSOAs are considered to be relatively healthy.
- 13.7.6** In terms of healthy lifestyles, The Public Health Wales Observatory identifies that approximately 18% of children ages 11-16 are considered to be physically active, and both Powys and NPT have the same percentage as this national average<sup>7</sup>. For adults, Powys has a much higher rate of physical activity, with 64% of adults considered to be physically active (defined as 150 minutes or more of physical activity in a week), compared with 53.1% nationally<sup>8</sup>. NPT however is below average, with only 48.4% of adults considered to be physically active.

<sup>5</sup> Office for National Statistics (ONS), 2011. 2011 Census – ethnicity. Available at: <https://www.nomisweb.co.uk/census/2011>

<sup>6</sup> Welsh Index of Multiple Deprivation, 2019. Available at: <https://wimd.gov.wales/explore?lang=en#domain=overall&z=8&lat=52.4137&lng=-4.2000>

<sup>7</sup> Public Health Wales Observatory, 2017/18 data. *Physical activity in adolescents*. Available at: <https://public.tableau.com/profile/publichealthwalesobservatory>

<sup>8</sup> Public Health Wales Observatory, 2016/17 – 2018/19 data. *Physical activity in adults*. Available at: <https://public.tableau.com/profile/publichealthwalesobservatory>

- 13.7.7 The socio-economic baseline (Chapter 12) has also been used to inform this assessment in terms of employment and economy. It states that according to the 2011 Census, at the local level, economic activity is low with a total economic activity of 61.6% compared to 62.3% for NPT, 69.6% for Powys and 65.8% across Wales<sup>9</sup>.
- 13.7.8 In NPT 75.7% of those aged 16-64 are economically active with an employment rate of 72.7%. These figures fall just below the Welsh figures of 76.5% and 73.2% respectively. In Powys, 78.1% are economically active, with the overall employment rate standing at 76%<sup>10</sup>.
- 13.7.9 In terms of key sectors across the local area, the largest employment sector (by broad industrial group) is health which employs 20.4% of total employees. Other notable sectors include construction, manufacturing and accommodation and food services each of which employ 10% of the local working population<sup>11</sup>.

## 13.8 Assessment of effects

### Assessment of effects from construction

#### Transport and connectivity

- 13.8.1 Evidence shows that accessibility for local residents to community facilities, public services and employment has a direct positive effect on human health (see Appendix 13B).
- 13.8.2 There are a number of Public Rights of Way (PRoW) which traverse the site. These link east to west connecting villages including Penrhos and Onllwyn onto Banwen, and north to south between Caehopkin and Severn Sisters. The Route 43 of the National Cycle Network (NCN) also runs adjacent to the north edge of the site. Further details are provided in Chapter 5, Traffic and Transport.
- 13.8.3 All PRoW that traverse the site are currently not in operation due to the existing coal mining operations at Nant Helen. Planning permission associated with the earthworks to restore the existing coal mining site has been granted, but it is not anticipated that the PRoW would be restored prior to construction of the proposed development.
- 13.8.4 All PRoW which would experience direct impacts would therefore be permanently diverted to created improved routes for different users which navigate around the site. Any required diversions would be completed in advance of works and where safe to do so, access on the PRoW network surrounding the site would be maintained during

<sup>9</sup> Office for National Statistics (ONS), 2011. 2011 Census – economic activity. Available at: <https://www.nomisweb.co.uk/census/2011> ONS Census (2011)

<sup>10</sup> ONS (2019) Annual Population Survey, Estimate 12 months to June. Available at:

<https://www.nomisweb.co.uk/query/construct/components/date.asp?menuopt=13&subcomp=>

<sup>11</sup> ONS (2015) Business Register and Employment Survey

construction. Further detail will be set out within a Public Rights of Way and Common Land Strategy, to be submitted as part of the Outline Planning Application.

- 13.8.5 Additionally, along the branch line, there are a number of points where designated PRoW cross the existing rail line (See Chapter 12 Socio-economics, Table 12.13). During construction train movements along the railway would not increase beyond current usage. Therefore, it is anticipated that the use of these PRoW along the branch line would continue as normal.
- 13.8.6 In terms of road connectivity, the site is well-connected to an existing network of major A-roads. The traffic and transport assessment (Chapter 5) sets out that during the construction phase, the road network would operate within the existing capacity without noticeable queues or delays to drivers, pedestrians or cyclists. Construction traffic will also access the site via existing entrances, with HGVs using the A4221 Washery and Distribution centre access.
- 13.8.7 Nevertheless, the presence of increased HGVs during construction may give rise to perceptions of additional road safety risks, particularly for vulnerable groups (such as children, older people and disabled people).
- 13.8.8 A CTMP would form part of planning condition. The transport assessment (Chapter 5) sets out a number of measures including: the provision of alternative walking routes to ensure safe access across the all PRoW and construction traffic measures, such as correct signage and wayfinding, to minimise highway disruptions.
- 13.8.9 Therefore, the impact on transport and connectivity during construction is expected to result in a low magnitude. The PRoW that currently traverse the site are not in use and would be diverted prior to construction. Additionally, the increase in construction vehicles it not anticipated to be noticeable. The population sensitivity is assessed as low based on:
- Low population exposure: as delays or route changes due to construction activity are not anticipated; and
  - Medium population vulnerability: due to the presence of a small number of vulnerable groups in the local area.
- 13.8.10 Therefore, this is likely to result in a temporary **minor** adverse effect which is **not significant**.

### Open space and nature

- 13.8.11 As described above, a number of PRoW traverse the site or are in proximity. The NCN 43 is also adjacent to the northern site boundary. However, the PRoW that traverse the site are currently not in use.

- 13.8.12 The health evidence base (Appendix 13B) sets out a range of evidence demonstrating the mental and physical health and wellbeing benefits associated with green and open space. Benefits include: physical benefits associated with obesity, life expectancy and blood pressure; attention and cognitive benefits; self-reported benefits in terms of health and life satisfaction; and community cohesion.
- 13.8.13 The presence of construction activity could deter the use of the local walking and cycling routes due to concerns around construction noise, emissions and visual intrusion impacting the amenity of these routes. The landscape and visual assessment (Chapter 9) identifies moderate to major (significant) adverse effects from a number of viewpoints used by recreational receptors. This is due to the presence of construction works including: the laying of track bed and track; erection of overhead line equipment; erection of signals, fencing and acoustic barriers; and construction of vehicle access route alongside the track.
- 13.8.14 However, the PRow network surrounding the site is extensive (See the Transport Assessment) and therefore a range of alternative recreational routes would be available in proximity to the proposed development. A Public Rights of Way and Common Land Strategy is also submitted as part of the Outline Planning Application and includes a more detailed approach to managing impacts on the PRow network. Overall the Strategy seeks to create a more circular, multi-user recreational route.
- 13.8.15 Therefore, the impact is expected to result in a medium magnitude health effect due to the temporary reduction in the amenity of the rural PRow network. However, a Public Rights of Way and Common Land Strategy will develop long-term improvements to the network. The population sensitivity is low based on:
- Low population exposure: due to the relatively small population in the rural area, the transient nature of PRow users, and the range of alternative PRow available;
  - Low population vulnerability: this effect is the same across all groups, including those with vulnerabilities.
- 13.8.16 Therefore, this is likely to result in a temporary **minor** adverse effect, which is **not significant**.

### Climate change

- 13.8.17 The construction period for the proposed development is between 2021 and 2025. It is not considered that there would be a significant change in the local climate over this time period which would affect health.
- 13.8.18 The construction works have the potential to contribute to climate change. The climate change assessment (Chapter 15) estimates that it would result in 67.5 KtCO<sub>2</sub>e of GHG emissions, representing 0.2% of

the emissions for the Neath Port Talbot and Powys region combined. Whilst this would be a significant effect from a climate change perspective, this change in emissions would not be perceptible by local residents and therefore there would be no effects from a health and wellbeing perspective.

### **Air quality, noise and neighbourhood quality**

- 13.8.19** Construction activities and increased Heavy Goods Vehicles (HGV) traffic on roads could result in adverse changes to the outdoor neighbourhood amenity. This is due to increased noise, dust and changes in visual amenity from construction activities and from construction traffic on the local road network.
- 13.8.20** The health evidence review (Appendix 13B) demonstrates that changes in air quality can affect respiratory health and air quality is considered a major health problem by the WHO. Additionally, excessive noise can interfere with people's daily activities, disturb sleep, cause cardiovascular and psychophysiological effects, reduce performance and provoke annoyance responses and changes in social behaviour.
- 13.8.21** The noise assessment (Chapter 10) has not identified any significant residual noise effects from construction traffic or activities.
- 13.8.22** Although air quality can affect respiratory health, the scale of impact from changes in air quality is too small to give rise to any measurable effects on the health of the population (Chapter 14). The CEMP also includes a number of measures in relation to air quality including the development of a Dust Management Plan, keeping dust-causing activities away from receptors, erecting barriers around dusty activities and no idling vehicles. Further measures are described in Chapter 14.
- 13.8.23** Nevertheless, it is likely that the community will be concerned about the health effects of construction emissions, particularly with regards to children's health and those with existing respiratory conditions. Additionally, dust from construction sites has the potential to cause nuisance and irritation.
- 13.8.24** The visual assessment (Chapter 9) identifies a major adverse impact on residential receptor's views south from the western edge of Ynswen, as construction activities or the northern embankment would be very visible within an otherwise rural backdrop. The assessment also identifies moderate adverse impacts on residential receptor views from Ystradgynlais Footpath 4 and north/north-west from properties on the A1049, due to the presence of construction activity in views which feature open landscapes.
- 13.8.25** The combination of impacts on environmental amenity has the potential to give rise of negative feelings in relation to quality of life

and the local environment. This could change behaviours, such as deterring the use of outdoor spaces during the construction phase.

13.8.26 The impact is expected to result in a low magnitude health effect. There is likely to be a temporary impact on mental wellbeing and quality of life, but mitigation measures are in place to manage impacts. The population sensitivity is assessed as medium based on:

- Medium population exposure: due to the temporary nature of construction activities and mitigation measures in place; and
- Medium population vulnerability: due to the presence of a small number of vulnerable groups in the local area.

13.8.27 Therefore, this is likely to result in a temporary **minor** adverse effect which is **not significant**.

### Employment and economy

13.8.28 As set out in the socio-economic assessment (Chapter 12), it is estimated that between 80 and 244 jobs could be created during construction. It is anticipated that approximately 10 and 20% of these jobs would be specialist jobs, whilst the remaining jobs would primarily be locally sourced (see Chapter 12 Socio-economics).

13.8.29 The proposed development would also support a wider supply chain and service industries in the local area, such as food outlets and accommodation providers. Any new employment or increase in profit generated by the construction workforce is likely to bring positive effects to the local economy and be beneficial to the wellbeing of the local communities within these supply chains.

13.8.30 As outlined in the socio-economics baseline, the 2018 Business Register and Employment Survey (BRES) identified that 10% of the population work in the construction industry and therefore the construction of the proposed development is likely to support a sizeable local workforce.

13.8.31 The socio-economic baseline also shows that Powys and NPT have similar levels of unemployment to the national level. The IMD Employment score (see health baseline, Appendix 13A) however does indicate some areas of employment deprivation at the more local level, for example in LSOA Ystradgynlais 1.

13.8.32 The health evidence review (Appendix 13B) describes how good employment is known to have psychological benefits, improve life expectancy and enable healthier lifestyle choices (as a result of reliable income).

13.8.33 Therefore, the impact on employment and economy is expected to result in a low magnitude effect as it is likely to generate local employment and local spending over the duration of the construction period. The population sensitivity is assessed as high based on:



- Medium population exposure: due to the relatively high construction workforce in the local area: and
- High population vulnerability: due to the presence of some areas of local employment deprivation.

13.8.34 This is likely to result in a temporary **moderate beneficial** effect which is **significant**.

## Assessment of effects from operation

### Transport and connectivity

13.8.35 The transport assessment (Chapter 5) does not identify any increase in driver or pedestrian delay during operation of the proposed Development.

13.8.36 Appropriate footpaths will also be provided along Onllwyn Road to the site entrance, allowing for a safe pedestrian crossing around Onllwyn Road and Wembley Avenue. The development will also connect with the NCN 43 to enable cycling accessibility.

13.8.37 Additionally, any PRoW directly impacted by the proposed development will be diverted and a Public Rights of Way and Common Land Strategy is to be submitted as part of the outline planning application. This Strategy seeks to create a more coherent network of PRoW, suitable for multiple users.

13.8.38 Along the branch line are a number of points where designated PRoW cross the branch line, further details and images are provided in Chapter 12 Socio-economics. During operation train movements are not expected to increase in frequency and therefore no impacts on PRoW along the branch line are anticipated.

13.8.39 Therefore, the operation of the proposed development is anticipated to result in a low magnitude health effects as the development is not anticipated to cause significant disruption to road users, cyclists or pedestrians. Measures are also in place to improve local connectivity and the PRoW network, resulting in an overall beneficial effect. The population sensitivity is assessed as low based on:

- Low population exposure: due to the transient nature of users and improved connectivity; and
- Low population vulnerability.

13.8.40 This is likely to result in a **minor beneficial** effect which is **not significant**.

### Open space and nature

13.8.41 As described above, there is an extensive network of PRoW in proximity to the site. Many of these routes would be used for

recreational purposes and allow access to the open space and nature of the surrounding area.

13.8.42 A Public Rights of Way and Common Land Strategy is submitted as part of the outline planning application. Overall, this Strategy seeks to create a more circular and coherent network of PRow suitable for different users, based on the existing bridleway to the south of the site, and the NCN to the north.

13.8.43 However, the landscape and visual assessment (Chapter 9) identifies significant adverse effects on recreational receptors, due to views of rail infrastructure and passing trains, from the following views:

- south-east from Ystradgynlais Bridleway 61 within the Brecon Beacons National Park;
- south from Ystradgynlais Footpath 64 within the Brecon Beacons National Park;
- east from Ystradgynlais Footpath 4;
- south from National Cycle Network Route 43; and
- south-west from Tawe-Uchaf Footpath 5.

13.8.44 Rail infrastructure and facilities at the location of the old coal washery would be visible from:

- south from the Trig Point on Cribarth;
- south-west from dismantled Neath & Brecon Railway line; and
- north from Sarn Helen Roman Road and Byway 28/39.N.Hi/1, along the ridge of Hirfynydd.

13.8.45 Additionally, there would be major significant adverse effects on recreational receptors from views north-east from Ystradgynlais Footpath 10 due to the proximity to rail infrastructure, fast moving trains and facilities associated with the rail testing loops. This would impact the views of immediate rural upland views and the wider views of the Brecon Beacon National Park.

13.8.46 Significant adverse effects on views north-east from Ystradgynlais Footpath 10, south from Trig Point on Cribarth, south from Ystradgynlais Footpath 64 and from the NCN Route 43 are expected at year 15 of operation. This is due to the proximity of the proposed development which would dominate views and change the character of the cycleway.

13.8.47 As described above, the evidence base (Appendix 13B) sets out how access to open space and nature can have beneficial effects on mental and physical health and wellbeing. Therefore, significant changes to the tranquillity of these routes and the rural surroundings could reduce access to associated health and wellbeing benefits.

13.8.48 This is likely to result in a medium magnitude effect due to the long-term changes to the recreational routes in the area. However, the Mitigation Strategy seeks to improve the overall PRoW network for different users. The sensitivity is assessed as low based on:

- Low population exposure: due to the relatively small population in the rural area, transient users of the PRoW and the range of alternative PRoW available;
- Low population vulnerability.

13.8.49 Therefore, effects on health are assessed as **minor adverse**, which is **not significant**.

### Climate change

13.8.50 The proposed development seeks to minimise greenhouse gas emissions by measures including using the existing rail and road network and the provision of new footpath connections to Onllwyn and connection to the NCN 43 route to encourage active travel to the site. However, the operation of the proposed development would still generate greenhouse gas emissions and within the climate change assessment (see Chapter 15) all emissions are considered significant.

13.8.51 From a health perspective, this is likely to result in a very low magnitude effect as any changes in emissions are unlikely to be perceptible to the local population. The sensitivity is assessed as low based on:

- Low population exposure: and
- Low population vulnerability: this effect is not anticipated to exacerbate vulnerabilities.

13.8.52 Therefore, this is anticipated to have a **negligible** effect on health, which is **not significant**.

### Air quality, noise and neighbourhood quality

13.8.53 The visual assessment identifies a major adverse effect on residential receptors during the first year of operation from the view south from western edge of Ynswen due to the presence of rail infrastructure including: overhead line equipment; signals, fencing and acoustic barriers. This would be visible across the hillside, introducing urban features into the current rural view.

13.8.54 Additionally, during the first year of operation moderate adverse effects on residential receptors are identified, due to the presence of rail infrastructure and passing trains, from the following views:

- western edge of Ynswen;
- south from Tanygarth, Abercraf;

- east from Gwrhyd Road, Pen-Rhiwfawr, on the north-eastern lower slopes of Mynydd Uchaf;
- south-west from Station Road, Coelbren and western end of Tawe-Uchaf Footpath 1;
- north-east from School Road, Ystalyfera; and
- north / north-west from properties on the A1049.

**13.8.55** Therefore, local residents would experience a significant change to the existing rural environment. By year 15 of operation all views would reduce to minor adverse effects which is not significant. This is due to screening of the infrastructure by established mitigation planting implemented as part of the Nant Helen Complementary Restoration Earthworks or mitigation planting as part of this proposed development.

**13.8.56** The noise assessment does not identify any significant operational effects. Significant embedded mitigation measures, such as noise barriers and landscape bunds, are included in the design to minimise noise impacts, as described in paragraph 13.5.20. Nevertheless, sensitivity to noise is subjective and some people may be particularly sensitive to even small changes in noise, even those that are assessed as not significant. As a result, operation of the proposed development could result in disturbance to local communities in proximity to the site due to changes in the noise environment, including some night-time operation.

**13.8.57** The scale of impact from changes in air quality during operation is assessed as negligible and would not give rise to any measurable effects on the health of the population (see Chapter 14 Air quality).

**13.8.58** The combined impact on air quality, noise and neighbourhood quality is expected to result in a low magnitude health effect. In consideration of the other assessments long-term impacts are assessed as not significant. The population sensitivity is assessed as medium based on:

- Medium population exposure: due to impacts likely to be localised to a small number of residents in proximity to the proposed development; and
- Medium population vulnerability: due to the presence of some vulnerable groups in the local area.

**13.8.59** Therefore, effects on health are assessed a **minor adverse** effect which is not **significant**

## **Employment and economy**

**13.8.60** As set out in the socio-economic chapter, approximately 179 jobs will be created at GCRE. Between 55 and 75 indirect jobs could also be created through the supply chain. Additionally, GCRE would look to

provide training and employment opportunities through partnerships with local further education institutions.

**13.8.61** As outlined in the socio-economic baseline, the 2018 BRES Survey identifies pockets of the local population (ward level) in relevant industries such as business administration and support services (9.6%) and transport and storage (3.1%) (see Chapter 12, Socio-economics). Additionally, as set out in paragraph 13.8.31 of this chapter, pockets of employment deprivation exist locally.

**13.8.62** The impact on employment and economy is expected to result in a very low magnitude effect as it is likely to generate employment opportunities relevant to a small proportion of the local workforce. The jobs are anticipated to be highly skilled and therefore may not come from the immediate community. The population sensitivity is assessed as medium based on:

- Low population exposure: due to the provision of a small number of jobs created which are relevant to a small proportion of the local workforce; and
- High population vulnerability: due to the presence of some areas of income and employment deprivation.

**13.8.63** Therefore, this is likely to result in a **minor beneficial** effect which is **not significant**.

### **Social capital**

**13.8.64** Connectivity and severance relate closely to social capital, with actual and perceived barriers potentially reducing access to key social networks and facilities.

**13.8.65** The operation of the proposed development is likely to result in a small increase in road transport.

**13.8.66** However, this increase in road trip generation is not expected to be significant or result in any physical changes to the local highway network (see Chapter 5 Traffic and Transport). Additionally, the number of trains along the branch line are not anticipated to increase during operation and therefore the PRow network along the branch line will not be impacted by operational activities.

**13.8.67** In addition, mitigation measures would be put in place, such as a site wide Travel Plan which will be used as a means of monitoring the transport situation and encouraging sustainable transport journeys.

**13.8.68** Therefore, this is likely to result in a very low magnitude effect as the increased trip generation is not anticipated to be noticeable. The population sensitivity is assessed as very low based on:

- Very low population exposure; and

- Very low population vulnerability: this effect is not anticipated to exacerbate vulnerabilities.

13.8.69 Therefore, this is likely to result in a **negligible** health effect which is **not significant**.

## 13.9 Mitigation and enhancement

13.9.1 The health assessment takes into account mitigation measures incorporated by traffic and transport, air quality, noise and vibration, socio-economics and LVIA to reduce the adverse effects of the proposed development on people and the environment. There are no health related mitigation measures proposed additional to those.

## 13.10 Residual effects

13.10.1 No further mitigation is proposed and therefore the effects are as described above.

## 13.11 Assessment summary matrix

Potential Effect	Receptor (s)	Sensitivity of Receptor	Magnitude (prior to mitigation)	Significance (prior to mitigation)	Mitigation	Magnitude (following mitigation)	Residual Significance
Affects from construction traffic and activity on local traffic levels and access	Residents in proximity to the proposed development and along the branch line	Low	Low	Not significant (minor adverse)	N/A	N/A	Not significant (minor adverse)
Impacts from construction activity on access to the surrounding open space and natural environment, and the recreational enjoyment of the local PRoW network.	Residents in proximity to the proposed development and along the branch line, and recreational users of the wider PRoW network	Medium	Low	Not significant (minor adverse)	N/A	N/A	Not significant (minor adverse)
Effects from construction activities and traffic on neighbourhood quality (including air quality, noise and visual amenity).	Residents in proximity to the proposed development and along the branch line	Medium	Low	Not significant (minor adverse)	N/A	N/A	Not significant (minor adverse)
Increased access to employment opportunities during construction	Job seekers, particularly those in the construction industry	High	Low	Significant (moderate beneficial)	N/A	N/A	Significant (moderate beneficial)
Impact on local traffic levels and accessibility during operation of the proposed development	Residents in proximity to the proposed development and along the branch line	Low	Low	Not significant (minor beneficial)	N/A	N/A	Not significant (minor beneficial)
Impact due to operational activity on access to the surrounding open space and natural environment, and the recreational enjoyment of the local PRoW network	Residents in proximity to the proposed development and along the branch line	Low	Medium	Not significant (minor adverse)	N/A	N/A	Not significant (minor adverse)
Impacts on climate change associated with operation of the proposed development.	Local and wider community	Very low	Low	Not significant (Negligible)	N/A	N/A	Not significant (Negligible)

Effects from operational activities and traffic on neighbourhood quality (including air quality, noise and visual amenity).	Residents in proximity to the proposed development and along the branch line	Medium	Low	Not significant (minor adverse)	N/A	N/A	Not significant (minor adverse)
Increased access to employment opportunities during operation.	Job seekers and local residents	Medium	Very low	Not significant (minor beneficial)	N/A	N/A	Not significant (minor beneficial)
Impacts on social capital during operation	Residents in proximity to the proposed development and along the branch line	Very low	Very low	Not significant (negligible)	N/A	N/A	Not significant (negligible)