
A83 Rest and Be Thankful

LTS EIAR VOLUME 4, APPENDIX 15.2 - POPULATION AND
HUMAN HEALTH METHODOLOGY

Transport Scotland

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15-2. Population and Human Health

Methodology

15-2.1. Introduction

Study Area

- A15-2.1.1. Within [Design Manual for Roads and Bridges \(DMRB\) LA 112 - Population and human health](#), in terms of Land Use and Accessibility, there is a requirement for the study area to be based on the construction footprint / Proposed Scheme boundary (including compounds and temporary land take) plus a 500m area surrounding the Proposed Scheme Boundary.
- A15-2.1.2. In relation to human health, DMRB LA 112 notes that the study area shall be defined based on the extent and characteristics of the Proposed Scheme and the communities / wards directly and indirectly affected by the Proposed Scheme. Therefore, in respect of human health, consideration has been made of the population of a wider study area used to define the characteristics of population and human health and health inequalities, including the area within which the local and regional National Health Service (NHS) organisations operate. Consideration has also been made of the [Scottish Government statistics](#), [Public Health Scotland](#), [Scottish Public Health Observatory](#) datasets, reporting across Loch Lomond and the Trossachs, Argyll and Bute Local Authority area as a whole (including for example Local Authority Profiles and data sourced from [Joint Strategic Needs Assessments](#) and [Joint Strategic Plans](#)), as well as through consideration of applicable Ward level data, in addition to information at Data Zone level.

Background to the Assessment Methodology

- A15-2.1.3. This Appendix sets out the assessment methodology adopted for the assessment of the anticipated impacts on population and human health. It is to be noted that while these issues are considered together and are complimentary, they are assessed separately, with a slightly different

methodology taken in relation to consideration of population and its assets, to that taken when considering impacts on human health.

- A15-2.1.4. In terms of population / land use, the DMRB LA 112 sets out the requirements for assessing and reporting the environmental effects on population from construction, operation, and maintenance of highways projects. Professional judgement is also used to guide the assessment alongside relevant findings from surveys undertaken through the WCHAR and AIA. The guidance requires reporting on the following elements:
- private property and housing
 - community land and assets
 - development land and businesses
 - agricultural land holdings
 - walkers, cyclists, and horse-riders (WCH).
- A15-2.1.5. In relation to human health DMRB LA 112 sets out the requirements for assessing and reporting the environmental effects on human health for construction, operation, and maintenance of highways projects. While regard is made of these requirements, it must be borne in mind that LA 112 provides a means to derive a human health outcome category and provides no mechanism to derive significance of effect. However, it is to be noted that [The Roads \(Scotland\) Act 1984 \(Environmental Impact Assessment\) Regulations 2017](#) (SSI 2017 No.137) require Environmental Impact Assessment Reports to include, among other topics, assessment of potential effects upon human health, and it is taken that this will include potential impacts/effects on physical, mental, and social wellbeing.
- A15-2.1.6. In order to remain compliant with the requirements of the EIA Regulations, in addition to DMRB LA 112, consideration is also made of The [Institute of Environmental Management and Assessment \(IEMA\) Guide To 'Determining Significance for Human Health in Environmental Impact Assessment'](#) which sets out the requirements for assessing the direct and indirect effects, in an appropriate manner, of a proposed development on human health.

- A15-2.1.7. As set out in the IEMA guidance, health is influenced by a range of factors, termed the ‘wider determinants of health’. Determinants of health span the bio-physical, social, behavioural, economic and institutional factors. The IEMA guidance document provides a framework for concluding on the significance of population health effects that can be applied across the wider determinants of health.
- A15-2.1.8. The IEMA guidance document recognises that significance at the level of individuals is not proportionate, and as such establishes a method for assessing significance at a population level, or disproportionate effects to relevant sub-populations, i.e. groups of more sensitive individuals.
- A15-2.1.9. It is considered that the requirements set out in LA 112 can be integrated with the IEMA guidance in order to provide an assessment and report that is both compliant with DMRB LA 112 and that of the EIA Regulations. This is developed further throughout this Appendix.
- A15-2.1.10. In order to integrate the separate but overlapping requirements set out in the DMRB standard and the IEMA guidance, groupings are made of the ‘Wider determinants of health’ and ‘Community aspect’ headings under respective IEMA Categories. This linkage is set out in Table A15-2.1 and provides the reporting structure for the purposes of the assessment.
- A15-2.1.11. Note that those determinants which have been scoped out from further consideration are noted in the following table.

Table A15-2.1: Linking the EIA wider determinants of health with the requirements of DMRB LA 112

Categories	Wider determinants of health (IEMA – Human health)	Community Aspect (DMRB LA 112 – Land use and accessibility)
Health related behaviours	Physical activity	Walkers, cyclists and horse-riders
Health related behaviours	Risk taking behaviour – scoped out	n/a
Health related behaviours	Diet and nutrition – scoped out	n/a
Social environment	Housing	Private property and housing
Social environment	Relocation – scoped out	n/a
Social environment	Open space, leisure and play	Community land and assets
Social environment	Transport modes, access and connections	n/a
Social environment	Community safety – scoped out	n/a
Social environment	Community identity, culture, resilience, and influence – scoped out	n/a
Social environment	Social participation, interaction and support	n/a
Economic environment	Education and training	n/a
Economic environment	Employment and income	Development land and business
Bio-physical	Climate change mitigation and	n/a

environment	adaptation – scoped out	
Bio-physical environment	Air quality	n/a
Bio-physical environment	Water quality or availability – scoped out	n/a
Bio-physical environment	Land quality	n/a
Bio-physical environment	Noise and vibration	n/a
Bio-physical environment	Radiation – scoped out	n/a
Institutional and built environment	Health and social care services	n/a
Institutional and built environment	Built environment – scoped out	n/a
Institutional and built environment	Wider societal infrastructure and resources	Agricultural Land Holdings

Determining value and sensitivity

Determining value and sensitivity of Population / Land Use and Accessibility / Socio-Economic issues

A15-2.1.12. Using DMRB LA 112, the sensitivity of land use and accessibility receptors (i.e. private property and housing, community land and assets, development land and businesses, agricultural land holdings, and walkers, cyclists and horse-riders) is determined by their location within the study area, proximity to the Proposed Scheme, characteristics and capacity to cope with change. This sensitivity criteria are set out in more detail in Table A15-2.2 below.

Table A15-2.2: Environmental value (sensitivity) and descriptions

Receptor Value (sensitivity)	Description
Very high	<p>Private property and housing:</p> <ul style="list-style-type: none"> existing private property or land allocated for housing located in a local authority area where the number of households are expected to increase by >25% by 2041 (ONS data) and/or existing housing and land allocated for housing (e.g. strategic housing sites) covering >5ha and / or >150 houses.
Very High	<p>Community land and assets where there is a combination of the following:</p> <ul style="list-style-type: none"> complete severance between communities and their land/assets, with little/no accessibility provision alternatives are only available outside the local planning authority area the level of use is very frequent (daily) and the land and assets are used by the majority (>=50%) of the community.
Very High	<p>Development land and businesses:</p> <ul style="list-style-type: none"> existing employment sites (excluding agriculture) and land allocated for employment (e.g. strategic employment sites) covering >5h
Very High	<p>Agricultural land holdings:</p> <ul style="list-style-type: none"> areas of land in which the enterprise is wholly reliant on the spatial relationship of land to key agricultural infrastructure and access between land and key agricultural infrastructure is required on a frequent basis (daily).

Receptor Value (sensitivity)	Description
Very High	<p>Walkers, cyclists and horse-riders (WCH):</p> <ul style="list-style-type: none"> national trails and routes likely to be used for both commuting and recreation that record frequent (daily) use. Such routes connect communities with employment land uses and other services with a direct and convenient WCH route. Little/no potential for substitution. routes regularly used by vulnerable travellers such as the elderly, school children and people with disabilities, who could be disproportionately affected by small changes in the baseline due to potentially different needs. rights of way for WCH crossing roads at grade with >16,000 vehicles per day.
High	<p>Private property and housing</p> <ul style="list-style-type: none"> private property or land allocated for housing located in a local planning authority area where the number of households are expected to increase by 16-25% by 2041 (ONS data) and/or existing housing and land allocated for housing (e.g. strategic housing sites) covering >1-5ha and/or >30-150 houses.
High	<p>Community land and assets where there is a combination of the following:</p> <ul style="list-style-type: none"> there is substantial severance between community and assets, with limited accessibility provision alternative facilities are only available in the wider local planning authority area the level of use is frequent (weekly) and the land and assets are used by the majority (>=50%) of the community.

Receptor Value (sensitivity)	Description
High	<p>Development land and businesses:</p> <ul style="list-style-type: none"> existing employment sites (excluding agriculture) and land allocated for employment (e.g. strategic employment sites) covering >1 -5ha.
High	<p>Agricultural land holdings:</p> <ul style="list-style-type: none"> areas of land in which the enterprise is dependent on the spatial relationship of land to key agricultural infrastructure and access between land and key agricultural infrastructure is required on a frequent basis (weekly).
High	<p>WCH:</p> <ul style="list-style-type: none"> regional trails and routes (e.g. promoted circular walks) likely to be used for recreation and to a lesser extent commuting, that record frequent (daily) use. Limited potential for substitution and/or rights of way for WCH crossing roads at grade with >8,000 -16,000 vehicles per day.
Medium	<p>Private property and housing:</p> <ul style="list-style-type: none"> houses or land allocated for housing located in a local authority area where the number of households are expected to increase by >6-15%by 2041 (ONS data) and/or existing housing and land allocated for housing (e.g. strategic housing sites) covering <1ha and / or <30 houses.

Receptor Value (sensitivity)	Description
Medium	<p>Community land and assets where there is a combination of the following:</p> <ul style="list-style-type: none"> • there is severance between communities and their land/assets but with existing accessibility provision • limited alternative facilities are available at a local level within adjacent communities • the level of use is reasonably frequent (monthly) and • the land and assets are used by the majority (>50%) of the community.
Medium	<p>Development land and businesses:</p> <ul style="list-style-type: none"> • existing employment sites (excluding agriculture) and land allocated for employment (e.g., strategic employment sites) covering >1ha
Medium	<p>Agricultural land holdings</p> <ul style="list-style-type: none"> • areas of land in which the enterprise is partially dependent on the spatial relationship of land to key agricultural infrastructure and • access between land and key agricultural infrastructure is required on a reasonably frequent basis (monthly)
Medium	<p>WCH</p> <ul style="list-style-type: none"> • public rights of way and other routes close to communities which are used for recreational purposes (e.g. dog walking), but for which alternative routes can be taken. These routes are likely to link to a wider network of routes to provide options for longer, recreational journeys, and / or • rights of way for WCH crossing roads at grade with >4000 – 8000 vehicles per day.

Receptor Value (sensitivity)	Description
Low	Private property and housing: <ul style="list-style-type: none"> proposed development on unallocated sites providing housing with planning permission/in the planning process.
Low	Community land and assets where there is a combination of the following: <ul style="list-style-type: none"> limited existing severance between community and assets, with existing full Disability Discrimination Act (DDA) (Ref 2.N) (This has been repealed and replaced by the Equality Act 2010 except in Northern Ireland) compliant accessibility provision alternative facilities are available at a local level with the wider community the level of use is infrequent (monthly or less frequent) and the land and assets are used by the minority ($\geq 50\%$) of the community.
Low	Development land and businesses: <ul style="list-style-type: none"> Proposed development on unallocated sites providing employment with planning permission/in the planning process.
Low	Agricultural land holdings: <ul style="list-style-type: none"> areas of land which the enterprise is not dependent on the spatial relationship of land to key agricultural infrastructure and access between land and key agricultural infrastructure is required on a infrequent basis (monthly or less frequent).

Receptor Value (sensitivity)	Description
Low	<p>WCH</p> <ul style="list-style-type: none"> • routes which have fallen into disuse through past severance or which are scarcely used because they do not currently offer a meaningful route for either utility or recreational purposes and/or • rights of way for WCH crossing roads at grade with <4000 vehicles per day.
Negligible	<p>Private property and housing: Not Applicable</p>
Negligible	<p>Community land and assets where there is a combination of the following:</p> <ul style="list-style-type: none"> • no or limited severance or accessibility issues • alternative facilities are available within the same community • the level of use is very infrequent (a few occasions yearly) and • the land and assets are used by the minority (>=50%) of the community.
Negligible	<p>Development land and businesses: Not Applicable</p>
Negligible	<p>Agricultural land holdings:</p> <ul style="list-style-type: none"> • areas of land which are infrequently used on a non-commercial basis • previously developed formerly in 'hard-uses' with little potential to return to agriculture.
Negligible	<p>WCH: Not Applicable</p>

Determining value and sensitivity of Human Health issues

A15-2.1.13. DMRB LA 112 sets out that once the health profile of communities has been established, the sensitivity of a community/population can be reported as ‘low’, ‘medium’; or ‘high’ noting that its attribution is to be supported with evidence, It is considered that this can be further developed through alignment with IEMAs Guide to Determining Significance for Human Health, which provides guidance on the attribution of ‘high’, ‘medium’, ‘low’ and ‘very low’ sensitivity for Human health. This is achieved through indicative criteria set out in Table A15-2.3.

Table A15-2.3: Health Sensitivity Methodology Criteria

Category / Level	Indicative criteria (as set out in IEMA guidance)
High	High levels of deprivation (including pockets of deprivation); reliance on resources shared (between the population and the Proposed Scheme); existing wide inequalities between the most and least healthy; a community whose outlook is predominantly anxiety or concern; people who are prevented from undertaking daily activities; dependants; people with very poor health status; and/or people with a very low capacity to adapt
Medium	Moderate levels of deprivation; few alternatives to shared resources; existing widening inequalities between the most and least healthy; a community whose outlook is predominantly uncertainty with some concern; people who are highly limited from undertaking daily activities; people providing or requiring a lot of care; people with poor health status; and/or people with a limited capacity to adapt
Low	Low levels of deprivation; many alternatives to shared resources; existing narrowing inequalities between the most and least healthy; a community whose outlook is predominantly ambivalence with some concern; people who are slightly limited from undertaking daily activities; people providing or requiring some care; people with fair health status; and/or people with a high capacity to adapt

Category / Level	Indicative criteria (as set out in IEMA guidance)
Very Low	Very low levels of deprivation; no shared resources; existing narrow inequalities between the most and least healthy; a community whose outlook is predominantly support with some concern; people who are not limited from undertaking daily activities; people who are independent (not a carer or dependant); people with good health status; and/or people with a very high capacity to adapt

A15-2.1.14. The sensitivity of an individual or population sub-group encompasses their ability to withstand exposures and the range of associated impacts or effects, and the physiological (e.g. co-morbidities or disabilities) and socio-economic factors that increase their susceptibility to the exposure. Wider and vulnerable groups sensitivity to health determinants have been determined from a review of baseline presented within the Baseline section of the EIA Report.

A15-2.1.15. The sensitivity of an individual or population sub-group encompasses their ability to withstand exposures and the range of associated impacts or effects, and the physiological (e.g. co-morbidities or disabilities) and socio-economic factors that increase their susceptibility to the exposure. The following table notes the wider and vulnerable groups sensitivity to health determinants from a review of baseline.

Table A15-2.4: Health receptor sensitivity to health determinants

Community / Population within study area	Determinant and sensitivity
Wider groups within Argyll & Bute	Physical activity - Medium Risk taking behaviour - Medium Housing- Medium Open space, leisure and play - Medium Transport modes, access and connections - Medium Community safety - Medium Social participation, interaction and support - Medium Education and training - Low Employment and income- Low Climate change mitigation and adaptation – Medium Air quality – High Water quality or availability - Medium Land quality- Medium Noise and vibration - High Health and social care services - Medium Built environment - Medium Wider societal infrastructure and resources - Medium

Community / Population within study area	Determinant and sensitivity
Children and adolescent within Argyll & Bute	Physical activity - Medium Risk taking behaviour - High Housing - High Open space, leisure and play - High Transport modes, access and connections -Medium Community safety - High Social participation, interaction and support - Medium Education and training - High Employment and income- Low Climate change mitigation and adaptation – Medium Air quality– Very High Water quality or availability - High Land quality - High Noise and vibration - High Health and social care services - High Built environment - Medium Wider societal infrastructure and resources - Medium

Community / Population within study area	Determinant and sensitivity
Older people within Argyll & Bute	Physical activity - Medium Risk taking behaviour - Medium Housing - High Open space, leisure and play - High Transport modes, access and connections - High Community safety - High Social participation, interaction and support - Medium Education and training- Low Employment and income- Low Climate change mitigation and adaptation – Medium Air quality– High Water quality or availability - Medium Land quality - Medium Noise and vibration - High Health and social care services – High Built environment - Medium Wider societal infrastructure and resources - Medium

Community / Population within study area	Determinant and sensitivity
<p>People who are disabled and/or with other health problems within Argyll & Bute</p>	<p>Physical activity - Medium</p> <p>Risk taking behaviour - Medium</p> <p>Housing - High</p> <p>Open space, leisure and play - High</p> <p>Transport modes, access and connections - High</p> <p>Community safety - Medium</p> <p>Social participation, interaction and support - Medium</p> <p>Education and training – Medium</p> <p>Employment and income - Medium</p> <p>Climate change mitigation and adaptation – Medium</p> <p>Air quality– High</p> <p>Water quality or availability – High</p> <p>Land quality- High</p> <p>Noise and vibration - High</p> <p>Health and social care services - High</p> <p>Built environment - Medium</p> <p>Wider societal infrastructure and resources - Medium</p>

Community / Population within study area	Determinant and sensitivity
Low-income groups within Argyll & Bute	Physical activity - Medium Risk taking behaviour - Medium Housing - High Open space, leisure and play - High Transport modes, access and connections - High Community safety - Medium Social participation, interaction and support - Medium Education and training - High Employment and income - High Climate change mitigation and adaptation – Medium Air quality– High Water quality or availability - Medium Land quality - Medium Noise and vibration - High Health and social care services - High Built environment - Medium Wider societal infrastructure and resources - Medium

Table source: Adapted from Table 3.2N of DMRB LA 104

Methodology for determining magnitude of Impact

Determining impact magnitude of Population / Land Use and Accessibility / Socio-Economic issues

- A15-2.1.16. Identifying and assessing the likely impacts of the Proposed Scheme (both beneficial and adverse) depends on the sensitivity of the receptors to changes to the baseline conditions.
- A15-2.1.17. In accordance with DMRB LA 112, the magnitude of any change to the baseline conditions has been reported according to the criteria set out in Table A15-2.5, with bespoke criteria added in respect of agricultural holdings to help aid understanding of this aspect.

Table A15-2.5: Magnitude of impact criteria

Magnitude of impact (change)	Description
Major	<p>Private property and housing, community land and assets, development land and businesses:</p> <ul style="list-style-type: none"> • loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements e.g. direct acquisition and demolition of buildings and direct development of land to accommodate development and/or • introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision. <p>Agricultural holdings</p> <ul style="list-style-type: none"> • loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements e.g. direct acquisition and demolition of buildings and direct development of land to accommodate development and/or • introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision. • The identified impacts are predicted to result in very significant damage to a farm business or rural land-based enterprise and may compromise its viability. <p>WCH</p> <ul style="list-style-type: none"> • >500m increase (adverse) / decrease (beneficial) in WCH journey

Magnitude of impact (change)	Description
Moderate	<p>Private property and housing, community land and assets, development land and businesses:</p> <ul style="list-style-type: none"> • partial loss of/damage to key characteristics, features or elements, e.g. partial removal or substantial amendment to access or acquisition of land compromising viability of property, businesses, community assets or agricultural holdings and/or • introduction (adverse) or decrease (beneficial) of severe severance with limited/moderate accessibility provision. <p>Agricultural holdings</p> <ul style="list-style-type: none"> • partial loss of/damage to key characteristics, features or elements, e.g. partial removal or substantial amendment to access or acquisition of land compromising viability of property, businesses, community assets or agricultural holdings and/or • introduction (adverse) or decrease (beneficial) of severe severance with limited/moderate accessibility provision. • The identified impacts are predicted to result in significant damage to a farm business or rural land-based enterprise, but with changes to management it should remain viable. <p>WCH:</p> <ul style="list-style-type: none"> • >250m – 500m increase (adverse) or decrease (beneficial) in WCH journey length

Magnitude of impact (change)	Description
Minor	<p>Private property and housing, community land and assets, development land and businesses</p> <ul style="list-style-type: none"> • a discernible change in attributes, quality or vulnerability; minor loss of, or alteration to one (maybe more) key characteristics, features or elements, e.g. amendment to access or acquisition of land resulting in changes to operating conditions that do not compromise overall viability of property businesses, community assets or agricultural holdings and/or • introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision. <p>Agricultural holdings</p> <ul style="list-style-type: none"> • a discernible change in attributes, quality or vulnerability; minor loss of, or alteration to one (maybe more) key characteristics, features or elements, e.g. amendment to access or acquisition of land resulting in changes to operating conditions that do not compromise overall viability of property businesses, community assets or agricultural holdings and/or • introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision. • The identified impacts are predicted to result in some damage to a farm business or rural land-based enterprise, but with minor changes to management it should continue as before. <p>WCH</p> <ul style="list-style-type: none"> • >50m – 250m increase (adverse) or decrease (beneficial) in WCH journey length

Magnitude of impact (change)	Description
Negligible	<p>Private property and housing, community land and assets, development land businesses</p> <ul style="list-style-type: none"> • very minor loss or detrimental alteration to one or more characteristics, features or elements, e.g. acquisition of non-operational land or buildings not directly affecting the viability of property, businesses, community assets or agricultural holdings and/or • very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision. <p>Agricultural holdings</p> <ul style="list-style-type: none"> • very minor loss or detrimental alteration to one or more characteristics, features or elements, e.g. acquisition of non-operational land or buildings nor directly affecting the viability of property, businesses, community assets or agricultural holdings and/or • very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision. • The identified impacts are predicted to result in little or no damage to a farm business or rural land-based enterprise. <p>WCH</p> <ul style="list-style-type: none"> • <50m increase (adverse) or decrease (beneficial) in WCH journey length
No change	<ul style="list-style-type: none"> • No loss or alteration of characteristics, features, elements or accessibility; no observable impact in either direction

Table Source: DMRB LA 112 which has been further developed based upon the professional judgement of an agricultural specialist.

Determining impact magnitude of Human Health issues

A15-2.1.18. DMRB LA 112 does not attribute magnitude so, in respect of Human health, magnitude is derived through assessment against indicative criteria as set out in IEMAs guidance.

Table A15-2.6: Health Magnitude Methodology Criteria

Category / Level	Indicative criteria (as per IEMA guidance)
High	High exposure or scale; long-term duration; continuous frequency; severity predominantly related to mortality or changes in morbidity (physical or mental health) for very severe illness/ injury outcomes; majority of population affected; permanent change; substantial service quality implications.
Medium	Low exposure or medium scale; medium-term duration; frequent events; severity predominantly related to moderate changes in morbidity or major change in quality-of-life; large minority of population affected; gradual reversal; small service quality implications.
Low	Very low exposure or small scale; short-term duration; occasional events; severity predominantly related to minor change in morbidity or moderate change in quality-of-life; small minority of population affected; rapid reversal; slight service quality implications.
Very Low	Negligible exposure or scale; very short-term duration; one-off frequency; severity predominantly relates to a minor change in quality-of-life; very few people affected; immediate reversal once activity complete; no service quality implication.

Methodology for Determining significance of impact

Determining significance of impact on Population / Land Use and Accessibility / Socio-Economic issues

A15-2.1.19. As noted in DMRB LA 112, the significance of effect shall be derived by combining the assigned value (sensitivity) of receptors with the magnitude of change arising from a project, in accordance with the following table from LA104.

Table A15-2.7: Significance of Effect

Environmental value (sensitivity)	Magnitude of Impact - No change	Magnitude of Impact - Negligible	Magnitude of Impact - Minor	Magnitude of Impact - Moderate	Magnitude of Impact - Major
Very high	Neutral	Slight	Moderate or large	Large or very large	Very large
High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

Table Source: DMRB LA104

A15-2.1.20. The significance of effect shall be determined for each element of the land and accessibility sub-topic affected by the Proposed Scheme and the following descriptors given (as set out in DMRB LA 104):

Table A15-2.8: Significance of Effect Descriptors

Significance	Descriptors
Very large	Effects at this level are material in the decision-making process.
Large	Effects at this level are likely to be material in the decision-making process.
Moderate	Effects at this level can be considered to be material in the decision-making factors.
Slight	Effects at this level are not material in the decision-making process.
Neutral	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

A15-2.1.21. Using the described significance of effect matrix classification in Table A15-2.8, professional judgement, industry best practice and knowledge from the assessment of other transportation schemes, any significance of effects considered to be Very Large, Large or Moderate are deemed to be significant and those Slight or Neutral, to be not significant.

A15-2.1.22. Land use effects are assessed for the construction period and for the first year of operation (future year scenario).

Determining significance of impact on Human Health issues

A15-2.1.23. The impact to human health from the Proposed Scheme are a function of the impact magnitude and receptor sensitivity as shown in Table A15-2.9. Impacts can be beneficial or adverse. Major or moderate impacts are deemed to be significant, and minor and negligible impacts are deemed to be not significant.

A15-2.1.24. Professional judgement has been exercised to validate the significance of impact value by considering the effect permanence (temporary or permanent) and duration (short-term or long-term) and by providing a narrative description of the health impacts. DMRB LA 112 does not assign significance of impact for human health and instead identifies likely health outcomes (positive, neutral, negative; and uncertain). In order to remain aligned to DMRB LA 112 these categories are

also communicated alongside the significance of effect described in Table A15-2.9 and Table A15-2.10 below.

Table A15-2.9: EIA Significance Matrix

Magnitude	High sensitivity	Medium sensitivity	Low sensitivity	Very Low sensitivity
High Magnitude	Major	Major/moderate	Moderate/minor	Minor/negligible
Medium Magnitude	Major/moderate	Moderate	Minor	Minor/negligible
Low Magnitude	Moderate/minor	Minor	Minor	Negligible
Negligible Magnitude	Minor/negligible	Minor/negligible	Negligible	Negligible

Table A15-2.10: Significance Conclusion and Reasoning Related to Public Health

Category/ Level	Indicative criteria (judgement based on most relevant criteria, it is likely in any given analysis that some criteria will span categories)
Major (Significant)	<p>The narrative explains that this is significant for public health because (select as appropriate):</p> <ul style="list-style-type: none"> • changes, due to the Proposed Scheme, have a substantial effect on the ability to deliver current health policy and/or the ability to narrow health inequalities, including as evidenced by referencing relevant policy and effect size (magnitude and sensitivity levels), and as informed by consultation themes among stakeholders, particularly public health stakeholders, that show consensus on the importance of the effect. • change, due to the Proposed Scheme, could result in a regulatory threshold or statutory standard being crossed (if applicable). • there is likely to be a substantial change in the health baseline of the population, including as evidenced by the effect size and scientific literature showing there is a causal relationship between changes that would result from the Proposed Scheme and changes to health outcomes. • in addition, health priorities for the relevant study area are of specific relevance to the determinant of health or population group affected by the Proposed Scheme.

Category/ Level	Indicative criteria (judgement based on most relevant criteria, it is likely in any given analysis that some criteria will span categories)
Moderate (significant)	<p>The narrative explains that this is significant for public health because (select as appropriate):</p> <ul style="list-style-type: none"> • changes, due to the Proposed Scheme, have an influential effect on the ability to deliver current health policy and/or the ability to narrow health inequalities, including as evidenced by referencing relevant policy and effect size, and as informed by consultation themes among stakeholders, which may show mixed views. • change, due to the Proposed Scheme, could result in a regulatory threshold or statutory standard being approached (if applicable). • there is likely to be a small change in the health baseline of the population, including as evidenced by the effect size and scientific literature showing there is a clear relationship between changes that would result from the Proposed Scheme and changes to health outcomes. • in addition, health priorities for the relevant study area are of general relevance to the determinant of health or population group affected by the Proposed Scheme.

Category/ Level	Indicative criteria (judgement based on most relevant criteria, it is likely in any given analysis that some criteria will span categories)
Minor (not significant)	<p>The narrative explains that this is not significant for public health because (select as appropriate):</p> <ul style="list-style-type: none"> • changes, due to the Proposed Scheme, have a marginal effect on the ability to deliver current health policy and/or the ability to narrow health inequalities, including as evidenced by effect size of limited policy influence and/or that no relevant consultation themes emerge among stakeholders. • change, due to the Proposed Scheme, would be well within a regulatory threshold or statutory standard (if applicable); but could result in a guideline being crossed (if applicable). • there is likely to be a slight change in the health baseline of the population, including as evidenced by the effect size and/or scientific literature showing there is only a suggestive relationship between changes that would result from the Proposed Scheme and changes to health outcomes. • in addition, health priorities for the relevant study area are of low relevance to the determinant of health or population group affected by the Proposed Scheme.

Category/ Level	Indicative criteria (judgement based on most relevant criteria, it is likely in any given analysis that some criteria will span categories)
Negligible (not significant)	<p>The narrative explains that this is not significant for public health because (select as appropriate):</p> <ul style="list-style-type: none"> • changes, due to the Proposed Scheme, are not related to the ability to deliver current health policy and/or the ability to narrow health inequalities, including as evidenced by effect size or lack of relevant policy, and as informed by the Proposed Scheme having no responses on this issue among stakeholders. • change, due to the Proposed Scheme, would not affect a regulatory threshold, statutory standard or guideline (if applicable). • there is likely to be a very limited change in the health baseline of the population, including as evidenced by the effect size and/or scientific literature showing there is an unsupported relationship between changes that would result from the Proposed Scheme and changes to health outcomes. • in addition, health priorities for the relevant study area are not relevant to the determinant of health or population group affected by the Proposed Scheme.