

A83 Rest and Be Thankful

MTS EIAR VOLUME 4, APPENDIX 7.2 – POPULATION AND
HUMAN HEALTH METHODOLOGY

Transport Scotland

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A7-2. Population and Human Health Methodology

A7-2.1. Introduction

Study Area

- A7-2.1.1. 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.
- A7-2.1.2. 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

- A7-2.1.3. 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.
- A7-2.1.4. 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 roads projects. Professional judgement is also used to guide the assessment. The guidance requires reporting on the following elements:

- private property and housing
- community land and assets
- development land and businesses
- agricultural land holdings and
- walkers, cyclists, and horse-riders (WCH).

- A7-2.1.5. 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 roads 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 (EIA) 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.
- A7-2.1.6. 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.
- A7-2.1.7. 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.
- A7-2.1.8. 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.

A7-2.1.9. It is considered that the requirements set out in DMRB 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.

A7-2.1.10. 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 A7-2.1 and provides the reporting structure for the purposes of the assessment.

Table A7-2-1: 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
Social environment	Housing	Private property and housing
Institutional and built environment	Wider societal infrastructure and resources	Agricultural Land Holdings

A7-2.1.11. Note that the following wider determinants of health (and linked community aspect, where relevant) have been scoped out:

- Risk taking behaviour
- Diet and nutrition
- Relocation
- Open space, leisure and play (Community land and assets)
- Transport modes, access and connections
- Community safety
- Community identity, culture, resilience, and influence

- Social participation, interaction and support
- Education and training
- Employment and income (Development land and business)
- Climate change mitigation and adaptation
- Air quality
- Water quality or availability
- Land quality
- Noise and vibration
- Radiation
- Health and social care services
- Built environment

A7-2.2. Determining value and sensitivity

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

- A7-2.2.1. Using DMRB LA 112, the sensitivity of land use and accessibility receptors (i.e. private property and housing, 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 A7-2.2 below.

Table A7-2-2: Environmental value (sensitivity) and descriptions

Receptor Value (sensitivity)	Description
Very high	Private property and housing: <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	Agricultural land holdings:

Receptor Value (sensitivity)	Description
	<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).
Very High	<p>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>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

Receptor Value (sensitivity)	Description
	<ul style="list-style-type: none"> 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.
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.
Low	<p>Private property and housing:</p> <ul style="list-style-type: none"> proposed development on unallocated sites providing housing with planning permission/in the planning process.
Low	<p>Agricultural land holdings:</p> <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: N/A</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: N/A</p>

Determining value and sensitivity of Human Health issues

A7-2.2.2. 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 A7-2.3.

Table A7-2-3: 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
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

A7-2.2.3. 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 A7-2.4: 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
<p>Children and adolescent within Argyll & Bute</p>	<p>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</p>

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 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 – Medium Employment and income - Medium Climate change mitigation and adaptation – Medium Air quality– 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</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.

A7-2.2.4. Note the sensitivity attributed to each determinant has been applied through review of Table A7-3-4 (Identification of subgroups) and consideration of IEMA guidance set out in Table A7-2-3. Note that a precautionary approach was taken using professional judgement and care taken to assign sensitivity to groupings and not individuals or individual receptor.

Methodology for determining magnitude of Impact

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

- A7-2.2.5. 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.
- A7-2.2.6. 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 A7-2.5, with bespoke criteria added in respect of agricultural holdings to help aid understanding of this aspect.

Table A7-2.5: Magnitude of impact criteria

Magnitude of impact (change)	Description
Major	<p>Private property and housing</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>

Magnitude of impact (change)	Description
	<ul style="list-style-type: none"> >500m increase (adverse) / decrease (beneficial) in WCH journey
Moderate	<p>Private property and housing</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 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 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
Minor	<p>Private property and housing</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 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,

Magnitude of impact (change)	Description
	<p>e.g. amendment to access or acquisition of land resulting in changes to operating conditions that do not compromise overall viability of agricultural holdings and/or</p> <ul style="list-style-type: none"> 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.
Negligible	<p>Private property and housing</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, 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 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

A7-2.2.7. 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 A7-2.6: 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

A7-2.2.8. 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 DMRB LA 104.

Table A7-2.7: 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

A7-2.2.9. 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 A7-2.8: 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.

A7-2.2.10. Using the described significance of effect matrix classification in Table A7-2.9, 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.

A7-2.2.11. 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

A7-2.2.12. The impact to human health from the Proposed Scheme is a function of the impact magnitude and receptor sensitivity as shown in Table A7-2.9. 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.

A7-2.2.13. 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). DMRB LA 112 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 A7-2.9 and Table A7-2.10 below.

Table A7-2-9: 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 A7-2-10: 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.
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

Category/ Level	Indicative criteria (judgement based on most relevant criteria, it is likely in any given analysis that some criteria will span categories)
	<p>would result from the Proposed Scheme and changes to health outcomes.</p> <ul style="list-style-type: none"> 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.
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.
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).

Category/ Level	Indicative criteria (judgement based on most relevant criteria, it is likely in any given analysis that some criteria will span categories)
	<ul style="list-style-type: none"> • 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.

A7-2.3. Sub-Topics scoped out

A7-2.3.14. The scope of the Population and Human Health assessment for the Proposed Scheme has been informed by a review of the EIA Scoping exercise undertaken for the wider Long-Term Solution EIA which encompassed the OMR improvements which comprise the Medium-Term Solution as part of a wider scheme. A review of each sub-topic was undertaken against the Proposed Scheme design and the potential for significant effects to occur as a result of the construction and operation of the MTS was assessed.

A7-2.3.15. The results of the initial scoping assessment are set out in Table A7-2.11 below for those topics scoped out of the assessment for the MTS with a summary included in Volume 4, Appendix 6.1: Summary of EIA Scoping. The scoping assessment concluded that the remaining topics (physical activity and housing) had the potential to result in significant effects and have therefore been included in the EIA Report and are assessed in Volume 2, Chapter 7 Population and Human Health and Volume 4, Appendix 7.3 Population and Human Health Assessment Tables.

Table A7-2-11: Linking the EIA wider determinants of health with the requirements of DMRB LA 112

Wider determinants of health	Rationale for Scoping Out
Risk taking behaviour	OUT (both construction and operation) – Construction at the Site is not anticipated to give rise to potentially significant effects on risk taking behaviour where standard best practice construction methods are used. This could include for example, erection of security fencing and controlled access into and out of Site where appropriate. The Operation of the road is not anticipated to give rise to potentially significant effects on risk taking behaviour where best practice operational procedures are adopted i.e. standard road safety measures etc.
Diet and nutrition	OUT (both construction and operation) – No significant effects in relation to human health from diet or nutrition have been identified. It is anticipated that loss / disruption to agricultural activities would not have a significant effect on diet or nutrition in the wider area.
Relocation	OUT (both construction and operation) – No property will be demolished / impacted by relocation as a result of the Proposed Scheme
Open space, leisure and play / Community land and assets	OUT (both construction and operation) – While sensitive receptors have been identified within the study area, no impacts have been identified and it is then considered that construction or operational activities would not have a significant effect on open space, leisure and play / Community land and assets. While there may be beneficial effects in the wider area, the OMR is utilised only during periods of closure on the A83 and therefore the potential for significant beneficial effects during operation is reduced.
Transport modes, access and connections	OUT (both construction and operation) – It is considered that relevant impacts identified (such as those to the OMR which functions as an informal WCH route are more appropriately captured under Physical Activity / Walkers Cyclists and Horse Riders which has been Scoped In.
Community safety	OUT (both construction and operation) – No significant effects in relation to community safety have been identified noting the particularly low population numbers locally. Note that it is considered that risk of landslide will not increase as a result of the Proposed Scheme and the Proposed Scheme does not introduce any new risk. The debris flow net will provide some

Wider determinants of health	Rationale for Scoping Out
	protection however effects are not considered significant. Please also see Appendix 6.1 Major Accidents and Disasters.
Community identity, culture, resilience, and influence	OUT (both construction and operation) – No significant effects in relation to community identity have been identified noting the particularly low population numbers locally. While there may be beneficial effects in the wider area, the OMR is utilised only during periods of closure on the A83 and therefore the potential for significant beneficial effects during operation is reduced.
Social participation, interaction and support	OUT (both construction and operation) – No significant effects in relation to social participation have been identified noting the particularly low population numbers locally. While there may be beneficial effects in the wider area, the OMR is utilised only during periods of closure on the A83 and therefore the potential for significant beneficial effects during operation is reduced.
Education and training	OUT (both construction and operation) – No significant effects in relation to education and training have been identified noting the particularly low population numbers locally. While there may be beneficial effects in the wider area, the OMR is utilised only during periods of closure on the A83 and therefore the potential for significant beneficial effects during operation is reduced.
Employment and income	OUT (both construction and operation) – No significant effects in relation to employment and income have been identified noting the particularly low population numbers locally. While there may be beneficial effects in the wider area, the OMR is utilised only during periods of closure on the A83 and therefore the potential for significant beneficial effects during operation is reduced.
Climate change mitigation and adaptation	OUT – see topic response set out in Table A6-1.1 of Appendix 6.1. In respect of Population and Human health, no additional impacts have been identified.
Air quality	OUT – see topic response set out in Table A6-1.1 of Appendix 6.1. In respect of Population and Human health, no additional impacts have been identified.
Water quality or availability	OUT – see topic response set out in Table A6-1.1 of Appendix 6.1. In respect of Population and Human health, no additional impacts have been identified.
Land quality	OUT – see topic response set out in Table A6-1.1 of Appendix 6.1. In respect of Population and Human health, no additional impacts have been identified.

Wider determinants of health	Rationale for Scoping Out
Noise and vibration	OUT – see topic response set out in Table A6-1.1 of Appendix 6.1. In respect of Population and Human health, no additional impacts have been identified.
Radiation	OUT (both construction and operation) – It is considered that the nature of the Proposed Scheme will not give rise to significant effects either through construction or operation.
Health and social care services	OUT (both construction and operation) – No significant effects in relation to health and social care services have been identified noting the particularly low population numbers locally. While there may be beneficial effects in the wider area, the OMR is utilised only during periods of closure on the A83 and therefore the potential for significant beneficial effects during operation is reduced.
Built environment	OUT (both construction and operation) – No significant effects in relation to built environment have been identified noting the particularly remote and rural location of the Proposed Scheme.

