

M20 Junction 10a

TR010006

Appendix 4.3 Health Impact Assessment Navigation Document

APFP Regulation 5(2)(q)

Revision A

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure)

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M20 Junction 10a

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Appendix 4.3 Health Impact Assessment Navigation Document

Volume 6.3

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1. Health Impact Assessment Navigation Document

- 1.1.1 As a statutory consultee, Public Health England (PHE) were consulted in February 2015 to provide an opinion on the M20 junction 10a Environmental Scoping Report. PHE responded with a number of recommendations for the EIA, to ensure that public health was considered in full for the Scheme. These recommendations from PHE have been summarised in Table 1.1 below.
- 1.1.2 Whilst a standalone Health Impact Assessment (HIA) Chapter has not been produced, the Environmental Statement (ES) does consider a number of the issues raised by PHE. This Appendix has been produced to evidence how a HIA has been integrated into the EIA. In addition to the recommendations from the PHE, and Table 1.1 also provides a sign post to the relevant ES chapter.

Table 1.1 Health Impact Assessment Navigation Document

Scoping Opinion Comment	Evidence of Public Health assessment within Environmental Statement
PHE Comment	
<p>1. In order to ensure that health is fully and comprehensively considered the Environmental Statement (ES) should provide sufficient information to allow the potential impact of the development on public health to be fully assessed.</p>	<p>The Health Impact Assessment (HIA) has been integrated into the EIA process and as such, to avoid unnecessary duplication, a separate HIA has not been produced. Instead this document references the sections of the Environmental Statement that consider the aspects of an HIA.</p>
<p>2. We understand that the promoter will wish to avoid unnecessary duplication and that many issues including air quality, emissions to water, waste, contaminated land etc. will be covered elsewhere in the ES. PHE however believes the summation of relevant issues into a specific section of the report provides a focus which ensures that public health is given adequate consideration. The section should summarise key information, risk assessments, proposed mitigation measures, conclusions and residual impacts, relating to human health. Compliance with the requirements of National Policy Statements and relevant guidance and standards should also be highlighted.</p>	<p>This document has been prepared to avoid unnecessary duplication. This includes references to the following ES chapters:</p> <ul style="list-style-type: none"> • Chapter 2 The Proposed Scheme, Volume 6.1. • Chapter 3 Consideration of Alternatives, Volume 6.1. • Chapter 5 Air Quality, Volume 6.1. • Chapter 9 Geology and Soils, Volume 6.1. • Chapter 10 Materials, Volume 6.1. • Chapter 11 Noise and Vibration, Volume 6.1. • Chapter 13 Community and Private Assets, Volume 6.1. • Chapter 14 Road Drainage and the Water Environment, Volume 6.1. • Chapter 15 Consideration of Combined and Cumulative Effects, Volume 6.1. • Appendix 17.1 Outline Construction Environmental Management Plan (Outline CEMP), Volume 6.3, of Chapter 17 Environmental Management, Volume 6.1. <p>Chapters 5, 9, 10, 11 and 14 include a reference to the National Policy Statements and a section on mitigation.</p>
<p>3. General approach The EIA should give consideration to best practice guidance such as the Government’s Good Practice Guide for EIA. It is important that the EIA identifies and assesses the potential public health impacts of the activities at, and emissions from, the installation. Assessment should consider the development, operational, and decommissioning phases. It is not PHE’s role to undertake these assessments on behalf of promoters as this would conflict with PHE’s role as an impartial and independent body. Consideration of alternatives (including alternative sites, choice of process, and the phasing of construction) is widely regarded as good practice. Ideally, EIA should start at the stage of site and process selection, so that the environmental merits of practicable alternatives</p>	<ul style="list-style-type: none"> • The EIA considers both construction and operation phases, however the decommissioning phase was scoped out as it wasn’t considered feasible to include within the ES (refer to Chapter 2 The Proposed Scheme, Volume 6.1 for further information). • Construction phasing has been considered within Chapter 2 The Proposed Scheme, Volume 6.1, and the Buildability Report (Section 4 of Appendix 2.1, Volume 6.3). • Consideration of alternatives (including alternative sites and choice of process) is included in Chapter 3 Consideration of Alternatives, Volume 6.1.

Scoping Opinion Comment	Evidence of Public Health assessment within Environmental Statement
<p>can be properly considered. Where this is undertaken, the main alternatives considered should be outlined in the ES.</p>	
<p>4. Receptors</p> <p>The ES should clearly identify the development's location and the location and distance from the development of off-site human receptors that may be affected by emissions from, or activities at, the development. Off-site human receptors may include people living in residential premises; people working in commercial, and industrial premises and people using transport infrastructure (such as roads and railways), recreational areas, and publicly-accessible land. Consideration should also be given to environmental receptors such as the surrounding land, watercourses, surface and groundwater, and drinking water supplies such as wells, boreholes and water abstraction points.</p>	<ul style="list-style-type: none"> • Key receptors identified within the vicinity of the Scheme can be seen in Location Plan Figure 1.1, Volume 6.2 and / or Environmental Constraints Plan Figure 2.3, Volume 6.2. • Different topics identify human and environmental receptors as appropriate. For instance: <ul style="list-style-type: none"> ○ Chapter 11 Noise and Vibration, Volume 6.1 considers the number of receptors affected. ○ Chapter 5 Air Quality, Volume 6.1 and Figures 5.4a and 5.4b, Volume 6.2 show modelled receptors for the Main and Alternative Scheme, and consider how human receptors would be affected by emissions. ○ Chapter 13 Community and Private Assets, Volume 6.1 considers human receptors, including private property, severance also open space. ○ Environmental receptors in relation to land are included in Chapter 9 Geology and Soils, Volume 6.1 and in the case of agricultural land Chapter 13 Community and Private Assets, Volume 6.1. ○ Water environment receptors have been considered in Chapter 14 Road Drainage and Water Environment, Volume 6.1.
<p>5. Impacts arising from construction and decommissioning</p> <p>Any assessment of impacts arising from emissions due to construction and decommissioning should consider potential impacts on all receptors and describe monitoring and mitigation during these phases. Construction and decommissioning will be associated with vehicle movements and cumulative impacts should be accounted for. We would expect the promoter to follow best practice guidance during all phases from construction to decommissioning to ensure appropriate measures are in place to mitigate any potential impact on health from emissions (point source, fugitive and traffic-related). An effective Construction Environmental Management Plan (CEMP) (and Decommissioning Environmental Management Plan (DEMP)) will help provide reassurance that activities are well managed. The promoter should ensure that there are robust mechanisms in place to respond to any complaints of traffic-related pollution, during construction, operation, and decommissioning of the facility.</p>	<ul style="list-style-type: none"> • Decommissioning has not been assessed within the ES as this was scoped out of inclusion within the EIA, as described in Chapter 2 The Proposed Scheme, Volume 6.1. • Appendix D of Appendix 17.1 Outline CEMP, Volume 6.3, describes mitigation and monitoring requirements for all ES topic Chapters during pre-construction, construction and operation phases. Reference to best practice where appropriate is also provided. A list of key relevant legislation, policies and strategies and best practice documents is also provided in Appendix E of Appendix 17.1 Outline CEMP, Volume 6.1. • The Contractor will take forward the Outline CEMP (Appendix 17.1, Volume 6.3) which has been produced and will subsequently ensure that construction activities are well managed. • Cumulative Effects are considered in Chapter 15 Combined and Cumulative Effects, Volume 6.1.

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<p>6. Emissions to air and water</p> <p>Significant impacts are unlikely to arise from installations which employ Best Available Techniques (BAT) and which meet regulatory requirements concerning emission limits and design parameters. However, PHE has a number of comments regarding emissions in order that the EIA provides a comprehensive assessment of potential impacts. When considering a baseline (of existing environmental quality) and in the assessment and future monitoring of impacts these:</p> <ul style="list-style-type: none"> • Should include appropriate screening assessments and detailed dispersion modelling where this is screened as necessary; • Should encompass all pollutants which may be emitted by the installation in combination with all pollutants arising from associated development and transport, ideally these should be considered in a single holistic assessment; • Should consider the construction, operational, and decommissioning phases; • Should consider the typical operational emissions and emissions from start-up, shut-down, abnormal operation and accidents when assessing potential impacts and include an assessment of worst-case impacts; • Should fully account for fugitive emissions; • Should include appropriate estimates of background levels; • Should identify cumulative and incremental impacts (i.e. assess cumulative impacts from multiple sources), including those arising from associated transport emissions should include consideration of non-road impacts (i.e. rail, sea, and air); • Should include consideration of local authority, Environment Agency (EA), Defra national network, and any other local site-specific sources of monitoring data; • Should compare predicted environmental concentrations to the applicable standard or guideline value for the affected medium (such as UK Air Quality Standards and Objectives and Environmental Assessment Levels). If no standard or guideline value exists, the predicted exposure to humans should be estimated and compared to an appropriate health-based value (a Tolerable Daily Intake or equivalent). Further guidance is provided in Annex 1. This should consider all applicable routes of exposure e.g. include consideration of aspects such as the deposition of chemicals emitted to air and their uptake via ingestion; and • Should identify and consider impacts on residential areas and sensitive receptors (such as schools, nursing homes and healthcare facilities) in the 	<p><u>Air Quality (Chapter 5 of the ES)</u></p> <ul style="list-style-type: none"> • Chapter 5 Air Quality, Volume 6.1 sets out the baseline with regard for air quality. Baseline data includes monitoring data from the local authority and Defra and PCM modelling data. • Construction and operation phases are considered. • Cumulative impacts are considered in Chapter 15 Combined and Cumulative Effects, Volume 6.1. • Impacts on sensitive receptors have been considered in the chapter. Figures 5.4a and 5.4b, Volume 6.2 present all receptors included within the assessment for the Main and Alternative Schemes. • Section 5.3 of Chapter 5 Air Quality, Volume 6.1, details how the dispersion model was used to inform the assessment. • A single holistic assessment has been undertaken (Section 5.8) which considers all pollutants which have potential to be emitted during both construction and operation. • Section 5.8 accounts for dust emissions, with consideration for mitigation measures in Section 5.7. • Section 5.8 also compares predicted environmental concentrations to the applicable standard with Table 5.13 (Main Scheme) and Table 5.20 (Alternative Scheme) showing where the greatest changes would occur, whilst Table 5.26 (Main Scheme) and Table 5.27 (Alternative Scheme) shows the magnitude of change for all modelled receptors. <p><u>Road Drainage and the Water Environment (Chapter 14 of the ES)</u></p> <ul style="list-style-type: none"> • Section 14.8 of the Chapter 14 Road Drainage and the Water Environment, Volume 6.1 provides an assessment of pollution risks associated with the Scheme both during construction and operation, for example the Operation assessment, Sections 14.8.15 to 14.8.27 considers pollution sources and the potential contaminants. • Construction and operation phases are considered in Section 14.8. • Baseline conditions of Water Framework Directive (WFD) waterbodies are considered in Section 3 of the WFD Assessment contained in Appendix 14.1, Volume 6.3. • Consideration for combined and cumulative effects relating to the road drainage and water environment is given in Section 15.6 of the Chapter 15 Combined and Cumulative Assessment, Volume 6.1. • Consultation was undertaken with the EA (Section 14.4) whilst EA data is

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<p>area(s) which may be affected by emissions, this should include consideration of any new receptors arising from future development.</p>	<p>considered in Section 14.6 i.e. groundwater and flood mapping.</p>
<p>7. Whilst screening of impacts using qualitative methodologies is common practice (e.g. for impacts arising from fugitive emissions such as dust), where it is possible to undertake a quantitative assessment of impacts then this should be undertaken. PHE's view is that the EIA should appraise and describe the measures that will be used to control both point source and fugitive emissions and demonstrate that standards, guideline values or health-based values will not be exceeded due to emissions from the installation, as described above. This should include consideration of any emitted pollutants for which there are no set emission limits. When assessing the potential impact of a proposed installation on environmental quality, predicted environmental concentrations should be compared to the permitted concentrations in the affected media; this should include both standards for short and long-term exposure.</p>	<ul style="list-style-type: none"> • A qualitative assessment of dust impacts was undertaken as part of the Chapter 5 Air Quality, Volume 6.1, and is included in Section 5.8. • Potential dust impacts have been assessed as 'Not Significant' in Section 5.8 with consideration given for the mitigation which would be implemented in Section 5.7.
<p>8. Additional points specific to emissions to water When considering a baseline (of existing water quality) and in the assessment and future monitoring of impacts these:</p> <ul style="list-style-type: none"> • Should include assessment of potential impacts on human health and not focus solely on ecological impacts. • Should identify and consider all routes by which emissions may lead to population exposure (e.g. surface watercourses; recreational waters; sewers; geological routes etc.). • Should assess the potential off-site effects of emissions to groundwater (e.g. on aquifers used for drinking water) and surface water (used for drinking water abstraction) in terms of the potential for population exposure. • Should include consideration of potential impacts on recreational users (e.g. from fishing, canoeing etc.) alongside assessment of potential exposure via drinking water. 	<p><u>Road Drainage and Water Environment (Chapter 14 of the ES)</u></p> <ul style="list-style-type: none"> • Drinking water quality is subject to different legislation and controls from water within the environment. As such, the control of drinking water quality and potential exposure route to human health cannot be assessed within the ES. South East Water are responsible for drinking water quality within the Scheme area. However, all potential pollution pathways have been considered, including potential effects on groundwater and downstream waterbodies, in Section 14.8 of Chapter 14 Road Drainage and the Water Environment, Volume 6.1. • Effects on groundwater and surface water are covered in Section 14.8 of Chapter 14 Road Drainage and the Water Environment, Volume 6.1. • Consideration for recreational use of waterbodies has not been given within Chapter 14 Road Drainage and Water Environment, Volume 6.1, as the Design Manual for Roads and Bridges (DMRB) methodology does not consider recreational use.
<p>9. Land quality We would expect the promoter to provide details of any hazardous contamination present on site (including ground gas) as part of the site condition report. Emissions to and from the ground should be considered in terms of the previous history of the site and the potential of the site, once operational, to give rise to issues. Public health impacts associated with ground contamination and/or the migration of material off-site should be assessed and the potential</p>	<ul style="list-style-type: none"> • Consideration for contamination and associated impacts on human health is given in Section 9.8 of Chapter 9 Geology and Soils, Volume 6.1. • Potential risks to human health through mobilisation of contaminants are considered in Section 9.8 of Chapter 9 Geology and Soils, Volume 6.1. • See also the Contaminated Land Desk Study and Preliminary Interpretative Report (DCO document submission number 7.4) which provides further information on existing ground contaminants and

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<p>impact on nearby receptors and control and mitigation measures should be outlined. Relevant areas outlined in the Government’s Good Practice Guide for EIA include:</p> <ul style="list-style-type: none"> • Effects associated with ground contamination that may already exist. • Effects associated with the potential for polluting substances that are used (during construction / operation) to cause new ground contamination issues on a site, for example introducing / changing the source of contamination. • Impacts associated with re-use of soils and waste soils, for example, re-use of site-sourced materials on-site or offsite, disposal of site-sourced materials offsite, importation of materials to the site, etc. 	<p>identifies risks to human health.</p> <ul style="list-style-type: none"> • The strict implementation of measures within the Appendix D of the Outline CEMP contained in Appendix 17.1, Volume 6.3, would ensure that any impacts relating to human health are minimised.
<p>10. Waste</p> <p>The EIA should demonstrate compliance with the waste hierarchy (e.g. with respect to re-use, recycling or recovery and disposal). For wastes arising from the installation the EIA should consider:</p> <ul style="list-style-type: none"> • The implications and wider environmental and public health impacts of different waste disposal options; and, • Disposal route(s) and transport method(s) and how potential impacts on public health will be mitigated. 	<ul style="list-style-type: none"> • Chapter 10 Materials, Volume 6.1, requires compliance with the waste hierarchy outlined in Sections 10.2 and 10.7. • No assessment of associated health impacts (direct waste disposal/ disposal routes and transport methods) however, has been made as this is not included in the DMRB IAN 153 scope of assessment.
<p>11. Other aspects</p> <p>Within the EIA PHE would expect to see information about how the promoter would respond to accidents with potential off-site emissions e.g. flooding or fires, spills, leaks or releases off-site. Assessment of accidents should: identify all potential hazards in relation to construction, operation and decommissioning; include an assessment of the risks posed; and identify risk management measures and contingency actions that will be employed in the event of an accident in order to mitigate off-site effects. The EIA should include consideration of the COMAH Regulations (Control of Major Accident Hazards) and the Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations 2009: both in terms of their applicability to the installation itself, and the installation’s potential to impact on, or be impacted by, any nearby installations themselves subject to the these Regulations. There is evidence that, in some cases, perception of risk may have a greater impact on health than the hazard itself. A 2009 report, jointly published by Liverpool John Moores University and the HPA, examined health risk perception and environmental problems using a number of case studies. As a point to consider, the report suggested: “Estimation of community anxiety and</p>	<ul style="list-style-type: none"> • Refer to Summary of Emergency Procedures Section 11 in the Outline CEMP, Appendix 17.1, Volume 6.3, which outlines how the promoter would respond to accidents. The OEMP states that an Emergency Response Plan will be produced which will include a series of protocols. • No COMAH sites have been identified within 1km of the Scheme and as such there is no potential for the Scheme to result in any impacts on/ by them.

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<p>stress should be included as part of every risk or impact assessment of proposed plans that involve a potential environmental hazard. This is true even when the physical health risks may be negligible.” PHE supports the inclusion of this information within EIAs as good practice.</p>	
<p>12. Liaison with other stakeholders, comments should be sought from:</p> <ul style="list-style-type: none"> • The local authority for matters relating to noise, odour, vermin and dust nuisance. • The local authority regarding any site investigation and subsequent construction (and remediation) proposals to ensure that the site could not be determined as ‘contaminated land’ under Part 2A of the Environmental Protection Act. • The local authority regarding any impacts on existing or proposed Air Quality Management Areas. • The Food Standards Agency for matters relating to the impact on human health of pollutants deposited on land used for growing food/ crops. • The EA for matters relating to flood risk and releases with the potential to impact on surface and groundwaters. • The EA for matters relating to waste characterisation and acceptance. • The Clinical Commissioning Groups, NHS commissioning Boards and Local Planning Authority for matters relating to wider public health. 	<p>As part of the EIA process we have been in consultation with the following:</p> <ul style="list-style-type: none"> • ABC’s Environmental Health Officer regarding the Noise and Vibration and Air Quality Assessments on 23 March 2016 (refer to the Consultation Report Chapter 3, DCO Document Submission Number 5.1) and 9 May 2016. • Odour was scoped out of the EIA as it is not considered to be relevant to this type of project (i.e. Highway Scheme). • ABC were not consulted with regards to vermin as vermin were not identified as relevant to this Scheme. • The Food Standards Agency was not consulted regarding the Scheme as they are not considered a relevant Stakeholder. • Numerous bodies were contacted as part of the non-statutory consultation process (refer to the Consultation Report Chapter 3, DCO Document Submission Number 5.1) comprising the EA for matters relating to flood risk, surface and groundwater and waste, East Kent Hospitals University NHS Foundation Trust (William Harvey Hospital) Kent Police, South East Coast Ambulance Service and Kent Fire and Rescue SHQ.
<p>13. Environmental Permitting</p> <p>Amongst other permits and consents, the development may require an environmental permit from the Environment Agency to operate (under the Environmental Permitting (England and Wales) Regulations 2010). If so, the installation will need to comply with the requirements of best available techniques (BAT). PHE is a consultee for bespoke environmental permit applications and will respond separately to any such consultation.</p>	<ul style="list-style-type: none"> • Consultation has been undertaken with the EA (see Chapter 14 Road Drainage and Water Environment, Volume 6.1, and Consultation Report Chapter 3, DCO Document Submission Number 5.1). • A list of permits and consents which would need to be obtained is provided in Section 5 of the Outline CEMP, Appendix 17.1, Volume 6.3. This comprises Badger, Dormice and Great Crested Newts licenses from Natural England, an Environmental Permit from the EA, Noise Control Pollution Act Section 61 from the EHO, Waste Carrier and Disposal Licences and a Hazardous Waste Licence from the EA. • The EA Flood Risk Permit has been dis applied in compliance with Section 120(5)(a) of the 2008 Act. Land Drainage Consent is not required with no ordinary watercourses affected. • The EA Abstraction Licence is to be dis applied in line with section 29 of the Water Resources Act 1991. Article 3 of the DCO will be amended to dis apply this provision.

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<p>14. Annex 1: Human health risk assessment (chemical pollutants)</p> <p>The points below are cross-cutting and should be considered when undertaking a human health risk assessment:</p> <ul style="list-style-type: none"> • The promoter should consider including Chemical Abstract Service (CAS) numbers alongside chemical names, where referenced in the ES. • Where available, the most recent United Kingdom standards for the appropriate media (e.g. air, water, and/or soil) and health-based guideline values should be used when quantifying the risk to human health from chemical pollutants. Where UK standards or guideline values are not available, those recommended by the European Union or World Health Organisation can be used. • When assessing the human health risk of a chemical emitted from a facility or operation, the background exposure to the chemical from other sources should be taken into account. • When quantitatively assessing the health risk of genotoxic and carcinogenic chemical pollutants PHE does not favour the use of mathematical models to extrapolate from high dose levels used in animal carcinogenicity studies to well below the observed region of a dose-response relationship. When only animal data are available, we recommend that the 'Margin of Exposure' (MOE) approach is used. 	<p>Not relevant as a standalone Health Impact Assessment (HIA) has not been produced.</p>