

**M25 junction 10/A3 Wisley
interchange
TR010030**

**9.162 Applicant's Response to
Secretary of State's Letter -
26 July 2021**

Planning Act 2008

Infrastructure Planning (Examination Procedure) Rules 2010

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The Infrastructure Planning (Examination Procedure) Rules 2010

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1. Introduction

- 1.1.1 This document sets out Highways England's response to the Department for Transport's letter dated 26 July 2021 containing a request by the Secretary of State (SoS) for additional information from Highways England.

2. SoS request for additional information, Part a

Secretary of State's request:

The Secretary of State requests that the Applicant provides additional information on:

a) the scheme's compliance with the sixth carbon budget as set out in the Carbon Budget Order 2021, including an update to the assessment of the impact of the scheme on the carbon budgets as set out in Chapter 15 of the Applicant's Environmental Statement to take account of the sixth carbon budget including for the design year (2037);

Highways England's response

- 2.1.1 A summary of the UK government carbon budgets relevant to the scheme is provided below in Table 2-1 (as per table 15.2 from the climate chapter of the Environmental Statement (APP-060), with the addition of information regarding the 6th carbon budget).

Table 2-1 Summary of relevant carbon budgets

Carbon Budget	Carbon Budget Level	Reduction Below 1990 Levels
3rd carbon budget (2018 to 2022)	2,544 MtCO ₂ e ¹	37% by 2023
4th carbon budget (2023 to 2027)	1,950 MtCO ₂ e	51% by 2025
5th carbon budget (2028 to 2032)	1,725 MtCO ₂ e	57% by 2030
6th carbon budget (2033 to 2037)	965 MtCO ₂ e	78% by 2035

- 2.1.2 As requested by the Secretary of State an assessment of scheme greenhouse gas (GHG) emissions against the UK government carbon budgets has been undertaken covering the GHG emissions that are projected to occur across the relevant carbon budget periods up to and including the design year (2037).

¹ Million tonnes of Carbon Dioxide equivalent

- 2.1.3 Table 2-2 Scheme GHG emissions in 5-year periods aligned with relevant carbon budgets summarises the cumulative operational GHG emissions of the scheme including emissions from construction and operation (the latter including road user, operational energy use and maintenance emissions, see paragraphs 15.1.7.4 to 15.1.7.9 of the Environmental Statement) for each 5-year period aligned with the relevant carbon budgets, up to and including the design year (2037).
- 2.1.4 Table 2-2 compares the carbon impact of the 'Do Minimum' option of not building the scheme with the 'Do Something' option of building the scheme. Both scenarios include consideration of traffic growth as a result of wider developments in the area, with the 'Do Something' scenario including direct impacts of the scheme on traffic. The comparison of the two scenarios provides the net emissions from construction (as a single time period) and operation across each carbon budget period.

Table 2-2 Scheme GHG emissions in 5-year periods aligned with relevant carbon budgets

Carbon Budget Period	3rd (2022): 2,544 Mt CO2e	4th (2023 – 2027): 1,950 Mt CO2e	5th (2028 – 2032): 1,725 Mt CO2e	6th (2033 – 2037): 965 Mt CO2e
GHG emissions from construction (tCO2e)	92,392	0	0	0
Net operational GHG emissions (tCO2e) (Do something - Do minimum) over whole budget period	3,435	17,234	17,335	17,436
Scheme total emissions	95,827	17,234	17,335	17,436
Scheme proportion of budget	0.0038%	0.0009%	0.0010%	0.0018%

- 2.1.5 As can be seen from the table above, the scheme has been assessed as contributing just 0.0018% to the 6th carbon budget reporting period (2033-2037).
- 2.1.6 It should be noted that this assessment is conservative. It is likely to be an overestimate as the projected uptake in sales of new electric vehicles is higher than the proportions used in the national projections included in DEFRA's Emissions Factor Toolkit used for the scheme assessment (see in this regard Highways England's response to question 2.1.2 of the ExA's second written questions (Examination Library reference REP5-014))

- 2.1.7 Furthermore, the recent publication of both the DfT's Transport Decarbonisation Plan² and Highways England's net zero plan³ are likely to further reduce carbon emissions.
- 2.1.8 The Climate Change Act 2008 (2050 Target Amendment) Order 2019, which gave legal effect to the net zero target by 2050, was made on 26 June 2019, shortly after the submission of the application for development consent for the scheme.
- 2.1.9 The DfT's Transport Decarbonisation Plan was published in July 2021. With respect to emissions from road traffic, the plan includes a number of commitments by the government to remove all emissions from road transport in order to achieve the net zero target by 2050. The plan includes commitments to banning the sale of new petrol and diesel cars and vans from 2030, 10 years earlier than planned. The plan also commits to sales of all new non-zero emission road vehicles (including HGVs) being phased out by 2040. From 2035, all new cars and vans will be required to be zero emission at the tailpipe. The government plans to make its car and van fleet 100% zero emission by 2027.
- 2.1.10 Also in July 2021, Highways England published its own 2030/2040/2050 net zero highways plan. This plan includes commitments to ensure that Highways England's corporate emissions become net zero by 2030, its maintenance and construction activities will become net zero by 2040 and road user emissions on the strategic road network will become net zero by 2050.

Part (a) Response - Summary and Conclusion

- 2.1.11 The contribution of GHG emissions resulting from the scheme is assessed as a maximum of 0.0038% across all relevant carbon budget periods. Highways England therefore does not consider carbon emissions resulting from the scheme to have a material effect on the government's ability to comply with the carbon budgets or the Paris Agreement commitments.
- 2.1.12 It was held in the very recent case of R (Transport Action Network Limited) v Secretary of State for Transport and Highways England Company Limited (2021) EWHC 2095 (Admin) that in relation to the judgment reached regarding the entirety of the carbon emissions from all schemes within RIS 2 (which includes this scheme, rolled forwards from RIS 1):
- “I see no reason to question the judgment reached by the DfT that the various measures of carbon emissions from RIS 2 were legally insignificant, or *de minimis*, when related to appropriate comparators for assessing the effect on climate change objectives.” (paragraph 159)
- 2.1.13 Since that is the conclusion reached in relation to all schemes within RIS 2, the proposed scheme is a small part of an overall programme which is *de minimis* in terms of its impact upon carbon reduction commitments.

² [Decarbonising Transport – A Better, Greener Britain \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/101411/Decarbonising-Transport-A-Better-Greener-Britain.pdf)
³ [net-zero-highways-our-2030-2040-2050-plan.pdf \(highwaysengland.co.uk\)](https://www.highwaysengland.co.uk/press-releases/net-zero-highways-our-2030-2040-2050-plan.pdf)

- 2.1.14 As a result, the increase in carbon emissions associated with the scheme is not a reason to refuse development consent. The increase would have no material impact on the ability of Government to meet its carbon reduction commitments. The proposed development does not give rise to any conflict with paragraph 5.18 of the National Policy Statement for National Networks (NNNPS).

3. SoS request for an update to the environmental information, part b

Secretary of State's request:

The Secretary of State requests that the Applicant provides additional information on:

b) building on paragraph 15.1.11 of the Applicant's Environmental Statement, the direct, indirect and cumulative likely significant effects of the Scheme with other existing and/or approved projects on climate, including greenhouse gas emissions and climate change adaptation;

Highways England's response

- 3.1.1 To support this response the following terms in the request have been interpreted as follows:
- Direct emissions - direct emissions to the atmosphere from relevant activities (e.g. tailpipe emissions from road users or construction vehicles);
 - Indirect emissions - indirect emissions resulting from the purchase of electricity (e.g. for infrastructure operation) and/or any relevant downstream activities by third parties within the supply chain (e.g. embedded carbon from the manufacturing of construction products such as concrete);
 - Cumulative effects of the scheme - The consideration of the GHG emissions impact of the scheme with other relevant committed developments included within the traffic model for the scheme;
 - Likely significant effect - An increase in carbon emissions resulting from a proposed scheme that are so significant that the scheme would have a material impact on the ability of Government to meet its carbon reduction targets (as per paragraphs 5.17 and 5.18 of the NNNPS).
- 3.1.2 The response to part b of the Secretary of State's request is provided in two parts. The first part relates to the climate effects, i.e. the GHG aspect of the question and the second part relates to climate vulnerability, i.e. the climate change adaptation aspect.

Part 1

Cumulative effects of the scheme – GHG emissions

- 3.1.3 The cumulative effects of the scheme are inherently captured within the GHG assessment methodology followed in chapter 15 of the Environmental Statement (see section 15.1.4.5). This is because emissions from various sources

embedded within the construction of the scheme are considered as well as, and additional to, emissions from the operation of the scheme as net emissions to the atmosphere to show the total impact on each carbon budget.

3.1.4 The following emissions sources are cumulatively reported for the scheme in tables 15.14 and 15.15 of the Environmental Statement (APP-060):

- Construction Stage
 - Construction materials (embodied GHG emissions associated with the materials required)
 - Transportation of materials (emissions from vehicles transporting materials to works site)
 - Construction Processes (emissions from activities during the construction process on the works site) and operational emissions (including an estimate of maintenance emissions and tailpipe emissions from traffic)
- Operation Stage
 - Road user (emissions from vehicles using highways infrastructure)
 - Maintenance / refurbishment (emissions from activities involved in routine maintenance)
 - Operational energy use (emissions from energy consumption during infrastructure operation)

Direct and indirect significant effects – GHG emissions

3.1.5 Direct and indirect emissions on account of the scheme are inherently included within the GHG assessment methodology followed in the Environmental Statement – see paragraph 15.1.5. Construction materials included in the assessment of the construction effects of the scheme are inherently ‘indirect’ as they are an accumulation of embedded emissions that occur throughout the construction supply chain (i.e. an accumulation of various emissions sources such as raw material extraction, intra-manufacturing transportation, manufacturing processes etc). The operational tailpipe emissions and construction process emissions from plant/vehicles on site are inherently ‘direct’ emissions as they are emissions that are directly released to the atmosphere.

3.1.6 Furthermore, to account for the carbon emissions resulting from all GHG emissions sources across the construction and operation of the scheme, the assessment uses GHG conversion factors expressed in carbon dioxide equivalent (CO₂e). These emissions factors account for the cumulative global warming potential of 6 different GHGs (as defined by the Kyoto Protocol) from emissions sources across the scheme, therefore accounting for the indirect behaviour of gases in the atmosphere over a 100-year time period.

Cumulative likely significant effects of the scheme with other existing and/or approved projects – GHG emissions

- 3.1.7 The consideration of the cumulative effects of the scheme with other existing and/or approved projects is inherent within the methodology followed in the Environmental Statement through the inclusion of the scheme and other locally committed developments within the traffic model (see paragraph 5.11.3 of the air quality chapter of the Environmental Statement, paragraph 16.5.14 of the cumulative effects chapter of the Environmental Statement, and paragraph 3.5.6 of the Transport Assessment⁴ (APP-136)).
- 3.1.8 Additionally, the emissions from the scheme are considered against the national context of continuing economic activity through the comparison of the resulting emissions from construction and operation of the scheme with the UK carbon budgets, which consider sectors across the economy. Were the scheme to have a material effect (which it does not), it would be because, acting together with the other economic activity factored into a carbon budget, the target budget would be made significantly harder to achieve.

Part 1 - Summary and Conclusion

- 3.1.9 As explained above at paragraph 2.1.12, the High Court has concluded that the total amount of carbon emissions from the entire RIS2 programme is *de minimis* in the context of appropriate comparators for assessing the effect on climate change objectives. Accordingly, Highways England do not consider that GHG emissions on account of this scheme alone, including on a cumulative basis, is likely to have any significant effect on climate or the UK's ability to comply with its carbon budgets.
- 3.1.10 As a result, the increase in GHG emissions associated with the scheme is not a reason to refuse development consent. The increase would have no material impact on the ability of Government to meet its carbon reduction targets and so the proposed development does not give rise to any conflict with paragraph 5.18 of the NNNPS.

Part 2

Cumulative likely effects of the scheme with other existing and/or approved projects – climate vulnerability

- 3.1.11 Direct and indirect climate vulnerability effects are already included within the vulnerability assessment provided within the Environmental Statement. For each potential climate vulnerability effect assessed in the Environmental Statement there is a climate hazard (e.g. hotter summers), a direct effect (e.g. softening of bitumen in asphalt), an indirect effect such as a failure (e.g. deformed assets) and a consequence (e.g. traffic delays). Direct climate vulnerability effects are often considered to be impact pathways in environmental assessment terminology. Each potential climate vulnerability is considered holistically within the Environmental Statement with regard to all of the associated direct and

⁴ HE551522-ATK-EAC-RP-TR-000001 (planninginspectorate.gov.uk)

indirect effects. These are described in detail in Tables 15.23, 15.24 and 15.25 within the Environmental Statement (see pages 46-59 of chapter 15).

- 3.1.12 The scheme's Environmental Statement found that there are no inter-scheme cumulative effects relevant to climate vulnerability. See section 15.2.12 which provides additional information to support that finding.
- 3.1.13 This section should be considered with reference to the climate vulnerability assessment methodology set out in the Climate chapter in the Environmental Statement, which considers the likelihood of effects and their consequences with regard to traffic disruption.

Study area

- 3.1.14 Given the scheme's importance to regional transport, cumulative climate vulnerability effects are considered at both local and regional scales. The main transport networks at these scales are shown in Figure 1, Figure 2 and Figure 3 below and are described in the following paragraphs.

Climate vulnerability baseline for cumulative effects

- 3.1.15 Figure 1 shows that alternate road routes around the scheme are primarily provided by A roads.
- 3.1.16 Collectively these routes ring the scheme and would provide local resilience in the event of climate vulnerability impacts in the area.
- 3.1.17 Figure 2 puts the scheme in a regional context. It shows that:
- Traffic traveling from the south west of the scheme towards London (or vice versa) can interchangeably use the A3, A31 or M3 for long distance journeys;
 - Traffic traveling from the south and south east of the scheme towards London (or vice versa) could interchangeably use the A3, A24 or M23 for long distance journeys.
- 3.1.18 All of the above mentioned regional alternate routes are interconnected by other A roads providing some flexibility at an unforeseen point of traffic disruption that caused re-routing. The routes also all intersect the M25 providing further flexibility to switch between them.
- 3.1.19 The rail transport network is shown on Figure 1 and Figure 2 and shown schematically on Figure 3. Together these figures show that:
- Main line routes from Portsmouth and Southampton to London pass through the study area;
 - Rail traffic can divert west around the study area through Reading via either Basingstoke or Guildford;
 - Rail traffic can divert east around the study area through Reading via either Dorking (edge of study area) or Redhill (outside of study area)

- 3.1.20 Road and rail networks crossing the study area do not operate in isolation; there are likely to be interdependencies between them, especially for commuters. Major rail disruption may increase road traffic in the area and the same, though to a lesser extent (due to the greater flexibility in the road network), may be true in reverse, i.e. road disruption may cause an increase in rail transport.
- 3.1.21 The scheme will improve transport resilience by replacing old degrading assets that were designed with less resilience to climate change than the assets that will replace them. Further details on the climate change mitigation that is embedded into the scheme design can be found in Table 15.23, Table 15.24 and Table 15.25 of the Environmental Statement.

Potential cumulative climate vulnerability effects

- 3.1.22 Cumulative vulnerability effects are determined with regard to their significance without the scheme compared to their significance if the scheme and its climate vulnerability mitigation were to be in operation. If there is no change in significance a cumulative effect is deemed to be not significant.
- 3.1.23 Climate vulnerability effects assessed in the Environmental Statement have been reviewed to identify which could cause the most significant worst case cumulative effects in the study area. The effect identified is the projected climate trend of increasing frequency and intensity of heavy rainfall events which is likely to increase the risk of flooding in the study area, both pluvial and fluvial. See Figure 4. Of all the potential climate vulnerability effects described in the Environmental Statement flood risk is considered to be the most likely to cause wide-spread disruption related to a climate event. This is as opposed to many of the other effects which relate to slow onset climate changes, such as gradual increases in temperature which have consequences that can typically be mitigated via more regular maintenance.
- 3.1.24 Effects associated with flood risk are likely to affect local roads most significantly; the SRN (trunk roads and motorways) and railway lines having a higher level of flood protection. As regards flood risk, the scheme has been designed to relevant standards with regard to anticipated climate change.
- 3.1.25 Table 3-1 below sets out how a worst-case cumulative effect (heavy rainfall events) would be scored in each scenario (i.e. with and without the scheme) and shows that there would be no significant cumulative climate vulnerability effects associated with the scheme.

Table 3-1 – Climate vulnerability cumulative effect assessment

Scenario	Impact	Likelihood	Consequence	Significance
Without Scheme	Flooding after an extreme rainfall event causes closures of some local roads around the Scheme and disruption on some of the larger roads around it, e.g. lane closures.	High - The event occurs several times during the lifetime of the project (60 years) e.g. approximately once every five years, typically 12 events.	Minor adverse - Diversions and bottle necks cause regional level disruption to strategic route(s) lasting less than 1 day	Significant
With Scheme	Flooding after an extreme rainfall event causes closures of some local roads around the Scheme and disruption on some of the larger roads around it, e.g. lane closures. The Scheme will improve the resilience of its assets to climate vulnerability effects and improve accessibility in the study area – thereby reducing traffic disruption so improving resilience to consequences caused by climate vulnerabilities (compared to the without scheme scenario). Neither of these changes will be sufficient to reduce worst case cumulative consequences compared to the without scheme scenario.	High - The event occurs several times during the lifetime of the project (60 years) e.g. approximately once every five years, typically 12 events.	Minor adverse - Diversions and bottle necks cause regional level disruption to strategic route(s) lasting less than 1 day	Significant
Change in significance:				<u>No change</u>

NOTE: Table follows the climate vulnerability methodology set out in the Climate chapter within the Environmental Statement.

Part 2 - Summary and Conclusion

- 3.1.26 The cumulative assessment demonstrates that the scheme will improve the resilience of the SRN to the effects of climate change. It will do this by replacing old less resilient assets and improving accessibility within the study area; thereby improving the flow of traffic. In operation the scheme will enhance the resilience of the regional transport network to respond to cumulative climate vulnerability effects, i.e. failures of surrounding local and regional transport networks.
- 3.1.27 The vulnerability assessment has shown that there will be no change in the significance of cumulative effects in the worst case scenario described.

4. Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 – National Policy Statement for National Networks

The Secretary of State has requested that the additional information to be provided '*...should be set in light of the requirements set out in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 and in light of paragraphs 5.17 and 5.18 of the National Policy Statement for National Networks ('NNNPS').*'

- 4.1.1 As to compliance with the Infrastructure Planning (Environmental Impact Assessment Regulations) 2017 (as amended) (the EIA Regulations), the scheme constitutes EIA development for the purposes of those regulations. The scheme is therefore subject to the environmental impact assessment process provided for at regulation 5 of the EIA Regulations, which includes the preparation of an environmental statement. An environmental statement was duly prepared and was submitted with Highways England's application for development consent.
- 4.1.2 Paragraph 5 of Schedule 4 of the EIA Regulations provides that the environmental statement must, among other matters, include a description of:
- "(e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;*
- (f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;"*
- 4.1.3 The environmental statement submitted with the application included a chapter on the assessment of the cumulative effects of the scheme (Chapter 16) and on climate (Chapter 15), in order to meet the requirements referred to above.
- 4.1.4 The information provided in this response is additional information for the purposes of the EIA Regulations and is provided in response to the Secretary of State's request to assist him in discharging his duty under regulation 21 of the

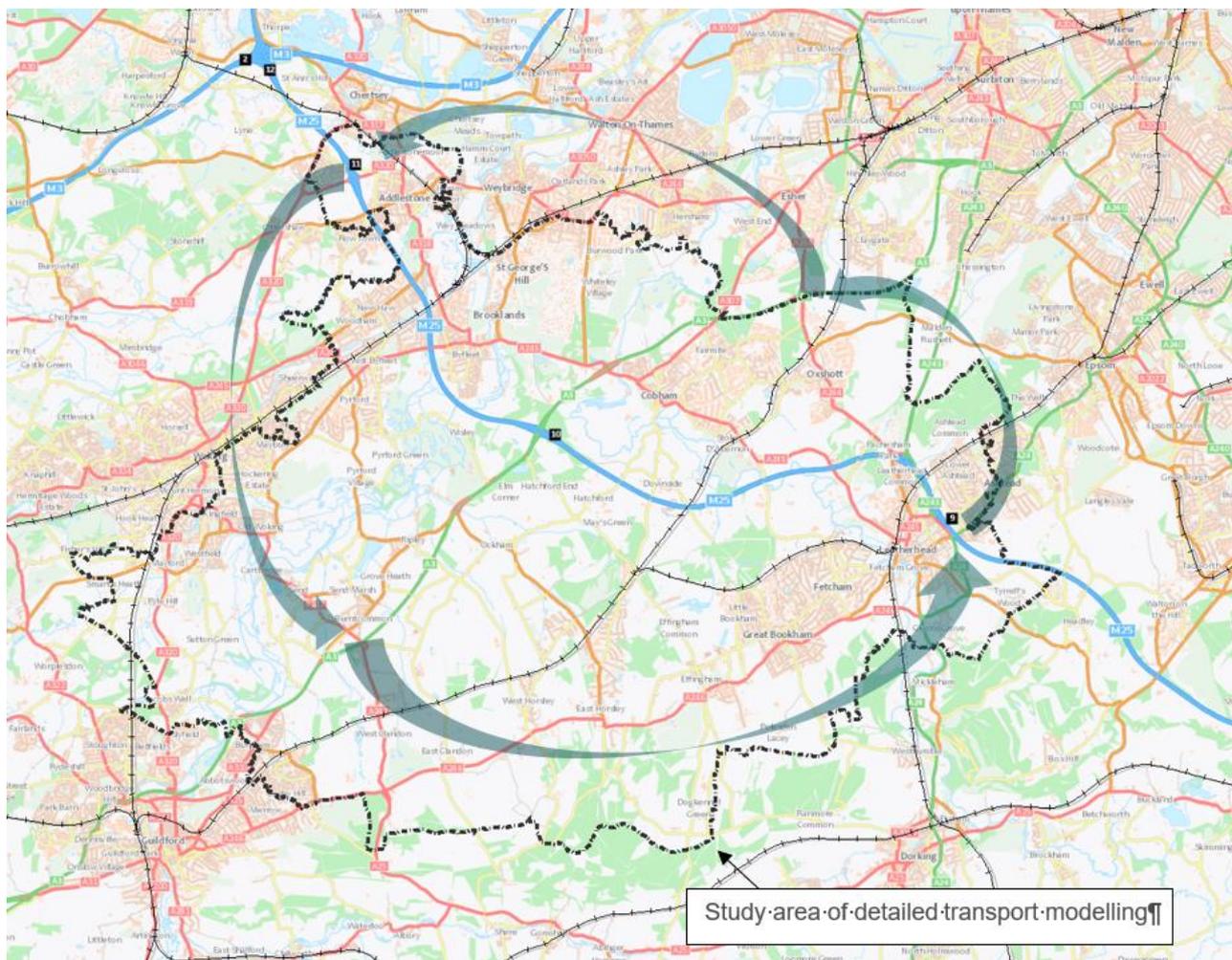
EIA Regulations to reach a reasoned conclusion which is up to date on the significant effects of the scheme on the environment.

- 4.1.5 In relation to paragraphs 5.17 and 5.18 of the NNNPS, this response, together with the information provided in Chapter 15 of the Environmental Statement, demonstrates that the scheme will not materially affect the ability of the Government to meet its carbon budgets. Accordingly, the increase in carbon emissions that may arise in consequence of the scheme is not a reason to refuse development consent pursuant to paragraph 5.18 of the NNNPS.

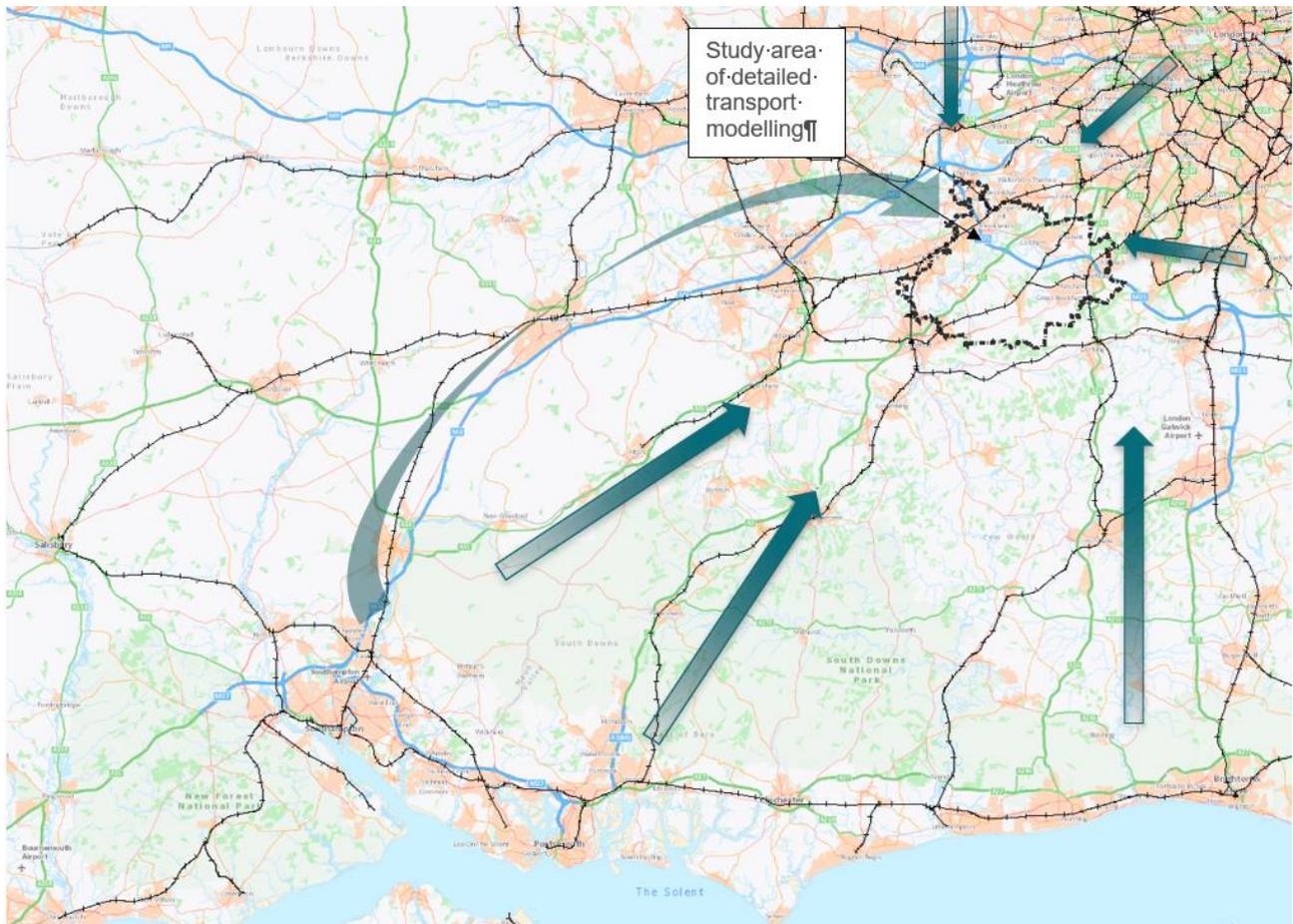
Appendices

Appendix A. Figures

A.1 Figure 1 – Local view of scheme showing transport routes that surround it



A.2 Figure 2 – Regional view of scheme and generalisation of main traffic flows toward it



A.3 Figure 3 – Regional rail connections



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