Gatwick Airport Northern Runway Project

Response to the Examining Authority's Written Questions (ExQ2) – Traffic and Transport

Book 10

VERSION: 1.0

DATE: JULY 2024

Application Document Ref: 10.56.15

PINS Reference Number: TR020005

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1 Response to the Examining Authority's Written Questions – Traffic and Transport

1.1.1 The below table sets out the Applicant's response to the Examining Authority's Written Questions relating to Traffic and Transport.

ExQ2	Question to:	Question:
TRAFFIC AND TRANSPORT		
These questions do not relate to the revised car parking analysis submitted at D6. Any further questions arising from D6 car parking submissions will be addressed via a Rule 17 letter.		
TT.2.1	Applicant National Highways	**National Networks National Policy Statement 2024 (2024 NNNPS)** NH's response to ExQ1 GEN.1.33 [REP3-138] in the last bullet point highlights that "*Paragraph 5.283: "The Applicant should provide evidence that the development improves the operation of the network and assists with capacity issues." Importantly, this sentence does not appear in the 2015 NNNPS and National Highways considers it is relevant to the Applicant's proposals. In light of the specific matters relating to the proposed expansion, and the assessments provided, National Highways does not consider such evidence has been provided*." Although the 2015 NNNPS has effect for this application, the 2024 NNNPS could be an important and relevant matter. What evidence has been provided that the development improves the operation of the network and assists with capacity issues?
		National Networks National Policy Statement 2024 (NNNPS 2024) Paragraph 5.283 of the NNNPS 2024 sets policies for national networks NSIPs. The NRP contains highway works which meet the definition of an NSIP.

		Issues are discussed elsewhere about the relative application of Sections 104 and 105 of the Planning Act in the **Applicant's Position on Sections 104 and 105 of the Planning Act 2008** [REP6-095] but the Applicant recognises that is not the primary purpose of this question. In so far as the NNNPS 2024 may be relevant and important, however, it comprises policies for networks related infrastructure on the road and rail networks, not airport related development. To the extent that it is to be considered in this case, therefore, its relevance and application may be limited to the highway works element of the NRP. In providing policy for highway and rail projects, the NPS expects developments to improve the operation of the network and 'assist' with capacity issues. The contribution which the proposed highway works make to the operation and capacity of the highway network is assessed in the **Transport Assessment** [REP3-058]. Chapters 12 and 13 consider the modelled effect of the project, whilst conclusions are set out in Chapter 18. The highway works are not assessed by themselves. Were they assessed on their own (without the additional passenger throughput facilitated by the airport related development), they unquestionably would improve the operation of and bring capacity to the network; that is their purpose and effect. However, the same conclusion arises if one considers the NRP project as a whole, including the traffic that would be generated by the airport related development. The Transport Assessment compares the position with both the highway works and the NRP growth at Gatwick against the future baseline – i.e. what the condition of the network would be without either the NRP or its associated highway works. Paragraph 13.6.5 confirms that: "*In the with-Project scenarios, which include the additional Project demand and the proposed highway works, the VISSIM model outputs show improved performance on the network compared to the equivalent future baseline scenario. This includes locations such as the M23 Spur, where congestion would largely be removed,*

		South and North Terminals where queues would be substantially reduced, and Longbridge Roundabout where conditions would be improved compared to those expected in the future baseline." Paragraph 18.5.8 records a brief conclusion, as follows: "*The future baseline scenarios indicate that without the Project, the network would operate close to capacity in several locations. The inclusion of the highway works as part of the Project prevents unacceptable highway conditions arising."* In other words, the highway works element of the project meet the requirements of the NNNPS 2024 by bringing additional capacity to the network and enhancing its performance compared with a situation in which those works were not proposed (and the NNNPS not engaged). Even if the test was applied to the Project as a whole, the test is met as the project brings a net betterment to the network compared with the future baseline.
TT.2.2	Applicant	**Future Baseline Sensitivity Analysis** Explain what is meant in para 5.10.21 of the Future Baseline Sensitivity Analysis [REP5-081], as it seems to suggest traffic data to inform other topics has not been derived from additional modelling. Is the ExA to assume that this is a commentary of what the Applicant considers to be the outcome of any additional sensitivity modelling if it was undertaken?
		For traffic and transport, paragraph 5.10.4 of Response to **Rule 17 letter - Future Baseline Sensitivity Analysis** [REP5-081] explains that "*The assessment of the potential implications related to traffic and public transport provides a high-level largely qualitative review based on the changes from the core scenario and professional judgement with reference to the assessment presented in ES Chapter 12: Traffic and Transport [REP3-016]*".

		Although no additional detailed modelling was undertaken to inform the analysis of the future baseline sensitivity scenarios, the Applicant has a close understanding of how the networks respond to changes in demand. That knowledge has been gained from: the core modelling and environmental assessment set out in the **Transport Assessment** [REP3-058], **ES Chapter 12: Traffic and Transport** [REP3-016] and **Technical Note: Impact of Latest IEMA Guidance (2023) on the Assessment of Effects Related to Traffic and Transport** [AS-119]; the tests of post-Covid conditions reported in **Accounting for Covid-19 in Transport Modelling** [AS-121] and **Environmental Appraisal of the Post-Covid 19 Traffic Data for the ES** [REP5-068]; and other sensitivity tests undertaken in the course of preparing the transport modelling (further information on these is provided in response to question TT.2.10). This provides a breadth of information and a reasonable basis on which to make informed judgements on the implications of alternative future baseline scenarios. The review of potential traffic and transport effects related to the future baseline sensitivity scenarios is therefore underpinned by: identifying the overall change in demand that each scenario implies for a busy June day (which is the time period used for assessing transport impacts); making reference to the criteria and thresholds used in identifying environmental effects related to traffic and transport; and considering whether and how those changes in demand might alter the outcomes of the core assessment. To support other environmental topics for which annual average traffic data is needed, that data was derived by applying factors to the core scenario model outputs used for the Application. The factors were based on the differences in annual passenger throughput and employee numbers between the core scenario and the future baseline sensitivity scenarios. This provided other topics with an informed high-level view on how annual traffic data might change under each of the sensitivity scenarios, to support their relevant assessments. Paragraph 5.10.21 of the **Response to Rule 17 Letter - Future Baseline Sensitivity Analysis** [REP5-081] simply confirms that this was the approach.
TT.2.3		**Future Baseline Sensitivity Analysis - Traffic and Transport**

	Local Authorities	Are the local authorities satisfied that the commentary on the effects of the future baseline sensitivity analysis [REP5-081] provides an accurate assessment of the possible effects on all factors that are covered within Chapter 12 of the ES.
		N/A – this question is not directed at the Applicant.
TT.2.4	Marathon Asset Management MCAP Global Finance (UK) LLP	**Pedestrian Access to Holiday Inn** Currently there is no footway connecting the hotel entrance to the pedestrian network on the adjacent highways. The only hard surfaced routes are the vehicle entrance carriageway directly from the A217 or via the car park carriageway exit onto Povey Cross Road. There is no hard surfaced segregated pedestrian or cycle access to the hotel. The Applicant's highway improvements to the Longbridge Roundabout include pedestrian and cycle circulation. The ExA would like to understand given that active travel to the Airport may become a realistic option should the highway improvements take place, whether your client will be considering pedestrian and cycle access on the hotel site.
		N/A – this question is not directed at the Applicant.
TT.2.5	Applicant West Sussex CC Crawley BC Reigate and Banstead BC	**Draft Section 106 Agreement Schedule 3 – Transport Mitigation Fund Decision Group** Explain how any disputes in respect of Schedule 3 of the draft Section 106 Agreement [REP2-004] the Transport Mitigation Fund Decision Group would be resolved and also the likely timescales for dispute resolution.
		The Applicant included new paragraph 8.8 in the **draft Section 106 Agreement** [REP6-064] submitted at Deadline 6 as requested by the Joint Local Authorities which sets out for the avoidance of doubt that clause 10

		(Resolution of Disputes) of the draft Section 106 Agreement applies in respect of a decision of a member of the Transport Mitigation Fund Decision Group ("TMFDG") who is also a party to the Section 106 Agreement. The Applicant is engaging directly with the Joint Local Authorities in respect of draft Terms of Reference for the TMFDG. The Applicant considers that it is appropriate for clause 10 (Resolution of Disputes) of the draft Section 106 Agreement to apply in respect of disputes of the TMFDG, as if each member of the TMFDG was a party to the Section 106. Clause 10 (Resolution of Disputes) of the draft Section 106 Agreement sets out the timescales for the resolution of a dispute by arbitration. In any case, paragraph 7.3.4 of Schedule 3 of the draft Section 106 Agreement requires the TMFDG to make such terms of reference as it considers appropriate for the proper and efficient functioning of the TMFDG which is anticipated to include the details of how any disputes will be resolved including the timescales for resolving such disputes.
TT.2.6	Applicant	**Surface Access Commitments – Commitment 16** Paragraphs 6.2.8 to 6.2.11 of the Surface Access Commitments (SAC) [REP6-030] sets out the involvement of the Secretary of State in the case where there is disagreement between the Transport Forum Steering Group (TFSG) and the Applicant in terms of the Surface Access Commitments Mitigation Action Plan. Explain: • The minimum timescale for the Secretary of State to be involved after the dispute has been identified, between the TFSG and the Applicant; • If there are any limitations on the Secretary of State in terms of response timescale; and • Whether as well as directing that the Mitigation Action Plan is amended, would this process make it possible for the Secretary of State to direct controls on factors affecting mode share at the airport. These possibly may include passenger numbers, aircraft movements and/or parking numbers.

		• Where a dispute has been identified between the TFSG and the Applicant (i.e. where the TFSG does not agree with the reasons put forward by GAL for not including the measures proposed by the TFSG in its SAC Mitigation Action Plan), GAL must make a submission to the Secretary of State within 90 days of receiving TFSG's written reasons, in accordance with paragraph 6.2.8 • The Applicant has not sought to impose any limitations on the Secretary of State's response in terms of timescales as it is expected the timeframe required to consider the matters will vary greatly depending on the matters in dispute. However, the Applicant notes that, whilst this process is ongoing, the Applicant will be carrying out further interventions that are necessary to prevent a breach or anticipated breach of the mode share commitments in accordance with paragraph 6.2.11 of the SACs. • As the Applicant explained in oral submissions at ISH8 and as noted in **The Applicant's Written Summary of Oral Submissions - ISH8 Surface Access Commitments** [REP6-078], the process described at paragraphs 6.2.8 to 6.2.11 of the **Surface Access Commitments (SAC)** [REP6-030] allows the Secretary of State to direct such additional or alternative interventions that are considered reasonably necessary to achieve the mode share commitments having regard to all the materials submitted to it. This is left deliberately broad. There is a discretion for the Secretary of State to require whichever measures are thought necessary to achieve the mode share commitments. That may mean a refocusing or ramping up of existing commitments that are set out in the SACs whether that be through parking charges, or forecourt charges for example. It does not preclude the Secretary of State from directing other controls on factors affecting mode share at the airport including passenger numbers, aircraft movements and/or parking numbers where the Secretary of State considers those interventions are reasonably necessary to achieve the mode share commitments (having had regard to the materials submitted to it including the representations submitted by the TFSG and any relevant evidence, data or information submitted by GAL).
TT.2.7	Applicant	**Rail Capacity and Mitigation**

	Network Rail Govia Thameslink Railway	Network Rail's PADSS [REP5-107] and Govia Thameslink Railway [REP6-126] highlight the outstanding issues around some elements of the rail modelling and also the mitigation required. The ExA are aware that discussions are ongoing, but would like parties' comments on: • Summary of outstanding issues relating to rail modelling; • Outline of any mitigation that may be required; • How any required mitigation would be secured; and • The likelihood of agreement on the above being reached during the Examination.
		The Applicant provided details of its approach to rail modelling and assessment in the **Transport Assessment** [REP3-058] and the associated **Annex B Strategic Transport Modelling Report** [APP-260] and **Annex D Station and Shuttle Legion Modelling Report** [APP-262], which provide information relevant to demand and capacity issues. In their relevant **Updated PADSS** [REP5-107] Network Rail has provided comments regarding their review of this information and the Applicant has provided further clarification on a number of matters. The Applicant is still in discussion with Network Rail and Govia Thameslink Railway (GTR) on the following aspects of rail modelling: • How rail demand modelling reflects the loading of different train services across peak hours and the impact of crowding on services • Differences in the assumed Future Baseline and With Project demand comparing annual, daily and hourly profiles • Confirmation of model assumptions, including fares and their effects on the assessment • Differences in the assumptions and approach taken for multi-modal modelling for the DCO Environmental Statement compared with rail modelling used for Network Rail's strategic planning

		Arising from these discussions is further engagement on the scale of impacts from the incremental growth created by the Project, potential interventions and measures that enhance the rail network or train services in support of increasing the use of sustainable transport by passengers and staff to and from the Airport, and funding mechanisms for such measures. There have been positive discussions and the parties are approaching agreement on some matters. However, analysis being undertaken by Network Rail to provide evidence supporting their position has not yet been completed for the Applicant to review and clarification on assumed levels of demand are still required. Acknowledging the timing of the analysis being brought forward by Network Rail, the Applicant is hopeful that some agreement will be possible before the end of Examination and commits to continue working with rail industry stakeholders to meet the common objective of encouraging sustainable travel.. The Applicant anticipates useful discussions with Network Rail to follow receipt of analysis relating to the impacts of the Project and its relationship to the list of measures included in the annex to Network Rail's **Updated PADSS** [REP5-107], which is acknowledged by Network Rail to be "an indicative range of initiatives which could improve rail network performance". The Applicant recognises the need for further work in order to respond to some of Network Rail's concerns and is supportive of some of the further analysis indicated in the PADSS. The Applicant will continue to engage with NR to resolve the outstanding issues including seeking to agree the initiatives and measures it can deliver and which NR can deliver with support from the Applicant to make a reasonable and proportionate contribution commensurate with the effects of the Project. The Applicant strongly rejects the characterisation presented by Govia Thameslink Railway (GTR) in their Deadline 6 representation [REP6-126] and believes there is no sound justification for the suggested requirement for the Project to fund grade separation of Windmill Bridge Junction north of East Croydon. This would be wholly unjustified by the scale of impact of the Project and GTR has not presented any evidence into Examination or for scrutiny by the Applicant to support its claim. The Applicant will continue to engage with train operating companies as part of discussions with Network Rail to determine the appropriate rail enhancements. We understand the representation from GTR at Deadline 6 will be updated at Deadline 7.

		Notwithstanding these ongoing discussions, the Applicant recognises that some further measures would be beneficial at Gatwick Airport Station to manage an increase in queueing at ticket gatelines above that which occurs in the Future Baseline (which is consistent with Network Rail's own assessment for the Gatwick Station Project) and the Applicant is prepared to commit to specific measures included in the annex to Network Rail's Updated PADSS [REP5-107] that are within the Applicant's ability to deliver. The Applicant is also committing to a Rail Enhancement Fund to provide funding to initiatives and measures that are aimed at improving reliability of the rail network or enhancing the rail network or rail services in support of increasing the use of sustainable transport by passengers and staff travelling to and from the airport and in delivering the mode share commitments in connection with the Project. Both the specific measures and the Rail Enhancement Fund are secured in the updated Surface Access Commitments (Doc Ref. 5.3) submitted at Deadline 7. The Applicant will work with Network Rail, GTR and other rail operators to agree on the measures and interventions to be supported by the Rail Enhancement Fund in order to support sustainable transport to the airport.
TT.2.8	Applicant	**Surface Access Commitments – Commitment 16** Paragraph 6.2.6 of the SAC [REP6-030] in Commitment 16 limits the need for action in failing to meet mode share commitments must have regard *"to any circumstances beyond GAL's control which may be responsible."* Prior to a decision on the DCO, if no agreement can be reached about the rail modelling and any necessary mitigations, would these be circumstances beyond the control of the Applicant in the context of Commitment 16?
		The reference to "circumstances beyond GAL's control which may be responsible" in paragraph 6.2.6 is a reference to those circumstances further outlined in paragraph 6.2.5; the examples given in that paragraph are extreme weather events or industrial action disrupting transport services. The Applicant considers that this reference is for truly exceptional circumstances and events that could not be reasonably foreseen. It will be for the Applicant to put forward alternative measures in consultation with industry stakeholders (including rail) in

		the form of an action plan for approval by the TFSG involving the suite of measures set out in the **Surface Access Commitments** [REP6-030].
TT.2.9	Applicant	**Surface Access Commitments – Car Travel** In the SAC [REP6-030] is the mode of car travel being monitored and reported the last mode of travel to and from the airport site or the main mode of travel for the whole trip? (e.g., car travel to remote parking and shuttle bus to site being recorded differently to car travel to the site)
		For car mode shares, the data for passengers derives from the Civil Aviation Authority (CAA) Departing Passenger Surveys and the information for staff derives from the Applicant's Staff Travel Surveys conducted every other year as set out in Table 3 of the **Surface Access Commitments** [REP6-030]. CAA data captures the final mode of transport and records up to three separate modes where multiple legs of a journey are made. Clarification on the CAA data was provided in **The Applicant's Response to the ExA's Written Questions (ExQ1) - Traffic and Transport** [REP3-104], questions TT.1.6 and TT.1.32 in that the CAA survey does not regard the connection between a parking place (on or off airport) and the airport terminals as an additional mode. This clarifies that passengers travelling to the airport by car and parking in a car park (on-airport or off-airport) and subsequently using car park courtesy buses, meet and greet services or active travel to access the airport terminals are treated in the CAA data as having made a car journey and are included in the car mode shares. This includes both "drop off/pick up" (recorded by the CAA survey as "private car, driven away") or "park and fly" (recorded by the CAA survey as "private car" with the description of the subsequent connection by on- or off-airport parking type, e.g. "airport long term car park bus" or "valet service off-airport"). For staff, as set out in Appendix D of **The Applicant's Response to Actions - ISHs 2-5** [REP2-005], the mode share is derived from the question "What method of transport do you usually use to travel to work at Gatwick?" which reflects the main mode. There is a separate question on "As part of your journey, do you use any other mode(s) of transport to work?" and a further question for those using car to clarify where the vehicle

		is parked "Where is the vehicle you travel to Gatwick in parked?" (noting this question applies to staff that travel both as drivers and as car passengers). In addition to mode share data, Table 3 of the **ES Appendix 5.4.1 Surface Access Commitments** [REP6-030] sets out the full range of sources for monitoring in connection with an Annual Monitoring Report as part of the Project. This includes barrier counts at car parks, Automatic Number Plate Recognition (ANPR) data for forecourt use, as well as road traffic and public transport data.
TT.2.10	Applicant	**Surface Access Commitments – Traffic Sensitivity Testing** The Joint Surrey Councils [REP6-101] have indicated that sensitivity testing shared with them about lower sustainable modes shares than required in the SAC [REP6-030]. The Joint Surrey Councils state that "*The results inevitably lead to more vehicles on the SRN and LRN, (approximately 7% more GAL related road traffic in 2032). The analysis presented traffic impacts, there was no associated air quality and noise assessment."* Given this the ExA would like to understand what sensitivity tests have been undertaken and details of the outputs so the impacts of lower sustainable mode shares can be understood.
		In the course of developing the modelling, testing the effect of different surface access interventions and mode share outcomes, and further sensitivity testing of highway network operation, the Applicant undertook several sensitivity tests which were discussed with the local highway authorities during the pre-application phase. These included: ▪ A test which explored the implications of only limited additional interventions beyond those expected in the future baseline scenario, leading to a public transport mode share which would be lower than that to which the Applicant is committing in **ES Appendix 5.4.1: Surface Access Commitments** (**SAC**) [REP6-030]

		▪ A test which explored the implications of increasing Airport-related highway journeys by 10% above the levels indicated in the core modelling scenario (i.e. the scenario presented in the DCO Application and which reflects the **SAC**) ▪ A test which explored the extent of interventions which would be required to achieve public transport mode shares in excess of those to which the Applicant is committing in the **SAC**. **Lower public transport mode share** The test for a lower public transport mode share was initially used to consider what outcome might result if the Applicant took no additional measures to increase public transport and active travel use. It suggested that in broad terms, air passenger public transport mode shares on the busy June day would be around 2.5 and 3.5 percentage points less than the core model scenario in 2032 and 2047 respectively. The equivalent reduction for airport employees was between 4 and 5 percentage points. The consequence of those changes was to increase the total number of highway trips associated with the Airport by between 7% and 8% compared to the core model scenario. **Higher public transport mode share** The test for higher public transport mode shares was primarily undertaken to understand the scale of interventions that could be needed to achieve such an outcome. It also included assumptions about further improvements in rail and bus services being brought forward by the rail and bus industry. These tests determined that while some improvement may be achieved, the level and nature of additional intervention necessary would be beyond that which the Applicant could reasonably and confidently commit to achieving at this point and would also require a level of commitment from third parties that could not be assumed, and so the Applicant could not rely upon such interventions for the purposes of its assessment . These tests have, however, informed the aspirational mode share targets described in Section 7 of the **SAC** and the Applicant will continue to work towards those targets once it has achieved the mode share commitments in the **SAC**.

		These tests implied reductions in the amount of Airport-related traffic on the highway network compared to that forecast in the core model scenarios. These respective lower and higher public transport mode share sensitivity tests allowed GAL to determine the appropriate mode shares to secure as part of the **SAC** for the Project. As this Examination has heard, GAL is committed to achieving those mode shares; however, GAL has also considered the potential impact of an increase in Airport-related highway trips on the network above that assumed in the core (pre-Covid) modelling that informs the assessment. Whilst this does not necessarily correlate to a failure to meet the mode share commitments in relation to public transport mode share, it does provide evidence as to what the potential impact could be of such circumstances and is discussed further below and in Appendix A to this response. However, it should be emphasised that the purpose behind the **SAC** is to allow for any potential issues in the achievement of mode shares to be anticipated in advance such that the eventuality of public transport mode shares lower than those committed to as part of the **SAC** does not arise. **Increasing Airport-related highway journeys** A further test was undertaken which directly increased the Airport-related highway trip totals in the core model scenario by 10%. This was intended as a specific test of the implications of additional traffic on the busy June day, to enable National Highways to consider such an increase in the context of operation of the Strategic Road Network. This test does not necessarily imply a lower public transport mode share than the Applicant is committing to, but does represent higher volumes of Airport-related traffic on the highway network. It also produced greater volumes of Airport-related traffic than the 'lower public transport mode share' test noted above. The Applicant has provided further information on the outcomes of this test in **Appendix A** to this response.

TT.2.11	Applicant Joint Surrey Councils	**Active Travel Access to Airport** The Joint Surrey Councils [REP6-101] in response to [REP5-072] TT.1.23 p181 express a number of outstanding concerns with respect to the inadequacy of the active travel infrastructure being proposed. The ExA noted the response [REP3-104] to TT.1.27, but also understands the concerns of the Joint Surrey Councils. The ExA notes the improved shared route from Longbridge roundabout but also appreciates that this is along a busy dual carriageway. In terms of tree loss, the ExA notes that there will be considerable impact along the A23 on the boundary of the Riverside Park. Is this therefore the right time to look at increasing permeability and active travel access that could be realised by the new crossing on the A23?
		NRP will improve cycling and walking routes to the Airport as illustrated on the **ES Traffic and Transport Figures** 12.6.2 and 12.6.3 [APP-059] and a further cyclist route crossing the Park north to south in this location is not considered to be required and could give rise to further environmental effects. There is negligible difference in cycling time overall from the centre of Horley to Airport areas served by the existing NCR21, and the proposed pedestrian/cyclist route from Longbridge Roundabout past Car Park Y. Cyclists wishing to access the South Terminal, Rail & Coach Station and employment areas south of the airport can use NCR21. Cyclists wishing to access the North Terminal and northern airport industrial areas can route via the improved crossings at Longbridge Roundabout to the new route being provided around Car Park Y, the design of which (including the separation buffer to the A23 London Road) has been developed with due consideration of the guidance set out in LTN 1/20. Upgrading the existing paths within the park to include additional and widened routes for direct access for cyclists between the existing car park and new junction with the A23 London Road would not be supported by all park users and other stakeholders. Under the current proposals, cyclists would continue to predominantly use paths on the perimeter of Riverside Garden Park via NCR 21, minimising the risk of collisions between pedestrians and cyclists through the middle of the park and the new crossing of A23 London Road. Additional/widened active travel provisions through the park and on the A23 London Road embankment

		connection to the new signalised junction would further increase the engineering footprint of the scheme leading to additional tree loss within Riverside Garden Park. The extent of this upgrade is also not considered justifiable due to the level of user demand based on user surveys and the predicted increase with the Project as illustrated in Diagram 14.2.3 in the **Transport Assessment** [REP3-058]. The extent of the environmental effects of these additional active travel provisions within Riverside Garden Park would depend on the detailed design requirements for the facility. However, it is likely that there would be effects, and that these could include; 1. Additional loss of vegetation, including mature vegetation and potential effects on biodiversity from creating a new corridor through the park north to south. 2. Requirements for any lighting of the route and related effects on biodiversity – particularly priority species like bats. 3. Potential effects on floodplain. 4. Visual effects arising from vegetation loss and introduction of infrastructure into the Park (depending on design). 5. Loss of the area of the park associated with the footprint for construction and operation (which is something GAL would have to assess, together with any further replacement required). Potential change in nature to the central area of the Park, which is characterised by wooded areas and glades and which can be used for games and picnics. 6. Construction footprint (including any compound provision) and disruption both in the Park and to nearby properties. Currently, the construction activities for the NRP highway improvement works are contained along the southern strip of the Park.

		The Project proposals adjacent to and along the A23 London Road have been designed to minimise the environmental impact of the permanent works and construction activities to Riverside Garden Park. and to retain the existing paths within the park minimises further tree loss and/or loss of green space.
TT.2.12	Applicant National Highways Highways Authorities	**Active Travel Access to Airport** The North and South Terminal Roundabouts BAU Improvement Scheme Plans [REP6-012] show concept designs for signalisation of the north and south terminal roundabouts. Should there be controlled pedestrian and cycle crossings on any elements of these design layouts to enable safe active travel around the airport?
		The Gatwick Business as Usual (BaU) Signalisation Scheme Concept Design drawings [REP6-012] demonstrate the proposed layout modifications required to accommodate the predicted increased demand based on traffic modelling for incremental growth at Gatwick Airport. The concept design provides an initial level of detail to understand the impact to the engineering footprint and to illustrate the signalisation required to successfully mitigate the predicted increase in demand. Existing pedestrian and cycle facilities and crossings already provide safe active travel access around the airport with further details set out below for each junction. Through the development of the Gatwick BaU Signalisation Scheme preliminary design stage, existing pedestrian and cycle facilities and crossings will be reviewed to establish if additional or enhanced facilities could be provided and would be beneficial within the extents of the proposed works at North and South Terminal Roundabouts. This will have due regard to alternative, safe crossing points already provided, connectivity with active travel corridors and desire lines and the nature, speed and volume of road traffic in the vicinity of the works. **North Terminal Roundabout** In the existing situation pedestrians travelling between North and South Terminal are able to use the existing Inter Terminal Transit Shuttle, which provides connectivity between terminals for active travel users separated from traffic. The existing footway provision and uncontrolled pedestrian crossings on Northway, Gatwick Way

		and Perimeter Road North also provide connectivity for active travel users between North Terminal and South Terminal, noting that National Cycle Route 21 which runs underneath South Terminal provides onward connectivity to/from the local road network. Pedestrian crossings of Northway and North Terminal Approach will be provided as part of the BaU scheme. In the current concept layout they take the form of uncontrolled crossings at similar locations to the existing. The size of the existing traffic island on the Longbridge Way arm will be increased, with benefits for active travel users travelling on Footpath 346_2sy that cross at this location. The crossings on these arms cater for the key existing active travel routes at the junction. Crossing provision on Airport Way and the slip road connections to/from A23 London Road is not considered to be required and would raise potential safety issues in relation to the interface with substantial traffic volumes travelling at relatively high speeds on these arms. The NRP scheme proposals will bring forward additional signalised crossing upgrades, further active travel link provision to/from A23 London Road together with associated safe crossing provision of A23 London Road and off carriageway cycle infrastructure upgrades as well as the associated mitigations required for these proposals (e.g. in relation to tree loss). **South Terminal Roundabout** The existing South Terminal Roundabout (M23 Junction 9a) is at the edge of the strategic road network (SRN) motorway network. There are no existing active travel route connections to/from the roundabout and accordingly there are no existing active travel crossing provisions on the roundabout approach arms. Active travel users travelling between the existing active travel footway network on Gatwick's internal South Terminal road network can access B2036 Balcombe Road and the wider local road network via existing crossings of Ring Road North and Ring Road South (which set back appropriately from the SRN at locations where vehicle speeds are reduced) and the existing footway connections on Buckingham Gate road. Active travel users seeking to head north can then travel under the SRN via the footway on Balcombe Road that passes under the M23 Spur at the existing Balcombe Road underbridge. This grade separated route is considered to be the most appropriate location to cross the SRN from a safety perspective, minimising the interface between active travel users and the high volumes of traffic on the SRN. It is also noted that there are no substantial trip

		attractors/generators on the northern side of the roundabout that create desire lines across South Terminal roundabout that cannot be served by users travelling via Balcombe Road. Based on the above, no active travel crossing provisions are therefore considered to be required for the BaU signalisation scheme at South Terminal Roundabout. An additional active travel pedestrian link between the South Terminal forecourt network and Balcombe Road (Work No. 35j) is proposed as part of the NRP scheme offering enhanced connectivity for active travel users to/from the local road network with the associated land acquisition requirements to be delivered through the DCO powers being sought through the DCO application. **Future project stages** The concept layouts for Gatwick BaU Signalisation Scheme layouts for North and South Terminal Roundabouts will be subject to continued design development and technical engagement through future design stages with National Highways as the highway authority following their technical approval processes including the Road Safety Audit process.

Appendix A:
Implications of additional Airport-related traffic

1 Introduction and summary

1.1.1 In question TT.2.10 of its Second Written Questions the Examining Authority (ExA) requested further information about the impacts of lower sustainable mode shares at the Airport than those to which the Applicant is committing in **ES Appendix 5.4.1: Surface Access Commitments** (**SAC**) [REP6-030] and, by implication, the potential effects of there being more road traffic than has been assessed in **ES Chapter 12: Traffic and Transport** [REP3-016].

1.1.2 Although some parties have characterised this as a test of the implication of the Applicant not successfully achieving the mode share commitments in **ES Appendix 5.4.1 Surface Access Commitments** [REP6-030] , the Applicant remains confident that it can achieve the mode share commitments, secured through Requirement 20 in the **draft Development Consent Order** (dDCO) [REP6-005].

1.1.3 Nevertheless, this Appendix provides information about the implications of additional traffic by drawing on a sensitivity test which examines a 10% increase in the volume of Airport-related vehicle traffic on a busy June day.

1.1.4 The busy June weekday is selected as this forms the basis for the transport modelling and assessment work. This is a reasonable and conservative approach which is explained in Section 7.3 of **Transport Assessment Annex B: Strategic Transport Modelling Report** [APP-260] and summarised in paragraphs 8.1.11 to 8.1.14 of the **Transport Assessment** [REP3-058]. It is important to note that the mode share commitments are based on annual performance, and therefore a higher volume of Airport-related traffic on a busy June day does not necessarily mean that the mode share commitments have not been achieved; however, this “10% sensitivity test” is considered to serve as a proxy analysis for what the impact may be in circumstances where they were not met.

1.1.5 The 10% sensitivity test examines how traffic flows on the surrounding highway network would change as a result and considers whether and how those changes might lead to conclusions about highway network related environmental effects which differ from those presented for the Application. The test is based on the core (pre-Covid) modelling and considers conditions in 2032 and 2047. This

provides a further level of conservatism as the additional testing of post-Covid conditions (**Accounting for Covid-19 in Transport Modelling** [AS-121] and **Post Covid VISSIM Sensitivity Tests for 2032 and 2047** [REP3-108] has indicated lower observed and forecast traffic flows than those produced by the core transport modelling and accordingly a reduced level of impact on the operation of the highway network.

1.1.6 The 10% sensitivity test indicates that the additional traffic, once assigned across the highway network in the strategic model, would result in increases of up to 6% in total traffic flow on the roads in the vicinity of the Airport in a peak hour. The majority of this additional traffic would use the strategic road network to access the Airport, as is the case for the core modelling. Flow changes on other roads as a result of the 10% increase would be comparatively small.

1.1.7 A review of the magnitude of impact analysis, which identifies the scale of change in network operation at junctions across the study area, shows limited change from the core scenarios in either 2032 or 2047 as a result of including the 10% additional Airport-related traffic demand. The changes identified are isolated (i.e. there are no new clusters of impacts on route corridors with the increased Airport-related traffic) and in most cases changes are in locations where the Airport-related traffic would be only a very small proportion of total traffic flow. They are not considered likely to lead to new or different significant adverse environmental effects related to driver delay.

1.1.8 The scale of traffic flow increases implied by the 10% sensitivity test is also considered unlikely to alter the significance of effects related to severance, fear and intimidation, non-motorised user delay and safety.

1.1.9 The 10% sensitivity test therefore suggests that an increase in Airport-related traffic of this magnitude on a busy June day, for whatever reason, is unlikely to alter the overall conclusions reached in **ES Chapter 12: Traffic and Transport** [REP3-016].

1.1.10 The ExA will also be aware that the Applicant is also making the Transport Mitigation Fund available to address any unforeseen impacts that might arise as a result of the Project, through the process set out in Schedule 3 of the **draft Section 106 Agreement** [REP6-063].

2 Context

2.1 Basis for the sensitivity test

2.1.1 The Applicant has provided a summary of sensitivity tests which have been undertaken and discussed with the local highway authorities in its response to ExA question TT.2.10, in which the ExA has indicated it wishes to understand the implications of a lower sustainable mode share, and therefore, potentially higher volumes of traffic than have been forecast in the core model scenario.

2.1.2 The assessment of traffic and transport impacts and effects is based on a busy June weekday. This represents conditions anticipated during school terms, when non-airport travel demand is at its highest, and overlaps with the peak summer period for airport-related demand. The use of a June weekday is an appropriate and reasonable worst case for the assessment of operational impacts on the transport networks and environmental effects arising from those impacts, as explained in Section 7.3 of **Transport Assessment Annex B: Strategic Transport Modelling Report** [APP-260].

2.1.3 The mode share commitments contained in **ES Appendix 5.4.1 Surface Access Commitments** [REP6-030] are based on annual mode share performance. This takes into account the expected seasonal fluctuations in demand and in the travel choices of air passengers and staff. The mode shares would be monitored and reported on a regular basis in accordance with the arrangements set out in the **SAC**.

2.1.4 If the annual mode share commitments were not met, it does not necessarily follow that there would be additional traffic on the highway network on a busy June day. For example, traffic volumes related to the Airport might be higher at other times of year when non-airport demand is lower, and therefore the total volume of traffic could still be lower than that assessed in the Application. Conversely, if higher traffic volumes did occur on a busy June day this would not necessarily mean a failure to achieve the mode share commitments at an annual level as proposed in the **SAC**.

2.1.5 Additional traffic on the network on a busy June day might arise for a variety of reasons in practice, not all of which are directly related to or in the control of the Applicant. They could include:

- Public transport service disruption during the peak summer period, such as from rail strikes or engineering works, leading to more air passengers travelling by car;

- A greater proportion of air passengers using Park & Fly facilities on the June busy weekday than forecast in the Application, which could result from fewer Kiss & Fly trips (taxi and drop-off/pick-up) or from lower use of public transport;
- Variation in the seasonal profile of air passenger demand leading to more air passengers in total travelling on a June busy weekday than is forecast, even if mode shares are aligned with those tested in the Application.

2.1.6 This note is not therefore a test of failing to achieve the mode share commitments but provides information on the implications of higher than expected levels of Airport-related traffic on the highway network during the busiest period of the year.

2.2 Application documents

2.2.1 The effects of road traffic arising from the Project are assessed in **ES Chapter 12: Traffic and Transport** [REP3-016], the **Impact of Latest IEMA Guidance (2023) on the Assessment of Effects Related to Traffic and Transport** [AS-119], and the **Transport Assessment** [REP3-058]. The assessments are informed by strategic modelling work and detailed information is provided in **Transport Assessment Annex B: Strategic Transport Modelling Report** [APP-260]. They also include the effect of the commitments made in the **ES Appendix 5.4.1 Surface Access Commitments** [REP6-030] to deliver a range of interventions and to achieve specified mode shares with the Project.

2.2.2 The core assessments in the documents described in paragraph 2.2.1 are based on pre-Covid conditions and growth expectations, to which is added the growth trajectory for the Airport in the future baseline and with Project scenarios.

2.2.3 Since undertaking the core assessment for the Application, the Applicant has provided further assessment taking account of updated DfT guidance on modelling post-Covid traffic conditions and including revised DfT forecasts of background growth, together with the core growth trajectory for the Airport in the future baseline and with Project scenarios.

2.2.4 That work is documented in **Accounting for Covid-19 in Transport Modelling** [AS-121], **Post Covid VISSIM Sensitivity Tests for 2032 and 2047** [REP3-108] and **Environmental Appraisal of the Impact of the Post-Covid 19 Traffic Data for the Environmental Statement** [REP5-068]. It shows that post-Covid traffic volumes were lower than those in the core modelling and therefore confirms that the core assessment is conservative.

2.2.5 The Applicant has also responded to the ExA's **Rule 17 request** [PD-018] to consider alternative growth forecasts for the Airport as a sensitivity analysis. A high level assessment on the traffic and transport implications of those tests, drawing on the core (pre-Covid) transport modelling, was provided in section 5.10 of **Response to Rule 17 Letter - Future Baseline Sensitivity Analysis** [REP5-081].

2.2.6 In earlier submissions, including the response to TT.1.13 in **The Applicant's Response to the ExA's Written Questions (ExQ1) - Traffic and Transport** [REP3-104], the Applicant has noted that some sensitivity analysis was undertaken to help understand specific topics in more detail and to help build confidence in the model forecasting process, assumptions and outputs.

2.2.7 Those tests included a test of a 10% increase in Airport-related traffic to understand the response of the model in terms of performance of the network and the resilience of the network to traffic flows greater than those forecast in the core modelling process, should they occur.

2.2.8 This note uses that "10% sensitivity test" as the basis for further commentary on the potential implications of additional traffic related to the Project.

3 Methodology

3.1.1 The 10% sensitivity test increases all highway demand related to Gatwick Airport by 10% in the strategic highway model. Gatwick Airport demand is defined as those highway trips with an origin or destination in one of the Gatwick Zones in the model. It therefore applies to air passenger and staff journeys and also includes vehicles related to air cargo movements and servicing.

3.1.2 The 10% increase was only applied to the with Project scenario and so the sensitivity test effectively increases the difference between the future baseline and with Project scenarios. It therefore explores both an absolute increase in total traffic on the network and a potentially greater degree of impact arising from the Project.

3.1.3 The outcomes of the test have been reviewed for the 2032 and 2047 assessment years, to consider whether they suggest a significantly worse overall operation of the highway network or new or different significant environmental effects related to traffic and transport.

3.1.4 This review of traffic and transport effects has been based on the knowledge of the previous detailed assessments in **ES Chapter 12: Traffic and Transport**

[REP3-016] and **Environmental Appraisal of the Impact of the Post-Covid 19 Traffic Data for the Environmental Statement** [REP5-068] and judgement of the implications of the sensitivity test, informed by high-level quantitative data drawn from the test in the transport model.

4 Assessment

4.1 Magnitude of change on the highway network

4.1.1 Tables 138 to 141 of **Transport Assessment Annex B: Strategic Transport Modelling Repor**t [APP-260] provide highway trip totals associated with Airport employees and passengers for the core scenario for the busy June day peak periods. Based on those, increasing Airport-related highway demand by 10% equates in broad terms to:

- An additional 720 passenger car units (pcu)[1] in the AM1 peak hour in 2032 and 770 pcu in 2047.
- An additional 660 pcu in the AM2 peak hour in 2032 and 710 pcu in 2047.
- An additional 500 pcu in the PM peak hour in 2032 and 550 pcu in 2047.

4.1.2 The strategic highway model is a dynamic assignment model in which traffic travelling between each origin and destination pair is allocated a route through the highway network based on, and seeking to minimise, the generalised cost of the journey.

4.1.3 The addition of 10% of Airport-related highway demand does not necessarily therefore lead to a uniform increase on each road in the vicinity of the Airport or elsewhere. Instead, the strategic model assignment reflects the likely way in which that additional traffic would find its way through the network to travel to and from the Airport.

4.1.4 Table 1, Table 2 and Table 3 show the changes in link flows indicated by the strategic model, comparing the core and 10% sensitivity outputs for the with Project scenario in 2032 against the core future baseline scenario. Figure 1, Figure 2 and Figure 3 show flow changes across the wider highway network.

4.1.5 Table 4, Table 5 and Table 6 together with Figure 4, Figure 5 and Figure 6 show the same information for 2047.

[1] Passenger car units are measurements used for traffic modelling to represent the equivalent amount of roadspace occupied by different vehicle types. For example, a car is represented by 1 pcu, whereas a heavy goods vehicle is represented by 2.5pcu.

Table 1: Changes in traffic flow on roads serving the Airport – 10% sensitivity test, 2032, AM1 period (pcu)

Link	Direction	Core			10% sensitivity test		Change	
		Future baseline	With Project	Diff from core FB	With Project	Diff from core FB	Diff in WP uplift	Diff (% of WP sens test flow)
M23 J8-J9	NB	6,586	6,815	+229	6,918	+332	+103	1.5%
	SB	6,110	6,508	+398	6,649	+539	+141	2.1%
M23 J9-J10	NB	6,057	6,366	+309	6,413	+356	+47	0.7%
	SB	4,413	4,248	-165	4,298	-115	+50	1.2%
M23 Spur	EB	2,410	2,851	+441	2,993	+583	+142	4.7%
	WB	3,579	4,672	+1,093	4,784	+1,205	+112	2.3%
Airport Way	EB	2,187	2,456	+269	2,550	+363	+94	3.7%
	WB	2,768	3,798	+1,030	3,856	+1,088	+58	1.5%
A23 London Rd (north)	EB	2,159	1,929	-230	1,956	-203	+27	1.4%
	WB	2,007	2,176	+169	2,198	+191	+22	1.0%
A23 Brighton Rd	NB	1,301	1,333	+32	1,324	+23	-9	-0.7%
	SB	1,512	1,454	-58	1,465	-47	+11	0.8%
A217	EB	734	653	-81	662	-72	+9	1.4%
	WB	715	835	+120	856	+141	+21	2.5%
A23 London Road (east)	NB	1,458	1,267	-191	1,318	-140	+51	3.9%
	SB	1,864	2,014	+150	2,023	+159	+9	0.4%

Note: Although Airport-related highway demand has been increased by 10%, increases on road links will be lower than this because Airport-related demand is only a proportion of the total traffic flow on the link.

Figure 1: Traffic flow change (vehicles) – 10% sensitivity test with Project less core future baseline, 2032, AM1 period

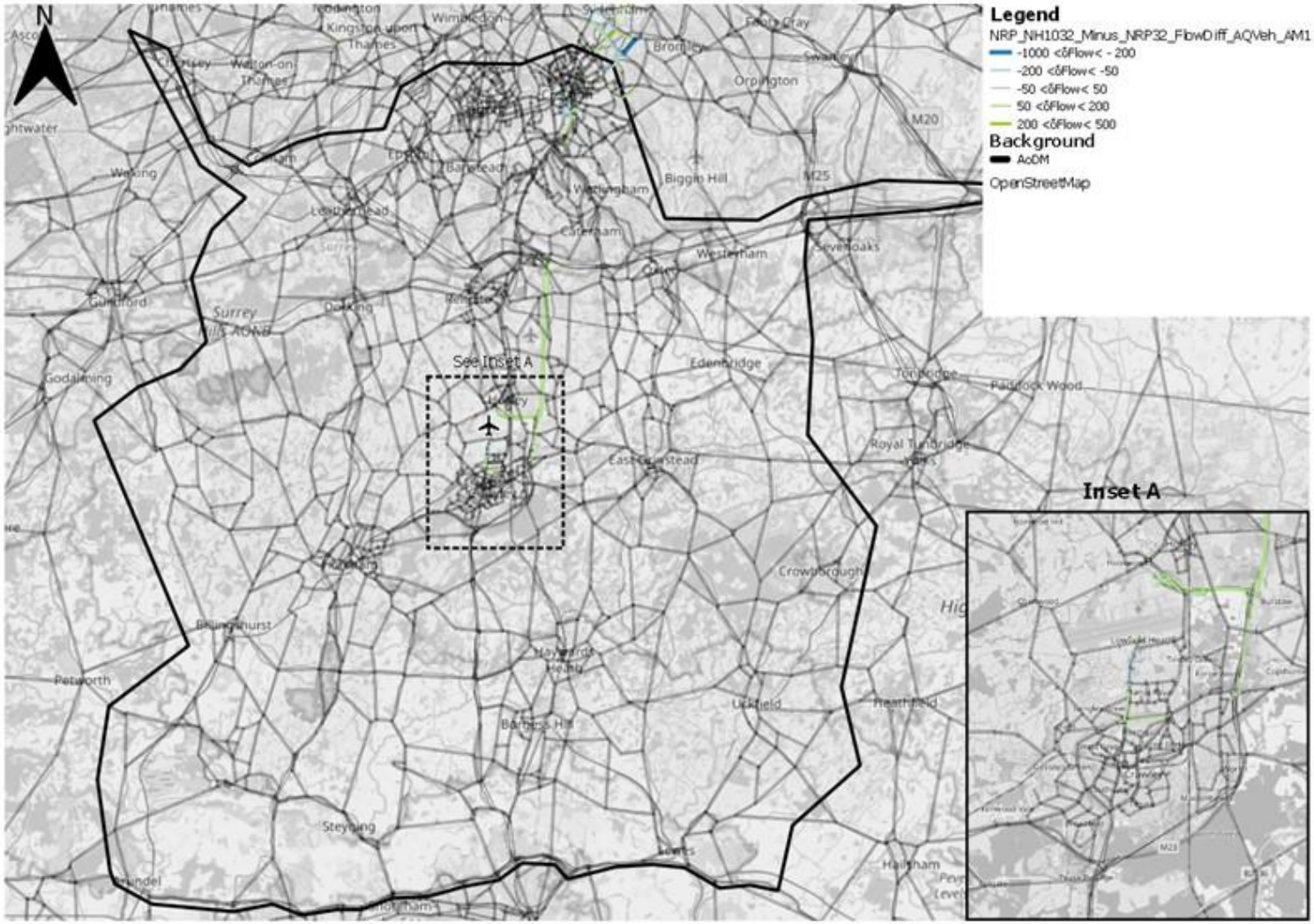


Table 2 Changes in traffic flow on roads serving the Airport – 10% sensitivity test, 2032, AM2 period (pcu)

Link	Direction	Core			10% sensitivity test		Change	
		Future baseline	With Project	Diff from core FB	With Project	Diff from core FB	Diff in WP uplift	Diff (% of WP sens test flow)
M23 J8-J9	NB	6,182	6,291	+109	6,412	+230	+121	1.9%
	SB	6,439	6,841	+402	6,949	+510	+108	1.6%
M23 J9-J10	NB	5,361	5,890	+529	5,928	+567	+38	0.6%
	SB	4,713	4,533	-180	4,613	-100	+80	1.7%
M23 Spur	EB	2,619	2,914	+295	3,053	+434	+139	4.6%
	WB	3,525	4,733	+1,208	4,787	+1,262	+54	1.1%
Airport Way	EB	2,187	2,570	+383	2,673	+486	+103	3.9%
	WB	2,768	3,940	+1,172	3,930	+1,162	-10	-0.3%
A23 London Rd (north)	EB	2,396	2,162	-234	2,190	-206	+28	1.3%
	WB	1,874	2,261	+387	2,177	+303	-84	-3.9%
A23 Brighton Rd	NB	1,352	1,540	+188	1,475	+123	-65	-4.4%
	SB	1,650	1,650	0	1,650	0	0	0.0%
A217	EB	871	814	-57	810	-61	-4	-0.5%
	WB	756	837	+81	823	+67	-14	-1.7%
A23 London Road (east)	NB	1,436	1,254	-182	1,297	-139	+43	3.3%
	SB	2,230	2,402	+172	2,402	+172	0	0.0%

Note: Although Airport-related highway demand has been increased by 10%, increases on road links will be lower than this because Airport-related demand is only a proportion of the total traffic flow on the link.

Figure 2: Traffic flow change (vehicles) – 10% sensitivity test with Project less core future baseline, 2032, AM2 period

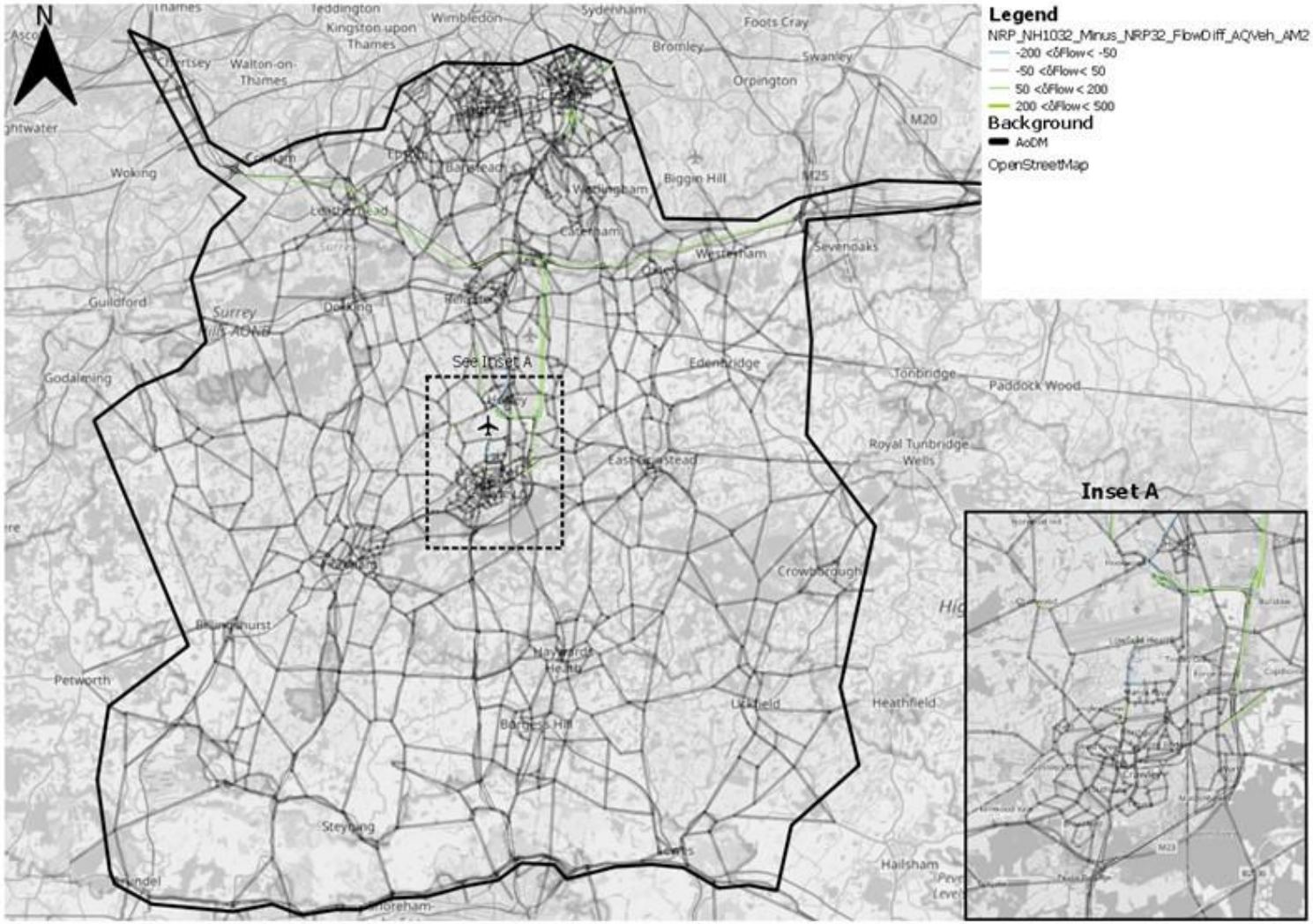


Table 3 Changes in traffic flow on roads serving the Airport – 10% sensitivity test, 2032, PM period (pcu)

Link	Direction	Core			10% sensitivity test		Change	
		Future baseline	With Project	Diff from core FB	With Project	Diff from core FB	Diff in WP uplift	Diff (% of WP sens test flow)
M23 J8-J9	NB	6,330	6,548	+218	6,663	+333	+115	1.7%
	SB	6,030	6,197	+167	6,309	+279	+112	1.8%
M23 J9-J10	NB	4,956	5,124	+168	5,154	+198	+30	0.6%
	SB	5,195	5,089	-106	5,088	-107	-1	0.0%
M23 Spur	EB	2,750	3,029	+279	3,169	+419	+140	4.4%
	WB	2,154	2,632	+478	2,793	+639	+161	5.8%
Airport Way	EB	2,364	2,399	+35	2,464	+100	+65	2.6%
	WB	2,115	2,467	+352	2,597	+482	+130	5.0%
A23 London Rd (north)	EB	2,200	2,001	-199	2,065	-135	+64	3.1%
	WB	2,490	2,440	-50	2,570	+80	+130	5.1%
A23 Brighton Rd	NB	1,656	1,708	+52	1,710	+54	+2	0.1%
	SB	1,624	1,584	-40	1,577	-47	-7	-0.4%
A217	EB	649	867	+218	879	+230	+12	1.4%
	WB	583	744	+161	752	+169	+8	1.1%
A23 London Road (east)	NB	1,954	1,914	-40	1,923	-31	+9	0.5%
	SB	1,834	1,894	+60	1,922	+88	+28	1.5%

Note: Although Airport-related highway demand has been increased by 10%, increases on road links will be lower than this because Airport-related demand is only a proportion of the total traffic flow on the link.

Figure 3: Traffic flow change (vehicles) – 10% sensitivity test with Project less core future baseline, 2032, PM period

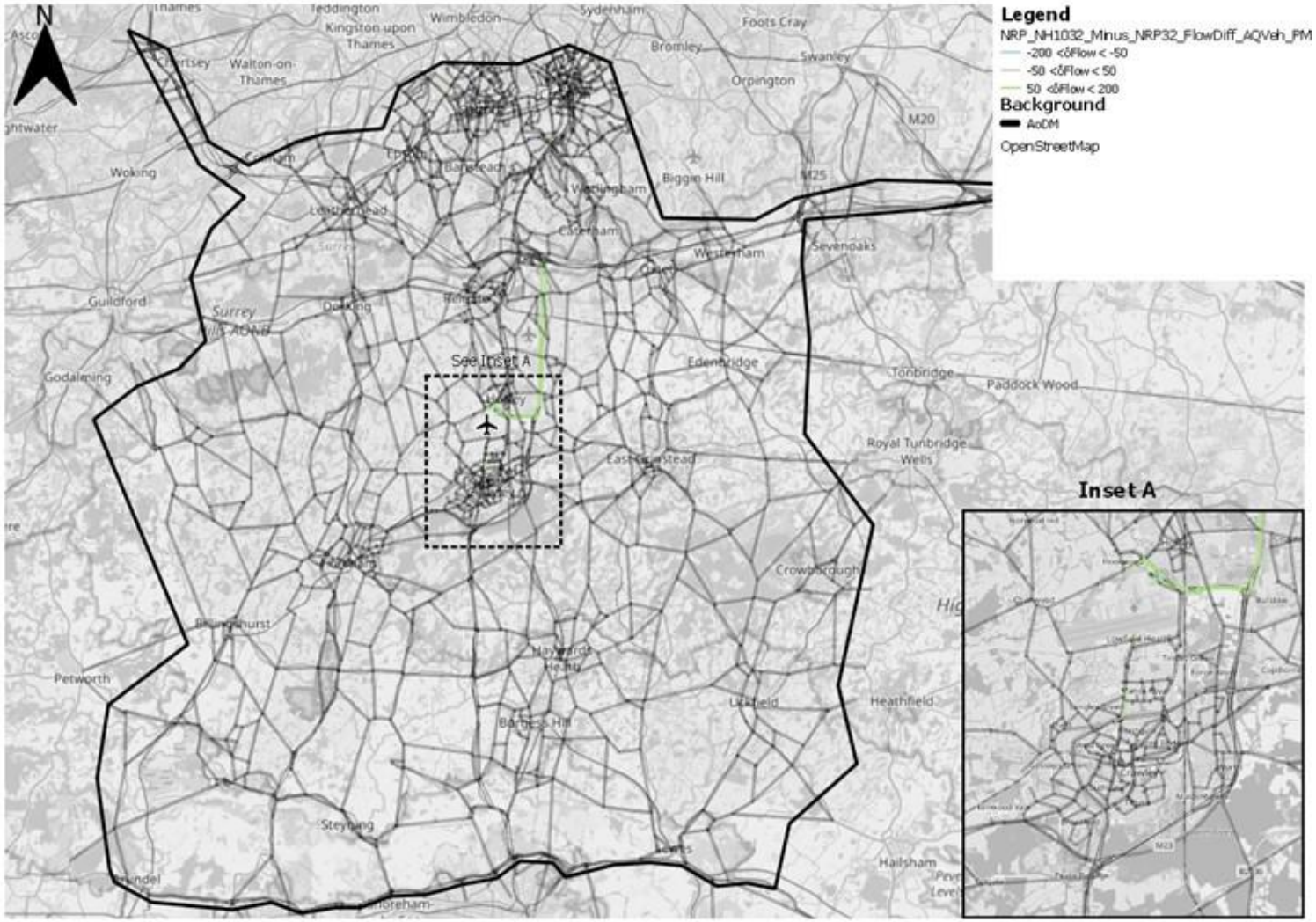


Table 4: Changes in traffic flow on roads serving the Airport – 10% sensitivity test, 2047, AM1 period (pcu)

Link	Direction	Core			10% sensitivity test		Change	
		Future baseline	With Project	Diff from core FB	With Project	Diff from core FB	Diff in WP uplift	Diff (% of WP sens test flow)
M23 J8-J9	NB	7,077	7,140	+63	7,205	+128	+65	0.9%
	SB	6,556	6,946	+390	7,052	+496	+106	1.5%
M23 J9-J10	NB	6,469	6,690	+221	6,681	+212	-9	-0.1%
	SB	4,758	4,572	-186	4,681	-77	+109	2.3%
M23 Spur	EB	2,490	2,958	+468	3,083	+593	+125	+4.1%
	WB	3,684	4,824	+1,140	4,857	+1,173	+33	+0.7%
Airport Way	EB	2,260	2,635	+375	2,745	+485	+110	+4.0%
	WB	2,768	4,089	+1,321	4,096	+1,328	+7	+0.2%
A23 London Rd (north)	EB	2,247	1,983	-264	2,041	-206	+58	+2.8%
	WB	2,201	2,424	+223	2,432	+231	+8	+0.3%
A23 Brighton Rd	NB	1,336	1,487	+151	1,463	+127	-24	-1.6%
	SB	1,513	1,513	0	1,513	0	0	0.0%
A217	EB	742	683	-59	708	-34	+25	+3.5%
	WB	757	869	+112	878	+121	+9	+1.0%
A23 London Road (east)	NB	1,606	1,376	-230	1,446	-160	+70	+4.8%
	SB	1,965	2,106	+141	2,081	+116	-25	-1.2%

Note: Although Airport-related highway demand has been increased by 10%, increases on road links will be lower than this because Airport-related demand is only a proportion of the total traffic flow on the link.

Figure 4: Traffic flow change (vehicles) – 10% sensitivity test with Project less core future baseline, 2047, AM1 period

Table 5: Changes in traffic flow on roads serving the Airport – 10% sensitivity test, 2047, AM2 period (pcu)

Link	Direction	Core			10% sensitivity test		Change	
		Future baseline	With Project	Diff from core FB	With Project	Diff from core FB	Diff in WP uplift	Diff (% of WP sens test flow)
M23 J8-J9	NB	6,746	6,635	-111	6,675	-71	+40	0.6%
	SB	6,920	7,175	+255	7,231	+311	+56	0.8%
M23 J9-J10	NB	5,849	6,296	+447	6,249	+400	-47	-0.8%
	SB	5,178	4,808	-370	4,822	-356	+14	0.3%
M23 Spur	EB	2,695	2,930	+235	3,061	+366	+131	+4.3%
	WB	3,530	4,835	+1,305	4,873	+1,343	+38	+0.8%
Airport Way	EB	2,311	2,662	+351	2,750	+439	+88	+3.2%
	WB	2,628	4,152	+1,524	4,140	+1,512	-12	-0.3%
A23 London Rd (north)	EB	2,438	2,151	-287	2,163	-275	+12	+0.6%
	WB	2,029	2,350	+321	2,290	+261	-60	-2.6%
A23 Brighton Rd	NB	1,445	1,673	+228	1,657	+212	-16	-1.0%
	SB	1,650	1,650	0	1,650	0	0	0.0%
A217	EB	869	875	+6	893	+24	+18	+2.0%
	WB	660	821	+161	821	+161	0	0.0%
A23 London Road (east)	NB	1,606	1,334	-272	1,383	-223	+49	+3.5%
	SB	2,259	2,433	+174	2,446	+187	+13	+0.5%

Note: Although Airport-related highway demand has been increased by 10%, increases on road links will be lower than this because Airport-related demand is only a proportion of the total traffic flow on the link.

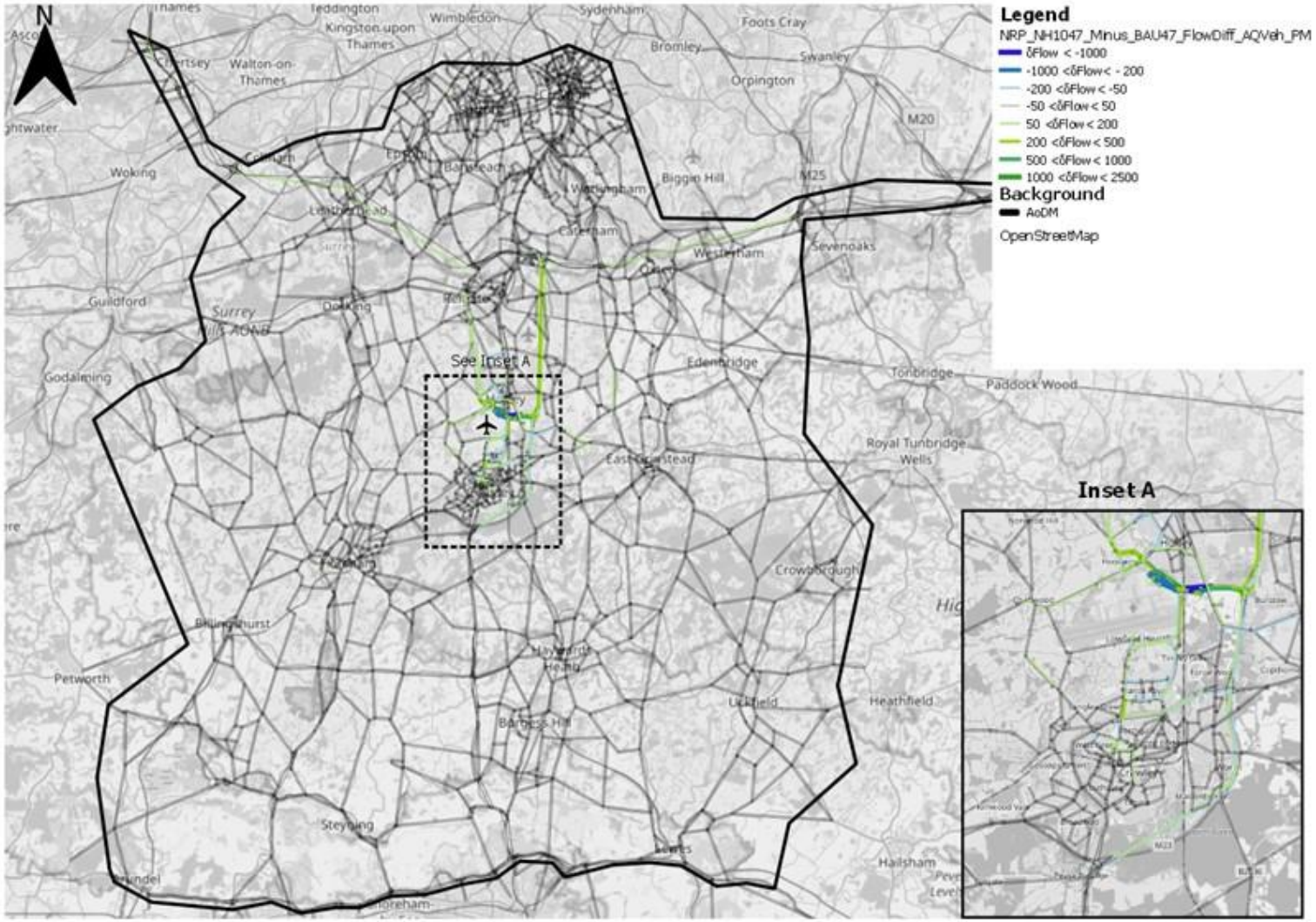
Figure 5: Traffic flow change (vehicles) – 10% sensitivity test with Project less core future baseline, 2047, AM2 period

Table 6: Changes in traffic flow on roads serving the Airport – 10% sensitivity test, 2047, PM period (pcu)

Link	Direction	Core			10% sensitivity test		Change	
		Future baseline	With Project	Diff from core FB	With Project	Diff from core FB	Diff in WP uplift	Diff (% of WP sens test flow)
M23 J8-J9	NB	6,832	7,056	+224	7,128	+296	+72	+1.0%
	SB	6,575	6,629	+54	6,725	+150	+96	+1.4%
M23 J9-J10	NB	5,477	5,646	+169	5,685	+208	+39	+0.7%
	SB	5,660	5,469	-191	5,456	-204	-13	-0.2%
M23 Spur	EB	2,851	3,198	+347	3,301	+450	+103	+3.1%
	WB	2,345	2,822	+477	2,969	+624	+147	+5.0%
Airport Way	EB	2,472	2,521	+49	2,544	+72	+23	+0.9%
	WB	2,364	2,726	+362	2,852	+488	+126	+4.4%
A23 London Rd (north)	EB	2,187	2,168	-19	2,222	+35	+54	+2.4%
	WB	2,598	2,581	-17	2,776	+178	+195	+7.0%
A23 Brighton Rd	NB	1,679	1,756	+77	1,760	+81	+4	+0.2%
	SB	1,639	1,633	-6	1,615	-24	-18	-1.1%
A217	EB	638	952	+314	999	+361	+47	+4.7%
	WB	527	810	+283	855	+328	+45	+5.3%
A23 London Road (east)	NB	2,009	1,962	-47	1,968	-41	+6	+0.3%
	SB	1,784	1,966	+182	2,009	+225	+43	+2.1%

Note: Although Airport-related highway demand has been increased by 10%, increases on road links will be lower than this because Airport-related demand is only a proportion of the total traffic flow on the link.

Figure 6: Traffic flow change (vehicles) – 10% sensitivity test with Project less core future baseline, 2047, PM period



4.1.6 The Tables and Figures show that, when Airport-related highway demand is increased by 10%, the following orders of change are seen in the peak hours in 2032 and 2047:

- Up to 140 additional pcu per direction (+2%) on the M23 north of Junction 9;
- Up to 110 additional pcu per direction (+2%) on the M23 south of Junction 9;
- Up to 160 additional pcu per direction (+6%) on the M23 Spur;
- Up to 130 additional pcu per direction on Airport Way (+5%);
- Small changes on A23 London Road (north) in the morning peak periods and up to 200 additional pcu per direction (+7%) in the evening peak period;
- Small increases of up to 20 pcu per direction on the A23 Brighton Road at Longbridge roundabout;
- Small changes of up to 20 pcu per direction on the A217 in 2032 and up to 50 pcu per direction in 2047;
- Increases of up to 70 pcu per direction (around 5%) on the A23 London Road to the east of the Airport.

4.1.7 These changes in link flows are comparatively small in percentage terms, and within the scope of the typical variation in traffic flows that might be experienced from day to day. As expected, greater proportional increases are indicated on the M23 Spur, Airport Way and A23 London Road (north), all of which provide the final routes to and from North and South Terminals.

4.1.8 The changes in link flows suggest that, if this additional Airport-related highway demand were to arise in the busiest periods on the highway network, the majority of the additional traffic would use the strategic road network and the routes in the vicinity of the Airport which provide access to it. This reflects the expected distribution of Airport-related traffic illustrated in Diagrams 12.3.2 and 12.3.3 of the **Transport Assessment** [REP3-058].

4.1.9 It can therefore be anticipated that, should any additional effects arise, over and above those already identified in **ES Chapter 12: Traffic and Transport** [REP3-016]), they are likely to be limited to these parts of the highway network.

4.1.10 Nevertheless, the Applicant has undertaken a further review of how these changes might affect the findings of the **Transport Assessment** [REP3-058] and **ES Chapter 12: Traffic and Transport** [REP3-016]). This is discussed in the following section.

4.2 Implications for impacts and effects related to the highway network

4.2.1 The review of the implications of additional Airport-related traffic draws on the previous assessments undertaken to support the Application and in the course of

the Examination (section 2.2 of this note lists relevant documents), taking a semi-quantitative approach coupled with professional judgement. It considers both operational effects, which are dealt with in the **Transport Assessment** [REP3-058], and environmental effects which are covered in **ES Chapter 12: Traffic and Transport** [REP3-016].

4.2.2 The review has not considered impacts related to the public transport network or the operation of Gatwick Airport station, because this 10% sensitivity test is not suggesting any increase in public transport patronage beyond that assessed in **ES Chapter 12: Traffic and Transport** [REP3-016] and other related documents.

Driver delay

4.2.3 Environmental effects related to driver delay are determined based on the magnitude of impact analysis for junctions, as described in paragraphs 12.4.47 and 12.4.48 and Table 12.4.6 of **ES Chapter 12: Traffic and Transport** [REP3-016]. This provides a measure of change in the operation of the highway network caused by the Project, where junctions would be operating at more than 80% of capacity, which is then considered alongside receptor sensitivity to determine the significance of environmental effect.

4.2.4 A reasonable indication of the implications of the 10% sensitivity test can therefore be gained by comparing the magnitude of impact outputs with those from the core modelling used for the Application. The magnitude of impact is defined in accordance with the methodology set out in Table 12.3.1 of the **Transport Assessment** [REP3-058] and Table 12.4.6 of **ES Chapter 12: Traffic and Transport** [REP3-016], which is reproduced below for reference.

4.2.5 The magnitudes of impact for the core scenario (with Project compared to future baseline) and 10% sensitivity test (core with Project plus 10% Airport-related traffic compared to core future baseline) are shown for 2032 in Figure 7 and Figure 8 and for 2047 in Figure 9 and Figure 10.

Table 7: Magnitude of impact for driver delay

Criteria	Magnitude of impacts			
	Negligible	**Minor**	**Moderate**	**Major**
V/C ratio[2] with Project	**80-85%**	**85 -90%**	**90 - 95%**	**95% or more**
<2 percentage point change in V/C ratio	Negligible	Negligible	Negligible	Negligible
2-5 percentage point change in V/C ratio	Low	Low	Low	Medium
Between 5-10 percentage point change in V/C ratio	Low	Low	Medium	High
>10 percentage point change in V/C ratio	Low	Medium	High	High

[2] V/C ratio is the ratio of traffic volume to road capacity

Figure 7: 2032 magnitude of impact for core scenario in Application

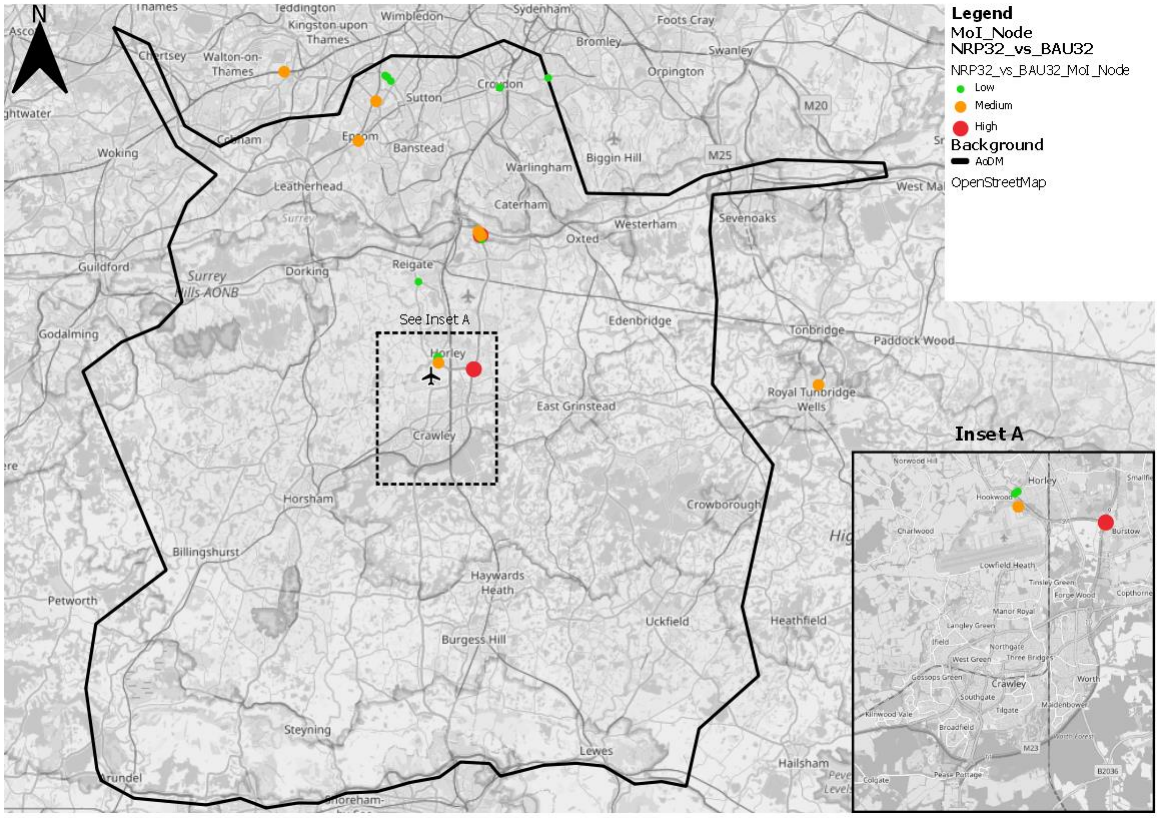
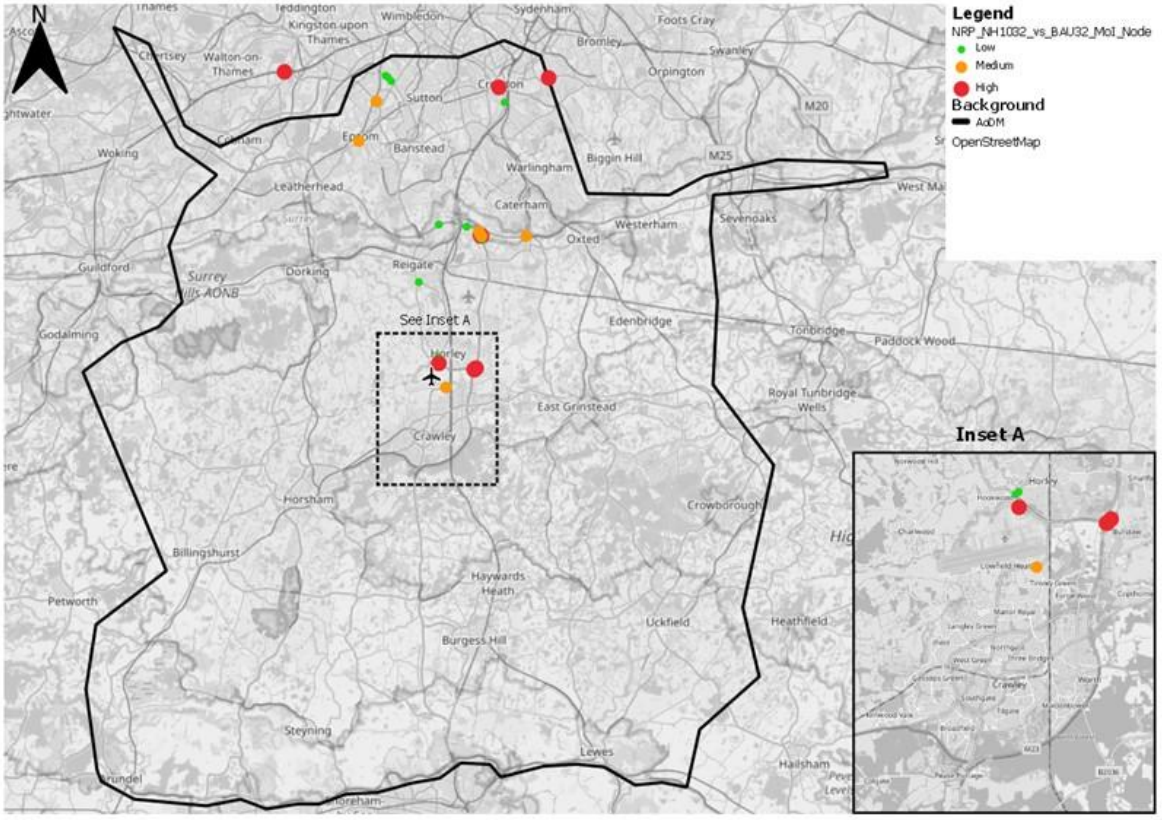


Figure 8: 2032 magnitude of impact for 10% sensitivity test (core with Project + 10% Airport-related traffic compared to core future baseline)



4.2.6 Figure 7 and Figure 8 suggest that the additional Airport-related traffic would only lead to limited change in the magnitude of impact across the highway network. In broad terms the changes compared to the core scenario would be:

- An increase in the magnitude of impact at junctions previously identified as experiencing impacts in the Croydon and Walton-on-Thames areas. Further investigation for the core assessment (reported in **ES Appendix 12.9.1: Highway Flows and Driver Delay Review** [REP3-049]) indicated that these impacts were due to model noise[3] and reassignment of background traffic within the model, with only very small volumes of Airport-related traffic

[3] Where high levels of congestion are predicted within strategic highway models a localised effect known as 'model noise' can occur. This results in traffic demand switching between routes in successive iterations (of a model run), and when compared against a corresponding scenario, may indicate effects that do not appear logical in the context of the test. Within the Gatwick model, some localised 'model noise' has been identified certain areas towards the edges of the Area of Detailed Modelling. These locations have been reviewed in detail and it is clear that airport traffic represents a very small proportion of traffic in these areas (less than 1%).

passing through these locations, and consequently that they were not likely to be attributable to the Project.

- An increase in the magnitude of impact at Longbridge Way / Perimeter Road North within the Gatwick road network. This location was also identified in the core assessment. The 10% sensitivity test suggests an increase in the magnitude of impact from medium to high, as a result of the change in v/c ratio, but the model confirms that the junction would still operate within capacity.
- A new medium impact on the A23 London Road to the southeast of the Airport. This part of the network would experience in the order of 50 additional vehicles as a result of the 10% sensitivity test, or less than one vehicle per minute, and since tests using the VISSIM model (reported in section 6 of **Transport Assessment Annex C: VISSIM Forecasting Report** [APP-261] indicated that the core with Project scenario would operate satisfactorily, it is unlikely that an increase in flow of this magnitude would change that outcome.
- A new medium impact on the interchange roundabout at Junction 6 of the M25. In 2032, the additional flow from the 10% sensitivity test on the M25 east of the M23 would be in the order of 50 to 60 vehicles each way. The majority of those are likely to be continuing to or from the east of Junction 6 and therefore the amount of additional Airport-related traffic using the interchange roundabout would be very small. It is therefore unlikely to lead to different environmental effects at this location.

Figure 9: 2047 magnitude of impact for core scenario in Application

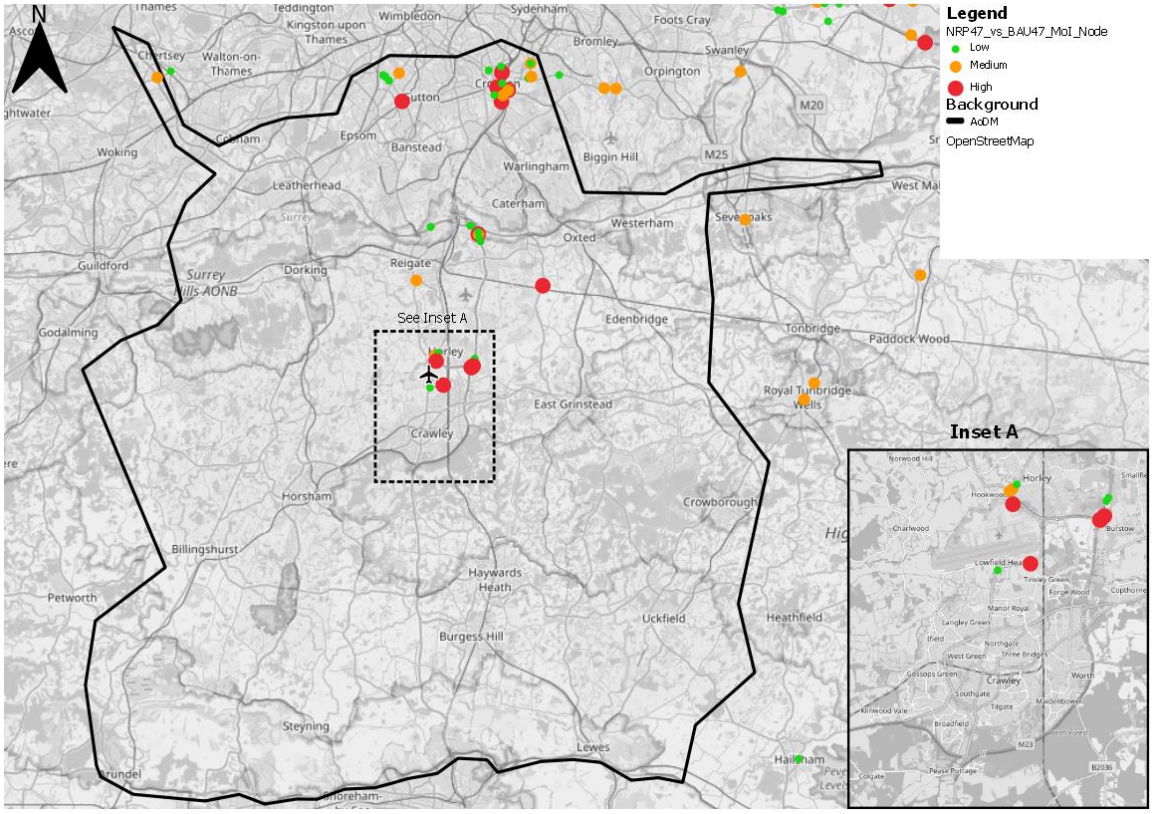
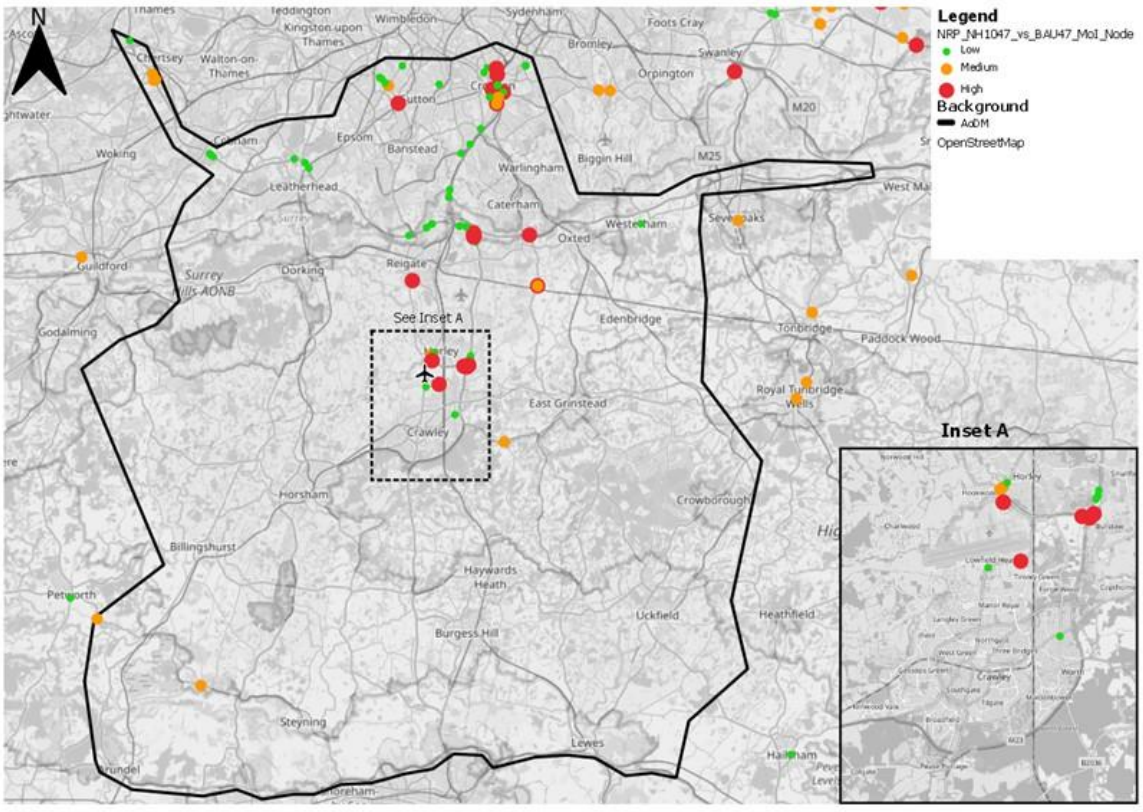


Figure 10: 2047 magnitude of impact for 10% sensitivity test (core with Project + 10% Airport-related traffic compared to core future baseline)



4.2.7 Figure 9 and Figure 10 similarly suggest that the additional 10% of Airport-related traffic in 2047 would lead to limited change in the magnitude of impact on the highway network. In broad terms the changes compared to the core scenario would be:

- Little change to the pattern of locations or magnitudes of impact identified in the core scenario in the Croydon, Sutton and Chertsey areas. As noted in paragraph 4.2.6 impacts in this area were determined to be due to model noise with only very small volumes of Airport-related traffic passing through these locations, and consequently that the impacts are not likely to be attributable to the Project.
- No change to the magnitude or pattern of impacts in the vicinity of the Airport.
- A new high impact on the interchange roundabout at Junction 6 of the M25. In 2047, the additional flow from the 10% sensitivity test on the M25 east of the M23 would be around 50 vehicles each way. Only a small proportion of that figure would be using the interchange roundabout and it is therefore unlikely to lead to different environmental effects at this location.

- New medium impacts on the A264 to the east of M23 Junction 10 and on the A283 at Storrington. These parts of the network are expected to carry no more than 1-2% of Airport-related traffic (as indicated in diagram 12.3.2 of the **Transport Assessment** [REP3-058]) which means that the 10% sensitivity test adds fewer than 10 vehicles to these routes in any peak hour. Given that these locations were not identified as experiencing an impact in the core assessment, it is unlikely that the additional traffic implied by the sensitivity test would lead to any significant change to the operation of the network in these locations.
- Little change beyond the Area of Detailed Modelling, which is in any case beyond the study area for the environmental assessment.

4.2.8 Overall, the 10% sensitivity test suggests that there would be no substantive change in the pattern of operational impacts on the highway network. It is therefore unlikely that the additional Airport-related traffic would give rise to new or different significant environmental effects.

Severance, fear and intimidation

4.2.9 The assessment of severance effects is based on thresholds of change in peak hour two-way traffic flows, as noted in Table 12.4.5 of **ES Chapter 12: Traffic and Transport** [REP3-016] and paragraph 2.1.3 of **Impact of Latest IEMA Guidance (2023) on the Assessment of Effects Related to Traffic and Transport** [AS-119]. Thresholds of a 30%-60% change represent low impact, 60%-90% represent medium impact and over 90% represent high impact. Consideration is also given to the absolute level of traffic flow, for example because roads with low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.

4.2.10 Fear and intimidation is assessed on the basis of a structured scoring approach (section 4.2 of **Impact of Latest IEMA Guidance (2023) on the Assessment of Effects Related to Traffic and Transport** [AS-119]). This considers total traffic volumes, total heavy vehicle volumes and average speeds on links.

4.2.11 For the purposes of the 10% sensitivity test it is assumed that the change in heavy vehicle flow would be marginal as the dominant elements of Airport-related demand are car journeys by air passengers and Airport employees. Average speeds are also assumed to remain unchanged; this is a conservative approach because any change in average speed due to increased traffic is likely to be a reduction (which would reduce the ‘hazard’ score in the fear and intimidation assessment).

4.2.12 The effect of the 10% sensitivity test on fear and intimidation can therefore be considered by examining changes in traffic flow in the same way as for severance and is therefore inherent in the discussion below.

4.2.13 Severance and fear and intimidation effects do not need to be considered for the M23, M23 Spur or Airport Way where there are no pedestrians and cyclists present.

4.2.14 Table 1 to Table 3 suggest that in 2032 on non-motorway routes the 10% sensitivity test would change two-way traffic flows as follows:

- An increase of around 4% (200pcu) in total two way flow on A23 London Road (north) in the AM1 peak hour and a lower increase in other peak hours. This road currently has limited walking and cycling facilities adjacent to it but improvements are incorporated as part of the Project highway works, including the new signalled junction at North Terminal which would include pedestrian and cycle crossing facilities. These new facilities would improve walking and cycling conditions along the route north of North Terminal and reduce severance by providing a safe means of crossing this road.
- Little change (less than 30pcu or 2.5% of total two way flow) on the A23 Brighton Road northeast of Longbridge roundabout and the A217 northwest of Longbridge roundabout. This degree of change would not produce different severance effects and the Project highway works include signal-controlled crossing facilities at the revised Longbridge roundabout which would reduce severance.
- An increase of up to 2% (60pcu) in total two way flow on the A23 London Road to the southeast of the Airport. There is limited pedestrian activity in this area and little need to cross the road, as there is no footway on the western side against the airfield perimeter fence. In any event, an additional one vehicle per minute would not lead to different severance effects on this road.
- Elsewhere, non-motorway roads in the wider area are expected to experience no more than 7% of the total amount of Airport-related traffic. This means that the 10% sensitivity test is likely to add no more than 50pcu (two-way) on any of those roads and in many cases considerably less. Given that this represents less than one additional vehicle per minute, it is very unlikely that it would produce new significant severance effects across the wider highway network.

4.2.15 Table 4 to Table 6 suggest that the 10% sensitivity test would result in the following changes on non-motorway routes in 2047:

- An increase of around 4% (200pcu) in total two way flow on A23 London Road (north) in the PM peak hour and smaller changes in other peak hours. As noted above, the new walking and cycling facilities including the new crossing at the North Terminal signal junction would reduce severance in this location.
- An increase of around 5% (90pcu) in total two way flow on the A217 in the PM peak hour and smaller changes in other peak hours. There would be little change on A23 Brighton Road. Given the new signal-controlled crossing facilities provided as part of the Project highway works, this is not expected to lead to different severance effects.
- An increase of around 2% (60pcu) in total two way flow on the A23 London Road southeast of the Airport. This is similar to the change anticipated in 2032 and would not lead to difference severance effects.
- On the wider network, the 10% sensitivity test implies that no road would experience an increase of more than 55pcu in total two way flow above the volume assessed as part of the core scenario for the Application and the majority of roads would experience considerably less of a change. As for 2032, this is unlikely to lead to new significant effects on the highway network.

4.2.16 Overall, the largest changes in traffic flow would occur on roads where pedestrians and cyclists are not present. On other routes close to the Airport, although there would be some additional traffic, the Project highway works would provide improved pedestrian and cyclist infrastructure including new or enhanced signal-controlled crossing locations, which would reduce severance. On the wider network, flow changes resulting from the test would typically be no more than one additional vehicle per minute.

4.2.17 The 10% sensitivity test therefore implies that there would be no changes to effects related to severance or fear and intimidation presented in the core assessment in **ES Chapter 12: Traffic and Transport** [REP3-016] and **Impact of Latest IEMA Guidance (2023) on the Assessment of Effects Related to Traffic and Transport** [AS-119]

Non-motorised user delay

4.2.18 The assessment presented in **ES Chapter 12: Traffic and Transport** [REP3-016] considered pedestrian and cyclist delay and amenity. The updated guidance from the Institute of Environmental Management and Assessment (IEMA) in 2023 (addressed in **Impact of Latest IEMA Guidance (2023) on the Assessment of Effects Related to Traffic and Transport** [AS-119]) provided additional journey length criteria for considering non-motorised user delay.

4.2.19 The amenity of pedestrians and cyclists, including their ability to cross roads, is considered as part of the severance and fear and intimidation assessments. These aspects are therefore covered in the review described in paragraphs 4.2.9 to 4.2.17 above.

4.2.20 The 10% sensitivity test does not consider any change to physical infrastructure provided for pedestrians and cyclists in addition to that already proposed as part of the Project. Accordingly, the 10% sensitivity test would not change the conclusions on non-motorised user delay that were set out in **Impact of Latest IEMA Guidance (2023) on the Assessment of Effects Related to Traffic and Transport** [AS-119].

4.3 Accidents and safety and hazardous loads

4.3.1 The additional traffic flows implied by the 10% sensitivity test typically represent less than a 5% increase in traffic on the M23 and routes in the vicinity of the Airport and beyond these, traffic will dissipate further across the network. Given that any adverse effects on accidents and safety were assessed to be negligible for the core scenario in the Application, the changes implied by the 10% sensitivity test would not lead to any new significant effects related to accidents and safety.

4.3.2 The 10% sensitivity test has no effect on the need to transport dangerous or hazardous loads during either construction or operation.

5 Conclusions

5.1.1 This Appendix provides information about the implications of more Airport-related traffic than has been forecast in the core transport modelling and assessment for the Application. It draws on a sensitivity test which examines a 10% increase in the volume of Airport-related vehicle traffic on a busy June day.

5.1.2 Although some parties have requested a test of the implication of the mode share commitments in the **ES Appendix 5.4.1 Surface Access Commitment** [REP6-030] not being achieved, the Applicant remains confident that it can achieve those commitments. In any event the commitments are secured through Requirement 20 in the **draft DCO** [REP6-005].

5.1.3 It is important to note that the mode share commitments are based on annual performance, and therefore a higher volume of Airport-related traffic on a busy June day does not necessarily mean that the mode share commitments have not been achieved. Nevertheless, this “10% sensitivity test” is considered to serve as

a proxy analysis for what the impact may be in circumstances where they were not met.

5.1.4 The analysis is based on the core (pre-Covid) transport modelling which examines conditions on a busy June weekday This is a reasonable and conservative approach which is explained in Section 7,3 of **Transport Assessment Annex B: Strategic Transport Modelling Report** [APP-260]. The use of the core modelling provides a further level of conservatism as subsequent testing of post-Covid conditions (**Accounting for Covid-19 in Transport Modelling** [AS-121] and **Post Covid VISSIM Sensitivity Tests for 2032 and 2047** [REP3-108] has indicated lower traffic flows than in the core transport modelling and accordingly a reduced level of impact on the operation of the highway network, which is not reflected in this analysis.

5.1.5 This 10% sensitivity test indicates that the additional Airport-related traffic, once assigned across the highway network in the strategic model, would result in increases of up to 6% in total traffic flow on the roads in the vicinity of the Airport in a peak hour. The majority of this additional traffic would be using the strategic road network to access the Airport. Flow changes on other roads as a result of the 10% increase would be comparatively small and within the typical scope of daily variation in traffic flows.

5.1.6 The magnitude of impact analysis identifies the scale of change in network operation at junctions across the study area, The review of this, including the additional 10% of Airport-related traffic, shows limited change in the number of locations that are identified with ‘medium’ or ‘high’ impacts (as defined in the assessment methodology reproduced in Table 7 in this Appendix) compared to the core scenarios in either 2032 or 2047. The changes identified are isolated (i.e. there are no new clusters of impacts on route corridors with the increased Airport-related traffic) and in most cases changes are in locations where the Airport-related traffic would be only a very small proportion of total traffic flow. They are not considered likely to lead to new or different significant adverse environmental effects related to driver delay.

5.1.7 The scale of traffic flow increases implied by the 10% sensitivity test on routes where pedestrians and cyclists would be present is less than 4% which in most locations equates to less than one additional vehicle per minute. Increases of two to three vehicles a minute are expected on A23 London Road and the A217 at Longbridge Roundabout, by 2047; at these locations active travel infrastructure will be improved as a result of the Project, including the provision of new signal-controlled crossing facilities. The flow changes resulting from the 10% sensitivity

test are therefore considered unlikely to alter the significance of effects related to severance, fear and intimidation, non-motorised user delay and safety.

5.1.8 There would be no different effects in relation to accidents and safety, which were assessed as negligible for the core scenario and would not therefore become significant given the relatively small change in traffic flows implied by the 10% sensitivity test. There would be no different effects related to the movement of hazardous loads (which would not change in this test) and no worse effects in relation to public transport, as this test assumes no increase in public transport demand.

5.1.9 The 10% sensitivity test therefore suggests that an increase in Airport-related traffic of this magnitude on a busy June day, for whatever reason, is unlikely to alter the overall conclusions reached in the **Transport Assessment** [REP3-058] and **ES Chapter 12: Traffic and Transport** [REP3-016].