

Our ref: 20025089
Your ref: EN020022

Highways England
Bridge House
1 Walnut Tree Close
Guildford GU1 4LZ

AQUIND Interconnector Case Team
The Planning Inspectorate
National Infrastructure Planning
Temple Quay House
2 The Square
Bristol, BS1 6PN

[REDACTED]
1 March 2021

Dear Sir/Madam

Application by AQUIND Limited for an Order Granting Development Consent for the AQUIND Interconnector Project (EN020022): Written Statement

I refer to your letter of 15 September 2020 regarding the above proposal and your invitation to submit written representations to the Examining Authority's (ExA) by Deadline 8 (1 March 2021).

Highways England's responses are set out below and should be read in conjunction with the Final Statement of Common Ground between Highways England and AQUIND which has been submitted to you by the Applicant at Deadline 8.

Yours faithfully,



Patrick Blake
Area 3 Spatial Planner
Email: patrick.blake@highwaysengland.co.uk

AQUIND Interconnector Project (EN020022)

Written Statement by Highways England

1 March 2021

Introduction

Highways England (HE) have been invited to provide written representations to the ExA's Written Questions for this project. The relevant issues outstanding for Highways England and our current position set out below.

FINAL Statement of Common Ground

Matters agreed to date with the applicant are set out in the agreed final statement of common ground (at deadline 8) which was submitted by the applicant.

Protective Provisions

Protective Provisions have been agreed between Highways England and AQUIND on 28th January 2021.

Traffic and Transport

We issued our final technical note (TN04) on matters related to traffic and transport on 19th February 2021. The highlighted outstanding issues identified in TN04 have been addressed by subsequent updates to the Framework Construction Management Strategy (namely 2.6 'Traffic Management Measures Outside the online cable corridor') and Framework Construction Traffic Management Plan (namely 7.3 'Liaison, Monitoring and Mitigation').

Proposed Easement

Following the formal approval and geotechnical certification in accordance with CD622 by Highways England, Heads of Terms for a formal easement to facilitate a crossing beneath the A27 have been agreed.

Dialogue is ongoing to complete documentation for the deed of easement, although there are no showstoppers to prevent this being formally agreed in due course.

Other Matters

'Relevant Highway Authority'

Following amendments to the Framework Construction Management Strategy and Framework Construction Traffic Management Plan, Highways England are content that appropriate engagement protocols are now in place related to matters on the strategic road network.

Project:	Highways England Spatial Planning Arrangement 2016-2020	Job No:	60600479 DF006.004
Subject:	Aquind Interconnector- Review WSP Supplementary TAA		
Prepared by:	Senthi Sivanathan	Date:	16th February 2021
Checked by:	Andrew Cuthbert	Date:	17th February 2021
Verified by:	Liz Judson	Date:	18th February 2021
Approved by:	Andrew Cuthbert	Date:	19th February 2021

Executive Summary

This Technical Note (TN04) summarises a review on behalf of Highways England of WSP's Supplementary Transport Assessment Addendum (Document Ref 7.7.20) dated 25th January 2021 and specifically Appendix A: 'Technical Note providing a review of collision data' and Appendix B: 'Technical Note HE03 – Response to Highways England Technical Note TN03' both also dated 25th January 2021 in support of the proposed Aquind Interconnector on-shore works. These documents were submitted by WSP in response to AECOM's TN03 dated 21st August 2020. Following the review of the document submitted by WSP, AECOM make the following recommendations.

Recommendations regarded as critical to the agreement in principle of the planning application:

1. With regard to A3(M) J3, the scheme to signalise the northbound off-slip at A3(M) J3 should be implemented with road markings that permit traffic to turn left into Hulbert Road (west) from both lanes of the slip road, so as to replicate the lane choice available to drivers today in the existing layout. (para 2.23).

Recommendations regarded as important but not critical to the agreement in principle of the planning application:

2. The typo with regard to Table 41 of the WSP HE03 TN should be rectified in any forthcoming submissions (para 2.20).
3. In the period immediately prior to the beginning of the works (and as necessary throughout the period of works) temporary signage warning drivers of the potential for queuing ahead should be installed on the approaches to the northbound off-slip roads at A3(M) Junctions 2 and 3 (paras 2.25 & 3.18).
4. Queue lengths and collision records on these slip roads should be monitored throughout the works to determine whether any additional mitigation is required (para 3.19).

1. Introduction

- 1.1. AECOM, on behalf of Highways England, have undertaken a review of Supplementary Transport Assessment Addendum (Document Ref 7.7.20) dated 25th January 2021 and specifically Appendix A: 'Technical Note providing a review of collision data' and Appendix B: 'Technical Note HE03 – Response to Highways England Technical Note TN03' both also dated 21st January 2021 in support of the proposed Aquind Interconnector on-shore works. These documents were submitted by WSP in response to AECOM's TN03 dated 21st August 2020.
- 1.2. The Aquind Interconnector is a proposed cross-channel electricity cable, which will make landfall at Southsea (Portsmouth) and access the National Grid at a converter station at Lovedean, to the north of Denmead. The cable will cross the A27 Trunk Road to the east of its junction with the A2030 Eastern Road.
- 1.3. AECOM understand that the engineering aspects of providing a cable crossing at this point are to be dealt with by Highways England's maintaining agent and that AECOM's input into the process relates primarily to the traffic capacity and road safety implications of the wider project on the Strategic Road Network (SRN).
- 1.4. AECOM previously reviewed 12 documents provided in advance of the DCO application (ref EN020022) being made. These were:
 - Preliminary Environmental Information Report (PEIR), dated February 2019;
 - The SRTM Data Analysis Report (SRTM DAR), dated September 2019: This provides a summary of the output from a run of the Solent Area Sub-Regional Transport Model (the SRTM) and provides details of the potential impact of the proposals at a number of locations on and close to the SRN within the South Hampshire area;
 - The SRTM DAR contained a copy of the draft Transport Assessment Scoping Note (TASN), dated June 2019;
 - Environmental Statement (ES) Chapter 22 Transport & Traffic Chapter (ES T&T Chapter) dated 14 November 2019;
 - ES Appendix 22.1 - Transport Assessment (TA) dated 14 November 2019;
 - ES Appendix 22.1A – Framework Traffic Management Strategy (FTMS) dated 14 November 2019;
 - ES Appendix 22.2 - Framework Construction Traffic Management Plan (FCTMP) dated 14 November 2019;
 - Supplementary Transport Assessment (STA);
 - Revised Framework Construction Traffic Management Plan dated October 2020;
 - Revised Framework Traffic Management Strategy;
 - Technical Note HE03 – Response to Highways England Technical Note TN03 dated November 2020; and
 - Technical Note HE03 – Response to Highways England Technical Note TN03 dated December 2020.
- 1.5. AECOM's previous review, which is documented in TN03, dated 21st August 2020, made a number of recommendations. After an initial review of WSP's HE03 dated November 2020, AECOM suggested changes to the modelling via an email sent to WSP on the 27th November 2020. WSP responded to the contents of this email in response HE03 dated December 2020. After an initial review of WSP's HE03 dated December 2020 and following a meeting held on the 7th January 2021, it was agreed that additional assessments would be undertaken using an alternative future year assessment due to concerns with regard to the outputs of the Solent Sub-Regional Transport Model (the SRTM).

- 1.6. Although WSP have included assessments undertaken using the SRTM model in their HE03 dated January 2021, AECOM have only tabulated the key results derived from the alternative future year assessments undertaken because we regard these as most likely to be representative of future year conditions on the network when the on-shore works take place.
- 1.7. The purpose of this TN is to consider whether WSP's TN HE03 dated January 2021 addresses AECOM's previous concerns appropriately and therefore determine whether the potential impact of the proposal on the strategic road network (SRN) has been reasonably assessed. This TN will consider whether the impact of the development on the SRN is thought to be material and, following the analysis of the impact, whether measures are required to mitigate the impact of the development on the SRN.
- 1.8. For ease of reference, AECOM's main comments and recommendations are presented in bold and underlined text throughout the note. Recommendations regarded as critical to the acceptability of this planning application are coloured **red**. Recommendations that are of concern but not critical to agreement of this planning application, which AECOM anticipate can be resolved at a subsequent stage of the project, are highlighted in **amber**.

2. Critical Recommendations previously identified in AECOM's TN03

AECOM Recommendation 1.

With regard to A3(M) Junctions 2 and 3, lane simulation should be used within ARCADY as a sensitivity test and these sensitivity tests should be undertaken before the results of the modelling are accepted.

AECOM Recommendation 2.

Further work should be carried out at A3(M) Junction 2 and Junction 3 to quantify the impact of Aquind Interconnector for the following scenarios:

- Without the committed development and without its mitigation scheme;
- With the committed development and with its mitigation scheme.

Discussion:

Response to AECOM's initial comments

- 2.1. AECOM's previous review is documented in TN03, dated 21st August 2020 which made a number of recommendations. As further detailed in AECOM's TN02, AECOM suggested a sensitivity test using lane simulation at A3 (M) Junctions 2 and 3 to be undertaken.
- 2.2. As a result of AECOM's recommendations, WSP revised their modelling assessments using lane simulation at A3(M) Junctions 2 and 3. This analysis is contained in WSP's TN HE03 dated November 2020. After an initial review, AECOM suggested further changes to the modelling via an email sent to WSP on the 27th November 2020. The suggested AECOM changes to the modelling are further detailed in para 1.1.2.2 and para 1.1.2.3 of TN HE03 dated 25th January 2021. With regard to A3(M) Junction 2, WSP have accepted the comments suggested by AECOM and have updated the modelling to reflect these amendments.

2.3. With regard to A3(M) Junction 3, WSP did not accept AECOM's recommendation to remove the left turn from the offside lane of the A3 (M) northbound off-slip for traffic wishing to turn on to Hulbert Road (west). WSP state that the use of the offside lane for left turners has been found to be commonplace when reviewing existing traffic behaviour at this junction. WSP have therefore retained this movement in the modelling of the existing layout of Junction 3, A3 (M) included within TN HE03. This movement is an existing traffic behaviour, since there are no road markings to indicate that it is not permitted. AECOM can therefore agree to this movement being retained in the modelling of A3(M) Junction 3 for the existing (unsignalised) layout.

Alternative Future Year Assessment

2.4. Following a review of WSP's TN HE03 dated December 2020 and a team meeting held on the 7th January 2021, it was agreed that additional assessments would be undertaken using an alternative future year assessment. This arose from concerns with regard to the outputs of the SRTM model and the resulting queues at A3 (M) Junctions 2 and 3. This analysis is further detailed and tabulated in WSP's TN HE03 dated December 2020.

2.5. As a result, WSP have used Manual Classified Turning Count (MCTC) traffic surveys undertaken September 2019 at junction 2 and 3 of the A3 (M). The full results of these traffic surveys can be seen in Appendix 2 of WSP's TN HE03. TEMPRO growth factors have been used to growth the observed 2019 traffic flows to anticipated 2022 traffic levels. The TEMPRO growth factors used by WSP are detailed in Tables 31 and 43 of WSP's TN HE03 and the resulting 2022 base flows in Tables 32 and 44. These have been verified by AECOM.

2.6. Allowance has then been made for traffic generated by the committed developments at 'Land East of Horndean' and 'Old Park Farm, Waterlooville' which are anticipated to affect A3(M) Junctions 2 and 3 respectively. With regard to the committed development schemes, the following documents have been reviewed by WSP in order to inform the assessments undertaken:

Land to the east of Horndean (55562/005):

- Environmental Statement – Chapter 2: Site description and development proposals (December 2018);
- Environmental Statement – Technical Appendix J: Transport Assessment (December 2018)

Old Park Farm, Waterlooville (05/00500/OUT):

- Environmental Statement Volume 3A - Transport Assessment (November 2004); and
- Drawing No. 3-004032-DR-100-003-P06: A3(M) J3 Northbound Slip S278 Signalisation Scheme (March 2017)

2.7. The impact of the on-shore works for Aquind Interconnector has been assessed using the differential between the SRTM DM and DS flows at A3(M) Junctions 2 and 3 and adding these to the 2022 base flows after adding the committed development flows, to obtain a set of with- and without-Aquind flows.

2.8. This process is documented in chapters 5.2 and 5.3 of WSP's TN HE03 and AECOM are content that a logical process has been followed and that the flows derived are suitable for use in the junction capacity models.

Assessment of existing junction layouts

- 2.9. The ARCADY module of Junctions9 has been used to assess the capacity of the existing layouts of A3(M) junctions 2 and 3
- 2.10. Based on check calculations undertaken by AECOM, the traffic flows in the models appear to correctly apply the flows in the matrices to the modelling of both A3 (M) Junctions 2 and 3. Furthermore the junction geometry at A3 (M) Junctions 2 and 3 has already been checked and is considered acceptable by AECOM.
- 2.11. The results of the current set of model runs for A3 (M) Junctions 2 and 3 are summarised in Tables 38-39 and 48-49 of WSP’s TN HE03 respectively. Results likely to be of direct interest to Highways England are summarised in Tables 1 and 2 below. It is to be noted that the results below illustrate the operation of the existing layouts at A3(M) Junctions 2 and 3 **without** the committed mitigation schemes. The operation of A3(M) Junctions 2 and 3 with the committed mitigation scheme is detailed later on this report.

Table 1: A3(M) Junction 2 model results: existing layout (With Lane Simulation)

		AM Peak		PM Peak	
A3(M) Junction 2 Existing Layout: 2022 DM (i.e. without Aquind construction)					
A3 (M) Junction 2 (DM)	Lane	Queue Length (PCU)	Delay (S)	Queue Length (PCU)	Delay (S)
A3 (M) South*	1 (Left)	1	6	2	11
	2 (Ahead / Right / U-Turn)	1	6	2	8
A3 (M) North**	1 (Left)	1	5	1	8
	2 (Ahead / Right / U-Turn)	1	5	1	6
A3(M) Junction 2 Existing Layout 2022 DS (i.e. whilst Aquind on-shore works take place)					
A3 (M) Junction 2 (DS)		Queue Length (PCU)	Delay (S)	Queue Length (PCU)	Delay (S)
A3 (M) South*	1 (Left)	1	6	6	22
	2 (Ahead / Right / U-Turn)	1	6	1	8
A3 (M) North**	1 (Left)	1	5	1	8
	2 (Ahead / Right / U-Turn)	1	5	1	6

* Slip Road approximately 315m long (capable of accommodating up to 54 PCU per lane)

** Slip Road approximately 230m long (capable of accommodating up to 40 PCU per lane)

- 2.12. The critical arms for Highways England are the two A3 (M) off slips. Both with (DS) and without (DM) the traffic associated with the Aquind construction phase, the predicted queue length for both of these approaches is minimal.

Table 2: A3(M) Junction 3 model results: existing layout (With Lane Simulation)

		AM Peak		PM Peak	
A3(M) Junction 3 Existing Layout: 2022 DM (i.e. without Aquind construction)					
A3 (M) Junction 3 (DM)	Lane	Queue Length (PCU)	Delay (S)	Queue Length (PCU)	Delay (S)
A3 (M) South*	1 (Left)	1	7	2	8
	2 (Left Ahead / Right/ U-Turn)	1	7	2	8
A3 (M) North**	1 (Left)	1	6	1	7
	2 (Right / U-Turn)	1	7	2	10
A3(M) Junction 3 Existing Layout 2022 DS (i.e. whilst Aquind on-shore works take place)					
A3 (M) Junction 3 (DS)		Queue Length (PCU)	Delay (S)	Queue Length (PCU)	Delay (S)
A3 (M) South*	1 (Left)	1	7	3	10
	2 (Left Ahead / Right/ U-Turn)	2	7	3	10
A3 (M) North**	1 (Left)	1	6	1	7
	2 (Right / U-Turn)	1	7	2	9

* Slip Road approximately 220m long (capable of accommodating up to 38 PCU per lane)

** Slip Road approximately 200m long (capable of accommodating up to 35 PCU per lane)

2.13. The critical arms for Highways England are the two A3 (M) off slips. Both with (DS) and without (DM) the traffic associated with the Aquind construction phase, the predicted queue length for both of these approaches is minimal.

2.14. Therefore, AECOM conclude that the proposals would not have a severe impact on the operation of the SRN in a scenario before implementation of the committed mitigation schemes at both A3 (M) Junctions 2 and 3.

Assessment of future (committed) signalised junction layouts

2.15. In terms of committed transport schemes, improvements are proposed for A3(M) Junctions 2 and 3, which comprise the full signalisation of A3(M) Junction 2 and signalisation of the A3(M) northbound off-slip approach to A3(M) Junction 3.

2.16. The alternative DM and DS scenarios have been assessed in a LINSIG model by WSP which reflects the proposals to signalise Junction 2 and partially signalise Junction 3.

2.17. With regard to A3(M) Junction 3 AECOM, as further detailed in AECOM's TN03, suggested that future year traffic modelling should match the proposed scheme design which is set out in Kier drawing 517770-HSN-DR-D-100-003 rev P06 entitled, 'A3 (M) J3 Northbound Slip S278 Signalisation Scheme'. This drawing is provided in Appendix 5 of the WSP TN HE03. WSP have stated that, in order to gain a better understanding of how this junction may operate in the future, all assessments of a signalised Junction 3 included in the TN have been undertaken for two different lane alignments on the A3 (M) South approach. These alignments are as follows:

- Use of the offside lane to turn left prohibited;
- Use of the offside lane to turn left permitted.

2.18. AECOM consider this approach to be reasonable.

2.19. The results of the LinSig models of A3(M) Junctions 2 and 3 are set out in Tables 40-41 and 50-53 of WSP’s TN HE03 respectively. Results likely to be of direct interest to Highways England are summarised in Tables 3 - 5 below.

Table 3: A3(M) Junction 2 model results: Committed Layout

	AM			PM		
A3(M) Junction 2 Committed Layout: 2022 DM (i.e. without Aquind construction)						
A3 (M) Junction 2 (DM)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)
A3 (M) South (off-slip)*	48.8	6	34	75.1	14	33
A3 (M) North (off-slip)**	35.0	4	36	55.3	8	33
Circulatory (East)	68.2	6	29	64.2	7	21
Circulatory (South)	54.9	4	7	75.5	8	17
Circulatory (West)	65.4	5	32	57.6	1	7
Circulatory (North)	59.0	4	8	62.5	8	13
A3(M) Junction 2 Committed Layout: 2022 DS (i.e. whilst Aquind on-shore works take place)						
A3 (M) Junction 2 (DS)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)
A3 (M) South (off-slip)*	53.7	7	35	88.5	21	40
A3 (M) North (off-slip)**	42.1	4	42	52.9	7	32
Circulatory (East)	49.6	5	12	46.7	6	12
Circulatory (South)	54.7	2	5	81.1	7(***)	18
Circulatory (West)	40.9	7	33	49.8	2	8
Circulatory (North)	58.7	4	4	64.7	7	13

* Slip Road approximately 315m long (capable of accommodating up to 54 PCU per lane)

** Slip Road approximately 230m long (capable of accommodating up to 40 PCU per lane)

*** this value appears as ‘69’ in Table 41 of TN HE03: the correct value is 6.9, which we have rounded to ‘7’.

- 2.20. With regard to A3(M) J2 south (northbound) off-slip in the PM peak the queue length increases from 14pcu in the DM to 21pcu in the DS. This is a queue of approximately 120m which would occupy less than half the length of the 315m long slip road and therefore the predicted queue length for this approach would not stretch back to the mainline carriageway. In Table 41 of the WSP HE03 TN, AECOM note a queue of 69 is predicted on the Circulatory (South) in the PM peak. Such a queue would be unacceptable. AECOM assume this is a typo as the model results indicate a queue of 6.9 pcu's in the relevant appendices. **AECOM recommend that this error is rectified in any forthcoming submissions.**
- 2.21. With regard to A3(M) Junction 3, as discussed earlier in this report, assessments of a signalised Junction 3 have been undertaken for two different lane alignments on the A3 (M) South approach. The results below illustrate both scenarios where the left turn from the offside lane is prohibited (Table 4) and permitted (Table 5):

Table 4: A3(M) Junction 3 model results: Committed Layout (With Left Turn Prohibited)

	AM			PM		
A3(M) Junction 3 Committed Layout: 2022 DM (i.e. without Aquind construction)						
A3 (M) Junction 3 (DM)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)
A3 (M) South (off-slip)*	65.6	10	9	101.6	43	83
A3 (M) North (off-slip)**	54.8	1	7	80.0	2	14
Circulatory (South)	141.1	86	594	100.9	24	104
A3(M) Junction 3 Committed Layout: 2022 DS (i.e. whilst Aquind on-shore works take place)						
A3 (M) Junction 3 (DS)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)
A3 (M) South (off-slip)*	72.3	12	11	109.2	83	191
A3 (M) North (off-slip)**	49.6	1	7	76.7	2	12
Circulatory (South)	142.8	89	609	103.8	31	138

* Slip Road approximately 220m long (capable of accommodating up to 38 PCU per lane)

** Slip Road approximately 200m long (capable of accommodating up to 35 PCU per lane)

Table 5: A3(M) Junction 3 model results: Committed Layout (With Left Turn Permitted)

	AM			PM		
A3(M) Junction 3 Committed Layout: 2022 DM (i.e. without Aquind construction)						
A3 (M) Junction 3 (DM)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)
A3 (M) South (off-slip)*	87.5	11	45	68.1	10	20
A3 (M) North (off-slip)**	54.2	1	7	80.0	2	14
Circulatory (South)	40.1	5	9	66.6	9	20
A3(M) Junction 3 Committed Layout: 2022 DS (i.e. whilst Aquind on-shore works take place)						
A3 (M) Junction 3 (DS)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)	D.O.S (%)	MMQ (PCU)	Delay (s/PCU)
A3 (M) South (off-slip)*	98.1	19	83	70.3	11	20
A3 (M) North (off-slip)**	49.0	1	7	76.7	2	12
Circulatory (South)	39.5	5	9	71.3	10	22

* Slip Road approximately 220m long (capable of accommodating up to 38 PCU per lane)

** Slip Road approximately 200m long (capable of accommodating up to 35 PCU per lane)

2.22. Table 4 represents a scenario where at the A1(M) South off-slip, the left turn is prohibited from the offside lane. This reflects the road markings shown on Kier drawing 517770-HSN-DR-D-100-003 rev P06 entitled, 'A3 (M) J3 Northbound Slip S278 Signalisation Scheme' which illustrates the proposed mitigation scheme. In this scenario the A3(M) South off-slip queues in the PM peak are expected to increase by 40 PCUs, from 43 to 83 PCUs. The slip roads are approximately 220m long (south) and 200m long (north). Therefore, in the in the DM scenario, the predicted queue length on the A3(M) South off-slip (250m) would slightly exceed the length of the slip road, and in the DS it would significantly exceed the length of the slip road and stretch back to the mainline carriageway. This would be regarded as a 'severe impact' in terms of Circular 02/2013. Furthermore, the queue at the circulatory south in both the DM (circa 495m) and DS scenario (512m) would significantly exceed the stacking capacity (circa 114m). In reality this would not be permitted for capacity and safety reasons and additional green time would be required to ensure the queues did not exceed the stacking capacity. Less green time would therefore be available for the A3(M) South off-slip which would result in queuing being even longer than shown in the model.

2.23. **AECOM recommend that the scheme to signalise the South off-slip at A3(M) J3 should be implemented with road markings that permit traffic to turn left into Hulbert Road (west) from both lanes of the slip road, so as to replicate the lane choice available to these drivers today in the existing layout.** This would effectively avoid the severe queuing problems on both the slip road and the circulatory carriageway that would occur if the left turn was prohibited from using the offside lane.

- 2.24. Table 5 shows that, where the left turn is permitted, A3(M) J3 south (northbound) off-slip in the AM peak the queue length increases from 11pcu in the DM to 19pcu in the DS which is a queue of circa 110m. This would occupy approximately half the length of the 220m long slip road and therefore the predicted queue is not likely to stretch back to the mainline carriageway.
- 2.25. **However, AECOM recommend that temporary fixed or variable message signs should be provided on the A3(M) northbound approaches to this junction to warn drivers of queuing traffic ahead, to address the predicted increase in queuing, even if the left turn is permitted from the offside lane.**

3. Collision Analysis

- 3.1. WSP have undertaken collision analyses of four Strategic Road Network (SRN) junctions; A3(M) Junctions 2 and 3, Portsbridge Roundabout and the A2030/ A27 junction to determine whether it is likely that the construction of the Proposed Development will exacerbate existing collision trends (as a result of the reassignment of traffic away from traffic management associated with construction of the Onshore Cable Route). The WSP collision analyses are held within Appendix 1 of 'Technical Note HE03 – Response to Highways England Technical Note TN03', produced by WSP, dated January 2021. Appendix 1 is entitled 'Collision Analysis of Highways England Roads' (dated January 2021, report reference TN HE04) and analyses recorded collision data provided by Hampshire Constabulary covering a five-year period between 01/10/2014 and 30/09/2019.
- 3.2. The aim of the TN HE04 assessment is to identify existing collision cluster sites at the four Strategic Road Network (SRN) junctions named above to determine whether it is likely that the construction of the Proposed Development will exacerbate existing collision trends (as a result of the reassignment of traffic away from traffic management installed in association with construction of the Onshore Cable Route).
- 3.3. AECOM have undertaken an in-depth review of the collision analyses undertaken by WSP at the two locations where noted increases in queuing are predicted, as follows:
- A3(M) Junction 2 Northbound Off-slip (where queue length increases from 14 PCU (80m) in the DM, to 21PCU in the DS (120m))
 - A3(M) Junction 3 Northbound Off-slip (where queue length increases from 11 PCU (63m) in the DM, to 19PCU in the DS (110m))

A3(M) Junction 2

- 3.4. Section 2 of TN HE04 covers the A3(M) Junction 2, which includes A3(M) (North), Dell Piece East B2149, A3(M) (South) and Dell Piece West B2149; the analysis includes the A3(M) slip roads.
- 3.5. TN HE04 states that a total of 25 recorded collisions were recorded at the above location; of which one resulted in serious injuries and the remaining 24 in slight injuries. All involved cars only, with exception of one involving a motorcyclist and one involving an LGV.
- 3.6. As part of TN04, a review of collision types was undertaken; WSP state that 21 of the collisions which occurred were rear end shunt type collisions, of which nine occurred on the slip roads indicating a potential existing cluster of collisions of this type. It is stated that all nine of the rear-end shunt collisions that occurred on the off-slips were at the location where the off-slips from the A3(M) 'merge with the roundabout'. The WSP collision review states that 'in terms of locations, the exact locations are fairly evenly distributed with no concentration on any particular part of the junction (such as the slip roads). This therefore corroborates the view that reassignment of traffic to this junction would not be intensifying use of a particularly hazardous junction as the data do not suggest any location-specific factor which might indicate a flaw in the design of part of the junction'.

- 3.7. Full raw collision data has not been provided; however Appendix A of TN HE04 provides a collision report summary. AECOM have used this information to undertake an independent review to determine whether the WSP conclusions above can be agreed, particularly with regards to the A3(M) northbound off-slip, where queueing is predicted to increase notably as the result of the Scheme. It should be noted that high-level assumptions will have to be made based on the limited level of detail provided in the summary tables in Appendix A.
- 3.8. The AECOM review has found that six collisions appear to have occurred on the A3(M) northbound off slip at Junction 2. These are summarised in Table 6 below:

Table 6: Collision Analysis: A3(M) Junction 2 northbound off-slip

Collision Ref	Severity	Collision Type	Location
140437106	Slight	Rear End Shunt	Roundabout approach
160218949	Slight	Human Error (casualty travelling on bonnet of car fell off)	On NB off slip – exact location unclear
160324935	Slight	Rear End Shunt	Roundabout approach
44170120346	Slight	Rear End Shunt	Roundabout approach
44190141173	Slight	Rear End Shunt	Roundabout approach
44190220416	Slight	Rear End Shunt	Roundabout approach

- 3.9. Of the six collisions that occurred on the A3(M) Junction 2 northbound off-slip, five were rear end shunt collisions that occurred at the roundabout approach; this indicates that there is an existing collision cluster and pattern at this location. It is acknowledged that all collisions occurred on the roundabout approach and therefore the increased queue lengths are unlikely to exacerbate this collision trend; however, the additional traffic using the A3(M) northbound off slip at this location as a result of the Proposed Development could exacerbate the collision concern at this location. Table 2.2 of TN HE04 shows that there will be an increase in 183 vehicles in the DS1 Scenario, and 180 in the DS2 scenario (during the PM peak); however it is unclear what proportion of these vehicles will be using the northbound off-slip. AECOM suggest that measures to address the potential increase in collisions on the northbound off-slip, as a result of increased traffic flows on the A3(M) northbound off slip, may need to be considered (see recommendation at 3.18, below).

A3(M) Junction 3

- 3.10. Section 3 of TN HE04 covers the A3(M) Junction 3, which includes A3(M) (North), Hulbert Road (West), Hulbert Road (East) and A3(M) (South); the analysis includes the A3(M) slip roads.
- 3.11. TN HE04 states that a total of 40 recorded collisions were recorded at the above location; of which five resulted in serious injuries and the remaining 35 resulted in slight injuries. TN04 states that one collision involved a pedestrian, one involved a pedal cyclist, four involved motorcycles and the remaining collisions involved cars only.
- 3.12. As part of TN04, a review of collision types was undertaken; WSP state that 31 of the collisions which occurred were rear end shunt type collisions, of which 19 occurred on the slip roads, indicating a potential existing pattern of collisions of this type. It is stated that 18 of the 19 rear end shunt collisions occurred on the off-slips where the off-slips ‘merge with the roundabout’. The WSP collision review states that ‘in terms of locations, the exact locations of the rear-end collisions are predominantly at the intersection of the off-slip roads with the circulatory carriageway, which might potentially suggest an existing safety issue, probably due to drivers observing on-coming traffic to their right, then entering the roundabout at speed unaware of the closeness of a vehicle right in front’.

- 3.13. Full raw collision data has not been provided; however Appendix A of TN HE04 provides a collision report summary. AECOM have used this information to undertake an independent review to determine whether the WSP conclusions above can be agreed, particularly with regards to the A3(M) northbound off-slip, where queueing is predicted to increase substantially as the result of the Scheme. It should be noted that high-level assumptions have been made based on the limited level of detail provided in the summary tables in Appendix A.
- 3.14. The AECOM review has found that 19 collisions appear to have occurred on the A3(M) northbound off slip at Junction 3. These are summarised in Table 7 below:

Table 7: Collision Analysis: A3(M) Junction 3 northbound off-slip

Collision Ref	Severity	Collision Type	Location
44190148585	Slight	Rear End Shunt	Roundabout approach
44170042205	Slight	Rear End Shunt	On NB off slip – exact location unclear
44170396122	Slight	Rear End Shunt	Roundabout approach (unclear whether NB or SB off slip)
140410784	Serious	Rear End Shunt	Roundabout approach
44190192019	Slight	Rear End Shunt	Roundabout approach
140449148	Slight	Rear End Shunt	On NB off slip – exact location unclear (failed to brake for heavy traffic)
44180359377	Slight	Rear End Shunt	Roundabout approach
44170183953	Slight	Rear End Shunt	Roundabout approach (unclear whether NB or SB off slip)
150394425	Serious	Loss of Control	Roundabout approach
160364235	Slight	Rear End Shunt	On NB off-slip – exact location unclear (failed to brake for traffic queueing to enter roundabout)
150053848	Slight	Rear End Shunt	Roundabout approach
44190273613	Slight	Rear End Shunt	Roundabout approach
44180041457	Slight	Rear End Shunt	On NB off-slip – exact location unclear (failed to slow in time)
44190281335	Slight	Rear End Shunt	On NB off-slip – exact location unclear (occurred within traffic waiting to join roundabout)
44190303147	Slight	Rear End Shunt	Roundabout approach
160012651	Slight	Loss of Control	Roundabout approach
44190342812	Slight	Rear End Shunt	On NB off-slip – exact location unclear (failed to slow in time)
44180089321	Slight	Rear End Shunt	Roundabout approach
44190244256	Slight	Rear End Shunt	Roundabout approach

- 3.15. Of the 19 collisions that occurred on the A3(M) Junction 3 northbound off-slip, 17 were rear end shunt collisions. At least nine of the rear end shunt collisions occurred on the approach to the roundabout and it is unclear from the collision descriptions provided exactly where the remaining eight occurred. Therefore, the rear end shunts known to occur at the roundabout approach indicate that there is a collision cluster and pattern at this location. It is acknowledged that the collision pattern on the roundabout approach is unlikely to be exacerbated by the increased queueing at this location; however, the additional traffic using the A3(M) northbound off slip at this location as a result of the Proposed Development could exacerbate this collision concern. Table 3.2 of TN HE04 shows that there will be an increase in 160 vehicles in the DS1 Scenario, and 158 in the DS2 scenario (during the AM peak); however it is unclear what proportion of these vehicles will be using the northbound off-slip. AECOM suggest that measures to address the potential increase in collisions on the northbound off-slip, as a result of increased traffic flows on the A3(M) northbound off slip, may need to be considered (see recommendation at 3.18, below).
- 3.16. Collision plots alone are typically unreliable sources of information when determining the exact locations of collisions, however the collision plot along with the descriptions provided give AECOM some confidence that the majority of the eight remaining collisions occurred on the approach to the roundabout. However, there is a small chance that the remaining eight rear end shunt collisions may indicate a further rear end shunt collision pattern further south along the slip road, which may be exacerbated by the additional queueing predicated at this location.

Conclusion

- 3.17. As a significant number of the rear end shunt collisions appear to be located at the slip road/roundabout entries, and therefore it is reasonable to suggest could be 'restart' collisions caused by gap-seeking vehicles attempting to join the roundabout circulatory and colliding with the vehicle in front which had not yet pulled away, it is considered that a number of these collisions would be addressed by the proposed signalisation of A3(M) J2 and part signalisation of A3(M) J3 by third parties;
- 3.18. In order to pre-emptively address the potential for rear end shunt collisions associated with the rear end of the queues which are likely to form on these slip roads **it is recommended that in the period immediately prior to the beginning of the works (and as necessary throughout the period of works) temporary signage warning drivers of the potential for queuing ahead are installed**
- 3.19. **Queue lengths and collision records on these slip roads should be monitored throughout the works to determine whether any additional mitigation is required.**

4. Other Matters

- 4.1. The following non-critical recommendations further detailed in AECOM'S TN03 have subsequently been resolved in AECOM's BN02 & subsequent correspondence with WSP:
- For both access and egress at the Farlington playing fields with regard to over sized vehicles, traffic management should be used;
 - Access by a 20t tipper/11.7m rigid vehicle at the Farlington playing fields should also take place under traffic management control;
 - Proposed restrictions on the movement of HGV's during peak periods will still need to be more robust and should be formalised as protective provisions in the DCO;

- The promoter of the Aquind Interconnector should work collaboratively with Highways England to co-ordinate matters such as temporary traffic signage in the event that the construction phases of the M27 J4 – J11 Smart Motorway Project and Aquind Interconnector scheme overlap; and
 - Once a construction contractor is appointed, the exact details of the construction phasing and duration of works should be provided.
- 4.2. The following non-critical recommendations further detailed in AECOM'S TN03 have subsequently been resolved:
- With regard to A3(M) Junction 2, the flow diagrams or the models should be corrected to ensure that these are consistent, and that clarification is provided. Furthermore, there appears to be no flows from A3(M) south to Dell Piece East and confirmation should be provided that this is correct (para 3.2);
 - With regard to A3(M) Junction 2, the AM peak ARCADY analysis for this junction should be provided (para 3.3); and
 - With regard to A3(M) Junction 3, there appears to be no flows from A3(M) south to Hulbert Road East, and confirmation should be provided that this is correct.

5. Conclusion

- 5.1. AECOM, on behalf of Highways England, have undertaken a review of Supplementary Transport Assessment Addendum (Document Ref 7.7.20) dated 25th January 2020 and specifically Appendix A: 'Technical Note providing a review of collision data' and Appendix B: 'Technical Note HE03 – Response to Highways England Technical Note TN03' both also dated January 2021 in support of the proposed Aquind Interconnector on-shore works. These documents were submitted by WSP in response to AECOM's TN03 dated 21st August 2020.
- 5.2. For ease of reference, AECOM's main comments and recommendations are presented in bold and underlined text throughout the note. Recommendations regarded as critical to the acceptability of this planning application are coloured **red**. Recommendations that are of concern but not critical to agreement of this planning application, which AECOM anticipate can be resolved at a subsequent stage of the project, are highlighted in **amber**.