



**AQUIND Limited**

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# **AQUIND INTERCONNECTOR**

## **Environmental Statement – Volume 3 – Appendix 20.1 Consultation Responses**

The Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

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**AQUIND Limited**

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Environmental Statement – Volume 3 –  
Appendix 20.1 Consultation Responses

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## DOCUMENT

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# APPENDIX 20.1 CONSULTATION RESPONSES

## 1.1. SCOPING OPINION

Table 1 - Scoping Opinion

Scoping Opinion Ref	Summary of Comment Received	How this has been Addressed by the Applicant
4.17.2	The Scoping Report identifies that surface water features up to a minimum of 0.5 km from the Proposed Development and features of hydraulic connectivity within 1km of the Proposed Development will be considered. The impact assessment should consider all sensitive receptors within the Zol for the Proposed Development, particularly where hydrological links occur.	Walkover surveys were undertaken to establish potential hydraulic connectivity of surface water receptors.  For this Chapter, it was considered appropriate for the study area to remain as surface water features up to a minimum of 0.5 km from the Proposed Development and features of hydraulic connectivity within 1km of the Proposed Development.
4.17.3	The Inspectorate notes that this paragraph defers the assessment of groundwater quantity, groundwater flows and release of contaminants to the Groundwater Chapter of the ES. As noted in Table 4.16 of the Opinion, there is no reference to the assessment of groundwater quality. This must be included in the ES. Where the Water Resources and Flood Risk aspect chapter informs	Groundwater is considered in Chapter 19 (Groundwater) of this Environmental Statement ('ES') Volume 1 (document reference 6.1.19).

Scoping Opinion Ref	Summary of Comment Received	How this has been Addressed by the Applicant
	the groundwater aspect chapter (and vice versa), appropriate cross-references should be included.	
4.17.4	This paragraph appears to be the first mention of ‘impact to flood defences, most likely from within the tidal area (landfall)’. The baseline does not contain any information with regards to flood defences present that could be affected by the Proposed Development. The ES should clearly include in the baseline, a description of existing (and where relevant, proposed) flood defences that could be impacted by the Proposed Development.	<p>Section 20.5.5 of Chapter 20 (Surface Water Resources and Flood Risk) of the ES Volume 1 (document reference 6.1.20) provides a summary of the flood defences present within the Order Limits which are considered within this assessment and Appendix 20.4 (Flood Risk Assessment) (‘FRA’) of the ES Volume 3 (document reference 6.3.20.4). The flood defences are further considered as part of the Proposed Development in relation to the interaction of the Proposed Development with the existing and current future proposed coastal flood defence schemes.</p> <p>Discussions with East Solent Coastal Partnership, as detailed in Table 4 within this report and the Consultation Report (document reference 5.1), have been on-going to discuss the practicability of the: construction programme, scheme alignment, and interactions between the Proposed Development and flood defences schemes.</p>

Scoping Opinion Ref	Summary of Comment Received	How this has been Addressed by the Applicant
		<p>These discussions have informed the Proposed Development, and where the Proposed Development is in close proximity to the coastal flood defences; detailed design will demonstrate the proposed works would not compromise the existing and current proposed coastal flood defences subject to relevant environmental permitting/ consenting.</p>
<p><b>4.17.5</b></p>	<p>As set out in the NPS EN-1 (Paragraph 4.8.6), the Applicant should consider the potential impacts of climate change using the latest UK Climate Projections (UKCP). The UKCP18 projections have recently been published. Effort should be made to agree the climate change model and future flood risk allowance baseline with relevant consultation bodies.</p>	<p>Through ES consultation it has been agreed with the EA that climate change impacts do not need to be assessed for construction activities and that a new assessment will be required at the time of decommissioning. Consideration of climate change has been undertaken based on the latest guidance available from the Environment Agency as agreed through consultation.</p>
<p><b>4.17.6</b></p>	<p>The Scoping Report does not clarify the locations where the cable may cross below or run in close proximity to a main river. This should be detailed in the ES. Site-specific assessments for each location should also be undertaken to inform the cable crossing techniques at each main river and where significant effects may occur.</p>	<p>Watercourses are discussed in Section 20.5.4 of Chapter 20 (Surface Water Resources and Flood Risk) and have been informed by a detailed site visit and consultation with relevant consultees which is further detailed within Appendix 20.3 (Watercourses Summary) of the ES Volume 3 (document reference 6.3.20.4).</p>

Scoping Opinion Ref	Summary of Comment Received	How this has been Addressed by the Applicant
	Any mitigation and/or design measures relied upon for the purposes of the assessment e.g. either trenchless or open cut methods should be explained in the ES and appropriately secured. Effort should be sought to agree proposed mitigation and reinstatement measures with the relevant consultation bodies e.g. EA.	
4.17.7	The ES and FRA should assess likely significant impacts associated with temporary works, such as dewatering and working compounds in the flood plain.	Assessment considers potential impacts associated with temporary works.
4.17.8	The Scoping Report does not include figures to show the location of potential receptors or the flood maps for the area. The ES must include clear and appropriate figures to support the impact assessment, including those in support of any FRA and WFD Assessment.	Figures 20.1 to 20.8 of the ES Volume 2 (document reference 6.2.20.1 to 6.2.20.8) support the assessment, FRA and WFD assessment.
4.17.9	The Scoping Report refers to outdated legislation: The Environment Permitting (England and Wales) Regulations 2010 which has been superseded by the Environmental Permitting (England and Wales) Regulations 2016, which should be used when interpreting the Environmental Permitting requirements for the Proposed Development in the ES.	Assessment legislation has been updated.



## 1.2. INFORMAL CONSULTATION PRIOR TO PEIR RESPONSES

**Table 2 Informal Consultation prior To PEIR Responses**

<b>Consultee</b>	<b>Discussion</b>	<b>Summary of Outcome of Discussions</b>
<b>Environment Agency</b>	Initial request sent for flood risk profile information and feedback on policy/assessment requirements.	Initial planning advice provided by the Environment Agency used to inform the development of the PIER and subsequently Chapter 20 (Surface Water Resources and Flood Risk) and Appendix 20.4 (Flood Risk Assessment).  Consultation was ongoing at the time of issuing the PEIR.
<b>East Solent Coastal Partnership</b>	Initial request sent for coastal flood risk profile information and details of current and proposed flood defence schemes in the area.	East Solent Coastal Partnership responded to queries with information on existing coastal flood defences they maintain, plans for future work as well as information on other defences in the area maintained by others.  Consultation was ongoing at the time of issuing the PEIR.
<b>Hampshire County Council</b>	Initial request sent for flood risk profile information, feedback on policy/assessment requirements and information requested on FRA and outline drainage strategy.	Initial planning advice provided by Hampshire County Council and available flood risk information.  Consultation was ongoing at the time of issuing the PEIR.

Consultee	Discussion	Summary of Outcome of Discussions
<b>Portsmouth City Council</b>	Initial request sent for flood risk profile information, feedback on policy/assessment requirements and information requested on FRA and outline drainage strategy.	<p>Initial response from PCC commented on points relating to policy and guidance documents, proposed FRA, an outline drainage strategy and provided a SuDS planning document.</p> <p>Particular note was given to need to assess PCS12 in PCC Local Plan.</p> <p>Consultation was ongoing at the time of issuing the PEIR.</p>
<b>East Hampshire District Council</b>	Initial request sent for flood risk profile information, feedback on policy/assessment requirements and information requested on FRA and outline drainage strategy.	<p>East Hampshire District Council response discussed flood risk, (historic and potential), the Converter Station being within SPZ1 and the need for further discussion with Portsmouth Water, susceptibility to high groundwater levels during prolonged wet periods, the need for run-off to be attenuated and not increase flood risk as well as the need to factor in climate change.</p> <p>East Hampshire District Council also noted that the majority of the Onshore Cable Corridor is outside the East Hampshire District Council boundary.</p>
<b>Havant Borough Council</b>	Initial request sent for flood risk profile information, feedback on policy/assessment requirements and information requested on FRA and outline drainage strategy.	<p>Havant Borough Council response focused mainly on recommending policies to review relating to their Adopted Core Strategy and Draft Local Plan.</p>

Consultee	Discussion	Summary of Outcome of Discussions
		Havant Borough Council recommended directing the flood risk portion of our enquiry to Hampshire County Council as Lead Local Flood Authority.
<b>Winchester City Council</b>	Initial request sent for flood risk profile information, feedback on policy/assessment requirements and information requested on FRA and outline drainage strategy.	No response was received from WCC.

### 1.3. PEIR CONSULTATION

**Table 3 - PEIR Consultation**

Consultee	Summary of Comment Received	How this has been addressed by the Applicant
<p><b>Environment Agency</b></p>	<p><u>Main river crossings</u></p> <p>For construction works under/ through and adjacent to main rivers the Environment Agency stated, “trenchless installation technique would still be our preferred installation method for all Main River crossings, as this is the least disruptive method for providing new service crossings under a watercourse.” Trenching would need suitable mitigation to be detailed.</p> <p><u>Climate change</u></p> <p>We are pleased to see that the Flood Risk Assessment will consider the potential impact of climate change in accordance with current policy and the latest UKCP18 allowances (November 2018).</p> <p><u>Surface water management</u></p> <p>EA have concerns of the currently proposed treatment train prior to discharge to groundwater.</p>	<p><u>Main river crossings</u></p> <p>Trenching of through Main Rivers has been avoided. Where crossings open Main Rivers, this is proposed by HDD or micro-tunnelling. Where crossings culverted Main Rivers, this is proposed within the carriageway build up. Principals of crossing agreed through consultation with detailed methodologies to be provided and agreed during detailed design through appropriate environmental permits.</p> <p><u>Climate change</u></p> <p>Further discussions on the consideration of climate change informed through consultation with the Environment Agency and informed the ES and FRA.</p> <p><u>Surface water management</u></p> <p>Surface water management at the converter station is discussed in Appendix 3.6 (Aquifer Contamination</p>

Consultee	Summary of Comment Received	How this has been addressed by the Applicant
	<p>There would need to be robust confidence that there is no potential for impact to the relevant public water supply abstractions from any surface discharges.</p> <p><u>Surface water contamination</u></p> <p>The ES and/or CEMP needs to consider how potential contaminated surface water will be managed to stop it flowing to watercourses and drains.</p> <p><u>Foul drainage</u></p> <p>In regard to the foul water proposals, we accept that a package sewage treatment plant is unlikely to be viable for infrequent use. However, given the sensitivity of the groundwater in this area, a sealed septic tank whereby foul water is tankered away would be preferable over the current proposal for a septic tank with a discharge to ground / surface waters. Should it be determined that a sealed septic tank is not appropriate and that there will be a discharge to a drainage field (for which justification</p>	<p>Mitigation Strategy) of this ES Volume 3 (document reference 6.3.3.6) and has been informed through consultation with the Environment Agency, Portsmouth Water and Hampshire County Council as appropriate.</p> <p>Impacts on groundwater are discussed further in Chapter 19 (Groundwater).</p> <p><u>Surface water contamination</u></p> <p>Impacts to surface water are considered within the ES based on in-principle approach agreed with the Environment Agency during consultation.</p> <p><u>Foul drainage</u></p> <p>Foul drainage management at the converter station is discussed in Appendix 3.6 (Aquifer Contamination Mitigation Strategy).</p>

Consultee	Summary of Comment Received	How this has been addressed by the Applicant
	<p>would be required), this discharge will require a permit from us.</p> <p><u>Flood defences</u></p> <p>“it will be crucial to determine whether there will be a likely significant effect of the proposed cable route on the defence scheme. An assessment of impacts on flood defences must be included as part of the ES. It will also be important to consider the future flood defences on Portsea Island, and we require that this is being taken into consideration and all necessary consultation with the ESCP carried out in order to ensure that the scheme is considered safe from a flood risk perspective.”</p>	<p><u>Flood defences</u></p> <p>Section 20.5.5 of Chapter 20 (Surface Water Resources and Flood Risk) of the ES Volume 1 (document reference 6.1.20) provides a summary of the flood defences present within the Order Limits which are considered within this assessment and Appendix 20.4 (Flood Risk Assessment) (‘FRA’) of the ES Volume 3 (document reference 6.3.20.4). The flood defences are further considered as part of the Proposed Development in relation to the interaction of the Proposed Development with the existing and current future proposed coastal flood defence schemes.</p> <p>Discussions with East Solent Coastal Partnership, as detailed in Table 4 within this report and the Consultation Report (document reference 5.1), have been on-going to discuss the practicability of the: construction programme, scheme alignment, and interactions between the Proposed Development and flood defences schemes.</p>

Consultee	Summary of Comment Received	How this has been addressed by the Applicant
<b>Hampshire County Council</b>	<p>No key concerns raised from flood risk perspective, and HCC stated “The Lead Local Flood Authority is satisfied that a Water Resources and Flood Risk Assessment will be submitted as part of the EIA. This should include a surface water drainage strategy, as per the County Council’s guidance”</p>	<p>Further consultation with Hampshire County Council undertaken to inform ES and FRA.</p>
<b>Portsmouth City Council</b>	<p>Comments relate to works around flood defences on Portsea Island, the potential for clashes in construction programme. Concern of works passing through Milton Common flood defence bund.</p>	<p>Section 20.5.5 of Chapter 20 (Surface Water Resources and Flood Risk) of the ES Volume 1 (document reference 6.1.20) provides a summary of the flood defences present within the Order Limits which are considered within this assessment and Appendix 20.4 (Flood Risk Assessment) (‘FRA’) of the ES Volume 3 (document reference 6.3.20.4).</p> <p>The flood defences are further considered as part of the Proposed Development in relation to the interaction of the Proposed Development with the existing and current future proposed coastal flood defence schemes.</p> <p>Discussions with East Solent Coastal Partnership, as detailed in Table 4 within this report and the Consultation Report (document reference 5.1), have been on-going to discuss the practicability of the: construction programme, scheme alignment, and</p>

Consultee	Summary of Comment Received	How this has been addressed by the Applicant
		interactions between the Proposed Development and flood defences schemes.



## 1.4. POST-PEIR CONSULTATION

**Table 4 - Post-PEIR Consultation**

Consultee	Discussion	Summary of Outcome of Discussions
<b>Environment Agency</b>	<p>On-going discussions have involved Main Rivers within the Order Limits, Main Rivers crossing methodologies, construction methodology principles within the Order Limits in areas at flood risk and permitting requirements, application of climate change allowances and development within the tidal Flood Zone 2.</p> <p>Consultation included co-ordination meeting with Environment Agency, Hampshire County Council Lead Local Flood Authority, Portsmouth City Council Lead Local Flood Authority and Portsmouth Water referred to as the 'Workshop' hereafter.</p>	<p>In principle approach in relation to Surface Water Resources and Flood Risk agreed through the workshop as recorded within the relevant minutes of meeting, see Appendix 1.</p> <p>Relevant principles agreed in relation to Main River crossings/ construction methodologies, permitting requirements, climate change, flood resilience measures are embedded into Chapter 20 (Surface Water and Flood Risk), Appendix 20.4 (FRA).</p>
<b>East Solent Coastal Partnership</b>	<p>Continued discussions centred around the Proposed Development and Order Limits in close proximity to the coastal flood defences adjacent to the Order Limits: construction programme, scheme alignment, and interactions between the Proposed Development and flood defences schemes.</p> <p>Consultation included a number of meetings to discuss the above matters.</p>	<p>East Solent Coastal Partnership provided comprehensive drawings of proposed works and other information regarding the coastal flood defences in the area, which have informed the Proposed Development.</p> <p>East Solent Coastal Partnership provided clarifications on flood risk profile in proximity to the Order Limits.</p>

Consultee	Discussion	Summary of Outcome of Discussions
		<p>Construction principles in relation to works adjacent to the coastal flood defences and proposed schemes and relevant principles agreed are presented within the Consultation Report (document reference 5.1).</p>
<p><b>Hampshire County Council</b></p>	<p>Continued flood risk data and approach consultation including the workshop.</p>	<p>Hampshire County Council provided clarifications on flood risk profile in proximity to the Order Limits and detail of history of flooding known within the Order Limits.</p> <p>Through workshop, in principle approach for the construction methodologies in relation to Surface Water Resources and Flood Risk agreed.</p>
<p><b>Portsmouth City Council</b></p>	<p>Continued flood risk data and approach consultation including the workshop.</p>	<p>Portsmouth City Council provided clarifications on flood risk profile in proximity to the Order Limits, known areas at risk of flooding and detail of history of flooding known within the Order Limits.</p> <p>Through workshop, in principle approach for the construction methodologies in relation to Surface Water Resources and Flood Risk agreed.</p>
<p><b>Portsmouth Water</b></p>	<p>Consultation on proposed Aquifer Contamination Mitigation Strategy.</p>	<p>Through emails and face to face meetings the principals of the Aquifer Contamination Mitigation Strategy agreed with Portsmouth Water.</p>

Consultee	Discussion	Summary of Outcome of Discussions
	Consultation on Surface Water Resources and Flood Risk through Workshop.	Through the Surface Water Resources and Flood Risk 'Workshop' Portsmouth Water raised no concerns with the proposed approach.
<b>Southern Water</b>	Budget estimate connection application submitted to Southern Water in relation to the Converter Station.	In principal agreement obtained from Southern Water.

# **Appendix 1 – Workshop Meeting Minutes**



## OVERVIEW

<b>PROJECT NUMBER</b>	62100616	<b>MEETING DATE</b>	23 July 2019
<b>PROJECT NAME</b>	Aquind DC Interconnector	<b>VENUE</b>	PW Offices - Havant
<b>CLIENT</b>	Aquind	<b>CONFIDENTIALITY</b>	Public
<b>MEETING SUBJECT</b>	<b>WORKSHOP PART 1 – FLOOD RISK</b>		
<b>PRESENT</b>	<p><u>WSP</u> Jo Welbourn (JW) - Flood Risk, Joe Oliver (JO) - Cable Engineer, Alan Hardwick (AH) - Planning, Mick McGuckin MM - Project Manager, Kjerstine Severinsen (KS) - Water Framework Directive, Jess Moran (JM) - Environmental Impact Assessment Overview</p> <p><u>Aquind</u> Elena Ivanova (EI) - Client,</p> <p><u>Portsmouth Water</u> James Bucknell (JB) <u>Hampshire County Council Lead Local Flood Authority</u> Vicki Westall (VW) <u>Portsmouth City Council Lead Local Flood Authority</u> Harvey Cable (HC) <u>Environment Agency</u> Anna Rabone (AR) - Sustainable Places (Planning), Sophie Brown (SB) - Sustainable Places (Planning), Linda Lohrstrater (LL) Partnership &amp; Strategic Overview Hampshire &amp; Isle of Wight (Flood Risk Specialist)</p>		
<b>APOLOGIES</b>	Caroline Barford (East Solent Coastal Partnership)		
<b>DISTRIBUTION</b>	As above		

## AGENDA

<b>ITEM</b>	<b>SUBJECT</b>
<b>1</b>	Project update
<b>2</b>	Overview on flood risk profile and site
<b>3</b>	Convertor station overview
<b>4</b>	Watercourse crossings <ul style="list-style-type: none"><li>i. Open trenching</li><li>ii. Horizontal directional drilling (HDD)</li></ul>
<b>5</b>	Cable route/ works in flood zone 2/3 considerations <ul style="list-style-type: none"><li>i. Tidal</li><li>ii. Fluvial</li></ul>
<b>6</b>	Cable route/ flood defence considerations
<b>7</b>	Overland flow management principles

## MINUTES OF MEETING

ITEM	SUBJECT	ACTION
<b>1</b>	<b>Project update</b>	
<b>1.1</b>	Introduction by JW of proposed format of the day, introductions of all parties present.	
<b>1.2</b>	Introduction by MM of project and how the red line boundary (RLB) is being refined following the submission of the PEIR – RLB still being refined through design development ahead of the Environmental Statement (ES) submission.  Landfall has been set at Eastney and converter station RLB location set.	
<b>1.3</b>	AH introduced proposed approach for the statement of common ground – WSP to send a draft for initial comments from statutory consultees.	WSP to send relevant draft statements to respective statutory consultees
<b>2</b>	<b>Overview on flood risk profile and site</b>	
<b>2.1</b>	<p><u>Flood Risk Profile:</u></p> <p>JW provided high level overview of flood risk profile throughout site boundary. Key highlights included:</p> <ul style="list-style-type: none"> <li>• Converter Station (section 1) – Flood zone 1. High ground and elevation, no significant sources of flood risk in this area, one isolated extreme event overland flow path.</li> <li>• Inland Cable route (section 2 to 5) – Flood zone 1, 2 and 3. Localised areas at risk of surface water flooding and localised fluvial flood risk adjacent to Main River watercourses.</li> <li>• Coastal Environment (section 6 to 10) – Flood zone 1, 2 and 3. Localised areas at risk of surface water flooding and tidal flood risk present. Cable route is close to the flood defences throughout Portsmouth.</li> </ul> <p>Details of all flood risk considerations discussed in 'Items 3 – 6'.</p> <p>HC highlighted that he would expect groundwater to be encountered at shallow depths in certain sections of the cable route – HC provided groundwater data from groundwater monitoring wells available for the Portsmouth area. WSP to review this information to inform understanding of flood risk profile for ES and Flood Risk Assessment (FRA).</p> <p>VW added that HCC hold limited detail on specific groundwater flood risk information however would also expect isolated encounters of groundwater at shallow depths.</p> <p>Consideration of groundwater flood risk and proposed management further discussed throughout workshop.</p>	
<b>2.2</b>	<p><u>Site and proposed works:</u></p> <p>JW talked through key elements proposed throughout the site.</p>	

	<ul style="list-style-type: none"> <li>• Converter station – further discussed in ‘Item 3’, highlighted that this will be unstaffed for majority of the time. (approx. 3 days of occupancy every 2 years.)</li> <li>• Cable route – predominantly buried cable with no above ground infrastructure along majority of cable route. JO added that joint bays would typically be checked once every couple of years.</li> <li>• Landfall – potential for landfall buildings prior to horizontal directional drilling (HDD) to offshore element. JW to follow up with LLFA and EA from flood risk and drainage once further certainty on the proposed buildings identified through design development.</li> </ul> <p>AR asked when construction dates are proposed – JO advised that construction is not fixed however expected to be 2022/ 23 and once started delivered within 18-20 months. JO explained that programme will need to balance the various constraints including, but not limited to; public holidays, local events, ecological nesting/ spawning periods with other constraints including flooding risks amongst others. JO emphasised that flexibility within the timescales required as the final programme will be contractor driven post-application, however where required seasonal constraints would need to be defined.</p> <p>MM mentioned the projects constraints register and asked EA to feed into it. EA advised they would be happy to do so. WSP to follow up with EA to identify any timescales/locations where works should be avoided.</p> <p>EA advised that following review of the technical note they can advise on any constraints.</p>	<p>JW to provide further information to PCC LLFA and EA on landfall arrangement once available.</p> <p>WSP to follow up with EA on seasonal constraints.</p>
<p><b>2.3</b></p>	<p><u>Overview of surface water resources and flood risk assessment:</u></p> <p>JW outlined how WSP are structuring the assessment in relation to surface water resources and flood risk.</p> <p><i>Construction:</i></p> <p>A qualitative assessment is proposed to inform an understanding of the flood risk profile during construction based on a range of data sources, principally:</p> <ul style="list-style-type: none"> <li>○ flood mapping (Flood map for planning/ long term flood risk information),</li> <li>○ site visit,</li> <li>○ desk top study of supplementary flood risk data (e.g. Strategic Flood Risk Assessment)</li> <li>○ local knowledge where available. JW requested for HCC, PCC and EA to support in developing the projects understanding of the flood risk profile by providing additional local knowledge of site specific issues, specifically any known history of flooding within or directly adjacent to the site boundary.</li> </ul> <p>HC, VW, AR, LL supported this approach in principle.</p>	<p>JW to follow up with HCC, PCC and EA on any potential additional local flood risk information.</p>

HC highlighted that based on his working knowledge of the area, the SFRA mapping is not representative in terms of groundwater flood risk. HC/VW raised concerns that there is limited data available with regards to groundwater flood risk.

JW outlined that these datasets are a starting point, and the project team are looking to use the data gathered from the site visit, desk top study and local knowledge to identify the 'hot spot' areas susceptible to flooding which can be mapped out and used to help inform where specific consideration and management of flood risks can be expected during construction within the RLB. This constraints map can then be used by the contractor to inform them of where flood risks are likely to be encountered and subsequently develop their own specific management practices for these locations.

JW highlighted that this is not expected to be an exhaustive list however will aid in informing the contractor during construction.

AR asked where this information would be presented. JW advised that this would be in a technical appendix to the ES and FRA. JW to distribute draft constraints plan when available.

JW to distribute constraints plan when available for HCC, PCC and EA comment.

JW added that it is not proposed to be too prescriptive in terms of the proposed mitigation and management of flood risk (groundwater, surface water, tidal, fluvial etc.) during construction as specific practices will vary from contractor to contractor. Within the application it is proposed to outline the general principles that would be expected to manage these risks with the specific measures further developed by the contractor post application and prior to construction works through relevant consents and permits where appropriate. HC, VW, AR, LL supported this approach in principle – These principles are further discussed during 'Item 3 to 6'.

*Operation*

JW outlined that during operation pluvial flood risk at the convertor station would be quantitatively assessed with allowance for climate change – the outline drainage strategy to support application is further discussed in 'Item 3'.

Tidal flood risk at landfall buildings is to be assessed based on ground levels against the EA modelled still water levels to inform any potential need for flood risk management.

No other significant flood risk during operation as limited infrastructure above ground throughout cable route, and no other flood risk management proposed.

It is not proposed to assess climate change scenarios at this stage as installation to occur in next 5 years, previously discussed to be 2022/ 23. AR and LL (EA) confirmed that they support this approach.

*Decommissioning:*

It is not proposed to assess the climate change scenarios for the decommissioning as this would be re-assessed prior to decommissioning in a similar way to the approach for construction where, prior to the works, the



	<p>contractor would develop relevant works practices and obtain the relevant permits and consents prior to construction works where appropriate based on the flood risk constraints identified within the ES and FRA as an overview of key 'hot spot' flood risk areas. AR and LL (EA) confirmed that they support this approach.</p>	
<p><b>2.4</b></p>	<p>Permits:</p> <p>Open discussion over the expected permits that would be required in terms of the flood risk environment which included:</p> <ul style="list-style-type: none"> <li>• Temporary dewatering</li> <li>• Ordinary watercourse consent</li> <li>• Flood risk activities permit – environmental permits</li> <li>• Discharges to surface water and groundwater: environmental permits</li> </ul> <p>HCC, PCC, EA to confirm if they expect any other permits to be required in relation to the flood risk environment.</p> <p>AR/ SB commented that further consideration would be required to determine where activities would need to be permitted or where activities may be exempt – for example permit for dewatering may need a permit depending on the quantities otherwise could fall within a permit exemption.</p> <p>JW suggested that consideration and application of permits in relation to the flood risk environment would be undertaken on a case by case basis post application and prior to the start of any construction works where permits are required. HC, VW, AR, LL supported this approach in principle.</p>	
<p><b>3</b></p>	<p><b>Converter Station Overview</b></p>	
<p><b>3.1</b></p>	<p>JW commented on previous meeting held between WSP's convertor station engineering team on 18<sup>th</sup> July where both PW and the EA were present. JB confirmed PW and others were all generally happy with principles discussed at that meeting on the 18<sup>th</sup> July.</p> <p>VW highlighted that HCC LLFA were unable to attend therefore JW provided high level overview of the proposed strategy for the management of surface water at the convertor station.</p> <ul style="list-style-type: none"> <li>• All surface water generated within the site will be collected in a treatment tank before being piped down to a settling pond and then into a soakaway.</li> <li>• Surface water storage calculations based on 100year pluvial rainfall event with allowance for climate change and an estimate on the rate of infiltration at soakaway that would be further investigation as required post planning.</li> <li>• Other than convertor station the only other impermeable areas will be the access road, which will have minimal usage as the convertor station will be accessed on a limited basis. Surface water generated on access road to be managed through filter strip which will either</li> </ul>	

	<p>infiltrate to the ground or discharge to filtration pond, depending on storage volume required.</p> <p>WSP to send relevant information and minutes of meeting to HCC LLFA. HCC LLFA to look over, and provide any comments on proposals.</p> <p>JW mentioned that an overland flow path (an area at a low risk of flooding on the gov.uk Long term flood risk information where Low risk means that each year this area has a chance of flooding of between 0.1% and 1%) that passes down the west side of the existing substation and then in SW direction following the natural terrain in the area. Based on a site visit it is understood that the extreme event overland flow route to the west of the existing substation aligns with the location of an existing filter strip and soakaway, however the design capacity of this system is unknown. The modelled extreme event flow path is then shown to flow in a SW direction. It is proposed that this potential extreme event flow path would be maintained by keeping the road level with the existing landscape so water can pass over it.</p> <p>JB (PW) raised concern around south west corner of Lovedean Substation fenced area, solution feature connected to the abstractions.</p> <p>VW stated that it would be likely to require an Ordinary Watercourse consent prior to works to demonstrate that the extreme event overland flow route is being maintained both during construction and as part of the permanent works (e.g. road installation).</p>	<p>WSP to provide HCC with converter station information. HCC LLFA to review strategy and provide feedback.</p>
<p><b>4</b></p>	<p><b>Watercourse Crossings</b></p>	
<p><b>4.1</b></p>	<p>Open trenching principles:</p> <p>JO talked through the proposed general principles for cable duct installation, as summarised hereafter:</p> <ul style="list-style-type: none"> <li>• Ducts to be installed in trench in advance of pulling cables through the ducts.</li> <li>• Typically, there will be two separate trenches running in parallel throughout the length of the RLB.</li> <li>• About 10.5 km of total route is in roads (total route just under 20 km).</li> <li>• In roads trenches and duct installation is to be undertaken with through a rolling installation, where short sections (expected to be 30m to 50m) of duct will be installed within any given day of duct installation works.</li> <li>• Each trench and cable duct will be installed at separate times in any one given location.</li> <li>• Duct installation in any given day would typically be backfilled within the same day and left for surface course to be reinstated at the end of the week.</li> <li>• Trenches don't need to be completely dry for works however joint bays will need to be kept dry during construction.</li> </ul>	

	<ul style="list-style-type: none"> <li>• If surface water or groundwater ingress into the trench needs to be removed it is anticipated to be pumped out via a filter medium and subject to consent approval disposed of into a watercourse, infiltrate to the ground or discharge into a public or highway drain.</li> <li>• Both in carriageway and within fields any interrupted overland flow routes are anticipated to be either over pumped/ pumped out or diverted to continue its original route of conveyance therefore no increase in flood risk elsewhere is expected, however groundwater emergence within a trench would need to be considered on a case by case basis depending on the volumes encountered and may require temporary dewatering consent.</li> <li>• During cable duct installation limited material will be stored on site.</li> </ul>	
<p>4.2</p>	<p>Discussion over surface water and groundwater management constraints:</p> <p>HC queried pumping into highway drains and silt risk – JW discussed that any pumping out of the open trenches would be via filter medium or similar to manage the risk of pollution of the pumped water. HC expressed concern that in some locations he would expect dewatering to be needed at all times due to shallow groundwater levels.</p> <p>JW advised where shallow groundwater is encountered temporary dewatering consent would be obtained, where required, from the EA which would ensure that any dewatering is appropriately controlled in terms of location of discharge, volume and water quality. Other installation methodologies may also be considered by the contractor if deemed appropriate.</p> <p>AR raised concern that appropriate control of any discharged water in the SPZ1 (north of Denmead) would need to manage the risk of pollution being present with the discharged water, less concern outside this. HC raised that HCC would have similar concerns from a Highways perspective.</p> <p>HC mentioned that the quantity of groundwater to be removed would need to be further considered – discharging into a highways drainage system may not be acceptable by the highways authority if the volume is large.</p> <p>JW agreed that specific consideration would be required and that temporary storage or alternative arrangements may be required to manage groundwater ingress to ensure the risk of flooding within the surrounding drainage system (public or highway) is not increased. Expected that exact management options would be developed as part of detailed design works by contractor prior to works and agreed through relevant permits and consents where appropriate.</p> <p>VW also mentioned need for approval from highways, MM confirmed that the project team are talking with Steven Flynn (highways Department) from a wider highways perspective.</p> <p>HC queried if inspection chambers are required along the route – and asked if so, for these not to be located on the highway. JO outlined that ‘pillars’ or ‘link boxes’ will be put at the back of verge where required. Preliminarily</p>	

	<p>preferred locations identified however would be confirmed by contractor post application prior to works.</p> <p>Management of overland flow and groundwater further discussed in 'item7'.</p>	
<p>4.3</p>	<p>Anticipated watercourse crossings:</p> <p>JW outlined that watercourse crossings would be either:</p> <ul style="list-style-type: none"> <li>• Open trenching within carriageway, where: <ul style="list-style-type: none"> <li>○ Trenching is expected to remain within the carriageway build up. Within the RLB watercourses pass under the carriageway in a structure (e.g. culvert/ sewer/ or under bridge)</li> <li>○ In these instances, the watercourse structure would not be stopped up and conveyance would not be impacted</li> </ul> </li> <li>• Horizontal directional drilling (HDD) is proposed where the anticipated cable route/ trench cannot be kept within a carriageway and where it is required to pass across an open section of watercourse. <ul style="list-style-type: none"> <li>○ HDD would pass under the watercourse and again not impact upon the watercourses conveyance</li> </ul> </li> </ul> <p>LL highlighted that EA prefer HDD where crossing an open watercourse but would discuss / consider open trenching if there was appropriate justifications.</p>	
<p>4.4</p>	<p>JW provides high level overview of the specific watercourse crossing.</p> <p>Each crossing to be detailed in technical note, which is to be distributed for comment when available. High level summary of crossings discussed below</p> <p>Soake Farm Main Rivers</p> <ul style="list-style-type: none"> <li>• North tributary - routing to the east, watercourse not expected to be crossed.</li> <li>• East trib – HDD under watercourse – no impact to the flood risk environment</li> </ul> <p>Hambledon Road – multiple watercourses</p> <ul style="list-style-type: none"> <li>• Watercourses all culverted under carriageway and trenching is expected to be within the carriageway build-up.</li> <li>• Watercourses are mapped to west, but nothing identified to the east of the carriageway. Nothing visible from site visit. The watercourses are assumed to start at west of carriageway or to be in a culvert under carriageway.</li> </ul> <p>Waterlooville</p> <ul style="list-style-type: none"> <li>• watercourse under carriageway, same principles as above</li> <li>• HC mentioned that when the Sainsbury's (PO6 1RR) was built they identified a watercourse.</li> </ul> <p>Farlington Marsh</p>	<p>JW to distribute watercourse technical note once available</p>

	<ul style="list-style-type: none"> <li>• Scheme runs parallel to railway line (from north to south) before turning at right angle to track the edge of playing fields (from west to east) – doesn't enter marshes.</li> <li>• Micro-tunnelling under ordinary watercourse that is a tributary of Farlington Marsh – no impact to the flood risk environment.</li> <li>• Micro-tunnelling – 1200mm steel pipe pushed through under the railway and Ordinary Watercourse.</li> </ul> <p>Broom channel</p> <ul style="list-style-type: none"> <li>• Largest HDD crossing.</li> <li>• Will take approximately 31 weeks.</li> <li>• HDD from Kendalls wharf to Farlington Playing Fields.</li> <li>• HDD reduces the risk to the flood risk environment</li> </ul> <p>Great Salterns Lake</p> <ul style="list-style-type: none"> <li>• Collects a third of cities surface water, pumped discharge to Langstone Harbour. Critical for the pumped outfall to remain operational at all times</li> <li>• Expected that the open trench will pass over the pumped outfall pipe within the carriageway buildup.</li> </ul>	
<p>4.5</p>	<p>JW outlined that it is not proposed to provide any detailed information of watercourse crossings as part of the application and that the detailed design and specific methodology of crossing the watercourses would build upon the principles above. Specific construction methodologies would be developed by the contractor and relevant consents and permits would be obtained prior to any works where required (e.g. flood risk activity permit, ordinary watercourse consent). However, the type of works proposed are considered to be 'standard activities' usually undertaken within a highway.</p> <p>AR and SB stated EA support this approach in principle, and added that the more detail that can be provided the better, i.e. need to see works methodology of each crossing.</p> <p>JW stated that we can't define specifics at ES/DCO (Development Consent Order) stage as contractor not on board yet. It is proposed to define general terms/principles at a high level for crossing both Main Rivers and Ordinary Watercourses. Further detail to be set by contractor when consents applied for. It is expected that each crossing over watercourses would not impact on conveyance or watercourse water quality as works will not be within the watercourses in any location. JO added that contractor would likely confirm not touching culverts etc. but would adhere to the high-level guidance set out in the DCO. Furthermore, if limited information is available up front (e.g. culvert depths under carriageway), contractor would do trial pits to determine depths prior to works and may tailor their proposed construction methodology to those specific watercourse constraints.</p> <p>HC, VW, AR, LL supported this approach in principle.</p>	

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<p><b>4.6</b></p>	<p>Request for information:</p> <p>JW asked for any drawing information of the watercourse structures passing under or through the RLB to be passed across to WSP to help inform and develop and understanding for the site-specific depth to the watercourse structures under the carriageway surface to inform the design development.</p> <p>JW requested for attendees to notify the team if they are aware of any other watercourse that have not currently been picked up.</p> <p>HC, VW, AR, LL advised they would share any additional information where available.</p> <p>HC mentioned a balancing pond (council asset) just north of Kendalls Wharf that collects a lot of highway drainage. HC to detail location on constraints plan when distributed.</p>	<p>EA/PCC/HCC to provide any information they have on depth of soffit underneath the carriageway and provide any information on watercourses not yet identified by WSP</p>
<p><b>4.7</b></p>	<p>HC raised concern on groundwater levels in location of Farlington March HDD and risk of groundwater emergence within the HDD pits.</p> <p>JO outlined that the pits will be 10 x 10 m and will need to be keep relatively dry therefore is expected to require some form of groundwater management (temporary dewatering or coffer damming), design option not currently developed, as appropriate information is developed to support the application ,WSP to share information for comment with PCC LLFA.</p>	<p>WSP to share applicable HDD information.</p>
<p><b>5</b></p>	<p><b>Works in flood zone 2 and 3</b></p>	
<p><b>5.1</b></p>	<p><b>Fluvial flood risk</b></p> <p>JW outlined that works within the fluvial flood zone 2 and 3 are mainly within carriageway, temporary storage and backfill the same day. Flood Risk Activities permit may be needed, or exemption obtained.</p> <p>JW stated that standard principles to be defined as part of the ES, which are likely to include; no significant structure within flood plain, rolling construction work, flood warning/ evacuation plan to halt works if immediate risk of flooding.</p> <p>LL asked where temporary storage would be and what it would be. JW advised that there is limited storage anticipated as part of the cable installation and temporary structures are not anticipated within the fluvial flood plain other than the rolling trench installation. The inland HDD locations are not within the fluvial flood plain.</p> <p>Joint bays will be located outside of fluvial flood plain where feasible, however if this is not feasible due to other constraints, during construction any works in the flood plain would be subject to approval of a flood risk activities permit or exemption.</p> <p>LL queried if bunds would be created from spoil material. JO outlined that the only permanent bunds would be at the converter station and temporary bunding of spoil along the cable route are not anticipated.</p> <p>If the contractor decides to use temporary bunds to protect the trench or construction works, these would be in small localised areas, not kms long.</p>	

	AR, LL supported this approach in principle.	
<b>5.2</b>	<p><b>Tidal flood risk</b></p> <p>Cable trenching in road or verges. Similar principles as fluvial, no additional provisions proposed within the tidal environment.</p> <p>HC stated that the RLB is elevated along the carriageway and would not expect any additional provisions against the risk of tidal flooding as this is an extreme scenario.</p> <p>JW outlined that the HDDs in the tidal flood zone 2 and 3 are expected to have site compounds set up for a number of months. The detailed design of the HDDs are proposed to be developed post application and any specific provisions to protect the HDD construction works from the tidal flood risk will be developed by the contractor prior to works, if required. EA want to see emergency contact (and PCC), JW stated this would all be included as part of flood risk activities permit or exception prior to works.</p> <p>HDD at Farlington, low ground and tidal levels, site compound, principles of infrastructure. However, the motorway embankment would block tidal flooding so minimal risk here.</p> <p>EA asked if winter months can be voided – JO outlined that a 31 week programme is anticipated at Farlington Marshes therefore would be difficult to avoid.</p> <p>AR, LL supported this overall approach in principle</p>	
<b>5.3</b>	<p>EA mentioned risk assessment for each watercourse. JW mentioned not completing at this stage as there is a need for this to be contractor led but will provide high level principles where possible at this stage as part of the ES.</p> <p>AR, LL supported this approach in principle</p>	
<b>6</b>	<b>Cable route – Flood defences</b>	
<b>6.1</b>	<p>JW/AH summarised previous discussions with ESCP and that they are still on-going in relation to the works adjacent to the coastal flood defences. General principles include:</p> <ul style="list-style-type: none"> <li>• It is proposed to either stay to the landward side of the defences, or where there is a pinch point and it is not possible to avoid the new defences alignment it is proposed to consider installing ducts through the proposed defence works.</li> <li>• Potential need to cross under the high ground bund in Milton Common – on-going discussion with ESCP with proposed cable route through/ around Milton Common</li> </ul> <p>JW asked if Flood Risk Activity Permit sits with the EA or with ESCP for the coastal flood defences. LL and AR confirmed that a flood risk activities permit from the EA would be required, for any works in close proximity to the coastal flood defence through the EA.</p>	
<b>7</b>	<b>Overland flow and flooding</b>	



<p><b>7.1</b></p>	<p>Re-capping on previous discussions throughout the workshop.</p> <p>Dewatering pumps, overpumping and potential diversions are expected to be methods used by contractors to manage any groundwater emergency or overland flow routes that are impacted by the works during construction with appropriate management of water quality through filtration members.</p> <p>Key considerations on groundwater dewatering is required as shallow groundwater is likely to be expected in some locations throughout cable route. As part of the ES it is proposed to identify the key 'hot spots' based on groundwater data and local ground conditions and leave flexibility for the contractor to specify any specific measures to manage the risk.</p> <p>Principle methods of management to be developed for hotspot locations where feasible at the ES stage, however the specific construction methodology and pollution prevention measures would be developed by the contractor post planning subject to relevant consents where required. The EA will not be able to give further advice on Flood Risk Activity Permits unless the methodology of works has been provided.</p> <p>HC, VW, AR, LL supported this approach in principle</p> <p>HC outlined that the key consideration for PCC is to ensure works protect the environment and the Council assets. HC also stated he would have particular interest in how groundwater will be managed where shallow groundwater levels are expected – however understanding that contractor not currently able to provide detailed specific methodology.</p> <p>JW summarised that some form of provision is anticipated to manage groundwater in HDD pits and in some open trenching. If dewatering is proposed, specific measures will be required to ensure that discharged water will not increase the risk of flooding off-site. HC stated he would like to see this. JW recommended that as part of the application the ES would set out principles for the management however the specific measures taken forward at each location would be contractor led and developed post planning through a permit, as required, where the relevant authorities would be consulted including the authority for where discharge is proposed (e.g. highway drainage, public sewer, Main River or Ordinary Watercourse). HC, VW, AR, LL supported this approach in principle</p>	
<p><b>8</b></p>	<p><b>Any other Business</b></p>	
<p><b>8.1</b></p>	<p>VW asked to be sent minutes of meeting held on 18<sup>th</sup> July along with technical note of watercourse crossings.</p> <p>LR and HC also asked for technical note.</p> <p>JW to provide technical note once available.</p>	
<p><b>8.2</b></p>	<p>VW asked how communication is being held with local residents and if any contact with the local flood action groups has been undertaken.</p> <p>Recommended to contact HCCs Emergency Planning Department to get the names of all the local groups. (e.g. Denmead and Hambledon both have active local flood action groups).</p>	



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	<p>Opportunity to inform groups and reassure locals through these local flood action groups that consideration of flood risk issues is being undertaken.</p>	
<b>8.3</b>	<p>AR asked if it would be proposed to disapply any consents. AH stated decision has not been made. JW added that it is not expected to disapply consents and permits in relation to the flood risk environment as specific details required for these permits are expected to be developed by the contractor post application and prior to works.</p> <p>Potential to disapply in some specific areas, but maintain on others where significant further detail (e.g. contractors detailed method statement) would be required.</p> <p>AH stated statement of common ground to be set out by each watercourse.</p>	
<b>8.4</b>	<p>HC noted a watercourse might have been missed, although underground now and not confirmed, to the west of Milton Common. Known issue of flooding in the Tamworth Park area, however the exact cause of flooding is unknown. Expected that the flooding is linked to groundwater, however source not fully understood.</p>	
<b>8.5</b>	<p>JB asked about impact on community and local roads. JO outlined that it is proposed to close one lane at a time to limit the impact on the highway network and that a traffic assessment is being undertaken in consultation with the highways authorities.</p>	

## NEXT MEETING

Placeholder for 23<sup>rd</sup> August 2019 if required.

