

<p>OMEGA ZONE 8 Application No, P/2020/0061/HYBR Response to Lead Local Flood Authority letter (ref: LLFAC/P/2020/0061/HYBR/001) dated 17th February 2020</p>	
LLFA comment	WSP response
Initial consultation with Environment Agency is required prior to layout planning to determine the acceptability of realignment proposals for Whittle Brook.	A Stage 1 WFD has been undertaken as part of the planning submission and issued to the Environment Agency for comment.
Environment Agency permit will be required for any discharge to Main River. Further to this, Environment Agency could have additional requirements for water quality and erosion protection. Developer has not included detailed design of control structures for Unit 1.	Agreed this is stated in the Drainage strategy section of the Water Chapter. The details for discharge point from Unit 1 will be developed as part of the tender design process. Permits for connections in to the main river will be applied for to the Environment Agency.
Unit 1 attenuation features appear to be close to the M62, has the developer undertaken pre-application discussions with Highways England to confirm the acceptability of this?	A Statement of Intent (SOI) relating to the construction of the Unit 1 attenuation feature has been prepared and submitted to Highways England. Feedback is awaited from Highways England.
It is assumed that there has been stakeholder liaison to confirm the 10 metre easement associated with the ethylene pipeline in Unit 1 plans. Developer has not provided details on suitability of the connection/crossing of the pipeline (i.e. within easement). Confirm any loading and easement requirements for construction, operation and maintenance of the SuDS	The pipeline operator/owners have been consulted in detail in relation to the proposed pond layout, crossing point and new site levels. The development's finished levels are set so as to provide the minimum clearances and ground cover to pipeline requested by its operators, to ensure it remains unaffected by development. The shallowest section of pipe is in the north of the site, the depth deepens as the pipe line runs southward and appears to pass beneath the invert of the Whittle Brook in the south.
It is noted that attenuation ponds are designed to be 1.5m deep (1m to Top Water Level). Micro Drainage results prove that the design is appropriate in principle, however, outfall interaction with normal river levels has not been considered. Further to this, confirm that basin invert depths have been checked against groundwater levels	Basin depths have been checked against ground water levels determined during the site investigation works. As the surface water outfall is pumped this will be above the 1 in 100 plus 40% climate change river level.
A plan defining access for maintenance of SuDS features including ramps and possible overflows would be beneficial to address LLFA concerns as defined in LLFA response to EIA Scoping Request. Confirm maintenance strategy for the ponds and tank?	A maintenance strategy for the basin's will be developed as the tender design progresses.
Infiltration testing must be carried out, minimum of BRE Digest 365 in order to appropriately discount infiltration as a means of surface water disposal.	Desk studies and the current GIR results suggest that infiltration will not be viable on site due to the presence of clays. However, it has been agreed with the LLFA to undertake rise and fall tests in existing SI boreholes to determine any suitability for infiltration. This form of

	testing avoids intrusive investigations being undertaken across the farmer's working land.
<p>Following EA consultation on river realignment, Warrington Borough Council should be consulted regarding the proposed realignment of Whittle Brook and any implications for downstream flood risk. United Utilities at Lingley Mere should be consulted regarding alterations to watercourses at the site - watercourses may drain or provide water to the Lingley Mere Estate.</p>	<p>The Whittle Brook diversion will be designed by means of an iterative approach, whereby a given proposed channel design will be assessed for both flood risk and habitat functionality using a suite of hydraulic modelling and detailed analysis – the design will be altered where required in order to satisfy all objectives. The design will also ensure that no increase in downstream flood risk would occur as a result of the diversion. Moreover, a degree of flow attenuation would be sought (if possible) in order to comply with the WFD mitigation measures set out for the Whittle Brook (Mersey Estuary) WFD water body. Both Warrington Borough Council and United Utilities would be involved in the consultation process.</p>
<p>Drainage Strategy Section 5.4.1 denotes a 225m swale in Unit 1, however, Section 5.5.4 refers to a 300m swale. Further to this, Section 5.6.1 - 6.06 l/s/ha contradicts 5.81 stated in FRA. It is noted that the large westerly attenuation pond will have standing water for wildlife/ecology benefit, however, permanent water levels have not been confirmed.</p>	<p>225m is correct and is reflected on the planning drawings. 5.5.4 will be updated to reflect the drawings. For the greenfield runoff rate, the FRA and outline site used 5.8 l/s/ha based on FEH catchment descriptors for the whole catchment (area 74.112ha). Unit 1 calculations use 6.06 l/s/ha which is specific to the smaller Unit 1 site area (18.96ha).</p>
<p>Developer has not provided information regarding detailed design of control structures, permanent water levels, suitability of the connection/crossing of the ethylene pipe (i.e. within easement).</p>	<p>The surface water control structure is a pump station and the general parameters are within the Micro Drainage calculations. The landscape architect is looking at having some permanent water in the ponds but this would be below the attenuation invert level requirements. The proposed details for crossing the ethylene pipeline have been discussed with the operator and they have provided their requirements.</p>