PEIR Chapter 13 Notes – Road Drainage and the Water Environment

Identified Issue(s):

- Compliance with the *Water Environment (Water Framework Directive) (England and Wales) Regulations 2017* due to inadequate assessment of road drainage discharge impacts on physically connected watercourses.

- Compliance with National Highways internal procedures for evaluating water risk assessment resulting from highways schemes (HEWRAT)

It appears that complete and adequate risk assessment for flooding and pollution have not been undertaken with sufficient rigour at the western extent of the scheme at LID_AQ101 and downstream water bodies.

Therefore, potential challenge arises from the statement given in **Paragraph 13.5.32 – '….*A discharge of attenuated drainage from the Scheme to the tributary (LID-AQ1010) would be required'*.** The drainage channel identified as taking future operational road drainage is the existing watercourse identified as LID_AQ101 that rises in 'Ashbeds' north of the existing A27 and runs south adjacent to Fordingbridge Engineering (Figure 1)

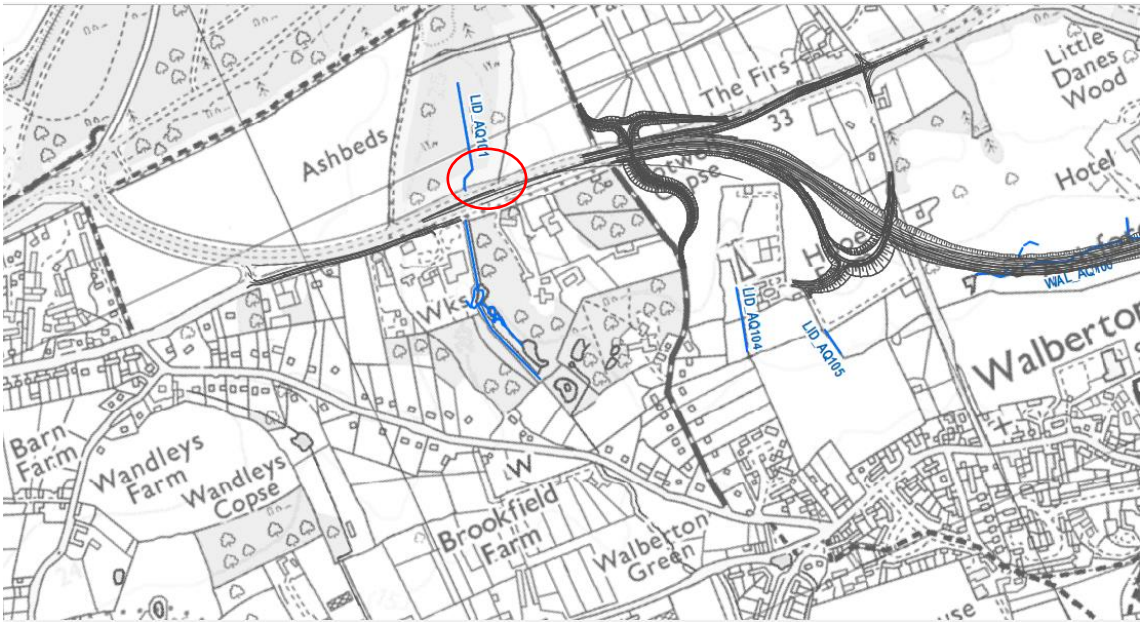

Figure 1: Grey Route Drainage to LID_AQ101

This watercourse is described in 13.5.16 as a tributary of Lidsey Rife. However, the route of the stream to Lidsey Rife is a convoluted pathway that runs south from the proposed point of discharge, through Hazel Plantation before crossing beneath West Walberton Lane. This channel then flows south to Eastergate Lane before splitting into separate channels. One of the channels feeds Walberton Pond. A viable connectivity pathway is therefore present between the proposed discharge point and Walberton Pond.

PEIR Volume 4c, Table 13-A-6, identifies those water bodies within scope for flood and pollution assessment following an NH WFD screening assessment. Walberton Pond (Figure 2), for which there is connectivity with LID_AQ101, is not listed in Table 13.1 on page 13-12 of Volume 2b nor in Paragraph

13.5.40 as a water body *'…likely to have hydraulic connectivity to watercourses or aquifers intercepted by the Scheme'.*

It does not therefore appear that flood risk and pollution assessments have been adequately undertaken for all water bodies downstream of the LID_AQ101 discharge point that have potential to be impacted by the scheme.

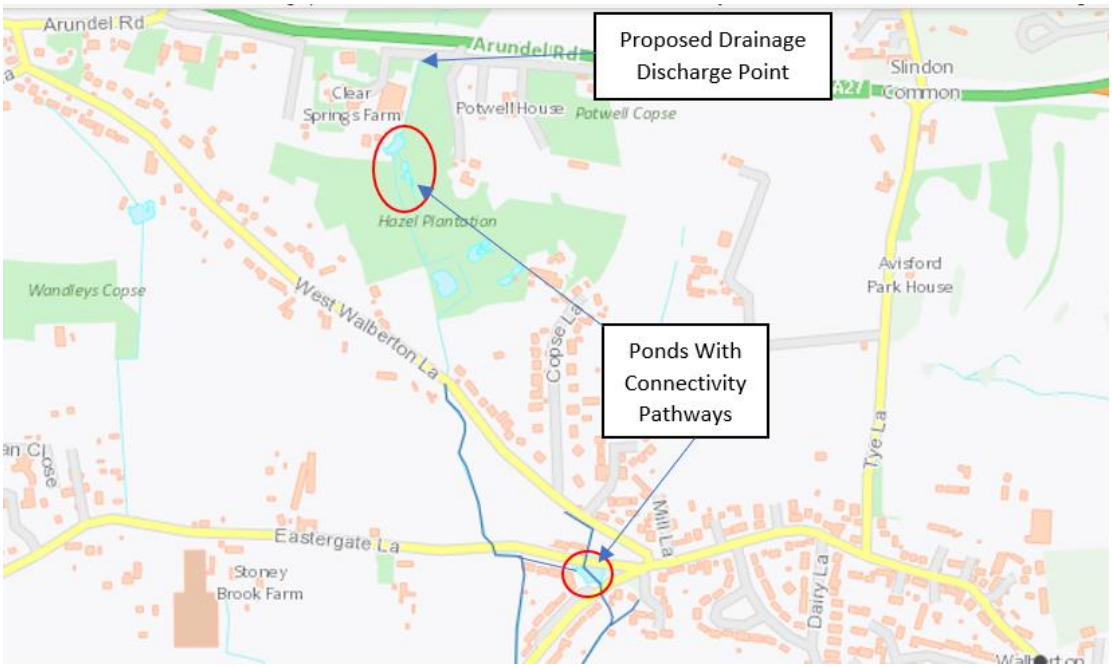

Figure 2: Walberton Pond Not Identified by NH as Potentially Impacted by Discharges

Section 13.6 sets out those waterbodies that will be affected by the scheme during construction and operation. Several of the ponds located within Hazel Plantation do not appear in the list given in Paragraph 13.6.8 of affected water bodies despite an acknowledged connectivity with LID_AQ101. Walberton Pond is also absent. Section 13.6.20 identifies LID-AQ101 along with the potential impacts that may arise without mitigation. No specific mitigation has been specified for LID_AQ101 nor those connected water bodies as shown in section *13.7 - Design, mitigation and enhancement measures.*

Although the statement given in Paragraph 13.5.32 states that the discharge to LID_AQ101 will be attenuated, there is no attenuation pond illustrated in the PLEM at the discharge location (Figure 3). It should however be noted that wording in the PLEM Table 13-A-8, Page 362, states that *'Treatment and attenuation to be provided by ponds, swales and oversized pipes'.* However, details are not provided and attenuation does not fully address pollution risk. It is therefore not clear at this stage that the ponds at Hazel Plantation and Walberton will be safeguarded as it does not appear that they have been adequately assessed in this regard.

It is not clear that the proposed attenuation ponds identfied in Paragraph 13.8.7 and illustrated in PEIR_Volume_3_Figure_2_1 (Preliminary Landscape and Environmental Masterplan (PLEM)) will have a role in preventing downstream impacts from road drainage discharges to LID_AQ101 and connected streams/ponds. Given the geomorphology of the western extent of the scheme, is does not appear feasible that discharges to LID_AQ101 can be attenuated by the proposed ponds set out in the PLEM. This is due to land gradients and flow direction being to the southwest and therefore away from the proposed attenuation ponds. Attenutaion via the currently proposed ponds would require a system

of pumping stations and associated pipework to achieve. To date, pumping stations and pipework have not been presented as a scheme requirement.

There is therefore potential non-compliance with NH's internal safeguarding procedures and methods: Section 2.7 of the Highways England Water Risk Assessment Tool (HEWRAT) Design Method for Roads and Bridges (DMRB) LA113: ***2.7 – 'Road drainage shall not be discharged into lakes, ponds, canals or reservoirs unless a site-specific risk assessment demonstrates that this would represent no or minimal risk to the water quality of the lake, pond, canal or reservoir.'***

Paragraph 13.7.1 states that '*Water environment, drainage and flood risk constraints have been taken into account during the development of the Scheme design, taking opportunities to avoid and reduce potential impacts where these have been identified for specific receptors as set out in Paragraph 13.6*'.

It is concluded from the above statement that streams and channels connected to LID_AQ101, which includes the ponds at Hazel Plantation and Walberton, have not been adequately taken into account as they are not listed in paragraph 13.6.

This therefore has the potential to result in the scheme being non-compliant with the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (WFD) without additional detailed assessment and mitigation plans being developed. The conclusion given in Paragraph 13.8.9 that '*no likely significant adverse effects associated with the water environment, flood risk and road drainage are anticipated',* has the potential to be flawed if the above observations are shown to be valid and correct.

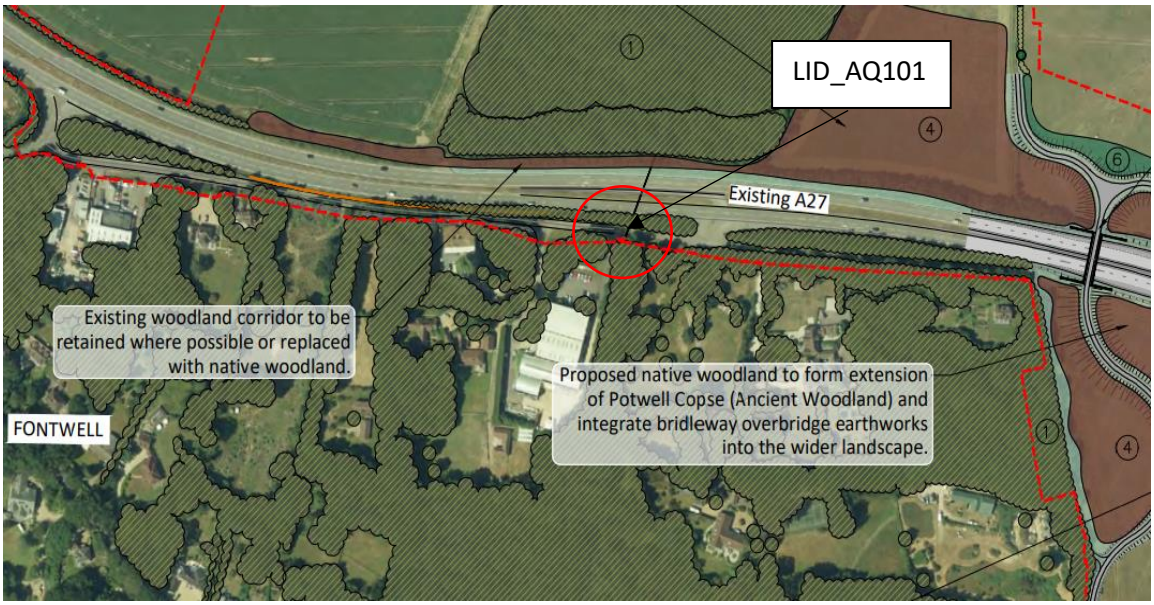

Figure 3: Location of Proposed Drainage Discharge to LID_AQ101 without Indication of Attenuation Pond Provision