

M54 to M6 Link Road

TR010054

**8.8 P(A) Draft Statement of Common
Ground with Environment Agency**

APFP Regulation 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

Volume 8

January 2021

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms and
Procedure) Regulations 2009**

M54 to M6 Link Road
Development Consent Order 202[]

**8.8 P(A) Draft Statement of Common Ground with
Environment Agency**

Regulation Number	Regulation 5(2)(q)
Planning Inspectorate Scheme Reference	TR010054
Application Document Reference	8.8 P(A)
Author	M54 to M6 Link Road Project Team and Highways England

Version	Date	Status of Version
4 (P06)	8 January 2021	Issue to the ExA at Deadline 4

STATEMENT OF COMMON GROUND

This Statement of Common Ground has been prepared and agreed by (1) Highways England Company Limited and (2) Environment Agency.

Signed.....
Andrew Kelly
Project Manager
on behalf of Highways England
Date: [DATE]

Signed.....
[NAME]
[POSITION]
on behalf of Environment Agency
Date: [DATE]

Table of contents

Chapter	Pages
1 Introduction	1
1.1 Purpose of this document.....	1
1.2 Parties to this Statement of Common Ground	1
1.3 Terminology	2
2 Record of Engagement	3
3 Issues	11
3.1 Introduction and General Matters	11
3.2 Issues related to the Environmental Statement (ES).....	12
3.3 Issues related to other documents	55

List of Tables

Table 2.1: Record of Engagement	3
Table 3.1: Issues Related to the Environmental Statement	12
Table 3.2: Issues Related to Other Relevant Documents	55

List of Figures

Figure 1: Proposed watercourses

List of Appendices

Appendix A: Initials and details of individuals involved.

Appendix B: Further analysis to support the Applicant's response

1 Introduction

1.1 Purpose of this document

- 1.1.1 This Statement of Common Ground ('SoCG') has been prepared in respect of an application for a Development Consent Order ('the Application') under section 37 of the Planning Act 2008 ('PA 2008') for the proposed M54 to M6 Link Road ('the Scheme') made by Highways England Company Limited ('Highways England') to the Secretary of State for Transport ('Secretary of State').
- 1.1.2 This SoCG does not seek to replicate information which is available elsewhere within the Application documents. All documents are available on the Planning Inspectorate website.
- 1.1.3 This SoCG has been produced to confirm to the Examining Authority where agreement has been reached between the parties to it, and where agreement has not (yet) been reached. SoCGs are an established means in the planning process of allowing all parties to identify and so focus on specific issues that may need to be addressed during the examination.
- 1.1.4 **This SoCG has been drafted by Highways England based on correspondence with the Environment Agency during the development of the Scheme and records Highways England's current understanding of the matters agreed and not agreed.**
- 1.1.5 **The first draft of this SoCG was provided to the Environment Agency on 27 March 2020. On 24 June 2020 the Environment Agency confirmed that they did not require any amendments to the SoCG. A revised SoCG was issued to the Environment Agency on 24 August to account for matters that have evolved since March 2020. Comments were received on 3 September and 16 September 2020. A revised draft was provided to the Environment Agency on 30 October 2020 to address comments received, a virtual meeting was held on 19 November to discuss those issues which remained outstanding. A revised draft was submitted to the Environment Agency on 22 December 2020 but has not yet been approved by the Environment Agency. Highways England will continue to work to finalise the contents of this SoCG at the earliest opportunity as the Application proceeds through the Examination process.**

1.2 Parties to this Statement of Common Ground

- 1.2.1 This SoCG has been prepared by (1) Highways England as the Applicant and (2) Environment Agency (also referred to as 'EA' in this SoCG).
- 1.2.2 Highways England became the Government-owned Strategic Highways Company on 1 April 2015. It is the highway authority in England for the strategic road network and has the necessary powers and duties to operate, manage, maintain and enhance the network. Regulatory powers remain with the Secretary of State. The legislation establishing Highways England made provision for all legal rights and obligations of the Highways Agency, including in respect of the Application, to be conferred upon or assumed by Highways England.

1.2.3 The Environment Agency is an executive non-departmental public body, sponsored by the Department for Environment, Food and Rural Affairs with the stated purpose “*to protect or enhance the environment, taken as a whole*”. Within England it is responsible for:

- regulating major industry and waste;
- treatment of contaminated land;
- water quality and resources;
- fisheries;
- some inland river, estuary and harbour navigations;
- conservation and ecology; and
- managing the risk of flooding from main rivers, reservoirs, estuaries and the sea.

1.3 Terminology

1.3.1 In the tables in the Issues chapter of this SoCG, ‘Not Agreed’ indicates a final position. ‘Under discussion’ indicates where these points will be the subject of ongoing discussion wherever possible to resolve, or refine, the extent of disagreement between the parties. ‘Agreed’ indicates where the issue has been resolved.

1.3.2 It can be taken that any matters not specifically referred to in the Issues chapter of this SoCG are not of material interest or relevance to the Environment Agency, and therefore have not been the subject of any discussions between the parties. As such, those matters can be read as agreed, only to the extent that they are either not of material interest or relevance to the Environment Agency.

2 Record of Engagement

2.1.1 A summary of the meetings and correspondence that has taken place between Highways England and the Environment Agency in relation to the Application is outlined in Table 2.1. A list of the initials, names, role and organisation of the people mentioned in the Table is included at Appendix A.

Table 2.1: Record of Engagement

Date	Form of correspondence	Key topics discussed and key outcomes
31/01/2019	Email from TP (AECOM) to General Enquiries (EA)	Advising of Scheme, providing details and requesting to set up for discretionary advice service.
11/02/19	Letter from JF (EA) to GB (Planning Inspectorate)	Scoping response re Scoping Opinion sought on 14/01/2019 requesting hydraulic assessment, a detailed FRA, WFDa, a waste management plan and highlighting need for a Flood Risk Activity Permit.
14/02/2019	Email from JF (EA) to TP (AECOM)	Attaching scoping response and responding to request in email of 31/01/2019.
05/03/2019 – 02/05/2019	Emails (Multiple)	Multiple e-mails between TP & JF setting up discretionary advice service and initial meeting.
09/05/19	Initial meeting with JF, IC, SBal, RB, KH, PB, (EA), TB (Amey), DL, AS, HH, DH, DT, OT, SB, Sba (AECOM)	<p>EA representatives included: Planning Specialist, Flood Risk, Groundwater and Contaminated Land, Biodiversity. Discussed flood risk, drainage design, groundwater and contaminated land and water quality.</p> <p>Ongoing flood modelling discussed, and agreement on the percentage of climate change to be used during the modelling.</p> <p>Drainage design presented that flows will be attenuated through attenuation ponds, sized for 100 year ply 40% climate change flows. EA unaware of further constraints in the area.</p> <p>The outline of the ground investigation which will start in June was presented. Agreed know constraints of historic landfill located near J11 M6, west of A460.</p> <p>Water quality monitoring was outlined, with the data being used to inform the assessment and the HAWRAT calculations.</p> <p>EA stated that shallow and deeper aquifer in the area, and avoidance of contamination would be needed during construction. AECOM stated that this risk would be managed by the use of CEMP during construction.</p> <p>Regarding permits, EA stated that it is a two-month time period for determination of consents. Dewatering will need</p>

Date	Form of correspondence	Key topics discussed and key outcomes
		to be permitted. Consideration of whether permits can be included in DCO application.
17/05/19	Email from JF (EA) to (AECOM)	Confirmation that an allowance for the 50% climate change flood event should be accounted for when considering fluvial flood risk.
23/05/2019	Email from TP (AECOM) to JF (EA)	Attaching minutes of meeting on 09/05/19 and PPT presentation. Agreement to EA's suggested scope summary subject to minor amendments. Advising of and inviting JF to initial meeting with Staffordshire County Council (SCC) as Lead Local Flood Authority (LLFA).
24/05/19 to 05/06/19	Letter sent to EA by Highways England in relation to section 42(1)(d) and 44 of the PA 2008.	Letter sent to EA to inform them of statutory consultation period in relation to the Scheme.
04/06/2019	Email from TP (AECOM) to JF (EA)	Attaching form for payment for discretionary advice. Enquiring whether EA received S42 consultation brochure.
14/06/2019	Email from TP (AECOM) to JF (EA)	Asking that EA review a draft of WFDa and asking for comments on previous minutes.
05/07/19	Email from JF (EA) to AK (HE)	Section 42 consultation comments on the Preliminary Environmental Information Report.
18/07/19	Meeting with JF, KH, KY (EA), HH, Sba, DH, AB, TP, AS (AECOM)	<p>The FRA progress was presented, with the drainage design on a watercourse by watercourse basis. All the watercourses were scoped in from a WFD perspective.</p> <p>Watercourse 1 – no impact to culvert.</p> <p>Watercourse 2 – noted that the approximately 180m long culvert was not desirable and should be minimised but permitting authority is LLFA (SCC) and not the EA.</p> <p>Watercourse 3 – a 2m weir is proposed to maintain water levels within the Lower Pool and Hilton Hall Ponds. There is historically a weir structure here for that purpose. EA stated a weir is undesirable, but the permitting authority is LLFA (SCC) and not the EA.</p> <p>Watercourse 4 – loss of Brookfield Farm pond has no impact on flood risk, and pond is offline to the watercourse.</p> <p>Watercourse 5 – discussion on the design of the watercourse crossing. This would need to be consented by LLFA, so suggested a meeting with EA/LLFA SCC/AECOM required.</p> <p>Watercourse 6 & 7 – no concerns from flood risk.</p> <p>DH requested details on a borehole received in scoping report data request, but not later requests. Clarity sought.</p> <p>KY confirmed no EA permits would be required for any FZ3 works. All permits to come from LLFA (SCC).</p>

Date	Form of correspondence	Key topics discussed and key outcomes
26/07/2019	Email from AS (AECOM) to JF (EA)	Sending and agreeing dates for meeting with AECOM, EA and LLFA to discuss watercourse crossings. Requesting that EA hydromorphologist is present.
02/08/2019	Email from DH (AECOM) to KH, JF (EA)	Seeking agreement on scoping out Mill Ride Country Sports Fishery and former sand and gravel pits/ponds, Watercourse 8 and all Abstractions more than 2km from the Scheme boundary, and listed abstractions between 1km and 2km. Attaching abstraction information and setting out queries.
02/08/2019	Email from AS (AECOM) to JF (ES)	Attaching slides of watercourse crossings for discussion at meeting on 06/08/2019.
05/08/2019	Email from DH (AECOM) to JF (EA)	Re Timescales for receiving a response to abstraction query.
08/08/2019	Email from JF (EA) to DH (AECOM)	Response to above stating would try to resolve quickly.
06/08/2019	Meeting JF et al (EA), SL, CA (SCC), HH, Amc, TP, AS (AECOM) & HM (Tyler Grange)	Detailed update on watercourse crossing design proposals. SCC require model scenarios. Update on Ecology and provision for mammals resulting from watercourse changes. Update on Flood Risk.
08/08/2019	Email from JF (EA) & TP & AS (AECOM)	Requesting an update on scheme progress and when DCO will be submitted.
14/08/2019	Email from JF (EA) to AS (AECOM)	Attaching EA's comments on the watercourse crossing.
28/08/2019	Email from AS (AECOM) to JF (EA)	Sent meeting minutes and presentation slides from meetings 18/07/19 and 06/08/19 for comment.
02/09/2019	Email from DH (AECOM) to JF (EA)	Follow up requesting response to abstraction query mail of 08/08/2019.
09/09/2019	E-mail from Enquiries.Westmids@environment-agency.gov.uk to DH (AECOM)	EA confirm no objection to scoping out of issues as stated in e-mail DH to EA 02/08/2019, and do not require further consideration of these matters.
08/10/2019	Email from JF (EA) to AS/TP (AECOM)	Acknowledge receipt of minutes and requesting scheme update and when EA review of WDFa would be required.
04/11/2019	Email from AS(AECOM) to JF (EA)	Responding to request for an update and stating WDFa for EA review end November, DCO submission will be the end of January 2020.
11/11/2019 to 11/12/2019	Non-statutory Supplementary Consultation	Non-statutory consultation on the changes to the draft Order limits to ensure relevant stakeholders (including the EA) and those affected by the changes have an opportunity to make their views known. Changes included:

Date	Form of correspondence	Key topics discussed and key outcomes
		<p>Inclusion of the full length of the existing A460 between M54 Junction 1 and M6 Junction 11 in the draft order limits.</p> <p>Extension of the draft order limits to the south of the M54 to include Whitgreaves Wood.</p> <p>Change to the draft order limits in the area to the north of the M54 between Junctions 1 and 2.</p> <p>Removal of small areas that are no longer required.</p>
20/11/2019	Tel TP (AECOM) to EA Helpdesk	TP contacted EA helpdesk to obtain contact name of replacement of JF EA. Advisor from EA tried to contact KH EA and KY EA, not available. Provided contact e-mail of JF's line manager Jim.davies@environment-agency.gov.uk.
20/11/2019	Email from TP (AECOM) to JD (EA) and swmplanning@environment-agency.gov.uk	Attaching draft FRA and Hydraulic Model Report for review and requested comment by 11/12/2019.
20/11/2019	Email from swmplanning@environment-agency.gov.uk to TP (AECOM)	Auto response received from swmplanning@environment-agency.gov.uk stating EA would endeavour to respond to you within 21 days.
26/11/2019	Email from TP (AECOM) to JD (EA) and swmplanning@environment-agency.gov.uk	Attaching WFDa for review and requesting comment by 17/12/2019.
26/11/2019	Email from swmplanning@environment-agency.gov.uk to TP (AECOM)	Auto response received from swmplanning@environment-agency.gov.uk stating EA would endeavour to respond to you within 21 days.
06/12/19	HH (AECOM) to JD (EA).	Notification of posting of accompanying model for the M54-M6 FRA to the EA on memory stick to EA office Fradley, password to encryption provided.
12/12/19	Tel TP(AECOM) to EA helpdesk	Request contact with JD, or alternative contact within EA due to urgency of WFDa & FRA review. EA advisor confirmed will respond as soon as possible.
13/12/19	Tel, AMM (EA) to TP (AECOM).	Discussed urgency of EA review of FRA and WFDa to enable response to be captured in DCO application, requested review and discussion of a Groundwater Technical note via telecon as soon as possible. Confirmed new EA contact as PG available to discuss the following week.

Date	Form of correspondence	Key topics discussed and key outcomes
18/12/19	Tel, PG (EA) to TP (AECOM).	Discussed urgency of EA review of FRA and WFDa to enable response to be captured in DCO application and requested review and discussion of a Groundwater Technical note via telecon as soon as possible. Agreed TN to be provided by AECOM 19/12/19, PG stated EA specialists not available until after the holidays.
19/12/2019	Email from TP (AECOM) to PG (EA)	Attaching a Technical Note re groundwater levels during construction and operation. Requesting a conference call to discuss in Jan 2020. Requesting comments again on the FRA and WFD asap. Advising that a draft SoCG will be sent for EA comment in early 2020.
20/12/2019	Email from RB (EA) to TP (AECOM)	Confirming receipt of groundwater technical note, enquiring about the ground investigation and confirming availability for a conference call on the 07/01/20 or 09/01/20.
20/12/2019	Email from AS (AECOM) to PG & RB (EA)	Arranging a conference call on 07/01/20 to discuss Groundwater Technical Note.
07/01/2020	Email from TP (AECOM) to PG & RB (EA)	Stating that no one from EA had joined conference call and requesting confirmation of their satisfaction with the approach and conclusions to the Groundwater Technical Note. Also asking for any comments/questions on the FRA and WFDa.
21/02/20	E-mail TP (AECOM) to PG (EA).	E-mail to confirm called to discuss approach to ongoing consultation. Will call again next week.
26/02/20	Tel. TP (AECOM) to PG (EA)	Discussed approach to on-going consultation. PG stated EA generally happy with the scheme and would defer to LLFA on all matters, providing advice to LLFA if required. Agreed TP to send all communications to LLFA and EA jointly going forward and EA would liaise with LLFA.
27/03/20	Email TP (AECOM) to PG (EA) and CA (SCC)	Notification that the Scheme had been accepted for examination by the Planning Inspectorate. Responses to comments on draft FRA and WFDa and how these were addressed prior to submission of the draft DCO. These responses are provided in a draft SoCG. A four-week period for review of the draft SOCG was requested.
27/04/20	Email from TP (AECOM) to PG (EA) and CA (SCC)	Request review and comment on draft SoCG sent on 27/03/20. Notified CA and PG that HE is extending the relevant representations period until 18/05/20. TP requested early sight of relevant representations if possible.
24/06/20	Email from TP (AECOM) to PG (EA) and CA (SCC)	Request review and comment on the draft SoCG sent on 27/03/20. HE is looking to reach an agreement as far as possible prior to the examination. Offered to set up a conference call to discuss any areas where an agreement has yet to be reached with the relevant specialists.

Date	Form of correspondence	Key topics discussed and key outcomes
24/06/20	Email from PG (EA) to TP (AECOM)	Apologies for the delay in response. The EA does not require any amendments to the SoCG as produced.
03/08/20	Email from JF (EA) to TP (AECOM)	<p>Notification of return to work. Acknowledging that the ExA have requested an SoCG with the EA and enquiring on timescales for this and progress on this matter. The EA's hydromorphologist is currently looking at responses to matters raised to provide an update to the EA's position.</p> <p>The EA will be working with the LLFA where appropriate to respond to First Written Questions as the EA have delegated responsibility of flood risk matters to the LLFA.</p>
03/08/20	Email from TP (AECOM) to JF (EA)	<p>Forwarded latest correspondence with PG (EA) on the draft SoCG. Based on this last correspondence it was assumed the EA were in agreement with all issues. SoCG is currently being updated to reflect that and ensure that it covers all topics listed by the ExA. The SoCG will be reissued to the EA as soon as it has been reviewed.</p> <p>Informed the EA that a number of design changes are currently being considered. Application document 8.3, Notification of proposed scheme changes attached to the email. All topic assessments are being reviewed and a technical note will be prepared to outline any implications of these design changes for the Environmental Statement. A further consultation exercise will be undertaken prior to the start of examination.</p> <p>Confirm that there has been no confirmation of programme from the ExA yet though examination is anticipated to start in mid-October.</p>
21/08/20	Letter from HE to JF (EA)	Supplementary consultation letter sent.
24/08/20	Email from AS (AECOM) to JF (EA)	<p>Sent amended draft SoCG to EA for review following comments from PG.</p> <p>Advise the EA that the ExA have released draft timescales for the examination.</p> <p>Draw attention to the work undertaken following updates to the noise and air quality methodology.</p>
03/09/20	Email from JF (EA) to TP and AS (AECOM)	Comments on the draft SoCG in relation to Chapter 8: Biodiversity, Appendix 8.2: Biodiversity Metric Calculation, Appendix 13.4 WFD and Figure 13.1 which require ongoing discussion.
16/09/20	Email from JF (EA) to AS (AECOM)	Comments on the draft SoCG, matters relating to Chapter 9: Geology and Soils, Chapter 10: Material Assets and Waste, Chapter 13: Road Drainage and the Water Environment, Appendix 13.1: Flood Risk Assessment and Appendix 13.2: Drainage Strategy are agreed.

Date	Form of correspondence	Key topics discussed and key outcomes
		Matters relating to Chapter 8: Biodiversity, Appendix 13.4 WFD are under discussion. Advice provided with regards to consents and licences.
21/09/20	Email from JF (EA) to AK (HE)	EA have no objections to the changes to the scheme as detailed. The only point of note is that Change 7 proposes reducing the land required for environmental mitigation which is of concern because to date the scheme does not provide clear evidence of achieving no net loss to biodiversity and no details of it will achieve biodiversity net gain. It may be wise to keep this land included within the boundary to maximise opportunities available for mitigation / enhancement.
15/10/20	Email from JF (EA) to AS (AECOM)	Checking of status of updates to SoCG.
19/10/20	Email from AS (AECOM) to JF (EA)	Currently progressing updates to the SoCG. Requested contact details for colleague who provided comments on the WFD to allow us to clarify a number of points and ensure we fully understand the concerns raised. The SoCG will be submitted to the EA prior to Deadline 1 however we recognise that there would be limited time to review the updated SoCG and therefore a number of points will remain under discussion. Request virtual meeting to discuss response week ending 30 th October.
30/10/20	Email from AS (AECOM) to JF (EA)	Sent SoCG for review and comment.
30/10/20	Email from JF (EA) to AS (AECOM)	Acknowledge receipt of SoCG.
03/11/20	Email from JF (EA) to AS (AECOM)	Sent suggestion for amended text in Table 3.1 on the issue of the Flood Risk Assessment. These amendments relate to the responsibility of the LLFA and EA to comment on flood risk issues.
04/11/20	Email from AS (AECOM) to JF (EA)	SoCG as submitted to the ExA on 03 November 2020 sent for information. Request to set up a meeting to discuss any outstanding issues in the SoCG on 19 or 20 November.
10/11/20	Email from JF (EA) to AS (AECOM)	Propose meeting on 19 November
19/11/20	Virtual meeting JF, PB and SV (EA) and OT, NW, TP and AS (AECOM)	Meeting to discuss outstanding issues as set out in the SoCG. These relate to Biodiversity Net Gain, the impact and mitigation for the culverting of watercourses and the articles and requirements of the draft DCO. Two further issues agreed.

Date	Form of correspondence	Key topics discussed and key outcomes
07/12/20	Email from AS (AECOM) to JF (EA)	Sent meeting minutes, presentation slides and a copy of the document marked up during the meeting.

- 2.1.2 It is agreed that this is an accurate record of the key meetings and consultation undertaken between (1) Highways England and (2) Environment Agency in relation to the issues addressed in this SoCG.

DRAFT

3 Issues

3.1 Introduction and General Matters

- 3.1.1 This chapter sets out the ‘issues’ which are agreed, not agreed, or are under discussion between the Environment Agency and Highways England.
- 3.1.2 The progress note submitted by the Planning Inspectorate on the 20 July 2020 under Section 88 of the PA 2008 (as amended) and Rules 5 and 17 of the Infrastructure Planning (Examination Procedure) Rules 2010, sets out in Annex B the Examining Authority’s (ExA) ‘Initial Assessment of Principle Issues’. In Annex C the Planning Inspectorate sets out a list of SoCG that the ExA request Highways England to enter into with a number of parties including the Environment Agency.
- 3.1.3 The ExA requested the SoCG between the Environment Agency and Highways England to cover the following issues:
- Water environment effects, including abstraction and discharge.
 - Drainage including provision for containment and treatment /disposal of contaminated run-off.
 - Waste management issues, including permitting and formal exemption requirements, and the likelihood that any such requirements outside the DCO process may be obtained.
 - The dDCO provisions and requirements including future procedures for approval of details.

3.2 Issues related to the Environmental Statement (ES)

Table 3.1: Issues Related to the Environmental Statement

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
Appendix 8.2: Biodiversity Metric Calculation	-	Biodiversity Metric Calculation	<p>The biodiversity net gain assessment report doesn't include any details of river morph units. The Environment Agency do not agree that additional creation of hedgerow habitats is a suitable enhancement for the loss of watercourse habitats. Furthermore, the report concludes that the biodiversity units would be 4.99% in net loss, although this is considered as no overall net loss of the biodiversity. This should be clarified.</p> <p>Following discussions at the meeting held on the 19 November, the EA are content that biodiversity net gain has been calculated appropriately</p>	<p>A biodiversity metric calculation undertaken for the Application submitted in January 2020 was based on the method published by Defra in Biodiversity Offsetting Pilots Technical Paper: the metric for the biodiversity offsetting pilot in England (Defra, 2012), to determine effects of the Scheme. The original Scheme would result in a total of 1156.98 biodiversity units after works have been completed and new habitats have matured, compared to the 1218.79 biodiversity units before works have started. This is a difference of -61.81 units, or -4.99%. Version 2.0 of the Defra metric was not available at the time the landscape design was being developed and the impact assessment was being undertaken. This methodology provided an overall net losses/ gains figure and did not separate out area habitats, linear habitats and rivers.</p>	Agreed	Agreed	Agreed

¹ Indication on likelihood that the matter will be agreed by the close of the Examination period as rated by the Applicant (app) and the Interested Party (IP). Dark green = agreed, Light green = high likelihood of agreement, orange = medium likelihood of agreement, red = low likelihood of agreement. Inserted as one column here as most issues raised already agreed.

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP?¹	IP?
			and that no net loss has been achieved by the Scheme.	<p>Proposed changes to the Scheme formally submitted and adopted in October 2020 alter the impact of the Scheme on some existing habitats and allow for retention and restoration of selected areas. A re-calculation using Defra Metric 2.0 has been undertaken by the Applicant and submitted to the inspectorate as a revision of Appendix 8.2: Biodiversity Metric Calculations [AS-103/6.3] The Biodiversity Metric Calculations Version 3 (Appendix 8.2 [AS-103/6.3]) show that following completion of the Scheme, total biodiversity units would be marginally higher, with an area based gain of 2.21% of units, a linear based gain of 29.01% and a gain of 2.23% of river based units no loss or gain. The Scheme is within the range -5 % to +5 % for area based habitats (woodland, grassland etc.) which can be classed as no net loss in accordance with Table 11.9 of CIRIA C776a Good practice principles for development (Ref 8.47).</p> <p>Highways England are currently examining the categorisation of watercourses and ditches within our metric calculation based on the criteria set out in Defra Metric 2.0 guidance. As the surveys of these waterbodies were</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>undertaken prior to the release of Defra Metric 2.0 the detailed data requirements for the calculation are not currently available for all surface water features. However, the categorisation of surface water features within the biodiversity metric do not alter the conclusions of the assessment as reported in Chapter 8: Biodiversity, Chapter 13: Road Drainage and the Water Environment and Appendix 13.4: Water Framework Directive Assessment.</p> <p>It should be noted that Highways England's project team for the M54 to M6 link road has submitted an application for funding from the 'designated fund' for an initial feasibility study to identify opportunities and appropriate sites which could be improved to provide biodiversity net gains to be delivered on land outside of the Order limits in partnership with key stakeholders and landowners. This funding application has been successful, and the feasibility study is underway. However, this process is separate from the Application and its success or otherwise is not a material consideration for decision making on the Application.</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
Chapter 9: Geology and Soils [APP-048/6.1]	-	Geology and soils	Chapter 9 of the ES shows that site investigations and assessment over the summer of 2019 did not reveal much in terms of contaminated land or groundwater (other than some ubiquitous PAHs and metals), even though Made Ground was confirmed at various locations across the Scheme's footprint (especially at either end, as a result of previous M6 and M54 motorway construction and Hilton colliery) and groundwater was found at all locations monitored (albeit at various depths, see Table 9.12). We agree with the conceptual model set out, incl. likely sources, pathways and Controlled Water receptors and as such the resulting risk assessment as summarised in Section 9.6.38 seems appropriate, i.e. there appears to be negligible risk to identified receptors from organic contaminants and only a very low risk from metals including cadmium, chromium, copper, nickel and zinc, negating the	This is noted by Highways England. Mitigation measures related to Chapter 9: Geology and Soils are set out in the OEMP [APP-218/6.11], the delivery of which is a Requirement of the draft DCO.	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
			<p>need for further monitoring and/or remediation.</p> <p>Furthermore, the pollution mitigation measures to be incorporated in the design, construction and operation of the proposed Scheme as set out in Section 9.8 (and the OEMP) are all sound and based on good practice and regulation (e.g. the production of an earthworks strategy, pollution 'discovery' plan, materials management plan, piling risk assessment where needed, road drainage controls, water management plan etc).</p>				
Chapter 10: Material Assets and Waste [APP-049/6.1]	-	Material assets and waste	The EA is content that the Environmental Statement appropriately assesses the effect of the Scheme on material assets and waste and that impacts would be managed through adherence to mitigation measures detailed in the OEMP.	Delivery of the OEMP [APP-218/Volume 6.11] is a Requirement in the draft DCO.	Agreed	Agreed	Agreed
Chapter 13: Road Drainage and the	-	Road drainage and the water	The EA are content that the Environmental Statement appropriately assesses the effect of the Scheme on road drainage and the water	Delivery of the OEMP [APP-218/Volume 6.11] is a Requirement in the draft DCO.	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP?¹	IP?
Water Environment [APP-52/ 6.1]		environment	environment and that impacts would be managed through adherence to mitigation measures detailed in the OEMP.				
Appendix 13.1 Flood Risk Assessment [APP-200/ 6.3]		Flood risk	The EA is to provide comments on flooding with regards to the Latherford Brook only (Watercourse 5), as this has a mapped floodplain. We have no objection to the assessment of flood risk in relation to this watercourse, subject to the land acquisition agreement proposed within para 4.2.8 of the FRA going ahead. We will work with the LLFA where this would be beneficial.	Noted. The land referred to in para 4.2.8 affected by the change in floodplain is within the Scheme boundary (includes areas of plots 5/11i, 5/22 and 5/23 as shown on the Land Plans [AS-065/2.2]) and is to be purchased to allow other environmental mitigation and compensation measures to be implemented, including the woodland planting proposed to compensate for the impact on ancient woodland.	Agreed	Agreed	Agreed
Appendix 13.2 Drainage Strategy [APP201/ 6.3]	-	Drainage – discharge rates	The EA considers that the drainage strategy as reported in Appendix 13.2 of the ES, utilises an appropriate discharge rate.	The discharge rate was agreed with the LLFA in June 2019 and further discussed and agreed in a joint meeting with the LLFA and Environment Agency in July 2019. As reported in Appendix 13.2 [APP-201/ 6.3] a discharge rate of 5 l/s/ha has been agreed.	Agreed	Agreed	Agreed
Appendix 13.2 Drainage Strategy [APP-	-	Drainage – climate change allowance	The EA is content with the climate change allowance provided for attenuation features as outlined in the drainage	Attenuation within SuDS features has been provided to ensure no flooding in a 1 in 100 year + 40% climate change allowance return period event as	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP?¹	IP?
201/Volume 6.3]			strategy, Appendix 13.2 of the ES.	reported in the. Drainage Strategy, Appendix 13.2 of the ES [APP-201/ 6.3].			
Appendix 13.4: Water Framework Directive Assessment [APP-203/ 6.3].	Para 5.4.14	Mitigation measures	<p>The reports provided state that 'Within the constraints of the Scheme, mitigation for the loss of aquatic habitats includes provision of 12 new ecological mitigation ponds and a total of 408 m of watercourse habitat'. We were not able to find any documents detailing these enhancements.</p> <p>Following Highways England's response the EA will review information provided and will provide additional text to include here on the EA's position.</p>	<p>The measures described are embedded mitigation measures for the loss of ponds and impacts on watercourses as a result of the construction of the Scheme, not enhancement measures. These mitigation measures are outlined in Chapter 8: Biodiversity of the ES [APP-047/6.1], Chapter 13: Road Drainage and the Water Environment [APP-052/6.1] illustrated in Figures 2.1 to 2.7 of the ES [APP-057 to 063/6.2] and set out in the Outline Environmental Management Plan Table 3.4, D-WAT1 to D-WAT6 and D-BIO1. These measures are secured through Requirement 3 of the draft DCO [APP-018/3.1 and subsequent revisions] and focus on mitigation to reduce the impact of culverting, the diversions of watercourses to those culverts and the creation of new ditchcourses and pond habitats.</p> <p>Further detail of the mitigation for culverts and compensation for the loss of riparian habitat is provided in Chapter 8: Biodiversity [AS-083/6.1], Chapter 13: Road Drainage and the Water Environment [APP-052/6.1], Appendix</p>	Under discussion	High	High

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>13.2 Drainage Strategy [APP-201/6.3], Figure 2.1 of the ES Draft Environmental Masterplan Overview [APP-057/6.2], and Outline Drainage Works [AS-072/2.11] (see Sheets 3-5). However, to support the interpretation of the environmental commitments made and to help illustrate what the proposals aspire to provide, Highways England has prepared an additional figure, Figure 1: Proposed Watercourse which is appended to this SoCG. Although the detailed design of new ditchcourses, channel diversions and realignments will be done during the detailed design stage, and will be site specific, (a figure will be produced and provided to support this ongoing discussion), to illustrate project aspiration in terms of ditchcourse and existing channel diversion/realignment design.</p> <p>Following the result of 2020 great crested newt (GCN) surveys these mitigation measures have been reviewed and amended as appropriate. The surveys confirmed the likely absence of GCN in those ponds which would be lost as a result of the Scheme. As no ponds known to support GCN would be lost the replacement of pond habitat is only required at an</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>approximate ratio of 1:1. Seven ponds would be lost as a result of the Scheme, with the partial loss of two further ponds. Therefore, eight ponds and suitable terrestrial habitats are proposed to replace this lost habitat as well as forming part of a mosaic of a habitats to support protected species such as bats. Chapter 8: Biodiversity (Version 3) [AS-083/6.1] and Figure 2.1 to 2.7 (Version 2) [AS-086 to 092/6.2] of the ES and the OEMP (Version 3) [AS-112/6.11] have been updated and issued to the Examining Authority on 8 October 2020. As before these mitigation measures are secured through Requirement 3 of the draft DCO [APP-018/3.1 and subsequent revisions].</p> <p>A summary of the WFD Assessment has been produced which sets out the impact on each of the WFD criteria for each watercourse, how this impact is mitigated and where this is secured by the DCO. This was submitted to the EA for comment on 22 December 2020.</p> <p>Tables 3 and 4 in Appendix B are extracts from the WFD Summary Report and detail the balance of impact and mitigation proposed.</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
Appendix 13.4: Water Framework Directive Assessment [APP-203/6.3] and Appendix 8.2 Biodiversity Metric Calculation [AS-031/6.3]	-	Mitigation measures - culverting	<p>The scheme as it is currently proposed would not achieve No Net Loss because as it stands currently the proposed mitigation does not address all the detrimental impacts or detail appropriate mitigation for them.</p> <p>The reports provided suggest that an embedded culvert is suitable mitigation for culverting watercourses. We disagree with this statement because this would only mitigate the flow connectivity of the brook - it would not mitigate for the detrimental impacts of direct loss of the natural bank and bed conditions, marginal vegetation, sediment supply from banks and lack of daylight. Consequently, we consider the detrimental impacts have been underestimated.</p> <p>Following Highways England's response the EA will review information provided and will provide additional text to include here on the EA's position.</p>	<p>The impact of culverts would be mitigated by the design of the culvert (to reduce adverse impacts on the hydromorphology of the watercourse and channel continuum) and by the creation of new ditchcourses, channel diversions and realignments designed to provide improvement on the current channels (to compensate for the loss of riparian habitat, shading of existing channels etc.). These mitigation measures are set out in the OEMP, Table 3.4, D-BIO1, D-WAT1 to D-WAT7 (see Deadline 4 revision for latest wording).</p> <p>In general, due to the small size of watercourses that would be culverted by the Scheme there will be limited downstream transportation of coarse sediment. Although the channel of Watercourse 4 downstream of the A460 includes alternating (embryonic) lateral gravel bars (suggesting that flows are capable of transporting small diameter gravels), the location of the proposed culvert is between two sets of ponds near Brookfield Farm, which will significantly reduce the downstream transport of coarse material. Therefore, it is not expected that there would be any significant interruption of sediment</p>	Under discussion	High	High

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>supply as a result of the culverts proposed as part of the Scheme.</p> <p>A summary of the WFD Assessment has been produced which sets out the impact on each of the WFD criteria for each watercourse, how this impact is mitigated and where this is secured by the DCO. This was submitted to the EA for comment on 22 December 2020.</p> <p>Tables 3 and 4 in Appendix B are extracts from the WFD Summary Report and detail the balance of impact and mitigation proposed.</p>			
Appendix 13.4: Water Framework Directive Assessment [APP-203/6.3].	-	Impact of culverting	<p>The report underestimates the impacts of culverting the watercourses by pointing that the impacts would be 1% of the overall watercourse. However, the WFD legislation assesses the impacts based on the activity and culverting is classified a high risk activity.</p> <p>Following Highways England's response the EA will review information provided and will provide additional text to include here on the EA's position.</p>	<p>Paragraph 13.9.90 of Chapter 13 [APP-052/6.1] and Paragraph 6.2.6 of Appendix 13.4 WFD Assessment [APP-203/6.3] consider the impact of culverting on watercourses so that the significance of the effect could be determined (taking into account the proposed mitigation) but also, in the case of the WFD Assessment, to determine whether the effects are significant at a local or water body level. This was done by expressing the length of channel to be lost as a percentage of the immediate reach it was in (i.e. between confluences with other tributaries) and as a percentage of the designated water body length. It is</p>	Under discussion	High	High

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>acknowledged that this is a simplistic and over precautionary a presentation of the impact as it does not show the effect of the culverting on the full length of the tributary, nor does it consider the whole catchment effect (i.e. the culverts proposed are not on the main stem of the WFD watercourse as shown on the WFD Catchment Data Explorer website and which represents the published length of the water body in the River Basin Management Plan (RBMP)), yet the length of other minor tributaries to this WFD water body have not been taken into account. A more detailed analysis of the length of channel to be culverted expressed as proportions of the tributary, the published length of the relevant WFD water body (i.e. main stem), and published length of the relevant WFD water body plus tributaries (with and without an estimate for existing culverts) is provided in Table 1, Appendix B of this SoCG (note that these are estimates determined through GIS analysis of digital Ordnance Survey maps, digital river networks, and data from Highways Agency Drainage Data Management System (HADDMS)).</p> <p>Table 1, Appendix B of this SoCG shows as a proportion of Watercourse 2,</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>the proposed culverting represents around 4% of the channel length (this was previously reported as 6% but has now been measured more precisely). As a proportion of the length of the River Penk WFD water body as published in the RBMP the proposed culverts represent around 1.5% of the channel length. However, as the proposed culvert is not on the main stem but on an associated tributary, it would be most appropriate to consider the impact as a proportion of the WFD water bodies main stem plus estimates for all other main tributaries to that WFD water body (taking into account an estimation for other existing culverts). When this is done the proportion of the total catchment channel length affected is only approximately 0.5%. Due to the small proportion of the total WFD water body catchment channel length impacted by the proposed culverts to Watercourse 2, the design of the culvert (which seeks to minimise adverse impacts on hydromorphological processes), and the compensation for the loss of riparian habitat provided by new ditchcourses (e.g. from Ponds 1 and 2), an overall minor adverse and localised impact is predicted, that would not be significant at the water body level</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>(i.e. no deterioration of the WFD status of the water body).</p> <p>As a proportion of Watercourse 3 and Watercourse 4, the proposed culverting represents around 1% and 2% of the total channel length of these Watercourses, respectively. When the proportion of the channel impacted along Watercourse 3 and Watercourse 4 from new culverts is estimated using the length of the Saredon Brook WFD water body as published in the RBMP the proportion affected reduces to around 0.4%. However, as described above, it would be most appropriate to consider the impact as a proportion of the WFD water body main stem plus estimates for all other main tributaries to that WFD water body (taking into account an estimation for other existing culverts). When this is done the proportion of the total catchment channel length affected is around 0.3%. Due to the very small proportion of the total WFD water body catchment channel length impacted by the proposed culverts to Watercourse 3 and Watercourse 4, the design of the culverts (which seeks to minimise adverse impacts on hydromorphological processes), and the compensation for the loss of riparian habitat provided by</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>new ditchcourses (e.g. from Ponds 3 and 4) plus the new channel proposed for Watercourse 3 (following relocation of the current impoundment structure for Lower Pool), an overall minor adverse and localised impact is predicted, that would not be significant at the water body level (i.e. no deterioration).</p> <p>With regards to the comment about culverting being a 'high' risk activity, Highways England has detailed in other technical responses how the adverse impact of culverts will be mitigated and compensated for.</p> <p>A summary of the WFD Assessment has been produced which sets out the impact on each of the WFD criteria for each watercourse, how this impact is mitigated and where this is secured by the DCO. It includes details of the watercourses measures when determining the percentage of channel impacted by culverts within each WFD water body catchment. This was submitted to the EA for comment on 22 December 2020.</p>			
Appendix 13.4 Water Framework Directive of	Paragraph 5.4.3 Section 5	Drainage Strategy - mitigation	No details provided for the proposed Drainage Strategy, this detail appears under section 5.5.1 Environmental	Appendix 13.4 Water Framework Directive is a technical appendix to the Environmental Statement [APP-203/6.3]. As referred to in paragraph 5.4.5	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
the ES [APP-203/6.3]	Mitigation Measures		<p>Enhancement Opportunities, even though its mitigation not enhancement. There is no detail on how the Drainage strategy will be managed long-term to monitor the quality of the water being discharged or maintained in perpetuity to ensure no detriment to water quality under WFD.</p> <p>Following the explanation provided, the EA is content that the proposed drainage will be managed by Highways England as part of standard operating protocols. It is also noted that water quality monitoring of highway outfalls is not routine, no additional monitoring is requested for this scheme.</p>	<p>and elsewhere within the report, a separate Drainage Strategy (i.e. Appendix 13.2 of the Environmental Statement [APP-201/6.3]) has been produced. Para 5.4.5 summarises the Drainage Strategy, although does not include details of management. Management of SuDS and the drainage would be undertaken by Highways England and their management partners according to standard methods and operating protocols. Water quality monitoring is not considered necessary as the treatment train has been developed using best practice risk assessment guidance, for which the Environment Agency was involved in the development (i.e. HEWRAT and M-BAT). Water quality monitoring of highway outfalls is not something that is done routinely across the UK. However, the Environment Agency's own network of monitoring stations could potentially be used to detect if there are any changes once the Scheme has been constructed and opened to traffic.</p>			
Appendix 13.4 Water Framework Directive of		Drainage strategy – water quality	The Environment Agency have further concerns regarding the water quality within the proposed 408m of watercourse if these are part of the SUDs	Commitment D-WAT6 in the OEMP [APP-218/6.11 and subsequent revisions] states that the ditchcourses would convey treated runoff to the receiving watercourses from new	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
the ES [APP-203/6.3]			<p>network for the road. It would be difficult to say the scheme is WFD compliant without seeing these details.</p> <p>Following Highways England's Response and discussions at the meeting held on the 11th of November, the EA are content that the water quality within the ditches proposed as part of the SUDs would convey treated runoff and that the water quality risk has been assessed in the HEWRAT assessment, Appendix 13.3 of the ES.</p>	<p>treatment ponds. As shown on the Outline Drainage Works figures [AS-072/2.11] (Sheets 3-5), these would be provided for drainage ponds 1 to 4 (currently the outfall from Pond 5 would be a pipe and engineered outfall, but options to include a cascade ditch arrangement are being considered to see if these are practical and cost effective). Having the final discharge from these treatment drainage ponds conveyed by an open ditchcourse is more sustainable avoiding the need to construct a new engineered outfall supported by concrete headwalls, whilst also encouraging greater connectivity between the existing watercourse network and the Sustainable Drainage Systems (SuDS) being proposed as part of the Scheme. Given the environmental benefits of this design Highways England would expect the Environment Agency to welcome this rather than conventional drainage options.</p> <p>The proposed operational phase surface water drainage strategy is described in Appendix 13.2: Drainage Strategy [APP-201/6.3] and summarised in paragraphs 13.8.11 to 13.8.20 of Chapter 13 of the ES [APP-052/6.1]. Appendix 13.3: Assessment of Routine Road Runoff</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>and Accidental Spillage Risk (HEWRAT) [APP-202/6.3] presents full details of the water quality risk assessment that has been carried out, which is summarised in paragraphs 13.9.57 to 77 of Chapter 13 of the ES [APP-052/6.1]. Appendix 13.4: Water Framework Directive Assessment [APP-203/6.3] also includes consideration of surface water drainage proposals and the assessment carried out.</p> <p>The previous estimates of the new ditchcourses failed to include the ditch to Watercourse 1 and thus the total length is in fact 483 m of new ditchcourses as opposed to 408 m reported in the ES and associated appendices. This includes 75 m of ditch to Watercourse 1, 32 m to Watercourse 2, 280 m to and from Pond 3 to Watercourse 3, and 96 m to and from Pond 4 to Watercourse 4. In addition, it should be noted that the Scheme will also provide new channels for Watercourse 2 (where it is diverted) and Watercourse 3 (due to the relocation of the impoundment to Lower Pool), which will also be designed to improve upon the current channel form, with the lengths provided to be confirmed through detailed design and thus not included in the 483 m length</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>stated above (with the recent proposed Scheme design changes 323 m of existing watercourse will be culverted, and a further 30 m affected by the new bridge crossing Watercourse 5 (Latherford Brook).</p> <p>The proposed road drainage networks 5, 8 and 10 (i.e. to Watercourses 2, 3 and 4, respectively) are not reliant on the proposed ditchcourses to provide treatment of highway runoff. Treatment of highway runoff from road drainage network 3 (to Watercourses 1) will primarily be from the proposed wet pond. However, to ensure adequate treatment is provided the proposed ditchcourse from Pond 1 is required to provide some treatment. Overall, as the flow within these ditchcourses will come from highway surfaces via a treatment train, water quality will be influenced by the type and range of chemical compounds that may be found in highway runoff. However, the proposed ditchcourse will still provide biodiversity benefits, and are preferred to discharging water from the treatment pond via a pipe and new engineered headwall. In addition, although direct comparison between the existing highway alignments and the Scheme is</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				not straight forward (for instance due to the remodelling of M54 Junction 1) the provision of new treatment measures where none currently exist will provide some improvement in water quality along local watercourses (in particular Watercourse 2 and Watercourse 6).			
Appendix 13.4 Water Framework Directive of the ES [APP-203/Volume 6.3]	Para 5.4.4, Section 5.4	Mitigation measures	<p>Suitable mitigation we would expect would be improving a length of watercourse up or downstream equal to the length of the proposed culvert.</p> <p>Following Highways England's response the EA will review information provided and will provide additional text to include here on the EA's position.</p>	<p>Please see response above which refers to the creation of new ponds and provision of ditch courses exceeding the total distance lost to the Scheme through new culverting.</p> <p>A summary of the WFD Assessment has been produced which sets out the impact on each of the WFD criteria for each watercourse, how this impact is mitigated and where this is secured by the DCO. This was submitted to the EA for comment on 22 December 2020.</p> <p>Tables 3 and 4 in Appendix B are extracts from the WFD Summary Report and detail the balance of impact and mitigation proposed.</p>	Under discussion	High	High
Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3]	Para 5.5.1, Section 5.5	Drainage Strategy	The WFDa mentions the Drainage Strategy, SuDS Swales & Ditches. These are not enhancement measures these are mitigation measures to	This is a complex issue and depends on what is considered as the base environment. The baseline for the current assessment includes existing roads for which there is not necessarily any water quality treatment measures in	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
			<p>mitigate the potential impacts of the pollution from road runoff.</p> <p>Following the Highways England response and the amendments to the WFD (prior to the submission of the DCO application), the EA is satisfied that SuDs are not being considered as enhancement measures.</p>	<p>place. Thus, the provision of new treatment measures on existing roads where none currently exist could be seen as an improvement, and thus enhancing the 'current' baseline. However, it is also accepted that this may be viewed as the Scheme belatedly addressing mitigation requirements that were not provided when existing roads were constructed, dealing with an existing pressure on a watercourse. Therefore, paragraph 5.5.1 Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3] has been moved to the previous section on operation mitigation rather than be included under 'Environmental Enhancement Opportunities' in the final WFD Assessment.</p>			
Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3]	Para 5.5.2, Section 5.5	Mitigation and enhancement measures	<p>Ditches are not natural features they are proposed as part of the scheme to convey the water runoff from the road, while they can be designed to have some habitat value they are a separate habitat to the natural watercourses so do not constitute an enhancement.</p> <p>Following the Highways England response provided and the</p>	<p>Rather than installing pipes to convey runoff from treatment ponds to existing watercourses the Scheme is committed to, wherever possible, providing new ditches. Furthermore, rather than construct uniform ditches of an unnatural character, the Scheme is committed to ensuring that each is designed with some asymmetry and variation in channel form in order to maximise any biodiversity benefits that they can provide. This goes beyond</p>	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP?¹	IP?
			amendment to the WFD (prior to the submission of the DCO application), the EA is satisfied that ditches are not being considered as enhancement measures.	standard practice and is why it was included in this section on enhancement. The ditches would connect with existing watercourses and extent to the new attenuation ponds that are proposed. These ditches would therefore support local habitats and green corridors. However, it is accepted that this measure does not enhance an existing receptor and thus paragraph 5.5.2 Appendix 13.4 Water Framework Directive of the ES [APP-203/Volume 6.3] has been moved to the previous section on operation mitigation rather than be included under 'Environmental Enhancement Opportunities' in the final WFD Assessment.			
Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3]	Para 5.5.3, Section 5.5	Mitigation and enhancement measures	<p>The diversion of the existing channel to facilitate culverting, design and installation method of culverts are not an enhancement they are methods to mitigate some the detrimental impact from the proposal to modify the watercourse in order to facilitate engineering.</p> <p>Environmental Enhancement is the increase or improvement in quality, value or extent of an environmental feature. For</p>	<p>Paragraph 5.5.3 Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3] has been moved to the operation mitigation section in the final WFD Assessment.</p> <p>Further commentary has been included in the final WFD Assessment report (prior to the submission of the DCO application in January 2020) on enhancement opportunities and how this has been considered. However, Highways England are able to offer the</p>	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
			<p>example the removal of the weir at watercourse 3 would provide an improvement to the existing biological and geomorphological function of that watercourse. The loss of open watercourse could be enhanced by improving the habitat and function a length of watercourse up or downstream greater than the length to be degraded by the culvert.</p> <p>Following the Highways England response provided and the amendment to the WFD (prior to the submission of the DCO application), the EA is satisfied that mitigation measures are not being considered as enhancement measures.</p>	<p>following comments on Watercourses 2, 3 and 4 (that would be culverted) below:</p> <p>Watercourse 2 within the Scheme boundary is the further most upstream reach and has the character of a ditch/drain and typical of those found in agricultural settings. For the Environmental Impact Assessment, the importance of the hydromorphology of Watercourse 2 is considered to be low, and from an ecological perspective the habitat is low-moderate (and of local importance only). The watercourse would be diverted and realigned in places and through best practice design enhancement of the current channel could be delivered by the project. This would ensure there are adequate buffers strips of vegetation to reduce sediment run off from land in addition to fencing to stop livestock accessing the river to reduce poaching and direct sediment input into the watercourse. However, given the small flows and low gradients, there are limitations as to what could be achieved in terms of morphological diversity.</p> <p>Watercourse 3 near Lower Pool was observed during site visits as being typically dry. Further downstream and outside to the Scheme boundary this</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>watercourse was a typical agricultural ditch/stream that has been modified by past land use and with areas of the bed covered in fine silt. However, there were short reaches were good and clean gravels were being washed clear. Options such as introducing buffers strips of vegetation to reduce sediment run off from land in addition to fencing to stop cattle accessing the river to reduce poaching and direct sediment input into the river. There may also be some opportunities to narrow the channel to improve flow and self-cleaning of fine sediments, creation of berms and marginal wetlands, and management of existing vegetation (e.g. thinning of overgrown sections and selected removal of undesirable shrubs and small trees). The removal of the weir at Watercourse 3 would result in the loss of Lower Pool which forms part of a Site of Biological Importance as well as being a feature of Hilton Park a non-designated historic park that has been defined as Historic Parkland within the South Staffordshire Local Plan. A new length of channel would be provided for Watercourse 3 following the need to construct a new impoundment structure across Lower Pool. The diversion of Watercourse 3 would be informed by</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>hydromorphological and ecology surveys to ensure that where enhancement on the existing channel is possible this is provided.</p> <p>Watercourse 4 is similar to Watercourse 2. Watercourse 4 within the Scheme boundary is the furthest most upstream reach of the ditch/drain. However, the Scheme boundary around Watercourse 4 is very constrained and this prohibits any meaningful enhancement of the channel upstream (where there are a series of ponds) and downstream (Brookfield Farm).</p> <p>Watercourse 5 within the Scheme boundary is tree lined and the surrounding land use is mainly agricultural and rough pasture. The river here has good habitat variety, such as pool/riffles, instream tree roots and good clean cobble/pebble substrate, however there are patches of silt – resulting from the agricultural land use. Shading of Watercourse 5 was high (90%), mainly resulting from bankside trees and shrubs. The clear span bridge proposed across this watercourse would ensure the diverse aquatic habitat remains the same. Furthermore, the shading expected from the bridge shall not</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				exceed the current shading from bankside trees.			
Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3]	Annex B of Appendix 13.4	Mitigation measures	<p>Annex B; Has some additional mitigation measures not mentioned in the report, including mammal ledges which are suitable mitigation for biological connectivity.</p> <p>Following the explanation provided and the amendment to the WFD (prior to the submission of the DCO application), the EA is satisfied that mitigation measures are listed in the main body of the report.</p>	<p>Annex B of Appendix 13.4 Water Framework Directive of the ES [APP-203/6.3] has been reviewed to ensure that all mitigation measures are also described in the summary sections of the main body of the report.</p> <p>Although Highways England recognises that mitigation for mammals is important, mammals are not a WFD biological quality element and therefore this is not directly relevant to the outcome of the WFD Assessment. An assessment of impacts on mammals has been presented in Chapter 8: Biodiversity of the Environmental Statement [APP-047/ 6.1] and associated appendices [TR010054/APP/6.3].</p>	Agreed	Agreed	Agreed
Appendix 13.4 Water Framework Directive of the ES [APP-203/6.3]	Annex B of Appendix 13.4	Mitigation measures – over pumping	<p>It also states that no mitigation measures are required for over-pumping on the Latherford Brook because they think there are no fish. We have records of Bullhead 2km downstream so would expect evidence for this assumption.</p> <p>Following Highways England's response and the amendment to</p>	<p>The Aquatic Invertebrates, Fish and Aquatic Macrophytes Report (Appendix 8.14 of the Environmental Statement [APP-186/ 6.3]) for this Scheme does describe a good community of fish in Latherford Brook. The report has been reviewed to ensure that Appendix 13.4 Water Framework Directive of the ES [APP-203/6.3] includes a summary of the most up to date information.</p> <p>Clarification on the mitigation proposed</p>	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
			the WFD (prior to the submission of the DCO application), the EA considers that appropriate mitigation measures for over-pumping are outlined in the ES and OEMP.	<p>for fish during construction has been provided in the WFD Assessment, reiterating the mitigation is presented in Chapter 8: Biodiversity of the Environmental Statement [APP-047/6.1], and the OEMP [APP-218/6.11].</p> <p>For example, if there is a need to over-pump or flume Latherford Brook during the construction of the bridge (which may not be required given it is a clear-span structure), a fish rescue and removal would need to be completed. In addition, areas of the channel beyond the primary channel would need to be sectioned off with stop nets and fish captured within this area during the draw-down of water. Any water pumps used would need to be fitted with a fine mesh to stop fish being pulled through the pump in addition to a fisheries consultant monitoring the area of the pump abstraction to reduce the risk of fish entrainment. Captured fish should be kept in aerated holding facilities on the river bank until all fish have been captured. The fish should then be moved upstream of the construction works (approx. 100 m) where they would not be impacted and then released safely in to the watercourse. The construction work should only go ahead</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>when the fisheries team/Ecological Clerk of Works have approved that all fish have been removed and with any consents from SCC and the EA.</p> <p>If over-pumping/fluming is required, water would be returned to the channel in the shortest possible distance downstream to minimise the depleted reach. No downstream impacts are predicted.</p>			
Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3]	Section 5.3 Operation	Impact on Latherford Brook	<p>No justification provided on why a 10m wide clear span bridge has been selected and what the detrimental impacts on the Latherford Brook will be.</p> <p>Following the Highways England response provided, the EA agree that the bridge span has been justified and that the impacts on Latherford Brook are reflected in the WFD Assessment.</p>	<p>Specialists in geomorphology/ hydromorphology have been involved with the design of this structure. The issue is discussed in para 6.1.30 to 6.1.34 of Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3]. Section 5 is only an introduction to potential impacts which could occur without mitigation in place. The assessment of the Scheme is presented in Annex B and summarised in Section 6. Paragraph 6.1.30 states:</p> <p>“Watercourse 5 (Latherford Brook) has been historically straightened, however, there is evidence that the watercourse is returning to its natural form. At the location of the proposed crossing the watercourse is showing signs of lateral movement, most likely as a result of localised change in gradient, and</p>	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>secondary channels active during high flow events.</p> <p>Culverting or straightening of the watercourse would result in further modification of the Latherford Brook at the crossing location, therefore representing a risk to the current WFD ecological and overall status. Therefore, it is recommended that the new link road crosses Watercourse 5 (Latherford Brook) supported on a 10 m clear-span bridge structure. This solution allows the naturally returning morphology of the waterbody to be retained as far as possible."</p> <p>There is a primary (permanently wet) channel at this location and also a 'semi-dry' secondary channel within the floodplain. The current wetted river corridor of the existing primary channel at the crossing location is assessed to be approximately 14 m wide. This excludes the relic secondary channel at this location which would add an additional 4 m in width. Paragraph 6.1.34 goes on to state:</p> <p>"Ideally, a structure at this location would be at least wide enough to encompass both the primary and secondary channels in their existing</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				alignments (18 m). This would allow the channel to continue to function and evolve naturally, therefore having minimal impact on the hydromorphology of the channel. However, the watercourse is a low energy stream with relatively cohesive banks and therefore the channel planform does not naturally actively change. What is occurring at the crossing location is considered to be adjustment, triggered by historic anthropogenic modification (e.g. straightening), as the watercourse attempts to re-establish equilibrium. Taking this into account it is considered that an acceptable compromise for the width of the structure at this location would be a minimum width of 10 m. This would allow the primary channel to be accommodated with minimal modification to channel geometry. It is considered that there is limited residual risk that the modifications required to build the structure would result in sufficient acceleration of the secondary currents to cause significant morphological adjustments to the channel. The minimum 10 m width also allows for a 0.5 m buffer either side of the new channel cross-section to provide a residual floodplain. This buffer would allow for some lateral re-working			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				of gravels as the channel adjusts to a new equilibrium post-construction.”			
Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3]	Section 5.3 Operation	Impact on Latherford Brook	<p>The current functional width of the Latherford Brook is 17 m so this would result in a loss of functional planform for the river and this is not mentioned in this section.</p> <p>Following the Highways England response provided, the EA is comfortable that the bridge span provided is appropriate.</p>	<p>It is unclear what is meant by ‘functional width.’ If it is referring to function in terms of river channel movement laterally across the floodplain then Highways England disagrees that the river is naturally sufficiently powerful to cause planform change in response to secondary currents at this location. Paragraphs 6.1.30 to 6.1.34 of the report (as stated above) describe the river corridor and why a clear-span of 10 m is considered appropriate. This solution has been reached in the context that wider bridge spans are increasingly expensive, complicated to build and have a wider footprint. A compromise has been proposed that maintains the primary channel with minimal modification to channel geometry balanced against cost, land take and engineering considerations. Although not described in the WFD assessment, hydraulic modelling to determine flood risk changes as a result of this crossing of the Latherford Brook has been undertaken and is presented in Annex B (Hydraulic Model Report) of Flood Risk Assessment (Appendix 13.1 of the Environmental Statement</p>	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>[TR010054/APP/6.3]). The Flood Risk Assessment was provided to Environment Agency and LLFA for review on 20th November 2019.</p> <p>Hydraulic modelling showed that a structure of around 3 m by 3 m would be sufficient to convey flows. A 10 m clear span is considerably greater than a minimum of 3 m. The proposal for a 10 m clear-span bridge is therefore being recommended to maintain the river corridor for the primary channel for hydromorphological and ecological reasons (e.g. in comparison to a culvert of standard dimensions required to manage flood risk only). It is also considered that a 10 m width would avoid development of the vena contracta effect through the bridge orifice, thereby avoiding natural erosion downstream.</p>			
Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3]	-	Hydromorphology	The reports provided have an insufficient hydromorphological assessment (considering all the elements of hydro-morphological quality elements). Flow impacts are only one element of hydromorphology. Culvert design does not mitigate the negative impacts of culverting on the loss of natural bank	The impact of culverting would be mitigated by the design of the culvert (to reduce adverse impacts on the hydromorphology of the watercourse and channel continuum), the design of diversions/enhancements to provide enhancement on existing modified channels, and by the creation of new drainage ditchcourses (and ecological ponds) (to compensate for the loss of	Under discussion	High	High

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
			<p>conditions, marginal vegetation, and sediment supply from banks etc.</p> <p>The Environment Agency are not able to find any separate documents related to morphological assessment. However, the fish survey shows the availability of the fish in this minor watercourses and it proves some morphological value exists in this watercourses, so the impacts of the scheme on this element need to be assessed.</p> <p>Following Highways England's response the EA will review information provided and will provide additional text to include here on the EA's position.</p>	<p>riparian habitat, shading of existing channels etc.).</p> <p>In general, due to the small size of watercourses that would be culverted by the Scheme there will be limited downstream transportation of coarse sediment. Although the channel of Watercourse 4 downstream of the A460 includes alternating (embryonic) lateral gravel bars (suggesting that flows are capable of transporting small diameter gravels), the location of the proposed culvert is between two sets of ponds near Brookfield Farm, which will significantly reduce the downstream transport of coarse material. Therefore, it is not expected that there would be any significant interruption of sediment supply as a result of the Culverts proposed for the Scheme.</p> <p>All watercourses were surveyed (access permitting) and a summary of the hydromorphology of each watercourse was included in Appendix 13.4 WFD Assessment. Further surveys were undertaken in November 2020 and have informed recent discussions with the Environment Agency and the summary of the WFD Assessment.</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				A summary of the WFD Assessment has been produced which sets out the impact on each of the WFD criteria for each watercourse, how this impact is mitigated and where this is secured by the DCO. This was submitted to the EA for comment on 22 December 2020.			
Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3]	-	Long-term impacts of the Scheme	<p>The WFD assessment indicates that, based on the current understanding of the Scheme, only minor and localised temporary and permanent impacts to WFD relevant bodies are expected providing the mitigation measures embedded in the design with regards to the design of drainage systems, new watercourse crossings, and outfalls, and construction phase mitigation measures are implemented. There is however no assessment to show that these permanent minor impacts will have the potential to adversely impacts the water course in the long run.</p> <p>Following Highways England's response the EA will review information provided and will</p>	<p>The impact of culverts would be reduced by the invert of the culvert being sunken beneath the existing bed level so that a naturalised bed can form through the structure helping to maintain channel continuum with no gradient step changes that can interrupt any coarse sediment transport or encourage erosion of the bed, see paragraph 13.8.22 of Chapter 13 of the ES [APP-052/6.1] and paragraphs 1.2.13 to 1.2.18 of Appendix 13.4 WFD Assessment [APP-203/6.3]. The base of each culvert would be sunk a minimum of 300 mm below the current bed level and the invert backfilled with excavated bed material or a suitable grade substrate [see drawings in Annex C of Appendix 13.4 WFD Assessment]. This is set out in the OEMP, Table 3.4, D-WAT2 to D-WAT4 and secured through Requirement 3 of the draft DCO. Culverts have also been sized appropriately for flood risk taking account of the 300 mm backfill of new</p>	Under discussion	High	High

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
			provide additional text to include here on the EA's position.	<p>material so that there is no significant constriction or narrowing that may lead to the accumulation of sediment upstream due to afflux, or starving the channel downstream of sediment leading to excessive bed scouring. Separate mammal tunnels are also proposed.</p> <p>Highways England agrees that despite designing the culverts to reduce impacts on flows, bed continuum and any sediment transport processes, there will also be the loss of riparian habitat. This is considered in Chapter 13 of the ES [paragraphs 13.9.87-92], Chapter 8 of the ES, and Appendix 13.4 WFD Assessment [paragraphs 6.1.22-25 and 6.1.30-35].</p> <p>To mitigate for the loss of riparian habitat, the Scheme proposes to create 483 m (corrected from 408 m reported) of new ditchcourses as part of the drainage networks. In addition, the 483 m (corrected from 408 m reported) of new ditchcourse does not include the new channels proposed for Watercourse 2 (where it is diverted) and Watercourse 3 (due to the relocation of the impoundment to Lower Pool), which will also be designed to improve upon the current channel form, with the lengths</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>provided to be confirmed through detailed design. Full details of the balance of impact and mitigation, including estimates for the length of channel diversions/realignments have now been provided in Tables 3 and 4 in Appendix B. Watercourse enhancements of equivalent or greater length than the culverts proposed have been included where feasible. Commitment D-WAT6 of the revised (Deadline 4) OEMP states that “The design of new ditches would be informed by a geomorphologist and ecologist and would include where practicable ‘natural’ features such as a sinuous low flow channel (albeit perhaps along a straight corridor) incorporating shallow berms and occasional sections where the channel is narrowed to improve flow. Where these ditches connect with the existing watercourse the hydromorphology of the receiving watercourse must be taken into account in the design. The ditchcourses would also be suitably landscaped and their margins planted to provide suitable riparian habitat to compensate for new culverting proposed by the Scheme. Ditchcourses will be designed so that they are sustainable and self-regulating, and so that ecology that develops in the</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>new lengths of channels will not be impacted by future maintenance works. Future maintenance of these ditches will take into account their biodiversity function as well as drainage requirements.”</p> <p>Further information is provided in Chapter 13 of the ES [APP-052/6.1], Appendix 13.2: Drainage Strategy [APP-201/6.3], and Appendix 13.4 of the ES [APP-203/6.3]. The design of new ditches would be informed by a geomorphologist and would include where practicable ‘natural’ features such as a sinuous low flow channel incorporating shallow berms and occasional sections where the channel is narrowed to improve flow.</p> <p>In addition to the above, Watercourse 2 would be realigned further to the north of its current course, and a new length of channel would be provided for Watercourse 3 following the need to construct a new impoundment structure across Lower Pool. The course of both are illustrated on Figure 2.1 of the ES Draft Environmental Masterplan Overview with detailed design to follow at a later stage. The design of the diversion to Watercourse 2 and new channel for Watercourse 3 would be</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>informed by hydromorphological and ecology surveys to ensure that where enhancement on the existing channel is possible this is provided [see paragraph 5.4.13 of Appendix 13.4: WFD Assessment]. This is secured through the OEMP in commitments D-WAT2 and D-WAT3. In particular, it is stated that 'The design will follow best practice to maintain flow, stream processes and ensuring flood risk is not worsened downstream, whilst seeking to provide morphological and ecological enhancement on current channel form. Uniform, artificial channels will be avoided, in favour of more natural designs.'</p> <p>As stated earlier, to support the interpretation of the environmental commitments made and to help illustrate what the proposals aspire to provide, we have prepared an additional figure, Figure 1: Proposed Watercourses appended to this SoCG. We would also reiterate that it has not been proposed through the DCO to disapply Land Drainage Consent and thus through this regulatory process, during which we assume the Environment Agency would be a consultee to SCC (as LLFA) regarding WFD matters, statutory</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>consultees will have the opportunity to comment on the final proposals for ditchcourse, channel diversion and realignment design.</p> <p>Highways England assumes that the final sentence of the Environment Agency's query relates to the need to support the future improvement objective of the WFD. This is addressed in the technical response provided above that considered the proposed mitigation and compensation measures.</p> <p>Design changes as submitted to the ExA on 9 October 2020 reduce the total area of the Scheme by reducing the size of M54 Junction 1 and reducing the width of the link road, this has resulted in a reduction in the total length of culverting proposed from 355 m to 323 m (noting that the length of bank of Watercourse 5 Latherford Brook affected by the proposed bridge is 30 m). This is assessed in the ES Addendum, which was submitted to the Planning Inspectorate in 9 October 2020 [AS-118/8/6]. Though the reduction in culverting is a positive change, Highways England acknowledge that it would not change the overall outcome of the assessment as reported in Chapter 13: Road Drainage and the Water</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>Environment of the ES [APP-052/6.1], Chapter 8: Biodiversity of the ES [AS-025/6.1], or Appendix 13.4: WFD Assessment [APP-203/6.3].</p> <p>A summary of the WFD Assessment has been produced which sets out the impact on each of the WFD criteria for each watercourse, how this impact is mitigated and where this is secured by the DCO. This was submitted to the EA for comment on 22 December 2020.</p>			
Appendix 13.4 Water Framework Directive of the ES [APP-203/ 6.3]	-	Impact on improvements to Saredon Brook.	<p>The Environment Agency believe that the scheme will have an impact on mitigations measures identified by the Environment Agency to improve Saredon Brook under WFD. This is because the culverted watercourse would impact on the measures including:</p> <ul style="list-style-type: none"> • retain marginal aquatic and riparian habitats (channel alteration) • preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone 	<p>Watercourses 3-5 as shown on Figure 13.1B [AS-029/6.2] of the ES are within the Saredon Brook WFD water body catchment. Paragraph 6.2.5 of Appendix 13.4 WFD Assessment [APP-203/6.3] states “<i>It is acknowledged that the culverts proposed for Watercourse 3 and Watercourse 4, and the outfalls to Watercourse 5 (Latherford Brook) are potentially inconsistent with the above mitigation measures proposed by the Environment Agency to improve the status of some WFD parameters of this water body. However, the physical impact of these structures would be very localised in nature and affecting the first order and minor channels of headwater tributaries, rather than the main stem of the water body. The impact would also be compensated by the creation of new</i></p>	Under discussion	High	High

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
			<ul style="list-style-type: none"> • preserve and, where possible, restore historic aquatic habitats, and • increase in-channel morphological diversity <p>Following Highways England's Response the EA will review information provided and will provide additional text to include here on the EA's position.</p>	<p><i>ditchcourses as part of the highway drainage system, but designed to best practice and linking existing green corridors with proposed treatment and attenuation ponds along the Scheme.</i>" In addition, and not explicitly mentioned in Appendix 13.4 WFD Assessment [APP-203/6.3], the Scheme will also extend the channel of Watercourse 3 where the impoundment for Lower Pool is relocated (refer to Figure 1 appended to this SoCG) which provides further compensation for the proposed 55 m culvert. Highways England are not aware of any specific Environment Agency led initiatives to implement these mitigation measures within the Scheme boundary, but where possible the views of the Environment Agency could be taken into account where new ditchcourses or other channels are being created by the Scheme. The overall effect of the Scheme is to provide a net gain in new watercourse channel/riparian habitat within the Saredon Brook Catchment. In total 241 m of new ditchcourse channel will be provided as shown in the Table 2, Appendix B of this SoCG. Table 4 provides full details of the net balance of all relevant mitigation pertaining to proposed culverts and bridges within the</p>			

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
				<p>Saredon Brook (Source to River Penk) WFD water body catchment. Overall, it is predicted and reported in Appendix 13.4 WFD Assessment [APP-203/6.3] that the Scheme will not prevent improvement of the Saredon Brook from Source to River Penk (GB104028042571) WFD water body. Please refer to commitments D-WAT2-7 and D-BIO1 in Table 3.4 of the latest version of the OEMP (Submitted at Deadline 4, January 2021) for details of the mitigation proposed with regards to the design of culverts, ditchcourses from treatment ponds, and diversions and realignments of watercourses.</p> <p>A summary of the WFD Assessment has been produced which sets out the impact on each of the WFD criteria for each watercourse, how this impact is mitigated and where this is secured by the DCO. This was submitted to the EA for comment on 22 December 2020.</p>			
Chapter 14: Climate [APP-053/6.1], Appendix 13.1 Flood Risk	-	Climate change allowance	The EA is content that the climate change provisions included within the drainage design and the flood risk mitigation proposals take account of latest UK Climate Projections.	Climate change allowance agreed with the EA and LLFA as reported in the Environmental Statement, Appendix 13.1 [APP-200/6.3] and Appendix 13.2 [APP-201/6.3].	Agreed	Agreed	Agreed

ES Chapter	Paragraph Reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely?	
						APP? ¹	IP?
Assessment [APP-200/6.3] and Appendix 13.2: Drainage Strategy [APP-201/6.3].							
Chapter 15: Assessment of Cumulative Effects [APP-054/6.1]		Cumulative assessment	The EA is content that the Environmental Statement appropriately assesses the cumulative effects of the Scheme and that impacts would be managed through adherence to mitigation measures detailed in the OEMP.	Delivery of the OEMP [APP-28/6.11] is a Requirement in the draft DCO.	Agreed	Agreed	Agreed

3.3 Issues related to other documents

3.3.1 The table below shows those matters which have been agreed or yet to be agreed by the parties, including a reference number for each matter, and the date and method by which it was agreed. The document reference column is included where the matter pertains to a specific section of a document submitted as part of the Application or following submission. This column is left blank where there is no document reference for the issue.

Table 3.2: Issues Related to Other Relevant Documents

Section	Paragraph reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely (APP)? ²	Agreement likely (IP)?
OEMP [APP-218/6.11] Section 4.2 Consents and permissions	Table 4.1	Consents and Agreements	The EA are content that there are no Main Rivers directly affected by the Scheme. Any works to floodplains can be considered through the Land Drainage Consent application procedure.	A meeting regarding Water and drainage consents was held on 21/01/20 with AECOM and LLFA to inform Table 4.1 of the OEMP which is also captured within the Consents and Agreements Position Statement [APP-020/3.3].	Agreed	Agreed	Agreed
OEMP [APP-218/6.11] Section 4.2 Consents and permissions	Table 4.1	Consents and Agreements	The EA is content that the appropriate consents and licences which may be required to construct the Scheme are outlined in Table 4.1 of the OEMP [APP-218/6.11] along with the correct consenting authority.	A meeting regarding Water and drainage consents was held on 21/01/20 with AECOM and LLFA to inform Table 4.1 of the OEMP which is also captured within the Consents and Agreements Position Statement [APP-020/3.3].	Agreed	Agreed	Agreed

² Indication on likelihood that the matter will be agreed by the close of the Examination period as rated by the Applicant (app) and the Interested Party (IP). Dark green = agreed, Light green = high likelihood of agreement, yellow = medium likelihood of agreement, red = low likelihood of agreement. Inserted as one column here as most issues raised already agreed.

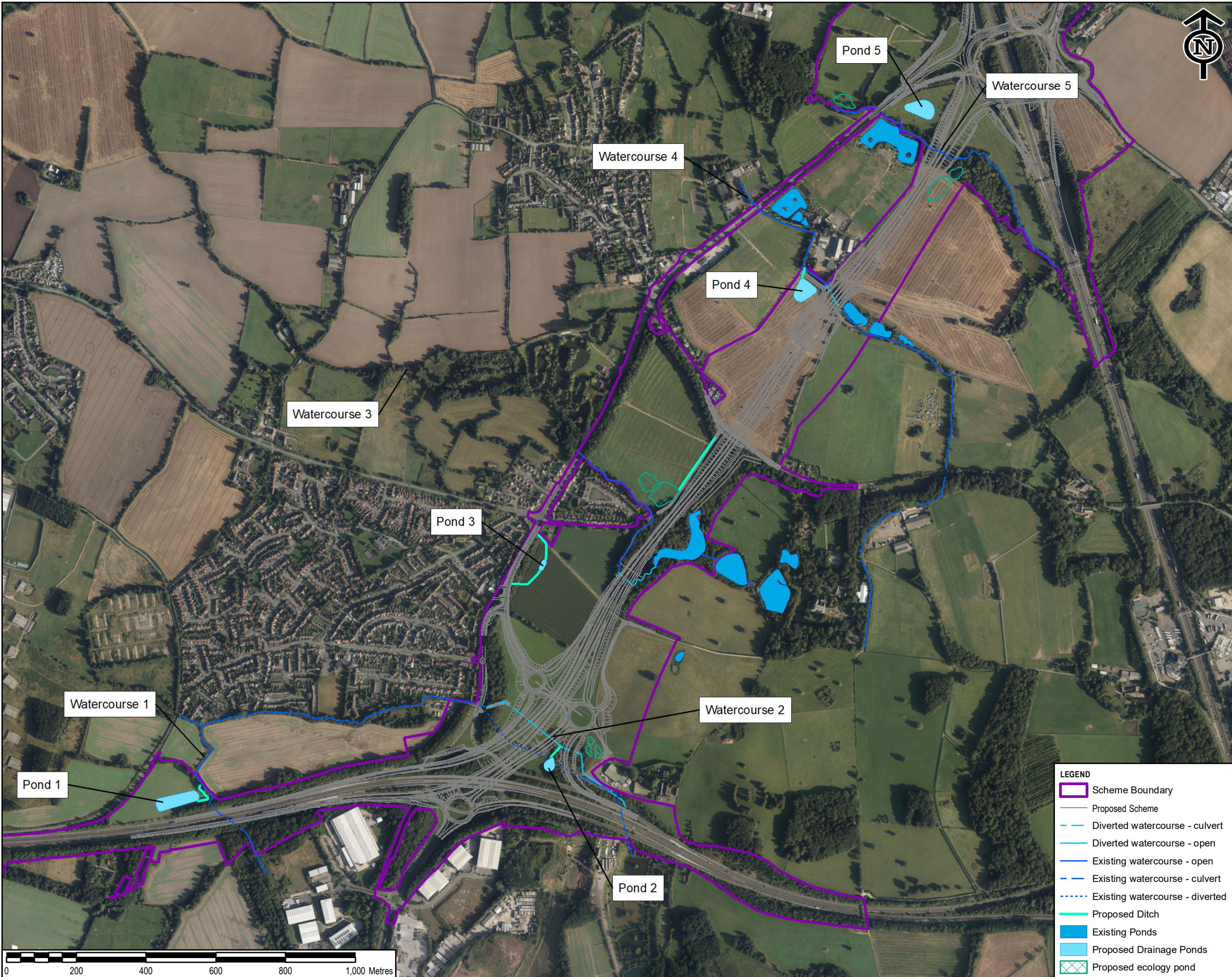
Section	Paragraph reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely (APP)? ²	Agreement likely (IP)?
			<p>We agree that a temporary EPR water or ground discharge permit might be required if there is a need to dispose of waste waters or sewage during construction. Also, a WRA dewatering permit / water abstraction licence may also be required in case of high watertable for footings / foundations.</p> <p>Additionally, discharge/Impoundment/Abstraction licencing that may be required should be able to avoid any significant detrimental impact via the adoption of fairly standard mitigation practices, so is unlikely to cause undue delays. Fish Rescue/Translocation licencing is generally a straightforward process and is unlikely to be refused providing appropriate methodologies are adhered to.</p> <p>The EA believe that there is a high likelihood that agreement will be reached regarding the various consents that will be required further to this DCO.</p>	<p>Highways England welcomes the EA's agreement in relation to the high likelihood that consents and licences will be agreed upon if approval of the draft DCO is granted.</p> <p>Further discussions with the EA, regarding consents and permissions, will be undertaken as the detailed design of the Scheme progresses.</p> <p>Delivery of the OEMP [APP-218/Volume 6.11] is a Requirement in the draft DCO.</p>			

Section	Paragraph reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely (APP)? ²	Agreement likely (IP)?
OEMP [APP-218/6.11] Section 4.2 Consents and permissions	Table 4.1	Consents and Agreements (Waste)	<p>The EA is content that waste management permits and formal exemptions outlined in Table 4.1 of the OEMP [APP-218/6.11] are appropriate.</p> <p>The EA believe that all considerations of production, movement and handling of waste have been considered. The construction will of course have to comply with relevant waste regulation (incl. DoWCoP) when handling, transporting, treating or disposing of Controlled Waste.</p> <p>The EA confirm that there is a high likelihood the outlined consent and permits would be granted.</p> <p>Please be minded, regarding permits, it is at least a three-month time period for determination of consents. Due to this, ensure enough time is factored in when applying for permits.</p>	<p>Highways England welcomes the EA's agreement in relation to the high likelihood that consents will be agreed upon if approval of the draft DCO is granted.</p> <p>Further discussions with the EA will be undertaken as the detailed design of the Scheme progresses.</p> <p>Delivery of the OEMP [APP-218/6.11] is a Requirement in the draft DCO.</p> <p>Highways England note the three month time period for the determination of consents.</p>	Agreed	Agreed	Agreed

Section	Paragraph reference	Sub-section	Environment Agency Comment	Highways England Response	Status	Agreement likely (APP)? ²	Agreement likely (IP)?
Draft DCO [AS-075/3.1]	-	Articles and Requirements of the draft DCO	[The EA to provide comments on the Articles and Requirements of the draft DCO including whether future procedures for approval of detail are appropriately outlined or confirm that the EA have no comments.]	The Applicant has not received any comments on the Articles or Requirements of the draft DCO.	Under discussion	High	High

Figure 1

DRAFT



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

EXCEPTIONAL RISKS RELATING TO THE WORKS ASSOCIATED WITH THIS DRAWING ARE IDENTIFIED BELOW.

CONSTRUCTION

MAINTENANCE / OPERATION / DECOMMISSIONING / DEMOLITION

NOTES
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION.
2. DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
3. ALL DIMENSIONS IN MILLIMETRES, ALL CHAINAGES, LEVELS AND COORDINATES ARE IN METRES UNLESS DEFINED OTHERWISE.

© Crown copyright and database rights 2020
Ordnance Survey 100030649.
Service Layer Credits: © 2020 Microsoft Corporation
© 2020 Maxar ©CNES (2020) Distribution Airbus DS

Revision Details

By

Check

Date

Suffix

Purpose of issue

FOR INFORMATION

Client
Highways England
The Cube
199 Wharfedale Street
Birmingham
B1 1RN

Working on behalf of

Development Consent Order Number

TR010054

Project Title

M54 TO M6 LINK ROAD

Drawing Title

PROPOSED WATERCOURSES

Designed
LC

Drawn
LC

Checked
OT

Approved
AS

Date
19/11/2020

Internal Project No.
60536736

Suitability
S8

Scale @ A3
1:10,000

Zone
M54 to M6 Link Road

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

Drawing Number
HE514465
M54_SW_PR_Z

Originator
-ACM

Volume
-EGN -
-DR - EG - 0038

Rev
P03

LEGEND

Scheme Boundary

Proposed Scheme

Diverted watercourse - culvert

Diverted watercourse - open

Existing watercourse - open

Existing watercourse - culvert

Existing watercourse - diverted

Proposed Ditch

Existing Ponds

Proposed Drainage Ponds

Proposed ecology pond

Plot Date: 19 November 2020 10:36:10
File Name: \\UK\dss\pfs\w001\uk\dss\pfs\w001\1\env\environment\Practice Areas\GIS\Projects\M54\4\6 Link\Workspace\Stage 4 Figures\General\HE514465-ACM-EGN-M54_SW_PR_Z-DR-LE-0038 - Proposed_Watercourses.mxd

Appendix A - Initials and details of individuals involved

Initials	Name	Role or Discipline	Organisation
AB	Andrew Brookes	Hydromorphology	AECOM
AMM	Anne Marie Mcloughlin	Planning Specialist	Environment Agency
AS	Amy Spencer	Deputy Environment Lead	AECOM
CA	Chris Archer	Flood Risk Officer	Staffordshire County Council
DH	Diane Harrower	Water Quality	AECOM
DL	Dave Last	Project Manager	AECOM
DT	Dyfan Thomas	Highways	Amey
GB	Gail Boyle	EIA & Land Rights Advisor	Planning Inspectorate
HH	Hannah Howe	Flooding/Water	AECOM
IC	Ian Cook	Flood Risk	Environment Agency
JF	Jane Field	Planning Specialist	Environment Agency
JD	Jim Davies	Planning Specialist	Environment Agency
KH	Karen Hall	Environment Officer	Environment Agency
KY	Karen Yates	Flood Risk	Environment Agency
NW	Neil Williams	Associate Geomorphologist	AECOM
OT	Owen Tucker	Road Drainage/Water Quality Lead	AECOM
PG	Paul Gethins	Planning Specialist	Environment Agency
PB	Petrina Brown	Biodiversity/Fisheries	Environment Agency
RB	Richard Brandsma	Groundwater/Contam Land	Environment Agency
SB	Sally Ball	Flood Risk	Environment Agency
SBa	Sally Barnett	Highways/Drainage Design	AECOM
SBI	Sarah Blackburn	Groundwater/Contaminated Land	AECOM
SV	Sangeetha Viswan	Geomorphology Specialist	Environment Agency
TB	Tom Bennett	Former Stakeholder Lead	Amey
TP	Tamara Percy	Environmental Lead	AECOM

Appendix B – Further analysis to support the Applicant's response

Table 1: GIS analysis of digital Ordnance Survey maps, digital river networks, and data from Highways Agency Drainage Data Management System (HADDMS))

Penk from Source to Saredon Brook (GB104028046740)	Length (m)	Saredon Brook from Source to River Penk (GB104028042571)	Length (m)
Estimated total length of tributaries (incl. existing culverts)	28618	Estimated total length of tributaries (incl. existing culverts)	11485
Estimated total length of existing culverts on tributaries	3148	Estimated total length of existing culverts on tributaries	491
Published length of the water body in the RBMP	14000	Published length of the water body in the RBMP	25000
Estimated total channel length within whole water body catchment	42618	Estimated total channel length within whole water body catchment	36485
Estimated total channel length within whole water body catchment minus existing culverts	39470	Estimated total channel length within whole water body catchment minus existing culverts	35994
Total length of new culverts proposed by the Scheme (but excluding new ditchcourses and channel diversions/realignments)	218	Total length of new culverts proposed by the Scheme (but excluding new ditchcourses and channel diversions/realignments)	105
Penk from Source to Saredon Brook (GB104028046740)	Percentage of watercourse (%)	Saredon Brook from Source to River Penk (GB104028042571)	Percentage of watercourse (%)
Estimated % Scheme culverting of Watercourse 2 as proportion of length of Watercourse 2	4.07	Estimated % Scheme culverting of Watercourse 3 as proportion of length of Watercourse 3	1.02
Estimated % Scheme culverting of Watercourse 2 as proportion of WFD water body published length	1.56	Estimated % Scheme culverting of Watercourse 4 as proportion of length of Watercourse 4	2.26
Estimated % Scheme culverting of Watercourse 2 as proportion of WFD water body published length + sub-tributaries (incl. existing culverts)	0.55	Estimated % Scheme culverting of Watercourse 3+4 as proportion of WFD water body published length	0.42
		Estimated % Scheme culverting of Watercourse 3+4 as proportion of WFD water body published length + sub-tributaries (incl. existing culverts)	0.29

Table 2: Comparison of watercourses crossing structure length and the length of new drainage ditchcourses within each watercourse sub-catchment

Water Body Catchment	Watercourse	Proposed Culvert/Bridge Length (approx. m)	Proposed New Ditchcourse Channel (approx. m)	Comparison of watercourses crossing structure length and the length of new drainage ditches within each watercourse sub-catchment (approx. m)
Penk from Source to Saredon Brook (GB104028046740)	1	0	75	+75 of channel
Penk from Source to Saredon Brook (GB104028046740)	2	166 + 52	32	-186 of channel
Saredon Brook from Source to River Penk (GB104028042571)	3	55	280	+225 m of channel
Saredon Brook from Source to River Penk (GB104028042571)	4	50	96	+46 m of channel
Saredon Brook from Source to River Penk (GB104028042571)	5	30	0	-30 m of channel (bridge abutments)
				Total + 241 m of new channel

Table 3: M54 Watercourse Impacts from Proposed Culverts/Bridges – River Penk Catchment

Watercourse	Impacts	Approx. Impact Length (m)	Structure Env. Design Considerations	Mitigation and Compensatory Enhancement (lengths all approx. and in m)	Net length impact (lengths all approx. and in m)
Watercourse 2	<p>Approx. 335 m of existing channel will be lost to the scheme for the construction of the new M54 Junction 1 and replaced with:</p> <ul style="list-style-type: none"> - 166 m long 1.2 m high x 2 m wide box culvert. - 52 m long 1.2 m diameter circular culvert under junction entry slip road. - Realignment lengthening of Watercourse 2 to the north upstream of new junction. This realignment will be undertaken during detailed design. Currently estimated to be 65-80m length. - A short open section between the mainline and the slip road c. 10 m in length. 	335 m (218 m new culverts)	<p>Invert recessed by a minimum of 300 mm for bed continuity.</p> <p>Realignment to minimise culvert length. Supports mitigation of historically straightened channel.</p>	<p>It is proposed that the realigned channel upstream of the new junction (approx. 65 m – lower estimate) and the new open channel downstream of the new junction (approx. 90 m) will be designed to enhance existing channel form/ character.</p> <p>Downstream the existing woodland channel will be retained but flow will be diverted along a new course (approx. 90 m).</p> <p>Approx. 10 m of open channel between mainline and slip road but connected to Pond 2 via 32 m of new ditch.</p> <p>3no. new ecology ponds will also be created to the north of the realigned Watercourse 2 upstream of the new junction. 600 mm dia. mammal tunnels also proposed.</p> <p>Realignment design will be informed by hydromorphological / ecology surveys to ensure that where enhancement on the existing channel is possible this is provided [see para. 5.4.13 of Appendix 13.4: WFDa]. Secured through OEMP commitment D-WAT2 stating <i>'The design will follow best practice to maintain flow, stream processes and ensuring flood risk is not worsened downstream, whilst seeking to provide morphological and ecological enhancement on current channel form. Uniform, artificial</i></p>	<p>Approx. 148 m of channel lost but new channel will be enhanced over existing and approx. 90 m of redundant channel in woodland north of new junction will be retained. There will also be the creation of new ponds.</p>

Watercourse	Impacts	Approx. Impact Length (m)	Structure Env. Design Considerations	Mitigation and Compensatory Enhancement (lengths all approx. and in m)	Net length impact (lengths all approx. and in m)
				<i>channels will be avoided, in favour of more natural designs.'</i>	

Table 4: M54 Watercourse Impacts from Proposed Culverts/Bridges – Saredon Brook Catchment

Watercourse	Impacts	Approx. Impact Length (m)	Structure Environmental Design Considerations	Mitigation and Compensatory Enhancement (lengths all approx. and in m)	Net length impact (lengths all approx. and in m)
Watercourse 3	1.2 m diameter circular culvert	55	Invert recessed by 300 mm (at mid-point) for bed continuity.	Approx. 280 m new ditch habitat created upstream and downstream of Pond 3.	Approx. 325 m of new channel and riparian habitat gained plus two new ecology ponds and a ecology mitigation ditch.
	Modification of online small ornamental lake (Lower Pool) resulting in partial loss of lake but opportunity for creation of new channel c. 100-120 m (depending on detailed design)	100 (lower estimate)	Supports restoration of impounded online pond to naturalised watercourse. Realignment to minimise culvert length, supports mitigation of historically straightened channel.	Approx. 100 m of new channel for Watercourse 3 will be created due to the modifications to Lower Pool. This provides an opportunity to improve the overflow from the lake that is currently overgrown and silted up. Two new ecological mitigation ponds and a new ditch (unconnected to local watercourses) to be created downstream of Dark Lane but close to Watercourse 3. 600 mm diameter mammal tunnel proposed.	

Watercourse	Impacts	Approx. Impact Length (m)	Structure Environmental Design Considerations	Mitigation and Compensatory Enhancement (lengths all approx. and in m)	Net length impact (lengths all approx. and in m)
Watercourse 4	1.2 m diameter circular culvert	50	Invert recessed by 300 mm (at mid-point) for bed continuity.	Approx. 96 m of new ditch proposed upstream and downstream of Pond 4. 600 mm diameter mammal tunnel proposed.	Approx. 46 m of new channel and riparian habitat gained.
Watercourse 5	10 m (minimum) span bridge	30	Bridge with a minimum span width defined from ecological and hydromorphological process analysis.	Three new ecological mitigation ponds are proposed, two upstream of the new link road to the south of the channel, and one downstream of the A460 to the north of the channel.	Approx. 30 m of channel affected by the new bridge structure.